

Jindabyne Education Campus

Traffic Assessment

School Infrastructure NSW

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Document control record

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1 Introduction

This Jindabyne Education Campus Modelling Report (the Report) accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of an application for a State Significant Development (SSD No 15788005). The SSDA is for a new education campus at Jindabyne, comprising of a new primary and high school, located at the Jindabyne Sport and Recreation Centre (JSRC).

The Report presents the methodology and findings of the additional SIDRA intersection modelling analysis undertaken with new survey data collected by Austraffic on 21 October 2021 and to provide understanding of the potential impact of the development and the modified intersection layout on the roads network performance adjacent to the site. The Report supplements and should be read in conjunction with the Transport Assessment Report (issued 19 August 2021).

1.1 Project Overview

The proposed development is for the construction of the Jindabyne Education Campus comprising a new primary school and a new high school at Jindabyne (the proposal). The proposal is located within the JSRC located at 207 Barry Way (the site) and will accommodate approximately 925 students with the capacity for expansion in the future.

The new primary school will be located generally in the northern portion of the site whilst the new high school will be to the south of the site. While the schools are inherently separate identities, with separate student entries, opportunities for integration are provided in a central shared plaza with co-located school administration facilities, as identified in Figure 1-1, over page. This outdoor learning space is activated by the school canteen (shared) and separate core facilities including the primary school hall and library, and the high school gym and library, and provides opportunities for shared community use.

The new primary school will provide for a Core 21 school. This will comprise of 20 home base units and 2 support learning units, administration and staff facilities, covered outdoor learning area (COLA), hall, staff and student amenities, out of school care facilities, library and special programs. Landscaped areas include active and passive open space play areas, and a games court.

The new high school will provide for a stream 2 high school. This is to comprise 20 general and specialised learning spaces and support learning units, administration and staff facilities, covered outdoor learning area (COLA), hall, staff and student amenities, library, an agricultural learning unit. Landscaped areas include active and passive open space play areas, a sports field and multipurpose games courts.

A new access driveway is proposed off Barry way Road along the western boundary of the site and includes car parking, bus and private vehicle drop-off zones, and delivery zones. The proposed school campus development will include upgrading the existing priority T-intersection between Barry Way and Sport and Recreation Centre access to a single lane roundabout.

The proposed site plan is shown in Figure 1-1, over page.

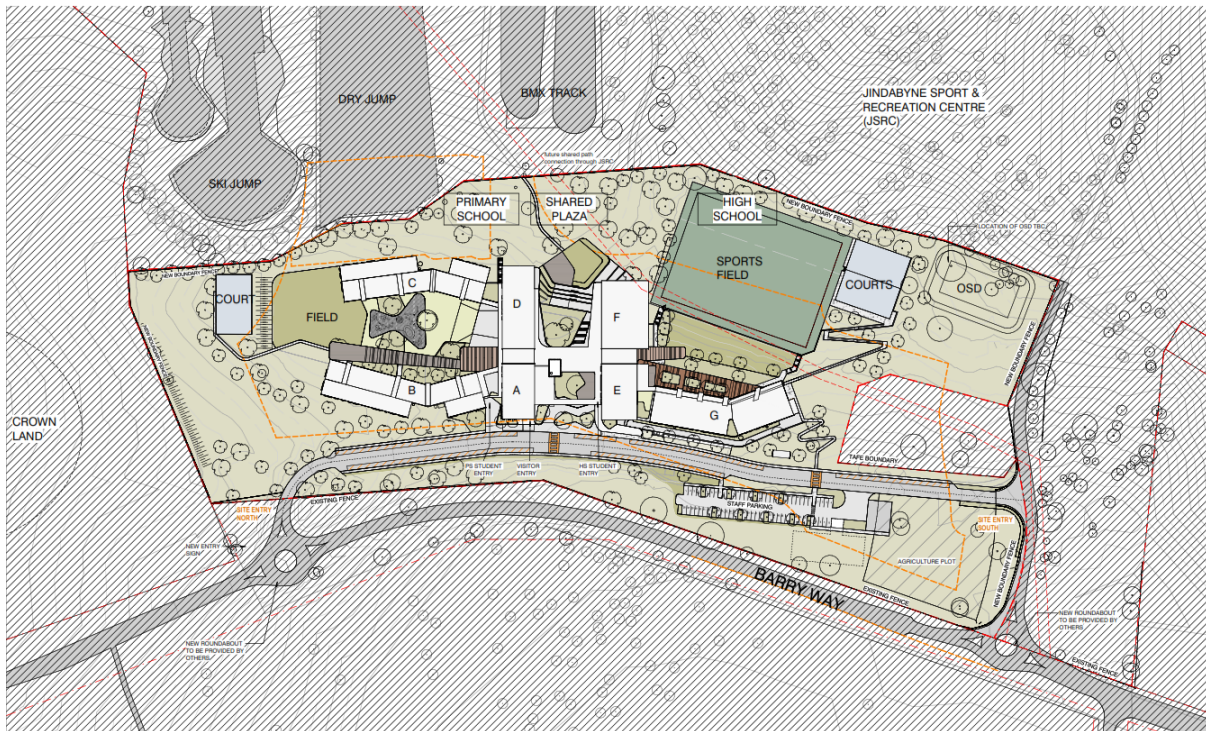


Figure 1-1 Proposed School Location (source: DJRD)

1.2 Site Description

The site of the proposed new education campus at Jindabyne is located within the western extent of the existing JSRC at 207 Barry Way (101 DP1019527). The site is located within the Snowy Monaro Regional Council local government area and is approximately 2.2km south of the Jindabyne town Centre.

The site is approximately 9ha in size, containing a former golf course and three existing workers cottages which were occupied during the construction of the Snowy Hydro Scheme. The majority of the site is undeveloped and contains maintained grasslands and scattered trees. Much of the surrounding land comprises remnant grassland, woodland and agricultural land.

As identified above, the site is within the existing JSRC which is a high performance and community sport centre located directly east of the site. The JSRC has a range of sporting facilities including a synthetic running track, cycling track, netball and tennis courts, fitness and indoor sports centres, and sporting ovals, as well as other services and accommodation facilities. The newly constructed BMX track is located directly east of the site with the new ski jump currently under construction to the northeast.

TAFE NSW have recently lodged a development application for a Connected Learning Centre (CLC) and Mobile Training Unit (MTU) which is proposed to the south of the site. The CLC and MTU will utilise interactive, digitally enabled, flexible, and multipurposed learning environments to provide high-quality training and learning experiences accommodating a maximum of 20-25 students and three teachers.

The surrounding locality is generally rural in character with other land uses also including the Jindabyne Aero Club located to the west of the site on Tinworth Drive, an industrial area to the southwest and the Jindabyne Community recycling centre is located east of the JSRC.

2 Traffic Counts, Survey and Trip Generation

Assumptions regarding the distribution of existing survey and school-related traffic are summarised below. It is noted that as the DA for the TAFE CLC has recently been lodged, the cumulative impact of the CLC and this proposal has been considered.

2.1 Midblock Surveys

To understand the base-year operational volumes of the study area, 24-hour midblock tube counts were conducted by Austraffic at the four following locations on Thursday, 21 October 2021 (Figure 2-1):

- Barry Way North of Jindabyne Sports and Recreation
- Barry Way South of Jindabyne Sports and Recreation
- Jindabyne Sports and Recreation internal road
- Tinworth Drive

AM and PM peak hour-volumes for each survey were extracted and used as base year volumes for the SIDRA analysis modelling. Whilst the peaks of each survey do not necessarily correspond, there was observed to be significant overlap and this methodology promotes a more conservative approach.

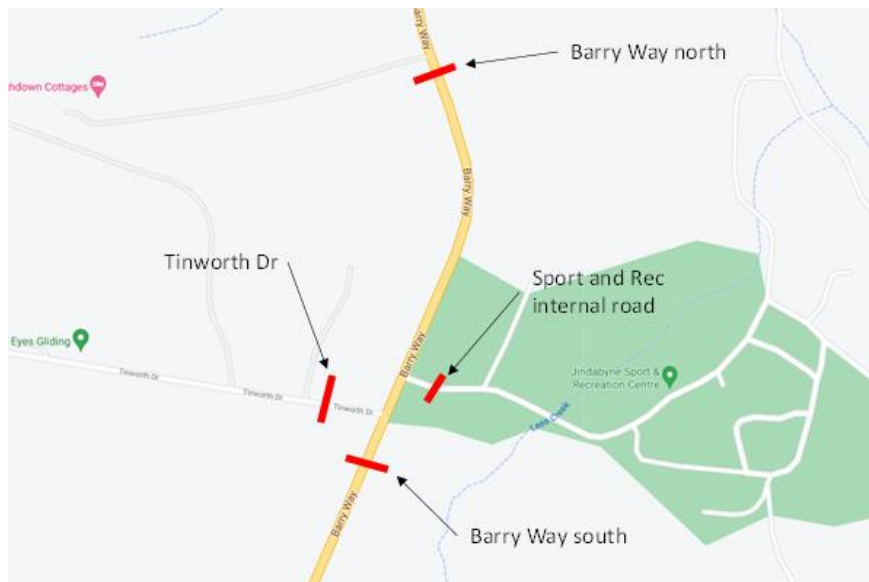


Figure 2-1 Midblock Survey Locations

2.2 Future Traffic Growth

Future traffic growth rates are summarised in Table 2-1. Growth is based on rates obtained from the Snowy Mountain SAP Concept Design Operational Traffic Model Traffic and Transport Assessment Report (GTA 2021) and are consistent with the growth rates applied in the initial Transport Assessment Report (Aurecon 2021). Note that this growth is applied only to existing traffic, not school generated traffic.

Table 2-1 Background Growth Rates

Growth Rate	Period	AM/PM
0.85%	2019 to 2031	AM
1.09%	2019 to 2031	PM
1.63%	2031 to 2041	AM
1.32%	2031 to 2041	PM

2.3 School Trip Generation

Demand assumptions of trips generated by the proposed development are consistent with the Worst-Case assumptions made within the Transport Assessment Report. These assumptions are summarised below:

- Opening year 2023
- Max capacity will be reached upon opening year, with student and staff numbers unchanged between 2023 and 2041
- School will accommodate 925 students, 70% of whom will be picked up and dropped off
- School will accommodate 50 staff, 80% of whom will drive to/ from the school
- Eight school bus trips will occur in the AM peak, two in the PM peak

2.4 TAFE CLC Trip Generation

Traffic generation assumptions for the TAFE CLC development are consistent with the assumptions made within its DA documentation. These are summarised below:

- The CLC will house approximately three staff and a maximum of 25 students
- 11 on-site car parking are provided, plus one accessible car parking space

On top of these existing assumptions, the following additional assumptions have been made:

- Completion and operation by 2023
- TAFE mode share will match the mode share assumed of the proposed school. Therefore the TAFE will generate:
 - Three staff at 80% car mode share. This results to three additional trips in the AM and PM peaks
 - 25 students at 70% car mode share. This results to 18 additional trips in the AM and PM peaks
- CLC will operate at maximum capacity from year of opening, and experience no growth in future years

2.5 Heavy Vehicles Traffic Volumes

Heavy vehicle percentages depart from the 10% network wide assumption made in the Transport Access Report and have been derived from midblock surveys for each surveyed approach and direction. These are summarised in Table 2-2 and assumed to be consistent across the AM and PM peaks.

Table 2-2 Midblock Heavy Vehicle Percentages

Midblock	Heavy Vehicle %
Barry Way North Northbound	18.7%
Barry Way North Southbound	13.9%
Barry Way South Northbound	18.5%
Barry Way South Southbound	18.0%
Sports and Recreation Eastbound	9.7%
Sports and Recreation Westbound	15.9%
Tinworth Drive Eastbound	20.0%
Tinworth Drive Westbound	8.0%

3 Traffic Distribution

Assumptions regarding the distribution of existing survey and school-related traffic are summarised below. The detailed SIDRA inputs are provided in Appendix A.

3.1 Survey Traffic Distribution Assumption

Surveyed counts were presented in the form of midblock volumes, which need to be converted into turn counts to be used within SIDRA. Distribution was conducted by balancing the entry and exit volumes of each approach of the intersection, whilst keeping in mind the general trend of traffic movements within the study area. The resultant turn counts can be seen in the base year model input volumes presented in Appendix A.

3.2 School Traffic Distribution Assumption

Distribution of school generated traffic is based on assumptions consistent with those made in the Transport Access Report. They are listed below:

- 50% of entering traffic comes from the north, 50% from the south
- 50% exiting traffic leaves to the north, 50% to the south

On top of these existing assumptions, the following additional assumptions have been made:

- Student pick-up and drop-off trips will arrive and leave the school precinct within the same peak hour
- Teacher related trips will arrive in the school precinct in the AM peak, and leave in the PM peak
- No turnaround facilities are provided within the school, so vehicles entering from the north access will be required to leave from the south access, and vice versa

The cumulative survey and school traffic turn counts can be seen in the 2023 and 2041 year model input volumes presented in Appendix A.

3.3 TAFE CLC Distribution Assumption

Traffic distribution assumptions for the TAFE CLC development are consistent with the assumptions made within its DA documentation. They are summarised below:

- A single vehicular access driveway is proposed off the School Access road. Vehicles will exit onto the access road which provides access to Barry Way

On top of these existing assumptions, the following additional assumptions have been made:

- CLC will operate at maximum capacity from year of opening, and experience no growth in future years
- Similar to the assumed school traffic distribution, CLC traffic will enter and exit evenly from the north and south of the Barry Way/ School Access intersection.
- Given the provision for 12 on-site parking spaces, it has been assumed that of the 21 additional trips generated in each peak:
 - 12 trips will arrive in the AM peak and leave in the PM peak (teachers and students driving to site)
 - Nine trips will arrive and leave in both AM and PM peaks (students being picked up and dropped off)

4 Intersection Layouts

The following intersections were modelled as part of this assessment:

- School Access/ Barry Way
- Tinworth Drive/ Barry Way

The intersections were modelled as a network within SIDRA due to their close proximity, to better understand the impacts of any potential overflow effects. The proposed layout of this roundabout has been provided through drawing *80820348-05-CI-1301-1303* by Cardno, received 2 November 2021, included in Appendix B. The network layout is shown in Figure 4-1, over page.

4.1 School Access/ Barry Way

The existing School Access/ Barry Way intersection is a priority intersection, with Barry Way locally widened to two-lanes in each direction to provide for overtaking and merging lanes. Based on the provided drawing, the intersection will be upgraded to a single-lane roundabout with the local widening removed to have single lane approaches from each direction. The SIDRA layout is provided in Figure 4-1, over page.

4.2 Tinworth Drive/ Barry Way

The existing School Access/ Barry Way intersection is a priority intersection, with Barry Way locally widened to two-lanes in each direction to provide for overtaking and merging lanes. As the provided drawings did not extend to this intersection, for the purposes of modelling, it has been conservatively assumed that the overtaking and merging lanes along Barry Way have also been removed at this intersection. The SIDRA layout is provided in Figure 4-1, over page.

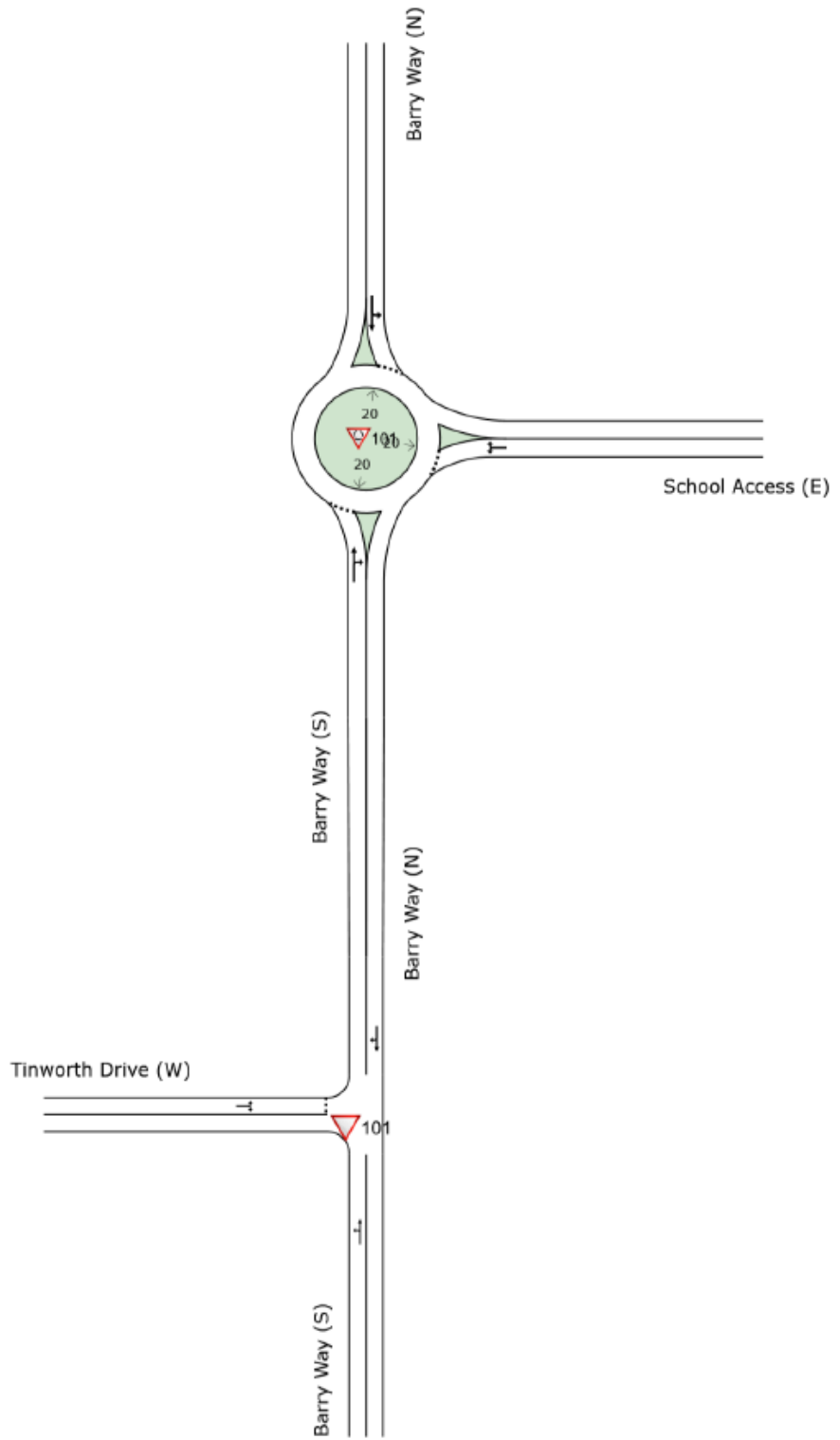


Figure 4-1 SIDRA Network Layout

5 Results and Discussion

Traffic analysis has been undertaken using SIDRA (version 9) for arrival and departure pedestrian crossings to evaluate the crossings performance. SIDRA vehicle and model parameters were set up in accordance with the suggested parameters in the Roads and Maritime Traffic Modelling Guidelines. Level of Service (LoS) were applied as per the guideline definition which ranks movement performance from “A”, being a low level of delay, to “F” being a high level of delay.

The results of the SIDRA analysis are summarised in this section of the report. Detailed SIDRA analysis software outputs of the movement summaries are provided in Appendix C.

5.1 School Access/ Barry Way

SIDRA results for the School Access/ Barry Way intersection for the AM peak of the three modelled scenarios are presented in Table 5-1, below. The layout modelled for all scenarios is the proposed single-lane roundabout configuration.

The results show that the intersection operates at a level of service A in the base year. The addition of school related traffic in 2023 approximately triples intersection volumes, increasing the degree of saturation from 0.19 to 0.628, though it still operates at a LoS A. Queues of up to 21m are observed along the southern approach, though this does not extend to the Tinworth Drive/ Barry Way intersection, which is 70m to the south.

Similarly, the intersection performs at a LoS A for the 2041 scenario, with only marginal worsening of performance indicators when compared to 2023.

Table 5-1 School Access/ Barry Way AM modelling Results

	Volume	Degree of Saturation	Delay (s)	Level of Service	Queue (m)
2021 AM					
Barry Way (S)	280	0.19	2.8	LoS A	4.1
School Access (E)	12	0.011	1.1	LoS A	0.2
Barry Way (N)	186	0.12	2.9	LoS A	2.1
Intersection	478	0.19	2.8	LoS A	4.1
2023 AM					
Barry Way (S)	657	0.628	13.3	LoS A	21
School Access (E)	365	0.43	3.2	LoS A	10
Barry Way (N)	372	0.464	6.8	LoS A	11.3
Intersection	1,394	0.628	8.9	LoS A	21
2041 AM					
Barry Way (S)	731	0.698	13.4	LoS A	28.2
School Access (E)	368	0.459	3.8	LoS A	10.9
Barry Way (N)	420	0.529	7.8	LoS A	14.8
Intersection	1,519	0.698	9.5	LoS A	28.2

SIDRA results for the School Access/ Barry Way intersection for the AM peak of the three modelled scenarios are presented in Table 5-2, below. The layout modelled for all scenarios is the proposed single-lane roundabout configuration.

The results show that the intersection operates at a LoS A in the base year. Similarly to the AM peak, the addition of school related traffic in 2023 approximately triples intersection volumes. This increases intersection degree of saturation from 0.165 to 0.578, though the intersection still operates at a LoS A with average delay increasing from 3.1s to 9.7s. Queueing is observed on the south approach, though not the extent as the AM peak.

Future traffic growth increases the average delay experienced in the intersection to 10.8s in the 2041 scenario, pushing intersection operation to a LoS B. However, this is still well within the boundary of intersection performance requirements.

Table 5-2 School Access/ Barry Way PM modelling Results

	Volume	Degree of Saturation	Delay (s)	Level of Service	Queue (m)
2021 AM					
Barry Way (S)	209	0.156	3.3	LoS A	3.2
School Access (E)	34	0.033	1.4	LoS A	0.5
Barry Way (N)	249	0.165	3.2	LoS A	3.1
Intersection	493	0.165	3.1	LoS A	3.2
2023 AM					
Barry Way (S)	561	0.578	14.5	LoS B	17.7
School Access (E)	419	0.536	5.3	LoS A	14.8
Barry Way (N)	453	0.55	7.8	LoS A	15.9
Intersection	1,433	0.578	9.7	LoS A	17.7
2041 AM					
Barry Way (S)	614	0.639	14.7	LoS B	22.9
School Access (E)	427	0.591	7.1	LoS A	18
Barry Way (N)	515	0.629	9.1	LoS A	21.3
Intersection	1,556	0.639	10.8	LoS B	22.9

In summary, the additional school generated traffic and geometry changes have no material impact on the performance of the School Access/ Barry Way intersection for the AM and PM peaks of the 2021, 2023 and 2041 modelled scenarios.

5.2 Tinworth Drive/ Barry Way

SIDRA results for the Tinworth Drive/ Barry Way intersection for the AM peak of the three modelled scenarios are presented in Table 5-3, below. The layout modelled for all scenarios involves the removal of the merging and overtaking lanes along Barry Way, conservatively assumed to be part of upgrade works at the School Access/ Barry Way intersection.

Note that SIDRA does not provide a level of service output for priority-controlled intersections, and only assigns one to the controlled approach, as it assumes that the major movements operate under free-flow conditions.

The modelling results show that for all modelled scenarios, the major movements along Barry Way operate at free flow conditions with minimal delay. Increased school-related through movements along Barry Way increase delay along the Tinworth Drive approach in from 7.2s in the base year to 13.6s in 2023, and 16.1s in 2041 scenarios, but still operates at an acceptable level of service for the AM peak of both future scenarios.

Table 5-3 Tinworth Drive/ Barry Way AM modelling Results

	Volume	Degree of Saturation	Delay (s)	Level of Service	Queue (m)
2021 AM					
Barry Way (S)	285	0.164	0.3	NA	0
Barry Way (N)	174	0.099	0.2	NA	0.2
Tinworth Drive (W)	15	0.016	7.2	LoS A	0.2
Intersection	474	0.164	0.5	NA	0.2
2023 AM					
Barry Way (S)	663	0.381	0.2	NA	0
Barry Way (N)	523	0.297	0.3	NA	0.4
Tinworth Drive (W)	15	0.04	13.6	LoS A	0.4
Intersection	1,201	0.381	0.4	NA	0.4
2041 AM					
Barry Way (S)	738	0.447	0.3	NA	0
Barry Way (N)	568	0.325	0.4	NA	0.6
Tinworth Drive (W)	17	0.059	16.1	LoS B	0.5
Intersection	1,323	0.447	0.5	NA	0.6

SIDRA results for the Tinworth Drive / Barry Way intersection for the AM peak of the three modelled scenarios are presented in Table 5-4, below. The layout modelled for all scenarios involves the removal of the acceleration and overtaking lanes along Barry Way, conservatively assumed to be part of upgrade works at the School Access/ Barry Way intersection.

The modelling results show that for all modelled scenarios, the major movements along Barry Way operate at free flow conditions with minimal delay. Increased school-related through movements along Barry Way increase delay along the Tinworth Drive approach in from 7s in the base year to 12.8s in 2023, and 14.7s in 2041 scenarios, but still operates at an acceptable level of service for the PM peak of both future scenarios.

Table 5-4 Tinworth Drive/ Barry Way PM modelling Results

	Volume	Degree of Saturation	Delay (s)	Level of Service	Queue (m)
2021 AM					
Barry Way (S)	212	0.122	0.3	NA	0
Barry Way (N)	236	0.132	0	NA	0
Tinworth Drive (W)	15	0.015	7	LoS A	0.2
Intersection	462	0.132	0.4	NA	0.2
2023 AM					
Barry Way (S)	563	0.324	0.2	NA	0
Barry Way (N)	614	0.344	0	NA	0.1
Tinworth Drive (W)	15	0.037	12.8	LoS B	0.3
Intersection	1,192	0.344	0.3	NA	0.3
2041 AM					
Barry Way (S)	616	0.354	0.2	NA	0
Barry Way (N)	673	0.377	0	NA	0.1
Tinworth Drive (W)	17	0.051	14.7	LoS B	0.5
Intersection	1,305	0.377	0.3	NA	0.5

In summary, the additional school generated traffic and geometry changes have no material impact on the performance of the Tinworth Drive/ Barry Way intersection for the AM and PM peaks of the 2021, 2023 and 2041 modelled scenarios.

6 Conclusion

The SIDRA analysis assessment finds that the combined effects of existing traffic growth, school-related traffic generation, and intersection changes at the School Access/ Barry Way intersection have no material impact on the performance of the following intersections for the 2021, 2023, and 2041 AM and PM peak scenarios:

- School Access/ Barry Way
- Tinworth Drive/ Barry Way

Appendix A – Input Volumes

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

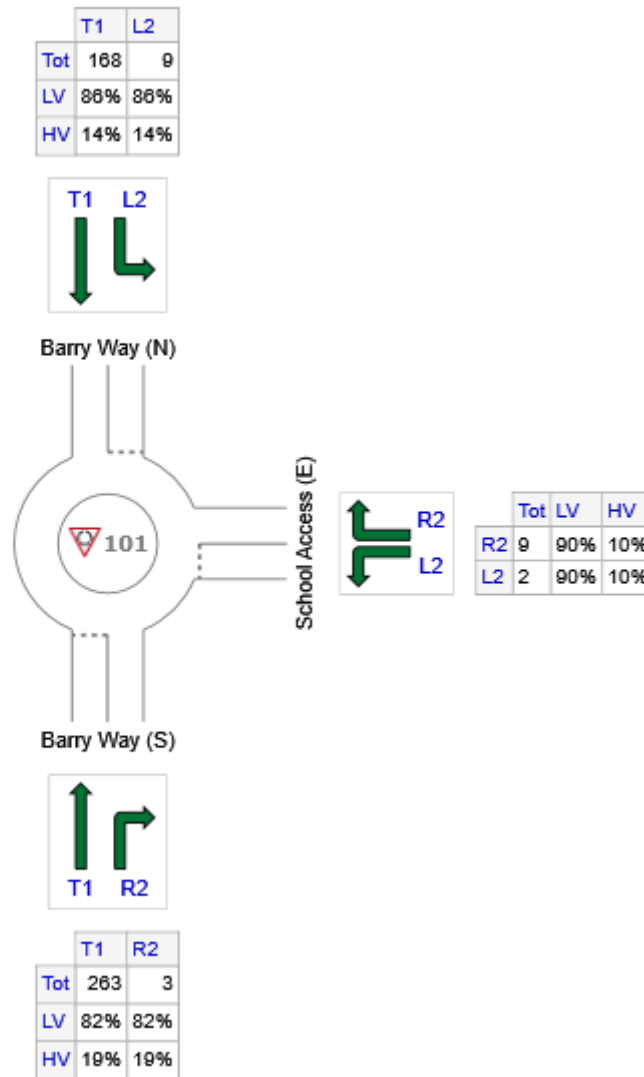
Site: 101 [School Access/Barry Way 2021 AM (Site Folder: Base Year)]

Southern Roundabout | 2023 AM

Site Category: 2023 AM

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	266	217	49
E: School Access (E)	11	10	1
N: Barry Way (N)	177	152	25
Total	454	379	75

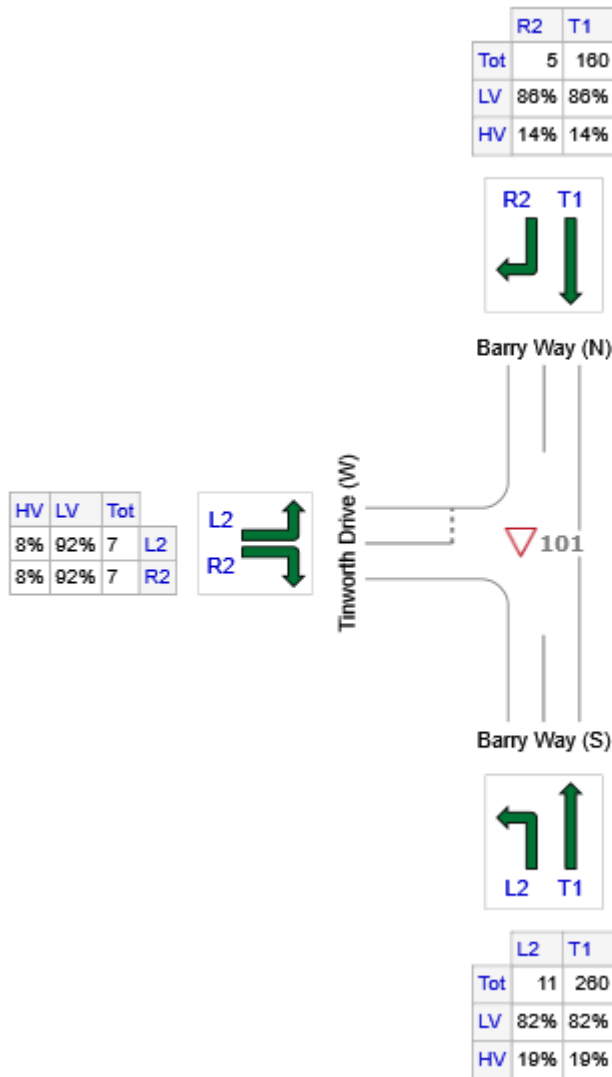
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

▽ Site: 101 [Tinworth Drive/Barry Way 2021 AM (Site Folder: Base Year)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	271	221	50
N: Barry Way (N)	165	142	23
W: Tinworth Drive (W)	14	13	1
Total	450	376	74

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

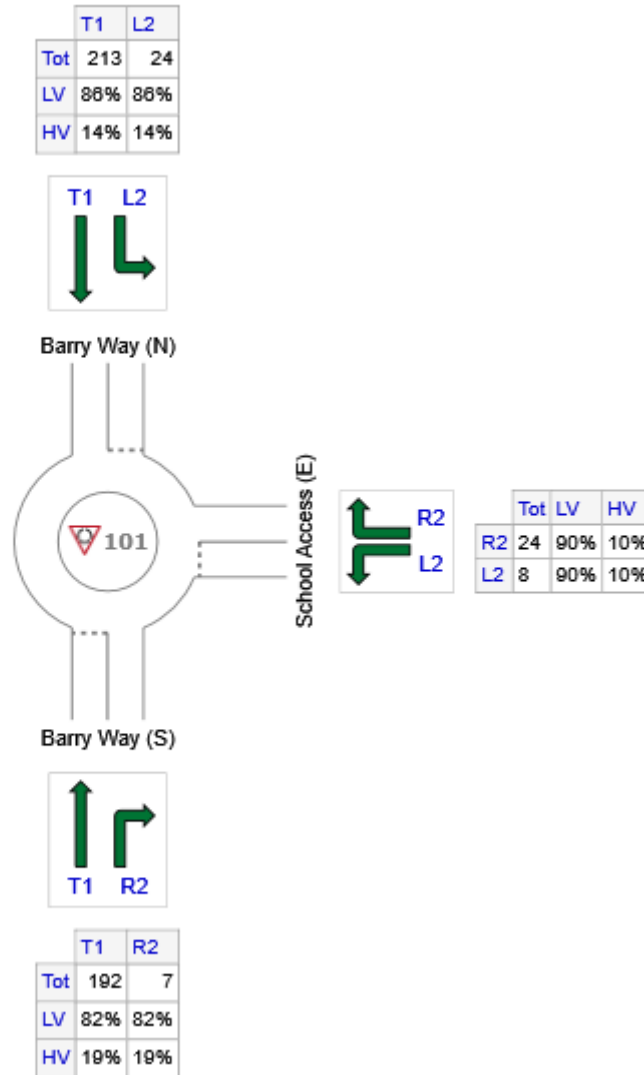
Site: 101 [School Access/Barry Way 2021 PM (Site Folder: Base Year)]

Southern Roundabout | 2023 AM

Site Category: 2023 AM

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	199	162	37
E: School Access (E)	32	29	3
N: Barry Way (N)	237	204	33
Total	468	395	73

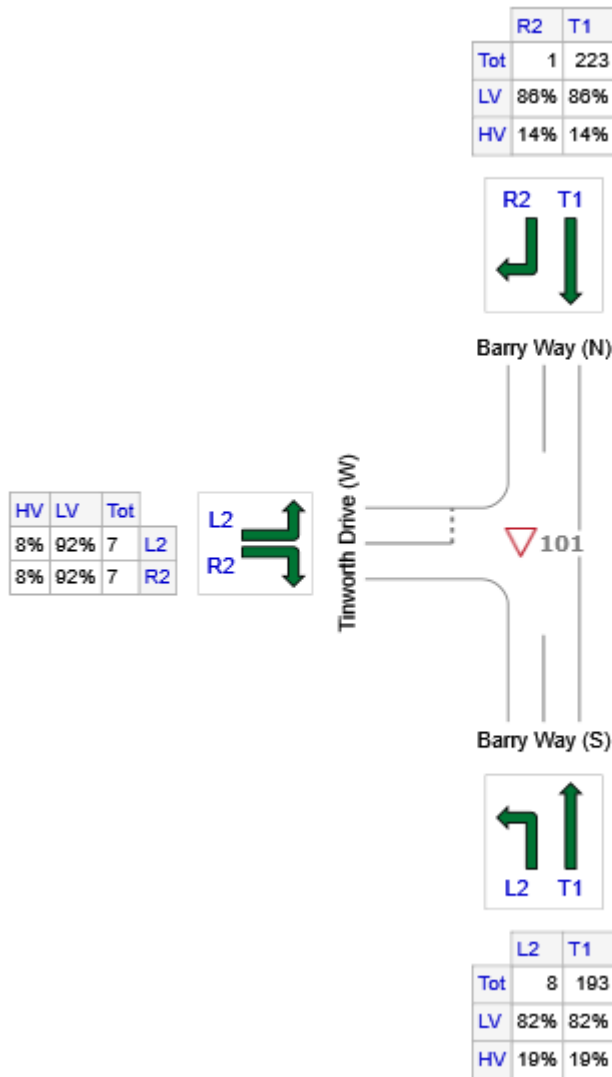
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

▽ Site: 101 [Tinworth Drive/Barry Way 2021 PM (Site Folder: Base Year)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	201	164	37
N: Barry Way (N)	224	193	31
W: Tinworth Drive (W)	14	13	1
Total	439	370	69

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

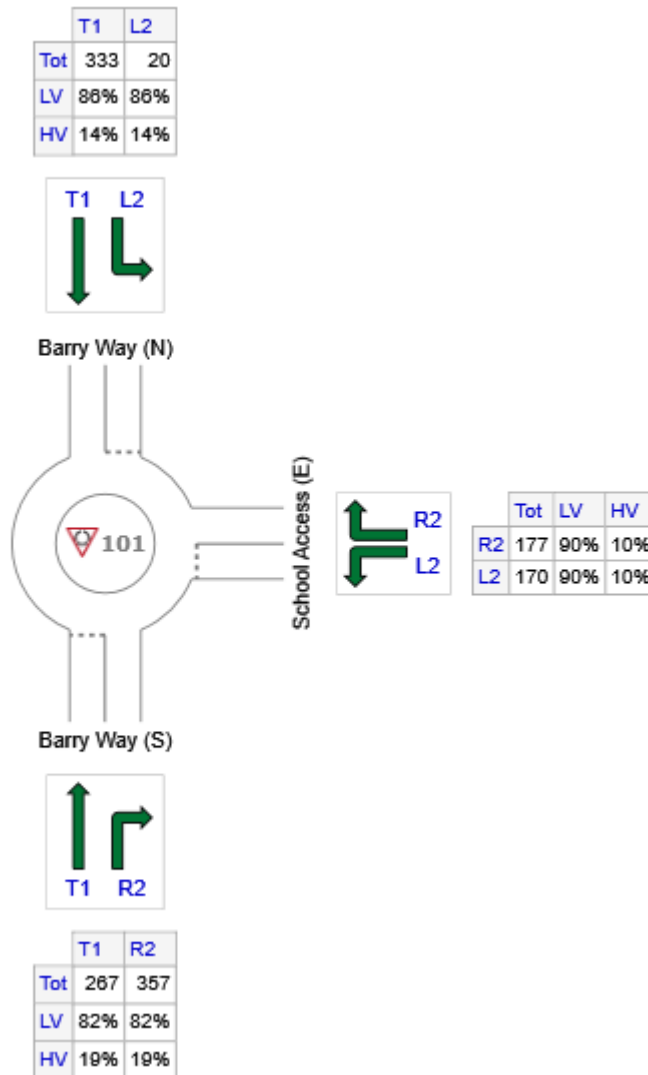
Site: 101 [School Access/Barry Way 2023 AM (Site Folder: 2023)]

Southern Roundabout | 2023 AM

Site Category: 2023 AM

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	624	509	115
E: School Access (E)	347	313	34
N: Barry Way (N)	353	304	49
Total	1324	1126	198

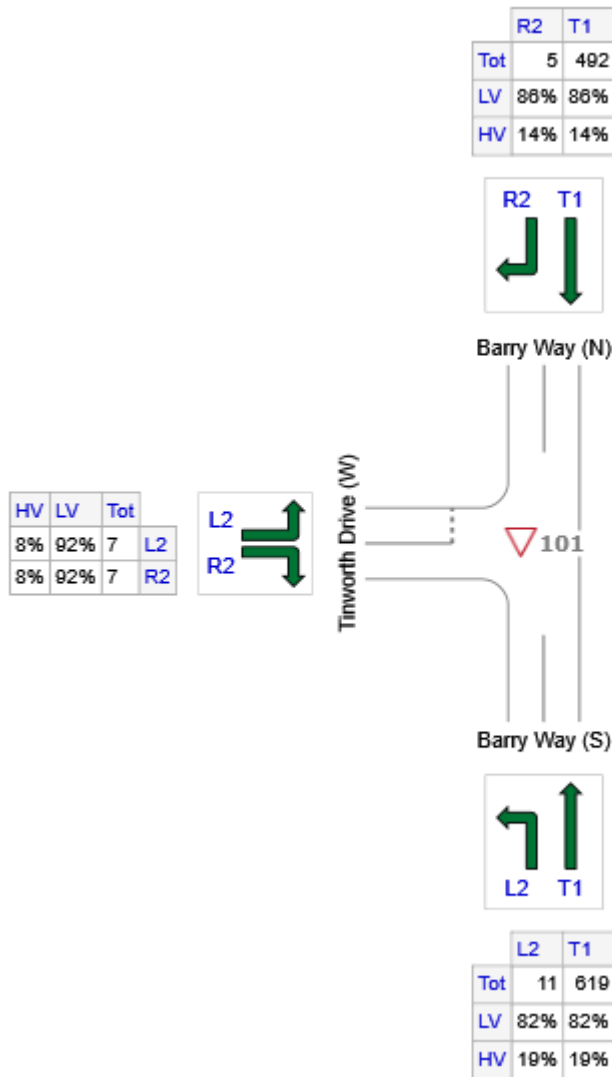
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

Site: 101 [Tinworth Drive/Barry Way 2023 AM (Site Folder: 2023)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	630	513	117
N: Barry Way (N)	497	428	69
W: Tinworth Drive (W)	14	13	1
Total	1141	954	187

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

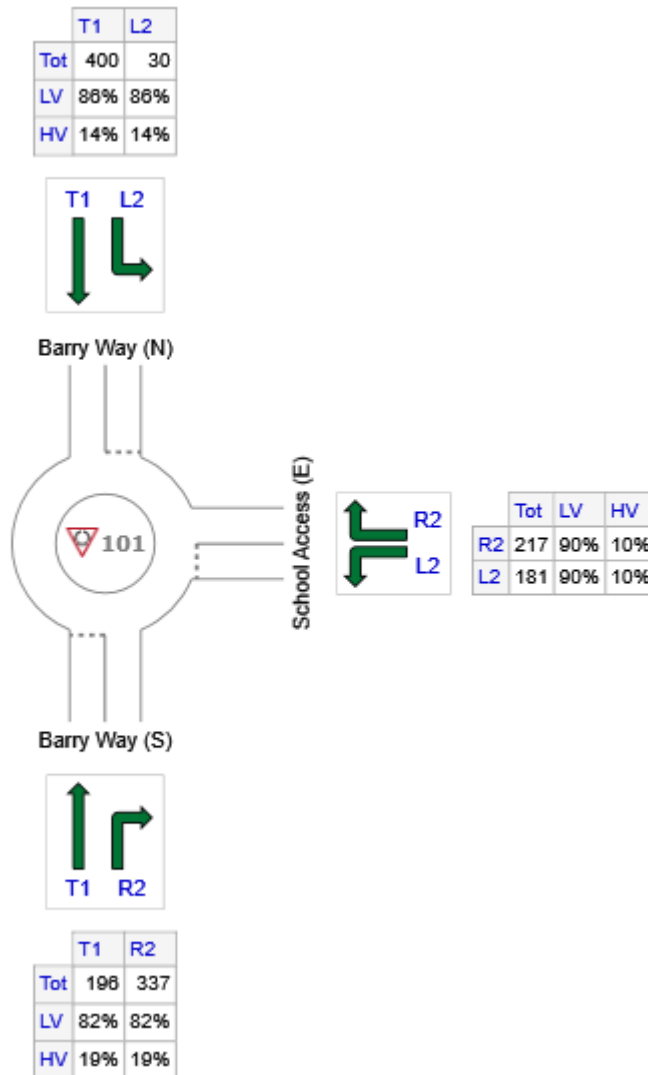
Site: 101 [School Access/Barry Way 2023 PM (Site Folder: 2023)]

Southern Roundabout | 2023 AM

Site Category: 2023 AM

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	533	434	99
E: School Access (E)	398	359	39
N: Barry Way (N)	430	370	60
Total	1361	1164	197

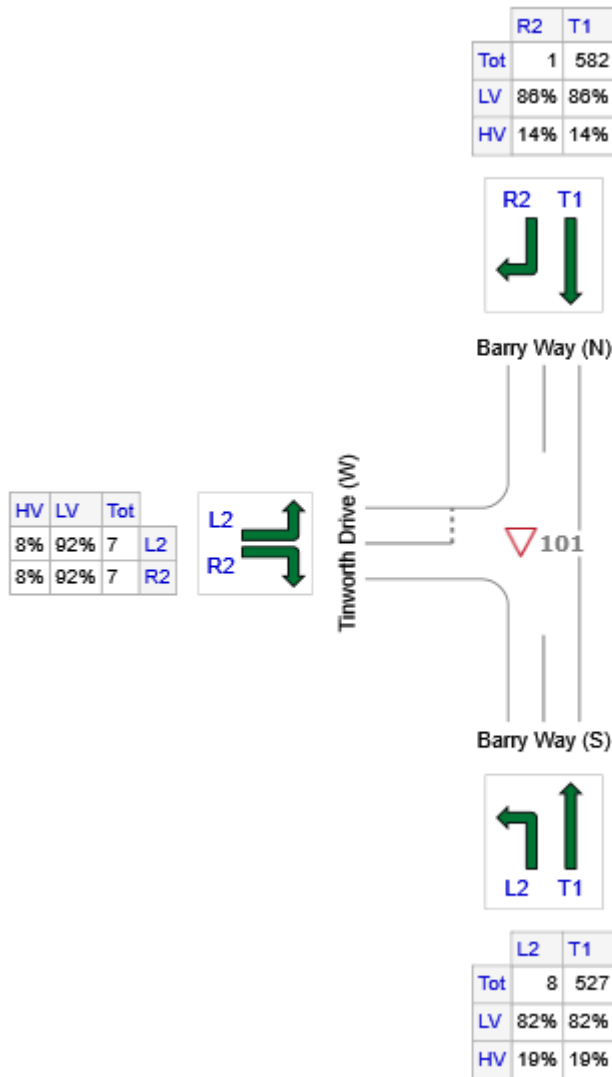
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

Site: 101 [Tinworth Drive/Barry Way 2023 PM (Site Folder: 2023)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	535	436	99
N: Barry Way (N)	583	502	81
W: Tinworth Drive (W)	14	13	1
Total	1132	951	181

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

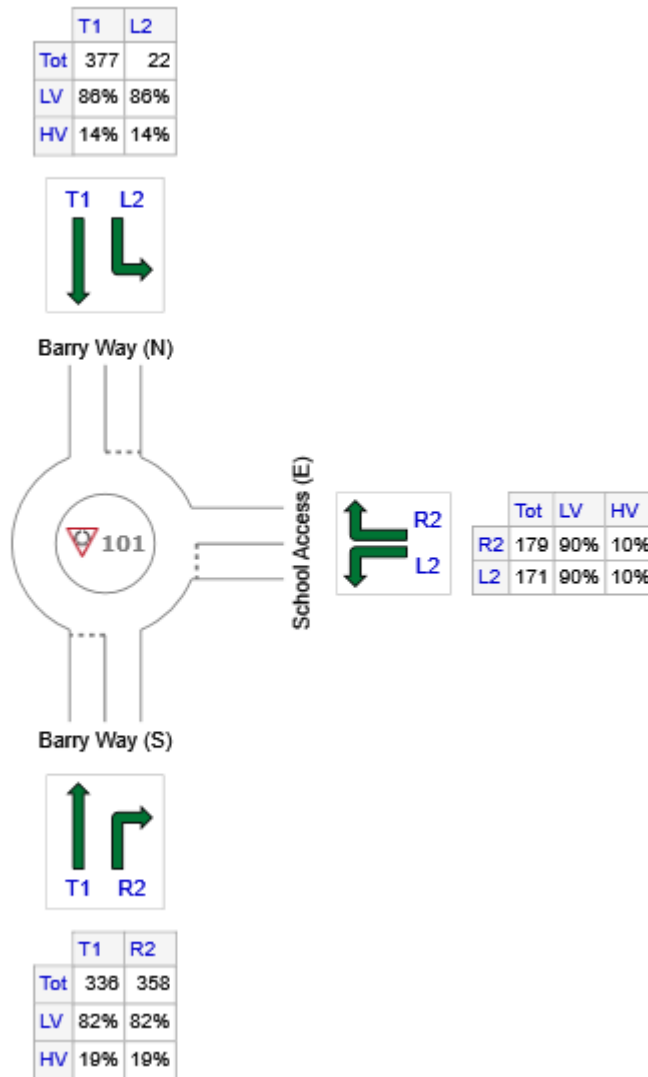
Site: 101 [School Access/Barry Way 2041 AM (Site Folder: 2041)]

Southern Roundabout | 2023 AM

Site Category: 2023 AM

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	694	566	128
E: School Access (E)	350	316	34
N: Barry Way (N)	399	344	55
Total	1443	1225	218

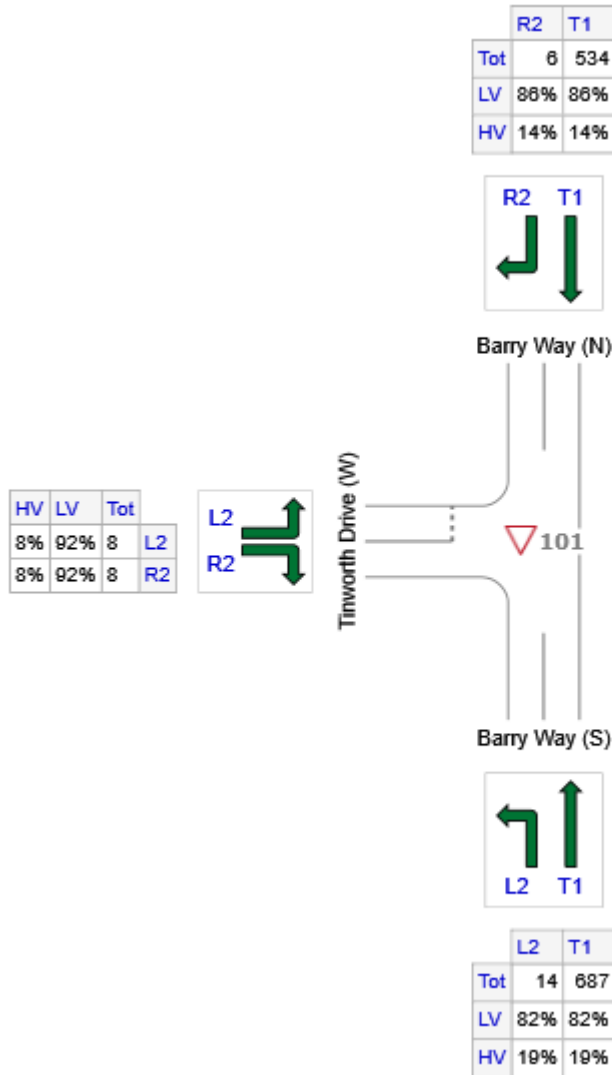
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

Site: 101 [Tinworth Drive/Barry Way 2041 AM (Site Folder: 2041)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	701	571	130
N: Barry Way (N)	540	465	75
W: Tinworth Drive (W)	16	15	1
Total	1257	1051	206

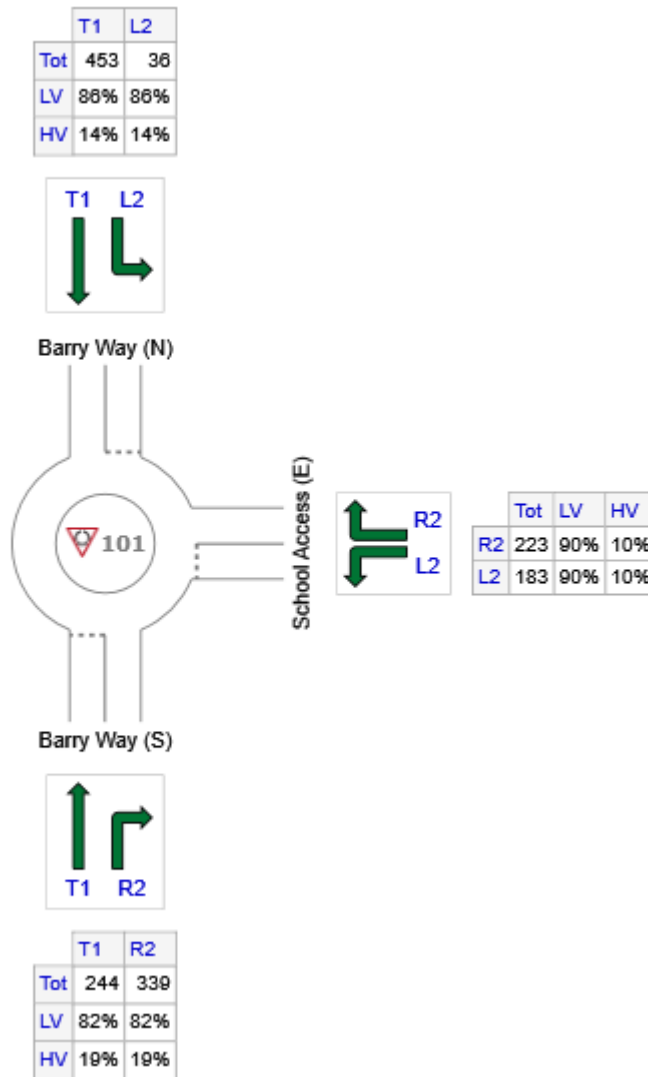
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

Site: 101 [School Access/Barry Way 2041 PM (Site Folder: 2041)]

Southern Roundabout | 2023 AM
 Site Category: 2023 AM
 Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	583	475	108
E: School Access (E)	406	367	39
N: Barry Way (N)	489	421	68
Total	1478	1263	215

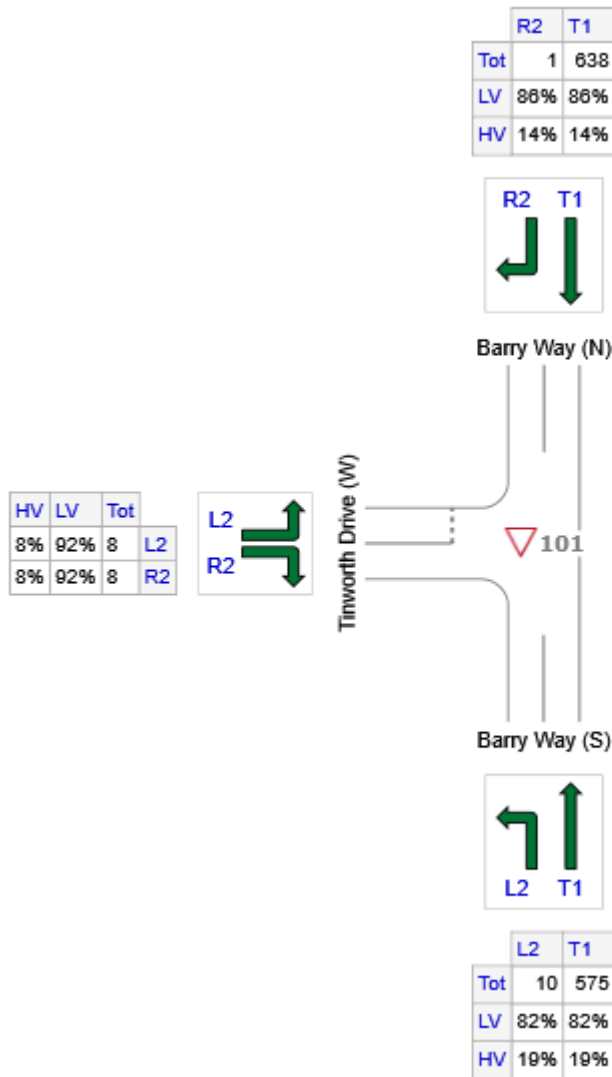
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

▽ Site: 101 [Tinworth Drive/Barry Way 2041 PM (Site Folder: 2041)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

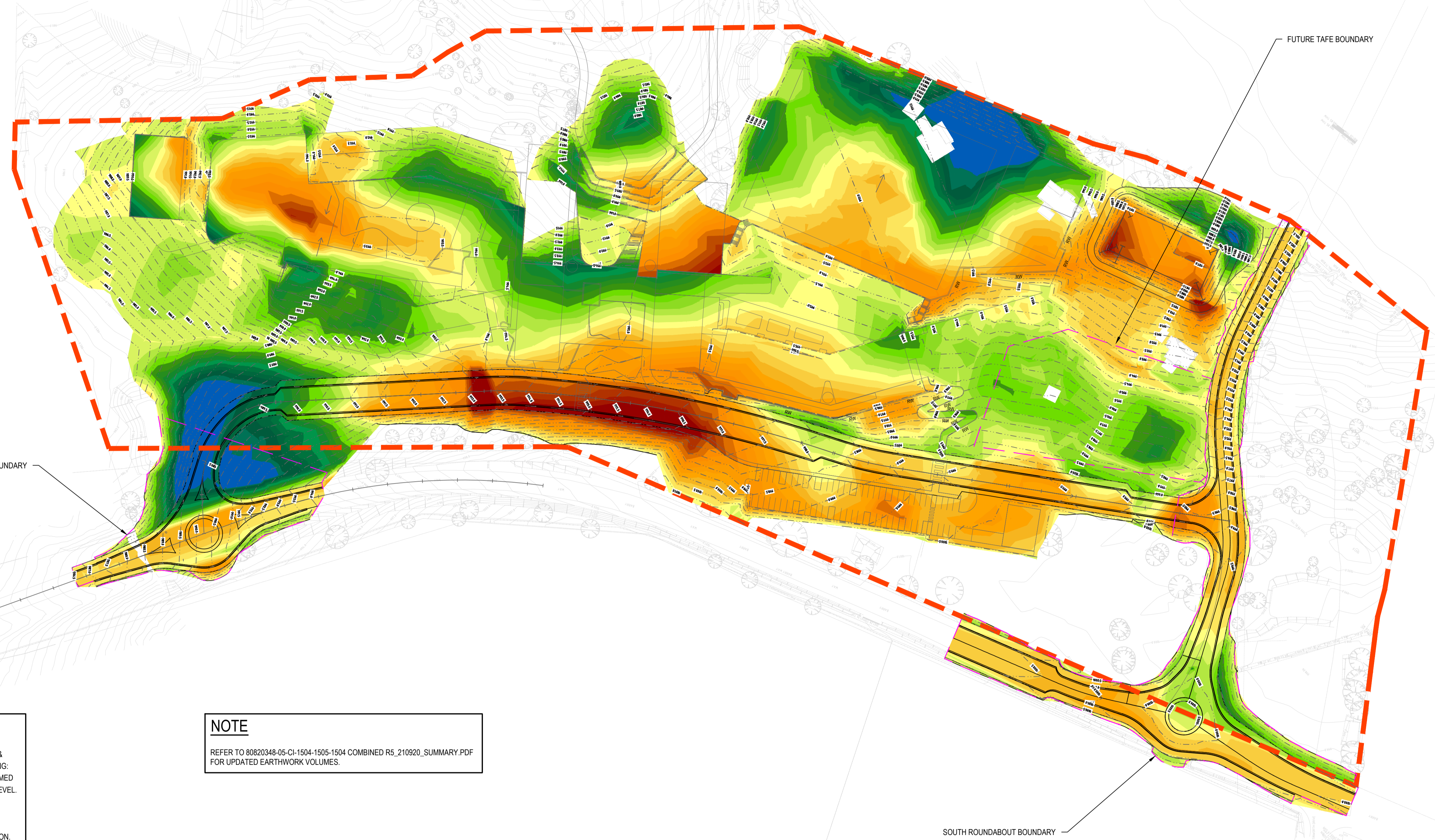
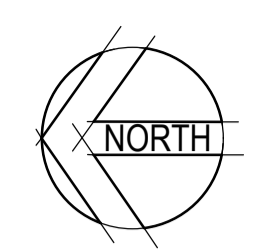
Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Barry Way (S)	585	477	108
N: Barry Way (N)	639	550	89
W: Tinworth Drive (W)	16	15	1
Total	1240	1042	198

Appendix B – Design Drawings

DATE PLOTTED: 26 October 2021 11:30 PM BY: GORAN MILENKOVIC



NOTE
 VOLUMES NOMINATED ARE PRELIMINARY ONLY & REFLECT THE DIFFERENCES BETWEEN EXISTING & FINISHED SURFACES. EXCEPT FOR THE FOLLOWING:
 BUILDING PLATFORM AND STAFF CAR PARK ASSUMED TO BE 400mm BELOW PROPOSED FINISH FLOOR LEVEL.
 SPORTS FIELD ASSUMED 400mm BELOW. ROAD ASSUMED 500mm BELOW. BIORETENTION FILTER MEDIA ASSUMED 800mm BELOW. NO ALLOWANCE MADE FOR DRAINAGE LINES IN CUT FILL ESTIMATION.

NOTE
 REFER TO 80820348-05-CI-1504-1505-1504 COMBINED R5_210920_SUMMARY.PDF FOR UPDATED EARTHWORK VOLUMES.

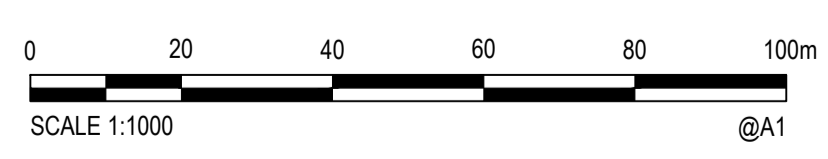
VOLUMES (ESTIMATED)

	CUT AND FILL VOLUME				
	NORTHERN ROUNDABOUT	SOUTHERN ROUNDABOUT AND ROAD 2	FUTURE TAFE	SINSW SCHOOL SITE	WHOLE SITE
CUT	960	3,640	200	32,267	37,067
FILL	4,550	830	2,390	31,941	39,711
BALANCE	3,590 FILL	2810 CUT	2,190 FILL	326 CUT	2,644 FILL

LEGEND

	PROPOSED CONTOURS
	EXISTING CONTOURS
	RETAINING WALL
	CUT GREATER THAN 3m
	CUT BETWEEN 2.75m AND 3m
	CUT BETWEEN 2.5m AND 2.75m
	CUT BETWEEN 2.25m AND 2.5m
	CUT BETWEEN 2.0m AND 2.25m
	CUT BETWEEN 1.75m AND 2.0m
	CUT BETWEEN 1.5m AND 1.75m
	CUT BETWEEN 1.25m AND 1.5m
	CUT BETWEEN 1.0m AND 1.25m
	CUT BETWEEN 0.75m AND 1.0m
	CUT BETWEEN 0.5m AND 0.75m
	CUT BETWEEN 0.25m AND 0.5m
	CUT LESS THAN 0.25m
	FILL LESS THAN 0.25m
	FILL BETWEEN 0.25m AND 0.5m
	FILL BETWEEN 0.5m AND 0.75m
	FILL BETWEEN 0.75m AND 1.0m
	FILL BETWEEN 1.0m AND 1.25m
	FILL BETWEEN 1.25m AND 1.5m
	FILL BETWEEN 1.5m AND 1.75m
	FILL BETWEEN 1.75m AND 2.0m
	FILL BETWEEN 2.0m AND 2.25m
	FILL BETWEEN 2.25m AND 2.5m
	FILL BETWEEN 2.5m AND 2.75m
	FILL BETWEEN 2.75m AND 3.0m
	FILL GREATER THAN 3.0m

Rev.	Date	Description	Des.	Verif.	Appd.
5	27/10/2021	OPTIMIZED EARTHWORKS FOLLOWING VALUE ENGINEERING	AL/CK	MR	PP
4	22/10/2021	UPDATED FOLLOWING VALUE EXERCISE - EARTHWORKS OPTIMISATION	AL/CK	MR	PP
3	08/09/2021	UPDATED AS PER ARCHITECT'S COMMENTS ON 25/08/09	AL/CK	MR	PP
2	20/08/2021	ISSUED FOR DA	AL/CK	MR	PP
1	07/07/2021	PRELIMINARY ISSUE	KP	KP	PP



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Drawn	G.M.	Date	AUG 2021
Checked	M.R.	Date	AUG 2021
Designed	AL/CK	Date	AUG 2021
Verified	P.P.	Date	AUG 2021
Approved			

Client	SCHOOL INFRASTRUCTURE NSW
Project	CIVIL ENGINEERING SERVICES
	207 BARRY WAY
	JINDABYNE 2627 NSW
Title	CUT/FILL EARTHWORKS PLAN

Status	SCHEMATIC DESIGN		
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Datum	AHD	Scale	1:1000
Size			A1
Drawing Number	80820348-05-CI-1141		Revision
			5

Appendix C – SIDRA Movement Summaries

MOVEMENT SUMMARY

Site: 101 [School Access/Barry Way 2021 AM (Site Folder: Base Year)]

Network: N102 [2021 AM (Network Folder: General)]

Southern Roundabout | 2023 AM
 Site Category: 2023 AM
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
2	T1	277	18.5	277	18.5	0.190	2.7	LOS A	0.5	4.1	0.08	0.33	0.08	47.8
3	R2	3	18.5	3	18.5	0.190	17.3	LOS B	0.5	4.1	0.08	0.33	0.08	11.3
Approach		280	18.5	280	18.5	0.190	2.8	LOS A	0.5	4.1	0.08	0.33	0.08	46.1
East: School Access (E)														
4	L2	2	9.7	2	9.7	0.011	1.1	LOS A	0.0	0.2	0.36	0.17	0.36	9.9
6	R2	9	9.7	9	9.7	0.011	1.1	LOS A	0.0	0.2	0.36	0.17	0.36	16.2
Approach		12	9.7	12	9.7	0.011	1.1	LOS A	0.0	0.2	0.36	0.17	0.36	15.2
North: Barry Way (N)														
7	L2	9	13.9	9	13.9	0.120	7.2	LOS A	0.3	2.1	0.04	0.34	0.04	16.7
8	T1	177	13.9	177	13.9	0.120	2.7	LOS A	0.3	2.1	0.04	0.34	0.04	46.3
Approach		186	13.9	186	13.9	0.120	2.9	LOS A	0.3	2.1	0.04	0.34	0.04	39.7
All Vehicles		478	16.5	478	16.5	0.190	2.8	LOS A	0.5	4.1	0.07	0.33	0.07	40.5

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

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

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

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\Modelling+Reporting\Jindabyne Model 02122021.sip9

MOVEMENT SUMMARY

Site: 101 [Tinworth Drive/Barry Way 2021 AM (Site Folder: Base Year)]

Network: N102 [2021 AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
1	L2	12	18.5	12	18.5	0.164	5.8	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
2	T1	274	18.5	274	18.5	0.164	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach		285	18.5	285	18.5	0.164	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.3
North: Barry Way (N)														
8	T1	168	13.9	168	13.9	0.099	0.1	LOS A	0.0	0.2	0.03	0.02	0.03	59.6
9	R2	5	13.9	5	13.9	0.099	5.9	LOS A	0.0	0.2	0.03	0.02	0.03	54.6
Approach		174	13.9	174	13.9	0.099	0.2	NA	0.0	0.2	0.03	0.02	0.03	59.4
West: Tinworth Drive (W)														
10	L2	7	8.0	7	8.0	0.016	6.6	LOS A	0.0	0.2	0.39	0.61	0.39	48.8
12	R2	7	8.0	7	8.0	0.016	7.7	LOS A	0.0	0.2	0.39	0.61	0.39	51.6
Approach		15	8.0	15	8.0	0.016	7.2	LOS A	0.0	0.2	0.39	0.61	0.39	50.6
All Vehicles		474	16.5	474	16.5	0.164	0.5	NA	0.0	0.2	0.02	0.04	0.02	58.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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MOVEMENT SUMMARY

Site: 101 [School Access/Barry Way 2021 PM (Site Folder: Base Year)]

Network: N101 [2021 PM (Network Folder: General)]

Southern Roundabout | 2023 AM
 Site Category: 2023 AM
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
2	T1	202	18.5	202	18.5	0.156	2.8	LOS A	0.4	3.2	0.15	0.37	0.15	47.1
3	R2	7	18.5	7	18.5	0.156	17.4	LOS B	0.4	3.2	0.15	0.37	0.15	11.3
Approach		209	18.5	209	18.5	0.156	3.3	LOS A	0.4	3.2	0.15	0.37	0.15	42.4
East: School Access (E)														
4	L2	8	9.7	8	9.7	0.033	1.4	LOS A	0.1	0.5	0.41	0.23	0.41	9.9
6	R2	25	9.7	25	9.7	0.033	1.4	LOS A	0.1	0.5	0.41	0.23	0.41	16.2
Approach		34	9.7	34	9.7	0.033	1.4	LOS A	0.1	0.5	0.41	0.23	0.41	14.8
North: Barry Way (N)														
7	L2	25	13.9	25	13.9	0.165	7.2	LOS A	0.4	3.1	0.07	0.37	0.07	16.7
8	T1	224	13.9	224	13.9	0.165	2.7	LOS A	0.4	3.1	0.07	0.37	0.07	45.9
Approach		249	13.9	249	13.9	0.165	3.2	LOS A	0.4	3.1	0.07	0.37	0.07	34.9
All Vehicles		493	15.6	493	15.6	0.165	3.1	LOS A	0.4	3.2	0.13	0.36	0.13	32.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Tinworth Drive/Barry Way 2021 PM (Site Folder: Base Year)]

Network: N101 [2021 PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
1	L2	8	18.5	8	18.5	0.122	5.8	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
2	T1	203	18.5	203	18.5	0.122	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.5
Approach		212	18.5	212	18.5	0.122	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.3
North: Barry Way (N)														
8	T1	235	13.9	235	13.9	0.132	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	1	13.9	1	13.9	0.132	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	54.9
Approach		236	13.9	236	13.9	0.132	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Tinworth Drive (W)														
10	L2	7	8.0	7	8.0	0.015	6.3	LOS A	0.0	0.2	0.34	0.59	0.34	49.0
12	R2	7	8.0	7	8.0	0.015	7.6	LOS A	0.0	0.2	0.34	0.59	0.34	51.7
Approach		15	8.0	15	8.0	0.015	7.0	LOS A	0.0	0.2	0.34	0.59	0.34	50.8
All Vehicles		462	15.8	462	15.8	0.132	0.4	NA	0.0	0.2	0.01	0.03	0.01	59.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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MOVEMENT SUMMARY

Site: 101 [School Access/Barry Way 2023 AM (Site Folder: 2023)]

Network: N101 [2023 AM (Network Folder: General)]

Southern Roundabout | 2023 AM
 Site Category: 2023 AM
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
2	T1	281	18.5	281	18.5	0.628	4.9	LOS A	2.6	21.0	0.74	0.78	0.74	38.7
3	R2	376	18.5	376	18.5	0.628	19.6	LOS B	2.6	21.0	0.74	0.78	0.74	10.9
Approach		657	18.5	657	18.5	0.628	13.3	LOS A	2.6	21.0	0.74	0.78	0.74	15.7
East: School Access (E)														
4	L2	179	9.7	179	9.7	0.430	3.2	LOS A	1.3	10.0	0.74	0.61	0.74	9.8
6	R2	186	9.7	186	9.7	0.430	3.2	LOS A	1.3	10.0	0.74	0.61	0.74	16.1
Approach		365	9.7	365	9.7	0.430	3.2	LOS A	1.3	10.0	0.74	0.61	0.74	13.3
North: Barry Way (N)														
7	L2	21	13.9	21	13.9	0.464	11.0	LOS A	1.4	11.3	0.78	0.75	0.79	16.4
8	T1	351	13.9	351	13.9	0.464	6.6	LOS A	1.4	11.3	0.78	0.75	0.79	42.1
Approach		372	13.9	372	13.9	0.464	6.8	LOS A	1.4	11.3	0.78	0.75	0.79	36.2
All Vehicles		1394	15.0	1394	15.0	0.628	8.9	LOS A	2.6	21.0	0.75	0.73	0.75	16.9

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

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

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

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\Modelling+Reporting\Jindabyne Model 02122021.sip9

MOVEMENT SUMMARY

Site: 101 [Tinworth Drive/Barry Way 2023 AM (Site Folder: 2023)]

Network: N101 [2023 AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
1	L2	12	18.5	12	18.5	0.381	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	57.1
2	T1	652	18.5	652	18.5	0.381	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.5
Approach		663	18.5	663	18.5	0.381	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.5
North: Barry Way (N)														
8	T1	518	13.9	518	13.9	0.297	0.1	LOS A	0.1	0.4	0.03	0.01	0.03	59.6
9	R2	5	13.9	5	13.9	0.297	10.9	LOS A	0.1	0.4	0.03	0.01	0.03	54.6
Approach		523	13.9	523	13.9	0.297	0.3	NA	0.1	0.4	0.03	0.01	0.03	59.5
West: Tinworth Drive (W)														
10	L2	7	8.0	7	8.0	0.040	9.3	LOS A	0.0	0.4	0.71	0.84	0.71	41.7
12	R2	7	8.0	7	8.0	0.040	18.0	LOS B	0.0	0.4	0.71	0.84	0.71	47.3
Approach		15	8.0	15	8.0	0.040	13.6	LOS A	0.0	0.4	0.71	0.84	0.71	45.2
All Vehicles		1201	16.4	1201	16.4	0.381	0.4	NA	0.1	0.4	0.02	0.02	0.02	59.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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MOVEMENT SUMMARY

Site: 101 [School Access/Barry Way 2023 PM (Site Folder: 2023)]

Network: N101 [2023 PM (Network Folder: General)]

Southern Roundabout | 2023 AM
 Site Category: 2023 AM
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Barry Way (S)														
2	T1	206	18.5	206	18.5	0.578	5.2	LOS A	2.2	17.7	0.75	0.81	0.75	38.1
3	R2	355	18.5	355	18.5	0.578	19.9	LOS B	2.2	17.7	0.75	0.81	0.75	10.8
Approach		561	18.5	561	18.5	0.578	14.5	LOS B	2.2	17.7	0.75	0.81	0.75	14.7
East: School Access (E)														
4	L2	191	9.7	191	9.7	0.536	5.3	LOS A	2.0	14.8	0.85	0.84	0.94	9.7
6	R2	228	9.7	228	9.7	0.536	5.3	LOS A	2.0	14.8	0.85	0.84	0.94	16.0
Approach		419	9.7	419	9.7	0.536	5.3	LOS A	2.0	14.8	0.85	0.84	0.94	13.4
North: Barry Way (N)														
7	L2	32	13.9	32	13.9	0.550	11.9	LOS B	2.0	15.9	0.82	0.81	0.90	16.4
8	T1	421	13.9	421	13.9	0.550	7.5	LOS A	2.0	15.9	0.82	0.81	0.90	41.6
Approach		453	13.9	453	13.9	0.550	7.8	LOS A	2.0	15.9	0.82	0.81	0.90	34.8
All Vehicles		1433	14.5	1433	14.5	0.578	9.7	LOS A	2.2	17.7	0.80	0.82	0.85	16.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Tinworth Drive/Barry Way 2023 PM (Site Folder: 2023)]

Network: N101 [2023 PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
1	L2	8	18.5	8	18.5	0.324	5.8	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
2	T1	555	18.5	555	18.5	0.324	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
Approach		563	18.5	563	18.5	0.324	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.5
North: Barry Way (N)														
8	T1	613	13.9	613	13.9	0.344	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
9	R2	1	13.9	1	13.9	0.344	9.6	LOS A	0.0	0.1	0.00	0.00	0.00	54.9
Approach		614	13.9	614	13.9	0.344	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
West: Tinworth Drive (W)														
10	L2	7	8.0	7	8.0	0.037	8.4	LOS A	0.0	0.3	0.68	0.81	0.68	42.4
12	R2	7	8.0	7	8.0	0.037	17.3	LOS C	0.0	0.3	0.68	0.81	0.68	47.8
Approach		15	8.0	15	8.0	0.037	12.8	LOS B	0.0	0.3	0.68	0.81	0.68	45.8
All Vehicles		1192	16.0	1192	16.0	0.344	0.3	NA	0.0	0.3	0.01	0.01	0.01	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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MOVEMENT SUMMARY

Site: 101 [School Access/Barry Way 2041 AM (Site Folder: 2041)]

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

Southern Roundabout | 2023 AM
 Site Category: 2023 AM
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
2	T1	354	18.5	354	18.5	0.698	5.9	LOS A	3.5	28.2	0.82	0.77	0.85	38.7
3	R2	377	18.5	377	18.5	0.698	20.5	LOS B	3.5	28.2	0.82	0.77	0.85	10.9
Approach		731	18.5	731	18.5	0.698	13.4	LOS A	3.5	28.2	0.82	0.77	0.85	16.7
East: School Access (E)														
4	L2	180	9.7	180	9.7	0.459	3.8	LOS A	1.4	10.9	0.79	0.69	0.80	9.8
6	R2	188	9.7	188	9.7	0.459	3.8	LOS A	1.4	10.9	0.79	0.69	0.80	16.1
Approach		368	9.7	368	9.7	0.459	3.8	LOS A	1.4	10.9	0.79	0.69	0.80	13.3
North: Barry Way (N)														
7	L2	23	13.9	23	13.9	0.529	11.9	LOS A	1.9	14.8	0.83	0.82	0.90	16.4
8	T1	397	13.9	397	13.9	0.529	7.5	LOS A	1.9	14.8	0.83	0.82	0.90	41.6
Approach		420	13.9	420	13.9	0.529	7.8	LOS A	1.9	14.8	0.83	0.82	0.90	36.0
All Vehicles		1519	15.1	1519	15.1	0.698	9.5	LOS A	3.5	28.2	0.81	0.77	0.85	17.6

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

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

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

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MOVEMENT SUMMARY

Site: 101 [Tinworth Drive/Barry Way 2041 AM (Site Folder: 2041)]

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

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
1	L2	15	18.5	15	18.5	0.447	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	57.0
2	T1	723	18.5	723	18.5	0.447	0.2	LOS A	0.0	0.0	0.00	0.01	0.00	59.4
Approach		738	18.5	738	18.5	0.447	0.3	NA	0.0	0.0	0.00	0.01	0.00	59.3
North: Barry Way (N)														
8	T1	562	13.9	562	13.9	0.325	0.2	LOS A	0.1	0.6	0.03	0.01	0.04	59.4
9	R2	6	13.9	6	13.9	0.325	12.7	LOS A	0.1	0.6	0.03	0.01	0.04	54.4
Approach		568	13.9	568	13.9	0.325	0.4	NA	0.1	0.6	0.03	0.01	0.04	59.3
West: Tinworth Drive (W)														
10	L2	8	8.0	8	8.0	0.059	10.1	LOS A	0.1	0.5	0.77	0.89	0.77	39.5
12	R2	8	8.0	8	8.0	0.059	22.1	LOS B	0.1	0.5	0.77	0.89	0.77	45.8
Approach		17	8.0	17	8.0	0.059	16.1	LOS B	0.1	0.5	0.77	0.89	0.77	43.5
All Vehicles		1323	16.4	1323	16.4	0.447	0.5	NA	0.1	0.6	0.02	0.02	0.03	58.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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MOVEMENT SUMMARY

Site: 101 [School Access/Barry Way 2041 PM (Site Folder: 2041)]

Network: N102 [2041 PM (Network Folder: General)]

Southern Roundabout | 2023 AM
 Site Category: 2023 AM
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
2	T1	257	18.5	257	18.5	0.639	6.2	LOS A	2.8	22.9	0.81	0.83	0.86	38.1
3	R2	357	18.5	357	18.5	0.639	20.8	LOS C	2.8	22.9	0.81	0.83	0.86	10.8
Approach		614	18.5	614	18.5	0.639	14.7	LOS B	2.8	22.9	0.81	0.83	0.86	15.4
East: School Access (E)														
4	L2	193	9.7	193	9.7	0.591	7.1	LOS A	2.4	18.0	0.91	1.02	1.09	9.6
6	R2	235	9.7	235	9.7	0.591	7.1	LOS A	2.4	18.0	0.91	1.02	1.09	15.8
Approach		427	9.7	427	9.7	0.591	7.1	LOS A	2.4	18.0	0.91	1.02	1.09	13.3
North: Barry Way (N)														
7	L2	38	13.9	38	13.9	0.629	13.3	LOS B	2.7	21.3	0.88	0.90	1.04	16.3
8	T1	477	13.9	477	13.9	0.629	8.8	LOS A	2.7	21.3	0.88	0.90	1.04	40.4
Approach		515	13.9	515	13.9	0.629	9.1	LOS A	2.7	21.3	0.88	0.90	1.04	33.7
All Vehicles		1556	14.6	1556	14.6	0.639	10.8	LOS B	2.8	22.9	0.86	0.90	0.98	17.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Tinworth Drive/Barry Way 2041 PM (Site Folder: 2041)]

Network: N102 [2041 PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Barry Way (S)														
1	L2	11	18.5	11	18.5	0.354	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
2	T1	605	18.5	605	18.5	0.354	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
Approach		616	18.5	616	18.5	0.354	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.5
North: Barry Way (N)														
8	T1	672	13.9	672	13.9	0.377	0.0	LOS A	0.0	0.1	0.00	0.00	0.01	59.9
9	R2	1	13.9	1	13.9	0.377	10.8	LOS B	0.0	0.1	0.00	0.00	0.01	54.9
Approach		673	13.9	673	13.9	0.377	0.0	NA	0.0	0.1	0.00	0.00	0.01	59.9
West: Tinworth Drive (W)														
10	L2	8	8.0	8	8.0	0.051	8.8	LOS A	0.1	0.5	0.73	0.85	0.73	40.7
12	R2	8	8.0	8	8.0	0.051	20.6	LOS C	0.1	0.5	0.73	0.85	0.73	46.6
Approach		17	8.0	17	8.0	0.051	14.7	LOS B	0.1	0.5	0.73	0.85	0.73	44.4
All Vehicles		1305	16.0	1305	16.0	0.377	0.3	NA	0.1	0.5	0.01	0.02	0.01	59.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

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