3 Shelley Street, Campsie

Traffic Impact Assessment



Ding Hui Dharma Centre

18th September 2023

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CONTENTS

		Page
1.	INTRODUCTION	1
1.1	Background	1
1.2	Existing Site	1
1.3	Proposed Development	1
1.4	Hours of Operation	2
1.5	Scope of Works	2
2.	EXISTING CONDITIONS	3
2.1	Surrounding Road Network	3
2.2	Public Transport	3
2.3	Active Transport	5
2.3.1	Cycling Facilities	5
3.	TRAFFIC ASSESSMENT	7
3.1	Design Traffic	7
3.2	Trip Distribution	7
3.3	Detailed Traffic Assessment	7
3.3.1	SIDRA Assessment	7
3.3.2	Shelley Street and Byron Street Intersection	8
3.3.3	Brighton Avenue, Byron Street and Cowper Street Roundabout	9
3.3.4	SIDRA Results Summary	11
3.4	Shelley Street Environmental Capacity Assessment	12
4.	PARKING ASSESSMENT	13
4.1	Overview	13
4.2	Car Parking Provision	13
4.2.1	Car Parking Occupancy Survey	13
4.2.2	PWD Parking Provision	15
4.3	Bicycle Parking Provision	15
4.4	Parking Geometric Layout	15
5.		17
5.1	Vehicular Access	17
5.2	Sight Distance	17
5.3	Pedestrian Connectivity	18
6.	SERVICING ASSESSMENT	19
6.1	Servicing, Delivery and Refuse Collection	19
7.	GREEN TRAVEL PLAN	20
7.1	Overview	20
7.2	Active Transport	20
7.2.1	Walking	20
7.2.2	Cycling	21
7.3	Public Transport	21
7.3.1	Trains / Bus services	21
7.3.2	Courtesy Bus Service	21
7.4	Private Vehicle	22
7.4.1	Carpooling Initiative	22



7.5 Travel Mode Survey

8. CONCLUSION

Tables

- Table 2.1: Surrounding Road Network
- Table 2.2: Relevant Public Transport Services
- Table 3.1: Development Traffic Generation
- Table 3.2: Shelley Street / Byron Street (2024) SIDRA Results Summary
- Table 3.3: Shelley Street / Byron Street (2034) SIDRA Results Summary
- Table 3.4: Brighton Avenue / Byron Street / Cowper Street (2024) SIDRA Results Summary
- Table 3.5: Brighton Avenue / Byron Street / Cowper Street (2034) SIDRA Results Summary
- Table 3.6: Average Daily Traffic
- Table 4.1: Bicycle Parking Requirement and Provision
- Table 4.2: Parking Geometric Layout Assessment
- Table 5.1: Vehicular Access South (Ingress Only)
- Table 5.2: Vehicular Access North (Egress Only)
- Table 5.3: Access Sight Distance Review

Figures

- Figure 1.1: Subject Site Location
- Figure 2.1: Public Transport Connectivity
- Figure 2.2: Pedestrian Connectivity
- Figure 2.3: Proposed Connectivity Improvements Near the Subject Site
- Figure 3.1: Shelley Street / Byron Street SIDRA Intersection Layout
- Figure 3.2: Brighton Avenue / Byron Street / Cowper Street SIDRA Intersection Layout
- Figure 4.1: On-Street Parking Locations
- Figure 4.2: Subject Site On-Street Parking Occupancy
- Figure 5.1: Available Sight Distance Northern Access

Appendices

- Appendix A: Development Plans
- Appendix B: Centre Management Plan
- Appendix C: Traffic Surveys
- Appendix D: On-Street Parking Surveys
- Appendix E: SIDRA Outputs



22

23

1. INTRODUCTION

1.1 Background

Bitzios Consulting (Bitzios) has been engaged by Ding Hui Dharma Centre (client) to prepare a Traffic Impact Assessment (TIA) for the redevelopment of a place of worship land use. The proposed development is located at 3 Shelley Street, Campsie (subject site), formally described as Lot 5 on 2/DP2862.

The location of the subject site is shown in Figure 1.1.



Source: Nearmap (edited by Bitzios)

Figure 1.1: Subject Site Location

1.2 Existing Site

The following is noted for the existing site:

- A single-story building used as a place of public worship
- One car space is available on-site
- Maximum occupancy of 20 worshipers (Sunday).

The client advised a courtesy minivan transporting visitors/worshippers to and from the Campsie train station.

It is understood that the existing development will be demolished as part of this application.

1.3 Proposed Development

The proposal is for a redevelopment of a place of worship land use comprising of:

- Two-storey building used as a place of public worship
- One level of basement parking allowing for eight car parking spaces
- Two vehicular crossovers accessed via Shelley Street
 - One ingress only crossover providing access to the basement level via the southern driveway
 - One egress only crossover from the basement level via the northern driveway



- Pedestrian access via Shelley Street
- Maximum occupancy of 30 worshipers.

The operation and management plan provided by the client proposes to maintain the existing minivan courtesy service offered to transport visitors/worshippers to and from the Campsie train station. This service is primarily used during the hours of operation on Sunday.

A copy of the proposed development plans is included in **Appendix A** and the operation and management plan is included in **Appendix B**.

1.4 Hours of Operation

The proposed reconstructed place of worship is expected to remain consistent with the existing development. Based on the information provided by the client, key site operational times are as follows:

- Monday Saturday: 10:00am to 3:00pm by appointment only and no scheduled events are to be held
- Sundays: 9:00am to 4:00pm with a maximum attendance of 30 individuals.

1.5 Scope of Works

The scope of this assessment included:

- Reviewing the existing conditions of the site and its surrounds relevant to traffic and transport
- Estimating the proposed development's traffic generation and a quantitative assessment of the impacts on the surrounding road network
- Reviewing the car and bicycle parking provision against the City of Canterbury Bankstown (Council) Canterbury Development Control Plan: B1 Transport and Parking (2012)
- Reviewing the on-site car and bicycle parking geometric layout against Council's requirements and Australian Standards AS2890
- Reviewing the proposed site access arrangements against Council's requirements and Australian Standards AS2890
- Reviewing the servicing / refuse collection arrangements against Council's requirements and Australian Standards AS2890
- Preparing a Green Travel Plan and detailing proposed measures to reduce private vehicle usage and dependency.



2. EXISTING CONDITIONS

2.1 Surrounding Road Network

Details of the road network surrounding the subject site are outlined in Table 2.1.

Road Name	Jurisdiction	No. of Lanes	Hierarchy	Divided	Posted Speed
Brighton Avenue	Council	2	Local Collector	No	50km/h
Shelley Street	Council	2	Local Access	No	50km/h
Byron Street	Council	2	Local Access	No	50km/h
Cowper Street	Council	2	Local Access	No	50km/h

 Table 2.1: Surrounding Road Network

2.2 Public Transport

The subject site is located within 150m walking distance of the nearest bus stop, located on Brighton Avenue to the east. An alternative bus stop pair with additional bus services is located to the east along Brighton Avenue. Figure 2.1 shows the location of relevant bus stops and heavy rail stations surrounding the subject site along the desired pedestrian route using formalised paths and crossings.



Source: Nearmap (edited by Bitzios)

Figure 2.1: Public Transport Connectivity

Table 2.2 summarises the relevant bus services and their frequencies during peak periods servicing the bus stops in proximity to the subject site.



Service	Route	Peak Frequency
410	Hurtsville to Macquarie Park	10 minutes
413	Campsie to Central Pitt Street	30 minutes
490	Hurstville to Drummoyne	30 minutes
492	Rockdale to Drummoyne	30 minutes
942	Campsie to Lugarno	30 minutes

Table 2.2: Relevant Public Transport Services



2.3 Active Transport

The subject site benefits from a well-connected path network with a number of local neighbourhood paths as well as high quality paths along Brighton Avenue. The pedestrian pathways provide access to retail stores, food facilities, public transport and the Campsie town centre.

The footpath network surrounding the subject site is shown in Figure 2.2.



SOURCE: Nearmap (edited by Bitzios)

Figure 2.2: Pedestrian Connectivity

2.3.1 Cycling Facilities

At present, there is insufficient cycle infrastructure surrounding the subject site. However, it is noted multiple cycle routes surrounding the subject site are proposed in the Active Transport Action Plan 2021-2031 (2021), which will improve the active transport network within Canterbury-Bankstown area. Figure 2.3 displays the proposed improvements within close proximity to the subject site.





SOURCE: Campsie Master Plan

Figure 2.3: Proposed Connectivity Improvements Near the Subject Site

Importantly, the proposed development does not warrant the provision of any additional paths or upgrades to existing active transport facilities.



3. TRAFFIC ASSESSMENT

3.1 Design Traffic

The traffic generation has been based on a 'first principles' approach using the details of the existing and proposed development. Given the development is a place of worship and no specific rates exist for the land use within the Transport for New South Wales (TfNSW) Guidelines, a 'first principles' approach has been undertaken.

Based on the Australian Transport Assessment and Planning (ATAP) Guidelines *PV2 Road Parameter Values* (2016) the average vehicle occupancy in New South Wales in the AM and PM peak hours is 1.21 and 1.25 respectively. Thus, the developments traffic generation has been based on the expected number of worshippers and the average vehicle occupancy sourced the ATAP Guidelines.

The abovementioned approach is considered conservative given that typically places of worship have a higher average vehicle occupancy. Worshippers generally travel with family members and friends together in the same vehicle.

Table 3.1 provides a summary of the net increase in trip generation for the proposed place of worship development.

Land Use	Quantity	AM Rate	AM Rate PM Rate		PM Trips (veh/h)
Place of Worship	20 worshippers	1.21 worshippers per vehicle	1.25 worshippers per vehicle	(-) 17	(-) 16
		Proposed Deve	lopment		
Place of Worship	30 worshippers	1.21 worshippers per vehicle	1.25 worshippers per vehicle	(+) 25	(+) 24
			Net Trip Increase	(+) 8	(+) 8

Table 3.1: Development Traffic Generation

The proposed development is estimated to result in an increase of eight trips both in the AM and PM peak hours. Under uniform flow, the increase in traffic equates to approximately one additional trip every minute seven to eight minutes in the AM and PM peak hour.

3.2 Trip Distribution

Based on the subject site operations, the trip distribution has been conservatively considered as 100% trips inbound in the AM and 100% trips outbound in the PM.

3.3 Detailed Traffic Assessment

Although the proposed development traffic generation described in Section 3.1 is minimal, Council's Development Control Plan (DCP) requires 'Place of Worship' land uses to undertake an environment capacity assessment and level of service assessment (i.e. SIDRA).

3.3.1 SIDRA Assessment

The key intersections surrounding the proposed development were assessed using SIDRA intersection (v. 9.1) to determine the impact of trips on key intersections and their level of service.



The assessment was undertaken for a typical Sunday AM and PM peak hours (i.e. operational hours). Detailed SIDRA outputs for with and without the development scenarios at the expected year of opening (2024) and 10-year design horizon (2034) are provided at **Appendix E**.

3.3.2 Shelley Street and Byron Street Intersection

Shelley Street and Byron Street intersection layout as assessed in SIDRA is shown in Figure 3.1



Figure 3.1: Shelley Street / Byron Street SIDRA Intersection Layout

Table 3.2 summarises the SIDRA results for Shelley Street and Byron Street intersection from AM and PM peak hours.

Table 3.2: She	lley Street / B	yron Street ((2024) SIDRA	Results Summary

Design Vear	Backgr	ound (with	out develo	pment)	Design (with development)			
2024	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
			Sunday A	M Peak				
Byron Street (E)	0.01	0.8	LOS A	0.0	0.02	2.2	LOS A	0.0
Byron Street (W)	0.01	0.6	LOS A	0.0	0.01	0.6	LOS A	0.0
Shelley Street	0.01	5.5	LOS A	0.0	0.01	5.5	LOS A	0.1
			Sunday P	M Peak				
Byron Street (E)	0.02	0.7	LOS A	0.0	0.02	0.9	LOS A	0.0
Byron Street (W)	0.01	0.2	LOS A	0.0	0.01	0.2	LOS A	0.0
Shelley Street	0.01	5.4	LOS A	0.1	0.01	5.3	LOS A	0.3



Design Year	Backgr	ound (with	out develo	pment)	Design (with development)			
2034	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
			Sunday A	M Peak				
Byron Street (E)	0.01	1.0	LOS A	0.0	0.02	2.1	LOS A	0.0
Byron Street (W)	0.01	0.5	LOS A	0.0	0.01	0.5	LOS A	0.0
Shelley Street	0.01	5.4	LOS A	0.0	0.01	5.4	LOS A	0.1
			Sunday F	PM Peak				
Byron Street (E)	0.02	0.7	LOS A	0.0	0.02	0.7	LOS A	0.0
Byron Street (W)	0.01	0.2	LOS A	0.0	0.01	0.2	LOS A	0.0
Shelley Street	0.01	5.4	LOS A	0.1	0.01	5.3	LOS A	0.3

Table 3.3: Shelley Street / Byron Street (2034) SIDRA Results Summary

As show, Shelley Street and Byron Street intersection is expected to operate within acceptable performance limits (i.e. LOS A) at the expected year of opening and at the expected 10-year design horizon (2034) with or without the proposed development. Furthermore, the introduction of development trips is expected to have a negligible impact on intersection performance.

3.3.3 Brighton Avenue, Byron Street and Cowper Street Roundabout

Brighton Avenue, Byron Street and Cowper Street roundabout layout as assessed in SIDRA is shown in Figure 3.1.





Figure 3.2: Brighton Avenue / Byron Street / Cowper Street SIDRA Intersection Layout

Table 3.2 summarises the SIDRA results for Shelley Street and Byron Street intersection from AM and PM peak hours.



Design Vear	Backgro	ound (with	out devel	opment)	Design (with development)			
2024	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
		Sı	unday AM	Peak				
Brighton Avenue (S)	0.43	3.3	LOS A	24.4	0.44	3.3	LOS A	24.6
Cowper Street (E)	0.05	10.2	LOS B	1.8	0.05	10.2	LOS B	1.8
Brighton Avenue (N)	0.34	5.0	LOS A	18.2	0.34	5.0	LOS A	18.5
Byron Street (W)	0.06	10.0	LOS A	2.2	0.06	9.9	LOS A	2.3
		Sı	unday PM	Peak				
Brighton Avenue (S)	0.32	3.1	LOS A	15.6	0.32	3.1	LOS A	15.7
Cowper Street (E)	0.03	8.8	LOS B	1.0	0.03	8.8	LOS A	1.0
Brighton Avenue (N)	0.32	5.0	LOS A	16.0	0.32	5.0	LOS A	16.3
Byron Street (W)	0.07	8.7	LOS A	2.3	0.07	8.7	LOS A	2.7

Table 3.4: Brighton Avenue / Byron Street / Cowper Street (2024) SIDRA Results Summary

Table 3.5: Brighton Avenue / Byron Street / Cowper Street (2034) SIDRA Results Summary

Design Vear	Background (without development)				Design (with development)			
2034	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
		Sı	unday AM	Peak				
Brighton Avenue (S)	0.49	3.3	LOS A	30.7	0.50	3.4	LOS A	31.1
Cowper Street (E)	0.06	10.7	LOS B	2.2	0.06	10.7	LOS B	2.2
Brighton Avenue (N)	0.39	5.0	LOS A	22.3	0.39	5.0	LOS A	22.7
Byron Street (W)	0.07	10.8	LOS B	2.9	0.07	10.8	LOS B	3.0
		Sı	unday PM	Peak				
Brighton Avenue (S)	0.32	3.1	LOS A	15.6	0.32	3.1	LOS A	15.7
Cowper Street (E)	0.03	8.8	LOS A	1.0	0.03	8.8	LOS A	1.0
Brighton Avenue (N)	0.32	5.0	LOS A	16.0	0.32	5.0	LOS A	16.3
Byron Street (W)	0.06	8.7	LOS A	2.3	0.07	8.7	LOS A	2.7

As show, Brighton Avenue, Byron Street and Cowper Street roundabout is expected to operate within acceptable performance limits (i.e. LOS A and LOS B) at the year of opening and at the expected 10-year design horizon (2034) with or without the proposed development. Furthermore, the introduction of development trips is expected to have a negligible impact on intersection performance.

3.3.4 SIDRA Results Summary

The assessment detailed above indicates that the existing road network and key intersections surrounding the subject site are currently operating within acceptable performance parameters and will continue to do so for the foreseeable future. Furthermore, the development will not result in a street intersection in the vicinity to the site to have a level of service below LOS B.



As such, the development for the purpose of public worship is considered to achieve compliance with Overall objective O5 of Canterbury-Bankstown Development Control Plan 2023 for places of Public Worship.

3.4 Shelley Street Environmental Capacity Assessment

Traffic counts were undertaken by Matrix Traffic and Transport Data at Shelley Street for 7 days between Sunday 3rd of September and Saturday 9th of September. Detailed traffic survey data is provided at **Appendix C**.

As described in Section 1.4, the busiest day is expected to be Sunday from 9:00AM to 4:00PM with maximum capacity of 30 worshipers (all the other days, the subject site operates by appointment only with no large group visits). Table 3.6 summarises daily traffic volumes at Shelley Street and proposed development additional traffic. From a conservative assessment it has been considered the weekdays and Saturday will generate the same level of development traffic as Sunday.

Table 3.6: Average Daily Traffic

	Existing Volumes (Vehicle/ Day (VPD))	Development Volumes (Vehicle/ Day (VPD))	Existing + Development Volumes (Vehicle/ Day (VPD))
Weekday (Monday- Friday)	171	16	187
Weekend (Saturday)	207	16	223
Weekend (Sunday)	172	16	188

Shelley Street is classified as a local minor street as per Council's requirements for subdivision roads. As shown above, the expected daily traffic volumes do not exceed the maximum environmental capacity of a local minor street (<400VPD) on any day of the week. The development for the purpose of public worship is considered to achieve compliance with Overall objective O5 of Canterbury-Bankstown Development Control Plan 2023 for places of Public Worship.



4. PARKING ASSESSMENT

4.1 Overview

The operation and management plan prepared by the client for the site, outlines the peak occupancy for the site is on Sunday from 9am to 4pm, when up to 30 visitors are expected (peak subject site occupancy). There are no regular activities scheduled through other weekdays.

From a conservative assessment it has been considered that all 30 visitors will be at the subject site from 9am to 4pm.

4.2 Car Parking Provision

Council's *Canterbury Development Control Plan: B1 Transport and Parking* (2012) was used to source car parking rates for the proposed development. Council requires traffic and parking surveys of similar developments to assist in assigning an appropriate parking rate for the proposed development.

Given the operations and nature of the proposed development, no similar places of worship in close proximity to the subject site were found. The nearest Buddhist centres to the subject site are located within 2km of the subject site, however both centres vary substantially in size and operations, further noting both sites are Korean Buddhist Centres, while the subject site is a Chinese Buddhist Centre.

As such, parking surveys of other place of worship land uses will not accurately reflect the operational nature of the proposed development. Council's objective of requiring a traffic and parking survey is to ensure developments satisfy their car parking demand by providing sufficient on-site parking and to minimise the reliance upon on-street parking.

Based on the car occupancy rates sourced from the ATAP guidelines (See section 3.1.1), the required number of parking spaces based on 30 visitors is 25 spaces. The development proposes eight car spaces, resulting in a shortfall in 17 car park spaces.

4.2.1 Car Parking Occupancy Survey

A parking occupancy survey of Shelley Street and Tennyson Street was undertaken by Traffic Data & Control (TDC) at the following dates and times:

- Saturday 13th May 2023: 8:00am to 4:00pm
- Sunday 14th May 2023: 8:00am to 4:00pm

Weekend parking surveys were undertaken in correspondence to Council's advice to demonstrate a 'worst case' scenario. Detailed on-street occupancy data is provided at **Appendix D**.

Figure 4.1 displays the location of on-street parking survey.





SOURCE: Google Maps

Figure 4.1: On-Street Parking Locations

Figure 4.2 details the peak parking occupancies for the two survey days. The survey counted a total supply of 109 unrestricted parking spaces along Shelley Street and Tennyson Street surrounding the subject site.



Figure 4.2: Subject Site On-Street Parking Occupancy



The occupancy survey results are summarised as follows:

- Saturday peak occupancy was 69% (i.e. 34 available on-street car parking spaces) at 1pm
- Sunday peak occupancy was 81% (i.e. 21 available on-street car parking spaces) at midday

Parking occupancy surveys demonstrate that there is capacity for on-street parking to accommodate the proposed development parking demand. Furthermore, the results demonstrated a minimum of 21 car parking spaces available at any one time during operating hours on Sunday, exceeding the proposed development parking shortfall of (17 spaces).

4.2.2 PWD Parking Provision

The Building Code of Australia (BCA) requires disabled car parking be provided at the rate of one space per 50 car spaces provided for an assembly building (Class 9b). Application of this rate to the 8 spaces proposed results in a requirement for one (1) PWD parking space.

The development proposes one (1) PWD parking space in accordance with AS2890.6 (2009) design requirements and therefore satisfies the requirements of the BCA.

4.3 Bicycle Parking Provision

Table 4.1 details the bicycle parking requirements for the proposed development based on Council's *Canterbury Development Control Plan: B1 Transport and Parking* (2012) requirements.

Table 4.1: Bicycle Parking Requirement and Provision

Land Use	Туре	Quantity	Parking Rate	Required	Proposed
Place of Worship	Class C	30 worshippers	1 per 20 worshippers	2 spaces	2 spaces

As shown in Table 4.1 the proposed developments bicycle parking supply meets Council's requirements. Visitor bicycle parking has been provided within the development and shall have wayfinding signage to guide cyclists to the bicycle parking area.

4.4 Parking Geometric Layout

The on-site parking geometric layout has been assessed in accordance with the relevant requirements of Council's *Canterbury Development Control Plan: B1 Transport and Parking* (2012) and AS2890. The outcomes of the assessment are summarised in Table 4.2.

Design Element	Requirements	Provided	Compliant
Visitor Car Parking Bays (User Class 2)	2.5m x 5.4m	2.6m x 5.4m	Yes
Parking Aisle Width (two-way)	5.8m (+0.3m clearance where bound by obstruction)	Minimum 6.545m	Yes
Column Intrusions	As per Figure 5.2 of AS2890.1	As per Figure 5.2 of AS2890.1	Yes
Blind Aisle Extension	1.0m	1.0m	Yes
Grades (Entry)	Max 1:20 for first 6m inside property boundary	Shall be max 1:20 for first 6m inside property boundary	Shall Comply
Grades (Parking Module)	1:20 parallel to the angle of parking and 1:16 in any other direction	Shall be 1:20 parallel to the angle of parking and 1:16 in any other direction	Shall Comply

 Table 4.2: Parking Geometric Layout Assessment



Design Element	Requirements	Provided	Compliant
Height Clearance (Car Parking)	Minimum 2.2m	Minimum 2.45m	Yes
Horizontal Bicycle Parking	0.5m x 1.8m	0.5m x 1.8m	Yes
Bicycle Parking Aisle	1.5m separated from vehicular movements	Minimum 1.5m separation	Yes

As shown above, the on-site parking geometric layout generally complies with the relevant requirements of the Australian Standards AS2890 and Council's *Canterbury Development Control Plan: B1 Transport and Parking* (2012).



5. ACCESS ASSESSMENT

5.1 Vehicular Access

The proposed vehicular access has been assessed against Council's *Canterbury Development Control Plan: B1 Transport and Parking* (2012) and AS2890 requirements. The development proposes an ingress only crossover and an egress only crossover constructed generally in accordance with Council's Standard Light Duty Vehicular Footway Crossing (VFC) (Standard Drawing S-007). Details of the proposed access are summarised in Table 5.1 and Table 5.2.

Design Element	Details
Access Facility Category	Type 1 as per AS2890.1 (i.e. User Class 2, <25 parking spaces and local road frontage)
Crossover Form	Generally, as per Council's Standard Drawing S-007 (4.0m width at property boundary) and Council's standards.
Pedestrian Sight Line Triangle	Pedestrian sight line triangles are not required as the proposed crossover is ingress only.
Crossover Location	Minimum 2.0m from the projection of adjacent property boundaries and 3.0m from any adjacent crossovers

Table 5.1:	Vehicular	Access - South	n (Ingress	Only)
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Table 5.2: Vehicular Access – North (Egress Only)

Design Element	Details
Access Facility Category	Type 1 as per AS2890.1 (i.e. User Class 2, <25 parking spaces and local road frontage)
Crossover Form	Generally, as per Council's Standard Drawing S-007 (4.0m width at property boundary) and Council's standards.
Pedestrian Sight Line Triangle	Pedestrian sight line triangles have not been provided on both sides of the driveway at 2.0m along the property boundary and 2.5m into the site. This criterion shall comply as per Figure 3.3 in AS2890.1.
Crossover Location	Minimum 2.0m from the projection of adjacent property boundaries and 3.0m from any adjacent crossovers

The vehicular accesses comply with the requirements of Council's *Canterbury Development Control Plan: B1 Transport and Parking* (2012) and AS2890.

5.2 Sight Distance

A sight distance assessment for the proposed development's vehicular accesses was undertaken in accordance with AS2890.1 as outlined in Table 5.3. AS2890.1 stipulates a desirable five (5) second gap of 69m for 50km/h roads.

A	Speed	Direction	Sight Distance		Compliant
Access			Available	Requirement	Compliant
Challes Ctreat	50km/h	North	73m	60m	Yes
Shelley Street		South	Cul de sac	0911	NA

Table 5.3: Access Sight Distance Review



Shelley Street is a local road and ends in a cul-de-sac. It is a straight and flat street, with generally unobstructed sight lines to the north and south from the egress only access location. An aerial of the available sight lines from the egress only access is shown in Figure 5.1.



SOURCE: Nearmap (edited by Bitzios)

Figure 5.1: Available Sight Distance – Northern Access

The proposed development's vehicular access location is therefore not expected to introduce any adverse traffic conditions.

5.3 Pedestrian Connectivity

A pedestrian connection has been provided from the Shelley Street frontage connecting directly to the pedestrian footpath running through the development site. Existing pathways are provided on the surrounding roads, including on Shelley Street (north and south) and Tennyson Street (east and west) and connects the subject sites to Campsie Train Station.



6. SERVICING ASSESSMENT

6.1 Servicing, Delivery and Refuse Collection

The Canterbury Council Development Control Plan 2012 does not specify minimum requirements for servicing vehicles for Places of Public Worship.

Generally for Places of Public Worship, servicing and delivery operations are limited, with the only expected requirements being for on-street refuse collection. Occasional servicing is proposed to be restricted to out of peak hours by B99 vehicles such as a van or utility vehicle within the proposed car parking area.



7. GREEN TRAVEL PLAN

7.1 Overview

Green Travel Plans (GTPs) are used to encourage sustainable travel options such as cycling, walking, carpooling and public transport as viable and attractive alternatives for single occupant private vehicle trips whenever practicable.

Increased uptake of public transport and active transport can bring a number of benefits to visitors, local communities and the environment. These include:

- Reduced congestion on surrounding roads
- Reduced emissions associated with private vehicle usage
- A healthier, more active and more productive workforce
- A greater sense of community among employees
- Reduction in car operating costs such as fuel and vehicle wear.

GTPs are designed to be used as a 'live document'. The document should be monitored and updated on a regular basis to monitor progress towards active transport mode share targets and review the success of current strategies.



The actions described aim to increase active transport usage. These actions are focused on making active transport a more convenient and desirable mode of transport for all visitors.

 Work with the City Council of Canterbury Bankstown on reviewing footpath network, crossing facilities and cycling network surrounding the place of worship to ensure connections meet the needs of the community and provide safe and convenient pathway connections for all type of users.

7.2.1 Walking

The actions described aim to increase walking as a mode of transport to and from the place of worship. These actions are focused on making walking a more convenient mode of transport for visitors.

Aim:

- Encourage visitors to travel by walking from the surrounding areas
- Reduce reliance on private vehicle usage, particularly for shorter local based trips.

Development:

- Review and record the condition and use of footpath network surrounding the site
- Identify treatments than can be incorporated into future works plans or programs.

Measure:

Outcomes from active transport review and travel surveys.

Timing:

Feedback from visitors 12 months from opening via the travel survey.





7.2.2 Cycling

Provide accessible, visible and secure bicycle parking spaces on site.

Aim:

- Encourage visitors to cycle to and from the subject site
- Reduce private vehicles dependency, particularly for short trips from the surrounding community.

Development:

- Provision of bicycle parking close to the main entrance with adequate signage to direct cyclists
- Incorporating lighting and passive surveillance
- Monitor the cycle parking demand and provide additional spaces if required.

Measure:

Monitor active transport usage rates using travel survey tool.

Timing:

- Ongoing review of cycle parking usage and demands as part of operational management
- Feedback on facilities 12 months from opening via the travel survey.

7.3 Public Transport

The actions described aim to increase public transport usage. These actions are focused on making public transport a more convenient mode of transport.

7.3.1 Trains / Bus services

Aim:

Increase awareness of public transport concession / benefits.

Measure:

- Monitor public transport usage rates using travel survey tool
- Promote and communicate to visitors the courtesy bus service to pick up visitors from and to Campsie Station.

Timing:

Commence upon opening and monitor regularly.

7.3.2 Courtesy Bus Service

A courtesy bus service is running as part of the current arrangements at the subject site. This courtesy service runs on regular Sunday's events. The courtesy service is provided via a 7-seater van between Campsie station and the subject site to all visitors who use public transportation.

Aim:

- Encourage visitors to take public transportation to arrive to the place of worship
- Reduce private vehicle trips.

Measure:

- Monitor visitors level of awareness of the courtesy bus service through the travel survey tool
- Monitor the visitor courtesy bus service usage to arrive to the place of worship specially on Sundays (main event day)



• Monitor the visitors demand and arrival via public transport at Campsie Station. If exceeded the van' capacity, replace the van with a bigger bus to cater for the additional demand.

Timing:

 Ongoing review of the courtesy bus service usage and demands as part of operational management.

7.4 Private Vehicle

7.4.1 Carpooling Initiative

Implement a carpool system and register to connect those interested in sharing car rides to the place of worship. This can be done through the temple's management.

Aim:

- Encourage visitors to carpool and reduce the total number of private vehicle trips
- Reduce private vehicle trips by increasing vehicle mode share
- Reduce number of single occupant vehicle trips
- Reduce car parking demands and allows for cost sharing amongst visitors.

Measure:

- Monitor visitors level of awareness of carpooling initiative through the travel survey tool
- Monitor the visitor carpooling usage to commute to the place of worship specially on Sundays (main event day).

Timing:

- Trial during the first 12 months of opening
- Review utilisation, uptake and feedback on carpool initiatives as part of travel surveys.

7.5 Travel Mode Survey

Create a travel mode survey for visitors to assess if the target mode shift rates are being achieved. In this action, a set of questions would be completed by all visitors to identify if further actions need to be taken to improve the usefulness of the Green Travel Plan.

Aim:

• Gather data on the travel modes of visitors which can help in developing recommendations to improve Green Travel Plan.

Measure:

- Delivery of travel survey to visitors
- Processing and analysis of the collected data
- Summarising results and providing recommendations.

Timing:

Every 12 months from commencing operations



8. CONCLUSION

The key findings of the traffic impact assessment for the proposed development located at 3 Shelley Street, Campsie are summarised as follows:

- The proposed development is for the redevelopment of a place of worship land use comprised of:
 - Two-storey building used as a place of worship
 - One level of basement parking allowing for eight car parking spaces accessed via Shelley Street
 - Two bicycle park spaces
 - Maximum visitor capacity: 30 persons.
- The development does not trigger the need for additional public transport facilities or services
- The proposed development is expected to generate a net increase of eight trips during the AM peak and eight trips at the PM peak hours
- SIDRA assessment demonstrates that nearby intersections are expected to operate within acceptable limits for the forecast 10-year design horizon (Shelley Street and Byron Street intersection is expected to operate within acceptable performance limits (i.e. LOS A) and Brighton Avenue, Byron Street and Cowper Street roundabout is expected to operate within acceptable performance limits (i.e. LOS A and LOS B), with or without the proposed development, and development trips have a negligible impact on intersection performance
- The car parking and internal road layout has been designed generally in accordance with the relevant requirements of Council's *Canterbury Development Control Plan: B1 Transport and Parking* (2012) and *AS2890.1*
- Two vehicular crossovers to the site are proposed via Shelley Street
 - One ingress only crossover providing access to the basement level via the southern driveway
 - One egress only crossover from the basement level via the northern driveway
 - The vehicular access is generally compliant with Council's Standard Light Duty Vehicular Footway Crossing (VFC) (Standard Drawing S-007).
- Servicing is proposed to occur out of peak hours by a B99 vehicle within the proposed car parking area
- Refuse is proposed to be collected on-street on Shelley Street.

Based on the above assessment it is concluded that there are no significant traffic or transport impacts associated with the proposed development to preclude its approval and relevant conditioning on transport planning grounds.





Appendix A: Development Plans



1 \DA101

Scale: 1:200

DEMOLITION NOTES:

- 1 DEMOLITION OF EXISTING CONCRETE SLAB 76.158m2
- 2 DEMOLITION OF METAL GARAGE 44.167m2
- 3 DEMOLITION OF EXISTING BRICK RESIDENCE 256.567m2
- 4 DEMOLITION OF METAL GARAGE 81.484m2
- 5 DEMOLITION OF METAL WORKSHOP 37.608m2



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Do not scale drawings.

Verify all dimensions on site

sue	amendment	date
1	DEVELOPMENT APPLICATION	31/03/2021
3	ADDITIONA INFORMATION	10/08/2022
;	DEVELOPMENT APPLICATION NO.2	30/05/2023



DEMOLISH CONCRETE SURFACE

DEMOLISH PLANTER WALL, FENCE

DEMOLISH PAVER SURFACE

DEMOLISH BUILDING ELEMENTS

DURING DEMOLITION AND CONSTRUCTION SEDIMENT CONTROL BARRIERS, THE EXISTING FENCES AND RETAINING WALL PREVENT SEDIMENT RUN OFF ESCAPING THE



GENERAL:

READ IN CONJUNCTION WITH SURVEY. DO NOT SCALE OFF DRAWINGS

DEMOLITION & CONSTRUCTION:

- DEMOLISH EXISTING BUILDINGS AND SITE FACILITIES SHOWN RED DASHED AND SHADED AREA SHOWN ON DEMOLITION WORK PLAN

- TREES UNDER 5M ARE EXEMPT APPLICATION AND TO BE REMOVED

- ASBESTO INSPECTION MUST BE CARRIED PRIOR DEMOLITION BY SUBCONTRACTOR, CAREFUL HANDLE AND DISPOSAL IS ESSENTIAL

- REMOVE EXTERNAL WEATHERBOARD CLADDING MATERIAL

- REMOVE ALL TIMBER WALL FRAME AND ROOF FRAME, CONTRACTOR ENSURE TIMBER TRANSFERRED TO RECYCLE DEPOT.

- REMOVE ALL METAL WORK, INCLUDING HANDRAIL, EAVE GUTTERM ALUMINUM FRAME WINDOW, DOWNPIPE.

- REMOVE ALL GLASSES

- ALL WORK MUST BE IN ACCORDANCE WITH AUSTRALIAN STANDARD 2601-2001, THE DEMOLITION OF STRUCTURES. THE WORK HEALTH AND SAFETY REGULATION 2011.

- CONTACT "1100 DIAL BEFORE YOU DIG" PRIOR TO EXCAVATION TO AVOID DAMAGING ANY EXISTING UNDERGROUND SERVICES.

SEDIMENT CONTROL NOTES

ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PRIOR TO SITE DISTURBANCE. STRIPPING OF GRASS AND VEGETATION ETC. FROM SITE SHALL BE KEPT TO A MINIMUM. ALL SEDIMENT CONTRO L STRUCTURES TO BE INSPECTED AFTER EACH RAINFALL EVENT. AND ALL TRAPPED SEDIMENT TO STRUCTURAL DAMAGE BE REMOVED TO A NOMINATED STOCKPILE SITE.

	10.2
project	
3 SHELLE	Y STREET CAMPSIE
drawing	
	DEMOLITION PLAN

As@A2 drawing no.

DA002

С

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DEVELOPMENT APPLICA	ATION
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LW issue

LW



SITE PLAN (DA101/ Scale: 1 : 200



STREET PERSPECTIVE

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С	ADDITIONA INFORMATION	10/08/2022
D	DEVELOPMENT APPLICATION NO.2	30/05/2023

	790.962 m2
ROPOSED FSR	0.511 / 389.60m2
LLOWABLE BUILDING AREA	395.48 m2
ROPOSED DEEP SOIL ZONE	242.45m2 / 30.6%
ASEMENT GFA	345.70 m2

DEVELOPMENT APPLICATION NO.2



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1 TENNYSON STREET

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PARK

SITE CHARACTER AND LOCAL CONTEXT

- NO STREET PREVAILING FRON SETBACK, EXISTING FRONT SETBACK NOTED 2.245M

- ONE SIGNIFICANT GUM TREE TO BE PROTECTED AND RETAINED ONSITE

- TWO EXISTING VEHICLE CROSSING, WIDE FRONTAGE NOTED 53.83M



EXISTING DWELLING USED AS PLACE OF WORSHIP



SITE SIGNIFICANT TREE



DEVELOPMENT APPLICATION NO.2

project				
3 SHELLEY STREET CAMPSIE				
drawing	SITE	ANALYSI	S PLAN	
scale	1 : 200@A2	drawing no.		
drawn	LW	-	DA004	
checked	LW	issue		
project no	2020-03SLY	-	В	

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	B ADDITIONA INFORMATION	15/11/2021	
	C ADDITIONA INFORMATION	10/08/2022	
	D DEVELOPMENT APPLICATION NO.2	30/05/2023	
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Α	DEVELOPMENT APPLICATION	3
В	ADDITIONAL INFORMATION	1
С	ADDITIONA INFORMATION	1
D	DEVELOPMENT APPLICATION NO.2	3

date

LEGEND

- attained

 31/03/2021
 RT CONCRETE ROOF TILES (TERRACOTTA)

 15/11/2021
 FB FACE BRICK (WHITE)

 10/08/2022
 AFW TIMBER FRAME WINDOW AND DOOR

 30/05/2023
 TC TIMBER CLADDING AND ENTRY DOOR

 30/05/2023
 S TIMBER PRIVACY SCREEN

 PC PREMIX COLOR CONCRETE
 SC SANDSTONE CLADDING

 TB TIMBER BALUSTRADE
 TB TIMBER BALUSTRADE

DEVELOPMENT APPLICATION NO.2



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and specifications.	D	DEVELOPMENT APPLICATION NO.2	30/05/2023
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DEVELOPMENT APPLICATION NO.2

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Appendix B: Centre Management Plan

Summary on Ding Hui Dharma Centre's plan of management:-

Centre Management

1. Ding Hui Dharma Centre at No.3 Shelley Street, Campsie NSW is run by the Chinese Buddhist Association of NSW Inc (Incorporation No: Y1857401).

2. The Association is managed by a Management Committee chaired by the Abbot, Ven. Shi Zheng Yun.

3. The Association has been conducting a range of activities in Sydney catering to the religious needs of its members since its incorporation in 1993. From 2010 onwards the Association has been running and managing its dedicated public place of worship, Ding Hui Dharma Centre, at No.3 Shelley Street, Campsie, since 2010.

4. The proposal to reconstruct the existing place of worship at No.3 Shelley Street recognises the needs of the changing demographics and needs of the Buddhist community and is designed to provide a modern and functional premises with building standards as required by the latest building codes.

Centre's Activities

1. Sunday: 9am-4pm - group session attended by up to 30 members, consisting of a group chanting, meditation, scripture reading, discourse by the monk and group discussion. At the conclusion of the formal activities some members may stay for lunch and social gathering afterwards. A typical Sunday timetable is as below:-

Time	Activity	Venue
9-10am	Members start arriving and getting themselves ready	Main Hall
	for the commencement of Sunday event	
10-11am	Group chanting	Main Hall
11-12am	Group Meditation	Main Hal
12-2pm	Lunch	Dining Room
2-4pm	Dharma Class (ie. sermon)	Main Hall

2. There is no regular activity scheduled on Saturday and during weekdays. There may be occasional visits from members of the Dharma Centre to for scripture browsing, book borrowing or personal meditation. The monk may also receive occasional visitors in small group for discussion or consultation on religious matters.

3. Outside of the scheduled activities on Sunday, the monk conducts a range of other activities utside and away from the premises which may include chanting at funerals, visiting members at their home, charity activities and social events in the Buddhist Community in wider Sydney.

4. The Centre also runs Vegetarian Food Fair for general public usually at public parks or other

hired premises.

5. No funeral or cremation will be conducted on the ground of the proposed premises

6. No bone ashes will be stored at the premises.

Proposed Use of Premises.

1. The Main Hall is where regular schedule Sunday events take place. This room will be acoustically isolated from the rest of the premises to provide a quiet space for the intended activities especially group meditation.

2. A number of ancillary spaces are located under the Main Hall at ground level to house a range of supplementary activities including cooking , group lunches, and Centre-related administrative and clerical works.

3. A separate wing on ground floor provides a series of quieter rooms for use as private member's library and personal or small-group scripture studies.

4. The Abbot of the Dharma Centres resides on the premises, in a separate self-contained Class 3

dwelling fire-separated from the rest of the Class 9 premises.

5. Members visiting the Centre arrive by cars or public transport in groups. During regular Sunday events the priest will also assist with picking up and dropping off non-driving elderly members to and from Campsie Station.

6. No public access will be permitted at the rear of the premises bordering adjacent residential dwellings



Appendix C: Traffic Surveys

Job No	AUNSW7667
Client	Bitzios Consulting
Site	Shelly Steet
Location	South of Byron Street
Site No	ATC 1
Start Date	03-Sep-23
Description	Volume Summary
Direction	Combined



			D	ay of Wee	ek				
Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
Starting	04-Sep	05-Sep	06-Sep	07-Sep	08-Sep	09-Sep	03-Sep	W'Day	7 Day
AM Peak	18	15	15	10	14	13	10	Ave	Ave
PM Peak	19	15	21	17	24	18	16	159	168
0:00	0	2	0	0	0	1	2	0	1
1:00	0	0	0	0	0	2	4	0	1
2:00	2	0	0	0	0	0	1	0	0
3:00	0	3	0	1	1	0	2	1	1
4:00	0	0	2	1	4	0	1	1	1
5:00	2	2	0	2	0	0	0	1	1
6:00	7	9	7	5	7	10	1	7	7
7:00	8	6	5	4	8	2	0	6	5
8:00	8	15	6	5	5	8	8	8	8
9:00	12	9	15	9	14	13	9	12	12
10:00	2	9	4	10	8	10	6	7	7
11:00	18	8	9	8	9	13	10	10	11
12:00	14	6	8	10	4	17	12	8	10
13:00	10	5	4	9	9	16	13	7	9
14:00	6	8	14	1	6	11	13	7	8
15:00	6	3	15	6	6	17	16	7	10
16:00	11	12	21	9	11	17	14	13	14
17:00	18	15	14	17	24	15	13	18	17
18:00	19	14	14	10	13	18	16	14	15
19:00	4	9	6	5	6	5	10	6	6
20:00	4	12	9	10	7	4	2	8	7
21:00	10	8	7	4	3	2	10	6	6
22:00	10	3	6	2	11	13	5	6	7
23:00	0	6	4	4	3	13	4	3	5
Total	171	164	170	132	159	207	172	159	168
7-19	132	110	129	98	117	157	130	117	125
6-22	167	148	158	122	140	204	153	145	163
0-24	171	164	170	132	159	207	172	159	168

Select Site

ATC 1. Shelly Steet

Select Direction

Combined 🗸

-

Job No.	: AUNSW7667
Client	: Bitzios Consulting
Suburb	: Campsie
Location	: 1. Brighton Ave & Byron St & Cowper St
Day/Date	: Sunday, 3rd September 2023
Weather	: Fine
Description	: Classified Intersection Count
	: Peak Hour Summary



Approach		Bright	on Ave			Cowp	per St			Bright	on Ave			Byrc	on St		otal
Time Period	Lights	Heavies	Cyclists	Total	Grand 1												
10:45 to 11:45	553	9	0	562	38	0	2	40	458	7	0	465	38	0	1	39	1,106

Ар	proa	ach		Bright	on Ave			Cowp	per St			Bright	on Ave			Byrc	on St		Total
Tim	e Pe	riod	Lights	Heavies	Cyclists	Total	Grand 1												
9:00	to	10:00	365	6	5	376	27	0	0	27	293	4	1	298	36	0	2	38	739
9:15	to	10:15	393	7	2	402	32	0	1	33	307	4	1	312	40	0	2	42	789
9:30	to	10:30	411	7	1	419	32	0	1	33	328	4	1	333	40	0	3	43	828
9:45	to	10:45	414	6	1	421	39	0	1	40	358	4	0	362	45	0	1	46	869
10:00	to	11:00	469	8	0	477	39	0	1	40	376	5	0	381	49	0	2	51	949
10:15	to	11:15	497	8	0	505	45	0	0	45	407	4	0	411	50	0	2	52	1,013
10:30	to	11:30	532	8	0	540	43	0	0	43	448	6	0	454	47	0	1	48	1,085
10:45	to	11:45	553	9	0	562	38	0	2	40	458	7	0	465	38	0	1	39	1,106





11:00	to	12:00	523	7	0	530	32	0	2	34	457	8	1	466	37	0	0	37	1,067
11:15	to	12:15	512	7	0	519	25	0	2	27	465	8	1	474	31	0	0	31	1,051
11:30	to	12:30	502	7	0	509	28	0	2	30	449	8	1	458	44	0	0	44	1,041
11:45	to	12:45	500	7	0	507	31	0	0	31	467	7	1	475	43	0	0	43	1,056
12:00	to	13:00	504	6	0	510	32	0	0	32	474	6	0	480	43	0	0	43	1,065
12:15	to	13:15	509	6	0	515	29	0	0	29	464	8	1	473	48	0	0	48	1,065
12:30	to	13:30	498	6	1	505	25	0	0	25	443	6	2	451	44	0	0	44	1,025
12:45	to	13:45	480	5	1	486	20	0	0	20	439	6	2	447	54	0	0	54	1,007
13:00	to	14:00	448	7	1	456	22	0	0	22	432	5	2	439	52	0	0	52	969
13:15	to	14:15	441	8	1	450	24	0	0	24	424	5	1	430	46	0	0	46	950
13:30	to	14:30	422	11	0	433	27	0	0	27	440	7	0	447	40	0	0	40	947
13:45	to	14:45	419	9	1	429	30	0	0	30	436	9	0	445	37	0	0	37	941
14:00	to	15:00	414	9	1	424	32	0	0	32	447	9	0	456	35	0	1	36	948
14:15	to	15:15	419	7	1	427	31	0	0	31	438	11	0	449	37	0	1	38	945
14:30	to	15:30	415	6	1	422	30	0	0	30	460	9	0	469	42	0	1	43	964
14:45	to	15:45	399	7	0	406	28	0	0	28	430	9	0	439	40	0	1	41	914
15:00	to	16:00	420	6	0	426	30	0	0	30	431	11	0	442	48	0	0	48	946
-	Total		3,143	49	7	3,199	214	0	3	217	2,910	48	4	2,962	300	0	5	305	6,683

Job No.	: AUNSW7667
Client	: Bitzios Consulting
Suburb	: Campsie
Location	: 2. Byron St & Shelley St
Dav/Date	· Sunday 3rd Sentember 2023
Day/Date	. Sunday, Sid September 2025
Weather	: Fine
Weather Description	: Fine : Classified Intersection Count



Approach		Shell	ey St			Byrc	on St	
Time Period	Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
13:00 to 14:00	6	0	0	6	30	0	1	31

Approach			Shell	ey St			Byrc	on St	
Time Period		Lights	Heavies	Cyclists	Total	Lights	Heavies	Cyclists	Total
9:00 to 10:	:00	5	0	0	5	7	0	0	7
9:15 to 10:	:15	6	0	0	6	9	0	1	10
9:30 to 10:	:30	6	0	1	7	9	0	1	10
9:45 to 10:	:45	4	0	1	5	10	0	1	11
10:00 to 11:	:00	4	0	2	6	12	0	1	13
10:15 to 11:	:15	2	0	2	4	16	0	0	16
10:30 to 11:	:30	2	0	1	3	18	0	0	18
10:45 to 11:	:45	3	0	1	4	18	0	2	20



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11:00	to	12:00	5	0	0	5	19	0	2	21	10	0	0	10	36
11:15	to	12:15	5	0	0	5	15	0	2	17	9	0	0	9	31
11:30	to	12:30	8	0	0	8	17	0	2	19	15	0	0	15	42
11:45	to	12:45	7	0	0	7	21	0	0	21	12	0	0	12	40
12:00	to	13:00	5	0	0	5	20	0	0	20	12	0	0	12	37
12:15	to	13:15	7	0	0	7	25	0	0	25	15	0	0	15	47
12:30	to	13:30	5	0	0	5	28	0	1	29	12	0	0	12	46
12:45	to	13:45	6	0	0	6	27	0	1	28	24	0	0	24	58
13:00	to	14:00	6	0	0	6	30	0	1	31	25	0	1	26	63
13:15	to	14:15	4	0	0	4	26	0	1	27	24	0	1	25	56
13:30	to	14:30	3	0	0	3	20	0	1	21	23	0	3	26	50
13:45	to	14:45	5	0	0	5	15	0	1	16	13	0	3	16	37
14:00	to	15:00	7	0	0	7	12	0	1	13	11	0	2	13	33
14:15	to	15:15	8	0	0	8	12	0	2	14	11	0	2	13	35
14:30	to	15:30	9	0	0	9	15	0	1	16	13	0	0	13	38
14:45	to	15:45	7	0	0	7	19	0	1	20	15	0	0	15	42
15:00	to	16:00	7	0	0	7	25	0	1	26	17	0	0	17	50
-	Total		39	0	2	41	125	0	6	131	94	0	5	99	271



Appendix D: On-Street Parking Survey Data

Street	Saturday 13th May 2023			12:0	0 PM	1:00) PM	2:00) PM	3:00) PM	4:00) PM	Average Spaces	Max Spaces
Section ID	Description	Allocation	Supply	Occ	%	Occupied	Occupied								
1	Shelley St from Park Area to Byron St	NR	12	11	92%	11	92%	11	92%	11	92%	11	92%	11	11
2	Shelley St from Byron St to Park Area	NR	11	9	82%	9	82%	10	91%	8	73%	9	82%	9	10
3	Tennyson St from Park Area to Brighton Ave	NR	9	4	44%	4	44%	4	44%	5	56%	5	56%	4	5
4	Tennyson St from Brighton Ave to Park Area	NR	8	4	50%	5	63%	3	38%	3	38%	3	38%	4	5
5	Shelley St from Park Area to Beamish St	NR	17	12	71%	12	71%	12	71%	10	59%	10	59%	11	12
6	Shelley Ave from Beamish St to Park Area	NR	22	12	55%	15	68%	13	59%	15	68%	14	64%	14	15
7	Tennyson St from Park Area to Beamish St	NR	15	7	47%	9	60%	8	53%	9	60%	9	60%	8	9
7A	Tennyson St from Park Area to Beamish St	10min	3	2	67%	2	67%	2	67%	1	33%	1	33%	2	2
8	Tennyson St from Beamish St to Park Area	NR	12	9	75%	8	67%	9	75%	9	75%	7	58%	8	9
	Grand Total		109	70	64%	75	69%	72	66%	71	65%	69	63%	71	75

Notes:

Area 5 A horse carriage and a vehicle parked on footpath all day

Area 7 Vehicle parked in no parking area between 1pm & 3pm

Area 8 Boat parked across 2 spaces include in count

Street	Sunday 14th May 2023			8:00	D AM	9:00	D AM	10:0	00 AM	11:0	0 AM	12:0	0 PM	1:00	0 PM	2:00	0 PM	3:00) PM	4:00) PM	Average Spaces	Max Spaces
Section ID	Description	Allocation	Supply	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Occ	%	Осс	%	Occupied	Occupied
1	Shelley St from Park Area to Byron St	NR	12	12	100%	10	83%	9	75%	12	100%	11	92%	12	100%	12	100%	12	100%	12	100%	11	12
2	Shelley St from Byron St to Park Area	NR	11	11	100%	9	82%	8	73%	8	73%	10	91%	10	91%	10	91%	11	100%	10	91%	10	11
3	Tennyson St from Park Area to Brighton Ave	NR	9	6	67%	6	67%	5	56%	5	56%	6	67%	5	56%	6	67%	6	67%	6	67%	6	6
4	Tennyson St from Brighton Ave to Park Area	NR	8	5	63%	4	50%	4	50%	3	38%	4	50%	3	38%	4	50%	5	63%	5	63%	4	5
5	Shelley St from Park Area to Beamish St	NR	17	14	82%	12	71%	11	65%	13	76%	15	88%	14	82%	14	82%	15	88%	13	76%	13	15
6	Shelley Ave from Beamish St to Park Area	NR	22	17	77%	16	73%	17	77%	17	77%	17	77%	17	77%	18	82%	15	68%	15	68%	17	18
7	Tennyson St from Park Area to Beamish St	NR	15	11	73%	11	73%	11	73%	11	73%	11	73%	11	73%	11	73%	10	67%	10	67%	11	11
7A	Tennyson St from Park Area to Beamish St	10min	3	0	0%	1	33%	0	0%	1	33%	3	100%	3	100%	1	33%	1	33%	2	67%	1	3
8	Tennyson St from Beamish St to Park Area	NR	12	10	83%	12	100%	10	83%	11	92%	11	92%	11	92%	8	67%	8	67%	6	50%	10	12
	Grand Total		109	86	79%	81	74%	75	69%	81	74%	88	81%	86	79%	84	77%	83	76%	79	72%	83	88

Notes:

Area 5 2 vehicles and a horse carriage parked on grass footpath during day

Area 7 Vehicles parked in no parking area most of day

Area 8 Boat parked across 2 spaces include in count

Traffic Data & Control

Day/Date	Supply	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	Average Spaces Occupied	Max Spaces Occupied
Saturday 13th May 2023	109					70	75	72	71	69	71	75
Sunday 14th May 2023	109	86	81	75	81	88	86	84	83	79	83	88



Traffic Data & Control













Appendix E: SIDRA Outputs

V Site: 101 [2024DES Weekend PM (Site Folder: 2024DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le Mo	ovement	l Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total veh/h	and ows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% [Qı [Veh. veh	Back Of Jeue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E	.)												
4a	L1	All MCs	4	5.0	4	5.0	0.017	5.3	LOS A	0.0	0.0	0.00	0.08	0.00	46.2
5	T1	All MCs	27	5.0	27	5.0	0.017	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	57.8
Appro	ach		32	5.0	32	5.0	0.017	0.7	NA	0.0	0.0	0.00	0.08	0.00	56.4
West:	Byror	n Street (V	N)												
11	T1	All MCs	25	5.0	25	5.0	0.014	0.0	LOS A	0.0	0.0	0.01	0.03	0.01	59.1
12b	R3	All MCs	1	5.0	1	5.0	0.014	6.1	LOS A	0.0	0.0	0.01	0.03	0.01	50.1
Appro	ach		26	5.0	26	5.0	0.014	0.2	NA	0.0	0.0	0.01	0.03	0.01	58.7
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.013	6.6	LOS A	0.0	0.3	0.12	0.54	0.12	41.2
32a	R1	All MCs	15	5.0	15	5.0	0.013	5.2	LOS A	0.0	0.3	0.12	0.54	0.12	36.7
Appro	ach		16	5.0	16	5.0	0.013	5.3	LOS A	0.0	0.3	0.12	0.54	0.12	37.1
All Ve	hicles		74	5.0	74	5.0	0.017	1.5	NA	0.0	0.3	0.03	0.16	0.03	52.5

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2024BG Weekend AM (Site Folder: 2024BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr Fl [Total veh/h	nand lows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Qi [Veh. veh	Back Of ueue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E)												
4a	L1	All MCs	3	5.0	3	5.0	0.011	5.3	LOS A	0.0	0.0	0.00	0.09	0.00	45.9
5	T1	All MCs	17	5.0	17	5.0	0.011	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	57.4
Appro	ach		20	5.0	20	5.0	0.011	0.8	NA	0.0	0.0	0.00	0.09	0.00	55.8
West:	Byror	n Street (V	√)												
11	T1	All MCs	9	5.0	9	5.0	0.006	0.0	LOS A	0.0	0.0	0.02	0.07	0.02	57.9
12b	R3	All MCs	1	5.0	1	5.0	0.006	6.1	LOS A	0.0	0.0	0.02	0.07	0.02	49.3
Appro	ach		11	5.0	11	5.0	0.006	0.6	NA	0.0	0.0	0.02	0.07	0.02	56.9
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.003	6.6	LOS A	0.0	0.1	0.08	0.55	0.08	41.2
32a	R1	All MCs	3	5.0	3	5.0	0.003	5.1	LOS A	0.0	0.1	0.08	0.55	0.08	36.6
Appro	ach		4	5.0	4	5.0	0.003	5.5	LOS A	0.0	0.1	0.08	0.55	0.08	38.0
All Ve	hicles		35	5.0	35	5.0	0.011	1.3	NA	0.0	0.1	0.01	0.14	0.01	53.5

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2024BG Weekend PM (Site Folder: 2024BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total] veh/h	nand lows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Qi [Veh. veh	Back Of Jeue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E)												
4a	L1	All MCs	4	5.0	4	5.0	0.017	5.3	LOS A	0.0	0.0	0.00	0.08	0.00	46.2
5	T1	All MCs	27	5.0	27	5.0	0.017	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	57.8
Appro	ach		32	5.0	32	5.0	0.017	0.7	NA	0.0	0.0	0.00	0.08	0.00	56.4
West:	Byror	n Street (V	√)												
11	T1	All MCs	25	5.0	25	5.0	0.014	0.0	LOS A	0.0	0.0	0.01	0.03	0.01	59.1
12b	R3	All MCs	1	5.0	1	5.0	0.014	6.1	LOS A	0.0	0.0	0.01	0.03	0.01	50.1
Appro	ach		26	5.0	26	5.0	0.014	0.2	NA	0.0	0.0	0.01	0.03	0.01	58.7
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.006	6.6	LOS A	0.0	0.1	0.11	0.54	0.11	41.1
32a	R1	All MCs	6	5.0	6	5.0	0.006	5.2	LOS A	0.0	0.1	0.11	0.54	0.11	36.6
Appro	ach		7	5.0	7	5.0	0.006	5.4	LOS A	0.0	0.1	0.11	0.54	0.11	37.4
All Ve	hicles		65	5.0	65	5.0	0.017	1.1	NA	0.0	0.1	0.02	0.11	0.02	54.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2034BG Weekend AM (Site Folder: 2034BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le Mo	ovement	l Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total veh/h	nand lows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Qu [Veh. veh	Back Of Jeue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E	.)												
4a	L1	All MCs	4	5.0	4	5.0	0.012	5.3	LOS A	0.0	0.0	0.00	0.11	0.00	45.5
5	T1	All MCs	19	5.0	19	5.0	0.012	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	57.0
Appro	ach		23	5.0	23	5.0	0.012	1.0	NA	0.0	0.0	0.00	0.11	0.00	55.1
West:	Byror	n Street (V	N)												
11	T1	All MCs	12	5.0	12	5.0	0.007	0.0	LOS A	0.0	0.0	0.02	0.06	0.02	58.2
12b	R3	All MCs	1	5.0	1	5.0	0.007	6.1	LOS A	0.0	0.0	0.02	0.06	0.02	49.5
Appro	ach		13	5.0	13	5.0	0.007	0.5	NA	0.0	0.0	0.02	0.06	0.02	57.3
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.004	6.6	LOS A	0.0	0.1	0.08	0.55	0.08	41.2
32a	R1	All MCs	4	5.0	4	5.0	0.004	5.1	LOS A	0.0	0.1	0.08	0.55	0.08	36.7
Appro	ach		5	5.0	5	5.0	0.004	5.4	LOS A	0.0	0.1	0.08	0.55	0.08	37.8
All Ve	hicles		41	5.0	41	5.0	0.012	1.4	NA	0.0	0.1	0.02	0.15	0.02	53.2

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2034BG Weekend PM (Site Folder: 2034BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total] veh/h	and ows HV] %	Ar Fl [Total] veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Qu [Veh. veh	Back Of Jeue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E)												
4a	L1	All MCs	4	5.0	4	5.0	0.017	5.3	LOS A	0.0	0.0	0.00	0.08	0.00	46.2
5	T1	All MCs	27	5.0	27	5.0	0.017	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	57.8
Appro	ach		32	5.0	32	5.0	0.017	0.7	NA	0.0	0.0	0.00	0.08	0.00	56.4
West:	Byror	n Street (V	√)												
11	T1	All MCs	25	5.0	25	5.0	0.014	0.0	LOS A	0.0	0.0	0.01	0.03	0.01	59.1
12b	R3	All MCs	1	5.0	1	5.0	0.014	6.1	LOS A	0.0	0.0	0.01	0.03	0.01	50.1
Appro	ach		26	5.0	26	5.0	0.014	0.2	NA	0.0	0.0	0.01	0.03	0.01	58.7
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.006	6.6	LOS A	0.0	0.1	0.11	0.54	0.11	41.1
32a	R1	All MCs	6	5.0	6	5.0	0.006	5.2	LOS A	0.0	0.1	0.11	0.54	0.11	36.6
Appro	ach		7	5.0	7	5.0	0.006	5.4	LOS A	0.0	0.1	0.11	0.54	0.11	37.4
All Ve	hicles		65	5.0	65	5.0	0.017	1.1	NA	0.0	0.1	0.02	0.11	0.02	54.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2024DES Weekend AM (Site Folder: 2024DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem F [Total veh/h	nand Iows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Qı [Veh. veh	Back Of Jeue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E	.)												
4a	L1	All MCs	12	5.0	12	5.0	0.015	5.3	LOS A	0.0	0.0	0.00	0.24	0.00	42.6
5	T1	All MCs	17	5.0	17	5.0	0.015	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	53.7
Appro	ach		28	5.0	28	5.0	0.015	2.2	NA	0.0	0.0	0.00	0.24	0.00	49.5
West:	Byror	n Street (V	N)												
11	T1	All MCs	9	5.0	9	5.0	0.006	0.0	LOS A	0.0	0.0	0.02	0.07	0.02	57.8
12b	R3	All MCs	1	5.0	1	5.0	0.006	6.1	LOS A	0.0	0.0	0.02	0.07	0.02	49.2
Appro	ach		11	5.0	11	5.0	0.006	0.6	NA	0.0	0.0	0.02	0.07	0.02	56.8
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.003	6.6	LOS A	0.0	0.1	0.08	0.55	0.08	41.1
32a	R1	All MCs	3	5.0	3	5.0	0.003	5.1	LOS A	0.0	0.1	0.08	0.55	0.08	36.6
Appro	ach		4	5.0	4	5.0	0.003	5.5	LOS A	0.0	0.1	0.08	0.55	0.08	38.0
All Ve	hicles		43	5.0	43	5.0	0.015	2.1	NA	0.0	0.1	0.01	0.23	0.01	49.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2034DES Weekend AM (Site Folder: 2034DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le M	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem F [Total veh/h	nand Iows HV] %	Ar F [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Qı [Veh. veh	Back Of Jeue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E)												
4a	L1	All MCs	13	5.0	13	5.0	0.017	5.3	LOS A	0.0	0.0	0.00	0.24	0.00	42.7
5	T1	All MCs	19	5.0	19	5.0	0.017	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	53.8
Appro	ach		32	5.0	32	5.0	0.017	2.1	NA	0.0	0.0	0.00	0.24	0.00	49.7
West:	Byror	n Street (\	N)												
11	T1	All MCs	12	5.0	12	5.0	0.007	0.0	LOS A	0.0	0.0	0.02	0.06	0.02	58.2
12b	R3	All MCs	1	5.0	1	5.0	0.007	6.1	LOS A	0.0	0.0	0.02	0.06	0.02	49.5
Appro	ach		13	5.0	13	5.0	0.007	0.5	NA	0.0	0.0	0.02	0.06	0.02	57.3
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.004	6.6	LOS A	0.0	0.1	0.09	0.55	0.09	41.2
32a	R1	All MCs	4	5.0	4	5.0	0.004	5.1	LOS A	0.0	0.1	0.09	0.55	0.09	36.6
Appro	ach		5	5.0	5	5.0	0.004	5.4	LOS A	0.0	0.1	0.09	0.55	0.09	37.7
All Ve	hicles		49	5.0	49	5.0	0.017	2.1	NA	0.0	0.1	0.01	0.23	0.01	50.1

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2034DES Weekend PM (Site Folder: 2034DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street / Shelley Street Site Category: (None) Give-Way (Two-Way)

Vehic	le Mo	ovement	l Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total veh/h	and ows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% [Qı [Veh. veh	Back Of Jeue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Byron	Street (E	.)												
4a	L1	All MCs	4	5.0	4	5.0	0.017	5.3	LOS A	0.0	0.0	0.00	0.08	0.00	46.2
5	T1	All MCs	27	5.0	27	5.0	0.017	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	57.8
Appro	ach		32	5.0	32	5.0	0.017	0.7	NA	0.0	0.0	0.00	0.08	0.00	56.4
West:	Byror	n Street (V	N)												
11	T1	All MCs	25	5.0	25	5.0	0.014	0.0	LOS A	0.0	0.0	0.01	0.03	0.01	59.1
12b	R3	All MCs	1	5.0	1	5.0	0.014	6.1	LOS A	0.0	0.0	0.01	0.03	0.01	50.1
Appro	ach		26	5.0	26	5.0	0.014	0.2	NA	0.0	0.0	0.01	0.03	0.01	58.7
South	West:	Shelley S	Street (S	SW)											
30b	L3	All MCs	1	5.0	1	5.0	0.013	6.6	LOS A	0.0	0.3	0.12	0.54	0.12	41.2
32a	R1	All MCs	15	5.0	15	5.0	0.013	5.2	LOS A	0.0	0.3	0.12	0.54	0.12	36.7
Appro	ach		16	5.0	16	5.0	0.013	5.3	LOS A	0.0	0.3	0.12	0.54	0.12	37.1
All Ve	hicles		74	5.0	74	5.0	0.017	1.5	NA	0.0	0.3	0.03	0.16	0.03	52.5

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

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V Site: 101 [2024BG Weekend AM (Site Folder: 2024BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	cle Mo	ovement	Perfo	rmai	nce										
Mov ID	Turn	Mov Class	Dem Fl	nand Iows H\/ 1	Ar Fl [Total	rival lows HV/ 1	Deg. Satn	Aver. Delay	Level of Service	95% E Qu [V/eh	Back Of Ieue Dist 1	Prop. Que	Eff. Stop Rate	Aver. No. of	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m		nato	Cycles	km/h
South	: Brigł	nton Aven	ue (S)												
1	L2	All MCs	9	5.0	9	5.0	0.428	2.8	LOS A	3.3	24.4	0.25	0.42	0.25	46.9
2	T1	All MCs	587	5.0	587	5.0	0.428	3.2	LOS A	3.3	24.4	0.25	0.42	0.25	45.4
3	R2	All MCs	6	5.0	6	5.0	0.428	6.3	LOS A	3.3	24.4	0.25	0.42	0.25	48.9
Appro	ach		603	5.0	603	5.0	0.428	3.3	LOS A	3.3	24.4	0.25	0.42	0.25	45.5
East:	Cowp	er Street	(E)												
4	L2	All MCs	7	5.0	7	5.0	0.048	7.3	LOS A	0.2	1.8	0.56	0.69	0.56	43.2
5	T1	All MCs	1	5.0	1	5.0	0.048	7.5	LOS A	0.2	1.8	0.56	0.69	0.56	47.9
6	R2	All MCs	32	5.0	32	5.0	0.048	10.9	LOS B	0.2	1.8	0.56	0.69	0.56	45.9
Appro	ach		40	5.0	40	5.0	0.048	10.2	LOS B	0.2	1.8	0.56	0.69	0.56	45.6
North	: Brigh	ton Aven	ue (N)												
7	L2	All MCs	31	5.0	31	5.0	0.340	4.7	LOS A	2.5	18.2	0.18	0.45	0.18	50.7
8	T1	All MCs	451	5.0	451	5.0	0.340	4.9	LOS A	2.5	18.2	0.18	0.45	0.18	44.2
9	R2	All MCs	16	5.0	16	5.0	0.340	8.3	LOS A	2.5	18.2	0.18	0.45	0.18	48.5
Appro	ach		497	5.0	497	5.0	0.340	5.0	LOS A	2.5	18.2	0.18	0.45	0.18	45.1
West:	Byror	n Street (V	V)												
10	L2	All MCs	19	5.0	19	5.0	0.057	8.4	LOS A	0.3	2.2	0.64	0.71	0.64	44.3
11	T1	All MCs	5	5.0	5	5.0	0.057	8.6	LOS A	0.3	2.2	0.64	0.71	0.64	48.0
12	R2	All MCs	18	5.0	18	5.0	0.057	12.0	LOS B	0.3	2.2	0.64	0.71	0.64	39.0
Appro	ach		42	5.0	42	5.0	0.057	10.0	LOS A	0.3	2.2	0.64	0.71	0.64	43.1
All Ve	hicles		1182	5.0	1182	5.0	0.428	4.4	LOS A	3.3	24.4	0.25	0.45	0.25	45.2

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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V Site: 101 [2024BG Weekend PM (Site Folder: 2024BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	le Mo	ovement	Perfo	rmai	nce										
Mov ID	Turn	Mov Class	Dem F [Total	nand lows HV]	Ar Fl [Total]	rival lows HV]	Deg. Satn	Aver. Delay	Level of Service	95% E Qu [Veh.	Back Of eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
South	·Briat	nton Aven	veh/h	%	veh/h	%	V/C	sec	_	veh	m		_	_	km/h
1	. Drigi		10	5.0	10	5.0	0 220	26	1084	2.1	15.6	0.15	0.42	0.15	47.5
1			19	5.0	19	5.0	0.320	2.0	LOGA	2.1	15.0	0.15	0.42	0.15	47.5
2	1.1	All MCs	446	5.0	446	5.0	0.320	3.0	LUSA	2.1	15.6	0.15	0.42	0.15	46.0
3	R2	All MCs	6	5.0	6	5.0	0.320	6.1	LOS A	2.1	15.6	0.15	0.42	0.15	49.4
Appro	ach		472	5.0	472	5.0	0.320	3.1	LOS A	2.1	15.6	0.15	0.42	0.15	46.2
East:	Cowp	er Street	(E)												
4	L2	All MCs	8	5.0	8	5.0	0.027	7.0	LOS A	0.1	1.0	0.53	0.64	0.53	44.5
5	T1	All MCs	3	5.0	3	5.0	0.027	7.2	LOS A	0.1	1.0	0.53	0.64	0.53	48.9
6	R2	All MCs	12	5.0	12	5.0	0.027	10.6	LOS B	0.1	1.0	0.53	0.64	0.53	46.9
Appro	ach		23	5.0	23	5.0	0.027	8.8	LOS A	0.1	1.0	0.53	0.64	0.53	46.5
North:	Brigh	iton Aveni	ue (N)												
7	L2	All MCs	26	5.0	26	5.0	0.316	4.7	LOS A	2.2	16.0	0.19	0.45	0.19	50.6
8	T1	All MCs	415	5.0	415	5.0	0.316	4.9	LOS A	2.2	16.0	0.19	0.45	0.19	44.1
9	R2	All MCs	12	5.0	12	5.0	0.316	8.3	LOS A	2.2	16.0	0.19	0.45	0.19	48.5
Appro	ach		453	5.0	453	5.0	0.316	5.0	LOS A	2.2	16.0	0.19	0.45	0.19	45.0
West:	Byror	n Street (V	V)												
10	L2	All MCs	26	5.0	26	5.0	0.064	7.2	LOS A	0.3	2.3	0.55	0.67	0.55	45.4
11	T1	All MCs	5	5.0	5	5.0	0.064	7.4	LOS A	0.3	2.3	0.55	0.67	0.55	48.9
12	R2	All MCs	23	5.0	23	5.0	0.064	10.8	LOS B	0.3	2.3	0.55	0.67	0.55	40.4
Appro	ach		55	5.0	55	5.0	0.064	8.7	LOS A	0.3	2.3	0.55	0.67	0.55	44.2
All Ve	hicles		1002	5.0	1002	5.0	0.320	4.4	LOS A	2.2	16.0	0.20	0.45	0.20	45.5

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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V Site: 101 [2034BG Weekend AM (Site Folder: 2034BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	cle Mo	ovement	t Perfo	rmar	nce										
Mov ID	Turn	Mov Class	Derr F	nand Iows	Ar F	rival lows	Deg. Satn	Aver. Delay	Level of Service	95% E Qi	Back Of Jeue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	: Brigł	nton Aven	ue (S)												
1	L2	All MCs	12	5.0	12	5.0	0.491	2.9	LOS A	4.2	30.7	0.30	0.42	0.30	46.6
2	T1	All MCs	668	5.0	668	5.0	0.491	3.3	LOS A	4.2	30.7	0.30	0.42	0.30	45.1
3	R2	All MCs	7	5.0	7	5.0	0.491	6.4	LOS A	4.2	30.7	0.30	0.42	0.30	48.7
Appro	ach		687	5.0	687	5.0	0.491	3.3	LOS A	4.2	30.7	0.30	0.42	0.30	45.2
East:	Cowp	er Street	(E)												
4	L2	All MCs	8	5.0	8	5.0	0.057	7.8	LOS A	0.3	2.2	0.60	0.71	0.60	42.7
5	T1	All MCs	1	5.0	1	5.0	0.057	8.0	LOS A	0.3	2.2	0.60	0.71	0.60	47.5
6	R2	All MCs	36	5.0	36	5.0	0.057	11.4	LOS B	0.3	2.2	0.60	0.71	0.60	45.5
Appro	ach		45	5.0	45	5.0	0.057	10.7	LOS B	0.3	2.2	0.60	0.71	0.60	45.2
North	Brigh	ton Aven	ue (N)												
7	L2	All MCs	35	5.0	35	5.0	0.389	4.7	LOS A	3.1	22.3	0.21	0.45	0.21	50.5
8	T1	All MCs	513	5.0	513	5.0	0.389	4.9	LOS A	3.1	22.3	0.21	0.45	0.21	43.9
9	R2	All MCs	18	5.0	18	5.0	0.389	8.3	LOS A	3.1	22.3	0.21	0.45	0.21	48.3
Appro	ach		565	5.0	565	5.0	0.389	5.0	LOS A	3.1	22.3	0.21	0.45	0.21	44.9
West:	Byror	n Street (V	N)												
10	L2	All MCs	21	5.0	21	5.0	0.071	9.2	LOS A	0.4	2.9	0.70	0.73	0.70	43.5
11	T1	All MCs	6	5.0	6	5.0	0.071	9.5	LOS A	0.4	2.9	0.70	0.73	0.70	47.3
12	R2	All MCs	20	5.0	20	5.0	0.071	12.9	LOS B	0.4	2.9	0.70	0.73	0.70	38.1
Appro	ach		47	5.0	47	5.0	0.071	10.8	LOS B	0.4	2.9	0.70	0.73	0.70	42.4
All Ve	hicles		1345	5.0	1345	5.0	0.491	4.6	LOS A	4.2	30.7	0.28	0.45	0.28	44.9

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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V Site: 101 [2034BG Weekend PM (Site Folder: 2034BG)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	cle Mo	ovement	t Perfo	rmai	nce										
Mov ID	Turn	Mov Class	Dem Fl	hand lows	Ar Fl	rival lows	Deg. Satn	Aver. Delay	Level of Service	95% E Qu	Back Of Ieue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			veh/h	пvј %	veh/h	пvј %	v/c	sec		ven.	m Dist		Rale	Cycles	km/h
South	: Brigł	nton Aven	ue (S)												
1	L2	All MCs	19	5.0	19	5.0	0.320	2.6	LOS A	2.1	15.6	0.15	0.42	0.15	47.5
2	T1	All MCs	446	5.0	446	5.0	0.320	3.0	LOS A	2.1	15.6	0.15	0.42	0.15	46.0
3	R2	All MCs	6	5.0	6	5.0	0.320	6.1	LOS A	2.1	15.6	0.15	0.42	0.15	49.4
Appro	ach		472	5.0	472	5.0	0.320	3.1	LOS A	2.1	15.6	0.15	0.42	0.15	46.2
East:	Cowp	er Street	(E)												
4	L2	All MCs	8	5.0	8	5.0	0.027	7.0	LOS A	0.1	1.0	0.53	0.64	0.53	44.5
5	T1	All MCs	3	5.0	3	5.0	0.027	7.2	LOS A	0.1	1.0	0.53	0.64	0.53	48.9
6	R2	All MCs	12	5.0	12	5.0	0.027	10.6	LOS B	0.1	1.0	0.53	0.64	0.53	46.9
Appro	ach		23	5.0	23	5.0	0.027	8.8	LOS A	0.1	1.0	0.53	0.64	0.53	46.5
North	: Brigh	ton Aven	ue (N)												
7	L2	All MCs	26	5.0	26	5.0	0.316	4.7	LOS A	2.2	16.0	0.19	0.45	0.19	50.6
8	T1	All MCs	415	5.0	415	5.0	0.316	4.9	LOS A	2.2	16.0	0.19	0.45	0.19	44.1
9	R2	All MCs	12	5.0	12	5.0	0.316	8.3	LOS A	2.2	16.0	0.19	0.45	0.19	48.5
Appro	ach		453	5.0	453	5.0	0.316	5.0	LOS A	2.2	16.0	0.19	0.45	0.19	45.0
West:	Byror	n Street (N	N)												
10	L2	All MCs	26	5.0	26	5.0	0.064	7.2	LOS A	0.3	2.3	0.55	0.67	0.55	45.4
11	T1	All MCs	5	5.0	5	5.0	0.064	7.4	LOS A	0.3	2.3	0.55	0.67	0.55	48.9
12	R2	All MCs	23	5.0	23	5.0	0.064	10.8	LOS B	0.3	2.3	0.55	0.67	0.55	40.4
Appro	ach		55	5.0	55	5.0	0.064	8.7	LOS A	0.3	2.3	0.55	0.67	0.55	44.2
All Ve	hicles		1002	5.0	1002	5.0	0.320	4.4	LOS A	2.2	16.0	0.20	0.45	0.20	45.5

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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W Site: 101 [2024DES Weekend AM (Site Folder: 2024DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	le Mo	ovement	Perfo	rmar	nce										
Mov ID	Turn	Mov Class	Dem Fl [Total veh/h	nand lows HV] %	Ar Fl [Total] veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% E Qu [Veh. veh	Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: Brigł	nton Aven	ue (S)		VOINT		110			Von					IXII 0 II
1	L2	All MCs	13	5.0	13	5.0	0.435	2.9	LOS A	3.4	24.6	0.27	0.42	0.27	46.8
2	T1	All MCs	587	5.0	587	5.0	0.435	3.3	LOS A	3.4	24.6	0.27	0.42	0.27	45.3
3	R2	All MCs	6	5.0	6	5.0	0.435	6.4	LOS A	3.4	24.6	0.27	0.42	0.27	48.9
Appro	ach		606	5.0	606	5.0	0.435	3.3	LOS A	3.4	24.6	0.27	0.42	0.27	45.4
East:	Cowp	er Street ((E)												
4	L2	All MCs	7	5.0	7	5.0	0.048	7.3	LOS A	0.2	1.8	0.56	0.69	0.56	43.2
5	T1	All MCs	1	5.0	1	5.0	0.048	7.5	LOS A	0.2	1.8	0.56	0.69	0.56	47.9
6	R2	All MCs	32	5.0	32	5.0	0.048	11.0	LOS B	0.2	1.8	0.56	0.69	0.56	45.9
Appro	ach		40	5.0	40	5.0	0.048	10.2	LOS B	0.2	1.8	0.56	0.69	0.56	45.6
North:	Brigh	iton Aveni	ue (N)												
7	L2	All MCs	31	5.0	31	5.0	0.344	4.7	LOS A	2.5	18.5	0.18	0.45	0.18	50.6
8	T1	All MCs	451	5.0	451	5.0	0.344	4.9	LOS A	2.5	18.5	0.18	0.45	0.18	44.1
9	R2	All MCs	21	5.0	21	5.0	0.344	8.3	LOS A	2.5	18.5	0.18	0.45	0.18	48.4
Appro	ach		502	5.0	502	5.0	0.344	5.0	LOS A	2.5	18.5	0.18	0.45	0.18	45.1
West:	Byror	n Street (V	V)												
10	L2	All MCs	20	5.0	20	5.0	0.059	8.4	LOS A	0.3	2.3	0.64	0.71	0.64	44.3
11	T1	All MCs	5	5.0	5	5.0	0.059	8.6	LOS A	0.3	2.3	0.64	0.71	0.64	48.0
12	R2	All MCs	18	5.0	18	5.0	0.059	12.0	LOS B	0.3	2.3	0.64	0.71	0.64	39.1
Appro	ach		43	5.0	43	5.0	0.059	9.9	LOS A	0.3	2.3	0.64	0.71	0.64	43.2
All Ve	hicles		1192	5.0	1192	5.0	0.435	4.5	LOS A	3.4	24.6	0.25	0.45	0.25	45.2

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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W Site: 101 [2024DES Weekend PM (Site Folder: 2024DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	cle Mo	ovement	Perfo	rmar	nce										
Mov ID	Turn	Mov Class	Dem F	nand Iows	Ar Fl	rival ows	Deg. Satn	Aver. Delay	Level of Service	95% E Qu	Back Of leue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed
			[Total veh/h	HV] %	[Total ∣ veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
South	: Brigł	nton Aven	ue (S)												
1	L2	All MCs	19	5.0	19	5.0	0.320	2.6	LOS A	2.1	15.7	0.15	0.42	0.15	47.5
2	T1	All MCs	446	5.0	446	5.0	0.320	3.0	LOS A	2.1	15.7	0.15	0.42	0.15	46.0
3	R2	All MCs	6	5.0	6	5.0	0.320	6.1	LOS A	2.1	15.7	0.15	0.42	0.15	49.4
Appro	ach		472	5.0	472	5.0	0.320	3.1	LOS A	2.1	15.7	0.15	0.42	0.15	46.2
East:	Cowp	er Street	(E)												
4	L2	All MCs	8	5.0	8	5.0	0.027	7.0	LOS A	0.1	1.0	0.54	0.64	0.54	44.5
5	T1	All MCs	3	5.0	3	5.0	0.027	7.2	LOS A	0.1	1.0	0.54	0.64	0.54	48.9
6	R2	All MCs	12	5.0	12	5.0	0.027	10.6	LOS B	0.1	1.0	0.54	0.64	0.54	46.9
Appro	ach		23	5.0	23	5.0	0.027	8.8	LOS A	0.1	1.0	0.54	0.64	0.54	46.5
North	Brigh	ton Aven	ue (N)												
7	L2	All MCs	26	5.0	26	5.0	0.320	4.7	LOS A	2.2	16.3	0.20	0.45	0.20	50.6
8	T1	All MCs	415	5.0	415	5.0	0.320	4.9	LOS A	2.2	16.3	0.20	0.45	0.20	44.0
9	R2	All MCs	12	5.0	12	5.0	0.320	8.4	LOS A	2.2	16.3	0.20	0.45	0.20	48.4
Appro	ach		453	5.0	453	5.0	0.320	5.0	LOS A	2.2	16.3	0.20	0.45	0.20	44.9
West:	Byror	n Street (N	V)												
10	L2	All MCs	31	5.0	31	5.0	0.074	7.2	LOS A	0.4	2.7	0.55	0.67	0.55	45.4
11	T1	All MCs	6	5.0	6	5.0	0.074	7.4	LOS A	0.4	2.7	0.55	0.67	0.55	48.9
12	R2	All MCs	26	5.0	26	5.0	0.074	10.9	LOS B	0.4	2.7	0.55	0.67	0.55	40.4
Appro	ach		63	5.0	63	5.0	0.074	8.7	LOS A	0.4	2.7	0.55	0.67	0.55	44.2
All Ve	hicles		1011	5.0	1011	5.0	0.320	4.4	LOS A	2.2	16.3	0.21	0.45	0.21	45.4

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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W Site: 101 [2034DES Weekend AM (Site Folder: 2034DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	le Mo	ovement	Perfo	rmai	nce										
Mov ID	Turn	Mov Class	Dem F [Total	nand Iows HV]	Ar Fl [Total]	rival ows HV]	Deg. Satn	Aver. Delay	Level of Service	95% E Qu [Veh.	Back Of eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
0 11	.		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South	: Brigh	nton Aven	ue (S)												
1	L2	All MCs	15	5.0	15	5.0	0.499	3.0	LOS A	4.3	31.1	0.31	0.42	0.31	46.5
2	T1	All MCs	668	5.0	668	5.0	0.499	3.4	LOS A	4.3	31.1	0.31	0.42	0.31	45.0
3	R2	All MCs	7	5.0	7	5.0	0.499	6.5	LOS A	4.3	31.1	0.31	0.42	0.31	48.7
Appro	ach		691	5.0	691	5.0	0.499	3.4	LOS A	4.3	31.1	0.31	0.42	0.31	45.1
East:	Cowp	er Street	(E)												
4	L2	All MCs	8	5.0	8	5.0	0.058	7.8	LOS A	0.3	2.2	0.60	0.71	0.60	42.7
5	T1	All MCs	1	5.0	1	5.0	0.058	8.0	LOS A	0.3	2.2	0.60	0.71	0.60	47.4
6	R2	All MCs	36	5.0	36	5.0	0.058	11.5	LOS B	0.3	2.2	0.60	0.71	0.60	45.5
Appro	ach		45	5.0	45	5.0	0.058	10.7	LOS B	0.3	2.2	0.60	0.71	0.60	45.1
North:	Brigh	iton Aveni	ue (N)												
7	L2	All MCs	35	5.0	35	5.0	0.393	4.7	LOS A	3.1	22.7	0.21	0.45	0.21	50.5
8	T1	All MCs	513	5.0	513	5.0	0.393	4.9	LOS A	3.1	22.7	0.21	0.45	0.21	43.9
9	R2	All MCs	23	5.0	23	5.0	0.393	8.3	LOS A	3.1	22.7	0.21	0.45	0.21	48.3
Appro	ach		571	5.0	571	5.0	0.393	5.0	LOS A	3.1	22.7	0.21	0.45	0.21	44.9
West:	Byror	n Street (V	V)												
10	L2	All MCs	22	5.0	22	5.0	0.073	9.3	LOS A	0.4	3.0	0.70	0.73	0.70	43.5
11	T1	All MCs	6	5.0	6	5.0	0.073	9.5	LOS A	0.4	3.0	0.70	0.73	0.70	47.3
12	R2	All MCs	20	5.0	20	5.0	0.073	12.9	LOS B	0.4	3.0	0.70	0.73	0.70	38.1
Appro	ach		48	5.0	48	5.0	0.073	10.8	LOS B	0.4	3.0	0.70	0.73	0.70	42.4
All Ve	hicles		1355	5.0	1355	5.0	0.499	4.6	LOS A	4.3	31.1	0.29	0.46	0.29	44.9

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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V Site: 101 [2034DES Weekend PM (Site Folder: 2034DES)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P6080 3 Shelley Street, Campsie Byron Street & Cowper Street / Brighton Avenue Site Category: (None) Roundabout

Vehic	cle Mo	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem F [Total	nand lows HV]	Ar Fl [Total]	rival lows HV]	Deg. Satn	Aver. Delay	Level of Service	95% E Qu [Veh.	Back Of ieue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South	: Brigł	nton Aven	ue (S)												
1	L2	All MCs	19	5.0	19	5.0	0.320	2.6	LOS A	2.1	15.7	0.15	0.42	0.15	47.5
2	T1	All MCs	446	5.0	446	5.0	0.320	3.0	LOS A	2.1	15.7	0.15	0.42	0.15	46.0
3	R2	All MCs	6	5.0	6	5.0	0.320	6.1	LOS A	2.1	15.7	0.15	0.42	0.15	49.4
Appro	ach		472	5.0	472	5.0	0.320	3.1	LOS A	2.1	15.7	0.15	0.42	0.15	46.2
East:	Cowp	er Street	(E)												
4	L2	All MCs	8	5.0	8	5.0	0.027	7.0	LOS A	0.1	1.0	0.54	0.64	0.54	44.5
5	T1	All MCs	3	5.0	3	5.0	0.027	7.2	LOS A	0.1	1.0	0.54	0.64	0.54	48.9
6	R2	All MCs	12	5.0	12	5.0	0.027	10.6	LOS B	0.1	1.0	0.54	0.64	0.54	46.9
Appro	ach		23	5.0	23	5.0	0.027	8.8	LOS A	0.1	1.0	0.54	0.64	0.54	46.5
North	Brigh	ton Aven	ue (N)												
7	L2	All MCs	26	5.0	26	5.0	0.320	4.7	LOS A	2.2	16.3	0.20	0.45	0.20	50.6
8	T1	All MCs	415	5.0	415	5.0	0.320	4.9	LOS A	2.2	16.3	0.20	0.45	0.20	44.0
9	R2	All MCs	12	5.0	12	5.0	0.320	8.4	LOS A	2.2	16.3	0.20	0.45	0.20	48.4
Appro	ach		453	5.0	453	5.0	0.320	5.0	LOS A	2.2	16.3	0.20	0.45	0.20	44.9
West:	Byror	n Street (V	V)												
10	L2	All MCs	31	5.0	31	5.0	0.074	7.2	LOS A	0.4	2.7	0.55	0.67	0.55	45.4
11	T1	All MCs	6	5.0	6	5.0	0.074	7.4	LOS A	0.4	2.7	0.55	0.67	0.55	48.9
12	R2	All MCs	26	5.0	26	5.0	0.074	10.9	LOS B	0.4	2.7	0.55	0.67	0.55	40.4
Appro	ach		63	5.0	63	5.0	0.074	8.7	LOS A	0.4	2.7	0.55	0.67	0.55	44.2
All Ve	hicles		1011	5.0	1011	5.0	0.320	4.4	LOS A	2.2	16.3	0.21	0.45	0.21	45.4

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout 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.

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