

Information Request Response

To	The BUSY School C/- Bespoke P&D	Date	16 June 2025
Prepared by	Casey Schackow, Velocity, Director	Approved by	Harj Singh, Traffic Engineering Advisor (RPEQ 22364)
Location	153 Dalrymple Road, Garbutt		
Status	Final	Attachments	Appendix A: Information Request Plans Appendix B: Development Plans Appendix C: Swept Path Assessment Appendix D: SIDRA Assessment

Introduction

1.1 Overview

Velocity has been commissioned by The BUSY School C/- Bespoke P&D to provide traffic and transport advice in response to the items within the Information Request (IR) #MCU25/0013, for the proposed development located at 153 Dalrymple Road, Garbutt.

The issues have been extracted from the IR and replicated below, responses to each item have been summarised in this Information Request Response.

Item 1 – Confirmation of On-Site Parking Requirements

The applicant is requested to provide:

- a) Confirmation of the age of students attending the proposed educational establishment
- b) The number of students able to be collected via shuttle bus;
- c) Details of bus pick-up and set-down for the shuttle bus.

Item 2 – Traffic Impact Assessment

- a) The applicant is requested to provide an amended Traffic Impact Assessment (TIA) report certified by an RPEQ and which meets the requirements of a Moderate TIA in accordance with SC6.4 Development manual planning scheme policy of the Townsville City Plan. Per SC6.4.5.2(2)(c), “a moderate level TIA Report will be performed using traffic forecasting processes or computerised methods (e.g., Sidra) to estimate and analyse traffic flows on the surrounding road network at predefined time horizons.”
- b) The amended TIA is also requested to include swept path analysis diagrams for the shuttle bus manoeuvres demonstrating that the shuttle bus can safely manoeuvre on the site and enter and exit in a forward gear

Design Amendments

The development plans have been updated to improve the safety and overall amenity for the future students at the site. The changes are focused on improving connectivity and capacity of active transport facilities to increase uptake.:

- ▶ The bicycle parking spaces have been relocated in front of the car parking bays with adequate space left for the bicycles to be parked in accordance with AS2890.3. Additional bicycle spaces have been provided, the new total is 16 spaces
- ▶ A scooter/skateboard parking area has been provided adjacent the main building entrance
- ▶ A footpath has been provided to link the bicycle parking and aforementioned scooter/skateboard parking to the front entrance, separated from all vehicle manoeuvres.
- ▶ The PWD space and shared space has been shifted back 1m to allow direct access from the new footpath
- ▶ A zebra crossing (pedestrian priority) has been provided across the main entrance crossover to ensure safety of pedestrians crossing into the site from Dalrymple Service Road.
 - A section of path has been added opposite the new zebra crossing as a landing for pedestrians which is then funnelled through a new footpath along the frontage to the west, where majority of active and public transport users will travel from.

These design updates are provided at **Appendix B**.

Velocity Response – Item 1a

Information has been sourced from the client regarding the ages of the student attending the proposed educational establishment. The ages are expected to be similar to those of the existing TBS facilities (and as such have been based on the existing attendance of the Ipswich and Cleveland sites.

The student profile has been determined by averaging the two surveyed sites. This is detailed in Table 1.

Table 1 Student Age Groups

Facility	Years 11 (15-16 years old)	Years 12 (17-18 years old)
Ipswich and Cleveland	130 Students	120 Students
Garbutt (Average of above)	65 Students	60 Students

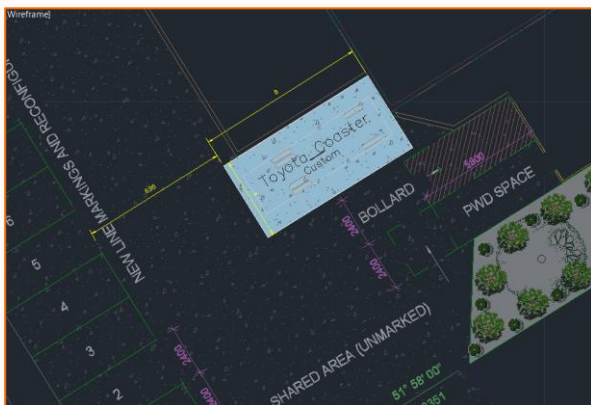
Velocity Response – Item 1b&c

A 22-seater Toyota Coaster (7m long) or similar shuttle bus is proposed to transport students to the proposed facility from two locations within the Townsville CBD.

The service will run twice in both the AM and PM periods, for a total of 4 times throughout the day. As such, a total of 44 students will be collected and brought to the campus each morning and returned to either of the Townsville CBD locations after school. This represents ~34% of the total quantum of students travelling to the educational establishment each day.

The Toyota Coaster is proposed to set-down within the site, in the available space adjacent the PWD parking space. This area has sufficient room to cater for the 7m long x 2.1m wide bus with adequate room for alighting. Specifically, the available area for the bus set down is proposed to measure 8m x 4m as shown indicatively in Figure 1.

Figure 1 Indicative Bus Set Down Area



Parking Compliance

The parking requirements have been updated based on the rates specified for a Secondary Education land use and are shown in Table 1.

Table 1 Car Parking Requirements

Land use	Yield	Car Parking Rate	Car Parking Required
Secondary Education	128 students (60 of which are of driving age) + 30 staff	1 per FTE + 1 per 10 students of driving age + 1 visitor per 50 students	30 FTE spaces + 6 student spaces + 3 visitors

As shown in Table 1, the proposed development requires a total of 30 FTE spaces, 6 student spaces and 3 visitor spaces for a total of 39 parking spaces.

This is in contrast to the requirements of a Tertiary Education land use which requires 15 FTE spaces and 13 student spaces.

As such, there is a shortfall of 19 parking spaces.

However, these requirements do not take into consideration the following factors:

- ▶ Council has provided the previous tenant with 25 additional on-street parking spaces directly adjacent the facility.
- ▶ The 44 students that will be taken to and from the campus via the proposed shuttle bus service each day
- ▶ The various mode share options available to staff members including public transport (which are located nearby and are serviced frequently as detailed within the Velocity Traffic - Traffic Impact Assessment Report [VT TIA]), active transport and carpooling.
 - The provision of 30 staff parking spaces is considered excessive considering only 15 are required for a tertiary education facility which are similar in nature (considering the age of the students).
- ▶ The existing TBS sites at Cleveland and Shailer Park only have 20 students (data attained from the client) and 6 students (as detailed in the VT TIA), respectively, that have their licence and drive to the campus
 - This is considerably lower than the 60 students (1000% more than Shailer Park) required to be used within the parking assessment
- ▶ Data from the Shailer Park Site (as detailed in the VT TIA) specified that 50% of the students utilised public transport to travel to the site. Adopting this rate

would see 64 students utilising the bus to attend the proposed site and significantly reduce short term parking demands.

- ▶ Visitors are not expected, nor are do they typically attend the existing TBS sites.
 - ▶ The parking spaces currently provided at the existing TBS sites are as follows:
 - Cleveland (Redlands): 28 spaces
 - Shailer Park (Logan): 22 spaces
 - Strathpine (Moreton Bay): 22 spaces
 - Ipswich (Ipswich): 14 spaces
 - Southport (Gold Coast): 15 spaces
 - Coolangatta (Gold Coast): 25 spaces
- All of these sites were approved for considerably less than the 39 spaces required by Townsville City Council and span across 5 different LGAs.

With respect to the above, there is expected to be far less than 39 parking spaces utilised on a daily basis to cater for the needs of the proposed TBS site. Velocity is of the opinion that the detail outlined within the VT TIA and the above, with particular focus on the 44 students utilising the shuttle bus and the additional 25 parking spaces on-street, that the proposed parking arrangements are considered adequate to service the expected demands.

Velocity Response – Item 2a

Velocity has undertaken a detailed intersection analysis using SIDRA Intersection software in accordance with the DTMR Guide to Traffic Impact Assessment (GTIA). This is in addition to the previously submitted Traffic Impact Assessment, which provided a high-level assessment based on trip generation and distribution.

Traffic volumes used for this analysis were sourced from the Townsville City Council's publicly available traffic calibration dataset. While this dataset is suitable for modelling purposes, it provides only generalised AM and PM peak period volumes and does not specify the exact peak hour, however, generally the AM road peak is located between 6-9am and the PM peak between 4-7pm.

Accordingly, we have taken a conservative approach by assuming the proposed school's PM peak period coincides with the broader network peak, despite the fact that the development's actual traffic peaks (2:45–3:45pm) are likely to occur outside the true background peak hours. This peak overlap assumption results in a highly conservative basis for modelling development impacts.

Furthermore, while our original TIA included the removal of church traffic for net impact estimates, we note that the church was operational at the time of background traffic data collection, and its traffic is therefore already embedded within the base volumes. To ensure a conservative approach, we have **not subtracted the church traffic from background volumes** in the SIDRA analysis. This represents an unrealistically worst-case scenario, modelling the new school traffic on top of the full background volumes, inclusive of the existing use.

Nonetheless, we have undertaken SIDRA analysis for all relevant intersections under both background and background with development scenarios as detailed in the following sections.

Development Traffic and Intersection Assessment

Proposed Shuttle Bus

A 22-seater privately contracted Toyota Coaster (7m long) or similar shuttle bus is proposed to transport students to the proposed facility from two locations within the Townsville CBD.

The service will run twice in the AM and PM periods, for a total of four times throughout the day. As such, 44 students will be collected and brought to the campus each morning and returned to either of the Townsville CBD locations after school. This represents ~34% of the total number of students travelling to the educational establishment each day.

Updated Traffic Generation

The traffic generation expected at the site has been updated based on the information detailed above. The updated traffic generation of the existing and proposed land uses is detailed within the following section.

The number of students travelling by their own vehicle has been assumed to be 20, in line with the number of students driving at the Cleveland TBS.

The modal splits from the VT TIA have been updated and detailed in Table 1, Table 2 and Table 3. The 44 shuttle bus users and 20 student drivers have been assumed to be evenly split between the three location ranges.

Table 1 Users Expected to Reside Within 2km of School

Student located: 1-2km		30%	38 Students		
Mode	Private (Driver)	Private (Passenger)	Shuttle	Bus	Cycle + Walk
% of Student	15.6%	34.0%	34.4%	9.0%	6.0%
# Student	5.9	12.9	13 (13.1)	3 (3.4)	2 (2.3)
Occupancy rate of 1.2	5 (4.9) vehicles	11 (10.8) vehicles			

Table 2 Users Expected to Reside Within 2-5km of School

Student located: 2-5km		50%	64 Students		
Mode	Private (Driver)	Private (Passenger)	Shuttle	Bus	Cycle + Walk
% of Student	15.6%	34.0%	34.4%	9.0%	6.0%
# Student	10	21.8	22	6 (5.8)	4 (3.8)
Occupancy rate of 1.2	8 (8.3) vehicles	18 (18.1) vehicles			

Table 3 Users Expected to Reside Within >5km of School

Student located: >5km		20%	26 Students		
Mode	Private (Driver)	Private (Passenger)	Shuttle	Bus	Cycle + Walk
% of Student	15.6%	30.5%	34.4%	17.0%	1.5%
# Student	4.1	7.9	9 (8.9)	4 (4.4)	0 (0.4)
Occupancy rate of 1.2	3 (3.3) vehicles	7 (6.6) vehicles			

Internal Trip Distribution

The updated existing and proposed traffic generation and directional input is detailed Table 4.

Table 4 Directional Trips

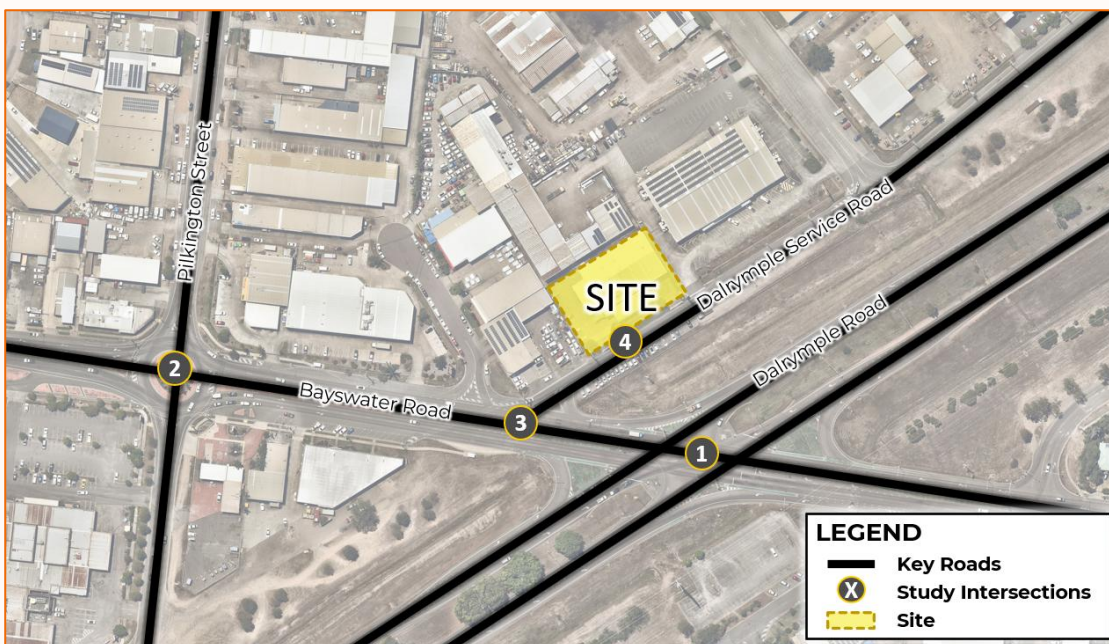
Land Use	Yield	AM		PM	
		IN	OUT	IN	OUT
The BUSY School	Student (Private) – 16 veh	16 vph	0 vph	0 vph	16 vph
	Student (Drop-off) – 36 pax	36 vph	36 vph	36 vph	36 vph
	Staff – 30 veh	30 vph	0 vph	0 vph	30 vph
NET PEAK TRAFFIC		63 vph	17 vph	17 vph	63 vph

As outlined in Table 4, an estimated net increase of 63 vph and 17 vph are expected to enter and exit the site, respectively, during the AM peak period, the opposite is true of the PM peak.

Study Intersections

Figure 1 shows the intersections under investigation, detail is provided in Table 5. No other intersections are expected to have any movement impacted enough to cause a net increase in delay of more than 5%.

Figure 1 Study Intersections



Source: Nearmap

Table 5 Study Intersections

ID	Intersection	Control
1	Dalrymple Road / Bayswater Road	Signalised Intersection
2	Bayswater Road / Pilkington Street	Roundabout
3	Bayswater Road / Dalrymple Service Road	Priority Intersection
4	Dalrymple Service Road / Site Access	Priority Intersection

Background Traffic Volumes

As detailed, to understand the existing traffic conditions, road segment traffic counts were attained using the TCC Traffic Calibration Model 2025.

Assumptions have been adopted to estimate the directional flows at the roundabout of Bayswater Road / Pilkington Street and the signalised intersection of Dalrymple Road / Bayswater Road as the road segment volumes do not provide individual directional volumes. These assumptions have ensured that the arrival flows balance with the departure flow to ensure the network is in equilibrium.

Background Traffic Growth

To understand traffic growth within the transport network near the development site, TMR's 2023 Segment Reports were consulted. These reports provide information on the Average Annual Daily Traffic (AADT) on State Controlled Roads in Queensland.

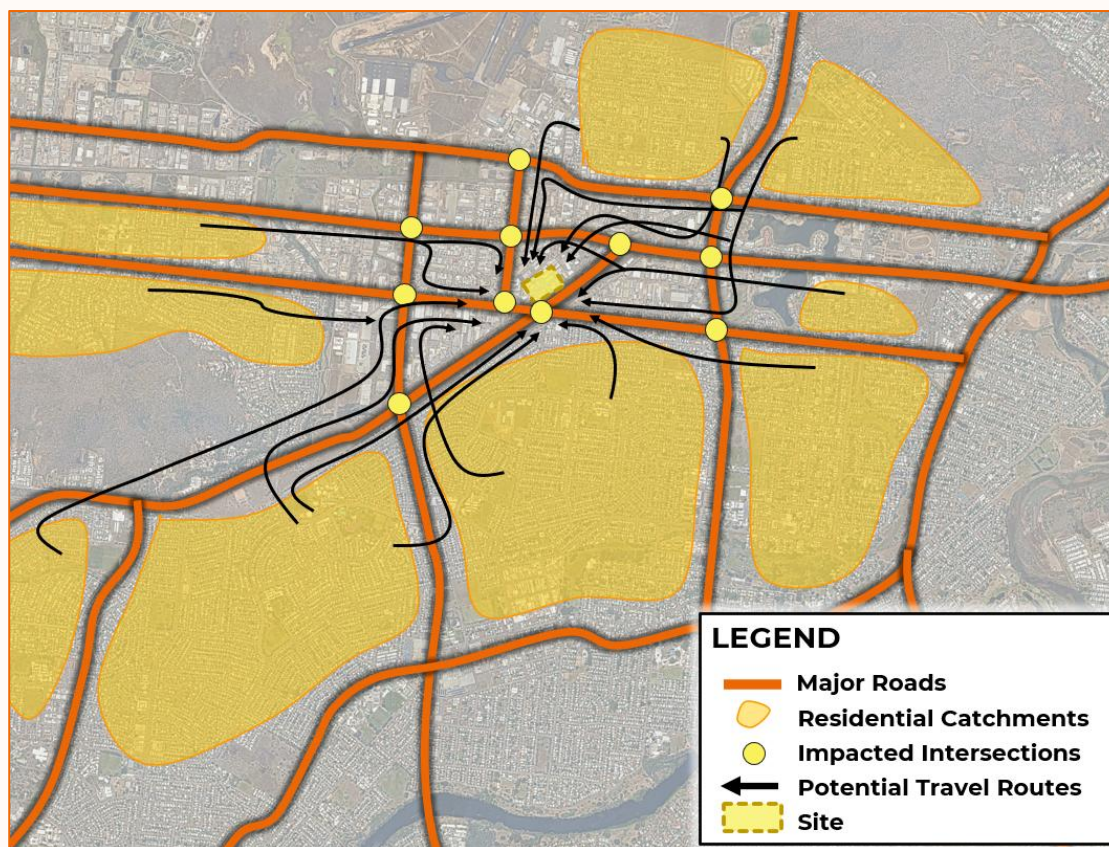
AADT data from several nearby locations were used to provide insight into traffic near the development site. The 10-year growth rates were averaged to determine a conservative growth rate for the development. Based on the assessment, a growth rate of 1% was adopted.

Trip Distribution

External Directional Distribution

The external trip distribution has been based on an expansion of the desktop model created within the VT TIA which is reproduced in Figure 2.

Figure 2 Expected Travel Routes to TBS



A more detailed assessment has been used to determine the travel routes and subsequent impacted intersections as a result of the proposed development.

The land area of each of the residential catchments detailed in Figure 2 was attained and a Google Maps travel route assessment was undertaken to determine the route chosen from each catchment area to the site during the typical AM peak. The chosen travel route was factored by the residential land area proportion.

The final external ingress and egress movement distribution are illustrated in Figure 3 and Figure 4.

Figure 3 IN Distribution

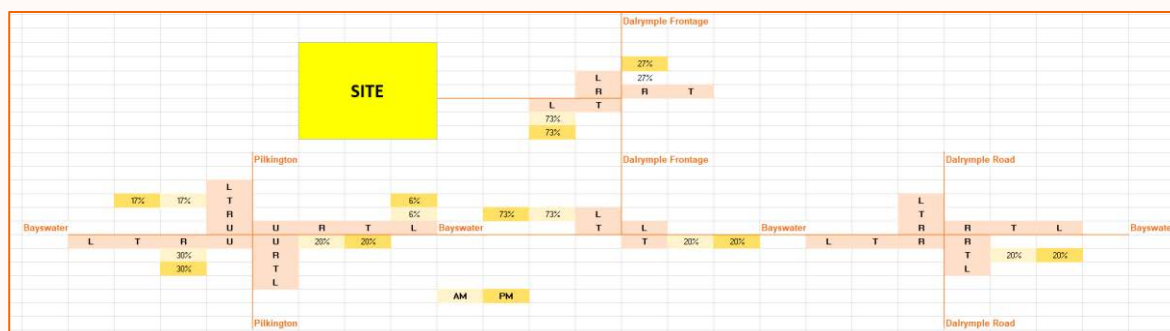
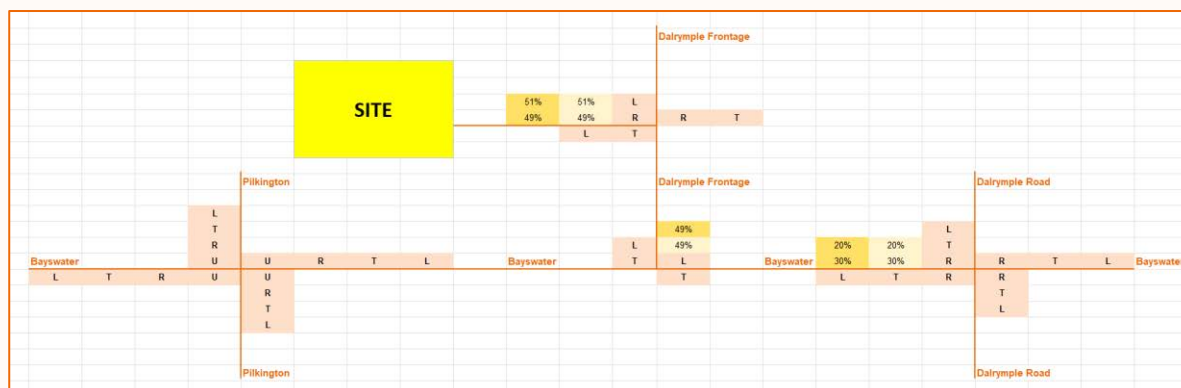


Figure 4 OUT Distribution



Assessment Scenarios

To evaluate the impact of the proposed development on the existing road network, each intersection has been analysed during the AM and PM peak periods, using the proposed yields detailed in Table 4.

As required by TMR's GTIA, the impact assessment year for external intersections should be the year of opening, while the impact assessment year for site accesses should be 10 years after the year of opening.

SIDRA results and layouts can be found in **Appendix D**. Table 6 summarises the impact assessment scenarios.

Table 6 Assessment Scenarios

Impact Assessment Scenario	Study Intersections
2025 BG (Year of opening)	All
2035 BG (10-year design horizon)	4
2025 BG + DEV	All
2035 BG + DEV	4

Note: BG = **B**ackground, Dev = **D**evelopment Traffic

Assessment Criteria

Intersection Degree of Saturation

The performance of each study intersection has been analysed using SIDRA Intersection 9.0 to determine the Degree of Saturation (DOS), queuing and delays. DOS is a measure of the intersection's capacity. TMR's DOS thresholds are listed in Table 7

Table 7 Intersection DOS Thresholds

Intersection Treatment	DOS Threshold
Signalised Intersections	Less than or equal to 0.90
Priority Intersections	Less than or equal to 0.80
Roundabouts	Less than or equal to 0.85

Source: TMR Guidelines for Assessment of Road Impacts Development

If the DOS exceeds the values in Table 7, it means that the intersection is approaching its practical capacity and upgrade works may be necessary. Above these threshold values, users of the intersection are likely to experience increased delays and queueing.

Intersection Delay

According to the GTIA, delay is a more important indicator of intersection performance than the DOS, as outlined in the previous TMR Guidelines for Assessment of Road Impacts of Development (GARID).

The GTIA aims to prevent intersection delays on the base traffic from getting worse by more than 5% on average as a result of the development. Measures to avoid, manage, or mitigate intersection delays must be considered if delays are expected to exceed this threshold. Velocity Traffic has provided additional comments if this threshold has been exceeded.

For priority-controlled intersections, if the average peak hour delay for any movement exceeds 42 seconds, as stated in the GTIA, the intersection should be upgraded for safety reasons. For signalised intersections, the DOS is still considered, as delay depends on the cycle length and phasing arrangement.

95th Percentile Queuing

The 95th percentile queue length is the one that 95% of all observed queue lengths during the assessment hour fall under. This value indicates the maximum queue length that should be designed for to prevent negative impacts on upstream lanes.

Modelling Parameters

A summary of the SIDRA parameters adopted for the study intersection is summarised below:

Signalised:

- ▶ Peak Flow Factor – 0.95 (30min/60min)
- ▶ Basic Saturation Flow – 1,950tcu/hr

Intersection 1: Dalrymple Road / Bayswater Road

The Dalrymple Road / Bayswater Road intersection is a four-way signalised intersection as shown in Figure 5. Results from the SIDRA analysis are summarised in Table 8 and Table 9.

Full SIDRA results for this assessment can be found in **Appendix D**.

Figure 5 Dalrymple Road / Bayswater Road intersection - SIDRA Layout

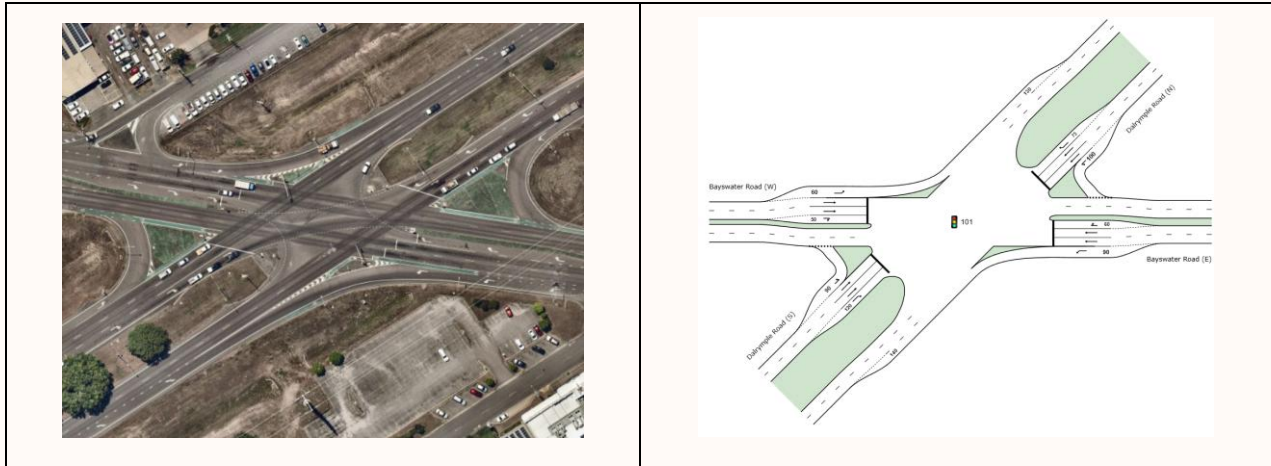


Table 8 Dalrymple Road / Bayswater Road intersection - SIDRA Summary (AM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.879	101.1 sec	288.3m	Western Right
2025 BG + DEV	0.892	104.3 sec	292.1m	Western Right

Table 9 Dalrymple Road / Bayswater Road intersection - SIDRA Summary (PM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.880	63.4 sec	202.4m	Southern Right
2025 BG + DEV	0.888	63.9 sec	210.2m	Southern Right

The results presented in Table 8 and Table 9 above suggest that the intersection is within acceptable performance thresholds for a signalised intersection (i.e. DOS less than 0.9) in all scenarios.

Additionally, it is clear that the addition of the proposed site traffic is negligible compared to the existing traffic and thus the performance of the signalised intersection.

Intersection 2: Bayswater Road / Pilkington Street

The Bayswater Road / Pilkington Street intersection is a four-way roundabout as shown in Figure 5. Results from the SIDRA analysis are summarised in Table 8 and Table 9.

Full SIDRA results for this assessment can be found in **Appendix D**.

Figure 6 Bayswater Road / Pilkington Street intersection - SIDRA Layout

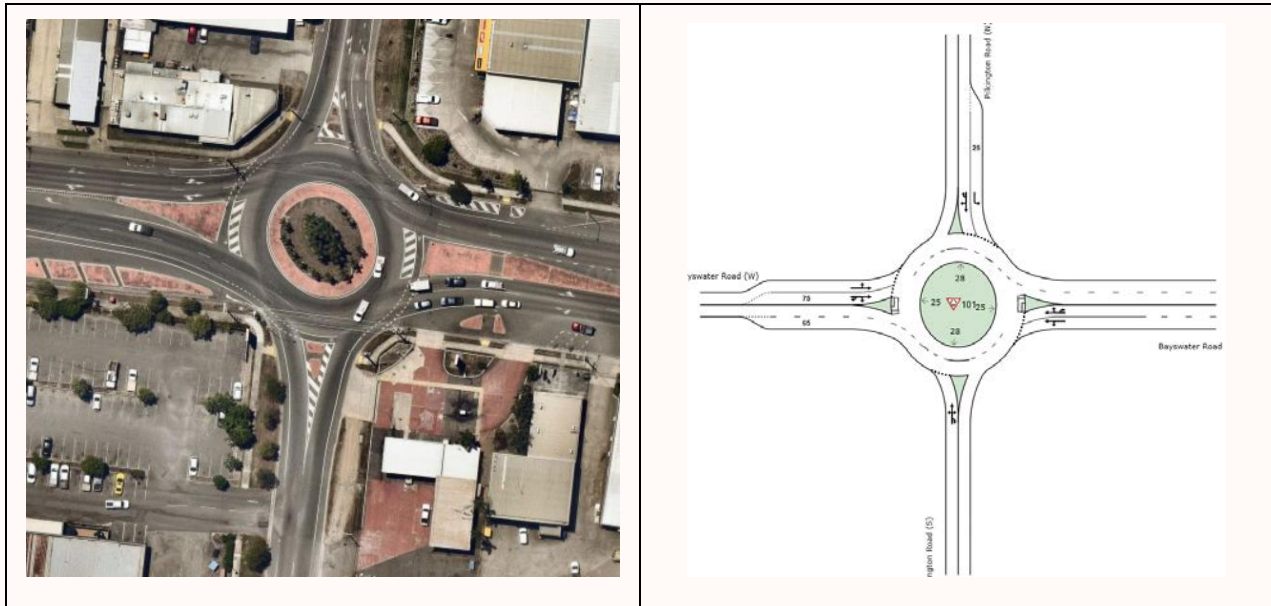


Table 10 Bayswater Road / Pilkington Street intersection - SIDRA Summary (AM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.413	15.1 sec	19.6m	Southern U-turn
2025 BG + DEV	0.421	15.2 sec	20.2m	Southern U-turn

Table 11 Bayswater Road / Pilkington Street intersection - SIDRA Summary (PM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.287	13.8 sec	11.9m	Southern U-turn
2025 BG + DEV	0.289	13.8 sec	12m	Southern U-turn

The results presented in Table 8 and Table 9 above suggest that the intersection is within acceptable performance thresholds for a roundabout (i.e. DOS less than 0.85) in all scenarios.

Intersection 3: Bayswater Road / Dalrymple Service Road

The Bayswater Road / Dalrymple Service Road intersection is a three-way priority-controlled intersection as shown in Figure 5. Results from the SIDRA analysis are summarised in Table 8 and Table 9.

Full SIDRA results for this assessment can be found in **Appendix D**.

Figure 7 Bayswater Road / Dalrymple Service Road intersection - SIDRA Layout

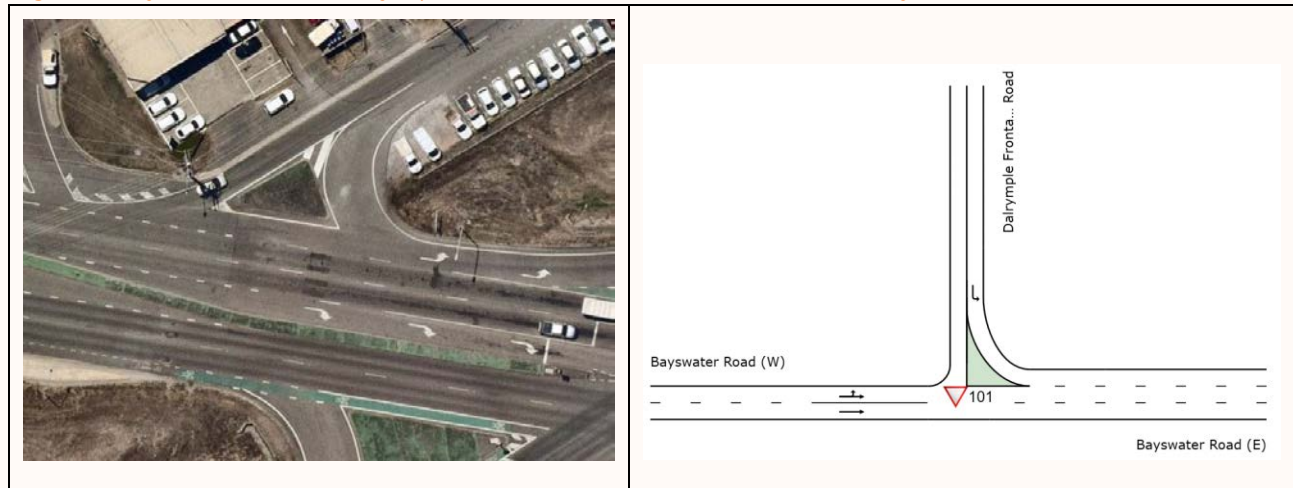


Table 12 Bayswater Road / Dalrymple Service Road intersection - SIDRA Summary (AM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.230	5.7 sec	0m	Western Left
2025 BG + DEV	0.244	5.7 sec	0m	Western Left

Table 13 Bayswater Road / Dalrymple Service Road intersection - SIDRA Summary (PM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.181	5.7 sec	0m	Western Left
2025 BG + DEV	0.185	5.7 sec	0m	Western Left

The results presented in Table 8 and Table 9 above suggest that the intersection is within acceptable performance thresholds for a priority-controlled intersection (i.e. DOS less than 0.8) in all scenarios.

Intersection 4: Dalrymple Service Road / Site Access

The Dalrymple Service Road / Site Access intersection is a three-way priority-controlled intersection as shown in Figure 5. Results from the SIDRA analysis are summarised in Table 8 and Table 9.

Full SIDRA results for this assessment can be found in **Appendix D**.

Figure 8 Dalrymple Service Road / Site Access intersection - SIDRA Layout

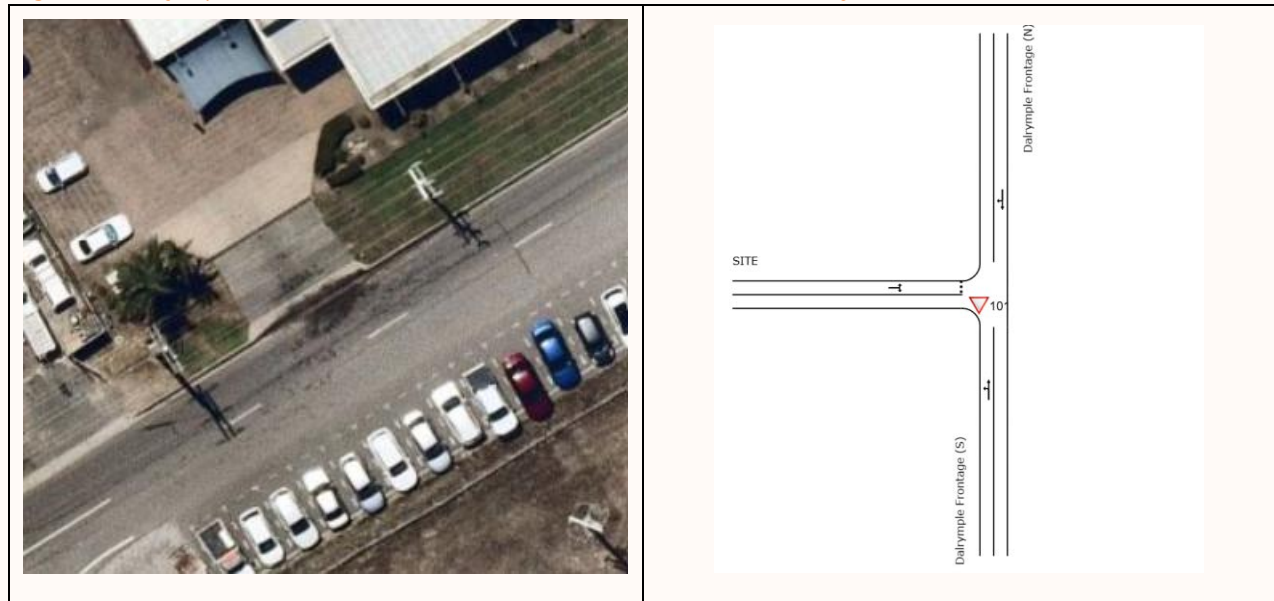


Table 14 Dalrymple Service Road / Site Access intersection - SIDRA Summary (AM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.014	5.5 sec	0.3m	Western Left
2035 BG	0.014	5.5 sec	0.3m	Western Left
2025 BG + DEV	0.036	5.5 sec	0.7m	Western Left
2035 BG + DEV	0.037	5.5 sec	0.7m	Western Left

Table 15 Dalrymple Service Road / Site Access intersection - SIDRA Summary (PM)

Scenario	DOS	Critical Delay	95th %ile Queue	Critical Movement
2025 BG	0.038	5.5 sec	0.4m	Western Left
2035 BG	0.045	5.5 sec	0.4m	Western Left
2025 BG + DEV	0.063	5.5 sec	1.6m	Western Left
2035 BG + DEV	0.063	5.5 sec	1.6m	Western Left

The results presented in Table 8 and Table 9 above suggest that the intersection is within acceptable performance thresholds for a priority-controlled intersection (i.e. DOS less than 0.8) in all scenarios.

Intersection Performance Summary

All scenarios in both AM and PM peak periods were found to operate within the threshold criteria for each intersection type, as defined in the DTMR Guide to Traffic Impact Assessment (GTIA). This includes a maximum Degree of Saturation (DOS) of 0.90 for signalised intersections, 0.85 for roundabouts, and 0.80 for priority-controlled intersections. No movements exceeded these thresholds, confirming the surrounding network is capable of accommodating the proposed development traffic.

Velocity Response – Item 2b

A swept path assessment has been undertaken for the Toyota Coaster bus which indicates the vehicle can safely and effectively enter the site in a forward gear, drop off students outside of the parking aisle (maintaining more than 6.5m), then depart the site in a forward gear while maintaining adequate 300mm buffers to all obstructions.

These swept paths are provided in **Appendix C**.

1.2 Conclusion

Velocity Traffic believes the parking shortfall is comfortably catered for by the existing parking both on-site and within the available on-street parking area.

The traffic generated by the site is minimal as detailed by the SIDRA assessment and no intersections are expected to have an increase in net delay of more than 5% as detailed in the GTIA.

Author:

Casey Schackow
Director

Effective Date 16/06/2025

C. Schackow

Approved By:

Harj Singh
Transport Advisor RPEQ 22364

Date Approved 16/06/2025

H. Singh

APPENDIX A

INFORMATION REQUEST





Date >> 07 April 2025

PO BOX 1268, Townsville
Queensland 4810

13 48 10

The Busy School
C/- Bespoke P&D
Po Box 5032
ALEXANDRA HILLS QLD 4161

enquiries@townsville.qld.gov.au
townsville.qld.gov.au

ABN: 44 741 992 072

Email >> planning@bespokepd.com.au

Dear Sir/Madam

Information Request

Planning Act 2016

As per Council's correspondence on 7 April 2025 please be advised that, upon review of the below mentioned development application, further information is required to undertake a comprehensive assessment. In accordance with section 12 of Development Assessment Rules under the *Planning Act 2016* the following information is requested.

Application Details

Application no:	MCU25/0013
Assessment no:	1038008
Proposal:	Educational establishment
Street address:	153-157 Dalrymple Road (Main) GARBUTT QLD 4814
Real property description:	Lot 1 SP 145199
Applicant's reference:	25677

The information requested is set out below >>

Request Item 1 - Confirmation of On-Site Parking Requirements

The applicant is requested to provide:

- confirmation of the age of students attending the proposed educational establishment;
- the number of students able to be collected via shuttle bus; and
- details of bus pick-up and set-down for the shuttle bus.

Reason

To demonstrate compliance with Performance Outcome PO2 of the Works code of the Townsville City Plan.

Advice

The applicant is advised that the traffic impact assessment utilises the parking calculation provided in SC6.10 for tertiary education rather than that for secondary education which alters depending on the number of driving age students. Assuming all 128 students attending at one time are of driving age and each of the 30 staff attend each day, there is a shortfall of 24 car parking spaces rather than the 8 detailed in the traffic impact assessment.

As noted in the planning report, the provision of shuttle bus may alleviate this shortfall somewhat, but in order to do so, it must be able to safely enter and exit the site as there are no drop-off facilities explicitly denoted on the plans and Council requires an understanding of how many students will be able to use this service.

Request Item 2 - Traffic Impact Assessment

- a. The applicant is requested to provide an amended Traffic Impact Assessment (TIA) report certified by an RPEQ and which meets the requirements of a Moderate TIA in accordance with SC6.4 Development manual planning scheme policy of the Townsville City Plan. Per SC6.4.5.2(2)(c), "a moderate level TIA Report will be performed using traffic forecasting processes or computerised methods (e.g., Sidra) to estimate and analyse traffic flows on the surrounding road network at predefined time horizons."; and
- b. The amended TIA is also requested to include swept path analysis diagrams for the shuttle bus manoeuvres demonstrating that the shuttle bus can safely manoeuvre on the site and enter and exit in a forward gear.

Reason

To demonstrate that the development will not adversely impact the external transport network in accordance with relevant codes and policy direction.

Advice

The applicant is advised that, as per Table SC6.4.5.2 of the Townsville City Plan, a Moderate TIA report is required where a development results in "new or additional trip generation in a peak hour of 20 to 300 trips directly accessing a street." The submitted TIA identifies that peak hour trip generation falls within this range.

Council prefers an amended TIA document, rather than an addendum to the original report.

Request Item 3 - Water & Sewer Assessment

The applicant is requested to provide a water and sewer assessment report certified by an RPEQ which identifies the demands associated with the development and any upgrades required to Council's infrastructure to accommodate the development.

Reason

To demonstrate that infrastructure is adequate for the needs of the intended use in accordance with relevant codes and policy direction.

Advice

Council's water and sewer network models can be requested via the following link: <https://fs6.formsite.com/townsvillecc/form83/index.html>.

Council wishes to provide the following advice:

Advice Item 1 - Landscaping

The applicant is advised that Council is implementing development conditions that will require additional plantings, consisting of low shrubs and ground covers to provide dense coverage to the main garden in front of the building to better align with the Landscape code of the Townsville City Plan.

End of Information Request >>

Under the provisions of the Development Assessment Rules under the *Planning Act 2016*, you have three options available in response to this Information Request. You may give the assessment manager (in this instance Council):

- (a) all of the information requested; or
- (b) part of the information requested; or
- (c) a notice that none of the information will be provided.

For any response given in accordance with items (b) and (c) above, you may also advise Council that it must proceed with its assessment of the development application.

Please be aware that under the Development Assessment Rules under the *Planning Act 2016*, the applicant is to respond to any Information Request within 3 months of the request. If you do not respond to the Information Request within this time period, or, within a further period agreed between the applicant and Council, it will be taken that you have decided not to provide a response. In the event of no response being received, Council will continue with the assessment of the application without the information requested.

Council prefers that all of the information requested be submitted as one package. If any additional matters arise as a result of the information submitted, or, as a result of public notification (where applicable), you will be advised accordingly.

Should any referral agency make an information request, you are reminded of your obligation to provide council with a copy of the information response provided to that referral agency.

You may wish to follow the progress of this application using PD Online on Council's website www.townsville.qld.gov.au

If you have any further queries in relation to the above, please do not hesitate to contact Jake Kidner on telephone 07 4417 5240, or email developmentassessment@townsville.qld.gov.au.

Yours faithfully



For Assessment Manager
Planning and Development

APPENDIX B

CONCEPT PLANS



GENERAL SITE NOTES

- SEWERAGE AND/OR SEPTIC TO BE IN ACCORDANCE WITH LOCAL BY-LAWS AND WATER & SEWERAGE ACT AMENDMENT ACT.
- POSITION OF STORMWATER LINES, DOWNPIPES, RETAINING WALLS, CUT/FILL EMBANKMENTS ARE APPROXIMATE ONLY AND MAY VARY TO SUIT SITE CONDITIONS AND THE BUILDER IS TO VERIFY AND ADJUST AS REQUIRED.
- ALL CUT/FILL EMBANKMENTS, RETAINING WALLS SHOWN AND CONSTRUCTED ARE TO COMPLY WITH COUNCIL POLICY & BCA HOUSING PROVISIONS.
- STORMWATER PIPES TO BE 90 mm CLASS 6 UPVC & LAID IN ACCORDANCE WITH BCA HOUSING PROVISIONS UNLESS SPECIFIED ELSEWHERE. ONE 90 mm UPVC PIPE PER 100 SQM OF ROOF AREA LAID TO 1:100 MIN GRADE.
- PAD CUT TO ALLOW GROUND WATER TO DRAIN AWAY FROM DWELLING ALL ROUND AT 1:20 FALL.
- ALL BOUNDARY CLEARANCES AND SET OUT DIMENSIONS TO BE VERIFIED PRIOR TO COMMENCEMENT OF WORK.
- THE BUILDER IS TO VERIFY ALL DIMENSIONS AND LEVELS ON PLAN PRIOR TO COMMENCEMENT OF THE JOB AS NO RESPONSIBILITY IS TAKEN AFTER WORK HAS COMMENCED.

TO BE POSITIONED BY BUILDER

IF APPLICABLE (IF INCLUDED IN SPEC.)

- METER BOX
- HOTWATER SYSTEM
- CLOTHES LINE
- LETTERBOX
- WATER TANK
- RETAINING WALLS
- FENCES - GATES
- DRIVEWAY - PATH

LINE TYPES

CUT / FILL	---
RETAINING WALL	---
BATTERS	---
BOUNDARY	---
STEEL BEAM	---

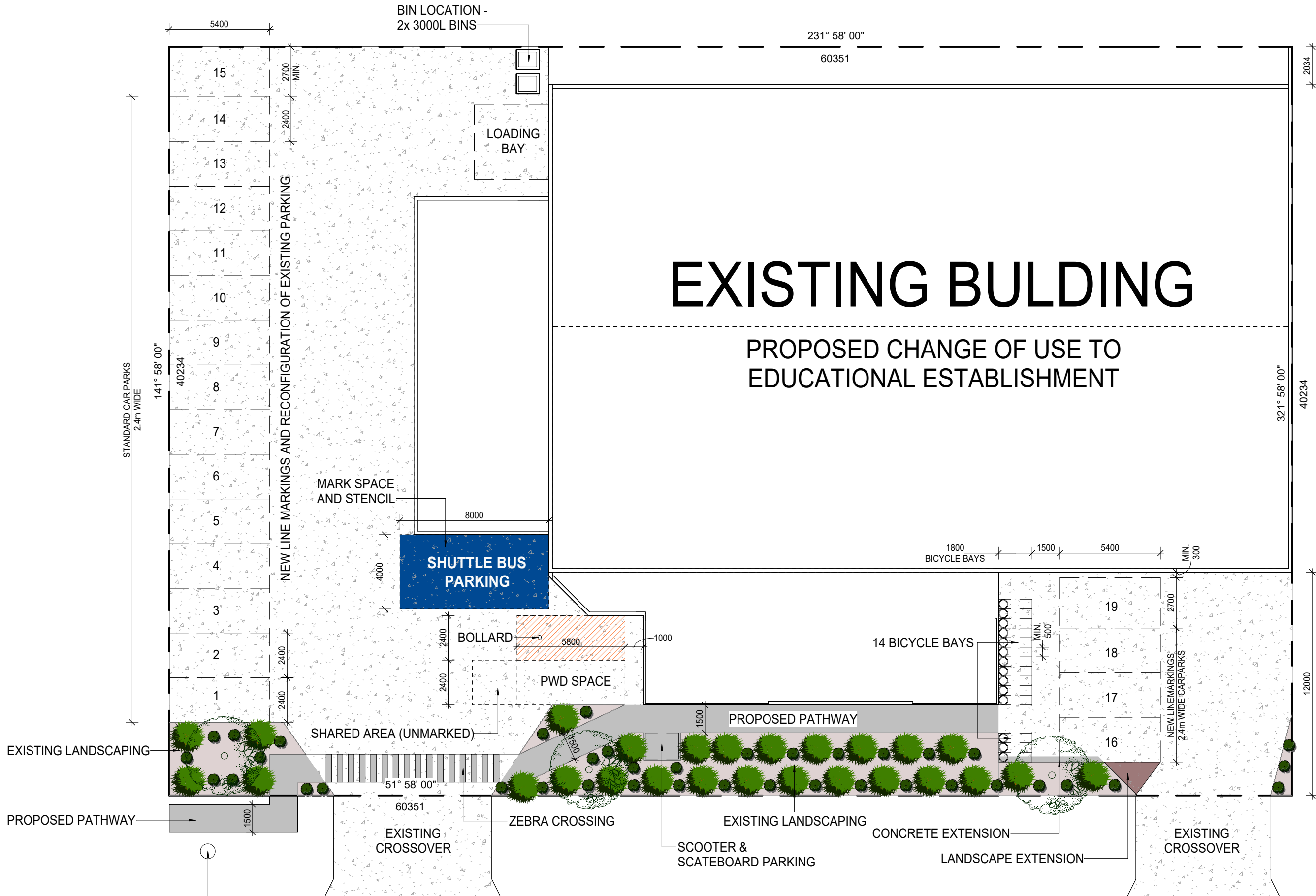
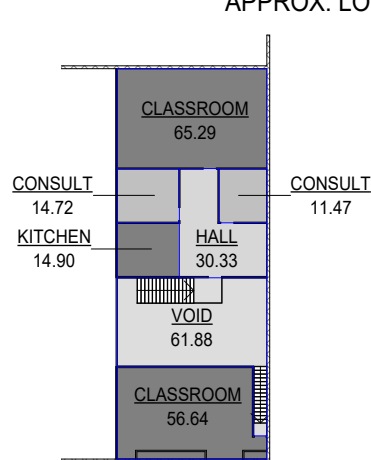
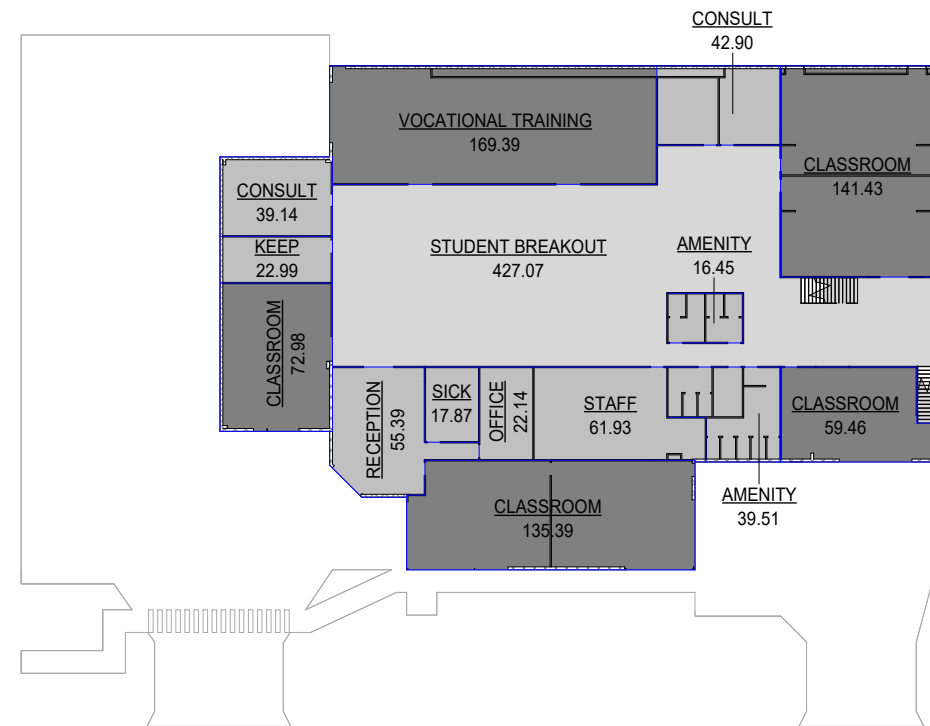
LEGEND

—W—W—W—	WATER PIPE
—S—S—S—	SEWER PIPE
—SW—SW—SW—	STORMWATER PIPE
⊞	STORMWATER PIT
⊞	WATER HYDRANT
⊞	SEWER HOUSE CONNECTION
⊞	SEWER PIT

SITE AREA	2428 m²
SITE COVER	REMAIN UNCHANGED

AREA SCHEDULE

LEVEL	NAME	AREA
GROUND FLOOR	AMENITY	55.96
GROUND FLOOR	CLASSROOM	409.25
GROUND FLOOR	CONSULT	82.05
GROUND FLOOR	KEEP	22.99
GROUND FLOOR	OFFICE	22.14
GROUND FLOOR	RECEPTION	55.39
GROUND FLOOR	SICK	17.87
GROUND FLOOR	STAFF	61.93
GROUND FLOOR	STUDENT BREAKOUT	427.07
GROUND FLOOR	VOCATIONAL TRAINING	169.39
FIRST FLOOR	CLASSROOM	121.93
FIRST FLOOR	CONSULT	26.19
FIRST FLOOR	HALL	30.33
FIRST FLOOR	KITCHEN	14.90
FIRST FLOOR	VOID	61.88
Grand total		1579.27



SITE PLAN

1 : 200

DALRYMPLE SERVICE ROAD



E: INFO@PACIFIK.COM.AU
T: 0730 763 859
M: 0434 265 004
W: WWW.PACIFIK.COM.AU
A: 42 MANILLA ST, EAST BRISBANE
QBCC LIC #: 15064535

REV	DATE	REVISION DESCRIPTION
1	25/02/25	CHANGE OF USE CONCEPT PLAN
2	27/05/25	RESPONSE TO IR
3		
4		
5		
6		
7		

BY
PK
PK

DRAWING NAME
SITE PLAN

© COPYRIGHT 2016 - 2025
ALL DIMENSIONS AND DESIGN REMAIN THE PROPERTY OF PACIFIK AND ARE SUBJECT TO THE LAWS AND PROTECTION OF COPYRIGHT

WHILEST DUE CARE HAS BEEN TAKEN IN THE PREPARATION OF THESE DRAWINGS, SHOULD CONSTRUCTION OF THIS DWELLING DIFFER FROM THE DETAILS SHOWN ON THESE PLANS, PACIFIK MUST BE CONTACTED IMMEDIATELY AND WORKS CEASE UNTIL A SOLUTION IS REACHED. WE WILL NOT ACCEPT ANY RESPONSIBILITY OR BACK CHARGES WITHOUT OUR WRITTEN AGREEMENT TO DO SO.

CLIENT
BUSY SCHOOLS

SITE ADDRESS
153 DALRYMPLE ROAD - GARBUTT

REAL PROPERTY DESCRIPTION
LOT 1 ON SP145199

SCALE
As indicated @ A2

WIND
TBA

JOB #
25703

NORTH

DATE
27/05/25

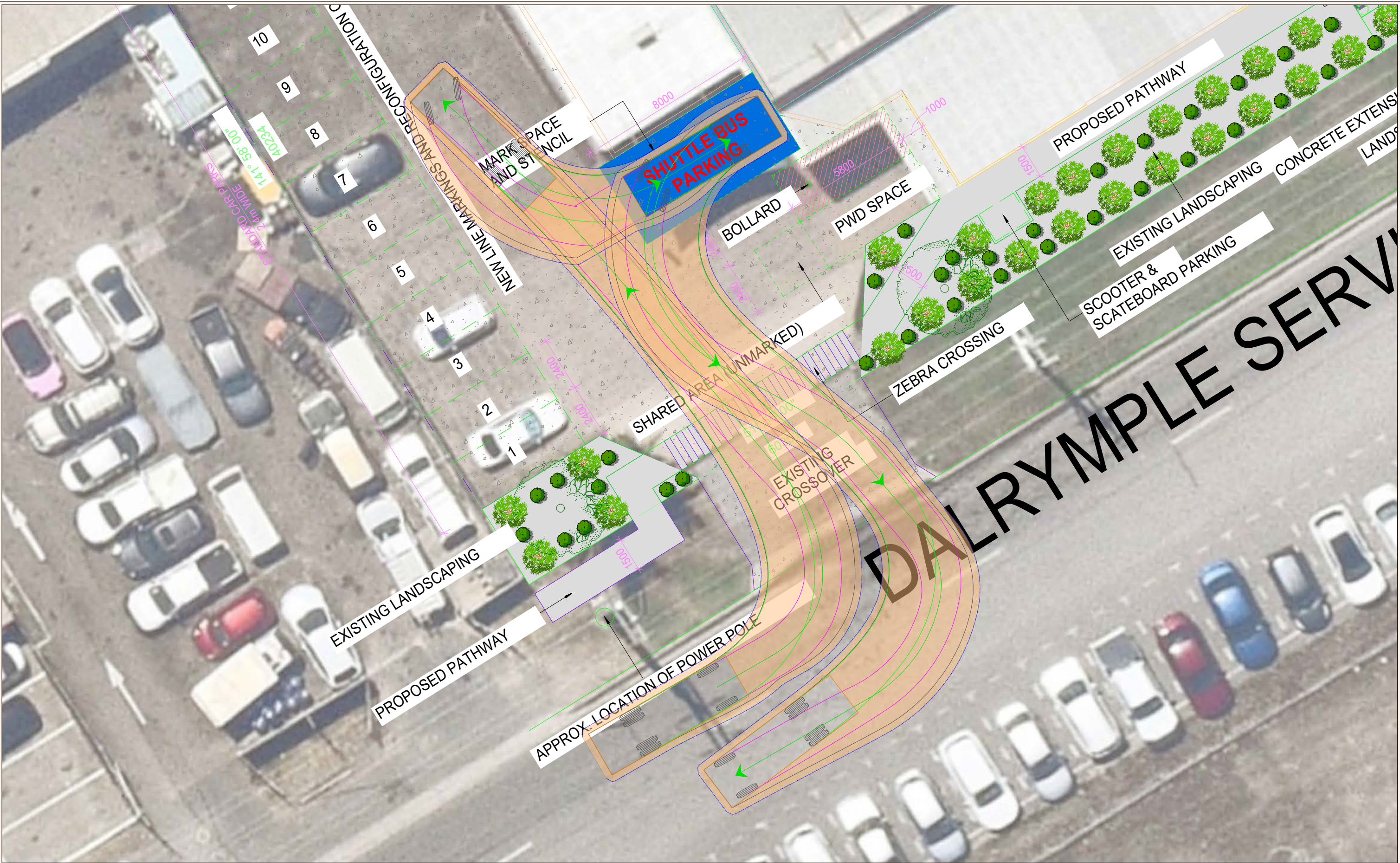
SHEET #
02

PRELIMINARY DRAWING - NOT FOR CONSTRUCTION

APPENDIX C

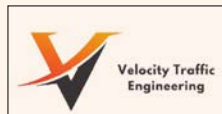
SWEPT PATH ASSESSMENT





SWEEP PATH LEGEND	
	VEHICLE BODY
	FRONT TIRES
	REAR TIRES
	VEHICLE PATH
	VEHICLE CLEARANCE (300mm)
	VEHICLE

Toyota Coaster	
Width	: 2.10
Track	: 2.05
Lock to Lock Time	: 6.0
Steering Angle	: 37.9



Velocity Traffic Engineering
T 0413482746
ABN 94 658 980 208

THE BUSY SCHOOL
153 DALRYMPLE ROAD, GARBUTT
SWEEP PATH - TOYOTA COASTER BUS

Drawn	Date	Scale	Size
C.Schackow	16/06/2025	1:100	A3
Drawing Number		Rev	
SK01		A	



SWEPT PATH LEGEND

- VEHICLE BODY
- FRONT TIRES
- REAR TIRES
- VEHICLE PATH
- VEHICLE CLEARANCE (300mm)
- VEHICLE

B85 - AS2890.1

Meters

Width : 1.87

Track : 1.77

Lock to Lock Time : 6.0

Steering Angle : 40.0

Velocity Traffic Engineering

T 0413482746

ABN 94 658 980 208

THE BUSY SCHOOL

153 DALRYMPLE ROAD, GARBUTT

SWEPT PATH - B85 CRITICAL SPACE

Drawn	Date	Scale	Size
C.Schackow	16/06/2025	1:100	A3
Drawing Number	SK02		Rev
		A	

APPENDIX D

SIDRA ASSESSMENT



SITE LAYOUT

▽ Site: [1] 2025 BG AM - Dalrymple Frontage / Bayswater
(General)

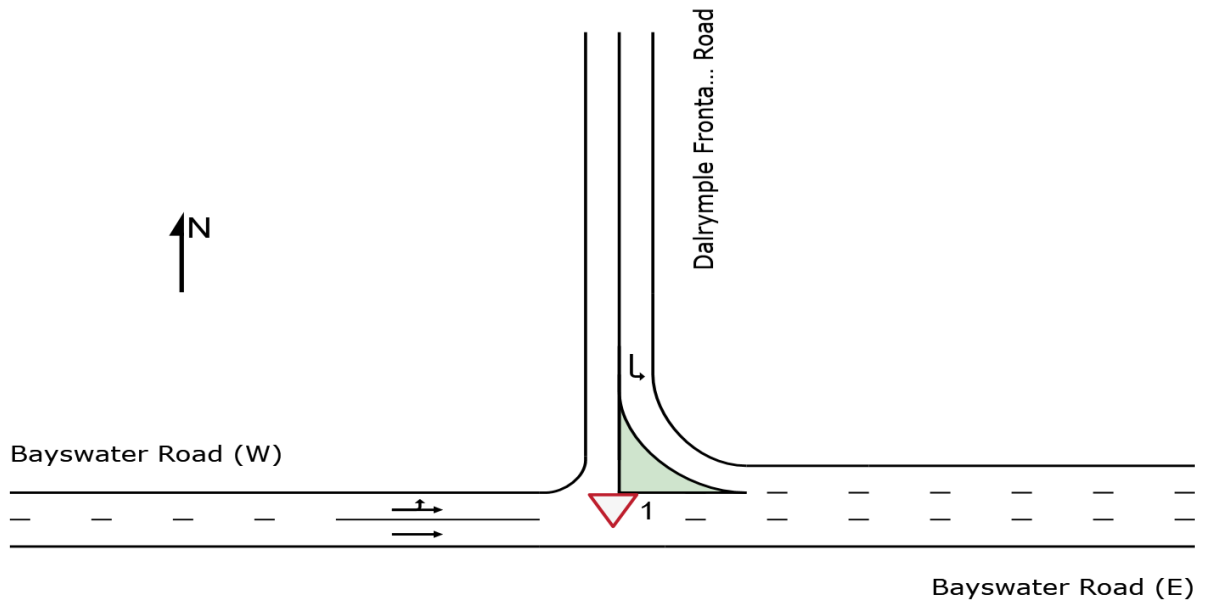
New Site

Site Category: (None)

Give-Way (Two-Way)

Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: | Licence: NETWORK / 1PC | Created: Monday, 16 June 2025 4:15:56 PM

Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

Site: [1] 2025 BG AM - Dalrymple Frontage / Bayswater
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	Arrival Flows [Total HV] veh/h	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
North: Dalrymple Frontage Road													
7	L2	All MCs	8 12.0	8 12.0	0.005	4.1	LOS A	0.0	0.0	0.00	0.51	0.00	33.0
Approach			8 12.0	8 12.0	0.005	4.1	NA	0.0	0.0	0.00	0.51	0.00	33.0
West: Bayswater Road (W)													
10	L2	All MCs	4 12.0	4 12.0	0.230	5.7	LOS A	0.0	0.0	0.00	0.01	0.00	44.2
11	T1	All MCs	834 11.0	834 11.0	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			838 11.0	838 11.0	0.230	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.6
All Vehicles			846 11.0	846 11.0	0.230	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.4

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.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:10 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

Site: [2] 2025 BG PM - Dalrymple Frontage / Bayswater
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV] veh/h	[Total HV] veh/h				[Veh.] veh	Dist] m				km/h
North: Dalrymple Frontage Road													
7	L2	All MCs	63 12.0	63 12.0	0.037	4.1	LOS A	0.0	0.0	0.00	0.51	0.00	33.0
Approach			63 12.0	63 12.0	0.037	4.1	NA	0.0	0.0	0.00	0.51	0.00	33.0
West: Bayswater Road (W)													
10	L2	All MCs	1 12.0	1 12.0	0.181	5.7	LOS A	0.0	0.0	0.00	0.00	0.00	44.3
11	T1	All MCs	659 11.0	659 11.0	0.181	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			660 11.0	660 11.0	0.181	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles			723 11.1	723 11.1	0.181	0.4	NA	0.0	0.0	0.00	0.05	0.00	57.4

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.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:11 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

Site: [3] 2025 BG AM + DEV - Dalrymple Frontage / Bayswater (General)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]	Stop of Cycles	Rate to Depart
			veh/h	%	veh/h	%	v/c	sec		veh	m		km/h
North: Dalrymple Frontage Road													
7	L2	All MCs	17	12.0	17	12.0	0.010	4.1	LOS A	0.0	0.0	0.00	33.0
Approach			17	12.0	17	12.0	0.010	4.1	NA	0.0	0.0	0.00	33.0
West: Bayswater Road (W)													
10	L2	All MCs	53	12.0	53	12.0	0.244	5.7	LOS A	0.0	0.0	0.00	42.8
11	T1	All MCs	834	11.0	834	11.0	0.244	0.0	LOS A	0.0	0.0	0.00	58.4
Approach			886	11.1	886	11.1	0.244	0.4	NA	0.0	0.0	0.00	57.1
All Vehicles			903	11.1	903	11.1	0.244	0.4	NA	0.0	0.0	0.00	56.7

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.

MOVEMENT SUMMARY

Site: [4] 2025 BG PM + DEV - Dalrymple Frontage / Bayswater (General)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV] veh/h	[Total HV] veh/h				[Veh.] veh	[Dist] m				km/h
North: Dalrymple Frontage Road													
7	L2	All MCs	96 12.0	96 12.0	0.056	4.1	LOS A	0.0	0.0	0.00	0.51	0.00	33.0
Approach			96 12.0	96 12.0	0.056	4.1	NA	0.0	0.0	0.00	0.51	0.00	33.0
West: Bayswater Road (W)													
10	L2	All MCs	13 12.0	13 12.0	0.185	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	43.8
11	T1	All MCs	659 11.0	659 11.0	0.185	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.4
Approach			672 11.0	672 11.0	0.185	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.0
All Vehicles			767 11.1	767 11.1	0.185	0.6	NA	0.0	0.0	0.00	0.07	0.00	55.7

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.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:11 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

SITE LAYOUT

 Site: [5] 2025 BG AM - Bayswater / Pilkington (General)

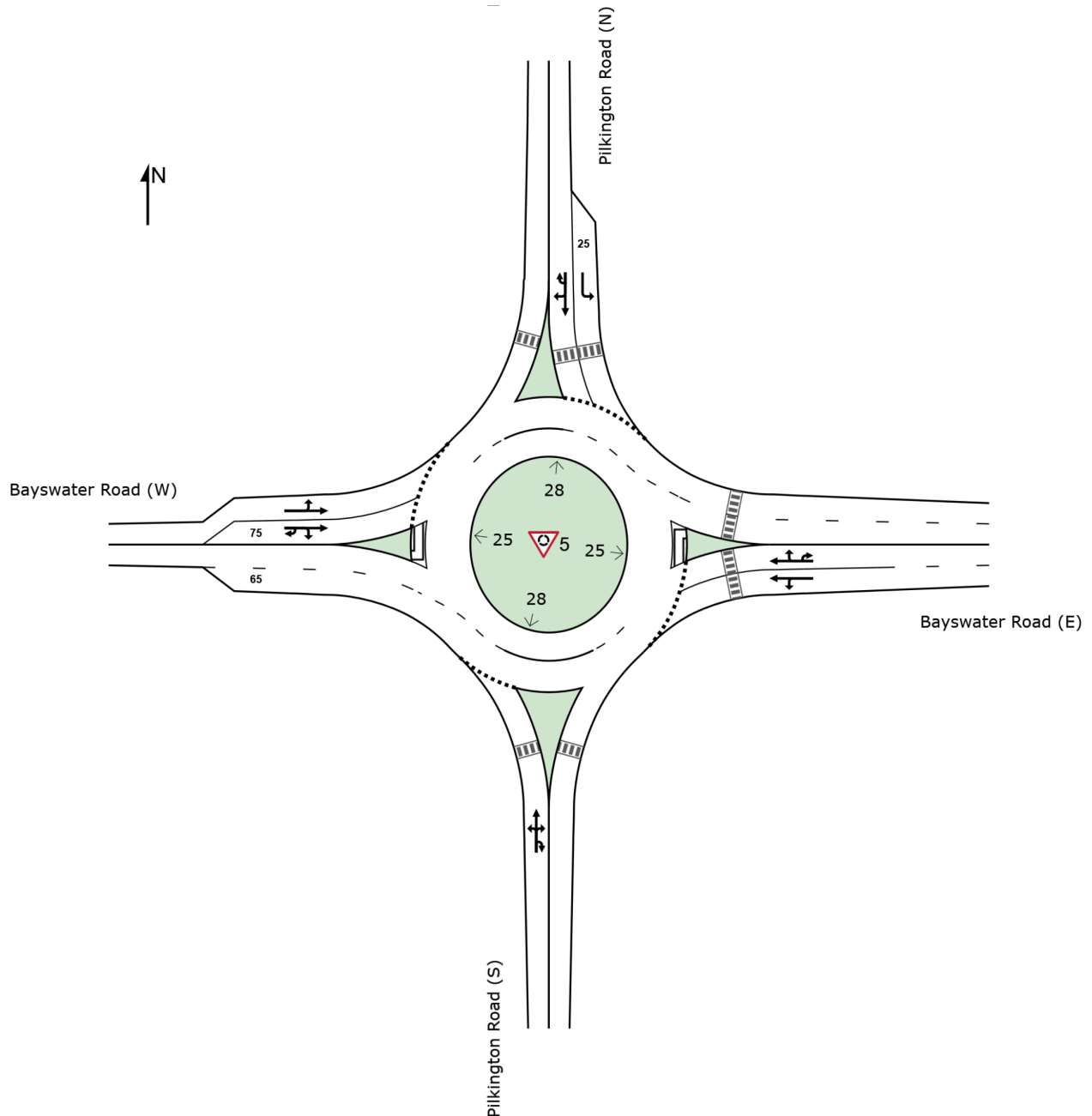
New Site

Site Category: (None)

Roundabout

Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: | Licence: NETWORK / 1PC | Created: Monday, 16 June 2025 4:17:42 PM

Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY



Site: [5] 2025 BG AM - Bayswater / Pilkington (General)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	Dist]				km/h
			veh/h		veh/h					veh	m				
South: Pilkington Road (S)															
1	L2	All MCs	58	9.0	58	9.0	0.233	8.5	LOS A	1.2	8.8	0.66	0.73	0.66	47.6
2	T1	All MCs	27	9.0	27	9.0	0.233	7.4	LOS A	1.2	8.8	0.66	0.73	0.66	47.9
3	R2	All MCs	82	9.0	82	9.0	0.233	12.9	LOS B	1.2	8.8	0.66	0.73	0.66	39.1
3u	U	All MCs	1	9.0	1	9.0	0.233	15.1	LOS B	1.2	8.8	0.66	0.73	0.66	40.1
Approach			168	9.0	168	9.0	0.233	10.5	LOS B	1.2	8.8	0.66	0.73	0.66	44.3
East: Bayswater Road (E)															
4	L2	All MCs	73	14.0	73	14.0	0.205	5.6	LOS A	1.0	7.6	0.40	0.52	0.40	43.2
5	T1	All MCs	421	14.0	421	14.0	0.413	5.4	LOS A	2.5	19.6	0.42	0.56	0.42	49.8
6	R2	All MCs	202	14.0	202	14.0	0.413	10.4	LOS B	2.5	19.6	0.43	0.58	0.43	47.8
6u	U	All MCs	1	14.0	1	14.0	0.413	12.7	LOS B	2.5	19.6	0.43	0.58	0.43	41.1
Approach			697	14.0	697	14.0	0.413	6.9	LOS A	2.5	19.6	0.42	0.56	0.42	48.7
North: Pilkington Road (N)															
7	L2	All MCs	195	13.0	195	13.0	0.208	5.8	LOS A	0.9	7.1	0.55	0.63	0.55	49.4
8	T1	All MCs	23	13.0	23	13.0	0.201	6.1	LOS A	0.8	6.6	0.56	0.73	0.56	46.6
9	R2	All MCs	137	13.0	137	13.0	0.201	11.5	LOS B	0.8	6.6	0.56	0.73	0.56	49.5
9u	U	All MCs	1	13.0	1	13.0	0.201	13.8	LOS B	0.8	6.6	0.56	0.73	0.56	49.4
Approach			356	13.0	356	13.0	0.208	8.0	LOS A	0.9	7.1	0.55	0.68	0.55	49.3
West: Bayswater Road (W)															
10	L2	All MCs	152	12.0	152	12.0	0.293	5.6	LOS A	1.9	14.8	0.53	0.52	0.53	52.5
11	T1	All MCs	449	12.0	449	12.0	0.293	5.6	LOS A	1.9	14.8	0.54	0.54	0.54	49.2
12	R2	All MCs	55	12.0	55	12.0	0.293	11.2	LOS B	1.8	14.2	0.55	0.55	0.55	47.8
12u	U	All MCs	1	12.0	1	12.0	0.293	13.5	LOS B	1.8	14.2	0.55	0.55	0.55	51.3
Approach			657	12.0	657	12.0	0.293	6.1	LOS A	1.9	14.8	0.54	0.54	0.54	50.1
All Vehicles			1878	12.7	1878	12.7	0.413	7.2	LOS A	2.5	19.6	0.51	0.59	0.51	49.0

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.

MOVEMENT SUMMARY



Site: [6] 2025 BG PM - Bayswater / Pilkington (General)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand		Arrival		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			Flows		Flows					Queue					
			[Total HV]	[Total HV]	[Veh.]	[Dist]									
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Pilkington Road (S)															
1	L2	All MCs	7	9.0	7	9.0	0.022	7.2	LOS A	0.1	0.7	0.53	0.64	0.53	48.5
2	T1	All MCs	1	9.0	1	9.0	0.022	6.1	LOS A	0.1	0.7	0.53	0.64	0.53	48.9
3	R2	All MCs	8	9.0	8	9.0	0.022	11.5	LOS B	0.1	0.7	0.53	0.64	0.53	40.2
3u	U	All MCs	1	9.0	1	9.0	0.022	13.8	LOS B	0.1	0.7	0.53	0.64	0.53	41.2
Approach			18	9.0	18	9.0	0.022	9.6	LOS A	0.1	0.7	0.53	0.64	0.53	45.0
East: Bayswater Road (E)															
4	L2	All MCs	61	14.0	61	14.0	0.143	6.2	LOS A	0.6	5.0	0.44	0.56	0.44	42.7
5	T1	All MCs	337	14.0	337	14.0	0.287	5.7	LOS A	1.5	11.9	0.46	0.56	0.46	50.2
6	R2	All MCs	45	14.0	45	14.0	0.287	10.8	LOS B	1.5	11.9	0.46	0.56	0.46	48.5
6u	U	All MCs	1	14.0	1	14.0	0.287	13.1	LOS B	1.5	11.9	0.46	0.56	0.46	42.0
Approach			444	14.0	444	14.0	0.287	6.3	LOS A	1.5	11.9	0.45	0.56	0.45	49.3
North: Pilkington Road (N)															
7	L2	All MCs	224	13.0	224	13.0	0.254	5.9	LOS A	1.0	7.9	0.51	0.63	0.51	49.6
8	T1	All MCs	37	13.0	37	13.0	0.242	5.4	LOS A	1.0	7.6	0.49	0.69	0.49	46.9
9	R2	All MCs	205	13.0	205	13.0	0.242	10.9	LOS B	1.0	7.6	0.49	0.69	0.49	49.7
9u	U	All MCs	1	13.0	1	13.0	0.242	13.1	LOS B	1.0	7.6	0.49	0.69	0.49	49.7
Approach			467	13.0	467	13.0	0.254	8.1	LOS A	1.0	7.9	0.50	0.66	0.50	49.4
West: Bayswater Road (W)															
10	L2	All MCs	55	12.0	55	12.0	0.197	4.2	LOS A	1.2	9.5	0.21	0.38	0.21	53.9
11	T1	All MCs	438	12.0	438	12.0	0.197	4.0	LOS A	1.2	9.5	0.22	0.41	0.22	51.0
12	R2	All MCs	73	12.0	73	12.0	0.197	9.4	LOS A	1.2	9.3	0.22	0.45	0.22	49.1
12u	U	All MCs	1	12.0	1	12.0	0.197	11.7	LOS B	1.2	9.3	0.22	0.45	0.22	52.4
Approach			566	12.0	566	12.0	0.197	4.7	LOS A	1.2	9.5	0.22	0.41	0.22	51.1
All Vehicles			1496	12.9	1496	12.9	0.287	6.3	LOS A	1.5	11.9	0.38	0.54	0.38	50.0

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.

MOVEMENT SUMMARY

 **Site: [7] 2025 BG AM + DEV - Bayswater / Pilkington**
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Pilkington Road (S)															
1	L2	All MCs	58	9.0	58	9.0	0.262	8.7	LOS A	1.3	10.1	0.67	0.74	0.67	47.2
2	T1	All MCs	27	9.0	27	9.0	0.262	7.6	LOS A	1.3	10.1	0.67	0.74	0.67	47.6
3	R2	All MCs	102	9.0	102	9.0	0.262	13.0	LOS B	1.3	10.1	0.67	0.74	0.67	38.7
3u	U	All MCs	1	9.0	1	9.0	0.262	15.2	LOS B	1.3	10.1	0.67	0.74	0.67	39.7
Approach			188	9.0	188	9.0	0.262	10.9	LOS B	1.3	10.1	0.67	0.74	0.67	43.5
East: Bayswater Road (E)															
4	L2	All MCs	73	14.0	73	14.0	0.209	5.6	LOS A	1.0	7.8	0.40	0.52	0.40	43.2
5	T1	All MCs	421	14.0	421	14.0	0.421	5.5	LOS A	2.6	20.2	0.43	0.57	0.43	49.7
6	R2	All MCs	202	14.0	202	14.0	0.421	10.4	LOS B	2.6	20.2	0.44	0.58	0.44	47.7
6u	U	All MCs	13	14.0	13	14.0	0.421	12.7	LOS B	2.6	20.2	0.44	0.58	0.44	41.0
Approach			708	14.0	708	14.0	0.421	7.0	LOS A	2.6	20.2	0.43	0.57	0.43	48.6
North: Pilkington Road (N)															
7	L2	All MCs	199	13.0	199	13.0	0.217	5.9	LOS A	1.0	7.6	0.57	0.65	0.57	49.3
8	T1	All MCs	23	13.0	23	13.0	0.207	6.3	LOS A	0.9	6.9	0.58	0.74	0.58	46.5
9	R2	All MCs	137	13.0	137	13.0	0.207	11.7	LOS B	0.9	6.9	0.58	0.74	0.58	49.4
9u	U	All MCs	1	13.0	1	13.0	0.207	13.9	LOS B	0.9	6.9	0.58	0.74	0.58	49.3
Approach			360	13.0	360	13.0	0.217	8.2	LOS A	1.0	7.6	0.57	0.69	0.57	49.2
West: Bayswater Road (W)															
10	L2	All MCs	152	12.0	152	12.0	0.305	5.9	LOS A	2.0	15.7	0.56	0.54	0.56	52.4
11	T1	All MCs	461	12.0	461	12.0	0.305	5.9	LOS A	2.0	15.7	0.57	0.55	0.57	49.1
12	R2	All MCs	55	12.0	55	12.0	0.305	11.4	LOS B	1.9	14.9	0.58	0.57	0.58	47.6
12u	U	All MCs	1	12.0	1	12.0	0.305	13.7	LOS B	1.9	14.9	0.58	0.57	0.58	51.2
Approach			668	12.0	668	12.0	0.305	6.3	LOS A	2.0	15.7	0.57	0.55	0.57	49.9
All Vehicles			1925	12.6	1925	12.6	0.421	7.4	LOS A	2.6	20.2	0.53	0.60	0.53	48.8

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.

MOVEMENT SUMMARY

 **Site: [8] 2025 BG PM + DEV - Bayswater / Pilkington**
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Roundabout
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Pilkington Road (S)															
1	L2	All MCs	7	9.0	7	9.0	0.029	7.3	LOS A	0.1	0.9	0.53	0.66	0.53	48.0
2	T1	All MCs	1	9.0	1	9.0	0.029	6.1	LOS A	0.1	0.9	0.53	0.66	0.53	48.4
3	R2	All MCs	14	9.0	14	9.0	0.029	11.6	LOS B	0.1	0.9	0.53	0.66	0.53	39.8
3u	U	All MCs	1	9.0	1	9.0	0.029	13.8	LOS B	0.1	0.9	0.53	0.66	0.53	40.7
Approach			23	9.0	23	9.0	0.029	10.1	LOS B	0.1	0.9	0.53	0.66	0.53	43.6
East: Bayswater Road (E)															
4	L2	All MCs	61	14.0	61	14.0	0.143	6.2	LOS A	0.6	5.1	0.44	0.56	0.44	42.6
5	T1	All MCs	337	14.0	337	14.0	0.289	5.7	LOS A	1.5	12.0	0.46	0.56	0.46	50.1
6	R2	All MCs	45	14.0	45	14.0	0.289	10.8	LOS B	1.5	12.0	0.46	0.56	0.46	48.5
6u	U	All MCs	3	14.0	3	14.0	0.289	13.1	LOS B	1.5	12.0	0.46	0.56	0.46	41.9
Approach			446	14.0	446	14.0	0.289	6.4	LOS A	1.5	12.0	0.45	0.56	0.45	49.2
North: Pilkington Road (N)															
7	L2	All MCs	225	13.0	225	13.0	0.257	6.0	LOS A	1.0	8.0	0.52	0.63	0.52	49.6
8	T1	All MCs	37	13.0	37	13.0	0.243	5.5	LOS A	1.0	7.7	0.50	0.70	0.50	46.9
9	R2	All MCs	205	13.0	205	13.0	0.243	10.9	LOS B	1.0	7.7	0.50	0.70	0.50	49.7
9u	U	All MCs	1	13.0	1	13.0	0.243	13.2	LOS B	1.0	7.7	0.50	0.70	0.50	49.7
Approach			468	13.0	468	13.0	0.257	8.1	LOS A	1.0	8.0	0.51	0.66	0.51	49.4
West: Bayswater Road (W)															
10	L2	All MCs	55	12.0	55	12.0	0.200	4.3	LOS A	1.2	9.5	0.22	0.38	0.22	53.8
11	T1	All MCs	441	12.0	441	12.0	0.200	4.0	LOS A	1.2	9.5	0.23	0.41	0.23	50.9
12	R2	All MCs	73	12.0	73	12.0	0.200	9.5	LOS A	1.2	9.3	0.24	0.45	0.24	49.1
12u	U	All MCs	1	12.0	1	12.0	0.200	11.7	LOS B	1.2	9.3	0.24	0.45	0.24	52.4
Approach			569	12.0	569	12.0	0.200	4.8	LOS A	1.2	9.5	0.23	0.41	0.23	51.1
All Vehicles			1507	12.9	1507	12.9	0.289	6.4	LOS A	1.5	12.0	0.39	0.54	0.39	49.9

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.

SITE LAYOUT

 Site: [9] 2025 BG AM - Dalrymple / Bayswater (General)

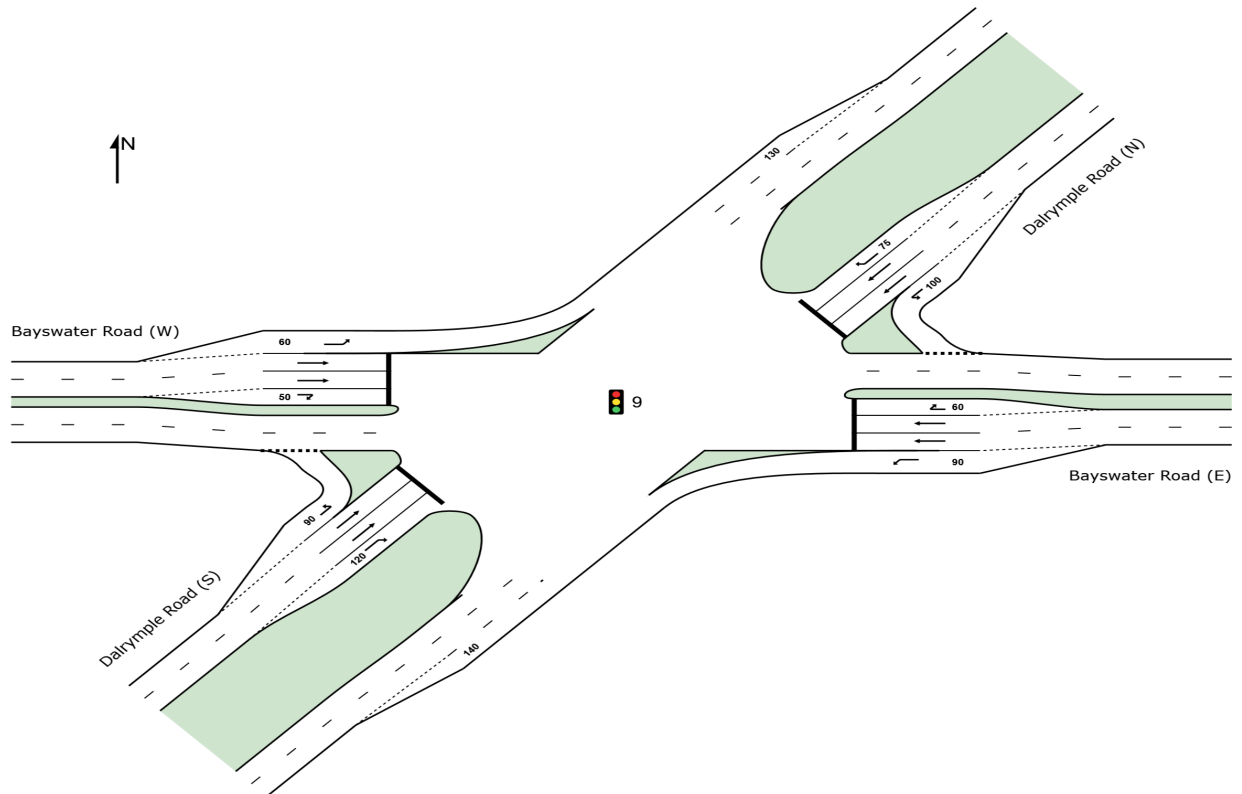
New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: | Licence: NETWORK / 1PC | Created: Monday, 16 June 2025 4:17:52 PM

Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153

Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

 **Site: [9] 2025 BG AM - Dalrymple / Bayswater (General)**
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131.0 seconds (Site User-Given Phase Times)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
East: Bayswater Road (E)															
4a	L1	All MCs	489	5.0	489	5.0	0.249	5.3	LOS A	0.0	0.0	0.00	0.45	0.00	52.1
5	T1	All MCs	536	12.0	536	12.0	0.603	49.5	LOS D	15.3	118.3	0.94	0.80	0.94	17.7
6b	R3	All MCs	21	12.0	21	12.0	0.305	81.5	LOS F	1.4	10.9	1.00	0.71	1.00	20.4
Approach			1046	8.7	1046	8.7	0.603	29.5	LOS C	15.3	118.3	0.50	0.63	0.50	29.9
NorthEast: Dalrymple Road (N)															
24b	L3	All MCs	91	6.0	91	6.0	0.136	12.8	LOS B	1.4	10.6	0.61	1.23	0.61	16.7
25	T1	All MCs	666	6.0	666	6.0	* 0.839	62.0	LOS E	22.6	166.3	1.00	0.97	1.14	30.4
26a	R1	All MCs	160	6.0	160	6.0	* 0.879	82.1	LOS F	11.4	84.1	1.00	1.00	1.31	21.0
Approach			917	6.0	917	6.0	0.879	60.6	LOS E	22.6	166.3	0.96	1.00	1.12	26.6
West: Bayswater Road (W)															
10a	L1	All MCs	103	10.0	103	10.0	0.054	24.4	LOS C	0.0	0.0	0.00	0.45	0.00	52.2
11	T1	All MCs	718	11.0	718	11.0	* 0.827	75.5	LOS E	24.1	184.8	1.00	0.96	1.11	15.7
12b	R3	All MCs	46	11.0	46	11.0	* 0.667	101.1	LOS F	3.2	24.7	1.00	0.81	1.15	20.3
Approach			867	10.9	867	10.9	0.827	70.8	LOS E	24.1	184.8	0.88	0.89	0.98	15.0
SouthWest: Dalrymple Road (S)															
30b	L3	All MCs	1	0.0	1	0.0	0.001	23.5	LOS C	0.0	0.1	0.27	1.16	0.27	27.5
31	T1	All MCs	1301	5.0	1301	5.0	0.831	48.4	LOS D	39.5	288.3	0.96	0.90	1.00	36.8
32a	R1	All MCs	433	5.0	433	5.0	* 0.877	43.5	LOS D	18.6	135.4	1.00	1.09	1.16	21.1
Approach			1735	5.0	1735	5.0	0.877	47.2	LOS D	39.5	288.3	0.97	0.95	1.04	29.9
All Vehicles			4565	7.2	4565	7.2	0.879	50.3	LOS D	39.5	288.3	0.84	0.88	0.92	26.4

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

* Critical Movement (Signal Timing)

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:13 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

 **Site: [10] 2025 BG PM - Dalrymple / Bayswater (General)**
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 104.0 seconds (Site User-Given Phase Times)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				km/h
East: Bayswater Road (E)															
4a	L1	All MCs	552	5.0	552	5.0	0.281	6.5	LOS A	0.0	0.0	0.00	0.45	0.00	52.1
5	T1	All MCs	349	12.0	349	12.0	* 0.829	55.7	LOS E	9.7	74.8	1.00	0.97	1.26	15.8
6b	R3	All MCs	21	12.0	21	12.0	0.121	53.0	LOS D	1.0	7.7	0.93	0.71	0.93	25.6
Approach			922	7.8	922	7.8	0.829	26.2	LOS C	9.7	74.8	0.40	0.65	0.50	33.2
NorthEast: Dalrymple Road (N)															
24b	L3	All MCs	147	6.0	147	6.0	0.157	11.7	LOS B	1.7	12.2	0.47	1.31	0.47	21.1
25	T1	All MCs	1046	6.0	1046	6.0	* 0.850	45.9	LOS D	27.7	204.2	1.00	0.98	1.13	35.8
26a	R1	All MCs	94	6.0	94	6.0	0.408	58.5	LOS E	4.5	33.4	0.97	0.77	0.97	27.0
Approach			1287	6.0	1287	6.0	0.850	42.9	LOS D	27.7	204.2	0.93	1.01	1.04	32.0
West: Bayswater Road (W)															
10a	L1	All MCs	136	10.0	136	10.0	0.072	7.2	LOS A	0.0	0.0	0.00	0.45	0.00	52.2
11	T1	All MCs	568	11.0	568	11.0	* 0.843	54.9	LOS D	16.4	125.4	1.00	1.00	1.21	16.7
12b	R3	All MCs	175	11.0	175	11.0	0.599	54.2	LOS D	8.4	64.0	0.96	0.82	0.96	26.9
Approach			879	10.8	879	10.8	0.843	47.4	LOS D	16.4	125.4	0.84	0.88	0.98	21.9
SouthWest: Dalrymple Road (S)															
30b	L3	All MCs	1	0.0	1	0.0	0.001	7.2	LOS A	0.0	0.0	0.14	1.00	0.14	31.6
31	T1	All MCs	561	5.0	561	5.0	0.437	28.9	LOS C	11.1	80.9	0.83	0.70	0.83	40.8
32a	R1	All MCs	203	5.0	203	5.0	* 0.880	62.4	LOS E	11.7	85.8	1.00	1.03	1.34	23.6
Approach			765	5.0	765	5.0	0.880	37.8	LOS D	11.7	85.8	0.87	0.79	0.96	35.7
All Vehicles			3854	7.3	3854	7.3	0.880	38.9	LOS D	27.7	204.2	0.77	0.85	0.88	31.0

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

* Critical Movement (Signal Timing)

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:14 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

 **Site: [11] 2025 BG PM + DEV - Dalrymple / Bayswater (General)**
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105.0 seconds (Site User-Given Phase Times)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]					
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Bayswater Road (E)															
4a	L1	All MCs	552	5.0	552	5.0	0.281	6.5	LOS A	0.0	0.0	0.00	0.45	0.00	52.1
5	T1	All MCs	353	12.0	353	12.0	* 0.844	57.2	LOS E	10.0	77.1	1.00	0.98	1.28	15.5
6b	R3	All MCs	21	12.0	21	12.0	0.122	53.6	LOS D	1.0	7.8	0.93	0.71	0.93	25.4
Approach			925	7.8	925	7.8	0.844	26.9	LOS C	10.0	77.1	0.40	0.66	0.51	32.8
NorthEast: Dalrymple Road (N)															
24b	L3	All MCs	147	6.0	147	6.0	0.159	12.2	LOS B	1.7	12.8	0.48	1.31	0.48	21.0
25	T1	All MCs	1046	6.0	1046	6.0	* 0.863	48.5	LOS D	28.6	210.2	1.00	1.01	1.15	35.1
26a	R1	All MCs	94	6.0	94	6.0	0.412	59.7	LOS E	4.6	33.8	0.97	0.77	0.97	26.9
Approach			1287	6.0	1287	6.0	0.863	45.1	LOS D	28.6	210.2	0.94	1.02	1.06	31.3
West: Bayswater Road (W)															
10a	L1	All MCs	136	10.0	136	10.0	0.072	8.6	LOS A	0.0	0.0	0.00	0.45	0.00	52.2
11	T1	All MCs	581	11.0	581	11.0	* 0.837	55.2	LOS E	16.9	129.4	1.00	0.99	1.20	16.9
12b	R3	All MCs	195	11.0	195	11.0	0.642	55.1	LOS E	9.5	72.7	0.97	0.83	0.99	26.8
Approach			912	10.9	912	10.9	0.837	48.3	LOS D	16.9	129.4	0.84	0.87	0.97	21.7
SouthWest: Dalrymple Road (S)															
30b	L3	All MCs	1	0.0	1	0.0	0.001	7.2	LOS A	0.0	0.0	0.14	1.00	0.14	31.6
31	T1	All MCs	561	5.0	561	5.0	0.441	29.5	LOS C	11.2	82.0	0.83	0.71	0.83	40.5
32a	R1	All MCs	203	5.0	203	5.0	* 0.888	63.9	LOS E	12.0	87.3	1.00	1.04	1.36	23.2
Approach			765	5.0	765	5.0	0.888	38.6	LOS D	12.0	87.3	0.88	0.80	0.97	35.4
All Vehicles			3889	7.4	3889	7.4	0.888	40.2	LOS D	28.6	210.2	0.78	0.86	0.89	30.4

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

* Critical Movement (Signal Timing)

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:14 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

 **Site: [12] 2025 BG AM + DEV - Dalrymple / Bayswater**
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 133.0 seconds (Site User-Given Phase Times)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
East: Bayswater Road (E)															
4a	L1	All MCs	489	5.0	489	5.0	0.249	5.4	LOS A	0.0	0.0	0.00	0.45	0.00	52.1
5	T1	All MCs	548	12.0	548	12.0	0.608	50.7	LOS D	15.9	122.8	0.94	0.80	0.94	17.6
6b	R3	All MCs	21	12.0	21	12.0	0.310	84.2	LOS F	1.4	11.1	1.00	0.71	1.00	20.2
Approach			1059	8.8	1059	8.8	0.608	30.4	LOS C	15.9	122.8	0.51	0.64	0.51	29.4
NorthEast: Dalrymple Road (N)															
24b	L3	All MCs	91	6.0	91	6.0	0.135	13.0	LOS B	1.5	10.9	0.61	1.23	0.61	16.6
25	T1	All MCs	698	6.0	698	6.0	* 0.869	66.8	LOS E	25.0	184.0	1.00	1.01	1.18	29.5
26a	R1	All MCs	160	6.0	160	6.0	* 0.892	87.2	LOS F	11.7	86.3	1.00	1.02	1.34	20.5
Approach			948	6.0	948	6.0	0.892	65.1	LOS E	25.0	184.0	0.96	1.03	1.15	25.8
West: Bayswater Road (W)															
10a	L1	All MCs	103	10.0	103	10.0	0.054	25.1	LOS C	0.0	0.0	0.00	0.45	0.00	52.2
11	T1	All MCs	721	11.0	721	11.0	* 0.821	76.0	LOS E	24.5	187.5	1.00	0.95	1.10	15.7
12b	R3	All MCs	52	11.0	52	11.0	* 0.754	104.3	LOS F	3.7	28.4	1.00	0.86	1.25	19.9
Approach			876	10.9	876	10.9	0.821	71.7	LOS E	24.5	187.5	0.88	0.88	0.98	14.9
SouthWest: Dalrymple Road (S)															
30b	L3	All MCs	1	0.0	1	0.0	0.001	24.1	LOS C	0.0	0.1	0.27	1.17	0.27	27.4
31	T1	All MCs	1301	5.0	1301	5.0	0.830	49.1	LOS D	40.0	292.1	0.96	0.89	0.99	36.7
32a	R1	All MCs	433	5.0	433	5.0	* 0.890	46.3	LOS D	19.3	141.0	1.00	1.11	1.18	20.7
Approach			1735	5.0	1735	5.0	0.890	48.4	LOS D	40.0	292.1	0.97	0.95	1.04	29.6
All Vehicles			4618	7.2	4618	7.2	0.892	52.1	LOS D	40.0	292.1	0.85	0.88	0.93	25.9

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

* Critical Movement (Signal Timing)

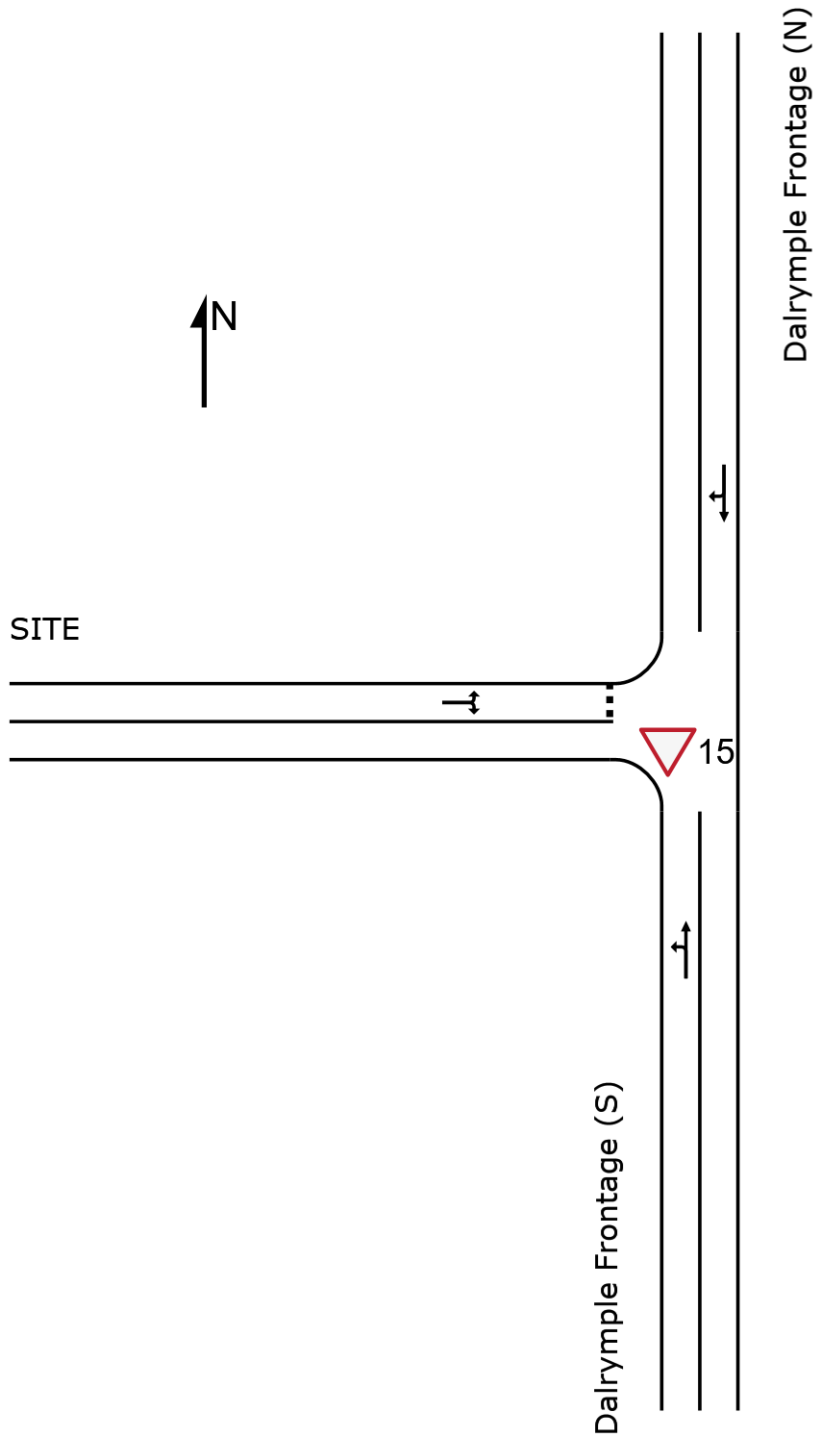
SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:14 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

SITE LAYOUT

▽ Site: [15] 2025 BG AM - Dalrymple Frontage / Site (General)

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: [15] 2025 BG AM - Dalrymple Frontage / Site (General)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Dalrymple Frontage (S)															
1	L2	All MCs	15	0.0	15	0.0	0.010	3.9	LOS A	0.0	0.0	0.00	0.44	0.00	51.3
2	T1	All MCs	4	12.0	4	12.0	0.010	0.0	LOS A	0.0	0.0	0.00	0.44	0.00	54.9
Approach			19	2.7	19	2.7	0.010	3.0	NA	0.0	0.0	0.00	0.44	0.00	52.0
North: Dalrymple Frontage (N)															
8	T1	All MCs	8	12.0	8	12.0	0.008	0.0	LOS A	0.0	0.2	0.05	0.23	0.05	55.9
9	R2	All MCs	5	0.0	5	0.0	0.008	5.5	LOS A	0.0	0.2	0.05	0.23	0.05	55.0
Approach			14	7.4	14	7.4	0.008	2.1	NA	0.0	0.2	0.05	0.23	0.05	55.4
West: SITE															
10	L2	All MCs	11	0.0	11	0.0	0.014	5.5	LOS A	0.0	0.3	0.04	0.57	0.04	52.8
12	R2	All MCs	9	0.0	9	0.0	0.014	5.5	LOS A	0.0	0.3	0.04	0.57	0.04	48.1
Approach			20	0.0	20	0.0	0.014	5.5	LOS A	0.0	0.3	0.04	0.57	0.04	51.2
All Vehicles			53	2.9	53	2.9	0.014	3.7	NA	0.0	0.3	0.03	0.43	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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:17 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

Site: [16] 2025 BG PM - Dalrymple Frontage / Site (General)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Dalrymple Frontage (S)															
1	L2	All MCs	15	0.0	15	0.0	0.009	3.9	LOS A	0.0	0.0	0.00	0.52	0.00	50.6
2	T1	All MCs	1	12.0	1	12.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.52	0.00	54.1
Approach			16	0.8	16	0.8	0.009	3.7	NA	0.0	0.0	0.00	0.52	0.00	50.8
North: Dalrymple Frontage (N)															
8	T1	All MCs	63	12.0	63	12.0	0.038	0.0	LOS A	0.0	0.2	0.01	0.05	0.01	59.1
9	R2	All MCs	5	0.0	5	0.0	0.038	5.5	LOS A	0.0	0.2	0.01	0.05	0.01	56.7
Approach			68	11.1	68	11.1	0.038	0.4	NA	0.0	0.2	0.01	0.05	0.01	58.8
West: SITE															
10	L2	All MCs	11	0.0	11	0.0	0.014	5.5	LOS A	0.1	0.4	0.02	0.58	0.02	52.9
12	R2	All MCs	9	0.0	9	0.0	0.014	5.5	LOS A	0.1	0.4	0.02	0.58	0.02	48.2
Approach			20	0.0	20	0.0	0.014	5.5	LOS A	0.1	0.4	0.02	0.58	0.02	51.2
All Vehicles			104	7.4	104	7.4	0.038	1.9	NA	0.1	0.4	0.01	0.22	0.01	55.6

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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [17] 2025 BG AM + DEV - Dalrymple Frontage / Site
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]		Rate to Depart	km/h
			veh/h	%	veh/h	%	v/c	sec		veh	m			
South: Dalrymple Frontage (S)														
1	L2	All MCs	63	0.0	63	0.0	0.036	3.9	LOS A	0.0	0.0	0.00	0.52	50.5
2	T1	All MCs	4	12.0	4	12.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.52	54.1
Approach			67	0.7	67	0.7	0.036	3.7	NA	0.0	0.0	0.00	0.52	50.7
North: Dalrymple Frontage (N)														
8	T1	All MCs	8	12.0	8	12.0	0.018	0.2	LOS A	0.1	0.6	0.16	0.42	52.6
9	R2	All MCs	23	0.0	23	0.0	0.018	5.6	LOS A	0.1	0.6	0.16	0.42	53.2
Approach			32	3.2	32	3.2	0.018	4.2	NA	0.1	0.6	0.16	0.42	53.1
West: SITE														
10	L2	All MCs	19	0.0	19	0.0	0.027	5.5	LOS A	0.1	0.7	0.04	0.57	52.8
12	R2	All MCs	19	0.0	19	0.0	0.027	5.5	LOS A	0.1	0.7	0.04	0.57	48.1
Approach			38	0.0	38	0.0	0.027	5.5	LOS A	0.1	0.7	0.04	0.57	51.0
All Vehicles			137	1.1	137	1.1	0.036	4.3	NA	0.1	0.7	0.05	0.51	51.5

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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

▽ Site: [18] 2025 BG PM + DEV - Dalrymple Frontage / Site
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]	[Total HV]						[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Dalrymple Frontage (S)															
1	L2	All MCs	27	0.0	27	0.0	0.015	3.9	LOS A	0.0	0.0	0.00	0.53	0.00	50.4
2	T1	All MCs	1	12.0	1	12.0	0.015	0.0	LOS A	0.0	0.0	0.00	0.53	0.00	54.0
Approach			28	0.4	28	0.4	0.015	3.8	NA	0.0	0.0	0.00	0.53	0.00	50.6
North: Dalrymple Frontage (N)															
8	T1	All MCs	63	12.0	63	12.0	0.041	0.0	LOS A	0.1	0.5	0.03	0.09	0.03	58.3
9	R2	All MCs	11	0.0	11	0.0	0.041	5.5	LOS A	0.1	0.5	0.03	0.09	0.03	56.3
Approach			74	10.3	74	10.3	0.041	0.8	NA	0.1	0.5	0.03	0.09	0.03	57.8
West: SITE															
10	L2	All MCs	43	0.0	43	0.0	0.063	5.5	LOS A	0.2	1.6	0.02	0.58	0.02	52.9
12	R2	All MCs	43	0.0	43	0.0	0.063	5.5	LOS A	0.2	1.6	0.02	0.58	0.02	48.2
Approach			86	0.0	86	0.0	0.063	5.5	LOS A	0.2	1.6	0.02	0.58	0.02	51.1
All Vehicles			188	4.1	188	4.1	0.063	3.4	NA	0.2	1.6	0.02	0.38	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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY



Site: [19] 2035 BG AM - Dalrymple Frontage / Site (General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles Rate to Depart	Number of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Dalrymple Frontage (S)															
1	L2	All MCs	15	0.0	15	0.0	0.011	3.9	LOS A	0.0	0.0	0.00	0.42	0.00	51.5
2	T1	All MCs	5	12.0	5	12.0	0.011	0.0	LOS A	0.0	0.0	0.00	0.42	0.00	55.1
Approach			20	3.2	20	3.2	0.011	2.9	NA	0.0	0.0	0.00	0.42	0.00	52.4
North: Dalrymple Frontage (N)															
8	T1	All MCs	11	12.0	11	12.0	0.009	0.0	LOS A	0.0	0.2	0.05	0.20	0.05	56.3
9	R2	All MCs	5	0.0	5	0.0	0.009	5.5	LOS A	0.0	0.2	0.05	0.20	0.05	55.3
Approach			16	8.0	16	8.0	0.009	1.8	NA	0.0	0.2	0.05	0.20	0.05	55.8
West: SITE															
10	L2	All MCs	11	0.0	11	0.0	0.014	5.5	LOS A	0.0	0.3	0.04	0.57	0.04	52.8
12	R2	All MCs	9	0.0	9	0.0	0.014	5.5	LOS A	0.0	0.3	0.04	0.57	0.04	48.1
Approach			20	0.0	20	0.0	0.014	5.5	LOS A	0.0	0.3	0.04	0.57	0.04	51.1
All Vehicles			56	3.4	56	3.4	0.014	3.5	NA	0.0	0.3	0.03	0.41	0.03	52.8

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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [20] 2035 BG PM - Dalrymple Frontage / Site (General)
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Rate	Number of Cycles to Depart	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Dalrymple Frontage (S)															
1	L2	All MCs	15	0.0	15	0.0	0.009	3.9	LOS A	0.0	0.0	0.00	0.52	0.00	50.6
2	T1	All MCs	1	12.0	1	12.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.52	0.00	54.1
Approach			16	0.8	16	0.8	0.009	3.7	NA	0.0	0.0	0.00	0.52	0.00	50.8
North: Dalrymple Frontage (N)															
8	T1	All MCs	77	12.0	77	12.0	0.045	0.0	LOS A	0.0	0.2	0.01	0.04	0.01	59.2
9	R2	All MCs	5	0.0	5	0.0	0.045	5.5	LOS A	0.0	0.2	0.01	0.04	0.01	56.8
Approach			82	11.2	82	11.2	0.045	0.3	NA	0.0	0.2	0.01	0.04	0.01	59.0
West: SITE															
10	L2	All MCs	11	0.0	11	0.0	0.014	5.5	LOS A	0.1	0.4	0.02	0.58	0.02	52.9
12	R2	All MCs	9	0.0	9	0.0	0.014	5.5	LOS A	0.1	0.4	0.02	0.58	0.02	48.2
Approach			20	0.0	20	0.0	0.014	5.5	LOS A	0.1	0.4	0.02	0.58	0.02	51.2
All Vehicles			118	7.9	118	7.9	0.045	1.7	NA	0.1	0.4	0.01	0.19	0.01	56.0

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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: | Licence: NETWORK / 1PC | Processed: Monday, 16 June 2025 4:16:19 PM
Project: C:\Users\Casey\Modus Engineering\Projects 2022 - 2023 - Documents\General\Projects 2022-2023\ACT\JOBS\Bespoke PD\153 Dalrymple Road, Garbutt\3 ANALYSIS\SIDRA\153 Dalrymple Road, Garbutt.sipx

MOVEMENT SUMMARY

Site: [21] 2035 BG AM + DEV - Dalrymple Frontage / Site
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]		Rate to Depart	km/h
			veh/h	%	veh/h	%	v/c	sec		veh	m			
South: Dalrymple Frontage (S)														
1	L2	All MCs	63	0.0	63	0.0	0.037	3.9	LOS A	0.0	0.0	0.00	0.51	50.6
2	T1	All MCs	5	12.0	5	12.0	0.037	0.0	LOS A	0.0	0.0	0.00	0.51	54.2
Approach			68	0.9	68	0.9	0.037	3.6	NA	0.0	0.0	0.00	0.51	50.9
North: Dalrymple Frontage (N)														
8	T1	All MCs	11	12.0	11	12.0	0.019	0.2	LOS A	0.1	0.6	0.16	0.40	52.9
9	R2	All MCs	23	0.0	23	0.0	0.019	5.6	LOS A	0.1	0.6	0.16	0.40	53.4
Approach			34	3.8	34	3.8	0.019	3.9	NA	0.1	0.6	0.16	0.40	53.3
West: SITE														
10	L2	All MCs	19	0.0	19	0.0	0.027	5.5	LOS A	0.1	0.7	0.05	0.57	52.8
12	R2	All MCs	19	0.0	19	0.0	0.027	5.5	LOS A	0.1	0.7	0.05	0.57	48.1
Approach			38	0.0	38	0.0	0.027	5.5	LOS A	0.1	0.7	0.05	0.57	51.0
All Vehicles			140	1.4	140	1.4	0.037	4.2	NA	0.1	0.7	0.05	0.50	51.6

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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [22] 2035 BG PM + DEV - Dalrymple Frontage / Site
(General)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop of Cycles	Number of Depart	Aver. Speed
			[Total HV]		[Total HV]					[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Dalrymple Frontage (S)															
1	L2	All MCs	27	0.0	27	0.0	0.015	3.9	LOS A	0.0	0.0	0.00	0.53	0.00	50.4
2	T1	All MCs	112.0		112.0		0.015	0.0	LOS A	0.0	0.0	0.00	0.53	0.00	54.0
Approach			28	0.4	28	0.4	0.015	3.8	NA	0.0	0.0	0.00	0.53	0.00	50.6
North: Dalrymple Frontage (N)															
8	T1	All MCs	77	12.0	77	12.0	0.048	0.0	LOS A	0.1	0.5	0.03	0.07	0.03	58.5
9	R2	All MCs	11	0.0	11	0.0	0.048	5.5	LOS A	0.1	0.5	0.03	0.07	0.03	56.4
Approach			87	10.6	87	10.6	0.048	0.7	NA	0.1	0.5	0.03	0.07	0.03	58.1
West: SITE															
10	L2	All MCs	43	0.0	43	0.0	0.063	5.5	LOS A	0.2	1.6	0.02	0.58	0.02	52.9
12	R2	All MCs	43	0.0	43	0.0	0.063	5.5	LOS A	0.2	1.6	0.02	0.58	0.02	48.2
Approach			86	0.0	86	0.0	0.063	5.5	LOS A	0.2	1.6	0.02	0.58	0.02	51.1
All Vehicles			202	4.6	202	4.6	0.063	3.2	NA	0.2	1.6	0.02	0.35	0.02	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 (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.