NAVIANTO GROUP

TRANSPORT PLANNING & TRAFFIC ENGINEERING

Jindabyne Education Campus – MOD 3 – SSD 15788005

Transport Impact Assessment

163 Barry Way, Jindabyne

31 October 2024

Version TIA_Rep02F02

Revision #	Issue Date	Reason for Issue	Prepared By	Approved By
TIA_REP01D01	17/09/2024	Draft Issue	T. Chen & D. Choi	D. Choi
TIA_REP02D01	08/10/2024	Revised Draft Issue	T. Chen & D. Choi	D. Choi
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October 2024

Our Reference: 1018_Tia_Rep02f02 Jindabyne Ec Mod3

1 Executive Summary

The following Transport Assessment assesses the proposed modifications, as they relate to parking, traffic and active transport provisions associated with SSD-15788005-Mod-3.

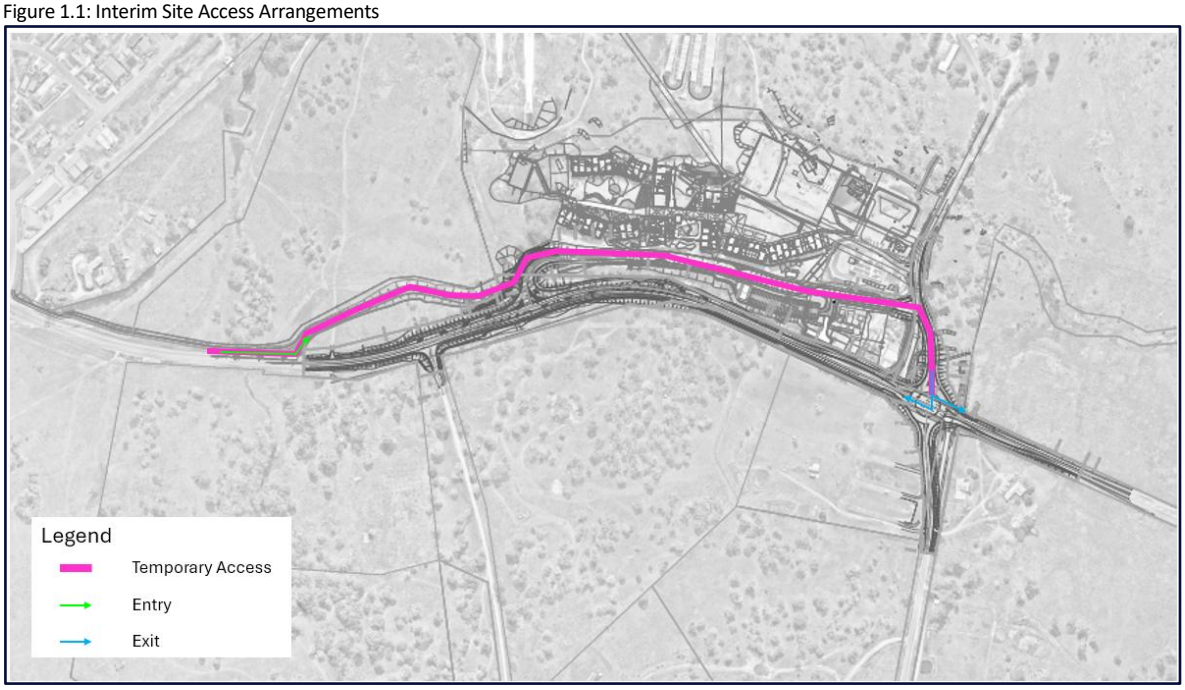
In April 2024, the NSW Government provided a community update with respect to the Snowy Mountains SAP, committing to priority projects to support the needs of the community and tourists to Jindabyne and the Snowy Mountains region, as well as aligning with government priorities and funding available. Significant to this project, the active transport infrastructure that was highlighted within the Snowy Mountains SAP and outlined within the Aurecon TA (and replicated within this TA in Table 3.1) have not been included within the priority projects to be delivered by the NSW Government, Regional Growth NSW Development Corporation (RGDC) and the Snowy Monaro Regional Council within the next four years.

As such, until the active transport infrastructure identified within the SAP is delivered by the NSW Government, Regional Growth NSW Development Corporation (RGDC) and the Snowy Monaro Regional Council, the uptake of active transport alternatives to access the education campus is expected to be low.

Thus, the following TA adopts Travel Mode Scenario 1 of the Aurecon Travel Mode Scenarios (refer to Table 6.3), whereby 70% of students are expected to travel to the education campus by private vehicle and the remaining 30% are expected to travel to the education campus by bus.

To facilitate access to the school while the permanent road infrastructure is being completed, due to the need to relocate the water mains and other underground services within the Barry Way carriageway before road widening and intersection works along Barry Way, an interim site access arrangement is proposed, as shown below in Figure 1.1.

Figure 1.1: Interim Site Access Arrangements



The SIDRA analysis indicates that the interim intersection treatments, being a temporary northern slip road and temporary southern roundabout for the education campus will operate in good conditions with acceptable delays in the Year 1, 2025 interim scenario.

The changes in the ultimate intersection configuration at the northern Barry Way / Education Road from a roundabout to a priority-controlled intersection, allowing for right-turn only bus movements from the south approach along Barry Way and left-out only, will continue to operate in good conditions with acceptable delays in both the Year 1, 2025 ultimate scenario and in the 2041 future year with background growth traffic along Barry Way.

The ultimate southern roundabout intersection of Barry Way / Sport & Recreation access road / Tinworth Drive will continue to operate in good conditions with acceptable delays in both the 2025 ultimate scenario and the 2041 future year with background growth applied to traffic along Barry Way.

The SSD-15788005-Mod 3 plans provide a total of 6 bus parking bays on the eastern side of education road. This provision is two (2) more than that approved under SSD-15788005 and resolves concerns raised by Cooma Coaches. The additional bus parking bays is to support an increase in the number of school bus services from 8 services identified in the original transport assessment to 13 school bus services developed in consultation with the local bus operator Cooma Coaches.

The addition of the two bus parking bays results in the loss of three drop off-pick up (DOPU) parking spaces, for a total of 51 DOPU parking spaces. The effective capacity of the 51 DOPU spaces over a 30-minute period, based on 2 minutes per vehicle, is 765 vehicles, which is more than the traffic level expected in Travel Mode Scenario 1. Thus, there is no material change to the operation of the DOPU parking spaces.

The staff car parking demands and staff parking provisions for Modification 3 remain consistent with that approved under SSD-15788005.

2 Introduction

2.1 Purpose of this report

Hansen Yuncken, on behalf of the NSW Department of Education, has commissioned Navianto Group to prepare an updated Transport Impact Assessment (TIA) for submission to the Department of Planning, Housing and Infrastructure (DPHI) regarding Modification 3 to State Significant Development 15788005 (the SSD) for the Jindabyne Education Campus at 207 Barry Way, Jindabyne (the site) (now known as 163 Barry Way, Jindabyne).

This TIA assesses the traffic and parking changes associated with SSD-15788005-Mod-3. The submitted documentation for the DPHI assessment provides full details of SSD-15788005-Mod-3.

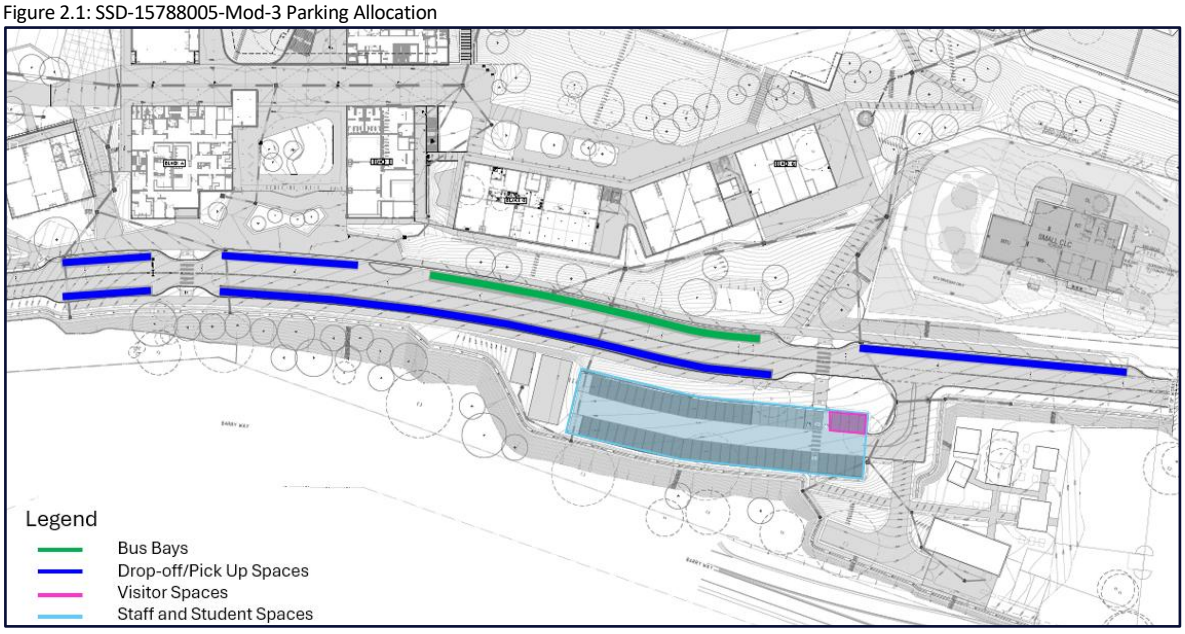
2.2 Transport Assessment Mod 3 Scope

SSD-15788005-Mod-3 proposes the following changes impacting the traffic and transport elements of the proposal:

- Minor relocation of the car parking spaces and bus bay infrastructure along the education road within the site boundary.
- A total of 111 on-site car parking spaces (overall reduction of 3 spaces when compared to Modification 1), allocated as follows:
  - 51 x Drop-off/pick-up spaces (DOPU) (reduction of 3 spaces when compared to Modification 1)
  - 4 x visitor parking spaces
  - 6 x Student (Year 12) parking spaces
  - 50 x Staff Spaces (inclusive of two accessible car parking spaces)
- 6 Bus Bays (overall increase of 2 bus bays when compared to Modification 1)

The SSD-15788005-Mod-3 parking allocation is shown below in Figure 2.1.

Figure 2.1: SSD-15788005-Mod-3 Parking Allocation



Source: Pedavoli Architects

Modification 3 does not provide for any changes to the number of students or staff to be accommodated at the education campus.

Consistent with the approved SSD and Mod-1, works external to the site (being the intersection treatments along Barry Way and the active transport paths) do not form part of this Modification 3 application.

Interim Site Access

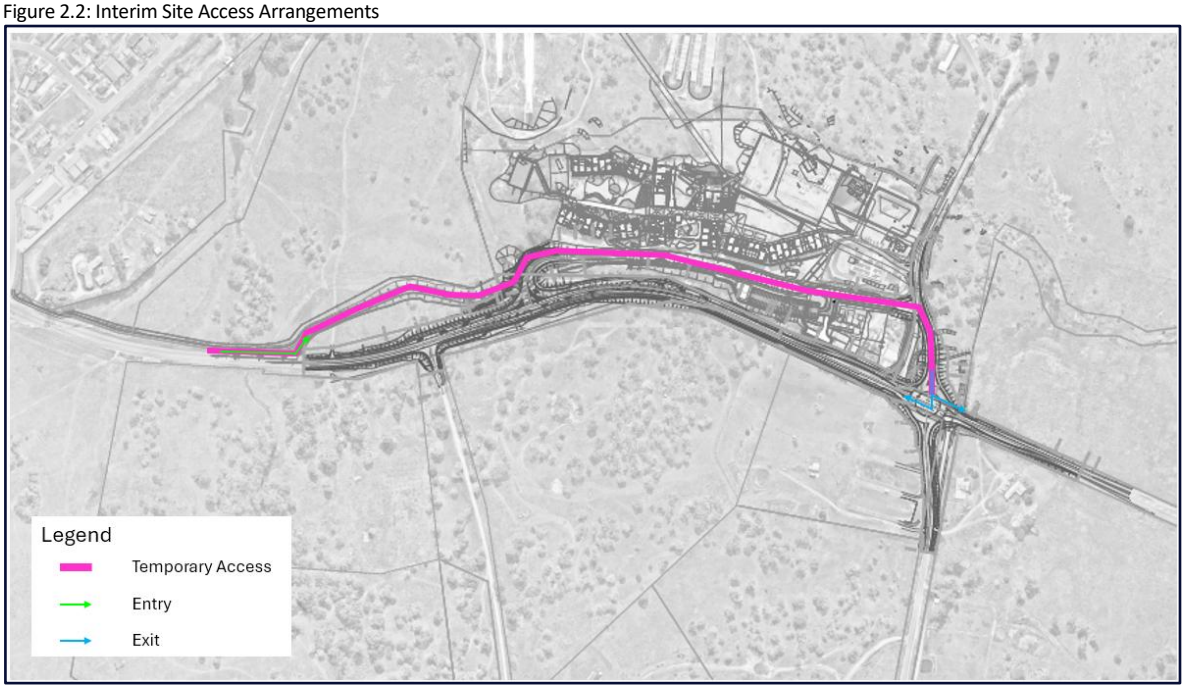
Due to the need to relocate the water mains and other underground services within the Barry Way carriageway before road widening and intersection works along Barry Way, the road works will not be complete when school operations commence on-site in Term 1, 2025.

To facilitate access to the school while the permanent road infrastructure is being completed, an interim site access arrangement is proposed, as shown below in Figure 2.2, and is subject to a separate S138 and REF application.

The interim access incorporates a 2.5-metre-wide temporary shared pathway along the interim road alignment, with a 1-metre-wide buffer with delineators provided to separate vehicular traffic from pedestrians and bicycles. This pathway connects Jillamatong Street to the permanent pathway along Education Road.

The interim access arrangements also include a temporary southern roundabout at the Barry Way/ Sport and Recreation access road/ Tinworth Drive intersection.

Figure 2.2: Interim Site Access Arrangements



This report provides high level details of the interim arrangement proposed.

2.3 School Operational Characteristics

The Education Precinct is anticipated to accommodate a maximum of 925 students, consisting of 515 primary school students and 410 high school students.

The primary and high schools have a combined total enrolment of 611 students as at Term 3, 2024.

Year 1 operations estimated the maximum combined enrolment to be 650 students in 2025. Based on data provided by the NSW Department of Education, the enrolment is expected to be approximately 50% primary school and 50% high school. This percentage split is expected to change in future years.

The intended bell times for operations when the school commences operations in 2025 are:

- Primary School: 9:10 am - 3:10 pm
- High School: 9:05 am – 3:15 pm

NOTE: Bell times may be subject to change in the future due to school operational requirements or school bus scheduling requirements.

2.4 References

The following documents were reviewed and considered in the preparation of this Transport Assessment:

Mod 3

- Reports prepared on behalf of Hansen Yuncken for Modification 3
- Architectural Plans prepared by Pedavoli Architects (04 September 2024)
- Jindabyne Education Campus - Operational School Travel Plan (Draft), prepared by Ason Group (Draft OSTP)

SSD 15788005

- Traffic Assessment (Reference 520703, Revision 1, 3 December 2021), prepared by Aurecon
- Transport Assessment (Reference 511976, Revision 4, 3 December 2021) prepared by Aurecon
- Preliminary School Transport Plan (Reference 511976, Revision 1, 2 August 2021) prepared by Aurecon
- Response to Submissions – SSD 15788005, Reference STH08/00725/04 prepared by Transport for NSW
- SSD-15788005 Development Consent, 10 August 2022
- Department of Planning and Environment Stamped Architectural Plans prepared by Djrd Architects (granted on 10 August 2022)

SSD 15788005-MOD-1

- Transport Assessment (Reference P0338r2v2, 31 October 2022), prepared by Arc Traffic + Transport
- SSD-15788005-Mod-1 Development Consent, 09 May 2023
- Architectural Plans prepared by Pedavoli Architects (16 November 2022)

SSD 15788005-MOD-2

- Architectural Plans prepared by Pedavoli Architects

Review of Environmental Factors 1 (REF 1)

- Barry Way Civil Engineering Works Drawings – Review of Environmental Factors (15 April 2024) prepared by Northrop

Review of Environmental Factors 2 (REF 2)

- Barry Way Civil Engineering Works Drawings – Review of Environmental Factors prepared by Northrop

Section 138 Submissions

- RA-2024-2804, approved in April 2024 – Norther T-Intersection early works on Barry Way
- RA-2024 -2259, approved September 2024 – Northern T-intersection whole package of works on Barry Way

- RA-2024-4254, approved August 2024 – Southern roundabout early works on Barry Way
- RA-2024-3045, approved October 2024 – Southern roundabout road upgrade works from single carriageway to a roundabout at the Barry Way / Jindabyne Sport & Recreation Centre intersection

Snowy Monaro Regional Council

- Jindabyne Development Control Plan 2024, adopted version 16 August 2024
- Snowy Monaro Regional Council Development Design Specification D1 Geometric Road Design

NSW Government

- Snowy Mountains Special Activation Precinct Community Updated April 2024

Australian Standards

- AS 2890.1:2004 Parking Facilities: Off-street Parking Facilities (Referred to as "AS2890.1:2004" in this report)
- AS 2890.2:2018 Parking Facilities: Off-street Commercial Parking Facilities (Referred to as "AS2890.2:2018" in this report)
- AS 2890.3:2015 Parking Facilities: Bicycle Parking Facilities (Referred to as "AS2890.3:2015" in this report)
- AS 2890.5:2020 Parking Facilities: On-street Parking Facilities (Referred to as "AS2890.5:2020" in this report)
- AS 2890.6:2022 Parking Facilities: Off-street parking for people with Disabilities (Referred to as "AS2890.6:2022" in this report)

Austroads

- Austroads Design Vehicles and Turning Path Templates, AP-G34-23, Edition 4.0 (May 2023)
- Austroads Guide to Road Design Part 3: Geometric Design, AGRD03-16, Edition 3.4 (February 2021)
- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, AGRD04A-23, Edition 3.2 (May 2023)
- Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling, AGRD06A-17, Edition 2.1 (February 2021)

Road Rules

- Road Rules 2014 (Current version for 1 July 2024, accessed 4 September 2024)

2.5 Stakeholder Consultation

Since June 2024, Navianto Group has participated in several consultation meetings with Snowy Monaro Regional Council, TfNSW, and Cooma Coaches.

Our record of consultation meetings are detailed in Table 2.1.

Table 2.1: Consultation Record

Meeting Date / Consultation Date	Meeting Attendees Authorities	Issues Discussed
27 June 2024 – MS Teams	Snowy Monaro Regional Council: Zachary Crombie-Brown Tanveer Ahmad SINSW: Jim Lewis Robin Roy Hansen Yuncken: Daniel Spirit-Jones Rohan Dubois Luke Carroll Colliers: Adam Howard Patrick Rogers Chelsea Balzan Navianto Group: Dora Choi	Stage 2 civil works – west side of Barry Way between Jillamatong Street and 200m north of the future northern intersection requiring shuttle flow along Barry Way. Council requires both travel lanes along Barry Way on weekends from Friday afternoon at 4pm due to high traffic volume during the winter season. Navianto Group presented traffic survey data collected in August 2023.
3 July 2024 – MS Teams Meeting	Snowy Monaro Regional Council: Zachary Crombie-Brown Tanveer Ahmad SINSW: Jim Lewis Robin Roy Hansen Yuncken: Daniel Spirit-Jones Rohan Dubois Luke Carroll Colliers: Adam Howard Patrick Rogers Chelsea Balzan	Staging of roadworks along Barry Way. Traffic management arrangement to support staging.
27 August 2024 – MS Teams	Snowy Monaro Regional Council: Zachary Crombie-Brown Tanveer Ahmad Sarah Brown SINSW: Jim Lewis Robin Roy Hansen Yuncken: Daniel Spirit-Jones Rohan Dubois	Discussion concerning Barry Way water mains works details. Discussion concerning water mains works delaying the completion of Barry Way road works, which results in the need for an interim access arrangement for the northern intersection and arrangements with the southern intersection. Council asked for clarification on whether there will be any arrangements to physically ban right turn and u-turn manoeuvres from south approach Barry Way vehicles into the interim slip road (particular concern raised over the use of Jillamatong Street and other local road intersections with Barry Way).

	Colliers: Adam Howard Patrick Rogers Chelsea Balzan	Council discussed up-coming road works associated with a private development further north along Barry Way. Council asked whether the project team considered constructing the southern roundabout first with turn-around arrangements within the site. Navianto advised that the team is looking into construction staging. The on-site turnaround was previously investigated but was not feasible due to constraints (insufficient turnaround space within the staff car park, or along Education Road to create a turnaround area). Alternative u-turn locations along the public road network (i.e., other local road intersections) are not feasible due to the lack of roundabout / suitable intersection treatments, sightline considerations, and road safety considerations.
25 September 2024 – MS Teams Meeting	Snowy Monaro Regional Council: Zachary Crombie-Brown Tanveer Ahmad Volker Georgi Peter Smith TfNSW: Maurice Morgan Sharon Horner SINSW: Jim Lewis Robin Roy Hansen Yuncken: Daniel Spirit-Jones Rohan Dubois Colliers: Adam Howard Patrick Rogers Chelsea Balzan	Navianto Group presented interim slip road arrangement, detour arrangement and intersection operations in Term 1, 2025. Council: Volker raised concerns over the detour arrangement and likelihood of south approach vehicles not following detour and u-tuning at a local road intersection. Concerns over compliance with the no right turn from Barry Way into the interim slip road. TfNSW: Sharon Horner raised concerns about the school zone signs needing relocation due to incomplete Barry Way works. Requested a consolidated work zone speed zone plan with proposed school zone location, and TGS details. Discussion of detour – detour involving Kosciuszko Road / Barry Way requires Road Occupancy Licence (ROL). Discussion over the need to seek confirmation from the bus operator over the detour arrangement. Consultation with Salma Cook (Manager, Bus Contracts, Southern Region) and Cooma Coaches required. TfNSW asked whether the project team considered constructing the southern roundabout first with turn-around arrangement within the site. Navianto advised that the on-site turnaround was previously investigated and is not feasible due to constraints (insufficient turnaround space within the staff car park, or along Education Road to create a turnaround area). Alternative u-turn locations along the public road network (i.e., other local road intersections) are not feasible due to the lack of roundabout / suitable intersection treatments, sightline considerations, and road safety considerations.

27 September 2024 – Telephone conversation and e-mail	Cooma Coaches: Geoff Ferris Navianto Group: Dora Choi	Telephone discussion about Term 1 interim traffic management arrangement. Discussion concerning bus circulation requirements. Cooma Coaches requires right turn from Barry Way onto interim slip road. Discussion about potential remote kiss and drop. Navianto Group will request and facilitate the release of de-personalised data so that Cooma Coaches can provide planning assistance.
15 October 2024 – Telephone conversation and e-mail	TfNSW – Bus Contracts Salma Cook Navianto Group: Dora Choi	Telephone discussion concerning Term 1 interim site access and discussion between Dora Choi and Geoff Ferris. Provide briefing on the status of road works, interim access and proposed detour via Barry Way / Kosciuszko Road roundabout. Dora Choi informed Salma Cook that Cooma Coaches requested right turn access from Barry Way into the interim site access under traffic control arrangement. Salma Cook informed Dora Choi that there is a meeting scheduled for 15 October 2024 within TfNSW (with the TfNSW Bus Planning, and Sharon Horner of TfNSW) to obtain an update on the project. Salma Cook recommended that Dora Choi should attend the meeting to provide an update to TfNSW. Dora Choi discussed that the Jindabyne Public School and Jindabyne High School are not available for selection in the SSTS portal. Salma Cook will liaise with the relevant personnel within TfNSW and circulate an e-mail for the matter to be resolved.
15 October 2024 – MS Teams Meeting	TfNSW Lara Manderson – Bus Planning Josh Tang – Bus Planning Sharon Horner SINSW Robin Roy Russell Humble Santi Botross	Dora Choi presented the draft Term 1 interim school zone time traffic management plan (which incorporates temporary traffic management and school zones. Discussion with Lara Manderson and Josh Tang concerning the interim access road, Cooma Coaches requirements. Sharon Horner commented on school zone signage requirements and need of a detailed construction traffic management methodology plan. The interim school zone signs will not have dynamic (flashing light or LED speed zone) element. Lara Manderson and Josh Tang advised that any additional buses triggered by construction staging may not be funded by TfNSW.

A revised combined signage plan incorporating interim school zone signs and traffic management signage showing traffic controllers was submitted on 15 October 2024 to the Local Traffic Committee in response to the TfNSW meeting discussions for consideration.

On-going coordination with the TfNSW Bus Planning Team will continue until the start of Term 1 2025.

3 Existing Statutory Approvals

3.1 The State Significant Development Consent (SSD-15788005)

SSD-15788005 approved the construction and operation of a new primary school and high school at 207 Barry Way, Jindabyne (now known as 163 Barry Way). The education campus will accommodate approximately 925 students (515 primary school students and 410 high school students) and employ approximately 90 staff. The education campus is expected to commence operation on Day 1, Term 1 2025.

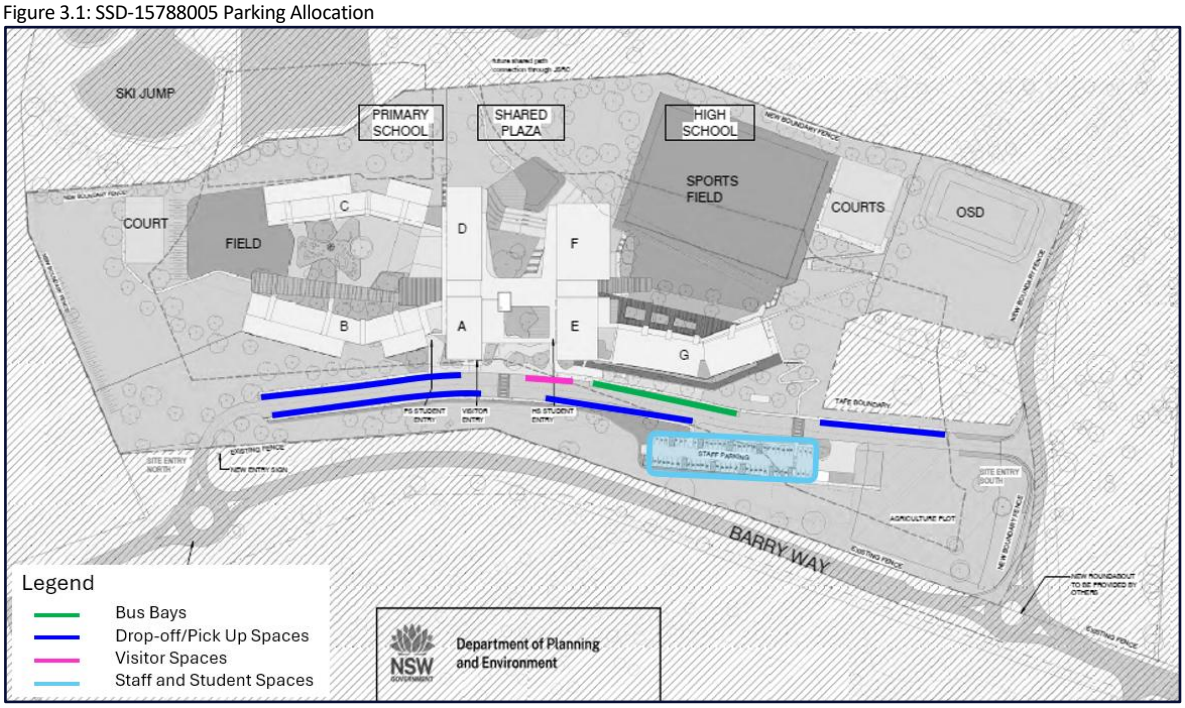
The proposal comprises:

- Primary School
  - A single-storey built form arranged in a U-shape surrounding a central play space area. The primary school campus will include 20 learning spaces amenities, special education learning spaces, a library and outdoor and hardstand courts.
- High School
  - A built form consisting of linear double-storey buildings, including 20 classrooms, amenities, special education learning spaces, and a library. A sport field and hardstand courts will also be provided on campus.
- A 'Shared Plaza' central to the site with communal facilities including administration, hall and gym.
- 113 on-site car parking spaces, comprising:
  - 50 staff spaces in a car park (inclusive of two accessible car parking spaces)
  - 6 student spaces in a car park
  - 53 Drop-off/Pick-up spaces along the new education road
  - 4 visitor spaces along the new education road
- 4 bus bays
- 50 bicycle parking spaces (with an additional capacity of 50 bicycle parking spaces when demand increases) and end-of -trip facilities.

Vehicular access to the education campus shall be provided by two separate accesses to/from Barry Way, connected via a new access road (also referred to as education road).

Figure 3.1 below shows the SSD-15788005 parking allocation.

Figure 3.1: SSD-15788005 Parking Allocation



Source: SSD-15788005 Stamped Plans (www.planningportal.nsw.gov.au)

Vehicle Access

A new school access road (education road), running parallel to Barry Way, shall provide vehicular access for the new education campus.

It is noted that whilst the intersection treatments (north and south) connecting Education Road to Barry Way do not form part of the SSD application, they have been shown on the plans as two new roundabouts. To the south, Education Road connects into the Jindabyne Sport & Recreation Centre access road, which in turn connects to the southern roundabout.

Active Transport Access

The education campus provides internal pedestrian and cycling infrastructure, which is intended to connect to the broader community infrastructure.

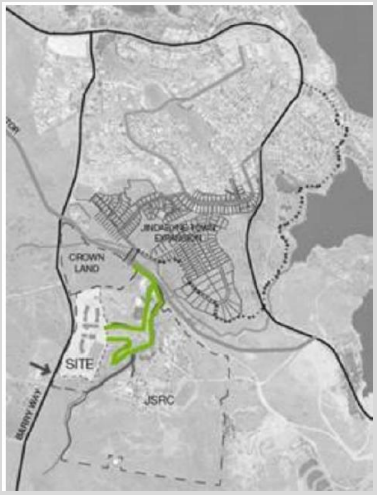
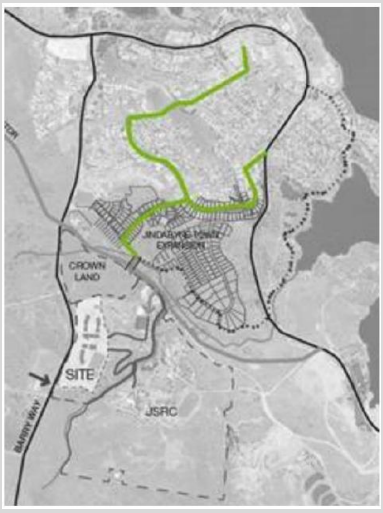
Active transport access to the broader community infrastructure was recommended within the Transport Impact Assessment prepared by Aurecon and replicated below in Table 3.1.

As noted within the Aurecon Transport Assessment, the active transport infrastructure identified was proposed within the Snowy Mountains SAP to support the Snowy Mountains SAP vision and master plan and was to be delivered by other public authorities. As stated within the Aurecon TA *"SINSW has been working in collaboration with the Department of Regional NSW, the Regional Growth Development Corporation (RGDC) and the Development of Planning Industry and Environment (DPIE) to ensure transport infrastructure to be delivered under the Snowy Mountain SAP is sufficient for the needs of the education campus. These works are to be delivered separately to this EIS by the public authorities outlined in the table below".*

As such, the requirement to provide active transport infrastructure was included within Condition D20 of the Development Consent. Refer to below for further details.

Table 3.1: Infrastructure to be delivered by other public authorities.

Item	Required Infrastructure	Image	Responsibility
1	**Shared Path along Barry Way** A 3.0m wide shared path connecting the Town Centre to the school, from the north, and from Snowy River Way to the school, from the south, is required to provide access for students and school staff. The shared path will need to be safely located along Barry Way, preferable with at least 1.0m of separation and will require the speed of Barry Way to be reduced to 50 km/h. Approximate length of shared path is 4.5 km. The intersection of Barry Way and the future Southern Connector Road is recommended to be a signalised intersection, to allow students to safely cross the intersection and access the school. Appropriate lighting and passive surveillance is required along the shared path to provide safety to students.		Snowy Mountains Special Activation Precinct – this is in the master plan.
2	**Pedestrian and Cycle Bridge** A pedestrian and cycle bridge connecting the Town Centre and Highview Estate to the school is required to allow student and school staff access into the school. Adequate lighting and shelter is required along the bridge and leading up to the bridge		Snowy Mountains Special Activation Precinct – this is in the master plan

3	**Shared Path from Sport and Recreation Centre into the School** A 3.0m shared path along the north of the Sport and Recreation Centre, connecting east into the school is required. Approximate length of shared path is 850m. Appropriate lighting and shelter for students and school staff are required.		Snowy Mountains Special Activation Precinct – this is in the master plan.
4	**Shared Path Route B1 and C1** A 3.0m shared path along Park Road and Gippsland Street is required to allow safe access for students and school staff from the Town Centre to the school. Since Park Road and Gippsland Street are existing residential streets and currently have footpath access, recommendations to monitor the quality of the footpaths and to provide pedestrian crossings along key intersections will improve student and school staff safety. Approximate length of shared path for the total of B1 and C1 is 3.2km. Appropriate lighting and shelter will need to be reviewed and provided, where lacking.		This could be within the Snowy Mountains Special Activation Precinct.
5	**Upgrade Existing Cycleway along Snowy River** A 3.0m formal shared path can be created along the existing gravel and narrow cycleway access following the Snowy River. This shared path access into the school provides a flatter journey for students and school staff. Adequate lighting and shelter is required along the shared path. Approximately 2.5km of shared path to be upgraded. Additional traffic measures, i.e. signalised intersection with pedestrian crossing, an overpass or an underpass, at the intersection of this shared path with Kosciuszko Road is required.		This could be Snowy Monaro Council, since there is an existing gravel cycle path currently maintained by Snowy Monaro Council.

Source: Aurecon TA, Version 4 dated 2021.12.03

External Works

SSD-15788005 did not include scope and approval for surrounding road infrastructure to support the Jindabyne Education Campus. At the time, it was advised external road works (the northern and southern roundabouts on Barry Way) would be delivered separately to SSD-15788005. The decision to exclude external infrastructure was made on the basis that other agencies would be responsible for the design and delivery of these works. Nonetheless, this infrastructure would be required prior to the school's operation. This was reflected in a condition of consent requiring road infrastructure be operational prior to the operation of the school.

"B30. Prior to the commencement of works within the road reserve, the Applicant must submit plans and technical specifications ***under Section 138 of the Roads Act 1993,*** *to the relevant roads authority, for the following works:*

a) Connection of internal access road to Barry Way

b) Tree removal within the road reserve."

It is noted that during the SSD application process TfNSW raised concerns with the delivery of the infrastructure being outside the scope of the development and advised that the infrastructure would need to be in place prior to the commencement of the school's operation.

The following additional conditions were provided within the Development Consent:

Roadworks

D16. Prior to the commencement of operation, the following road upgrade works must be completed to the satisfaction of the relevant roads authority:

c) Intersection treatments on Barry Way to the proposed internal access road.

School/Pedestrian Crossing Facilities

D20. Prior to commencement of operation, the pedestrian pathway from the School to the Jindabyne Town Centre must be operational to enable pedestrian access to the site. The pedestrian pathway shall be agreed with Council and be generally in accordance with the following pedestrian paths as outlines in Table 8.1 of the Transport Impact Assessment prepared by Aurecon Australasia Pty Ltd dated 03 December 2021:

a) Item 2: Pedestrian and Cycling Bridge

b) Item 3: Shared Path from Sport and Recreation Centre into the School

c) Item 4: Shared Path Route B1 and C1

3.2 SSD Modification 1 (SSD-15788005-Mod-1)

SSD-15788005-Mod-1 approved the following changes with respect to the traffic and transport elements of the education precinct:

- A minor realignment of Education Road providing access to/from Barry Way
- Minor relocation of the Drop-off/ Pick-up (DOPU) spaces and bus bay infrastructure along education road
- 1 additional DOPU space along the Education Road (to a total of 54 spaces)
- The relocation of visitor parking spaces (4) from Education Road to the car park
- Regrading of Education Road to provide more accessible gradients from the DOPU spaces and car park to the Campus' pedestrian entry points.

A comparison of the SSD and SSD Mod 1 parking provision and allocation is provided below.

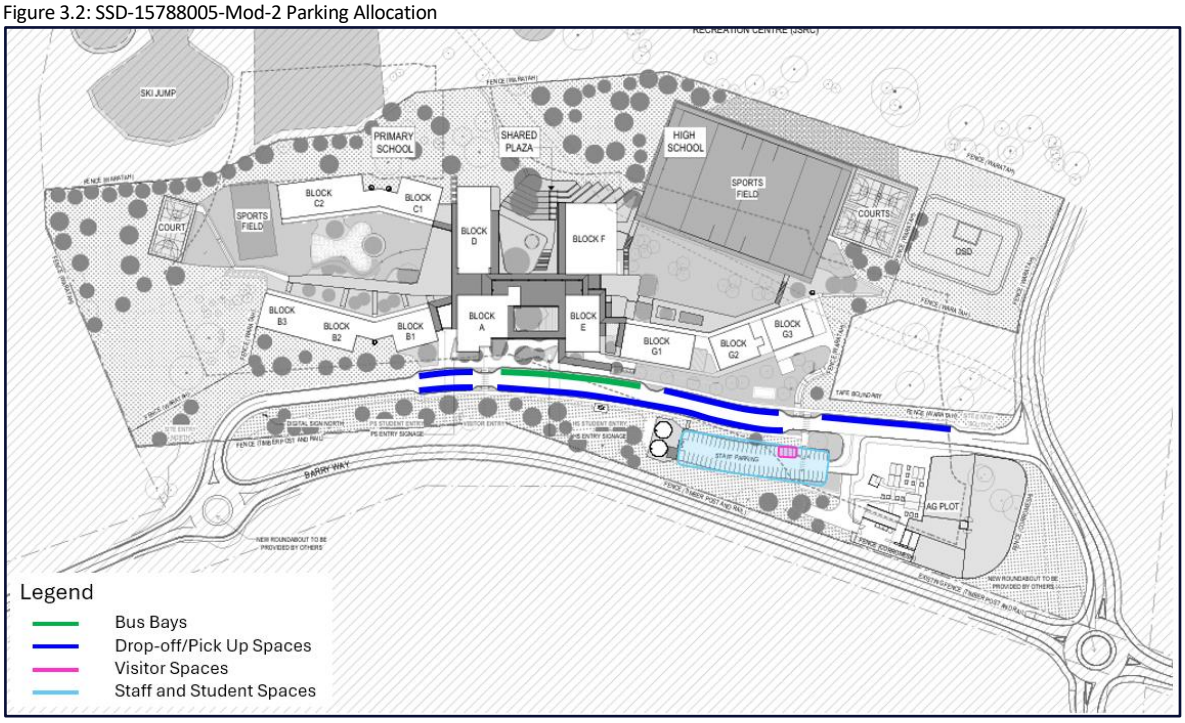
Table 3.2: SSD and SSD-Mod 1 Parking Allocation Comparison

	Bus Bays	DOPU	Visitor	Staff	Student (Year 12)
SSD	4	53	4	50	6
SSD-Mod 1	4	54	4	50	6

The SSD-15788005-Mod-1 parking allocation is shown graphically in Figure 3.2 below.

SSD-15788005-Mod-1 did not provide for any changes to the accessibility of the Education Campus to the local road network, which will continue to be provided via the Barry Way & Education Road roundabout to the north of the site, and a new roundabout at the intersection of Barry Way and the Jindabyne Sport & Recreation Centre access road.

Figure 3.2: SSD-15788005-Mod-2 Parking Allocation

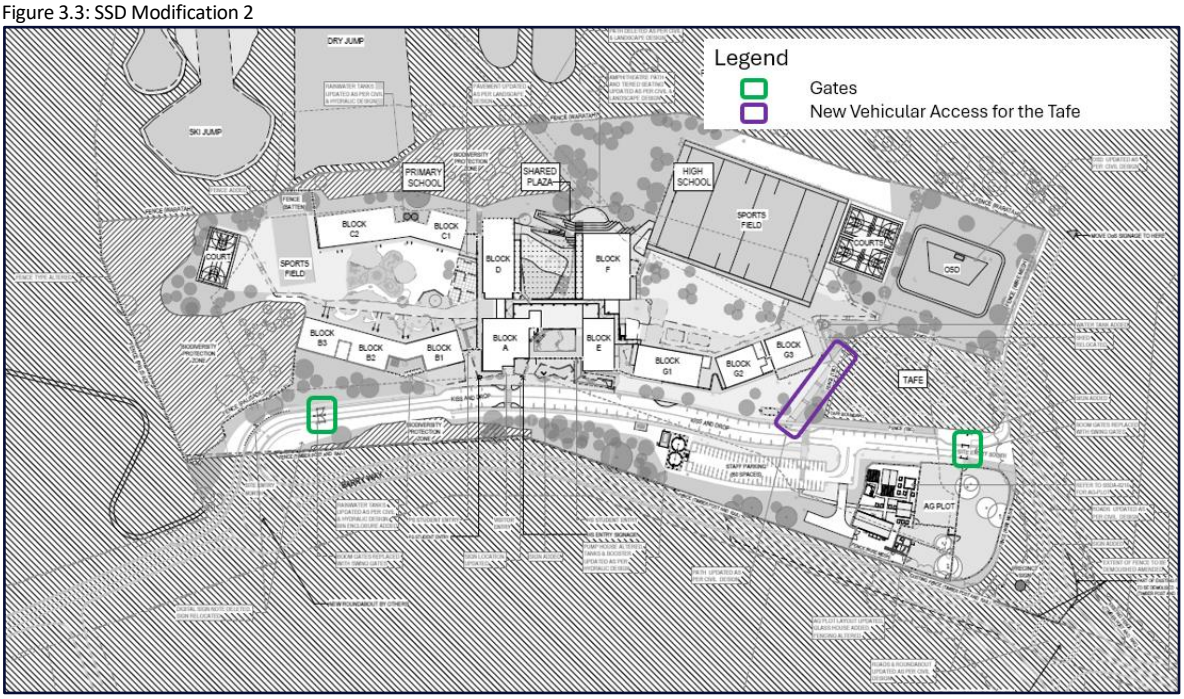


3.3 SSD Modification 2 (SSD-15788005-Mod-2)

SSD-15788005-Mod-2, which is currently under consideration, proposed the following changes, with respect to the Traffic and Transport elements of the proposal:

- Replacement of boom gates with swing gates for smoother traffic management and to improve the security of the kiss and drop function.
- Provision of vehicular access to the TAFE Campus from the school site to facilitate drop off of materials to the wood and metalwork classrooms.

Figure 3.3: SSD Modification 2

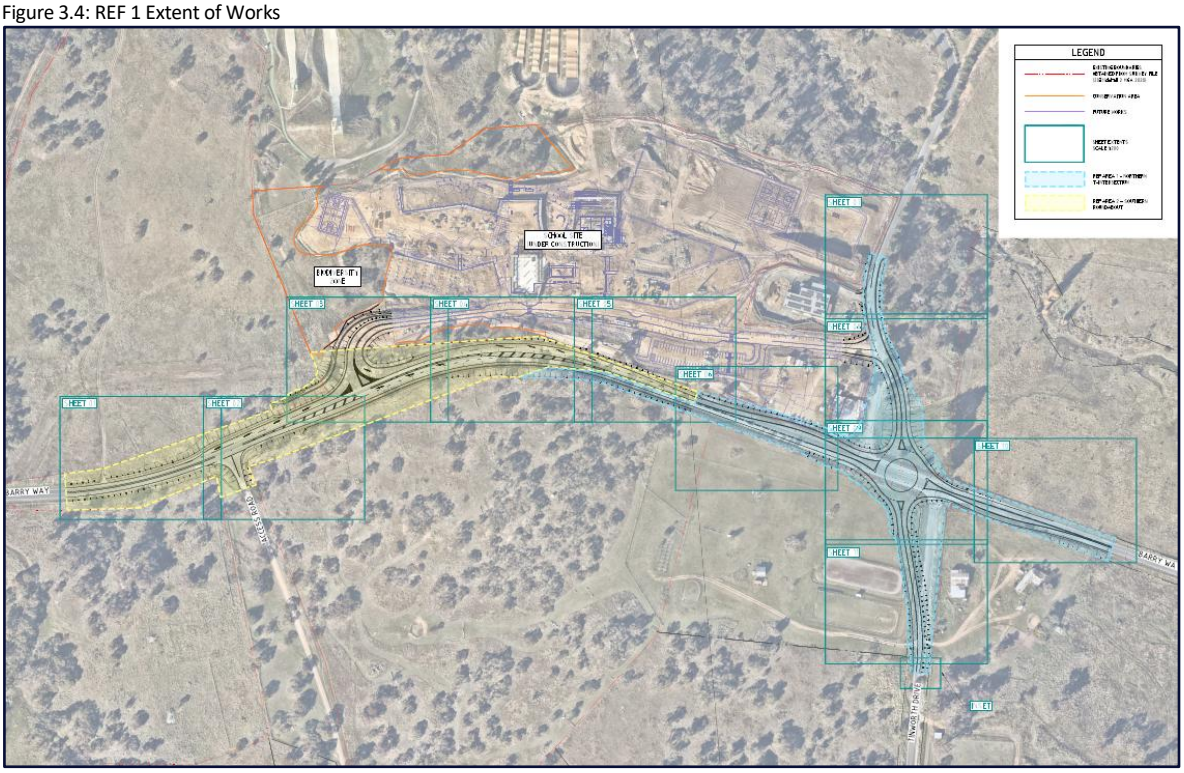


3.4 Review of Environmental Factors 1 (REF 1)

The approved REF 1 works relate to the northern T-intersection and partial pedestrian path and cycleway to enable future connections.

Figure 3.4 below shows the extent of works to be undertaken as part of the REF 1 (shown in yellow). Works identified as 'REF 2' are subject to a future separate approval process (REF 2).

Figure 3.4: REF 1 Extent of Works



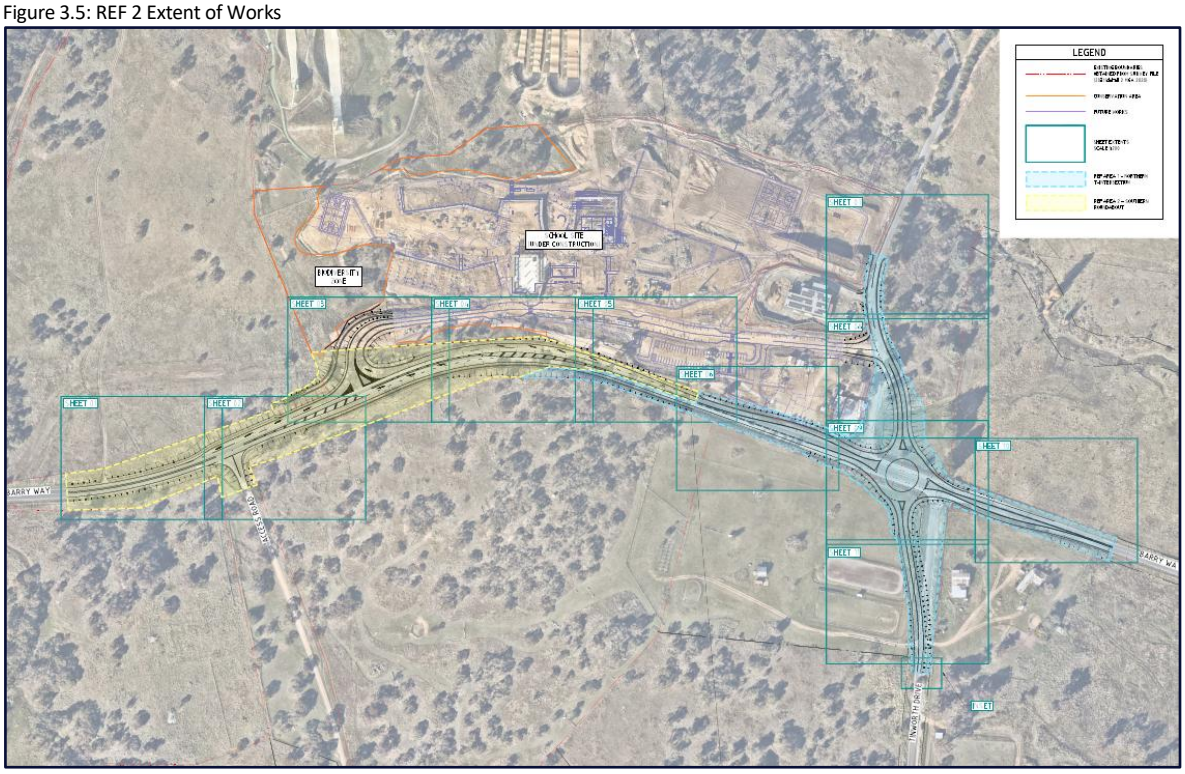
Source: Northrop

3.5 Review of Environmental Factors 2 (REF 2)

REF 2 represented the second stage in a suite of improvements to existing road infrastructure along Barry Way to support access to the Jindabyne Education Campus that is currently under construction, in particular the construction of the southern roundabout including the realignment of the Sport & Recreation Centre access road and inclusion of Tinworth Drive

The extent of works approved as part of REF 2 (shown in blue) is shown below in Figure 3.5.

Figure 3.5: REF 2 Extent of Works



Source: Northrop

3.6 Barry Way Speed Limit

Simultaneous with the Review for Environmental Factors 1 and 2, a speed limit change was sought for Barry Way adjacent to the Education Campus.

Barry Way has an existing posted speed limit of 100 km/hr adjacent to the site, which reduces to 60 km/hr on the approach into Jindabyne and the intersection with Kosciuszko Road.

Ongoing discussions occurred between SINSW, TfNSW and Council to determine an appropriate speed limit change based on the road geometry and new intersection treatments to safely accommodate the new education campus along Barry Way.

Initially, SINSW sought a speed limit reduction to 60 km/hr, but TfNSW did not support this. Upon further discussion, TfNSW supports a reduced posted speed limit of 80km/hr. In addition, school zones will be implemented along Barry Way during school hours.

As such, the upgrades along Barry Way, including the new intersection treatments, have been designed with a posted speed limit of 80 km/hr and a design speed of 90km/hr.

3.7 Review of Environmental Factors 3 (REF 3)

Due to the need to relocate the water mains and underground services from Barry Way to the western side of the Barry Way carriageway, the civil works along Barry Way will not be complete before Day 1 Term 1 2025.

An interim road access arrangement involving the construction of a slip lane north of the education precinct has been designed and will form part of a separate REF application.

3.8 Section 138 Applications

In addition to the statutory applications above, Condition B30 of SSD-15788005 states:

"B30. Prior to the commencement of works within the road reserve, the Applicant must submit plans and technical specifications ***under Section 138 of the Roads Act 1993,*** *to the relevant roads authority, for the following works:*

d) Connection of internal access road to Barry Way

e) Tree removal within the road reserve."

Four applications are approved pursuant to Section 138 of the Roads Act (as required by condition B30 of SSD-1578005) to facilitate the work packages for the T-intersection and southern roundabout along Barry Way.

The works associated with the REFs mentioned above will tie in with the existing section 138 applications and provide wider road and service upgrades to support vehicular access to the new school. The Section 138 applications are summarised in Table 3.3.

Table 3.3: Section 138 Applications

S138 Applications	Status	Description
RA-2024-2804	Approved April 2024	Northern T-Intersections: Early works for the Northern T-Intersections on Barry Way
RA-2024-2259	Approved September 2024	Northern T-Intersections: Whole package works for the Northern T-Intersections on Barry Way
RA-2024-4254	Approved August 2024	Southern Roundabout: Early works for the Southern Roundabout on Barry Way
RA-2024-3045	Approved October 2024	Southern Roundabout: Upgrade of the existing roadway and adjacent intersections from a single carriageway to a roundabout along Barry Way outside the Jindabyne Sport and Recreation Centre.

4 Existing Conditions

4.1 Site and Locality Description

The New Education Campus at Jindabyne (New Primary School and High School) is located at 163 Barry Way, Jindabyne, legally described as Lot 1 DP 1294413, within the Snowy Monaro Regional Council Local Government Area. The new education campus relocates the existing Jindabyne Central School from 8/20 Park Road, Jindabyne to 163 Barry Way, Jindabyne.

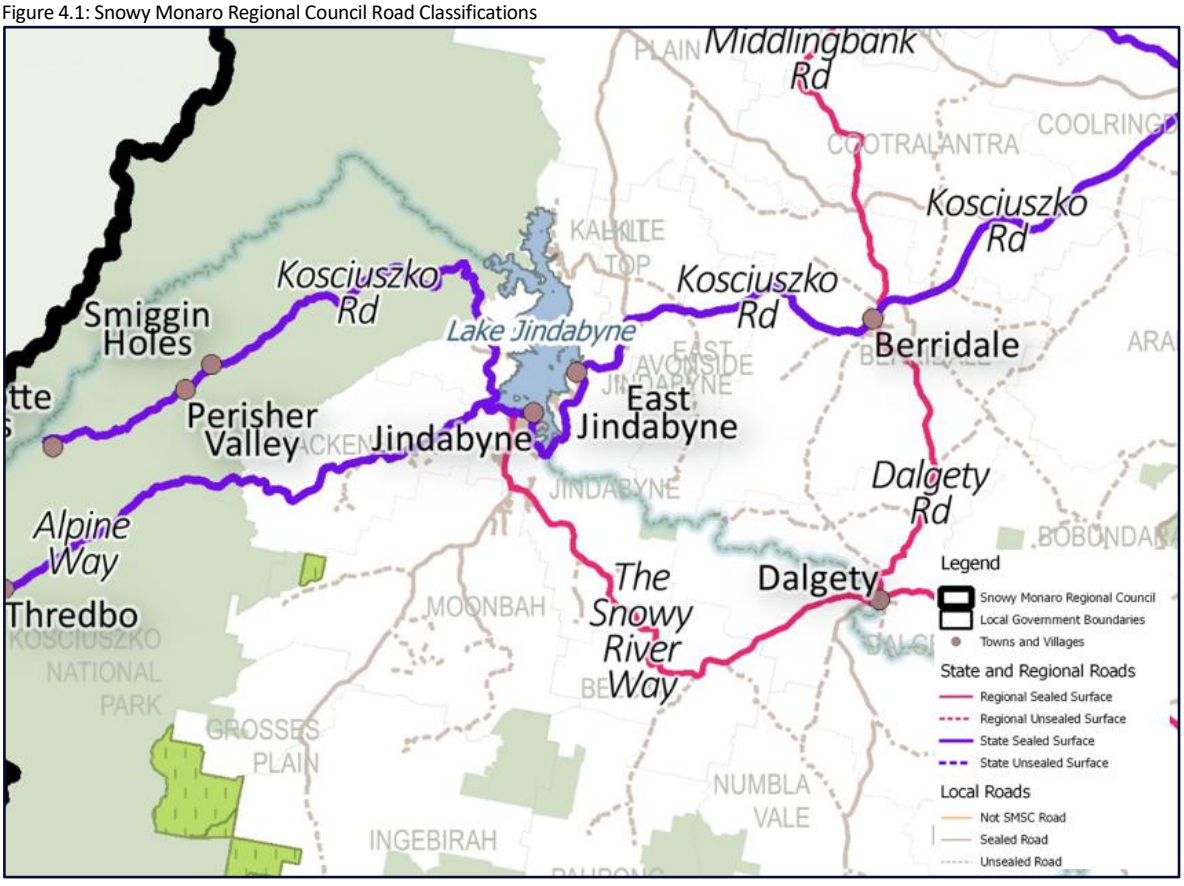
4.2 Road Network

Barry Way is classified as a regional road under the care and management of the Snowy Monaro Regional Council, as shown in Figure 4.1.

In the vicinity of the subject site, Barry Way accommodates one traffic lane and a sealed shoulder in each direction, with a table drain adjacent to the eastern side of the road. Between the Sport & Recreation Centre access road and Tinworth Drive, Barry Way accommodates two traffic lanes in each direction, tapering back to a single lane in each direction north and south of these intersections.

Barry Way, adjacent to the subject site, has a current posted speed limit of 100 km/hr. As mentioned above, this will be reduced to 80 km/hr before the school is operational in Day 1 Term 1 2025. In addition, school zones will be in place along Barry Way during school hours.

Figure 4.1: Snowy Monaro Regional Council Road Classifications



Source: State and Regional Classified Roads in the Snowy Monaro Region (www.snowymonaro.nsw.gov.au)

The Sport & Recreation Centre Access Road is a private road and, therefore, not under the care and management of the Council. Typically, it has an approximate carriageway width of 5.2 metres, allowing for a single lane of traffic in each direction. Speed Humps are intermittently located along the length to slow vehicles.

On the approach to Barry Way, the sport and recreation access road widens to enable satisfactory access to/from Barry Way.

Figure 4.2: Sport and Recreation Access Road Intersection with Barry Way (Google Maps capture date July 2023)

Source: Google Maps

Tinworth Drive is a local road under the care and management of Council. Typically, it has sealed carriageway width of approximately 5.6 metres, accommodating one lane of traffic in each direction.

4.3 Existing Traffic Conditions

Given the location of nearby ski fields and resorts to Jindabyne, it is anticipated that Barry Way, leading to/from Jindabyne will experience significant seasonal variations in visitors and associated traffic volumes. During the winter peak snow periods, especially on weekends and during public holiday or school holiday periods, in particular when there are heavy snowfalls and good snow conditions, Barry Way is expected to experience significantly higher daily and peak hourly traffic volumes.

In order to capture the worst-case scenario, as well as to determine existing traffic conditions on the surrounding road network, turning movement count (TMC) surveys were undertaken on Friday 30 August 2024, between 6:30 am – 9:30 am and 1:30 pm – 4:30 pm at the following locations:

- TMC #1: Barry Way & Kosciuszko Road
- TMC #2: Barry Way & Jillamatong Street; and
- TMC #2: Barry Way & Jindabyne Sport & Recreation Centre access road.

The peak AM and PM peak hours for the surveyed periods for the entire network (combined traffic volumes for all surveyed intersections) occurred between:

- AM: 8:15am to 9:15am
- PM: 3:15pm to 4:15pm

The TMC locations are shown in Figure 4.3, with the network peak hour traffic volumes at the above intersections shown graphically in Figure 4.4, Figure 4.5 and Figure 4.6.

Figure 4.3: TMC Survey Locations

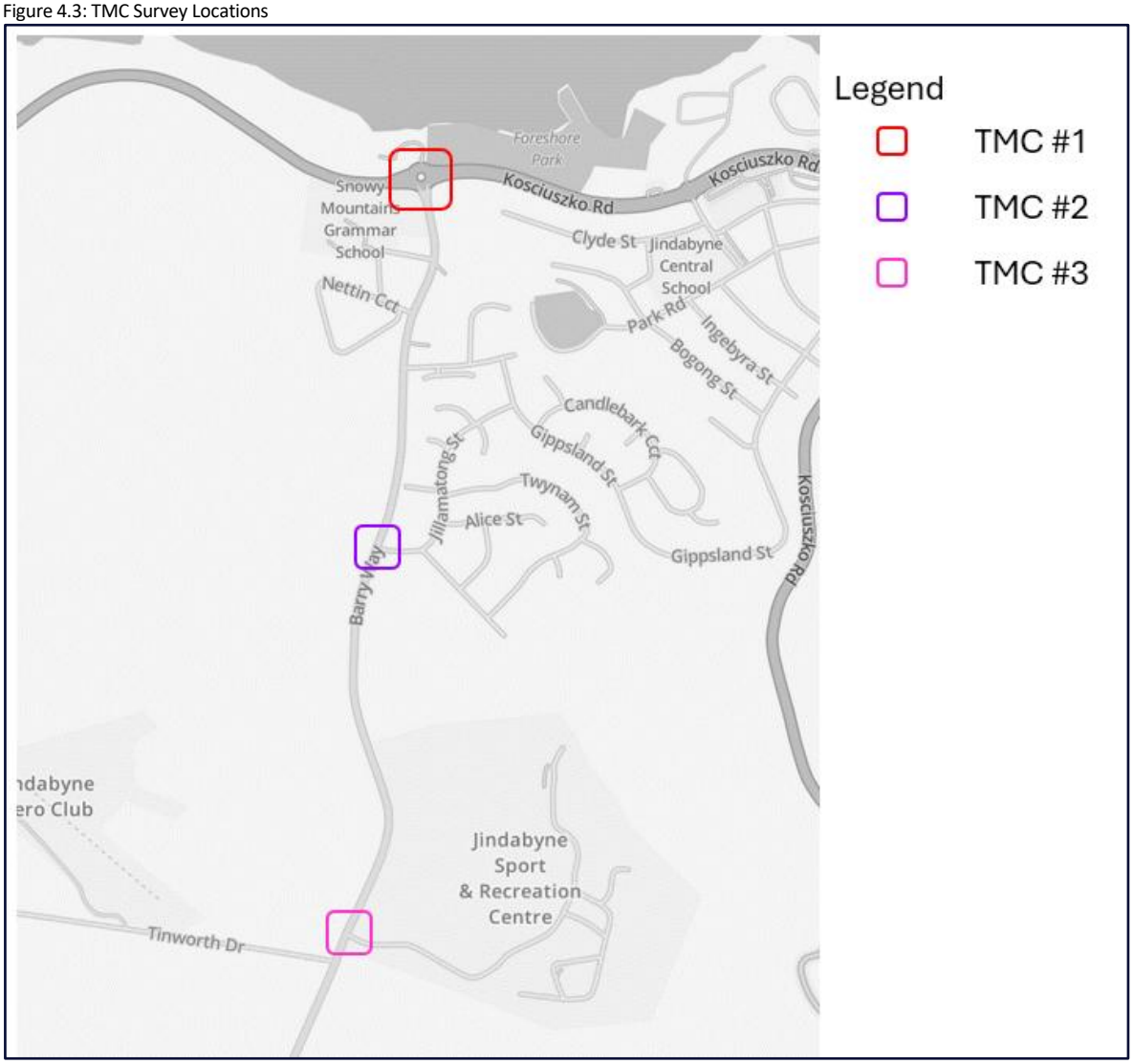


Figure 4.4: TMC #1 - Barry Way & Kosciuszko Road Network Peak Hour Traffic Volumes

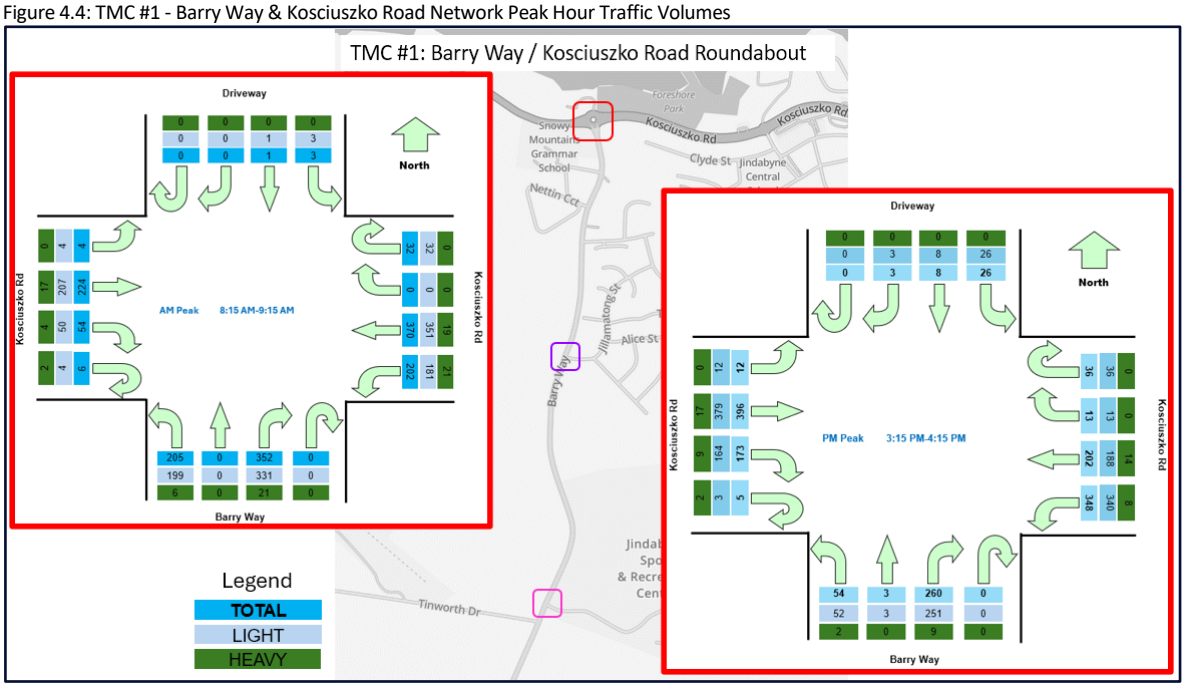


Figure 4.5: TMC #2 - Barry Way & Jillamatong Street Network Peak Hour Traffic Volumes

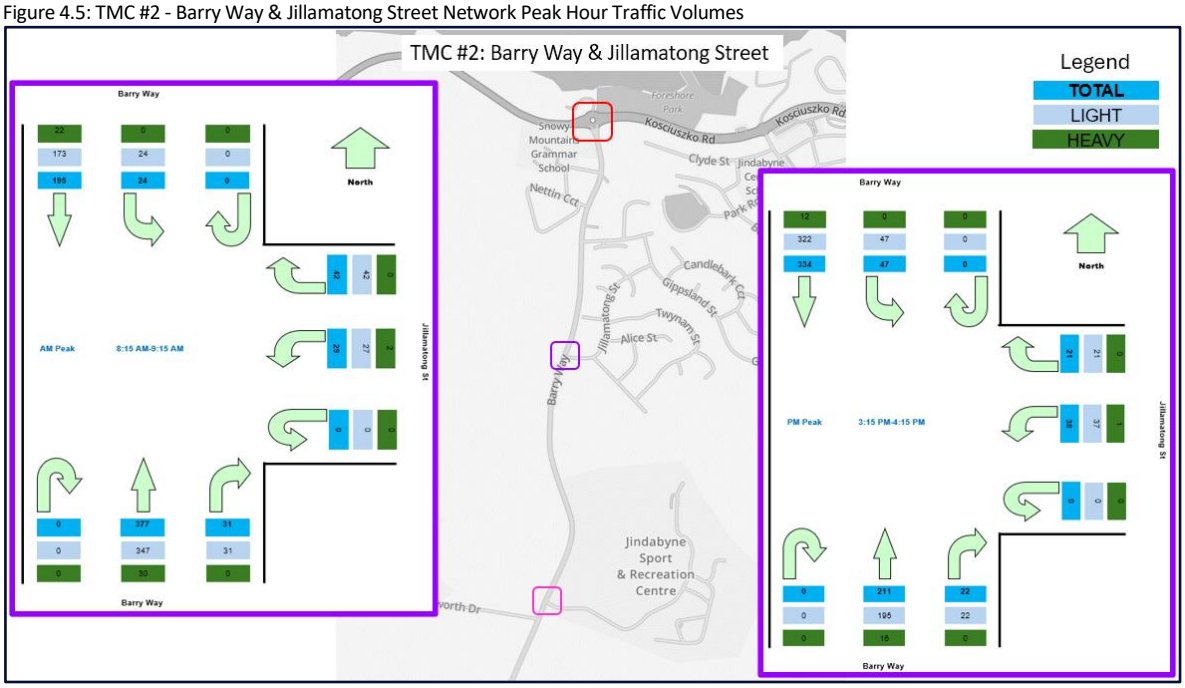
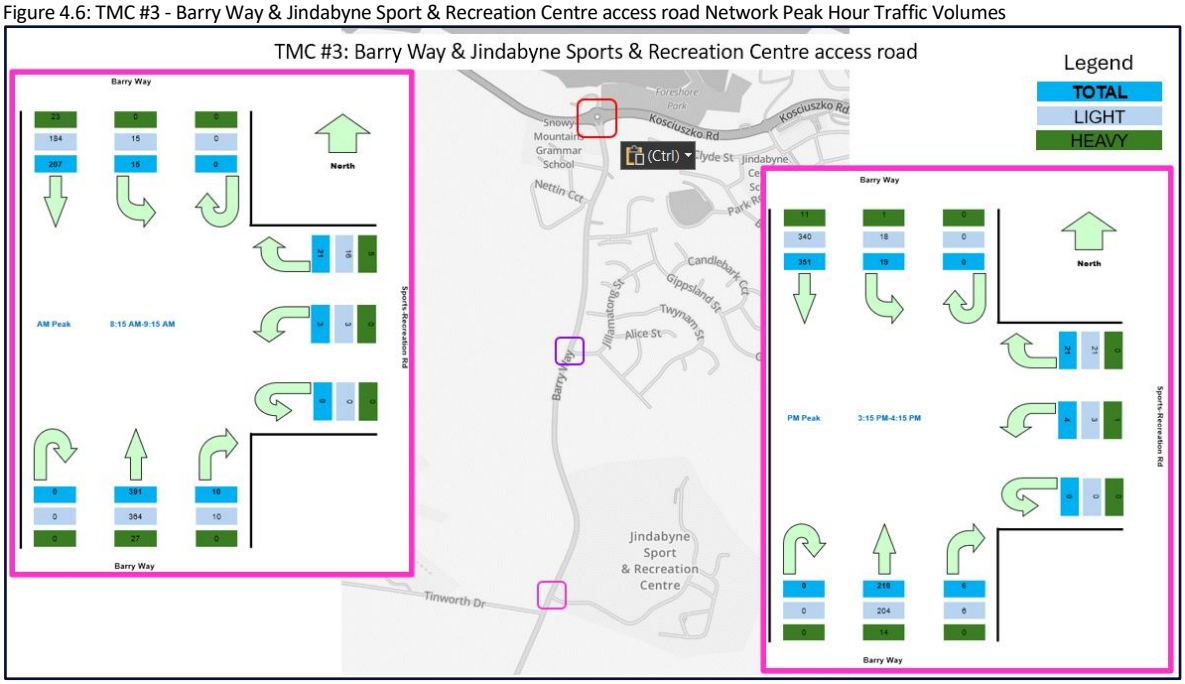


Figure 4.6: TMC #3 - Barry Way & Jindabyne Sport & Recreation Centre access road Network Peak Hour Traffic Volumes



The data indicates that:

- Barry Way, adjacent to the education campus, currently carries in the order of 630 and 610 vehicles per hour (vph) in each of the AM and PM network peak hours, respectively. This suggests an overall daily traffic volume in the order of 6,200 vehicles per day (vpd). The level of traffic is consistent with the 7-day automatic tube count commissioned by SINSW in August 2023.
- Adjacent to the education campus, traffic is distributed in the following manner during each of the network peak hours:
  - AM network peak: 65% of vehicles travelling north and 35% of vehicles travelling south.
  - PM network peak: 40% of vehicles travelling north and 60% of vehicles travelling south.

Table 4.1: Surrounding Road Network peak hour and daily traffic volumes

	AM Network Peak (vph)	PM Network Peak (vph)	Daily Traffic Volumes (vpd)
Barry Way	630 vph	610 vph	6,200 vpd
Jindabyne Sport & Recreation Centre access road	50 vph	50 vph	500 vpd
Jillamatong Street	125 vph	130 vph	1,275 vpd
Kosciuszko Road	1,180 vph	1,280 vph	12,300 vpd

The detailed survey results are attached in Appendix A.

4.4 Baseline SIDRA Performance Testing

The performance of the existing road network is dependent on the operating performance of key intersections of the arterial, sub-arterial, and collector roads.

Intersections network performance assessment prepared using SIDRA Network software version 9.1 has been undertaken to establish existing network intersection performance.

Reference is made to the TfNSW (formerly RTA) Guide to Traffic Generating Developments V2.2 (2002) (RTA Guide), whereby the Level of Service (LOS) relevant to local roads is used to assess the operational performance of intersections.

Roads operating at LOS D or better are generally considered to have acceptable flow conditions. Roads operating at LOS E or worse are generally considered to have unacceptable flow conditions because they are at or above capacity.

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

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

The SIDRA recommended criteria for the assessment of intersections as references by the RTA Guide are outlined in Table 4.2.

Table 4.2: SIDRA Level of Service (LOS) Criteria

Level of Service (LOS)	Average Vehicle Delay (AVD), in seconds (s)	Traffic Signals & Roundabouts	Priority (unsignalised) Intersections
A	Less than 14	Good Operation	Good Operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity Signals – incidents will cause excessive delays Roundabouts – require other control mode	At capacity and requires other mode control
F	More than 70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode or major treatment

Source: SIDRA

SIDRA Input Parameters

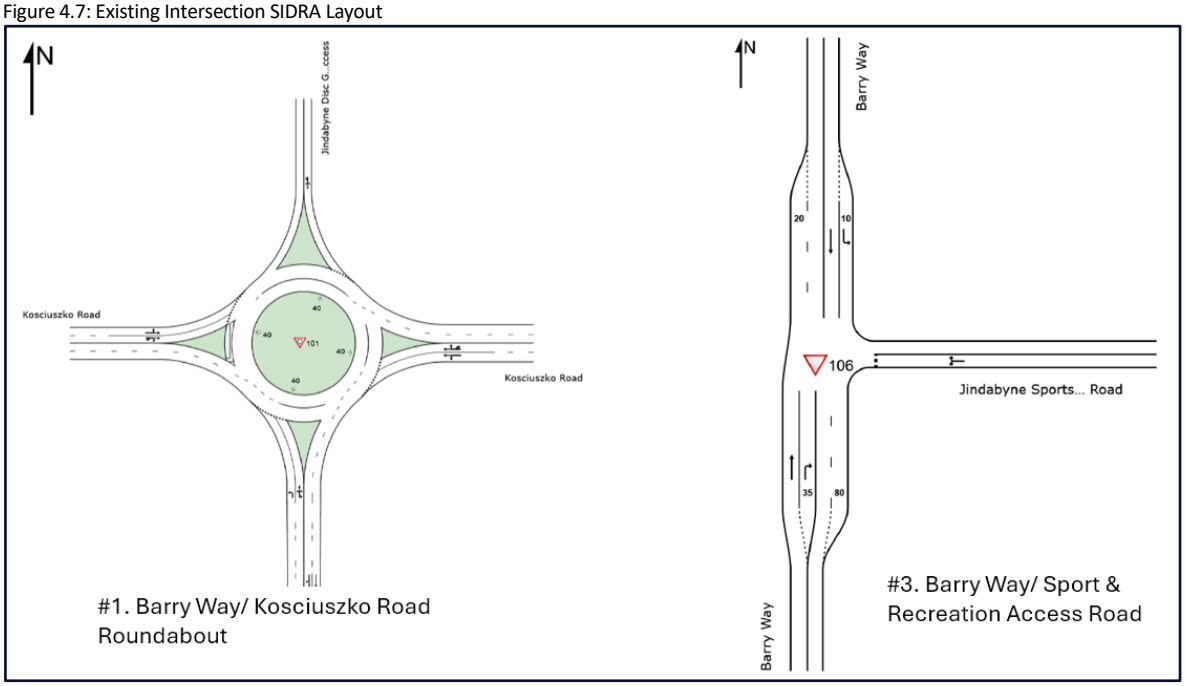
All modelling assessments for this study were carried out in SIDRA Network software version 9.1, with the below input parameters:

- 'Current Setup' was set to New South Wales.
- Site Level of Service Method was set to 'Delay (RTA NSW)'.
- Physical features of the existing intersection geometries were coded using the latest Metromap aerial images (accessed on 2 September 2024).
- Default values for Basic Saturation Flow and peak flow factor were unchanged.
- Speed limits input for the existing conditions as per existing posted speed limits at each location.
  - Barry Way (north of Jillamatong Street): 60km/hr
  - Barry Way (south of Jillamatong Street): 100km/hr
  - Kosciuszko Road: 60km/hr
  - Jindabyne Sport & Recreation Centre access road: 20 km/hr

SIDRA Layout

The SIDRA intersection layout input is provided in Figure 4.7.

Figure 4.7: Existing Intersection SIDRA Layout



Source: SIDRA

Existing Intersection Performance

The results of the worse-performing leg of the intersection modelled using SIDRA Network 9.1 for the current 2024 base year are summarised in Table 4.3, with the detailed results included in Appendix B.

Table 4.3: SIDRA Intersection Performance 2024 Base Year (Worse Leg)

#	Intersection Name	Control	Period	Degree of Saturation	Intersection Delay (s)	Level of Service (LOS)
1	Barry Way / Kosciuszko Road	Roundabout	AM	0.131	15.6	LOS B
			PM	0.243	15.4	LOS B
3	Barry Way & Jindabyne Sport & Recreation Centre access road	Priority	AM	0.086	17.6	LOS B
			PM	0.060	12.2	LOS A

The results indicated that the existing Barry Way/ Kosciuszko Road and Barry Way/ Sport & Recreation Centre access road is currently operating in good operations (LOS B) with acceptable delays and spare capacity.

4.5 Existing Public Transport

There is currently limited access to public transport services within the Jindabyne township. The only form of public transport is buses, and there are no bus stops along Barry Way from the Jindabyne Town Centre to the education campus site.

It is noted that the existing schools are heavily reliant on school bus services, which will be rerouted to service the new education campus.

Consultations with the local bus operator, Cooma Coaches, and TfNSW occurred in late 2023 and early 2024. New school bus routes were agreed to for implementation when the education precinct commences operations on Day 1, Term 1 2025.

4.6 Existing Active Transport

Currently, there is no walking or cycling infrastructure to and from the education campus site. There is also no adequate street lighting, shelter, or pedestrian crossing from the Jindabyne Town Centre to the education campus site.

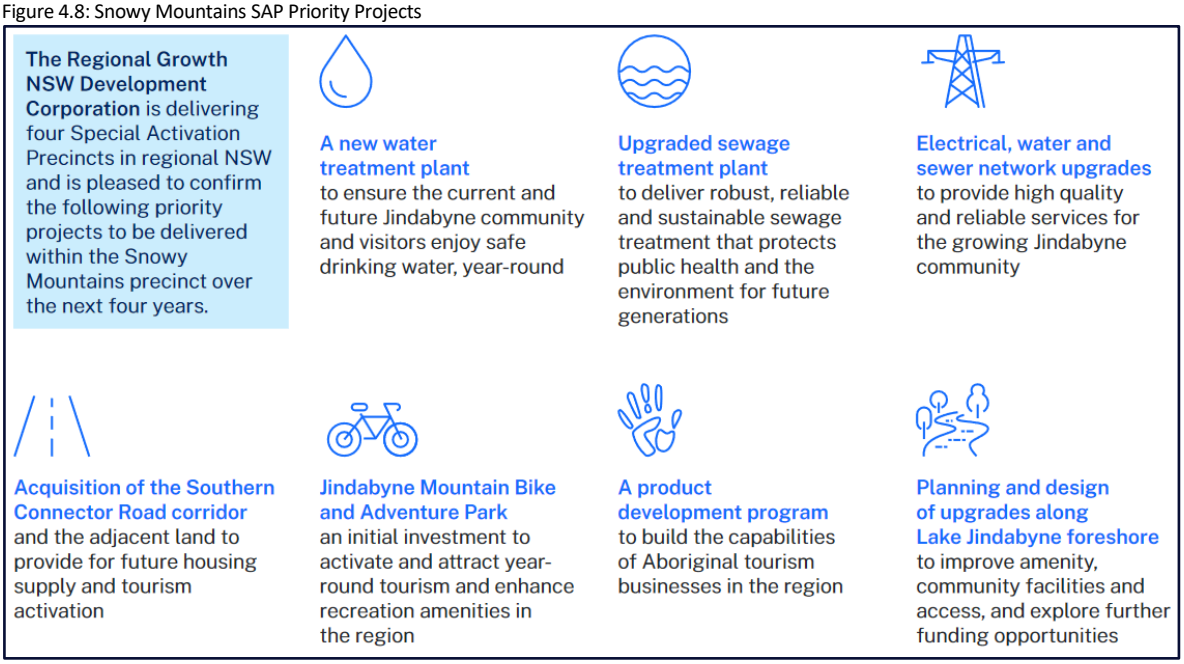
Snowy Mountains Special Activation Precinct (SAP)

In April 2024, the NSW Government provided the following community update with respect to the Snowy Mountains SAP

"The NSW Government is making an initial $196.3 million investment for the Snowy Mountains Special Activation Precinct (The Snowy Mountains precinct) as part of the 40-year vision to support the development of year-round tourism opportunities, to improve community amenities, support a diverse supply of housing and create long-term sustainable growth for generations to come.

These priority projects support the needs of the community and tourists to Jindabyne and the Snowy Mountains region, as well as aligning with government priorities and funding available."

Figure 4.8: Snowy Mountains SAP Priority Projects



Source: Snowy Mountains SAP Community Update April 2024

It is noted that the active transport infrastructure provided within the Snowy Mountains SAP and outlined within the Aurecon Transport Assessment (replicated in this report in Table 3.1) have not been included within the priority projects to be delivered by the NSW Government, Regional Growth NSW Development Corporation (RGDC) and the Snowy Monaro Regional Council within the next four years.

4.7 Road Safety

A review of the reported casualty accident history for the roads and intersections adjoining the subject site has been sourced from the NSW Centre for Road Safety interactive crash statistics data for the last five reporting years (2018 – 2022).

The search area specifically included all recorded crashes along Barry Way between Reedys Cutting Road and Lee Avenue, including the intersections.

A total of eight casualty crashes have occurred within the identified intersections, with the results shown in Figure 4.9 and summarised in Table 4.4 below:

Figure 4.9: Crash Map

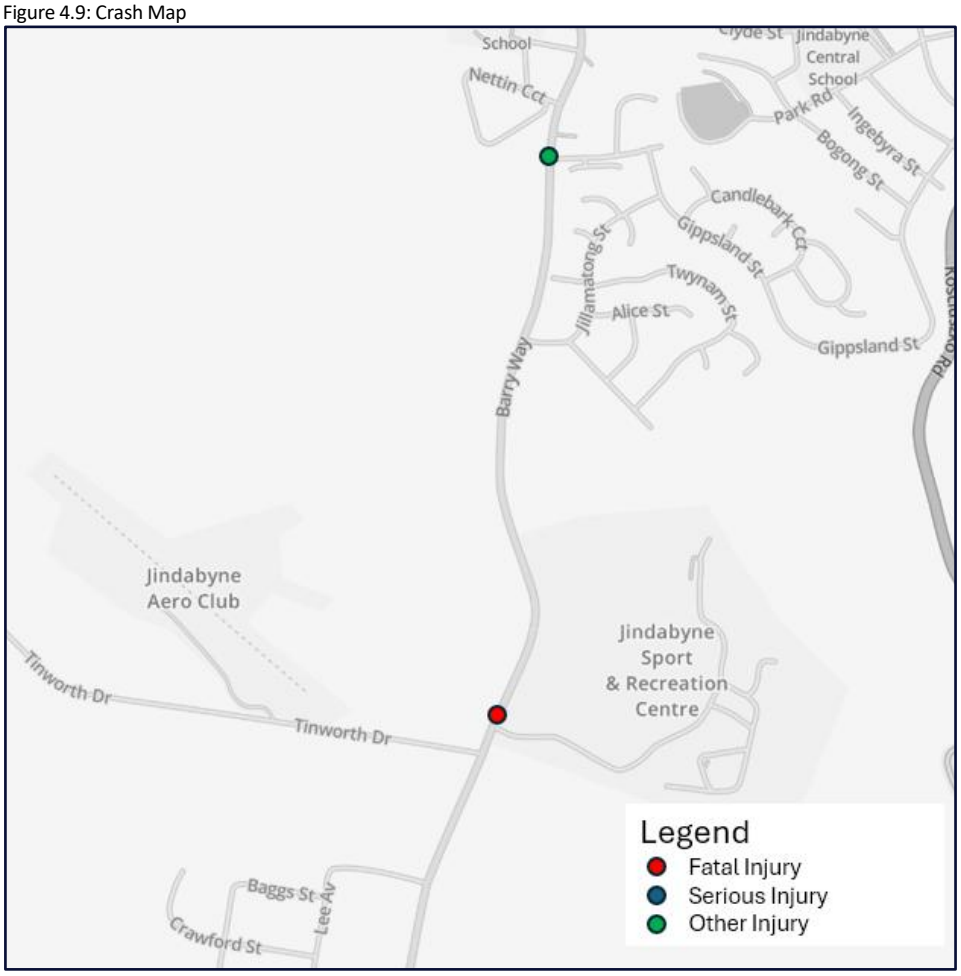


Table 4.4: Crash History

Location	Year	Crash ID	RUM Code & Description	Injury Severity
Barry Way (approximately 60m north of Tinworth Drive)	2019	1215627	32 – Right Rear	Fatality
Barry Way/ Reedys Cutting Road Intersection	2021	1263344	81 – Off left/right bend	Non-Casualty

Source: Transport for NSW Centre for Road Safety LGA view crashes map

As a safety improvement to the road network, with particular reference to the fatal crash 60 metres north of the Barry Way/ Tinworth Drive intersection, the project includes modification to the Sport & Recreation Centre access road to align with Tinworth Drive, where a new roundabout will be introduced to control all traffic movements.

5 The Proposed Modification

5.1 Proposed Modification

The proposed modification comprises:

- Aligning the SSD traffic modelling with the REF approvals, including the changes to the northern intersection of Barry Way and Education Road – change from a roundabout to a priority-controlled t-intersection with a right turn lane along Barry Way for bus turning only;
- Active transport infrastructure – change of shared path alignment from RGDC land connecting to the local active transport path network to be delivered as part of SAP works, to a shared path along the east side of Barry Way between Jillamatong Street and the Education Precinct;
- Kiss and drop bays and bus bay – reassignment of 3 drop off / pick up spaces to provide 2 additional bus bays, resulting in 51 DOPU spaces and 6 bus bays;
- On-site parking provision – no changes to staff or student parking numbers;
- Mode Share – adopting the Scenario 1 worse-case scenario as assessed previously in the SSD as the current scenario due to the unknown timing of precinct-wide active transport infrastructure to be delivered as part of the SAP works;
- Staging of road infrastructure works – due to the delay in the completion of Barry Way road works, the northern t-intersection and the southern roundabout, the introduction of an interim access roadway through RGDC land connecting with the completed education road to provide interim access to the Education Precinct until the staged completion of the Barry Way road works. The southern Barry Way / Tinworth Drive / Sport & Recreation access road will be afforded an interim roundabout whilst road works and services re-location works along Barry Way continue.

5.2 Statutory Approvals Summary and Proposed Modification 3 Changes

To assist with the assessment, we prepared the following traffic and transport summary to outline the quantum of parking facilities previously approved in the current proposal, the car parking allocation rate, and the two intersections' configuration for assessment.

Table 5.1: SSD Status and Proposed MOD 3 Comparative Parking Allocation Summary

Application	Status	Bus Bays	Car Parking					Bicycle Parking
			DOPU	Visitor	Staff	Student (Year 12)	Total	
SSD	Approved	4	53	4	50	6	**113**	50
SSD Mod 1	Approved	4	54 (+1)	4	50	6	**114 (+1)**	50
SSD Mod 2	Under Consideration	4	54	4	50	6	**114**	50
SSD Mod 3	This application	6 (+2)	51 (-3)	4	50	6	**111 (-3)**	50

Table 5.2: SSD Status and Proposed MOD 3 Comparative Staff Car Parking Rate Summary

Application	Number of Staff	Number of Car Parking Spaces	Car Parking Rate per Staff Member
SSD	90	50	0.556 spaces/ staff member
SSD Mod 1	90	50	0.556 spaces/ staff member
SSD Mod 2	90	50	0.556 spaces/ staff member
SSD Mod 3	90	50	0.556 spaces/ staff member

Table 5.3: SSD/Review of Environmental Factors Summary

Application	Status	Northern Intersection	Southern Intersection	Pedestrian Infrastructure	Notes
SSD	For Reference	Roundabout	Roundabout (Tinworth Drive realignment not included)	Pedestrian and Cycle Bridge* Shared Path from Sport and Recreation Centre into the School* Shared Path Route B1 and C1*	Design based on a posted speed limit of 60km/hr
REF 1	Approved	T-Intersection (right turn only for buses)	N/A – did not form part of REF 1	Construction of a partial pedestrian path and cycleway to enable future connection	Design based on a posted speed limit of 80km/hr, design speed of 90km/hr
REF 2	Approved	N/A – did not form part of REF 2	Roundabout, including the realignment and inclusion of the Sport & Recreation Centre access road and Tinworth Drive	N/A – did not form part of REF 2	Design based on a posted speed limit of 80km/hr, design speed of 90km/hr
REF 3	In preparation	Interim northern slip road access	N/A	Temporary shared user pathway along interim northern slip road	Design of the left turn deceleration lane based on a design speed of 90km/h. Within the interim northern slip road, a design speed of 30km/h adopted.

* Pedestrian Infrastructure identified within the Aurecon SSD Transport Assessment (2021.12.03) and replicated in Table 3.1 above.

NOTE: The approval of works external to the site was not included under the SSD. However, the works are required to be completed prior to operation under the SSD conditions.

Table 5.4: Section 138 Applications

S138 Applications	Status	Description
RA-2024-2804	Approved April 2024	Northern T-Intersections: Early works for the Northern T-Intersections on Barry Way
RA-2024-2259	Approved September 2024	Northern T-Intersections: Whole package works for the Northern T-Intersections on Barry Way
RA-2024-4254	Approved August 2024	Southern Roundabout: Early works for the Southern Roundabout on Barry Way
RA-2024-3045	Approved October 2024	Southern Roundabout: Upgrade of the existing roadway and adjacent intersections from a single carriageway to a roundabout along Barry Way outside the Jindabyne Sport and Recreation Centre.
TBC	In preparation	Northern interim slip road: Whole package of works for the northern interim slip road access, approximately 250 metres south of Jillamatong Street.

5.3 SSD-15788005 Conditions to be altered as Part of Modification 3

Table 5.5: SSD Conditions to be altered as part of Modification 3

No. #	SSD-15788005 Condition	Reasons for the alteration
D16	Prior to the commencement of operation, the following road upgrade works must be completed to the satisfaction of the relevant road authority: a) Intersection treatments on Barry Way to the proposed internal access road	Due to the need to relocate services from east side of Barry Way road reservation to the west side of Barry Way road reservation, the permanent intersection treatments (i.e. ultimate condition) cannot be achieved before the commencement of school operations in Day 1, Term 1 2025. Interim northern slip road access, and a temporary southern roundabout is proposed to facilitate access to support commencement of operations.
D20	Prior to commencement of operation, the pedestrian pathway from the School to the Jindabyne town centre must be operational to enable pedestrian access to the site. The pedestrian pathway shall be agreed with Council and be generally in accordance with the following pedestrian paths as outlined in Table 8.1 of the Transport Impact Assessment prepared by Aurecon Australasia Pty Ltd dated 03 December 2021: a) Item 2: Pedestrian and Cycling Bridge b) Item 3: Shared Path from Sport and Recreation Centre into the School c) Item 4: Shared Path Route B1 and C1	Due to the cancellation of SAP funding outlined in Section 4.6 of this report, infrastructure to be delivered by other agencies, the items identified in condition D20, are no longer getting delivered prior to the commencement of school operations on Day 1, Term 1 2025. As agreed with the council, a shared pathway will be provided along the east side of Barry Way, connecting Jillamatong Street and the Education Precinct. A pathway has been incorporated into the interim road design and will be delivered before the commencement of operations.
D23	Prior to the commencement of operation, all required School Zone signage, speed management signage and associated pavement markings along Barry Way must be installed, inspected by TfNSW and handed over to TfNSW.	TfNSW and Council implemented the permanent 80km/h speed zone along Barry Way in October 2024. Due to the ongoing road works along Barry Way, interim School Zone signage will be provided in consultation with TfNSW.

		The ultimate School Zone signage will be provided upon completion of road works along Barry Way in consultation with TfNSW.
AN12	At least eight weeks prior to the commencement of operation, the Applicant must submit the following details to TfNSW and obtain authorisation to install School Zone signs and associated pavement markings, and/or removal/ relocation of any existing speed limit signs: a) a copy of the conditions of consent; b) the proposed school commencement/ opening date c) two sets of detailed design plans showing the following: i) accurate Site boundaries; ii) details of all road reserves, adjacent to the Site boundaries; iii) all proposed access points from the Site to the public road network and any additional conditions imposed/proposed on their use; iv) all existing and proposed pedestrian crossing facilities on the adjacent road network; v) all existing and proposed traffic control devices and pavement markings on the adjacent road network (including School Zone signs and pavement markings); and vi) all existing and proposed street furniture and street trees.	Interim School Zone signage plans have been submitted on 15 October 2024 to the Local Traffic Committee. As elements of the Barry Way roadworks progress, further detailed plans of the northern and southern intersections' school zone signage and pavement marking plans will be submitted to TfNSW.

6 Parking Assessment

6.1 Statutory Car Parking Assessment

Parking requirements for land-use developments are set out in B2 Transport, access and car parking of the Jindabyne Development Control Plan (DCP), adopted version Final 16 August 2024.

More specifically, B2.3.3 Car parking provision sets out the objectives and controls for the on-site parking provision. The objectives of B2.3.3 Car Parking Provision are set out below:

- Ensure the number, location and access to vehicle parking spaces available on site, and along the street frontage, is sufficient to cater for residents and visitor parking needs.

In addition, the following notes are provided:

- Where parking calculations produce a fraction, the requirement is to be rounded up eg. 3.2 spaces = 4 spaces.
- Parking requirements may also be contained in area specific DCP Chapters
- In determining the prescriptive parking requirements for each type of land use, Council has adopted guidelines from the AustRoads Guide to Traffic Management Part 12: Integrated Transport Assessment for Development (2020). Council uses this guide on a discretionary basis only, and may be flexible in establishing parking conditions according to an expert Traffic Impact Assessment which takes into account existing parking and traffic conditions in the vicinity of the subject site and surveys of similar sites to justify an appropriate parking rate for any development.
- In addition to the parking requirements set out in this DCP Chapter, applicants may have other obligations and requirements for accessible parking under other legislation.

B2.4 Accessible Parking Controls states the following:

- Accessible car parking spaces must be provided in accordance with the minimum percentages listed in Table B-6: Minimum percentage of accessible car parking spaces to be provided per development or in accordance with the National Construction Code or Australian Standards, whichever is higher.

Table B-4 Parking rates of the Jindabyne DCP outline the number of parking spaces for each land use type.

In accordance with Table B-4 of the DCP, Table 6.1 below sets out the statutory parking requirements associated with the development.

Table 6.1: Statutory Parking Requirements (Car and Bus)

Land Use	GLA / GFA	Car Parking Rate	Statutory Car Parking Requirement
Schools	90 staff 50 Year 12 Students 925 students	1 parking space per employee 1 parking space per 10 students in Year 12 (where applicable); and 1 bus parking space per 100 enrolled students.	90 staff spaces 5 Year 12 student spaces 10 bus parking spaces
Total Parking Requirement			90 staff spaces 5 Year 12 student spaces 10 bus parking spaces

Application of the above rates results in a requirement to provide a minimum of 95 car parking spaces (90 staff car parking spaces and 5 Year 12 student car parking spaces) and 10 bus parking spaces.

With respect to accessible parking, Table B-6 Minimum percentage of accessible car parking spaces to be provided per development, does not provide a rate for schools.

The SSD-15788005-Mod-3 plans show the provision of 111 on-site car parking spaces and 6 bus bays, allocated as follows:

- 50 x Staff Spaces (inclusive of two accessible car parking spaces)
- 6 x Student (Year 12) parking spaces
- 4 x Visitor parking spaces
- 51 x Drop-off/ Pick up spaces (DOPU)

It is noted that the reduction of three (3) on-site car parking spaces along Education Road is due to the provision of an additional two (2) bus bays.

A car parking demand assessment for SSD-15788005-Mod-3 is provided below.

6.2 Car Parking Demand Assessment

SSD-15788005

The State Significant Development Assessment Report that accompanied the SSD-15788005 Development Consent assessed the provision of car parking. It noted that while the provision of staff car parking was below the statutory car parking rate, TfNSW and the Council did not raise any concerns about the proposed parking.

Overall, the State Significant Development Assessment Report stated the following regarding the car and bus parking provision: *"The Department is satisfied that sufficient parking is provided as part of the development. The Department has recommended that parking allocations and functions be reinforced through signage within the internal road."*

Whilst SSD-15788005 did not specifically state the number of car and bus parking spaces to be provided within the Development Consent, the stamped plans showed a total of 113 car parking spaces and 4 bus bays. A comparison of the proposed car parking provision and allocation for SDD-15788005-Mod-3 against the approved SSD-15788005 and subsequent modifications is provided below in Table 6.2.

Table 6.2: Original SSD and SSD Modifications Parking Allocation Summary

Application	Bus Bays	Car Parking					Bicycle Parking
		DOPU	Visitor	Staff	Student (Year 12)	Total	
SSD	4	53	4	50	6	**113**	50
SSD Mod 1	4	54 (+1)	4	50	6	**114 (+1)**	50
SSD Mod 2	4	54	4	50	6	**114**	50
SSD Mod 3	6 (+2)	51 (-3)	4	50	6	**111 (-3)**	50

Staff Car Parking Demands

There is no material change to staff car parking demands and staff parking provisions for Modification 3.

Operational School Transport Plan (OSTP)

Ason Group is currently preparing an operational school travel plan (OSTP). As part of this OSTP, a Transport Working Group has been established to consult relevant parties on traffic and transport related matters.

As described below in Section 6.3 consultation has been undertaken with Cooma Coaches, Alpine Coaches, and TfNSW Bus Planning to discuss the future bus services for the education campus. These ongoing discussions include subsidised fares for students not eligible for the free School Student Transport Scheme (SSTS). Future discussions should aim to target future student populations with limited access to existing public transport alternatives.

Additionally, continual monitoring and assessment of the OSTP, particularly the bus services, should result in changes to the bus services to support the route planning work undertaken by the bus operator. Subsequently, this is expected to result in increased bus patronage, decreased reliance on private vehicles, and reduced reliance on the DOPU car parking spaces.

Drop-Off/ Pick-Up (DOPU) Car Parking Demands

The Transport Assessment prepared by Aurecon (Revision 4 Final Report dated 23/12/2021) for SSD-15788005 provided three travel mode scenarios based on the current school travel scenarios and the existing transport infrastructure at the proposed education campus site. They are as follows:

- Scenario 1 – Day 1. This scenario assumed that on Day 1 of school opening, only bus and vehicle access is available. This scenario assumes no walking and cycling infrastructure is provided for students, connecting the Town Centre to the Education Campus Site.
- Scenario 2 – Post Special Activation Precinct Infrastructure. This scenario assumes that the Snowy Mountains SAP transport infrastructure is provided, creating accessible and safe walking and cycling connectivity from the Town Centre and key residential estates, connecting directly to the school site to promote walking and cycling.
- Scenario 3 – Maximise walking and cycling access to the Education Campus. This scenario aims to maintain current school travel modes, with more incentives for students to walk and cycle to school.

The three scenarios are provided below in Table 6.3.

Table 6.3: Aurecon Travel Mode Scenarios

	Walk	Cycle	Bus	Private Vehicle
Scenario 1 – Day 1	-	-	30%	70%
Scenario 2 – Post SAP Infrastructure	5%	10%	30%	55%
Scenario 3 – Maximise Walking and Cycling (Post SAP Infrastructure)	15%	20%	30%	35%

As previously mentioned in Section 4.6, the active transport infrastructure initially identified within the Snowy Mountains SAP and outlined within the Aurecon TA have not been included within the priority projects to be funded within the next four years by the NSW Government.

Therefore, the Scenario 1 travel modes will be the main traffic and transport scenario in the foreseeable future, whereby the uptake of active transport alternative is expected to be extremely low.

Adopting the worst-case scenario, Scenario 1 (as a result of transport identified in the SAP not being provided) results in 30% of students arriving by bus and the remaining 70% of students arriving by private vehicle.

It is understood the primary school has the provision of an Out of School Hours Care (OSHC) Facility. The maximum capacity of this OSHC facility is pending determination when an operator is engaged. For planning purposes, a capacity of 45 students is assumed. Adopting a conservative approach it has been assumed that the OSHC facility operates at 80% capacity, with an estimate that 36 primary school students participate in the OSHC Program. With the start and finish hours of the OSHC Program typically at least 1 – 1.5 hours before and after the school bell times, these 36 primary school students would be arriving and departing outside of the peak school hour periods.

Subsequently, the maximum number of primary school students arriving and departing during the school peak hours would be 479 students, calculated based on the ultimate student capacity of 515 primary school students.

Based on Scenario 1, 70% of remaining primary school students will be arriving and departing via private vehicle during the school peak hours.

- Primary School: 479 x 0.7 = 336
- High School: 410 x 0.7 = 287

Student DOPU usage is expected to be concentrated over 30-45 minutes rather than the full hour in each of the school's peak hours.

It is understood that schools must use DOPU areas under the same conditions as No Parking Zones. That is, no stopping for more than 2 minutes provided that the occupants stay within 3 metres of the vehicle such that they are dropping off or picking up passengers and loading or unloading items. On this basis, an individual DOPU space could effectively serve approximately 10 - 15 vehicles across 30 - 45 minutes.

The effective capacity of the 51 DOPU spaces over a 30-minute period, based on 2 minutes per vehicle, is 765 vehicles, more than the traffic level expected in Scenario 1.

It is also important to consider the different characteristics of the drop-off trip compared to the pick-up trip. In the AM school peak, the drop-off trip generally takes less time, as the students are in the car and simply need to be dropped off.

Conversely, during the PM school peak, parents/ carers typically arrive early and wait for students, which can increase the average stopping time. In addition, many parents/ carers will arrive prior to the PM school bell time, and as such, queues can form behind the vehicles waiting in the pick-up area. To ensure queuing is kept to a minimum, management measures will be required to ensure parents/ carers do not arrive at the school early and the DOPU operates in the most effective manner.

When school operations commence in Term 1 2025, traffic controllers will be provided to assist in educating students and families about the operation of the DOPU.

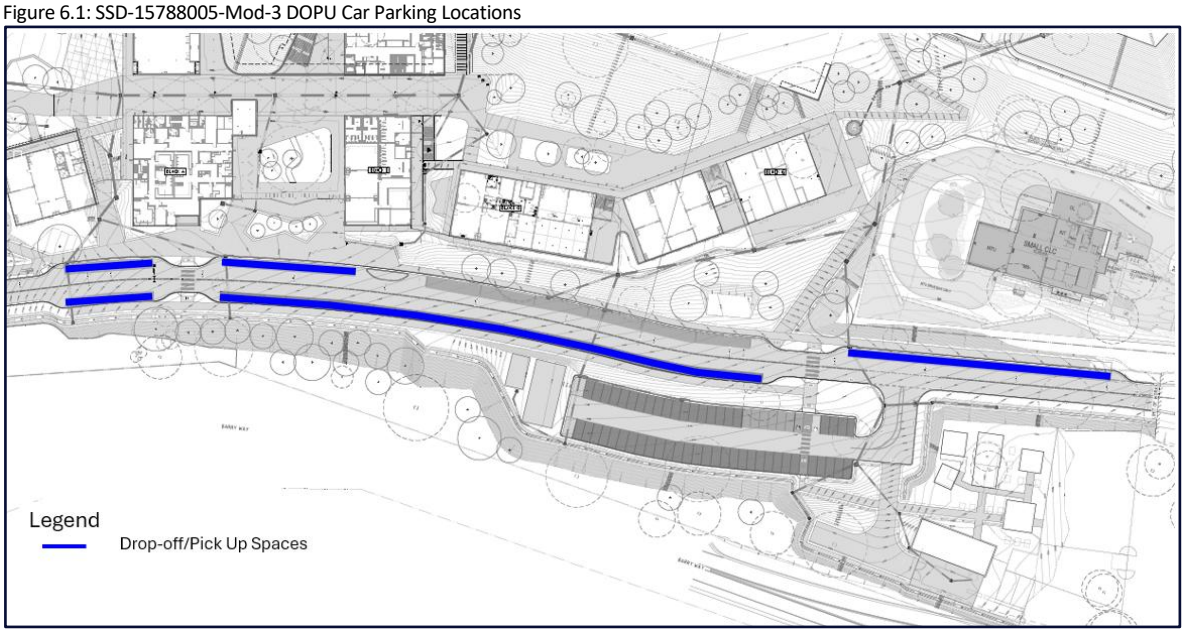
Specifically, the traffic controllers will focus on educating families on:

- Not arriving at the DOPU early and dwell in DOPU zones;
- Location of public school and high school DOPU;
- The DOPU parking restrictions and the requirement for drivers not be more than 3 metres away from the vehicle;
- That students are to enter/depart vehicles as fast as reasonably possible;
- That vehicles drive forward when vehicles in front departs to maintain the efficiency and capacity of the DOPU;
- Establish the active bays for DOPU activity to ensure students can access the correct vehicle efficiently.

During the initial phase of school operations, the traffic controllers on-site will provide feedback to the School Travel Coordinator and transport planner to make necessary minor modifications to operational procedure and identify any additional communications required with the school community to ensure safe and efficient DOPU operations.

Figure 6.1 below illustrates the location of the drop-off and pick-up spaces within Education Road.

Figure 6.1: SSD-15788005-Mod-3 DOPU Car Parking Locations



6.3 Statutory Bus Parking Assessment

Table B-4 Parking rates of the Jindabyne DCP provides the rate at which bus parking should be provided for schools. In accordance with Table B-4 of the Jindabyne DCP, Table 6.1 above sets out the statutory bus parking requirements associated with the development, which equates to 10 bus parking bays.

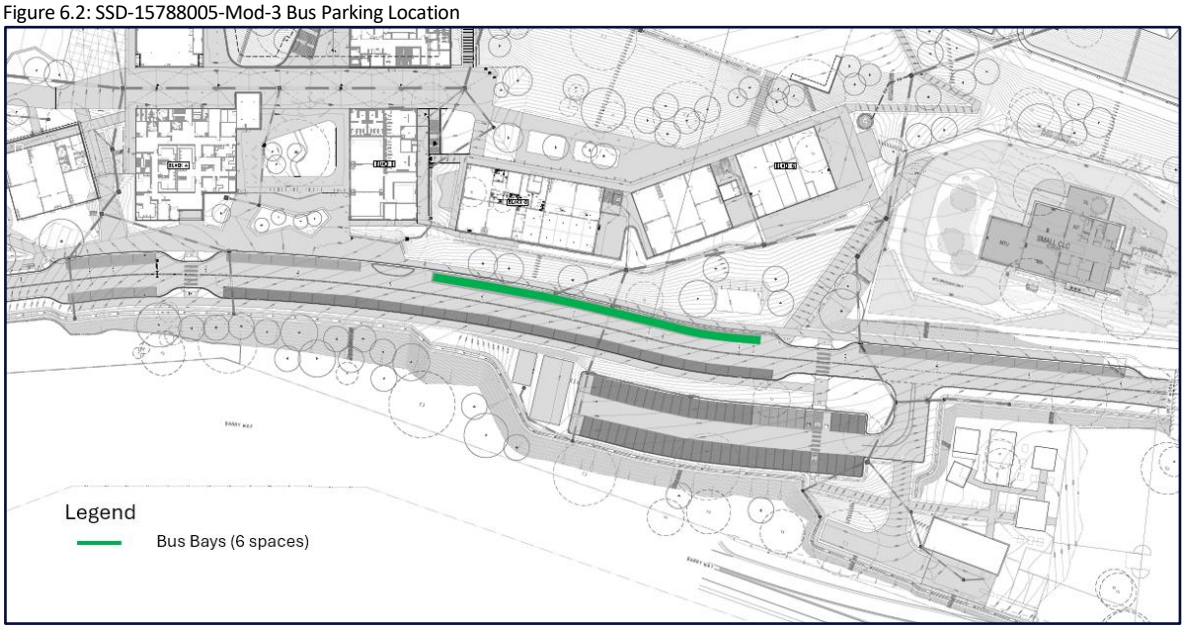
Notwithstanding the requirements of the Jindabyne DCP, the approved SSD-15788005 (including Modification 1 and 2) only required a total of 4 bus bays to be provided.

Operational School Transport Plan (OSTP)

A draft OSTP has been prepared by Ason Group for the Jindabyne Education Campus. As part of this report, a Transport Working Group has been established to undertake consultation between relevant parties in relation to traffic and transport matters. Concerning the bus parking, consultation has been conducted between Ason Group, Cooma Coaches, Alpine Coaches and TfNSW Bus Planning to discuss the bus services for the new campus, in particular the number of bus bays to be provided and the operational management measures to alleviate pressures on the drop-off/pick-up facilities for buses.

Initial consultations with Cooma Coaches raised concerns with the provision of only 4 bus bays to cater for the operational requirements of the education campus. As a result of this concern, the SSD-15788005-Mod-3 plans have been updated to provide 6 bus bays, each with a length of 15.0 metres and depth of 3.0 metres, as shown in Figure 6.2 below.

Figure 6.2: SSD-15788005-Mod-3 Bus Parking Location



The minor relocation of the bus bays, adjacent to the High School building (Block G) as shown above in Figure 6.2 has been designed to incorporate the additional bus bays and improve the DOPU arrangements for all users.

It is noted that consultation with the Transport Working Group regarding rerouting the bus routes for the education campus and rescheduling the bus timetables has resulted in an agreed timetable and route for Year 1 operations, increasing from the original 8 bus routes assessed in the SSD to 13 bus routes. Once the Barry Way works are fully complete and the education precinct commences operations in its ultimate condition, ongoing monitoring of the school bus services will form part of the implementation of the OSTP. The services are planned to provide extensive coverage of students within the enrolment intake area and are expected to attract improved bus patronage and a reduction in the reliance on private vehicle usage after completion of all road works along Barry Way. Subsequently, this should reduce reliance on the DOPU car parking spaces.

The project team is working closely with Cooma Coaches to plan for the interim site access conditions whilst road works continue along Barry Way. The exact details of the final arrangements will not be fully known until December 2024, where the arrangements will be communicated to the school community via an interim Travel Access Guide (TAG) to be distributed prior to commencement of Term 1, 2025.

Bus Parking Summary

The SSD-15788005-Mod-3 plans to provide 6 bus parking bays on the eastern side of the education road.

This provision is two (2) more than that approved under SSD-15788005 and resolves concerns raised by Cooma Coaches.

As such, the provision of 6 on-site bus bays is considered satisfactory.

6.4 Statutory Bicycle Parking Assessment

Bicycle parking requirements for land-use developments are set out in B2 Transport, access and car parking of the Jindabyne Development Control Plan (DCP), adopted version Final 16 August 2024, more specifically Part B2.6 Bicycle Parking.

Table B-7: Minimum number of bicycle parking spaces to be provided per development of the Jindabyne DCP outline the number of bicycle parking spaces for each land use type.

In accordance with Table B-7 of the DCP, Table 6.4 below sets out the statutory parking requirements associated with the development.

Table 6.4: Statutory Bicycle Parking Requirements

Land Use	GLA / GFA	Car Parking Rate	Statutory Car Parking Requirement
Schools	90 staff 925 students	1 bicycle space per 10 staff (security level B) 1 bicycle space per 10 students (security level C)	9 staff bicycle spaces 93 student bicycle parking spaces
Total Parking Requirement			9 staff bicycle spaces 93 student bicycle parking spaces

SSD – 15788005 Condition D18

Condition D18 of the Development Consent for SSD-15788005 states the following:

"D18. Prior to the commencement of operation, compliance with the following requirements for secure bicycle parking and end of trip facilities must be submitted to the Certifier:

a) the provision of a minimum 50 students/staff bicycle parking spaces;

b) the layout, design and security of bicycle parking facilities must comply with the minimum requirements of the latest version of AS 2890.3:2015 Parking Facilities – Bicycle parking, and be located in easy to access, well-lit areas that incorporate passive surveillance;

c) the provision of end-of-trip facilities for staff; and

d) appropriate pedestrian and cyclist advisory signs are to be provided.

Snowy Mountains SAP

As mentioned in Section 4.6, the active transport infrastructure initially identified within the Snowy Mountains SAP and outlined within the Aurecon TA have not been included within the priority projects to be funded within the next four years by the NSW Government.

As such, the active transport infrastructure connecting the education campus to the broader Jindabyne community shall be limited to the shared path along Barry Way, between the education campus and Jillamatong Street (to be provided by the project), until future connections are provided by other public authorities.

As mentioned above, this assessment assumes the worst case travel mode scenario of 30% of students travelling by bus and the remaining 70% travelling by private vehicle.

Bicycle Parking Summary

A total of 50 bicycle parking spaces are to be provided for students and staff, with additional bicycle parking spaces to be provided, as demand increases.

Consistent with the Aurecon TA, it is recommended that the usage of bicycle parking be continually monitored through the OSTP, with the provision of bicycle parking to increase and meet demands, as required.

Thus, the current provision of bicycle parking is considered acceptable. In addition, the current provision of 50 bicycle parking spaces complies with Condition D18 of SSD-15788005Transport Assessment

7 Transport Assessment

7.1 Ultimate Traffic Generation vs Aurecon TA Future Year 2033 Traffic Generation

Table 7.1, below illustrates the differences in expected traffic generation between this report and the Aurecon TA.

The Ultimate Traffic Generation represents when the education campus is operating at capacity, with 925 students and 90 staff. Compared with our assessment, the Aurecon TA anticipated an additional 334 vehicles arriving and departing the education campus in each of the AM and PM peak hours.

Based on our assumptions of the Aurecon TA traffic generation, refer to Section 7.3. We conclude that the Aurecon TA did not apply a student car occupancy rate to the student trips arriving and departing the education campus and thus overestimated the traffic volumes.

Table 7.1: Ultimate Traffic Generation Comparison Summary

	Aurecon Transport Assessment										Navianto Transport Assessment									
	Students		Staff		Bus		Tafe		Total		Students		Staff		Bus		Tafe		Total	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Arrivals	648	648	50	0	Assumed to be included within the Student numbers		21	9	**708**	**660**	453	453	72	0	13	13	21	9	**559**	**475**
Departures	648	648	0	50			9	21	**660**	**708**	453	453	0	72	13	13	9	21	**475**	**559**
TOTAL	**1296**	**1296**	**50**	**50**			**30**	**30**	**1368**	**1368**	**906**	**906**	**72**	**72**	**26**	**26**	**30**	**30**	**1304**	**1034**

7.2 Ultimate Traffic Generation

The Ultimate Traffic Generation represents when the education campus operates at capacity, with 925 students and 90 staff.

Student Traffic Generation

The following student traffic generation is based on the following inputs:

- Ultimate student demand of 925 students
- A student car occupancy rate of 1.43 students per vehicle (based on analysis of the 2024 de-personalised data)
- Aurecon Travel Mode Scenario 1 – 70% of students to arrive by private vehicle
- Vehicle trips during the AM and PM peaks are evenly distributed between arrivals and departures

Staff Traffic Generation

The following staff traffic generation is based on the following inputs:

- Ultimate staff demand of 90 staff members
- A car occupancy rate of 1 staff member per vehicle
- Aurecon Travel Mode for staff – 80% of staff to arrive by private vehicle
- Aurecon Travel Mode for staff – remaining 20% of staff to arrive as a passenger or public transport
- All vehicle trips in the AM peak will be arrivals and all vehicle trips in the PM peak will be departures

Bus Traffic Generation

Cooma Coaches has provided an indicative bus schedule for each of the AM and PM peaks for the Jindabyne Education Campus, as follows:

- 13 trips will arrive and depart in the AM peak
- 13 trips will arrive and depart in the PM peak

TAFE CLC Traffic Generation

The TAFE CLC traffic generation has been adopted from the Aurecon TA, which provides the following:

- *12 trips will arrive in the AM peak and leave in the PM peak (teachers and students driving and parking on site)*
- *Nine (9) trips will arrive and leave in each of the AM and PM peaks.*

7.3 Aurecon Transport Assessment Future Year 2033 Traffic Generation

The Aurecon TA relied on the following assumptions, as shown in Figure 7.1, for the SIDRA Modelling.

Figure 7.1: Aurecon TA SIDRA Transport modelling assumptions

Assumptions
10%of the Barry Way traffic stream are Heavy Vehicles
Opening year 2023
Students and staff numbers remain unchanged for the opening year and the future year 2033
70% of students get dropped off and picked up
80% of staff drive there and back in their own vehicle
50% of entering traffic comes from north
50%of exiting traffic leaves to north
50%of entering traffic comes from south
50% of exiting traffic leaves to south

Source: Aurecon TA

Whilst the Aurecon TA did not expressly provide the breakdown of the traffic generation for each class (students, staff, etc) or the overall traffic generation for the education campus, Appendix A of the Aurecon TA provided the detailed SIDRA results. These results include the arrival and departure inputs for each of the proposed roundabouts during each of the AM and PM peak periods. Based on the detailed SIDRA Results in Appendix A of the Aurecon TA, the education campus generated the following traffic volumes for the Future Year 2033.

Table 7.2: Aurecon TA detailed SIDRA results northern roundabout traffic generation (Future Year 2033)

	AM	PM
Arrivals	344	324
Departures	324	344
TOTAL	668	668

Table 7.3: Aurecon TA detailed SIDRA results southern roundabout traffic generation (Future Year 2033)

	AM	PM
Arrivals	364	336
Departures	336	364
TOTAL	700	700

Table 7.4: Aurecon TA detailed SIDRA results Northern and Southern Roundabout Traffic Generation (Future Year 2033)

	AM	PM
Arrivals	708	660
Departures	660	708
TOTAL	1368	1368

Based on a total of 1368 vehicles arriving and departing the education campus in each of the AM and PM peak periods, we have assumed the following traffic generation breakdown:

- 648 students trips will arrive and depart the education campus in each peak hour (1296 trips in each peak hour)

- 50 staff trips will arrive in the AM peak and depart in the PM peak (50 trips in each peak hour)
- No trips have been allocated for the buses
- 12 TAFE trips will arrive in the AM peak and depart in the PM peak (12 trips in each peak hour)
- 9 TAFE trips will arrive and depart the TAFE in each peak hour (18 trips in each peak hour)

NOTE: The Aurecon TA assumes 80% of staff arrive and depart the education campus via private vehicle, which based on 90 staff members results in 72 vehicle movements. However, based on our assumptions of the breakdown of the Aurecon traffic generation, only 50 trips were to be generated by staff of the education campus. It is unclear how the remaining 22 trips have been accounted for.

7.4 Year 1, 2025 Traffic Generation

Table 7.5: Year 1, 2025 Traffic Generation Summary

	Students		Staff		Bus		Tafe		Total	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Arrivals	319	319	72	0	13	13	21	9	**425**	**341**
Departures	319	319	0	72	13	13	9	21	**341**	**425**
TOTAL	**638**	**638**	**72**	**72**	**26**	**26**	**30**	**30**	**766**	**766**

Year 1, 2025 Education Campus Traffic Generation

The Year 1, 2025 student traffic generation is based on the following inputs:

- Year 1, 2025 student demand of 650 students
- A student car occupancy rate of 1.43 students per vehicle (based on analysis of the 2024 de-personalised data)
- Aurecon Travel Mode Scenario 1 – 70% of students to arrive by private vehicle
- Vehicle trips during the AM and PM peaks are evenly distributed between arrivals and departures

Year 1, 2025 Staff Traffic Generation

The following staff traffic generation is based on the following inputs:

- Year 1, 2025 staff demand of 90 staff members
- A car occupancy rate of 1 staff member per vehicle
- Aurecon Travel Mode for staff – 80% of staff to arrive by private vehicle
- Aurecon Travel Mode for staff – remaining 20% of staff to arrive as a passenger or public transport
- All vehicle trips in the AM peak will be arrivals and all vehicle trips in the PM peak will be departures

Year 1, 2025 Bus and Tafe Traffic Generation Summary

No changes are expected to the traffic generations associated with the Tafe CLCL and Bus Schedules. Hence, the ultimate traffic generations for those uses have been adopted for the Year 1, 2025 scenario.

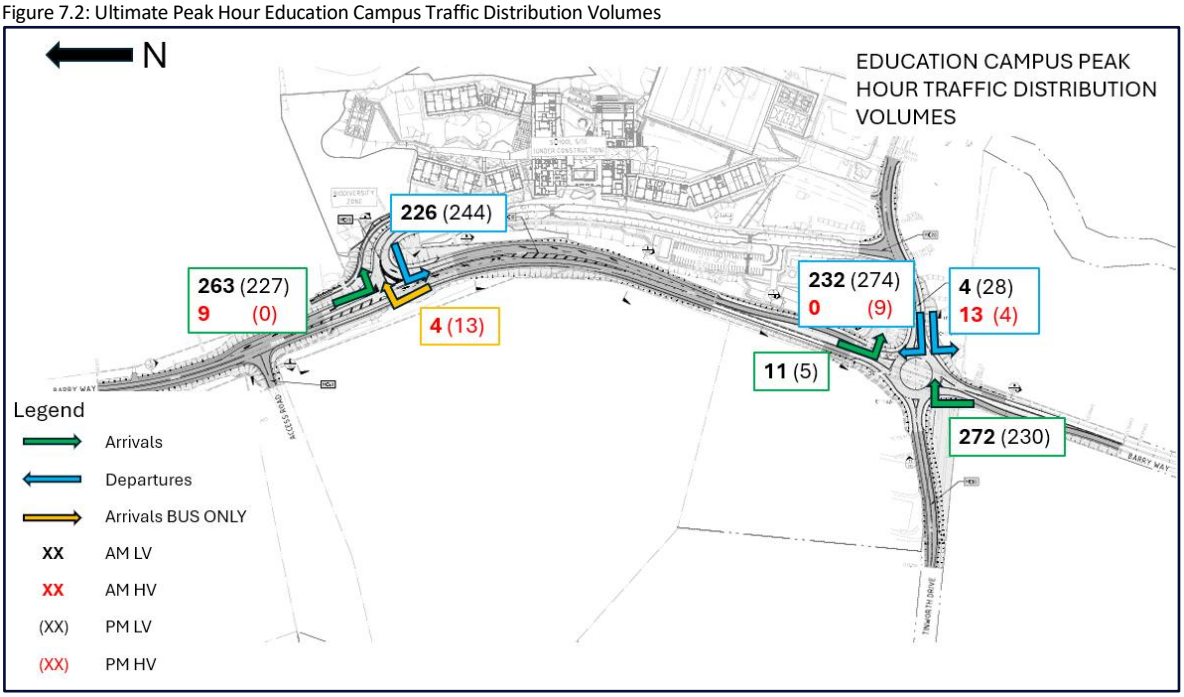
7.5 Ultimate Traffic Trip Distribution

The Ultimate Traffic Trip Distributions described below are based on the education campus intersections along Barry Way being complete and operational and the primary school and high school operating at capacity, with 925 students and 90 staff.

Ultimate Summary Trip Distribution

Based on the traffic distributions discussed below, Figure 7.2 illustrates the ultimate trip distributions volumes for the education campus during each of the AM and PM peak hours.

Figure 7.2: Ultimate Peak Hour Education Campus Traffic Distribution Volumes



Student Trip Distribution

As per the original Aurecon TA, under ultimate conditions student traffic arriving and departing the education campus is expected to be evenly distributed (50/50 split) to the north and south during each of the AM and PM peak hours.

Figure 7.3 and Figure 7.4 represent the ultimate peak hour student traffic distribution percentages splits and ultimate student peak hour volumes, respectively.

Figure 7.3: Ultimate Peak Hour Student Traffic Distribution Percentages

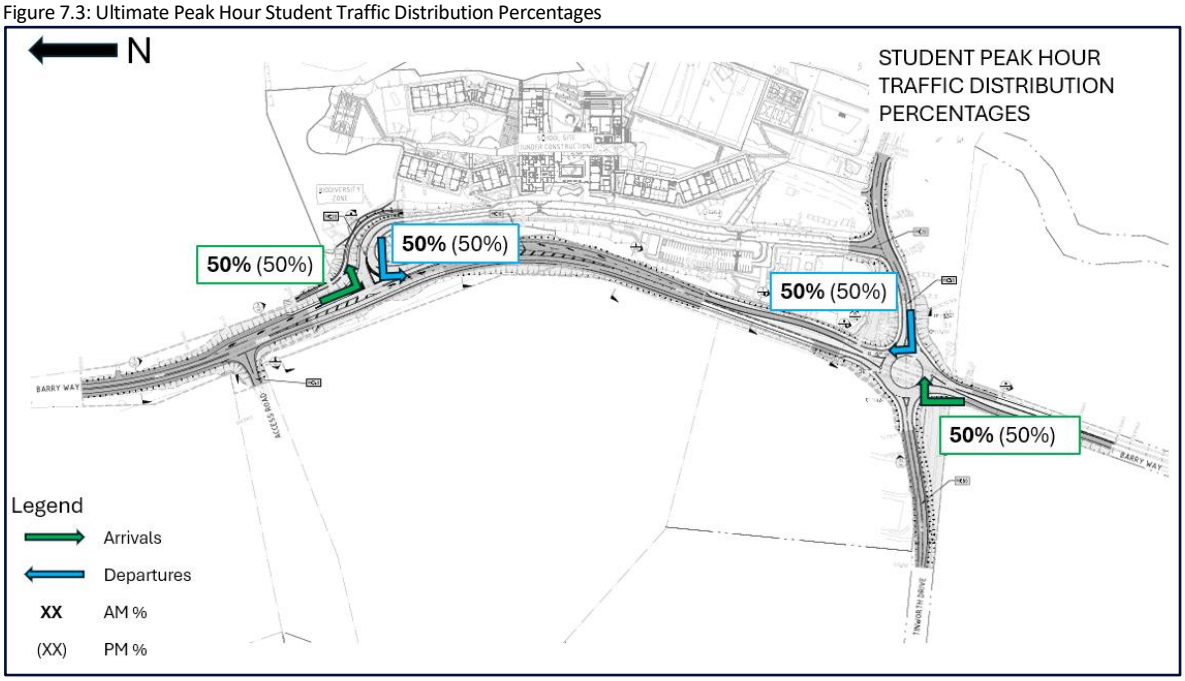
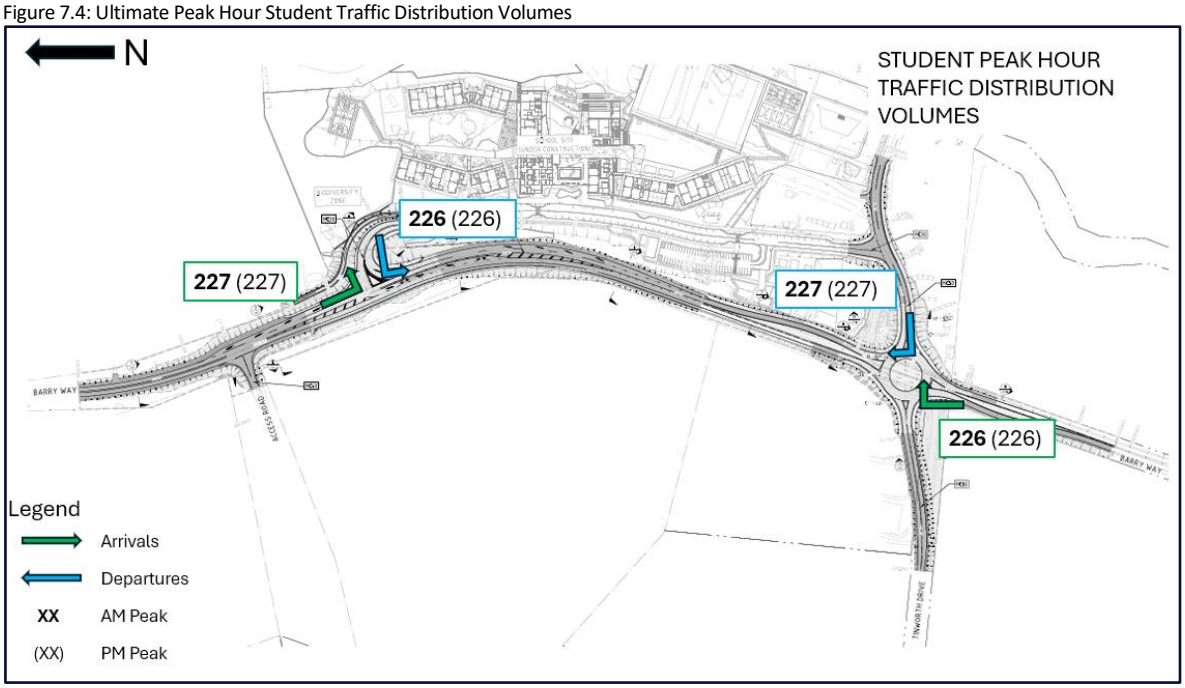


Figure 7.4: Ultimate Peak Hour Student Traffic Distribution Volumes



Staff Trip Distribution

As per the original Aurecon TA, under ultimate conditions, staff arriving to the education campus during the AM peak are expected to be evenly distributed (50/50 split) from the north and south. During the PM peak, staff departing the site are expected to be evenly distributed (50/50 split) to the north and south.

Figure 7.5 and Figure 7.6 represent the ultimate peak hour staff traffic distribution percentages splits and ultimate staff peak hour volumes, respectively.

Figure 7.5: Ultimate Peak Hour Staff Traffic Distribution Percentages

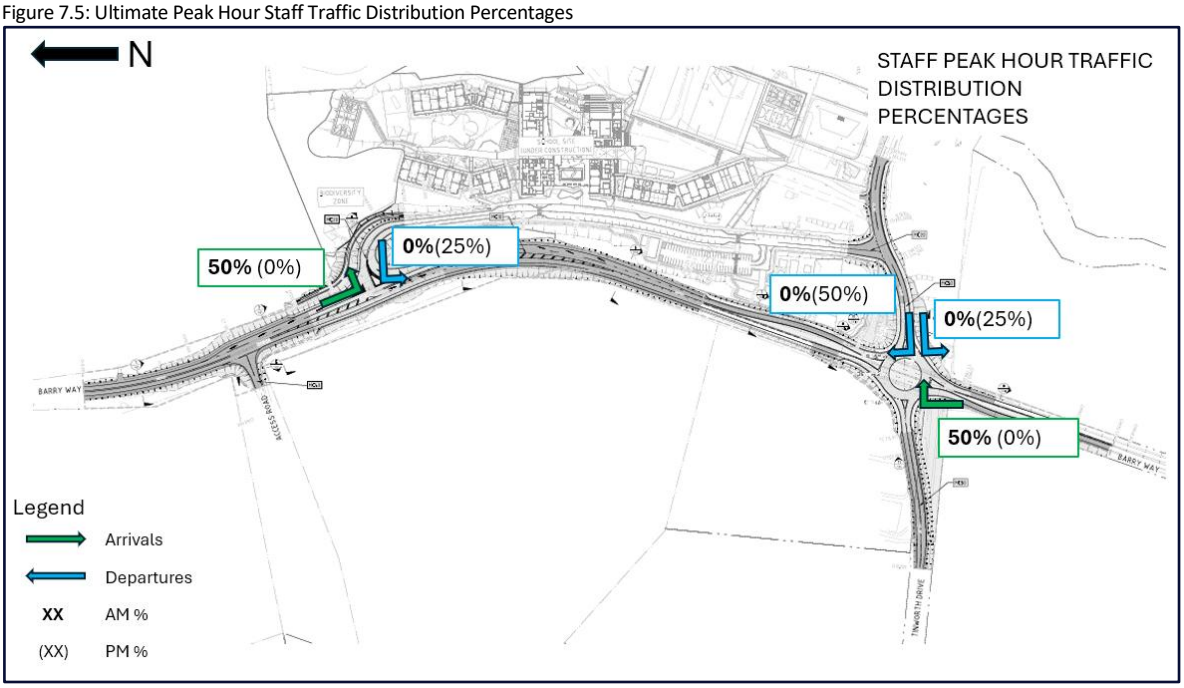
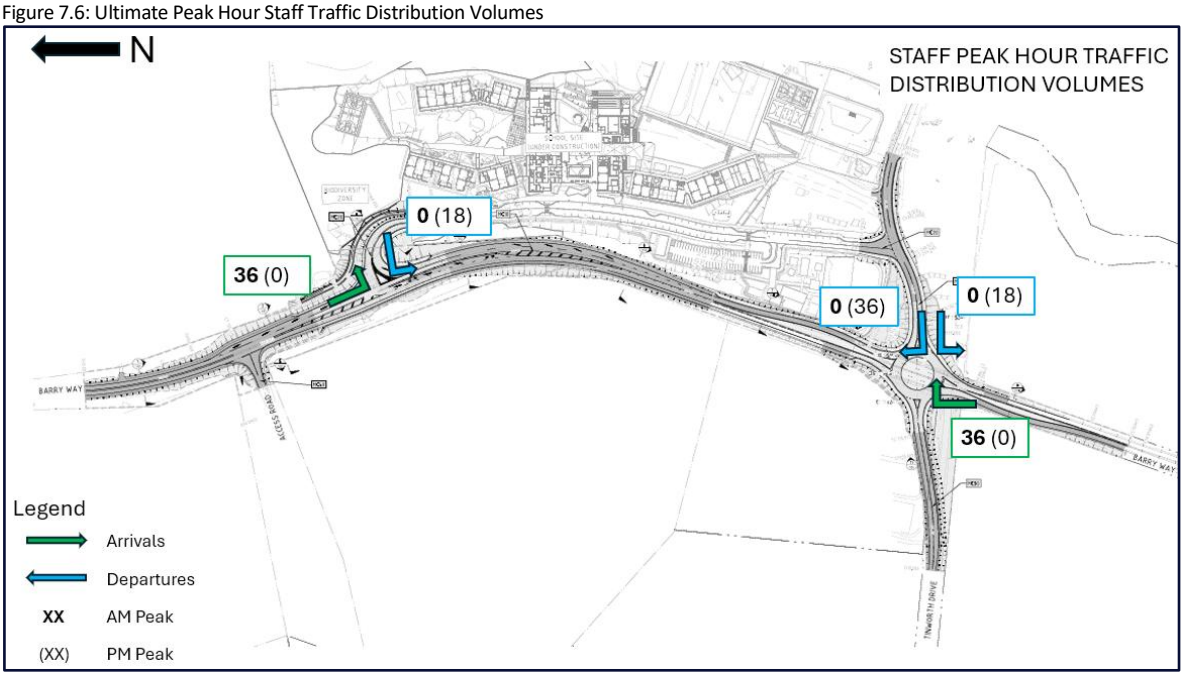


Figure 7.6: Ultimate Peak Hour Staff Traffic Distribution Volumes

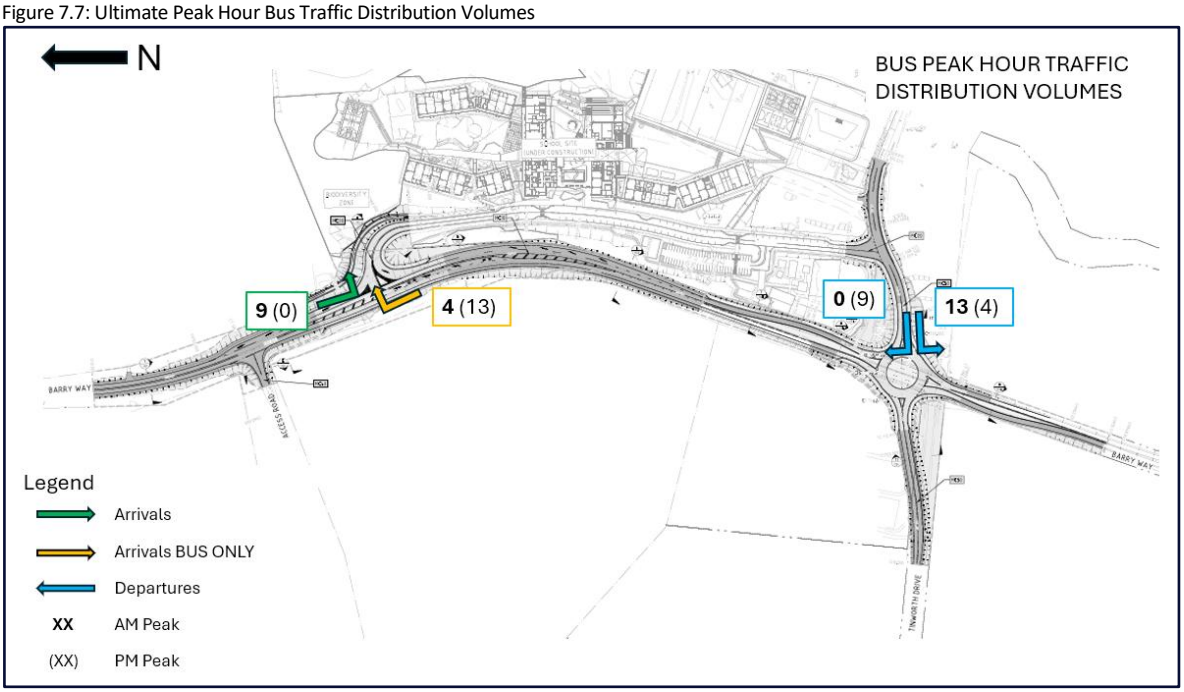


Bus Trip Distribution

During the AM peak, buses will arrive to the education campus from the service destination and depart to the Cooma Coaches depot, located to the south of the education campus. Conversely, during the PM peak, buses will arrive to the education campus from the Cooma Coaches Depot (south of the education campus) and depart to the service destination.

The ultimate bus peak hour volumes, based on the schedules provided by Cooma Coaches are shown graphically in Figure 7.7. As mentioned in Section 6.3, the continued monitoring and implementation of the OSTP should result in further refinements to the bus services to support the route planning work undertaken by the bus operator. Subsequently, this should result in increased bus patronage (and potentially additional bus services) and a decrease in the reliance on private vehicles, which in turn should reduce the reliance on the DOPU car parking spaces.

Figure 7.7: Ultimate Peak Hour Bus Traffic Distribution Volumes

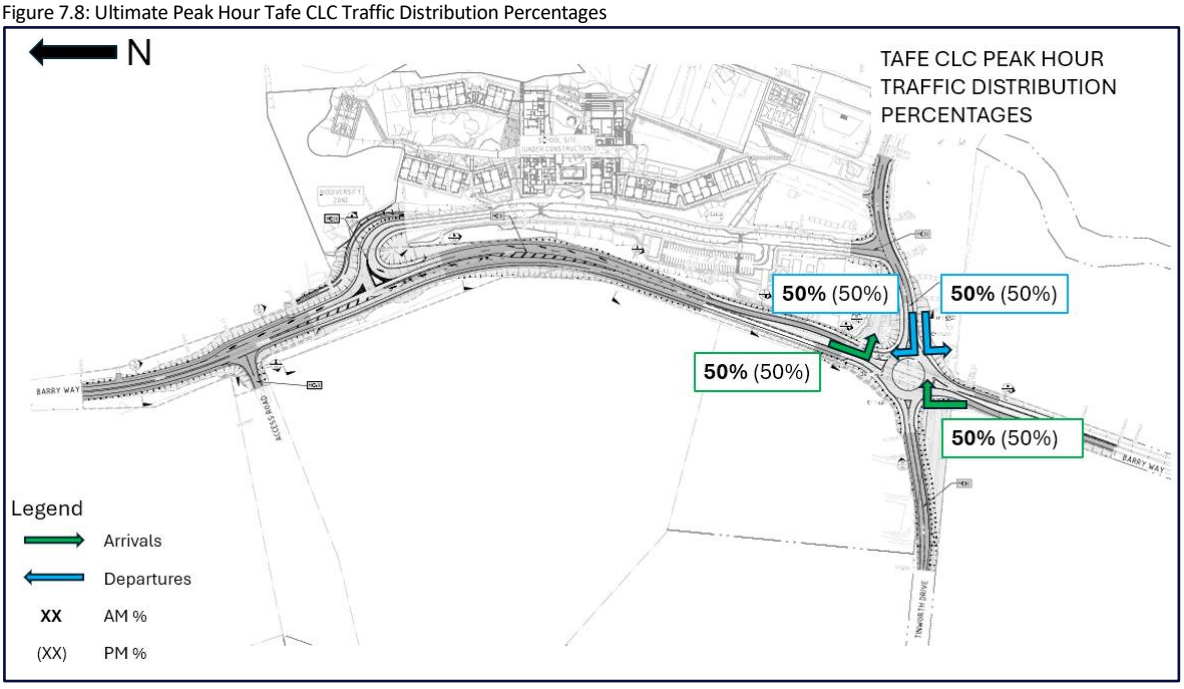


Tafe Trip Distribution

All Tafe CLC trips will arrive and depart from the southern intersection, accessing the Tafe CLC site via the Sport & Recreation access road.

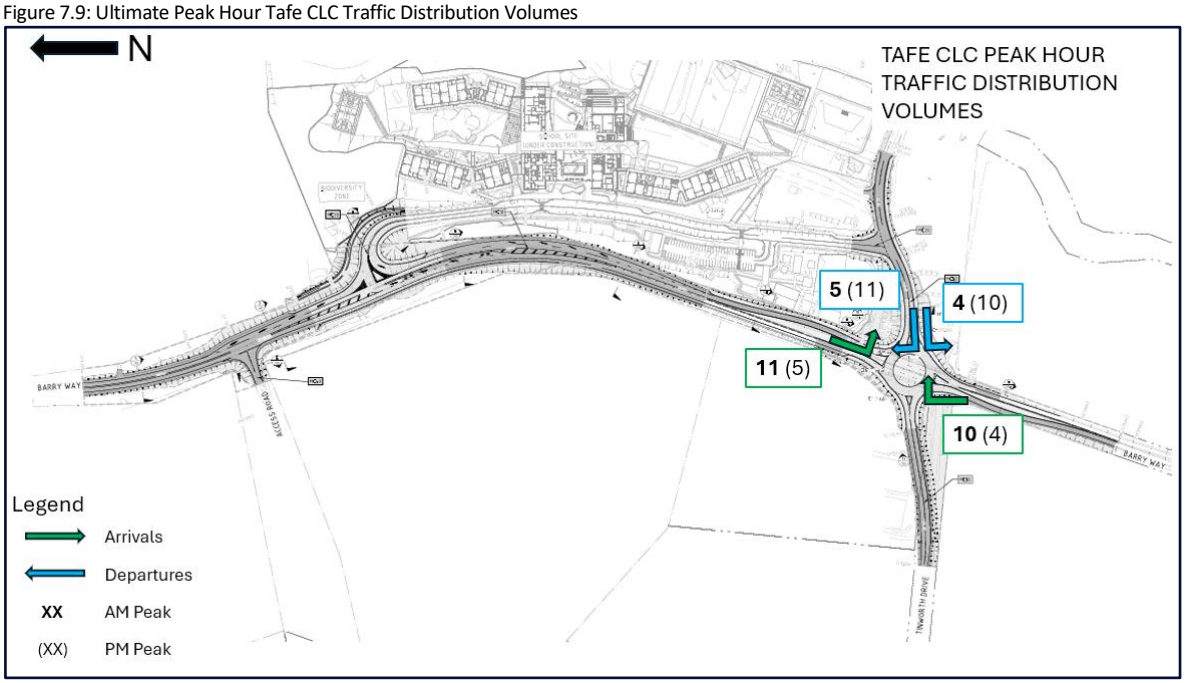
Figure 7.8 below shows the ultimate peak hour Tafe CLC traffic distribution percentages splits.

Figure 7.8: Ultimate Peak Hour Tafe CLC Traffic Distribution Percentages



Additionally, Figure 7.9 below illustrates the ultimate Tafe CLC peak hour volumes.

Figure 7.9: Ultimate Peak Hour Tafe CLC Traffic Distribution Volumes



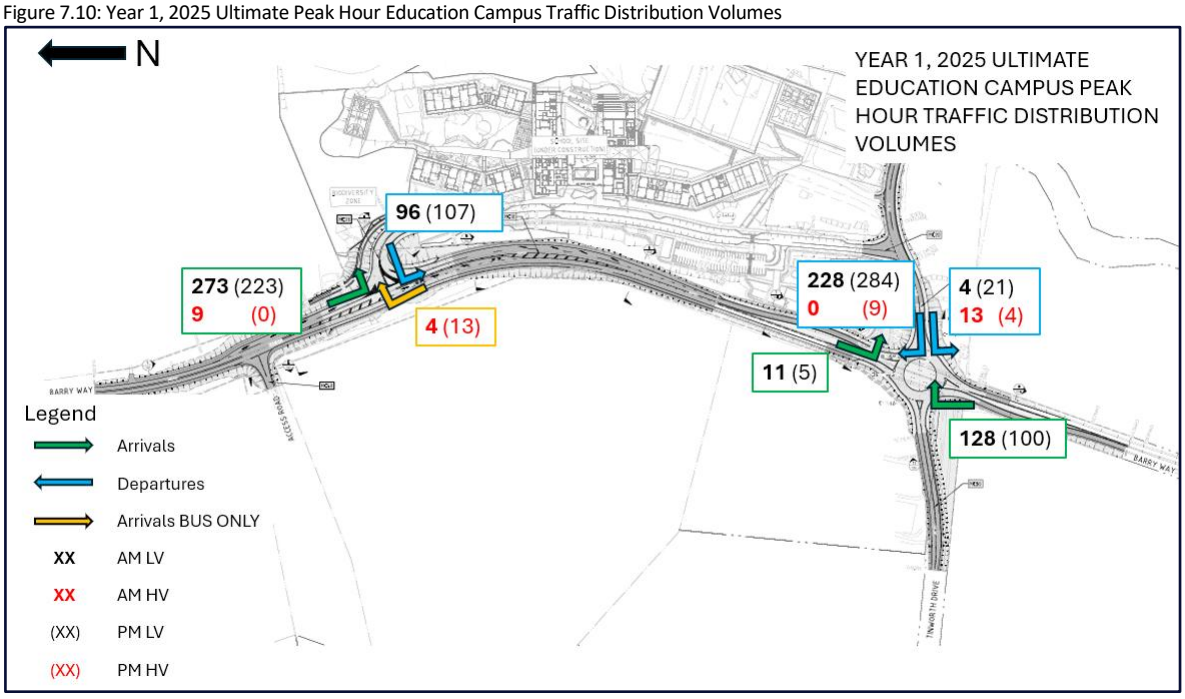
7.6 Year 1, 2025 Ultimate Trip Distribution

The Year 1, 2025 Ultimate Trip Distribution is based on the Barry Way intersections being complete and operational and the primary school and high school operating with a combined capacity of 650 students and 90 staff.

Year 1, 2025 Ultimate Summary Trip Distribution

Based on the traffic distributions described below, Figure 7.10 below illustrates the ultimate trip distribution volumes for the education campus during each of the AM and PM peak hours.

Figure 7.10: Year 1, 2025 Ultimate Peak Hour Education Campus Traffic Distribution Volumes



Year 1 Ultimate Student Trip Distribution

SINSW has provided de-personalised student data for the existing Jindabyne Public School (Primary School) and Jindabyne High School. Analysis of the 2024 data for the new education campus location indicates the following directional splits:

- Primary School
  - 75% arriving and departing to the north
  - 25% arriving and departing to the south
- High School
  - 70% arriving and departing to the north
  - 30% arriving and departing to the south

Based on the above distributions, the following directional percentage splits have been adopted, as shown in Figure 7.11. The resultant student peak hour volumes are shown in Figure 7.12.

Figure 7.11: Year 1, 2025 Ultimate Peak Hour Student Traffic Distribution Percentages

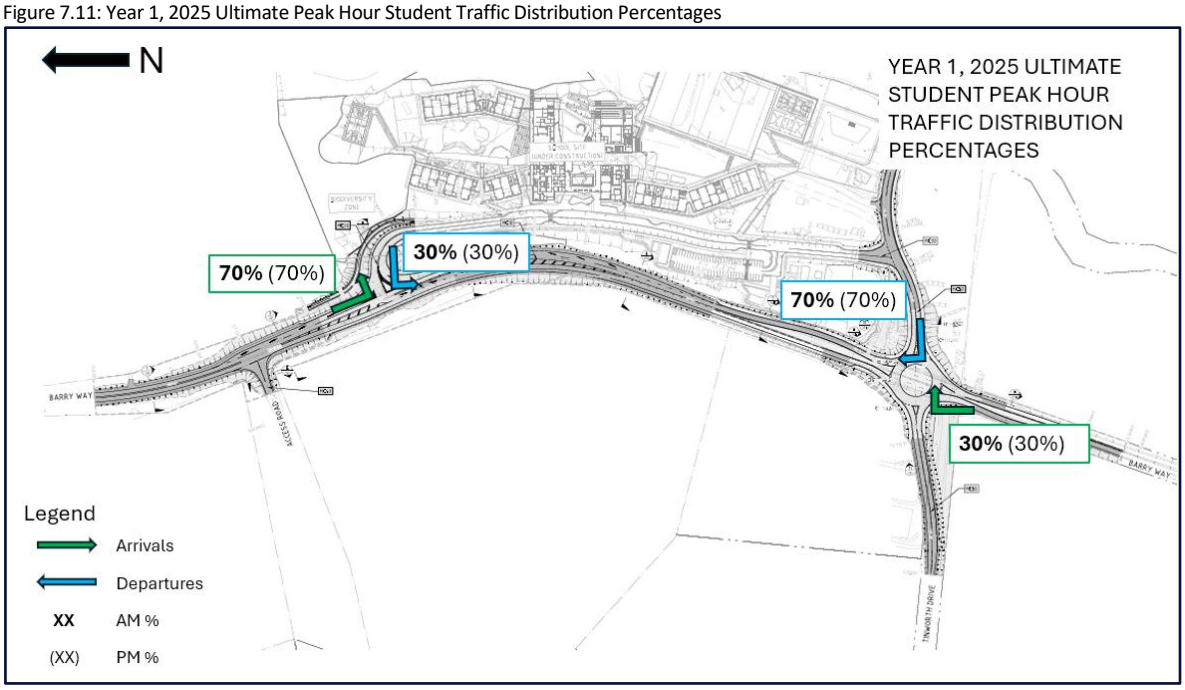
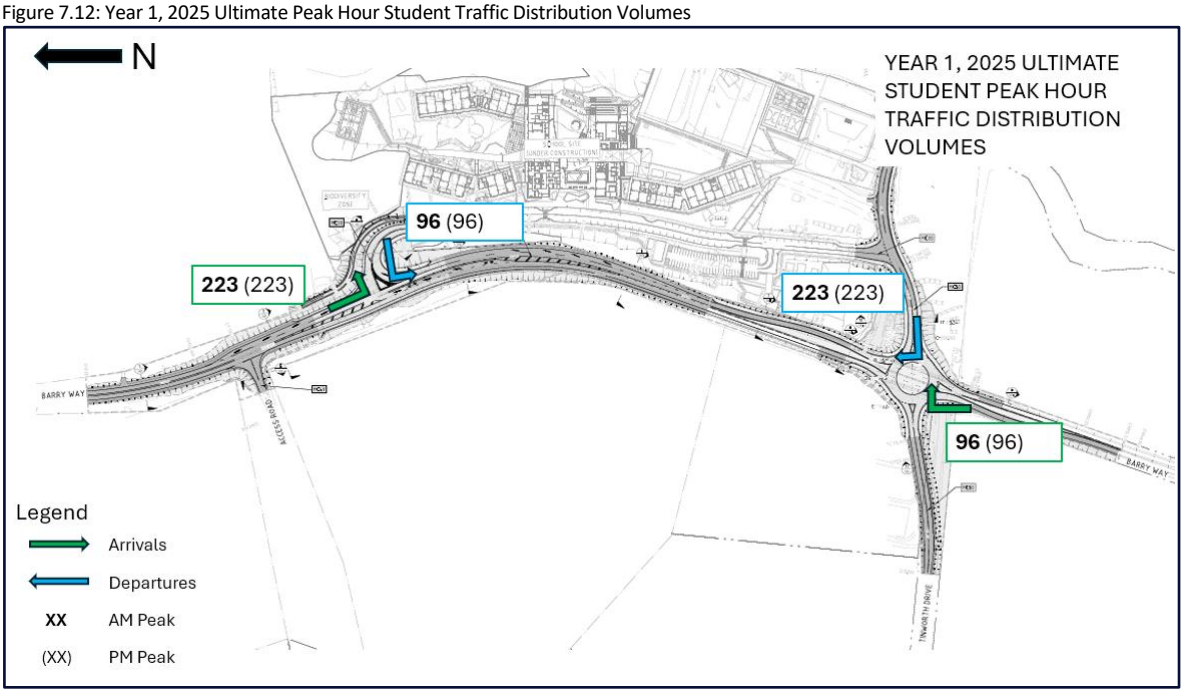


Figure 7.12: Year 1, 2025 Ultimate Peak Hour Student Traffic Distribution Volumes



Year 1, 2025 Ultimate Staff Trip Distribution

Staff origin trips are based on a number of factors, including existing housing locations and future housing opportunities. Currently, the majority of staff are expected to reside to the north and thus are required to travel from the north to the education campus.

Thus, the staff peak hour traffic distribution percentages splits and volumes to and from the education campus during the Year 1, 2025 ultimate scenario are shown in Figure 7.13 and Figure 7.14, respectively.

Figure 7.13: Year 1, 2025 Ultimate Peak Hour Staff Traffic Distribution Percentages

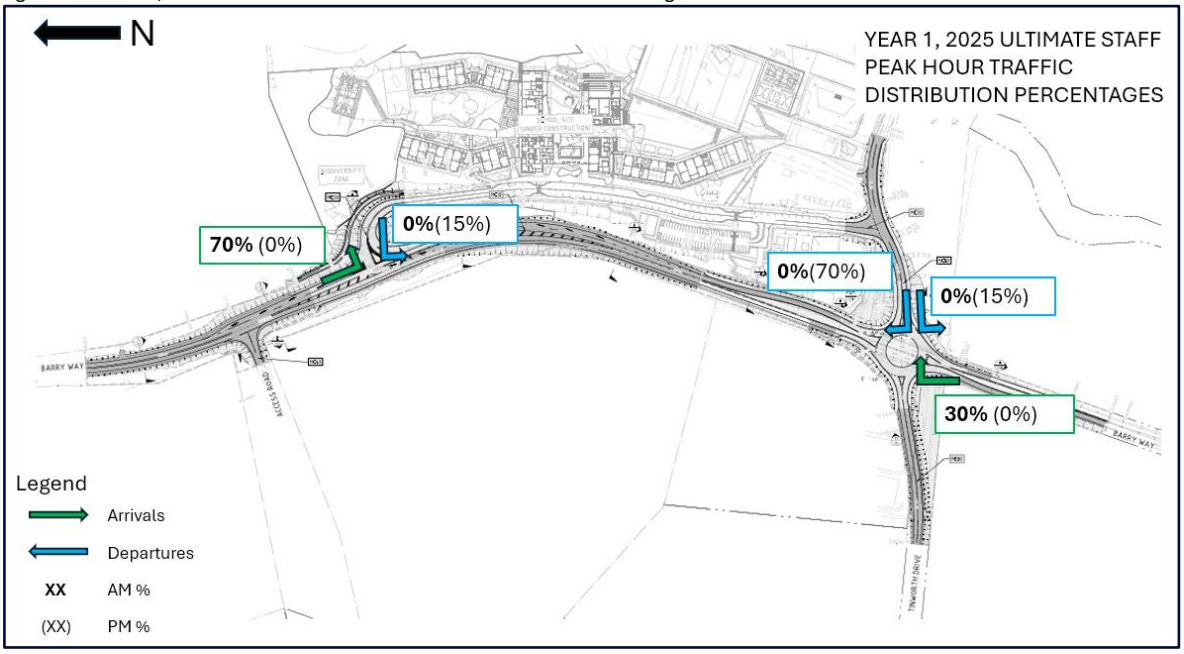
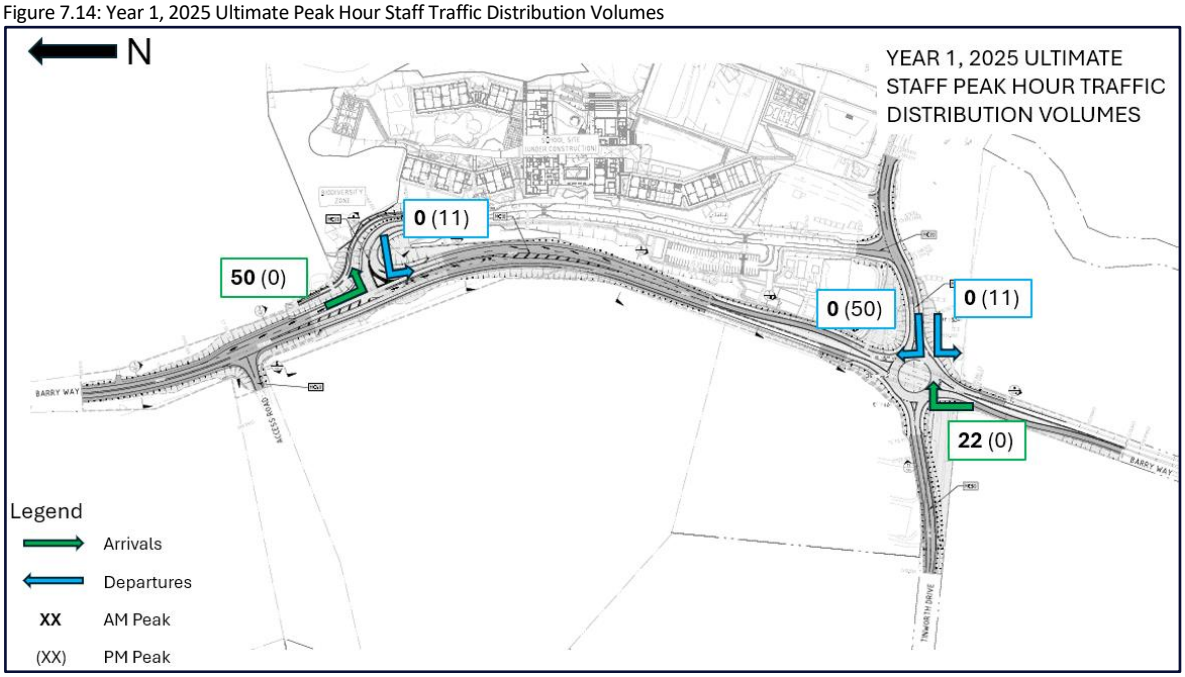


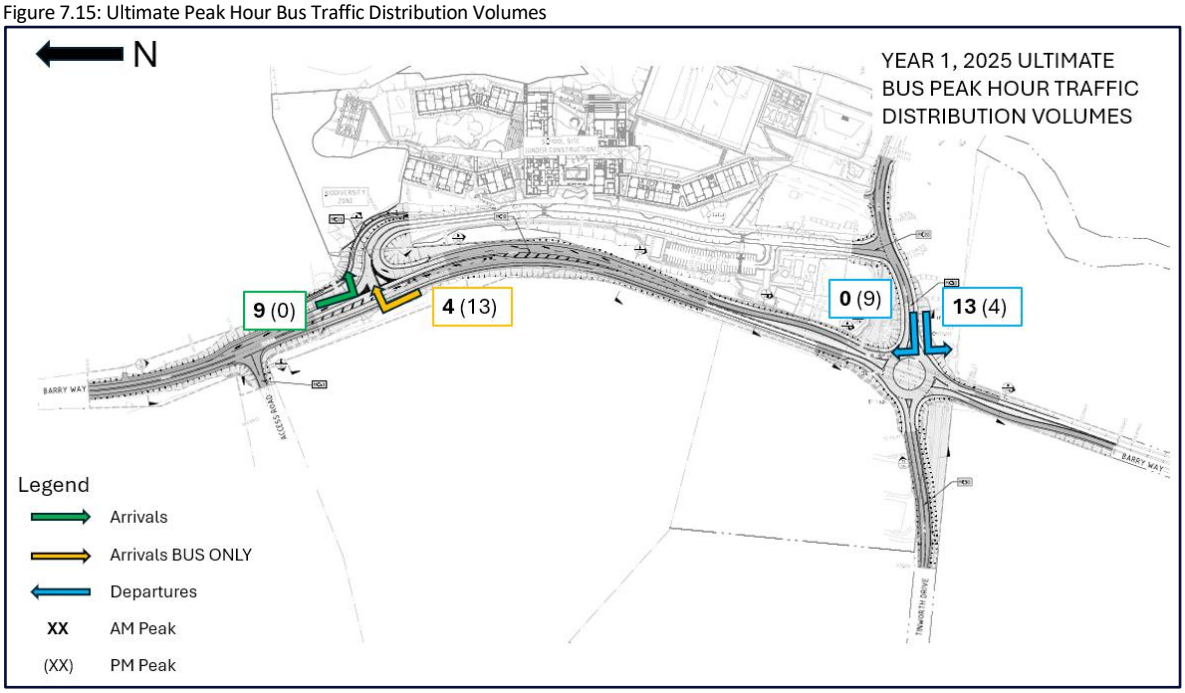
Figure 7.14: Year 1, 2025 Ultimate Peak Hour Staff Traffic Distribution Volumes



Year 1, 2025 Ultimate Bus Trip Distribution

The Year 1, 2025 ultimate bus trip distribution is the same as the ultimate conditions as shown above in Figure 7.7 and replicated below in Figure 7.15

Figure 7.15: Ultimate Peak Hour Bus Traffic Distribution Volumes



Year 1, 2025 Ultimate Tafe Trip Distribution

Similar to the Year 1, 2025 ultimate bus trip distributions, the Tafe CLC trips remain the same as the ultimate conditions.

Figure 7.16 and Figure 7.17 replicate the Ultimate peak hour Tafe CLC traffic distribution percentages splits and ultimate Tafe CLC peak hour volumes, respectively.

Figure 7.16: Ultimate Peak Hour Tafe CLC Traffic Distribution Percentages

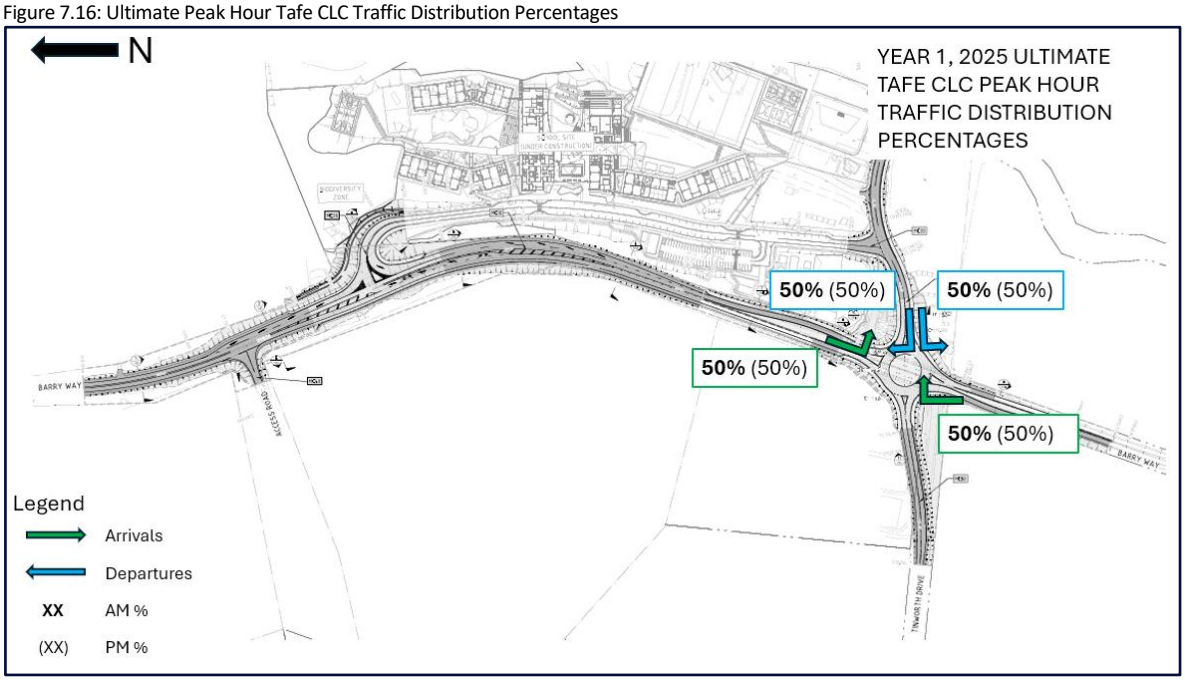
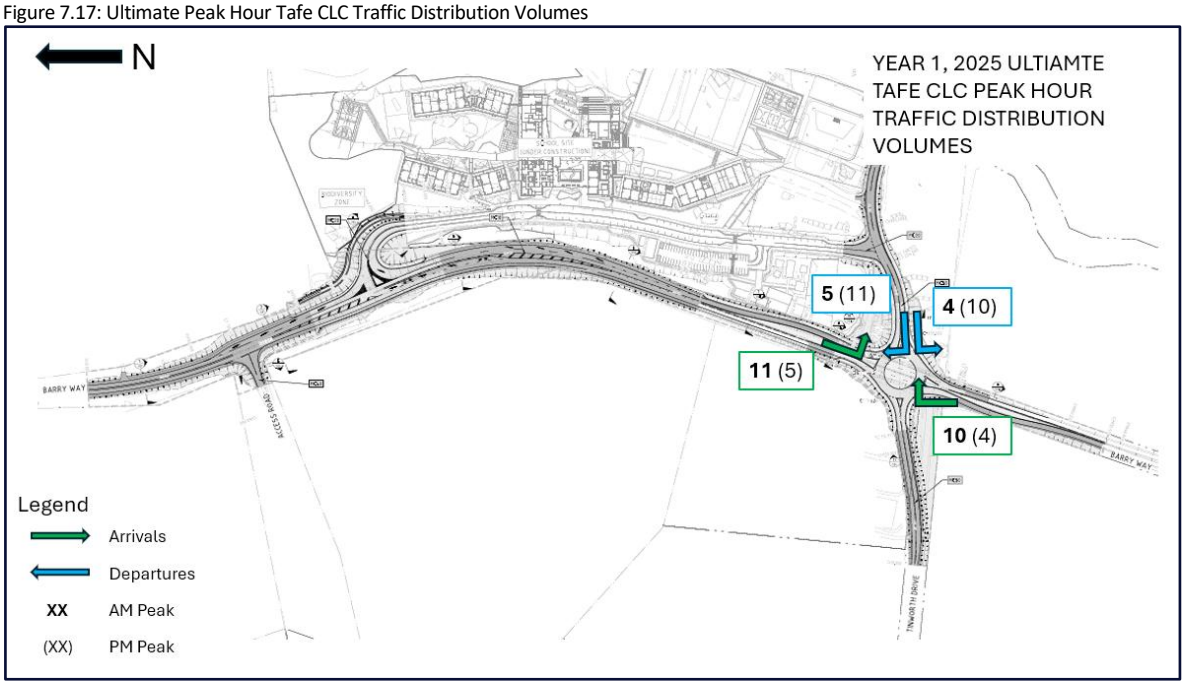


Figure 7.17: Ultimate Peak Hour Tafe CLC Traffic Distribution Volumes



7.7 Year 1, 2025 Interim Trip Distribution

All traffic associated with the education campus (with the exception of buses and the CLC Tafe) must enter from the north via the temporary access road, and movements from the south must make a U-turn at the Barry Way/ Kosciuszko roundabout.

When school operations commence in Term 1 2025, traffic controllers will be positioned along Barry Way to assist in educating students and families about the operation of the interim traffic arrangements. This includes instructing drivers approaching from the south that to enter the education campus, they must make a u-turn at the Barry Way/ Kosciuszko Road roundabout.

Year 1, 2025 Interim Summary Trip Distribution

Based on the traffic distributions shown below, Figure 7.18 and Figure 7.19 show the interim arrival and departure trips at the Barry Way/ Kosciuszko Road roundabout. Additionally, Figure 7.20 below illustrates the Year 1, 2025 interim trip distributions for the education campus during the AM and PM peak hours.

Figure 7.18: Year 1, 2025 Interim Peak Hour Arrival Traffic Distribution Volumes at Barry Way/ Kosciuszko Road roundabout

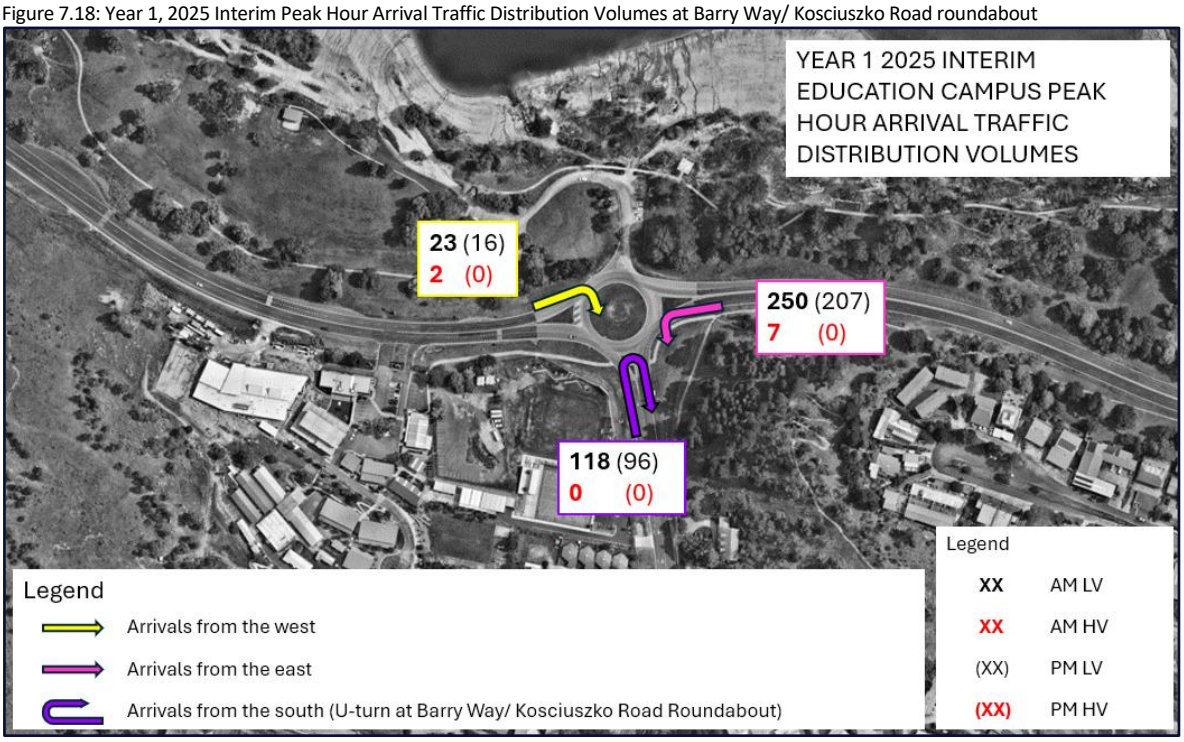


Figure 7.19: Year 1, 2025 Interim Peak Hour Departure Traffic Distribution Volumes at Barry Way/ Kosciuszko Road roundabout

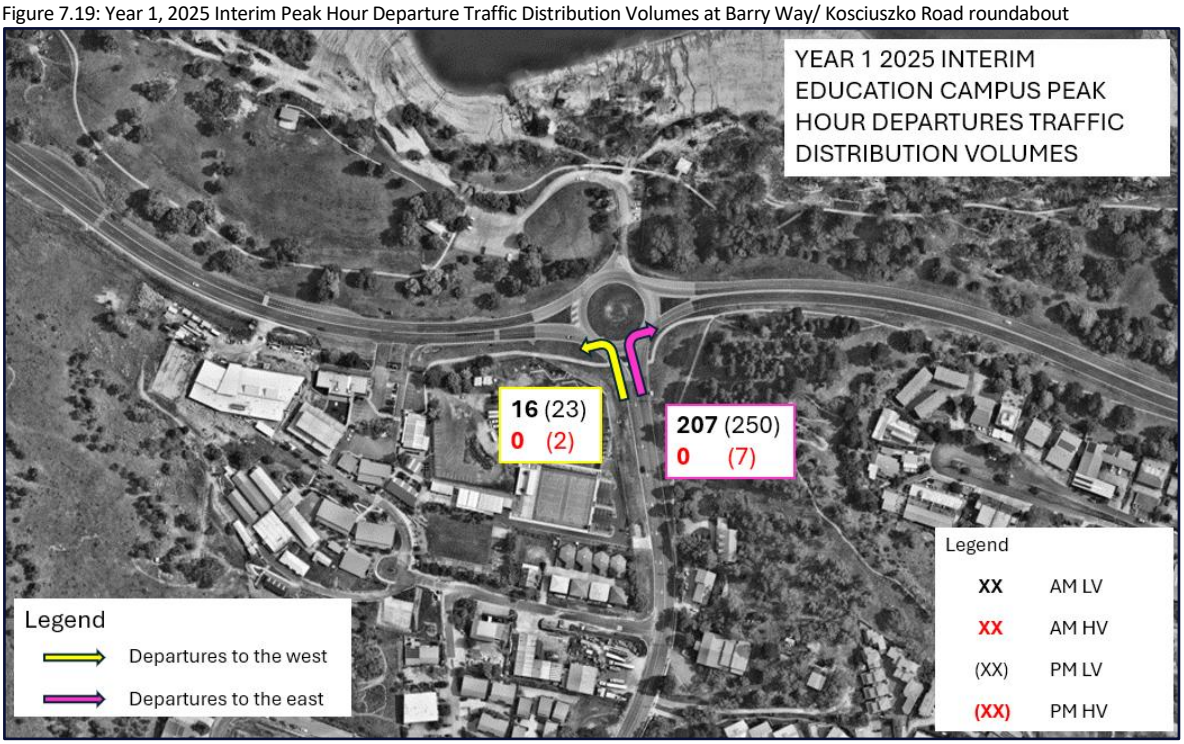
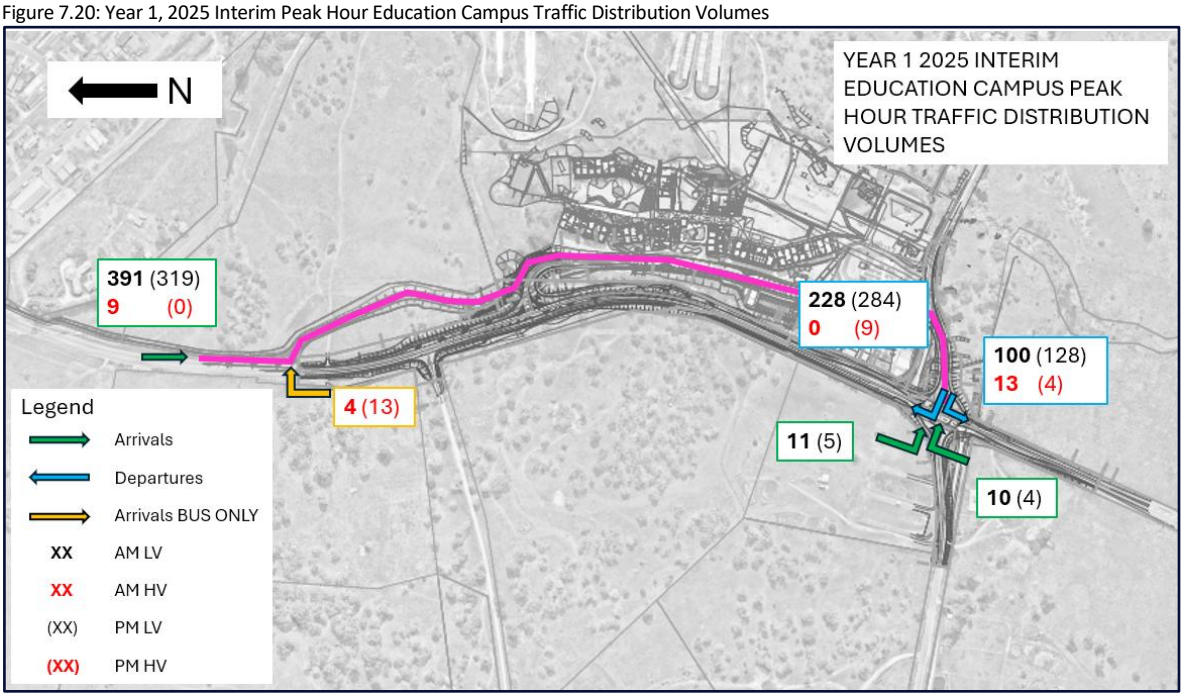


Figure 7.20: Year 1, 2025 Interim Peak Hour Education Campus Traffic Distribution Volumes



Year 1, 2025 Interim Student Trip Distribution

Due to the interim access arrangements requiring all students to access the site from the north, vehicles south of the education campus are required to make a U-turn at the Barry Way/ Kosciuszko roundabout. The percentage and equivalent traffic volumes for the roundabout are provided in Figure 7.21 and Figure 7.22 below.

Based on the distributions discussed in Section 7.6, the below directional percentage splits for students arriving and departing the education campus have been adopted, as shown in Figure 7.23. The resultant student peak hour volumes are shown in Figure 7.24.

Figure 7.21: Year 1, 2025 Interim Student Peak Hour Arrival Traffic Distribution Percentages and Volumes at Barry Way/ Kosciuszko Road roundabout

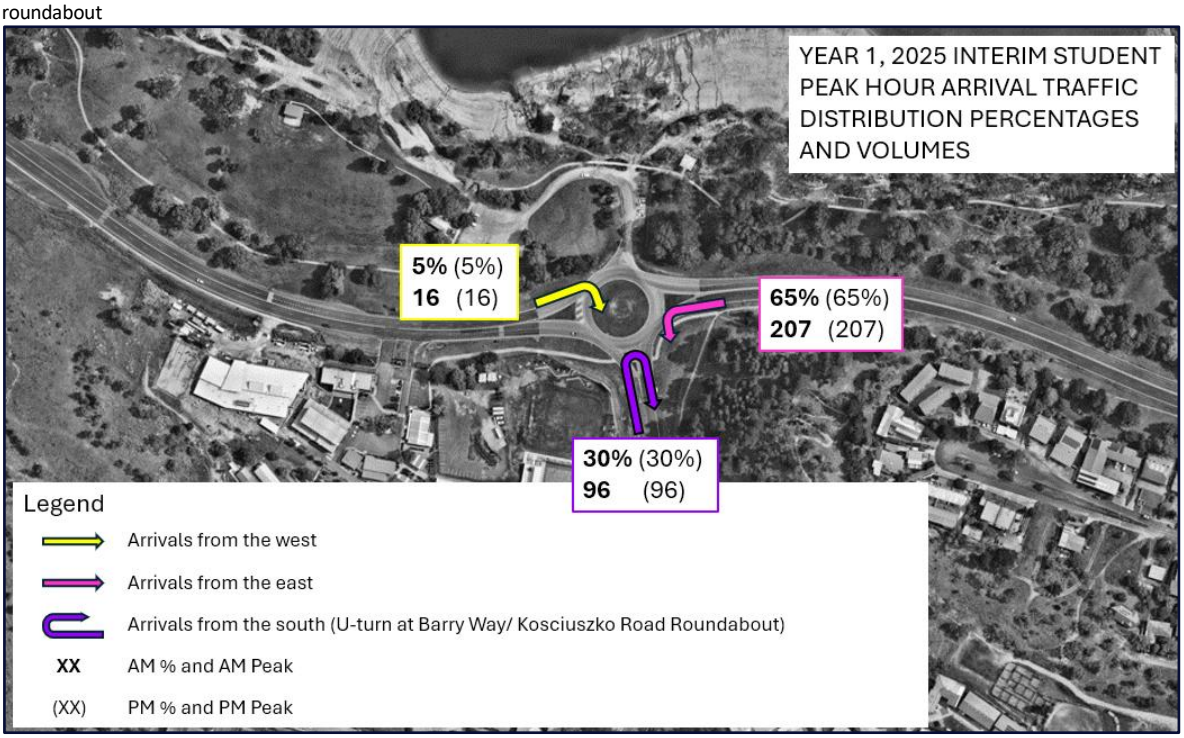


Figure 7.22: Year 1, 2025 Interim Student Peak Hour Departures Traffic Distribution Percentages and Volumes at Barry Way/ Kosciuszko Road roundabout

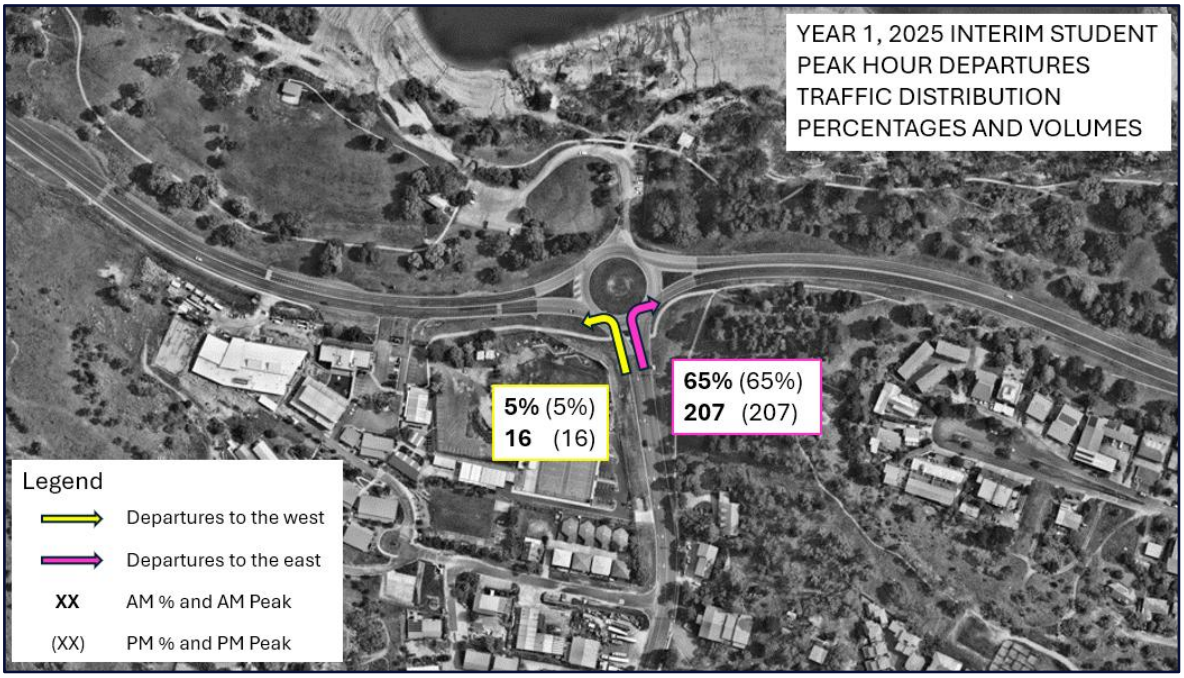


Figure 7.23: Year 1, 2025 Interim Peak Hour Student Traffic Distribution Percentages

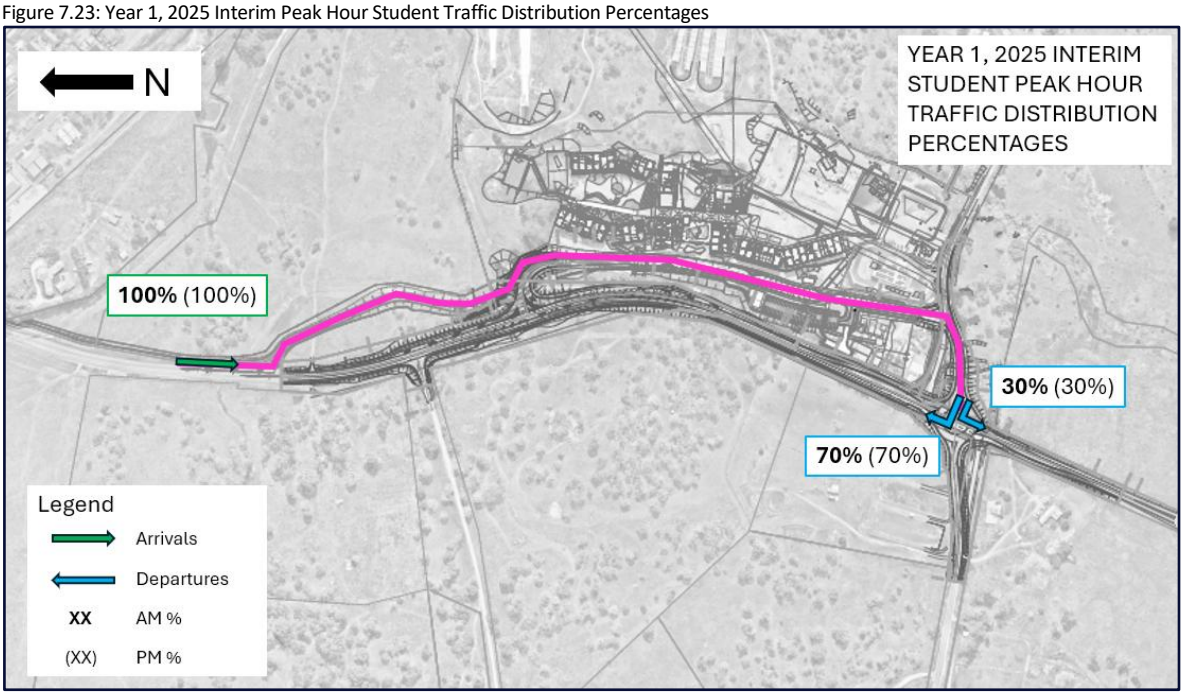
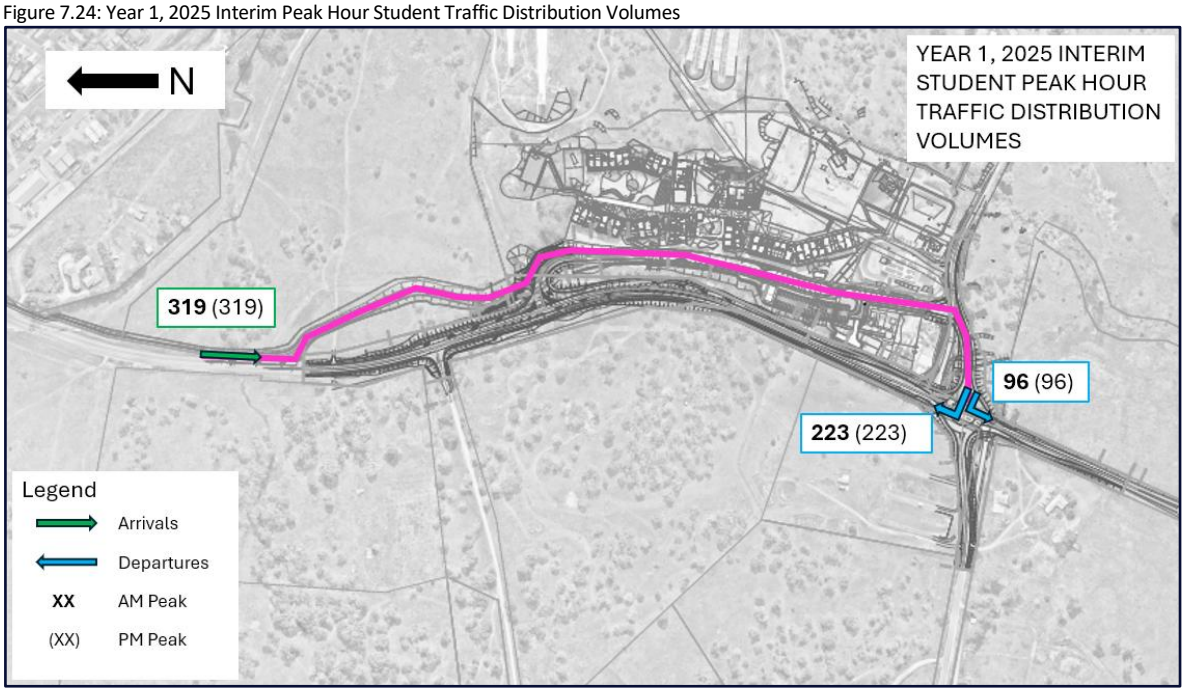


Figure 7.24: Year 1, 2025 Interim Peak Hour Student Traffic Distribution Volumes



Year 1, 2025 Interim Staff Trip Distribution

Similar to the above, the interim access arrangements require all staff members to access the site from the north, with vehicles south of the education campus required to make a U-turn at the Barry Way/ Kosciuszko roundabout. The percentage and corresponding traffic volumes for the roundabout are provided in Figure 7.25 and Figure 7.26 below.

Based on the discussion within Section 7.6, staff peak hour traffic distribution percentages split and volumes to and from the education campus during the Year 1, 2025 interim scenario are shown Figure 7.27 and Figure 7.28, respectively.

Figure 7.25: Year 1, 2025 Interim Staff Peak Hour Arrival Traffic Distribution Percentages and Volumes at Barry Way/ Kosciuszko Road roundabout

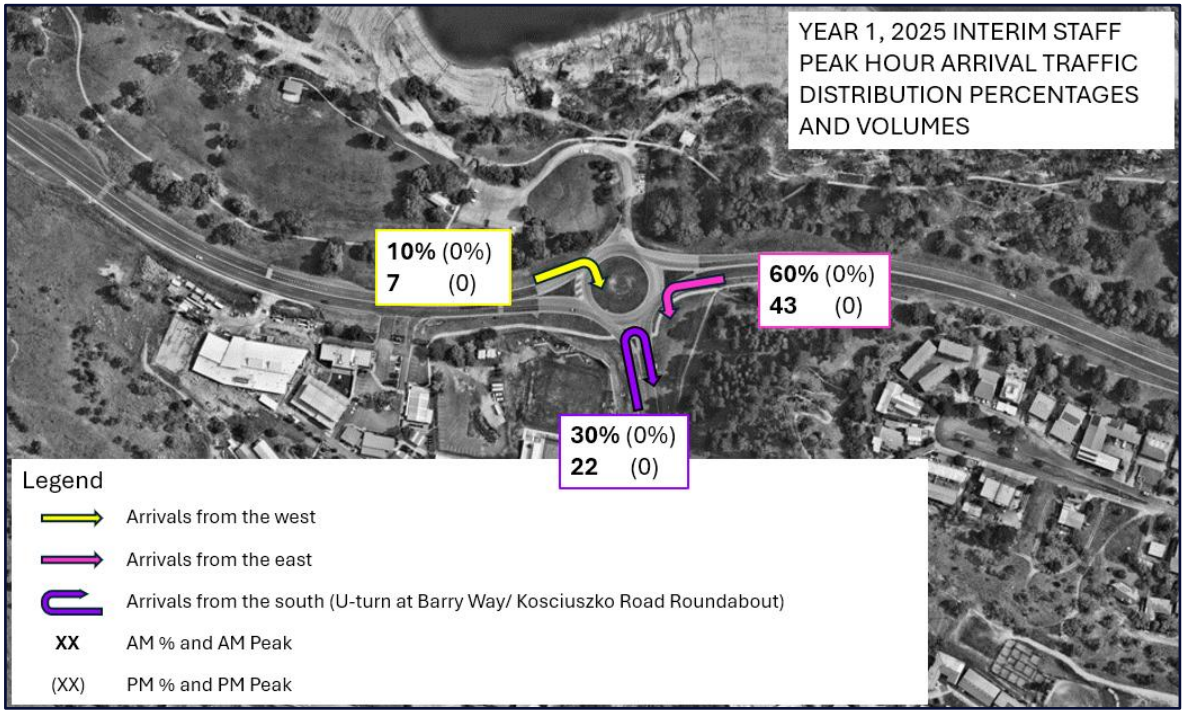


Figure 7.26: Year 1, 2025 Interim Staff Peak Hour Departure Traffic Distribution Percentages and Volumes at Barry Way/ Kosciuszko Road roundabout

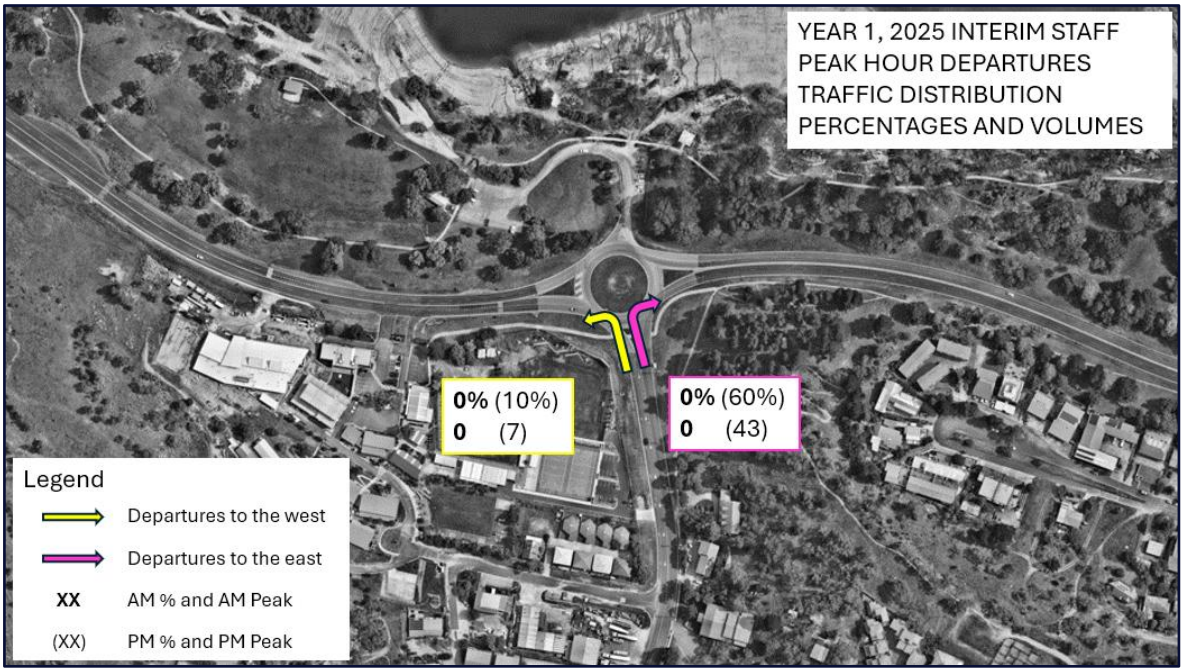


Figure 7.27: Year 1, 2025 Interim Peak Hour Staff Traffic Distribution Percentages

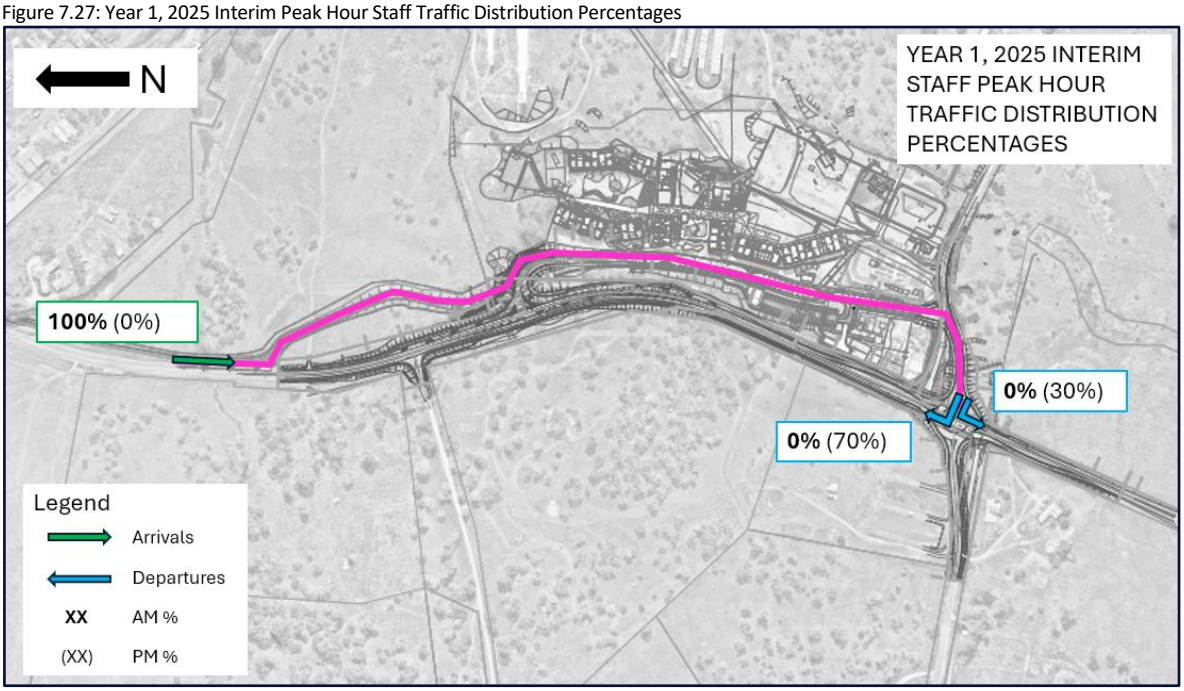
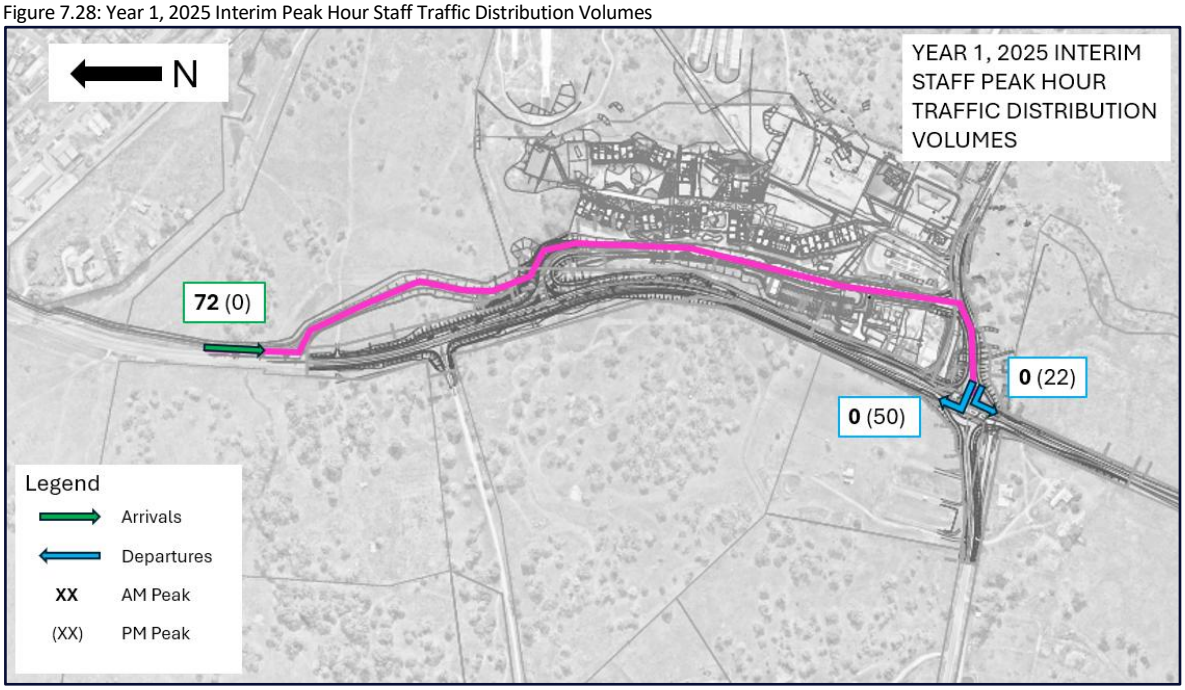


Figure 7.28: Year 1, 2025 Interim Peak Hour Staff Traffic Distribution Volumes



Year 1, 2025 Interim Bus Trip Distribution

The bus movements through the Barry Way/ Kosciuszko Road roundabout have been shown in Table 7.6.

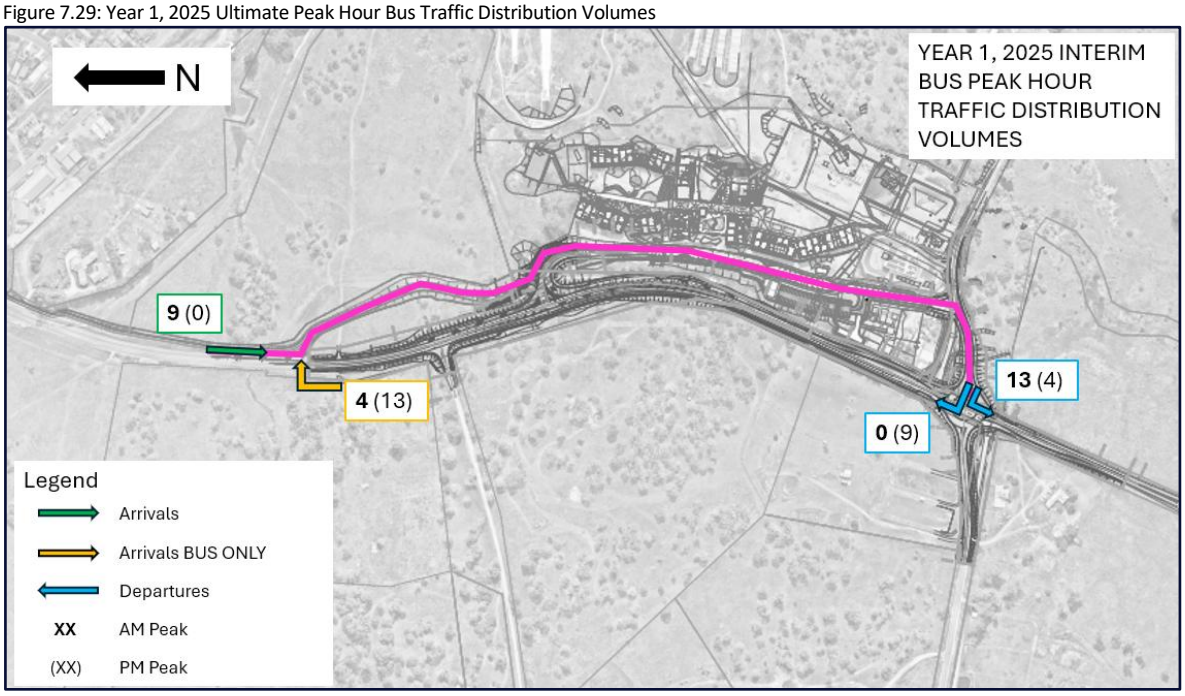
Table 7.6: Year 1, 2025 Interim Bus Arrivals and Departures through the Barry Way/ Kosciuszko Road Roundabout

	Arrivals		Departures	
	West	East	West	East
AM Peak	2	7	0	0
PM Peak	0	0	2	7

It is noted that the four buses arriving from the south will turn right into the interim access road and thus, are not required to u-turn at the Barry Way/ Kosciuszko Road roundabout.

The Year 1, 2025 interim bus trip distribution is the same as the ultimate conditions and shown below in Figure 7.29

Figure 7.29: Year 1, 2025 Ultimate Peak Hour Bus Traffic Distribution Volumes



Year 1, 2025 Interim Tafe Trip Distribution

Similar to the Year 1, 2025 ultimate bus trip distributions, the Tafe CLC trips remain the same as the ultimate conditions. These figures are replicated below in Figure 7.30 and Figure 7.31.

Figure 7.30: Ultimate Peak Hour Tafe CLC Traffic Distribution Percentages

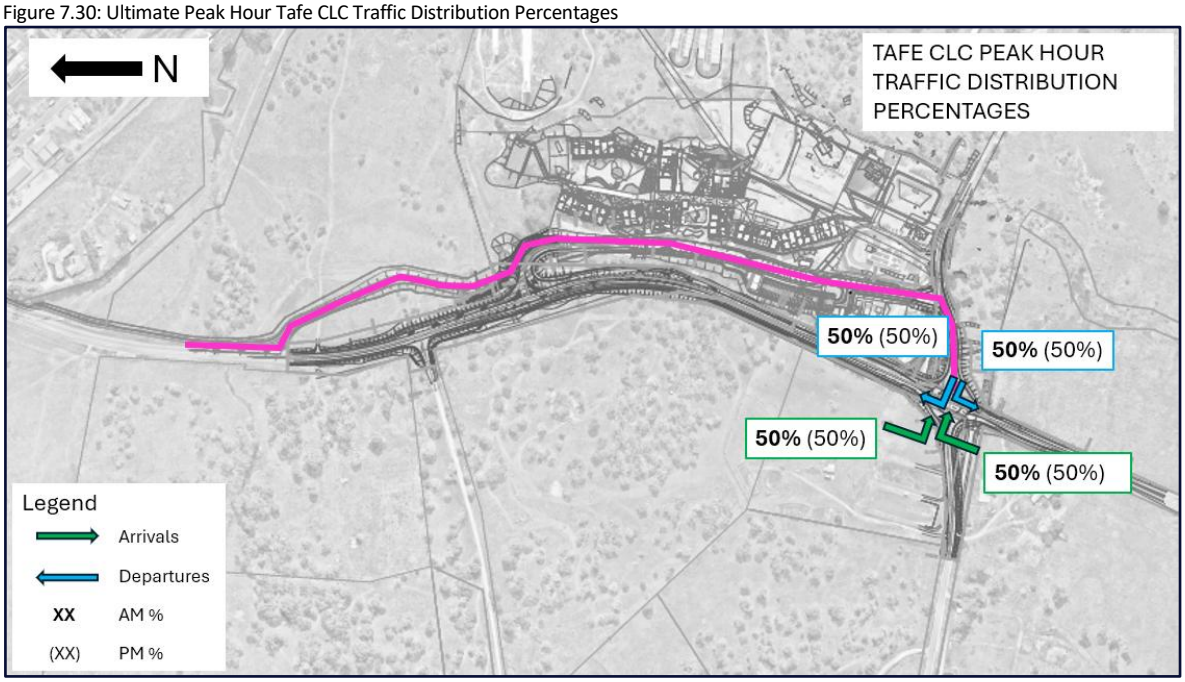
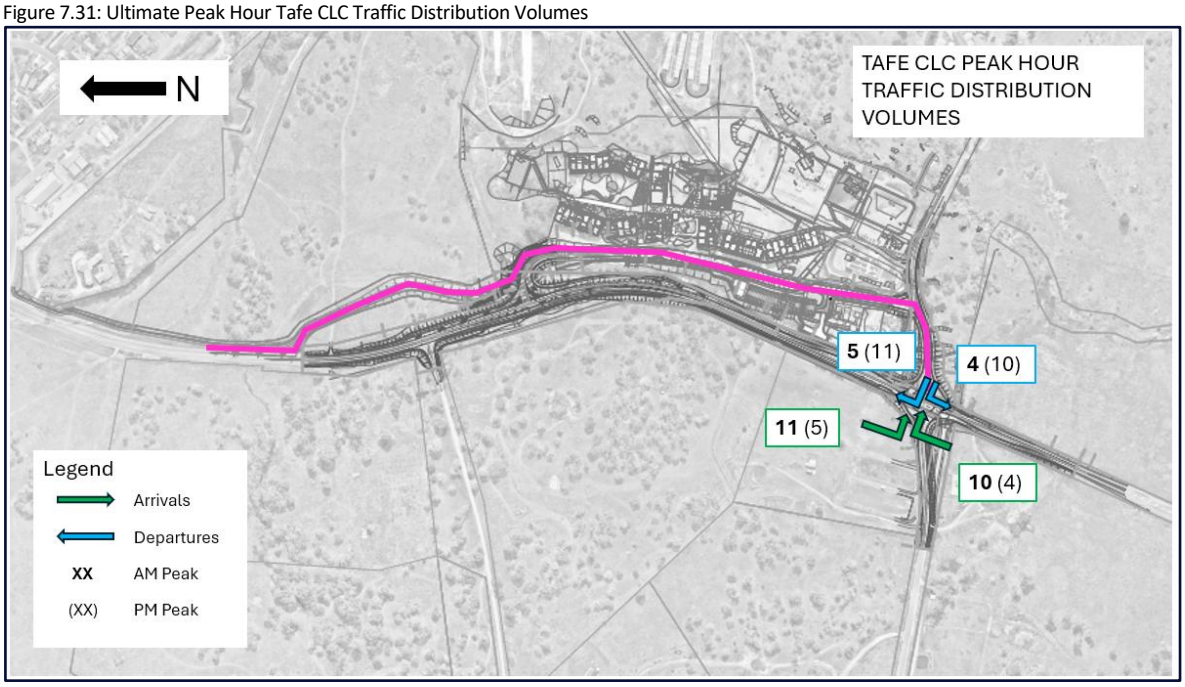


Figure 7.31: Ultimate Peak Hour Tafe CLC Traffic Distribution Volumes



7.8 SIDRA Intersection Performance

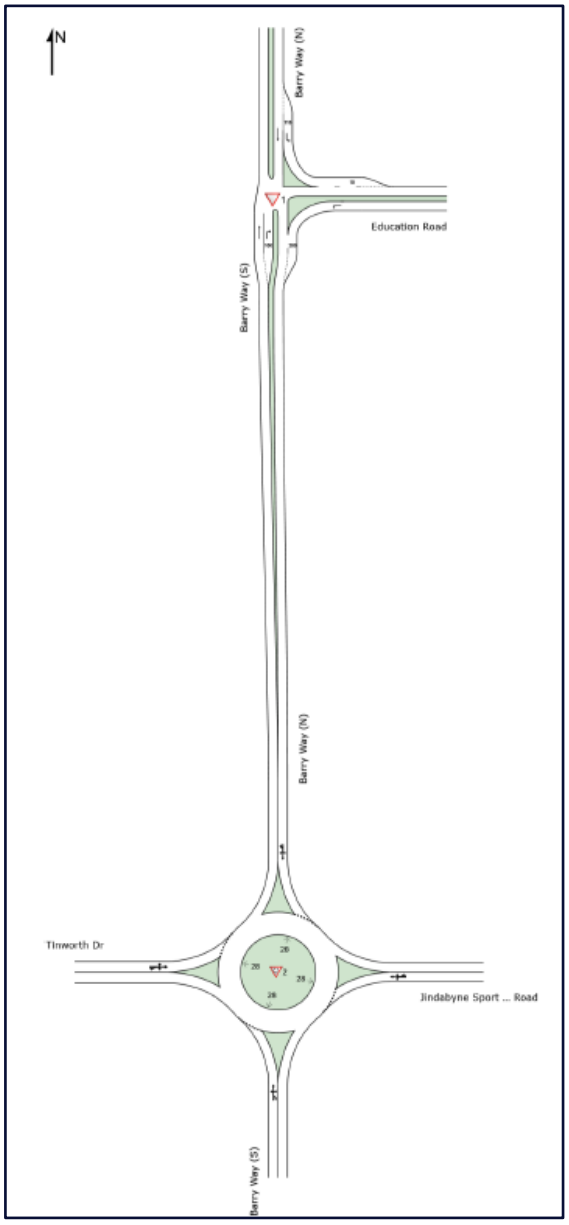
SIDRA Input Parameters

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

- 'Current Setup' was set to New South Wales.
- Site Level of Service Method was set to 'Delay (RTA NSW)'.
- Physical features of the existing intersection geometries were coded using the latest Metromap aerial images (accessed on 2 September 2024).
- Default values for Basic Saturation Flow and peak flow factor were unchanged.
- Speed limits input:
  - Barry Way: 80km/hr adjacent to the subject site, reducing to 60km/hr approximately 250 metres south of Jillamatong Street/ Barry Way intersection.
  - Kosciuszko Road: 60 km/hr (only used for the Year 1, 2025 interim scenario)
  - Jindabyne Sport & Recreation Centre access road: 20 km/hr
  - Education Road: 10 km/hr

SIDRA Layout

Figure 7.32: Ultimate Education Campus Intersections, produced by SIDRA



Source: SIDRA

Background Growth Rates

To provide a consistent approach to the SIDRA analysis, the background growth rates for the Future Year 2041 are the same as those used in the Aurecon TA and replicated below in Table 7.7.

Table 7.7: SIDRA Traffic Background Growth Rates

Growth Rate	Period	AM/PM
1.63%	2031 to 2041	AM
1.32%	2031 to 2041	PM

Source: Aurecon TA

Future Intersection Performance

The SIDRA intersection modelling results for the worse-performing leg are presented in Table 7.8, Table 7.9 and Table 7.10, with the detailed results presented in Appendix C.

The following scenarios were modelled:

- Future Year 2041 plus education campus traffic;
- Year 1, 2025 Ultimate Scenario plus education campus traffic; and
- Year 1, 2025 Interim Scenario plus education campus traffic.

Adopting a conservative approach, the peak AM and PM periods that were modelled coincided with the AM and PM network peaks, as follows:

- AM School Peak = AM Network Peak = 8:15am to 9:15am
- PM School Peak = PM Network Peak = 3:15pm to 4:15pm

Table 7.8: SIDRA Intersection Performance Future Year 2041 plus education campus development

#	Intersection Name	Control	Period	Degree of Saturation	Intersection Delay (s)	Level of Service (LOS)
2	Barry Way & Education Road (Northern Intersection)	Priority	AM	0.005	11.1	LOS A
			PM	0.025	13.5	LOS A
3	Barry Way / Jindabyne Sport & Recreation Centre access road / Tinworth Drive (Southern Roundabout)	Roundabout	AM	0.734	18.6	LOS B
			PM	0.554	17.4	LOS B

The SIDRA results for the Future Year 2041 indicate that the new intersections along Barry Way for the Education Campus will operate under good operations with acceptable delays and spare capacity when background traffic growth and the education campus traffic is applied.

Table 7.9: SIDRA Intersection Performance Year 1 2025 Ultimate Scenario plus education campus development

#	Intersection Name	Control	Period	Degree of Saturation	Intersection Delay (s)	Level of Service (LOS)
2	Barry Way & Education Road (Northern Intersection)	Priority	AM	0.005	10.6	LOS A
			PM	0.021	12.2	LOS A
3	Barry Way / Jindabyne Sport & Recreation Centre access road / Tinworth Drive (Southern Roundabout)	Roundabout	AM	0.507	16.2	LOS B
			PM	0.347	16.4	LOS B

The SIDRA results for the Year 1 2025 ultimate scenario indicate that the new intersections along Barry Way for the Education Campus will operate under good operations with acceptable delays and spare capacity when background traffic growth and the education campus traffic is applied.

Table 7.10: SIDRA Intersection Performance Year 1 2025 Interim Scenario plus education campus development

#	Intersection Name	Control	Period	Degree of Saturation	Intersection Delay (s)	Level of Service (LOS)
1	Barry Way & Kosciuszko Road	Roundabout	AM	0.635	16.2	LOS B
			PM	0.082	15.7	LOS B
2	Barry Way & Education Road (Northern Intersection)	Priority	AM	0.014	19.0	LOS B
			PM	0.050	20.9	LOS B
3	Barry Way / Jindabyne Sport & Recreation Centre access road / Tinworth Drive (Southern Roundabout)	Roundabout	AM	0.033	17.2	LOS B
			PM	0.392	15.7	LOS B

The SIDRA results for the Year 1 interim scenario indicate that the interim intersections along Barry Way for the Education Campus (northern temporary slip road and temporary southern roundabout) will operate under good operations with acceptable delays and spare capacity when the Year 1, 2025 interim traffic volumes are applied.

Aurecon Transport Assessment SIDRA Analysis Comparison

Since the completion of the original Aurecon Transport Assessment, a number of changes to the intersection design occurred resulting in some differences in the SIDRA analysis outcome.

The southern intersection was previously modelled based on a three approach intersection, prior to the re-alignment of the roundabout to include Tinworth Drive.

With the approved design of the northern intersection now a T-intersection, incorporating a channelised left turn lane and bus only channelised right turn, vehicles (except for buses) arriving from the south must access the site via the southern roundabout. Additionally, vehicles departing to the north must exit via the southern roundabout to then head north. The change in the intersection configuration resulted in a redistribution of traffic compared to the previous assessment undertaken by Aurecon, where there is a higher volume of vehicles using the southern roundabout compared with the original Aurecon TA SIDRA analysis.

A comparison of the Aurecon report in comparison to the SIDRA analysis presented in this Mod 3 assessment found several input differences that also impacted the results.

The SIDRA analysis prepared for this report is based on the NSW Traffic Modelling Guidelines, which adopt the Site Level of Service (LOS) Method: Delay (RTA NSW). However, the initial SIDRA modelling adopted the Site Level of Service (LOS) Method: Delay (SIDRA).

This assessment is also based on a different future year, 2041, instead of 2033, in the Aurecon Transport Impact Assessment, based on a 10-year post-development scenario.

Throughout this report, we presented the results for the worst-performing leg of the intersection. However, to allow for easier comparison of the different SIDRA results, we compiled Table 7.1, based on the same reporting structure adopted by Aurecon in their report.

The SIDRA analysis results indicate that the intersections will continue to perform at a Level of Service A in the future year, with the level of delay expected at each of the northern and southern intersections similar to the previous assessment prepared by Aurecon.

The most significant change relates to the increase in the Degree of Saturation of the south approach to the southern intersection and an increase in the queue length due to the re-distribution of traffic. An extra 8 years of background traffic growth (2033 vs 2041) were applied to the traffic data collected in 2024, forming this assessment's basis.

Table 7.11: Future Year SIDRA Analysis Results Comparison

Intersection	Approach	Aurecon Transport Assessment 2033 SIDRA Modelling Results (Note: This assessment was completed before the realignment of the southern intersection to incorporate Tinworth Drive, and before the change to the northern intersection to a priority controlled T-intersection)								Navianto Group Assessment 2041 SIDRA Modelling Results							
		Degree of Saturation		Average Delay (s)		Level of Service		Queue (m)		Degree of Saturation		Average Delay (s)		Level of Service		Queue (m)	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Barry Way / Education Road (Northern Intersection)	S	0.353	0.431	4.2	4.4	LOS A	LOS A	19.4	26.7	0.411	0.328	0.1	0.3	LOS A	LOS A	0.3	1.3
	E	0.290	0.390	1.0	3.0	LOS A	LOS A	14.0	19.5	0.127	0.137	3.5	4.1	LOS A	LOS A	0.0	0.0
	N	0.208	0.223	5.9	4.9	LOS A	LOS A	11.1	12.3	0.159	0.250	3.8	2.6	LOS A	LOS A	0.0	0.0
	Overall	0.353	0.431	4.0	4.3	LOS A	LOS A	19.4	26.7	0.411	0.328	2.0	1.9	LOS A	LOS A	0.3	1.3
Barry Way / Sport & Rec Road / Tinworth Drive (Southern Roundabout)	S	0.530	0.582	13.8	12.9	LOS B	LOS B	36.9	43.7	0.734	0.554	13.3	13.0	LOS A	LOS A	74.4	38.0
	E	0.383	0.515	2.6	5.6	LOS A	LOS A	21.5	34.2	0.343	0.592	3.6	9.4	LOS A	LOS A	18.3	44.6
	N	0.354	0.550	6.0	7.0	LOS A	LOS A	19.0	38.0	0.512	0.647	8.15	8.8	LOS A	LOS A	32.7	50.8
	W	N/A								0.050	0.035	14.4	11.2	LOS A	LOS A	2.7	1.7
	Overall	0.530	0.582	8.7	9.1	LOS A	LOS A	36.9	43.7	0.734	0.647	10.1	10.3	LOS A	LOS A	74.4	50.8

8 Speed Zone

8.1 Proposed Speed Zones

Since the original SSD assessment, consultation with TfNSW and Snowy Monaro Regional Council has resulted in the following agreed posted speed limits.

- Barry Way – the section between Jillamatong Street and south of Tinworth Drive will have a speed limit reduction to 80km/h outside of school zone hours.

  A 40km/h school zone will be provided to Barry Way on the north approach to the Barry Way / Education Road intersection, south of the Barry Way / Tinworth Drive / Sport & Recreation Road roundabout. The school zone is expected to be implemented following the completion of Barry Way road and intersection works.

- Education Road – the immediate throat of the intersection with Barry Way configured with a 40km/h speed zone to function as a transitional exit speed from Barry Way. To the north of the start of the kiss and ride spaces, a 10km/h speed limit will be introduced due to safety considerations associated with high levels of pedestrians and children anticipated. This 10km/h speed limit will apply in both directions of travel, extending to the intersection with Sport & Recreation Road.

9 Design Assessment

9.1 Design Standards

The staff and student car parking areas and the parallel parking areas along Education Road have been designed in accordance with the following relevant Australian Standards:

- AS 2890.1: 2004 for car parking areas
- AS 2890.5:2020 for parallel parking along Education Road
- AS2890.6:2022 for accessible parking spaces

The bus bays have been designed generally in accordance with Austroads Guide to Road Design Part 3: Geometric Design, AGRD03-16, Edition 3.4 (February 2021).

The proposed interim access road and associated intersection arrangements has been designed by Northrop in accordance with relevant parts of the Austroads Guide to Road Design, detailed in the Civil Works package forming part of the S138 application.

9.2 Design Review

Further to the review of the Development Application Plans, the following is noted:

Indented Bus Bay

The plans show the provision of 6 indented bus bays, each 3.0 metres wide and 15.0 metres long.

The bus bay configuration has been formulated on the basis that the bus bays will function in a "nose to tail" operation, whereby the bus that arrives first uses the frontmost bay for pick-up/drop-off and must depart in the same order of arrival. Independent bus operations, where a bus parking in the middle spaces is unable to depart unless the bus in front exits first.

Whilst this is a departure from Austroads Guide to Road Design Part 3, considering 12.5m long buses are utilised, and the 15m long bus bay received in principal support from the bus operators, the length of the bays is therefore considered acceptable.

The bus bay design achieved the 3.0m width specified in Section 4.13 of the Austroads Guide to Road Design Part 3.

With the presence of a kerb outstand on both the approach and departure side of the bus bays concerned, no stopping areas as stipulated in TS 05413 *Stopping and Parking Restrictions at Intersections and Crossings*, whereby a minimum of 7.5 metres of no stopping restriction is proposed at the draw out and draw inside of the bus bays.

Swept Path Assessment

An assessment (refer to Appendix D) of the accessibility to/from the site using Autodesk Vehicle Tracking software has been conducted. The 12.5m bus (adopting a 15m radii) was used in the assessment, and it was found that the site (ingress and egress) and bus bays can be accessed in a satisfactory manner.

The assessment indicates that the site access arrangement and bus bay parking layouts have been designed appropriately and in general accordance with the requirements of the Jindabyne DCP, AS 2890 and Austroads Guide to Road Design Part 3.

10 Conclusions

Based on the above assessment, the following conclusions have been reached regarding the proposed MOD 3 for the Jindabyne Education Precinct:

- The provision and allocation of car parking remains generally consistent with the original SSD and MOD 1 Assessment. The reduction in three car parking spaces is due to the increase in bus bays.
- The level of bicycle parking and end-of-trip facilities provision remain consistent with the original SSD and MOD 1 assessments.
- The increase in the number of bus bays from four to six bays was due to the outcome of consultation with local bus operators and TfNSW to support the establishment of 13 school bus routes. These routes will be implemented in Term 1 2025 to support the new education precinct and forecasted Year 1 mode share established in the original SSD transport assessment.
- Based on an analysis of de-personalised data provided by the NSW Department of Education for 2024, the trip distribution for students is 75% north and 25% south for primary school and 70% north and 30% south for high school. A 70% north and 30% south trip distribution applies to staff trips during Year 1 2025 conditions.
- In the future, when increases in housing are provided to the south of the education precinct, the original SSD transport assessment, which stipulated a 50% / 50% north / south split in terms of trip distribution, is valid for the future year 2041 assessment.
- New turning movement counts were undertaken on 30 August 2024 because traffic is heaviest during winter. A review of 7-day tube count data collected in August 2023 found Friday to be the busiest day of the week.
- For the future year 2041 ultimate scenario, based on 925 students and 90 staff, 1034 trips will be generated during the AM and PM school peak periods.
- For Year 1, 2025 ultimate scenario, when all road works along Barry Way are complete, 766 trips will be generated during the AM and PM school peak periods, based on 650 students and 90 staff.
- For Year 1, 2025 interim scenario, when interim education campus intersections will be provided along Barry Way, 766 trips will be generated during the AM and PM school peak periods, based on 650 students and 90 staff.
- The SIDRA analysis prepared for both the 2025 ultimate scenario and the 2041 future-year ultimate scenario adopted a speed zone setting of 80 km/h to align with the agreed design speed and new posted speed limit along Barry Way.
- The changes in the intersection configuration at the northern Barry Way / Education Road from a roundabout to a priority-controlled intersection, allowing for only right-turn bus movements from the south approach along Barry Way and left-out only, will continue to operate in good conditions with acceptable delays in both the Year 1, 2025 ultimate scenario and in the 2041 future year with background growth traffic along Barry Way.
- The new southern roundabout intersection of Barry Way / Sport & Rec access road / Tinworth Drive will continue to operate in good conditions with acceptable delays in both the 2025 ultimate scenario and the 2041 future year with background growth applied to traffic along Barry Way.
- The interim intersection treatments for the education campus will operate in good conditions with acceptable delays in the Year 1, 2025 interim scenario.

APPENDIX A

Traffic Survey Results

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Kosciuszko Rd and Driveway, Jindabyne

GPS *-36.414584, 148.610957*

Date:	Fri 30/08/24
Weather:	Overcast
Suburban:	Jindabyne
Customer:	Navianto

North:	Driveway
East:	Kosciuszko Rd
South:	Barry Way
West:	Kosciuszko Rd

Survey Period	AM:	6:30 AM-9:30 AM
	PM:	1:30 PM-4:30 PM
Network Traffic Peak	AM:	8:15 AM-9:15 AM
	PM:	3:15 PM-4:15 PM

All Vehicles

Time		North Approach Driveway				East Approach Kosciuszko Rd				South Approach Barry Way				West Approach Kosciuszko Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
6:30	6:45	0	0	0	0	3	0	47	24	0	23	0	44	0	2	5	0	853	
6:45	7:00	0	1	0	1	5	2	48	26	0	31	2	44	0	3	9	0	1017	
7:00	7:15	0	0	1	0	6	0	80	34	0	45	0	56	0	5	15	1	1187	
7:15	7:30	0	1	0	0	8	1	116	42	0	33	0	73	0	5	11	0	1284	
7:30	7:45	0	0	0	1	2	1	110	38	0	63	0	68	0	11	18	0	1290	
7:45	8:00	0	0	0	0	9	0	110	54	0	79	1	58	0	5	26	0	1382	
8:00	8:15	0	1	0	2	3	0	106	74	0	53	0	62	2	13	24	0	1425	
8:15	8:30	0	0	0	0	7	0	95	34	0	61	0	59	2	7	31	0	1453	
8:30	8:45	0	0	0	1	5	0	105	55	0	94	0	55	2	19	68	0	1491	Peak
8:45	9:00	0	0	1	0	5	0	101	53	0	98	0	50	0	12	63	2		
9:00	9:15	0	0	0	2	15	0	69	60	0	99	0	41	2	16	62	2		
9:15	9:30	0	1	0	0	13	0	65	65	0	76	0	27	0	9	78	0		
13:30	13:45	0	0	1	3	3	6	39	54	0	42	3	7	0	13	47	2	1048	
13:45	14:00	0	2	2	3	9	3	34	76	1	42	2	15	1	22	64	0	1120	
14:00	14:15	0	0	3	0	4	4	44	59	0	47	3	15	1	19	44	2	1161	
14:15	14:30	0	2	5	4	6	5	42	65	0	65	0	15	2	20	76	0	1206	
14:30	14:45	0	2	2	3	6	7	47	71	0	51	2	12	0	20	69	0	1280	
14:45	15:00	0	2	3	6	9	3	39	58	0	56	1	17	0	33	89	1	1402	
15:00	15:15	0	0	1	5	7	4	40	79	1	57	2	10	0	23	61	0	1480	
15:15	15:30	0	0	2	8	15	6	54	86	0	71	1	17	0	38	80	3	1539	Peak
15:30	15:45	0	0	2	4	5	4	64	87	0	71	0	15	3	48	110	1	1504	
15:45	16:00	0	2	2	7	8	1	43	88	0	54	2	9	2	55	118	4		
16:00	16:15	0	1	2	7	8	2	41	87	0	64	0	13	0	32	88	4		
16:15	16:30	0	0	2	2	8	4	34	80	0	66	1	8	0	35	106	0		

Peak Periods		North Approach Driveway				East Approach Kosciuszko Rd				South Approach Barry Way				West Approach Kosciuszko Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
8:30	9:30	0	1	1	3	38	0	340	233	0	367	0	173	4	56	271	4	1491
15:15	16:15	0	3	8	26	36	13	202	348	0	260	3	54	5	173	396	12	1539

Network Peak Periods		North Approach Driveway				East Approach Kosciuszko Rd				South Approach Barry Way				West Approach Kosciuszko Rd				Network Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:15	9:15	0	0	1	3	32	0	370	202	0	352	0	205	6	54	224	4	1453
15:15	16:15	0	3	8	26	36	13	202	348	0	260	3	54	5	173	396	12	1539

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Jillamatong St and Barry Way, Jindabyne

GPS *-36.423305, 148.609673*

Date:	Fri 30/08/24
Weather:	Overcast
Suburban:	Jindabyne
Customer:	Navianto

North:	Barry Way
East:	Jillamatong St
South:	Barry Way
West:	N/A

Survey Period	AM:	6:30 AM-9:30 AM
	PM:	1:30 PM-4:30 PM
Network Traffic Peak	AM:	8:15 AM-9:15 AM
	PM:	3:15 PM-4:15 PM

All Vehicles

Time		North Approach Barry Way			East Approach Jillamatong St			South Approach Barry Way			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
6:30	6:45	0	17	4	0	3	3	0	4	47	425	
6:45	7:00	0	23	5	0	6	4	0	7	50	505	
7:00	7:15	0	28	5	0	8	7	0	6	58	578	
7:15	7:30	0	37	0	0	11	14	0	4	74	630	
7:30	7:45	0	43	1	0	9	8	0	3	94	647	
7:45	8:00	0	52	3	0	8	9	0	3	93	675	
8:00	8:15	0	44	5	0	11	7	0	7	90	679	
8:15	8:30	0	26	5	0	9	5	0	9	103	698	Peak
8:30	8:45	0	53	8	0	12	6	0	7	100	679	
8:45	9:00	0	50	2	0	7	10	0	8	95		
9:00	9:15	0	66	9	0	14	8	0	7	79		
9:15	9:30	0	51	11	0	7	8	0	4	57		
13:30	13:45	0	55	3	0	4	8	0	2	39	525	
13:45	14:00	0	64	4	0	3	3	0	5	46	546	
14:00	14:15	0	56	4	0	3	6	0	4	53	560	
14:15	14:30	0	75	9	0	3	5	0	6	65	573	
14:30	14:45	0	61	3	0	7	4	0	3	54	580	
14:45	15:00	0	62	11	0	5	2	0	4	55	613	
15:00	15:15	0	64	7	0	7	5	0	2	54	638	
15:15	15:30	0	79	12	0	7	7	0	4	61	673	Peak
15:30	15:45	0	83	15	0	4	8	0	6	49	673	Peak
15:45	16:00	0	85	13	0	4	12	0	3	47		
16:00	16:15	0	87	7	0	6	11	0	9	54		
16:15	16:30	0	84	10	0	6	11	0	7	52		

Network Peak Periods		North Approach Barry Way			East Approach Jillamatong St			South Approach Barry Way			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:15	9:15	0	195	24	0	42	29	0	31	377	698
15:15	16:15	0	334	47	0	21	38	0	22	211	673

Network Peak Periods		North Approach Barry Way			East Approach Jillamatong St			South Approach Barry Way			Network Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:15	9:15	0	195	24	0	42	29	0	31	377	698
15:15	16:15	0	334	47	0	21	38	0	22	211	673

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Sports-Recreation Rd and Barry Way, Jindabyne

GPS *-36.432459, 148.608755*

Date:	Fri 30/08/24
Weather:	Overcast
Suburban:	Jindabyne
Customer:	Navianto

North:	Barry Way
East:	Sports-Recreation Rd
South:	Barry Way
West:	N/A

Survey Period	AM:	6:30 AM-9:30 AM
	PM:	1:30 PM-4:30 PM
Network Traffic Peak	AM:	8:15 AM-9:15 AM
	PM:	3:15 PM-4:15 PM

All Vehicles

Time		North Approach Barry Way			East Approach Sports-Recreation Rd			South Approach Barry Way			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
6:30	6:45	0	17	4	0	1	0	0	0	49	392	
6:45	7:00	0	20	6	0	2	0	0	1	56	470	
7:00	7:15	0	27	11	0	4	0	0	1	62	541	
7:15	7:30	0	47	5	0	2	0	0	0	77	591	
7:30	7:45	0	43	7	0	6	0	0	1	92	612	
7:45	8:00	0	56	2	0	5	0	0	0	93	629	
8:00	8:15	0	45	9	0	1	0	0	0	100	643	
8:15	8:30	0	30	2	0	5	1	0	2	112	647	Peak
8:30	8:45	0	53	4	0	8	1	0	3	97	623	
8:45	9:00	0	56	5	0	5	0	0	2	102		
9:00	9:15	0	68	4	0	3	1	0	3	80		
9:15	9:30	0	56	6	0	4	3	0	0	59		
13:30	13:45	0	60	2	0	3	1	0	0	37	500	
13:45	14:00	0	61	4	0	2	1	0	0	48	521	
14:00	14:15	0	59	4	0	6	3	0	1	54	532	
14:15	14:30	0	74	5	0	3	1	0	3	68	541	
14:30	14:45	0	57	6	0	6	0	1	1	53	538	
14:45	15:00	0	56	7	0	3	2	0	2	57	565	
15:00	15:15	0	65	8	0	3	3	0	1	56	591	
15:15	15:30	0	79	4	0	7	1	0	1	59	619	
15:30	15:45	0	89	4	0	5	0	0	1	52	628	Peak
15:45	16:00	0	94	5	0	3	2	0	1	48		
16:00	16:15	0	89	6	0	6	1	0	3	59		
16:15	16:30	0	81	12	0	11	4	0	6	46		

Peak Periods		North Approach Barry Way			East Approach Sports-Recreation Rd			South Approach Barry Way			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:15	9:15	0	207	15	0	21	3	0	10	391	647
15:30	16:30	0	353	27	0	25	7	0	11	205	628

Network Peak Periods		North Approach Barry Way			East Approach Sports-Recreation Rd			South Approach Barry Way			Network Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:15	9:15	0	207	15	0	21	3	0	10	391	647
15:15	16:15	0	351	19	0	21	4	0	6	218	619

APPENDIX B

Existing SIDRA Results

MOVEMENT SUMMARY

Site: 101 [Barry Way/Kosciuszko Road - BYAM (Site Folder: 2024 BYAM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BYAM 2024 (Network Folder: General)]

Barry Way/Kosciuszko Road BYAM 2024
Site Category: 2024 AM - Exisiting Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
1	L2	All MCs	216	2.9	216	2.9	0.226	5.3	LOS A	1.1	8.1	0.54	0.57	0.54	40.2
2	T1	All MCs	1	0.0	1	0.0	0.315	2.8	LOS A	1.7	12.8	0.54	0.67	0.54	42.6
3	R2	All MCs	371	6.0	371	6.0	0.315	11.3	LOS A	1.7	12.8	0.54	0.67	0.54	45.8
3u	U	All MCs	1	0.0	1	0.0	0.315	13.6	LOS A	1.7	12.8	0.54	0.67	0.54	34.4
Approach			588	4.8	588	4.8	0.315	9.1	LOS A	1.7	12.8	0.54	0.63	0.54	43.7
East: Kosciuszko Road															
4	L2	All MCs	213	10.4	213	10.4	0.220	3.5	LOS A	1.3	10.0	0.23	0.37	0.23	52.5
5	T1	All MCs	389	5.1	389	5.1	0.220	4.0	LOS A	1.3	10.0	0.23	0.39	0.23	45.3
6	R2	All MCs	1	0.0	1	0.0	0.220	9.7	LOS A	1.3	9.5	0.24	0.40	0.24	49.7
6u	U	All MCs	34	0.0	34	0.0	0.220	12.3	LOS A	1.3	9.5	0.24	0.40	0.24	53.4
Approach			637	6.6	637	6.6	0.220	4.3	LOS A	1.3	10.0	0.23	0.39	0.23	47.0
North: Jindabyne Disc Golf Course Access															
7	L2	All MCs	3	0.0	3	0.0	0.008	4.6	LOS A	0.0	0.3	0.61	0.56	0.61	48.3
8	T1	All MCs	1	0.0	1	0.0	0.008	4.0	LOS A	0.0	0.3	0.61	0.56	0.61	37.9
9	R2	All MCs	1	0.0	1	0.0	0.008	10.3	LOS A	0.0	0.3	0.61	0.56	0.61	39.0
9u	U	All MCs	1	0.0	1	0.0	0.008	12.4	LOS A	0.0	0.3	0.61	0.56	0.61	41.6
Approach			6	0.0	6	0.0	0.008	6.7	LOS A	0.0	0.3	0.61	0.56	0.61	44.4
West: Kosciuszko Road															
10	L2	All MCs	4	0.0	4	0.0	0.131	4.7	LOS A	0.9	7.0	0.60	0.46	0.60	49.3
11	T1	All MCs	236	7.6	236	7.6	0.131	4.9	LOS A	0.9	7.0	0.61	0.50	0.61	53.0
12	R2	All MCs	57	7.4	57	7.4	0.131	12.0	LOS A	0.9	6.5	0.63	0.61	0.63	46.9
12u	U	All MCs	6	33.3	6	33.3	0.131	15.6	LOS B	0.9	6.5	0.63	0.61	0.63	43.1
Approach			303	8.0	303	8.0	0.131	6.4	LOS A	0.9	7.0	0.61	0.52	0.61	51.9
All Vehicles			1535	6.2	1535	6.2	0.315	6.6	LOS A	1.7	12.8	0.43	0.51	0.43	46.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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: 106 [Barry Way/Jindabyne Sport and Recreation Road - BYAM (Site Folder: 2024 BYAM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BYAM 2024 (Network Folder: General)]

Barry Way/Jindabyne Sport and Recreation Road BYAM 2024
Site Category: 2024 AM - Exisiting Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
2	T1	All MCs	412	6.9	412	6.9	0.221	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	99.9
3	R2	All MCs	11	0.0	11	0.0	0.009	8.5	LOS A	0.0	0.2	0.33	0.61	0.33	55.8
Approach			422	6.7	422	6.7	0.221	0.3	NA	0.0	0.2	0.01	0.02	0.01	96.2
East: Jindabyne Sports and Recreation Road															
4	L2	All MCs	3	0.0	3	0.0	0.086	5.8	LOS A	0.3	2.5	0.68	0.82	0.68	47.7
6	R2	All MCs	22	23.8	22	23.8	0.086	17.6	LOS B	0.3	2.5	0.68	0.82	0.68	34.8
Approach			25	20.8	25	20.8	0.086	16.1	LOS B	0.3	2.5	0.68	0.82	0.68	37.0
North: Barry Way															
7	L2	All MCs	16	0.0	16	0.0	0.009	7.8	LOS A	0.0	0.0	0.00	0.66	0.00	82.2
8	T1	All MCs	218	11.1	218	11.1	0.122	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.9
Approach			234	10.4	234	10.4	0.122	0.6	NA	0.0	0.0	0.00	0.04	0.00	98.5
All Vehicles			681	8.5	681	8.5	0.221	1.0	NA	0.3	2.5	0.03	0.06	0.03	94.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Organisation: TRANSPORT STRATEGIES ALLIANCE PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 10 September 2024 4:58:14 AM
Project: C:\Users\Visitor\Transport Strategies Dropbox\siew hwee kong\PC\Desktop\TS PROJECT\2024\24162 - 207 Barry Way, Jindabyne \MODEL\Jindabyne Network 090924.sip9

MOVEMENT SUMMARY

Site: 101 [Barry Way/Kosciuszko Road - BYPM (Site Folder: 2024 BYPM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BYPM 2024 (Network Folder: General)]

Barry Way/Kosciuszko Road BYPM 2024
Site Category: 2024 PM - Exisiting Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
1	L2	All MCs	57	3.7	57	3.7	0.069	5.1	LOS A	0.3	2.4	0.47	0.51	0.47	40.4
2	T1	All MCs	3	0.0	3	0.0	0.217	4.0	LOS A	1.3	9.4	0.47	0.62	0.47	41.4
3	R2	All MCs	274	3.5	274	3.5	0.217	10.7	LOS A	1.3	9.4	0.47	0.62	0.47	46.3
3u	U	All MCs	1	0.0	1	0.0	0.217	13.1	LOS A	1.3	9.4	0.47	0.62	0.47	34.9
Approach			335	3.5	335	3.5	0.217	9.7	LOS A	1.3	9.4	0.47	0.60	0.47	45.2
East: Kosciuszko Road															
4	L2	All MCs	366	2.3	366	2.3	0.266	4.0	LOS A	1.6	11.6	0.41	0.45	0.41	51.5
5	T1	All MCs	213	6.9	213	6.9	0.231	4.7	LOS A	1.3	9.6	0.42	0.50	0.42	44.3
6	R2	All MCs	14	0.0	14	0.0	0.231	10.4	LOS A	1.3	9.6	0.42	0.50	0.42	48.5
6u	U	All MCs	38	0.0	38	0.0	0.231	13.0	LOS A	1.3	9.6	0.42	0.50	0.42	52.3
Approach			631	3.7	631	3.7	0.266	4.9	LOS A	1.6	11.6	0.41	0.47	0.41	47.8
North: Jindabyne Disc Golf Course Access															
7	L2	All MCs	27	0.0	27	0.0	0.056	5.3	LOS A	0.3	1.9	0.67	0.66	0.67	49.2
8	T1	All MCs	8	0.0	8	0.0	0.056	4.8	LOS A	0.3	1.9	0.67	0.66	0.67	40.0
9	R2	All MCs	3	0.0	3	0.0	0.056	11.0	LOS A	0.3	1.9	0.67	0.66	0.67	39.8
9u	U	All MCs	1	0.0	1	0.0	0.056	13.1	LOS A	0.3	1.9	0.67	0.66	0.67	43.3
Approach			40	0.0	40	0.0	0.056	5.9	LOS A	0.3	1.9	0.67	0.66	0.67	46.9
West: Kosciuszko Road															
10	L2	All MCs	13	0.0	13	0.0	0.243	4.5	LOS A	1.8	13.1	0.56	0.44	0.56	49.5
11	T1	All MCs	417	4.3	417	4.3	0.243	4.5	LOS A	1.8	13.1	0.57	0.47	0.57	53.2
12	R2	All MCs	182	5.2	182	5.2	0.243	11.6	LOS A	1.7	12.3	0.60	0.61	0.60	46.2
12u	U	All MCs	5	40.0	5	40.0	0.243	15.4	LOS B	1.7	12.3	0.60	0.61	0.60	42.8
Approach			617	4.8	617	4.8	0.243	6.7	LOS A	1.8	13.1	0.58	0.51	0.58	51.6
All Vehicles			1622	4.0	1622	4.0	0.266	6.6	LOS A	1.8	13.1	0.49	0.52	0.49	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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: 106 [Barry Way/Jindabyne Sport and Recreation Road - BYPM (Site Folder: 2024 BYPM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BYPM 2024 (Network Folder: General)]

Barry Way/Jindabyne Sport and Recreation Road BYPM 2024
Site Category: 2024 PM - Exisiting Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
2	T1	All MCs	229	6.4	229	6.4	0.123	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	99.9
3	R2	All MCs	6	0.0	6	0.0	0.007	9.2	LOS A	0.0	0.2	0.43	0.64	0.43	55.4
Approach			236	6.3	236	6.3	0.123	0.3	NA	0.0	0.2	0.01	0.02	0.01	96.0
East: Jindabyne Sports and Recreation Road															
4	L2	All MCs	4	25.0	4	25.0	0.060	7.7	LOS A	0.2	1.7	0.62	0.77	0.62	46.8
6	R2	All MCs	22	0.0	22	0.0	0.060	12.2	LOS A	0.2	1.7	0.62	0.77	0.62	38.2
Approach			26	4.0	26	4.0	0.060	11.4	LOS A	0.2	1.7	0.62	0.77	0.62	40.2
North: Barry Way															
7	L2	All MCs	20	5.3	20	5.3	0.012	8.0	LOS A	0.0	0.0	0.00	0.66	0.00	80.9
8	T1	All MCs	369	3.1	369	3.1	0.196	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	99.9
Approach			389	3.2	389	3.2	0.196	0.4	NA	0.0	0.0	0.00	0.03	0.00	98.7
All Vehicles			652	4.4	652	4.4	0.196	0.8	NA	0.2	1.7	0.03	0.06	0.03	95.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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APPENDIX C

Future SIDRA Results

MOVEMENT SUMMARY

Site: 1 [Northern Intersection | 2041 AM - CHR + CHL (Site Folder: 2041 - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2041 AM (Network Folder: General)]

Northern Roundabout | 2041 AM
Site Category: 2041 AM
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
2	T1	All MCs	785	4.8	785	4.8	0.411	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
3	R2	All MCs	4	100.0	4	100.0	0.005	11.1	LOS A	0.0	0.3	0.46	0.60	0.46	43.1
Approach			789	5.3	789	5.3	0.411	0.1	NA	0.0	0.3	0.00	0.00	0.00	79.3
East: Education Road															
4	L2	All MCs	238	0.0	238	0.0	0.127	3.5	LOS A	0.0	0.0	0.00	0.37	0.00	37.5
Approach			238	0.0	238	0.0	0.127	3.5	NA	0.0	0.0	0.00	0.37	0.00	37.5
North: Barry Way (N)															
7	L2	All MCs	286	3.3	286	3.3	0.156	7.7	LOS A	0.0	0.0	0.00	0.60	0.00	63.1
8	T1	All MCs	293	10.8	293	10.8	0.159	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			579	7.1	579	7.1	0.159	3.8	NA	0.0	0.0	0.00	0.30	0.00	68.1
All Vehicles			1606	5.2	1606	5.2	0.411	2.0	NA	0.0	0.3	0.00	0.16	0.00	68.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 2 [Southern Roundabout | 2041 AM (Site Folder: 2041 - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2041 AM (Network Folder: General)]

Southern Roundabout | 2041 AM
Site Category: 2041 AM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
1	L2	All MCs	15	7.1	15	7.1	0.734	10.0	LOS A	10.2	74.4	0.88	0.71	1.00	50.0
2	T1	All MCs	514	7.0	514	7.0	0.734	10.5	LOS A	10.2	74.4	0.88	0.71	1.00	50.9
3	R2	All MCs	299	0.0	299	0.0	0.734	18.3	LOS B	10.2	74.4	0.88	0.71	1.00	29.3
3u	U	All MCs	1	0.0	1	0.0	0.734	18.6	LOS B	10.2	74.4	0.88	0.71	1.00	58.1
Approach			828	4.4	828	4.4	0.734	13.3	LOS A	10.2	74.4	0.88	0.71	1.00	37.0
East: Jindabyne Sport and Recreation Road															
4	L2	All MCs	21	65.0	21	65.0	0.343	5.7	LOS A	2.5	18.3	0.78	0.56	0.78	25.4
5	T1	All MCs	1	0.0	1	0.0	0.343	3.4	LOS A	2.5	18.3	0.78	0.56	0.78	26.8
6	R2	All MCs	265	0.0	265	0.0	0.343	3.4	LOS A	2.5	18.3	0.78	0.56	0.78	19.3
6u	U	All MCs	1	0.0	1	0.0	0.343	3.4	LOS A	2.5	18.3	0.78	0.56	0.78	19.6
Approach			288	4.7	288	4.7	0.343	3.6	LOS A	2.5	18.3	0.78	0.56	0.78	20.0
North: Barry Way (N)															
7	L2	All MCs	32	0.0	32	0.0	0.512	9.5	LOS A	4.5	32.7	0.74	0.61	0.74	28.1
8	T1	All MCs	498	6.1	498	6.1	0.512	8.4	LOS A	4.5	32.7	0.74	0.61	0.74	59.8
9	R2	All MCs	1	0.0	1	0.0	0.512	13.8	LOS A	4.5	32.7	0.74	0.61	0.74	49.9
9u	U	All MCs	1	0.0	1	0.0	0.512	16.5	LOS B	4.5	32.7	0.74	0.61	0.74	52.1
Approach			532	5.7	532	5.7	0.512	8.5	LOS A	4.5	32.7	0.74	0.61	0.74	56.0
West: Tinworth Dr															
10	L2	All MCs	9	11.1	9	11.1	0.050	11.6	LOS A	0.4	2.7	0.93	0.79	0.93	36.6
11	T1	All MCs	1	0.0	1	0.0	0.050	15.9	LOS B	0.4	2.7	0.93	0.79	0.93	26.2
12	R2	All MCs	9	11.1	9	11.1	0.050	16.6	LOS B	0.4	2.7	0.93	0.79	0.93	45.4
12u	U	All MCs	1	0.0	1	0.0	0.050	17.9	LOS B	0.4	2.7	0.93	0.79	0.93	41.4
Approach			21	10.0	21	10.0	0.050	14.4	LOS A	0.4	2.7	0.93	0.79	0.93	40.4
All Vehicles			1669	5.0	1669	5.0	0.734	10.1	LOS A	10.2	74.4	0.82	0.65	0.88	37.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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: 1 [Northern Intersection | 2041 PM - CHR + CHL (Site Folder: 2041 - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2041 PM (Network Folder: General)]

Northern Roundabout | 2041 PM
Site Category: 2041 PM
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
2	T1	All MCs	637	2.5	637	2.5	0.328	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
3	R2	All MCs	14	100.0	14	100.0	0.025	13.5	LOS A	0.1	1.3	0.58	0.72	0.58	41.9
Approach			651	4.5	651	4.5	0.328	0.3	NA	0.1	1.3	0.01	0.02	0.01	78.3
East: Education Road															
4	L2	All MCs	257	0.0	257	0.0	0.137	4.1	LOS A	0.0	0.0	0.00	0.37	0.00	37.5
Approach			257	0.0	257	0.0	0.137	4.1	NA	0.0	0.0	0.00	0.37	0.00	37.5
North: Barry Way (N)															
7	L2	All MCs	239	0.0	239	0.0	0.127	7.6	LOS A	0.0	0.0	0.00	0.60	0.00	64.1
8	T1	All MCs	482	3.3	482	3.3	0.250	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			721	2.2	721	2.2	0.250	2.6	NA	0.0	0.0	0.00	0.20	0.00	71.3
All Vehicles			1628	2.8	1628	2.8	0.328	1.9	NA	0.1	1.3	0.00	0.15	0.00	67.9

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

MOVEMENT SUMMARY

Site: 2 [Southern Roundabout | 2041 PM (Site Folder: 2041 - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2041 PM (Network Folder: General)]

Southern Roundabout | 2041 PM
Site Category: 2041 PM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
1	L2	All MCs	11	10.0	11	10.0	0.554	9.0	LOS A	5.3	38.0	0.82	0.70	0.85	50.1
2	T1	All MCs	282	6.3	282	6.3	0.554	9.4	LOS A	5.3	38.0	0.82	0.70	0.85	51.2
3	R2	All MCs	249	0.0	249	0.0	0.554	17.2	LOS B	5.3	38.0	0.82	0.70	0.85	29.4
3u	U	All MCs	1	0.0	1	0.0	0.554	17.4	LOS B	5.3	38.0	0.82	0.70	0.85	58.3
Approach			543	3.5	543	3.5	0.554	13.0	LOS A	5.3	38.0	0.82	0.70	0.85	35.3
East: Jindabyne Sport and Recreation Road															
4	L2	All MCs	38	11.1	38	11.1	0.592	9.8	LOS A	6.2	44.6	0.99	1.03	1.24	27.2
5	T1	All MCs	1	0.0	1	0.0	0.592	9.2	LOS A	6.2	44.6	0.99	1.03	1.24	25.8
6	R2	All MCs	358	2.6	358	2.6	0.592	9.3	LOS A	6.2	44.6	0.99	1.03	1.24	18.3
6u	U	All MCs	1	0.0	1	0.0	0.592	9.2	LOS A	6.2	44.6	0.99	1.03	1.24	19.1
Approach			398	3.4	398	3.4	0.592	9.4	LOS A	6.2	44.6	0.99	1.03	1.24	19.4
North: Barry Way (N)															
7	L2	All MCs	36	0.0	36	0.0	0.647	9.9	LOS A	7.1	50.8	0.79	0.62	0.82	28.0
8	T1	All MCs	706	2.1	706	2.1	0.647	8.7	LOS A	7.1	50.8	0.79	0.62	0.82	60.5
9	R2	All MCs	1	0.0	1	0.0	0.647	14.2	LOS A	7.1	50.8	0.79	0.62	0.82	49.7
9u	U	All MCs	1	0.0	1	0.0	0.647	17.0	LOS B	7.1	50.8	0.79	0.62	0.82	51.6
Approach			744	2.0	744	2.0	0.647	8.8	LOS A	7.1	50.8	0.79	0.62	0.82	57.3
West: Tinworth Dr															
10	L2	All MCs	9	11.1	9	11.1	0.035	8.4	LOS A	0.2	1.7	0.81	0.71	0.81	38.9
11	T1	All MCs	1	0.0	1	0.0	0.035	12.9	LOS A	0.2	1.7	0.81	0.71	0.81	26.8
12	R2	All MCs	9	11.1	9	11.1	0.035	13.4	LOS A	0.2	1.7	0.81	0.71	0.81	47.2
12u	U	All MCs	1	0.0	1	0.0	0.035	14.9	LOS B	0.2	1.7	0.81	0.71	0.81	42.9
Approach			21	10.0	21	10.0	0.035	11.2	LOS A	0.2	1.7	0.81	0.71	0.81	42.2
All Vehicles			1706	2.9	1706	2.9	0.647	10.3	LOS A	7.1	50.8	0.85	0.74	0.93	37.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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: 1 [Northern Intersection | 2025 AM - CHR + CHL (Site Folder: 2025 - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 AM (Network Folder: General)]

Northern Roundabout | 2025 AM
Site Category: 2025 AM
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
2	T1	All MCs	677	4.2	677	4.2	0.353	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
3	R2	All MCs	4	100.0	4	100.0	0.005	10.6	LOS A	0.0	0.3	0.42	0.58	0.42	43.3
Approach			681	4.8	681	4.8	0.353	0.1	NA	0.0	0.3	0.00	0.00	0.00	79.3
East: Education Road															
4	L2	All MCs	101	0.0	101	0.0	0.054	3.3	LOS A	0.0	0.0	0.00	0.37	0.00	37.5
Approach			101	0.0	101	0.0	0.054	3.3	NA	0.0	0.0	0.00	0.37	0.00	37.5
North: Barry Way (N)															
7	L2	All MCs	297	3.2	297	3.2	0.162	7.7	LOS A	0.0	0.0	0.00	0.60	0.00	63.2
8	T1	All MCs	238	10.6	238	10.6	0.129	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			535	6.5	535	6.5	0.162	4.3	NA	0.0	0.0	0.00	0.33	0.00	67.3
All Vehicles			1317	5.1	1317	5.1	0.353	2.1	NA	0.0	0.3	0.00	0.17	0.00	70.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 2 [Southern Roundabout | 2025 AM (Site Folder: 2025 - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 AM (Network Folder: General)]

Southern Roundabout | 2025 AM
Site Category: 2025 AM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
1	L2	All MCs	12	9.1	12	9.1	0.507	7.6	LOS A	4.3	31.6	0.66	0.62	0.66	51.6
2	T1	All MCs	415	6.9	415	6.9	0.507	8.1	LOS A	4.3	31.6	0.66	0.62	0.66	54.3
3	R2	All MCs	145	0.0	145	0.0	0.507	15.9	LOS B	4.3	31.6	0.66	0.62	0.66	29.9
3u	U	All MCs	1	0.0	1	0.0	0.507	16.2	LOS B	4.3	31.6	0.66	0.62	0.66	60.4
Approach			573	5.1	573	5.1	0.507	10.1	LOS A	4.3	31.6	0.66	0.62	0.66	41.2
East: Jindabyne Sport and Recreation Road															
4	L2	All MCs	21	65.0	21	65.0	0.268	3.5	LOS A	1.8	12.9	0.59	0.38	0.59	25.6
5	T1	All MCs	1	0.0	1	0.0	0.268	2.0	LOS A	1.8	12.9	0.59	0.38	0.59	27.0
6	R2	All MCs	257	0.0	257	0.0	0.268	2.0	LOS A	1.8	12.9	0.59	0.38	0.59	19.5
6u	U	All MCs	1	0.0	1	0.0	0.268	2.0	LOS A	1.8	12.9	0.59	0.38	0.59	19.8
Approach			280	4.9	280	4.9	0.268	2.1	LOS A	1.8	12.9	0.59	0.38	0.59	20.2
North: Barry Way (N)															
7	L2	All MCs	27	0.0	27	0.0	0.275	8.1	LOS A	2.0	14.5	0.44	0.50	0.44	28.5
8	T1	All MCs	309	7.8	309	7.8	0.275	7.0	LOS A	2.0	14.5	0.44	0.50	0.44	61.4
9	R2	All MCs	1	0.0	1	0.0	0.275	12.4	LOS A	2.0	14.5	0.44	0.50	0.44	51.4
9u	U	All MCs	1	0.0	1	0.0	0.275	15.1	LOS B	2.0	14.5	0.44	0.50	0.44	55.5
Approach			339	7.1	339	7.1	0.275	7.1	LOS A	2.0	14.5	0.44	0.50	0.44	56.1
West: Tinworth Dr															
10	L2	All MCs	7	14.3	7	14.3	0.026	7.6	LOS A	0.2	1.2	0.76	0.68	0.76	39.5
11	T1	All MCs	1	0.0	1	0.0	0.026	12.0	LOS A	0.2	1.2	0.76	0.68	0.76	26.9
12	R2	All MCs	7	14.3	7	14.3	0.026	12.7	LOS A	0.2	1.2	0.76	0.68	0.76	47.1
12u	U	All MCs	1	0.0	1	0.0	0.026	14.0	LOS A	0.2	1.2	0.76	0.68	0.76	43.2
Approach			17	12.5	17	12.5	0.026	10.5	LOS A	0.2	1.2	0.76	0.68	0.76	42.0
All Vehicles			1208	5.7	1208	5.7	0.507	7.4	LOS A	4.3	31.6	0.58	0.53	0.58	37.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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: 1 [Northern Intersection | 2025 PM - CHR + CHL (Site Folder: 2025 - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 PM (Network Folder: General)]

Northern Roundabout | 2025 PM
Site Category: 2025 PM
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
2	T1	All MCs	558	2.1	558	2.1	0.287	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
3	R2	All MCs	14	100.0	14	100.0	0.021	12.2	LOS A	0.1	1.1	0.53	0.67	0.53	42.6
Approach			572	4.4	572	4.4	0.287	0.3	NA	0.1	1.1	0.01	0.02	0.01	78.2
East: Education Road															
4	L2	All MCs	113	0.0	113	0.0	0.060	3.7	LOS A	0.0	0.0	0.00	0.37	0.00	37.5
Approach			113	0.0	113	0.0	0.060	3.7	NA	0.0	0.0	0.00	0.37	0.00	37.5
North: Barry Way (N)															
7	L2	All MCs	235	0.0	235	0.0	0.125	7.6	LOS A	0.0	0.0	0.00	0.60	0.00	64.1
8	T1	All MCs	395	3.2	395	3.2	0.205	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			629	2.0	629	2.0	0.205	2.9	NA	0.0	0.0	0.00	0.22	0.00	70.6
All Vehicles			1314	2.9	1314	2.9	0.287	1.8	NA	0.1	1.1	0.01	0.15	0.01	70.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 2 [Southern Roundabout | 2025 PM (Site Folder: 2025 - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2025 PM (Network Folder: General)]

Southern Roundabout | 2025 PM
Site Category: 2025 PM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way (S)															
1	L2	All MCs	8	12.5	8	12.5	0.347	8.0	LOS A	2.6	18.7	0.66	0.65	0.66	51.3
2	T1	All MCs	232	6.4	232	6.4	0.347	8.3	LOS A	2.6	18.7	0.66	0.65	0.66	53.7
3	R2	All MCs	112	0.0	112	0.0	0.347	16.2	LOS B	2.6	18.7	0.66	0.65	0.66	29.8
3u	U	All MCs	1	0.0	1	0.0	0.347	16.4	LOS B	2.6	18.7	0.66	0.65	0.66	60.0
Approach			353	4.5	353	4.5	0.347	10.8	LOS A	2.6	18.7	0.66	0.65	0.66	39.2
East: Jindabyne Sport and Recreational Road															
4	L2	All MCs	29	14.3	29	14.3	0.396	4.0	LOS A	2.9	20.7	0.75	0.54	0.75	28.2
5	T1	All MCs	1	0.0	1	0.0	0.396	3.4	LOS A	2.9	20.7	0.75	0.54	0.75	26.8
6	R2	All MCs	331	2.9	331	2.9	0.396	3.5	LOS A	2.9	20.7	0.75	0.54	0.75	19.3
6u	U	All MCs	1	0.0	1	0.0	0.396	3.4	LOS A	2.9	20.7	0.75	0.54	0.75	19.6
Approach			362	3.8	362	3.8	0.396	3.6	LOS A	2.9	20.7	0.75	0.54	0.75	20.3
North: Barry Way (N)															
7	L2	All MCs	24	0.0	24	0.0	0.376	7.9	LOS A	3.0	21.6	0.43	0.48	0.43	28.6
8	T1	All MCs	481	2.4	481	2.4	0.376	6.7	LOS A	3.0	21.6	0.43	0.48	0.43	63.0
9	R2	All MCs	1	0.0	1	0.0	0.376	12.3	LOS A	3.0	21.6	0.43	0.48	0.43	51.4
9u	U	All MCs	1	0.0	1	0.0	0.376	15.0	LOS B	3.0	21.6	0.43	0.48	0.43	55.7
Approach			507	2.3	507	2.3	0.376	6.8	LOS A	3.0	21.6	0.43	0.48	0.43	59.5
West: Tinworth Dr															
10	L2	All MCs	8	12.5	8	12.5	0.024	6.2	LOS A	0.1	1.1	0.67	0.64	0.67	40.7
11	T1	All MCs	1	0.0	1	0.0	0.024	10.8	LOS A	0.1	1.1	0.67	0.64	0.67	27.2
12	R2	All MCs	8	12.5	8	12.5	0.024	11.2	LOS A	0.1	1.1	0.67	0.64	0.67	48.3
12u	U	All MCs	1	0.0	1	0.0	0.024	12.8	LOS A	0.1	1.1	0.67	0.64	0.67	43.9
Approach			19	11.1	19	11.1	0.024	9.0	LOS A	0.1	1.1	0.67	0.64	0.67	43.2
All Vehicles			1241	3.5	1241	3.5	0.396	7.0	LOS A	3.0	21.6	0.59	0.55	0.59	37.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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: 101 [Barry Way/Kosciuszko Road - BG+DEV AM (Site Folder: 2025 BG+DEV AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BG DEV 2025 AM - Roundabout (Network Folder: General)]

Barry Way/Kosciuszko Road 2025 BG+DEV AM
Site Category: 2024 AM - Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
1	L2	All MCs	236	3.1	236	3.1	0.301	6.5	LOS A	1.8	12.9	0.66	0.62	0.66	39.8
2	T1	All MCs	1	0.0	1	0.0	0.635	7.0	LOS A	6.7	47.9	0.81	0.77	0.93	38.9
3	R2	All MCs	593	3.9	593	3.9	0.635	13.8	LOS A	6.7	47.9	0.81	0.77	0.93	44.6
3u	U	All MCs	124	0.0	124	0.0	0.635	16.2	LOS B	6.7	47.9	0.81	0.77	0.93	32.6
Approach			954	3.2	954	3.2	0.635	12.3	LOS A	6.7	47.9	0.77	0.73	0.86	42.5
East: Kosciuszko Road															
4	L2	All MCs	497	6.1	497	6.1	0.369	4.2	LOS A	2.4	17.8	0.46	0.47	0.46	51.2
5	T1	All MCs	394	5.3	394	5.3	0.366	4.9	LOS A	2.3	16.9	0.47	0.49	0.47	44.4
6	R2	All MCs	1	0.0	1	0.0	0.366	10.6	LOS A	2.3	16.9	0.47	0.49	0.47	48.6
6u	U	All MCs	35	0.0	35	0.0	0.366	13.2	LOS A	2.3	16.9	0.47	0.49	0.47	52.5
Approach			926	5.6	926	5.6	0.369	4.9	LOS A	2.4	17.8	0.46	0.48	0.46	47.0
North: Jindabyne Disc Golf Course Access															
7	L2	All MCs	4	0.0	4	0.0	0.015	6.7	LOS A	0.1	0.6	0.78	0.67	0.78	47.3
8	T1	All MCs	2	0.0	2	0.0	0.015	6.2	LOS A	0.1	0.6	0.78	0.67	0.78	36.1
9	R2	All MCs	1	0.0	1	0.0	0.015	12.4	LOS A	0.1	0.6	0.78	0.67	0.78	38.2
9u	U	All MCs	1	0.0	1	0.0	0.015	14.5	LOS B	0.1	0.6	0.78	0.67	0.78	40.4
Approach			8	0.0	8	0.0	0.015	8.3	LOS A	0.1	0.6	0.78	0.67	0.78	43.3
West: Kosciuszko Road															
10	L2	All MCs	5	0.0	5	0.0	0.222	4.4	LOS A	2.0	14.8	0.91	0.62	0.91	38.9
11	T1	All MCs	239	7.9	239	7.9	0.222	4.4	LOS A	2.0	14.8	0.91	0.64	0.91	43.4
12	R2	All MCs	85	8.6	85	8.6	0.222	10.7	LOS A	1.7	12.7	0.89	0.72	0.89	34.0
12u	U	All MCs	8	37.5	8	37.5	0.222	13.6	LOS A	1.7	12.7	0.89	0.72	0.89	36.3
Approach			338	8.7	338	8.7	0.222	6.2	LOS A	2.0	14.8	0.90	0.66	0.90	41.3
All Vehicles			2226	5.0	2226	5.0	0.635	8.3	LOS A	6.7	47.9	0.66	0.61	0.70	44.1

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

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

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: 101 [Barry Way/School ingress - BG+DEV AM (Site Folder: 2025 BG+DEV AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BG DEV 2025 AM - Roundabout (Network Folder: General)]

Barry Way/School ingress
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
2	T1	All MCs	798	4.4	798	4.4	0.427	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
3b	R3	All MCs	4	100.0	4	100.0	0.014	19.0	LOS B	0.0	0.6	0.69	0.81	0.69	38.4
Approach			802	4.9	802	4.9	0.427	0.3	NA	0.0	0.6	0.00	0.00	0.00	78.7
North: Barry Way															
7a	L1	All MCs	421	2.3	421	2.3	0.227	6.8	LOS A	0.0	0.0	0.00	0.67	0.00	64.6
8	T1	All MCs	239	11.0	239	11.0	0.133	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			660	5.4	660	5.4	0.227	4.3	NA	0.0	0.0	0.00	0.43	0.00	65.7
All Vehicles			1462	5.1	1462	5.1	0.427	2.1	NA	0.0	0.6	0.00	0.20	0.00	72.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 106v [Barry Way/Jindabyne Sport and Recreation Road - BG+DEV AM - Roundabout - Conversion (Site Folder: 2025 BG +DEV AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BG DEV 2025 AM - Roundabout (Network Folder: General)]

Barry Way/Jindabyne Sport and Recreation Road 2025 BG+DEV AM
Site Category: 2024 AM - Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
1	L2	All MCs	12	9.1	12	9.1	0.551	8.5	LOS A	4.9	36.3	0.73	0.61	0.73	55.6
2	T1	All MCs	540	6.2	540	6.2	0.551	9.1	LOS A	4.9	36.3	0.73	0.61	0.73	55.2
3	R2	All MCs	22	0.0	22	0.0	0.551	14.0	LOS A	4.9	36.3	0.73	0.61	0.73	29.8
3u	U	All MCs	1	0.0	1	0.0	0.551	15.5	LOS B	4.9	36.3	0.73	0.61	0.73	60.8
Approach			575	6.0	575	6.0	0.551	9.3	LOS A	4.9	36.3	0.73	0.61	0.73	52.1
East: Jindabyne Sports and Recreation Road															
4	L2	All MCs	123	11.1	123	11.1	0.370	2.5	LOS A	2.9	21.0	0.61	0.37	0.61	28.9
5	T1	All MCs	1	0.0	1	0.0	0.370	2.2	LOS A	2.9	21.0	0.61	0.37	0.61	28.3
6	R2	All MCs	264	2.4	264	2.4	0.370	2.3	LOS A	2.9	21.0	0.61	0.37	0.61	19.5
6u	U	All MCs	1	0.0	1	0.0	0.370	2.2	LOS A	2.9	21.0	0.61	0.37	0.61	19.7
Approach			389	5.1	389	5.1	0.370	2.3	LOS A	2.9	21.0	0.61	0.37	0.61	23.1
North: Barry Way															
7	L2	All MCs	17	0.0	17	0.0	0.171	7.0	LOS A	1.2	9.3	0.19	0.49	0.19	39.6
8	T1	All MCs	221	11.4	221	11.4	0.171	6.8	LOS A	1.2	9.3	0.19	0.49	0.19	67.8
9	R2	All MCs	1	0.0	1	0.0	0.171	10.9	LOS A	1.2	9.3	0.19	0.49	0.19	64.6
9u	U	All MCs	1	0.0	1	0.0	0.171	13.3	LOS A	1.2	9.3	0.19	0.49	0.19	69.7
Approach			240	10.5	240	10.5	0.171	6.8	LOS A	1.2	9.3	0.19	0.49	0.19	64.6
West: Tinworth Drive															
10	L2	All MCs	7	14.3	7	14.3	0.033	11.4	LOS A	0.2	1.6	0.83	0.73	0.83	41.8
11	T1	All MCs	1	0.0	1	0.0	0.033	14.3	LOS A	0.2	1.6	0.83	0.73	0.83	27.4
12	R2	All MCs	7	14.3	7	14.3	0.033	16.2	LOS B	0.2	1.6	0.83	0.73	0.83	48.7
12u	U	All MCs	1	0.0	1	0.0	0.033	17.2	LOS B	0.2	1.6	0.83	0.73	0.83	47.5
Approach			17	12.5	17	12.5	0.033	14.1	LOS A	0.2	1.6	0.83	0.73	0.83	43.8
All Vehicles			1221	6.7	1221	6.7	0.551	6.7	LOS A	4.9	36.3	0.59	0.51	0.59	41.0

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

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

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: 101 [Barry Way/Kosciuszko Road - BG+DEV PM (Site Folder: 2025 BG+DEV PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BG DEV 2025 PM - Roundabout (Network Folder: General)]

Barry Way/Kosciuszko Road 2025 BG+DEV PM
Site Category: 2024 PM - Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
1	L2	All MCs	85	6.2	85	6.2	0.107	5.3	LOS A	0.6	4.1	0.50	0.53	0.50	40.3
2	T1	All MCs	4	0.0	4	0.0	0.509	4.5	LOS A	4.1	29.4	0.62	0.64	0.62	39.8
3	R2	All MCs	548	3.3	548	3.3	0.509	11.2	LOS A	4.1	29.4	0.62	0.64	0.62	45.4
3u	U	All MCs	101	0.0	101	0.0	0.509	13.6	LOS A	4.1	29.4	0.62	0.64	0.62	33.8
Approach			739	3.1	739	3.1	0.509	10.8	LOS A	4.1	29.4	0.61	0.62	0.61	43.9
East: Kosciuszko Road															
4	L2	All MCs	589	1.6	589	1.6	0.466	4.8	LOS A	3.5	24.6	0.61	0.55	0.61	50.1
5	T1	All MCs	217	7.3	217	7.3	0.288	5.7	LOS A	1.7	12.4	0.55	0.57	0.55	43.9
6	R2	All MCs	15	0.0	15	0.0	0.288	11.3	LOS A	1.7	12.4	0.55	0.57	0.55	47.7
6u	U	All MCs	39	0.0	39	0.0	0.288	13.9	LOS A	1.7	12.4	0.55	0.57	0.55	51.6
Approach			860	2.9	860	2.9	0.466	5.5	LOS A	3.5	24.6	0.59	0.55	0.59	47.5
North: Jindabyne Disc Golf Course Access															
7	L2	All MCs	28	0.0	28	0.0	0.082	7.9	LOS A	0.4	3.1	0.80	0.77	0.80	47.1
8	T1	All MCs	9	0.0	9	0.0	0.082	7.4	LOS A	0.4	3.1	0.80	0.77	0.80	35.5
9	R2	All MCs	4	0.0	4	0.0	0.082	13.6	LOS A	0.4	3.1	0.80	0.77	0.80	38.0
9u	U	All MCs	1	0.0	1	0.0	0.082	15.7	LOS B	0.4	3.1	0.80	0.77	0.80	40.1
Approach			43	0.0	43	0.0	0.082	8.5	LOS A	0.4	3.1	0.80	0.77	0.80	44.4
West: Kosciuszko Road															
10	L2	All MCs	14	0.0	14	0.0	0.369	4.4	LOS A	3.3	24.3	0.90	0.61	0.90	39.0
11	T1	All MCs	423	4.5	423	4.5	0.369	4.3	LOS A	3.3	24.3	0.90	0.62	0.90	43.5
12	R2	All MCs	202	5.2	202	5.2	0.369	10.5	LOS A	2.9	21.1	0.89	0.72	0.89	33.8
12u	U	All MCs	7	42.9	7	42.9	0.369	14.0	LOS A	2.9	21.1	0.89	0.72	0.89	36.2
Approach			646	5.0	646	5.0	0.369	6.3	LOS A	3.3	24.3	0.89	0.65	0.89	40.9
All Vehicles			2288	3.5	2288	3.5	0.509	7.5	LOS A	4.1	29.4	0.69	0.61	0.69	44.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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: 101 [Barry Way/School ingress - BG+DEV PM (Site Folder: 2025 BG+DEV PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BG DEV 2025 PM - Roundabout (Network Folder: General)]

Barry Way/School ingress
Site Category: 2024 PM - Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
2	T1	All MCs	654	3.9	654	3.9	0.349	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
3b	R3	All MCs	14	100.0	14	100.0	0.050	20.9	LOS B	0.2	2.2	0.73	0.91	0.73	38.0
Approach			667	5.8	667	5.8	0.349	0.6	NA	0.2	2.2	0.01	0.02	0.01	76.4
North: Barry Way															
7a	L1	All MCs	336	0.0	336	0.0	0.178	6.8	LOS A	0.0	0.0	0.00	0.67	0.00	65.0
8	T1	All MCs	397	3.7	397	3.7	0.212	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			733	2.0	733	2.0	0.212	3.1	NA	0.0	0.0	0.00	0.31	0.00	67.0
All Vehicles			1400	3.8	1400	3.8	0.349	1.9	NA	0.2	2.2	0.01	0.17	0.01	72.2

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 106v [Barry Way/Jindabyne Sport and Recreation Road - BG+DEV PM - Conversion (Site Folder: 2025 BG+DEV PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [BG DEV 2025 PM - Roundabout (Network Folder: General)]

Barry Way/Jindabyne Sport and Recreation Road 2025 BG+DEV PM
Site Category: 2024 PM - Existing Design
Roundabout

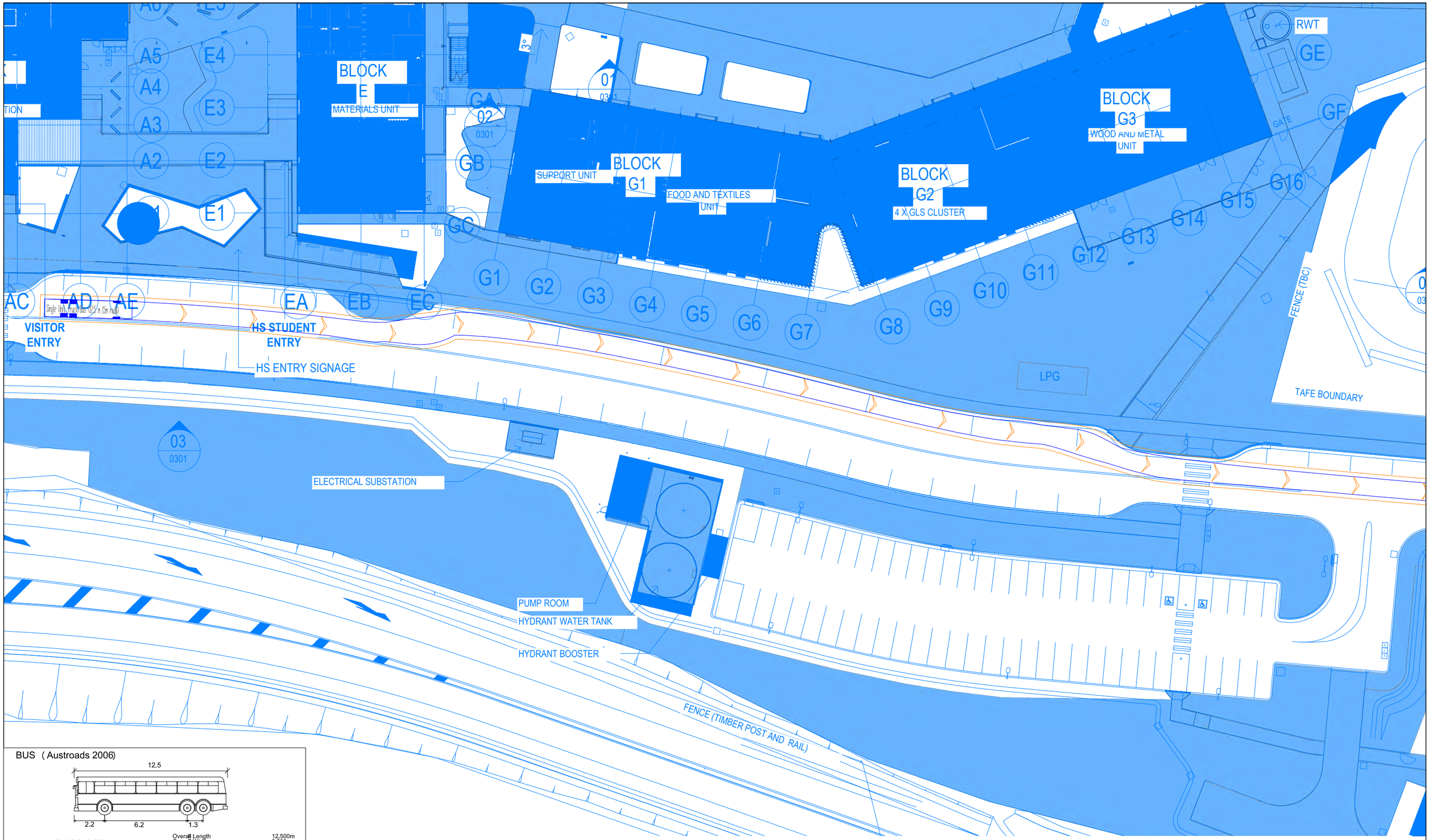
Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Barry Way															
1	L2	All MCs	8	12.5	8	12.5	0.392	8.9	LOS A	3.0	22.6	0.71	0.63	0.71	55.6
2	T1	All MCs	337	8.8	337	8.8	0.392	9.4	LOS A	3.0	22.6	0.71	0.63	0.71	55.4
3	R2	All MCs	12	0.0	12	0.0	0.392	14.2	LOS A	3.0	22.6	0.71	0.63	0.71	29.9
3u	U	All MCs	1	0.0	1	0.0	0.392	15.7	LOS B	3.0	22.6	0.71	0.63	0.71	61.0
Approach			358	8.5	358	8.5	0.392	9.6	LOS A	3.0	22.6	0.71	0.63	0.71	52.7
East: Jindabyne Sports and Recreation Road															
4	L2	All MCs	145	4.3	145	4.3	0.525	4.8	LOS A	4.7	33.6	0.80	0.61	0.84	28.9
5	T1	All MCs	1	0.0	1	0.0	0.525	4.6	LOS A	4.7	33.6	0.80	0.61	0.84	27.8
6	R2	All MCs	332	2.9	332	2.9	0.525	4.8	LOS A	4.7	33.6	0.80	0.61	0.84	19.1
6u	U	All MCs	1	0.0	1	0.0	0.525	4.6	LOS A	4.7	33.6	0.80	0.61	0.84	19.5
Approach			479	3.3	479	3.3	0.525	4.8	LOS A	4.7	33.6	0.80	0.61	0.84	22.6
North: Barry Way															
7	L2	All MCs	22	9.5	22	9.5	0.260	7.1	LOS A	2.0	14.4	0.16	0.48	0.16	39.6
8	T1	All MCs	375	3.4	375	3.4	0.260	6.6	LOS A	2.0	14.4	0.16	0.48	0.16	69.6
9	R2	All MCs	1	0.0	1	0.0	0.260	10.8	LOS A	2.0	14.4	0.16	0.48	0.16	64.8
9u	U	All MCs	1	0.0	1	0.0	0.260	13.2	LOS A	2.0	14.4	0.16	0.48	0.16	69.9
Approach			399	3.7	399	3.7	0.260	6.7	LOS A	2.0	14.4	0.16	0.48	0.16	66.8
West: Tinworth Drive															
10	L2	All MCs	8	12.5	8	12.5	0.030	9.5	LOS A	0.2	1.4	0.75	0.69	0.75	43.6
11	T1	All MCs	1	0.0	1	0.0	0.030	12.6	LOS A	0.2	1.4	0.75	0.69	0.75	27.8
12	R2	All MCs	8	12.5	8	12.5	0.030	14.2	LOS A	0.2	1.4	0.75	0.69	0.75	50.3
12u	U	All MCs	1	0.0	1	0.0	0.030	15.6	LOS B	0.2	1.4	0.75	0.69	0.75	48.7
Approach			19	11.1	19	11.1	0.030	12.1	LOS A	0.2	1.4	0.75	0.69	0.75	45.5
All Vehicles			1255	5.0	1255	5.0	0.525	6.8	LOS A	4.7	33.6	0.57	0.58	0.59	41.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
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.

APPENDIX D

Swept Path Assessment



BUS (Austroads 2006)

VEHICLE ENVELOPE

300mm CLEARANCE

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by Pedavoli Architects, received 13/09/2024.
Education Road has a posted speed limit of 10 km/h.
Swept path assessments completed at 10 km/h and 500mm clearance.

DESIGNED	T.CHEN
PAPER SIZE	A3
APPROVED BY	D. CHOI
DATE	08.10.2024
SCALE	1:500

0 2.5 5

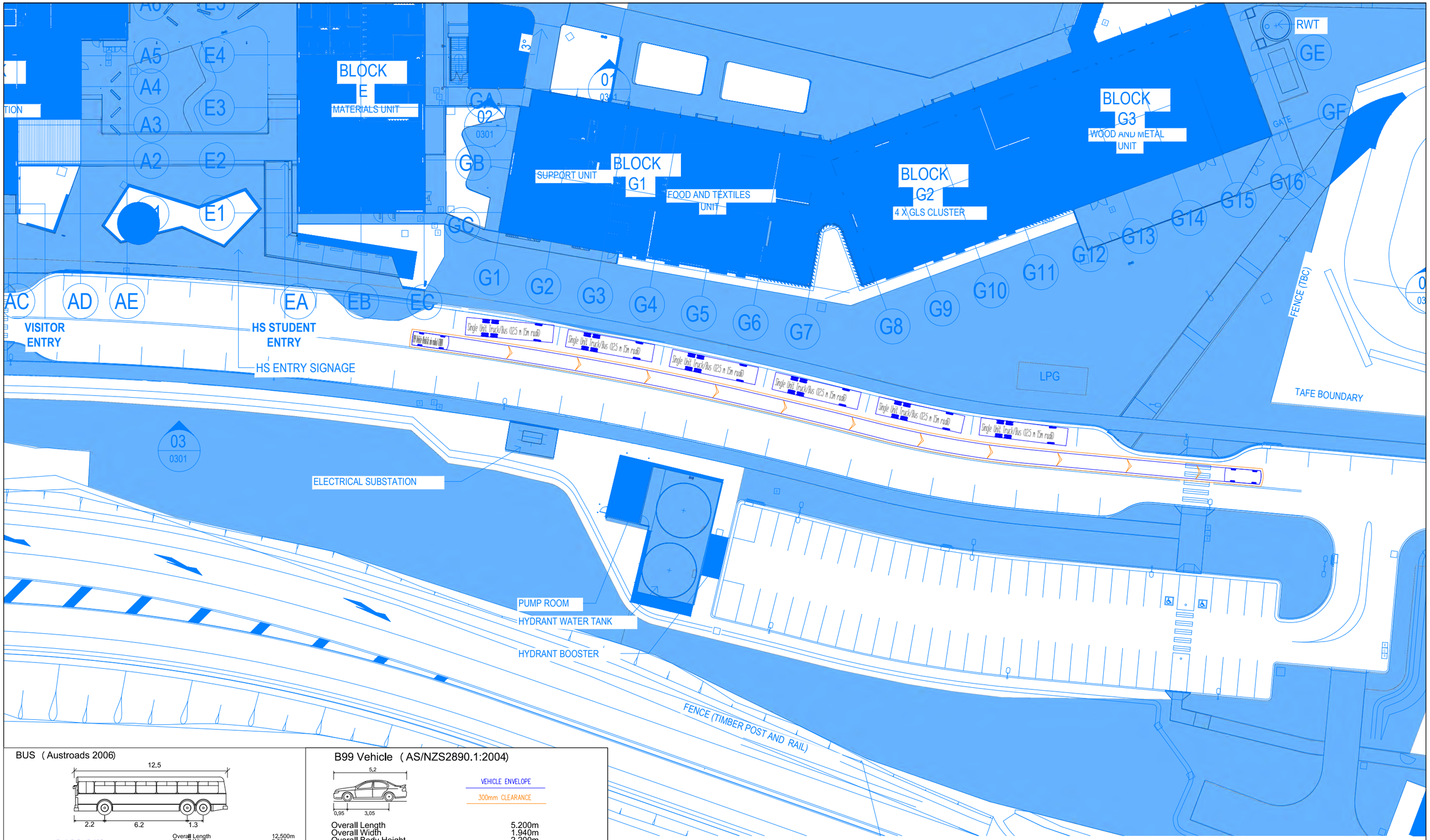
CLIENT: Hansen Yuncken

PROJECT: 1018
207 Barry Way, Jindabyne

DOCUMENT INFORMATION
Jindabyne Education Campus - Modification 3
12.5m Bus Swept Path Assessment (15.0m radii)

FILE NAME	SHEET
NAV1018-05-v01.dwg	NAV01

NAVIANTO GROUP
TRANSPORT PLANNING & TRAFFIC ENGINEERING
info@naviantogroup.com.au
81-83 Campbell Street, Surry Hills NSW 2010



BUS (Austroads 2006)

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

B99 Vehicle (AS/NZS2890.1:2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	2.200m
Min Body Ground Clearance	0.312m
Track Width	1.840m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	6.30m

GENERAL NOTES

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Base Plan prepared by Pedavoli Architects, received 13/09/2024.
Education Road has a posted speed limit of 10km/h.
Swept path assessments completed at 10 km/h and 500mm clearance.

DESIGNED	T.CHEN
PAPER SIZE	A3
APPROVED BY	D. CHOI
DATE	08.10.2024
SCALE	1:500
	0 2.5 5

CLIENT

Hansen Yuncken

PROJECT

1018

207 Barry Way, Jindabyne

DOCUMENT INFORMATION

Jindabyne Education Campus - Modification 3

12.5m Bus Swept Path Assessment (15.0m radii)

FILE NAME	NAV1018-05-v01.dwg
SHEET	NAV02

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