

Health Infrastructure NSW

Rouse Hill Hospital

Transport and Accessibility Impact Assessment

Reference: 286539-00

Final | 5 November 2025



This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 286539-00

Arup Australia Pty Ltd | ABN 76 625 912 665

Arup Australia Pty Ltd
Level 5
151 Clarence Street
Sydney
NSW, 2000
Australia
arup.com

Document Verification

Project title Rouse Hill Hospital
Document title Transport and Accessibility Impact Assessment
Job number 286539-00
Document ref 286539-00
File reference Final

Revision	Date	Filename			
Draft	27 June 2025	250627_Rouse Hill Hospital TAIA.docx			
		Description	Draft report		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			
Final	17 July 2025	250717_Rouse Hill Hospital TAIA.docx			
		Description	Report updated with TSA and Architectus comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			
Final	14 August 2025	250814_Rouse Hill Hospital TAIA.docx			
		Description	Report updated with TSA and Architectus comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			
Final	8 September 2025	250908_Rouse Hill Hospital TAIA.docx			
		Description	Report updated with TSA and Architectus comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			

Final	22 September 2025	Filename	250922_Rouse Hill Hospital TAIA.docx		
		Description	Report updated with TSA comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			

Final	26 September 2025	Filename	250926_Rouse Hill Hospital TAIA.docx		
		Description	Report updated with TSA comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Wendy Zheng	Eric Rivers
		Signature			

Final	8 October 2025	Filename	251008_Rouse Hill Hospital TAIA.docx		
		Description	Report updated with HI comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton	Eric Rivers
		Signature			

Final	27 October 2025	Filename	251027_Rouse Hill Hospital TAIA.docx		
		Description	Report updated with HI comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton	Eric Rivers
		Signature			

Final	5 November 2025	Filename	251105_Rouse Hill Hospital TAIA.docx		
		Description	Report updated with HI comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton	Eric Rivers
		Signature			

Issue Document Verification with Document

Contents

1.	Introduction	1
1.1	Background	1
1.2	Planning context	1
1.3	Consultation	1
1.4	Report scope	2
2.	Existing transport conditions	3
2.1	Site location and road network	3
2.2	Public transport	3
2.3	Walking and Cycling	4
2.4	Travel behaviour	4
2.5	Existing road network performance	5
2.6	Nearby developments	6
3.	Proposed scheme	9
3.1	Proposed road network	10
3.2	Pick up/ drop off	10
3.3	New multi-storey car park	11
3.4	Bicycle parking and End of Trip facilities	12
3.5	Motorcycle parking facilities	12
3.6	Ambulance care	12
3.7	Other emergency vehicle access	13
3.8	Loading dock	13
3.9	Pedestrian access	14
3.10	Cycling access	14
3.11	Commercial Road Access	15
4.	Transport and accessibility assessment	16
4.1	Impacts on the road network	16
4.2	Future road network performance without the proposal	16
4.3	Future road network performance with the proposal	16
4.4	Traffic distribution	18
4.5	Impacts on parking and access	22
4.6	Impacts on public transport, walking and cycling	22
4.7	Travel demand management	22
5.	Outline construction traffic management plan	23
5.1	Key principles	23
5.2	Proposed working hours	23
5.3	Construction parking	23
5.4	Heavy vehicle access routes	23
5.5	Traffic generation	24
6.	Conclusion	25

Tables

Table 1: SEARs requirements and relevant sections	1
Table 2: Public transport facilities	3
Table 3: Mode of travel to work to Rouse Hill – Beaumont Hills SA2 (ABS 2016 Census)	5
Table 4: Top 3 places of usual residence (ABS 2016 Census)	5
Table 5: Level of Service criteria for intersections	6
Table 6: Traffic modelling results – existing	6
Table 7: Key features of the MSCP	12
Table 8: Assumed in/ out distribution	18
Table 9: Traffic generation assumptions	18
Table 10: Traffic generation summary	18
Table 11: Traffic modelling results – existing and future	21
Table 12: Overall construction traffic generation	24

Figures

Figure 1: Site location and surrounding transport network	3
Figure 2: Region 1 bus services near the Site (Source: Busways)	3
Figure 3: Region 4 bus services near the Site (Source: Hills District Bus Timetables)	4
Figure 4: Cycling network	4
Figure 5: Modelled road layout – existing	5
Figure 6: Rouse Hill Strategic Centre structure Plan	7
Figure 7: Area 20 precinct- final indicative layout plan (NSW Government Planning and Environment, 2015)	8
Figure 8: Level 00 – General arrangement plan (source: HDR, 07/08/2025)	9
Figure 9: Level 01 – General arrangement plan (source: HDR, 07/08/2025)	9
Figure 10: Site plan proposed (source: HDR, 07/08/25)	10
Figure 11: Drop-off and MSCP access	10
Figure 12: Car park level 00 – General arrangement plan (source: HDR, 5/06/2025)	11
Figure 13: Daily parking accumulation profile for staff, patients and visitors	11
Figure 14: Daily parking departures profile for staff, patients and visitors	12
Figure 15: Ambulance access	13
Figure 16: Ground level emergency vehicle access	13
Figure 17: Lower ground loading and servicing access	14
Figure 18: Pedestrian access	14
Figure 19: Cyclist access	15
Figure 20: Modelled road layout – future without the Proposal	16
Figure 21: Modelled road layout – future with the Proposal	16
Figure 22: Daily departure/arrival profile for staff (note percentages are rounded)	17
Figure 23: Daily departure/arrival profile for patients and visitors (note percentages are rounded)	17
Figure 24: Assumed trip distribution – AM peak hour	19
Figure 25: Assumed trip distribution – PM peak hour	19
Figure 26: Assumed overall traffic generation – AM peak hour	19
Figure 27: Assumed overall traffic generation – PM peak hour	20

Figure 28: TfNSW 25/26m B-double routes	23
Figure 29: Heavy vehicle access routes (prior to completion of upgrade of Commercial Road / Health Co access intersection)	24
Figure 30: Heavy vehicle access routes (after completion of upgrade of Commercial Road / Health Co access intersection)	24

Appendices

Appendix A	A-1
Swept Paths	A-1
Appendix B	B-1
SIDRA Traffic Modelling Results	B-1
Appendix C	C-1
Green Travel Plan	C-1

1. Introduction

1.1 Background

This Transport and Accessibility Impact Assessment Report has been prepared by ARUP to support a State Significant Development Application (SSDA) for the construction and operation of a new hospital campus at the Corner of Commercial Road and Windsor Road, Rouse Hill (SSD-96248991).

The proposed development comprises:

- Site preparation including earthworks and tree removal;
- Construction of internal roads with access from Commercial Road;
- Incoming electrical and communications services
- Construction of hospital buildings up to eleven storeys;
- Construction of a ten storey above-ground car park;
- Pedestrian and cycle pathway connections;
- Landscaping; and
- Ancillary works to Commercial Road, comprising:
 - Minor works (including realignment of existing median strip, kerb and gutter, footpath and lane marking) to provide access from Commercial Road into Hospital Road; and
 - Associated tree removal along Commercial Road.

The scope of the proposed works include:

- An emergency department and primary access clinic;
- Comprehensive birthing services including birthing rooms and a maternity inpatient unit;
- Inpatient beds and day surgery services;
- Short stay medical assessment services;
- Pathology, pharmacy, and medical imaging services;
- Outpatient and ambulatory care services including paediatrics and renal dialysis and antenatal and postnatal services;
- Virtual care and hospital in the home services;
- Prehabilitation, rehabilitation and lifestyle medicine;
- Administration, staff support, loading dock and back-of-house services; and
- Ancillary commercial uses to support the hospital, including retail.

The NSW Government has committed \$10 million to progress planning for critical upgrades to Windsor Road at the site of the future Rouse Hill Hospital, ensuring patients, visitors and staff can travel to and from the hospital safely and efficiently. In addition, the Australian Government has pledged \$200 million towards the broader upgrade of Windsor Road, contingent on matching funding from the NSW Government.

1.2 Planning context

This report has been prepared to address the following matters within the Secretary’s Environmental Assessment Requirements (SEARs) issued for the SSDA on 16th October 2025.

The SEARs relevant to this Transport and Accessibility Impact Assessment (TAIA) and where they are addressed in this report are outlined in Table 1.

Table 1: SEARs requirements and relevant sections

SEARs		Relevant report sections
Provide a transport accessibility impact assessment which includes:	An analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections.	Section 2
	Details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle and end-of-trip facilities), drop-off/pick-up-zone(s) and bus bays (if applicable), and provisions for servicing and loading/unloading.	Section 3 and Appendix A
	Analysis of the impacts of the proposed development during construction and operation (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments.	Section 4 and Section 5
	Measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with the relevant standards.	Section 4
	Measures to promote sustainable travel choices for employees and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high quality end-of-trip facilities, and implementing a Green Travel Plan.	Section 4.7 and Appendix C
Provide a Construction Traffic Management Plan detailing construction vehicle routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.		Section 5

1.3 Consultation

Consultation has been undertaken with the following agencies as part of the development of this report.

- Transport for NSW (Land Use Planning and Advanced Analytics and Insights teams)
- The Hills Shire Council
- Western Sydney Local Health District
- NSW Ambulance

Consultation and engagement with Transport for NSW has continued regularly throughout the planning phase of the project, such as with over eight working group and technical review meetings, and with INSW and TfNSW on a monthly basis.

1.4 Report scope

This report covers the following scope of works:

- Existing transport conditions including the road network, public transport network and walking and cycling.
- Overview of the proposed development.
- Proposed pedestrian, cyclist and vehicle access, loading dock operation and car and cycle parking arrangements.
- Transport assessment including forecast traffic generation and impacts on the road network, parking, access, public transport network and walking and cycling.
- Outline Construction Traffic Management Plan.
- Framework Green Travel Plan.

2. Existing transport conditions

2.1 Site location and road network

The road network surrounding the Rouse Hill Hospital site comprises a mix of state and local roads, that provide regional and local connectivity. Windsor Road and Old Windsor Road are the primary state roads in the vicinity, offering north-south connections to Greater Sydney’s arterial and motorway network, including the M2 and M7 Motorways to the south. Both roads are high-capacity corridors with posted speed limits of 80 km/h and accommodate significant traffic volumes. To the west of the site, Schofields Road, also classified as a state road, provides an important east-west connection to the suburbs of Schofields, Marsden Park, and Mount Druit.

Local access to the site is primarily provided via Commercial Road, which extends east-west between Rouse Hill and North Kellyville, with a posted speed limit of 60 km/h. Caddies Boulevard links Commercial Road to Rouse Hill Town Centre, located to the south of the Site, while Rouse Hill Drive provides additional east-west connectivity from Windsor Road into the town centre precinct.

On-street parking is not permitted on Windsor Road, Commercial Road, or Caddies Boulevard in the immediate vicinity of the Site.

The location of the Site and its surrounding transport network is shown in Figure 1.

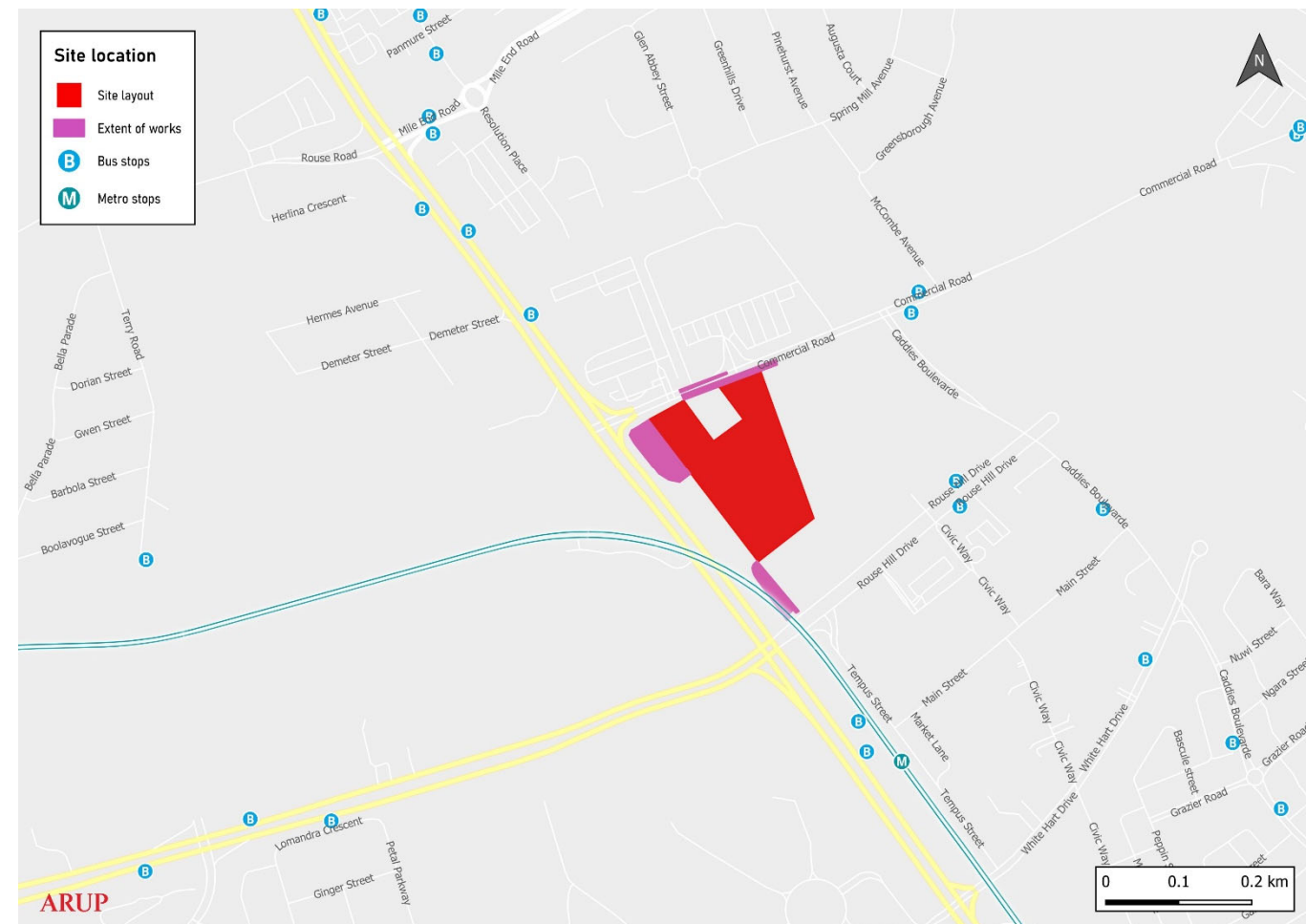


Figure 1: Site location and surrounding transport network

2.2 Public transport

The site is well-served by both Sydney Metro (800m, 10 minute walk) and bus services, offering strong connectivity to key regional and metropolitan destinations. The proximity of the hospital to the Metro station enables a significant mode shift by facilitating convenient, high-frequency public transport access for staff, patients, and visitors. This approach aligns with the NSW Government’s strategic investment in the Sydney Metro, which is

designed to support sustainable growth, reduce reliance on private vehicles, and encourage transit-oriented development. By leveraging the Metro’s accessibility, the proposal supports a significant mode shift while promoting integrated land use and transport outcomes consistent with state planning priorities.

Public transport facilities in the vicinity of the proposed site are listed in Table 2.

Table 2: Public transport facilities

Mode	Service details	Frequency
Sydney Metro North West and Bankstown line	<ul style="list-style-type: none"> From Sydenham to Tallawong Key intermediate stops- Central, Barangaroo, Chatswood, Macquarie Park, Epping, Castle Hill, and Rouse Hill Rouse Hill Station is approximately 300 meters south of the site 	Every 4 minutes during peak hours
Local Bus Services	Bus stops near the Site are serviced by Region 1 and Region 4 routes as shown in Figure 2 and Figure 3 operated by CDC NSW and Busways. These provide connections to suburbs such as Blacktown, Norwest, Kellyville, and Castle Hill.	Typically, every 15–30 mins, varies by route
North-West T-way	The T-way station at Rouse Hill Station (approx. 250 metres south of the Site) offers rapid bus connections via dedicated bus lanes and separate roadways to Parramatta, Blacktown, and other regional centres.	Every 10–20 mins during peak periods
Night Bus (N92)	NightRide route N92 operates between Tallawong Station, Macquarie Park, and Town Hall, providing overnight services when Metro is not operating. Services run from Rouse Hill Station, within 300 metres of the Site.	Approximately every 60 mins overnight

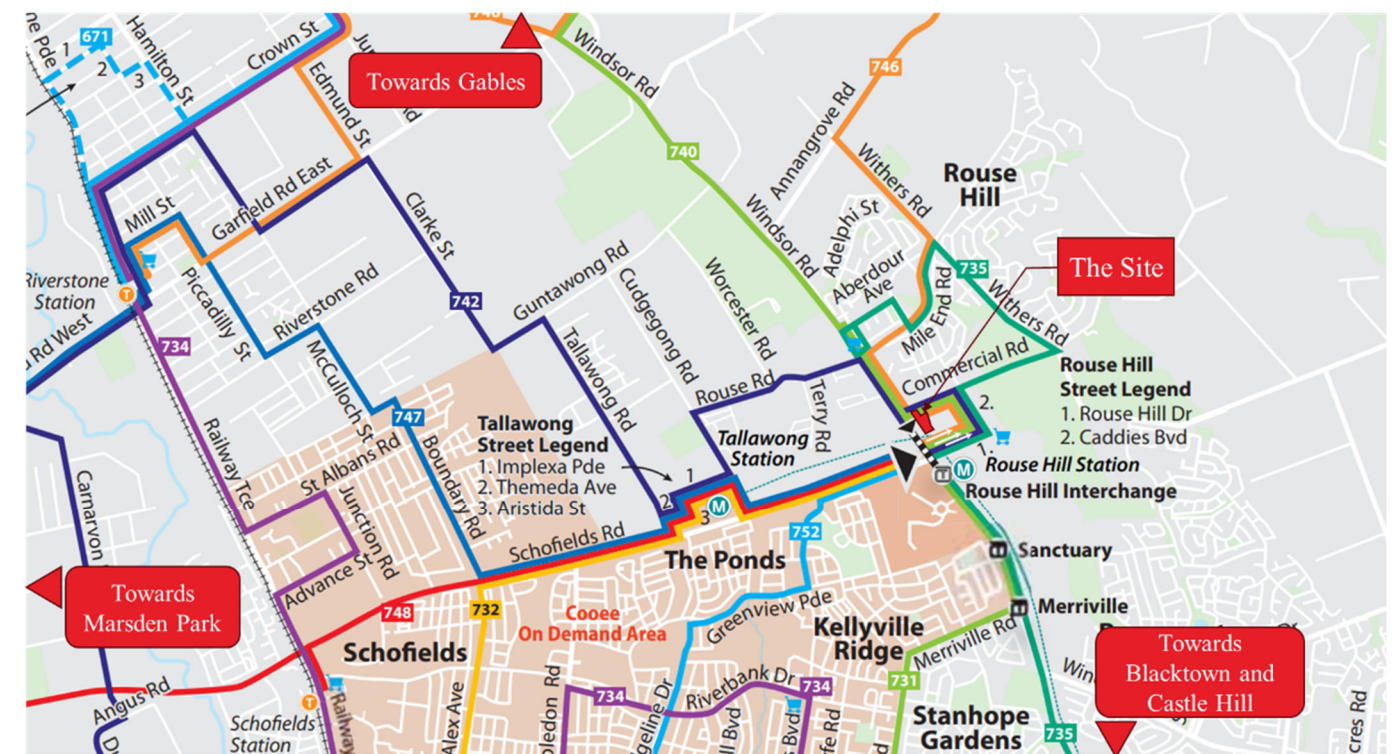


Figure 2: Region 1 bus services near the Site (Source: Busways)

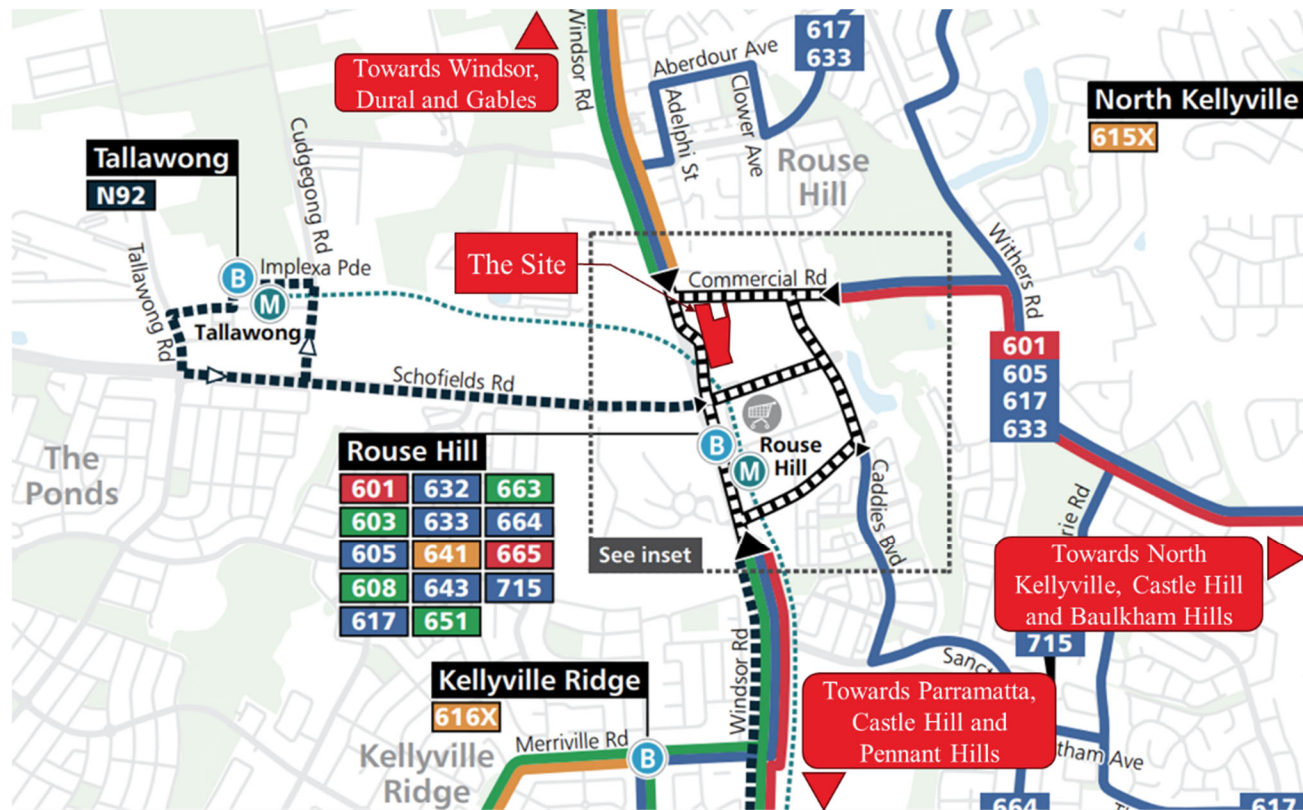


Figure 3: Region 4 bus services near the Site (Source: Hills District Bus Timetables)

2.3 Walking and Cycling

The area surrounding the proposed Rouse Hill Hospital site supports active transport due to its proximity to major public infrastructure and residential communities. The local urban density, combined with the walkability of the precinct and the proximity to Rouse Hill Station and Town Centre, encourages a significant proportion of trips to be made by walking or cycling.

- Walking
 - The Site is within 10 minutes walking distance of Rouse Hill Station and Rouse Hill Town Centre, making it highly accessible on foot for residents and transit users.
 - The pedestrian network is well established, with continuous footpaths along Windsor Road, Commercial Road, Rouse Hill Drive, and Caddies Boulevard. However, some intersections, such as Commercial Road / Caddies Boulevard, lack pedestrian crossings.
- Cycling
 - The cycling network near the site includes shared paths along Windsor Road, Schofields Road, Rouse Hill Drive, Caddies Boulevard, and local parks and residential streets. These paths provide connections to surrounding suburbs including Kellyville, The Ponds, and Schofields.
 - The Hills Shire Bike Plan was adopted in November 2023 that outlines strategic directions for cycling infrastructure within the Shire, emphasizing the development of safe, convenient, and accessible transport options.

The cycling network is shown in Figure 4.

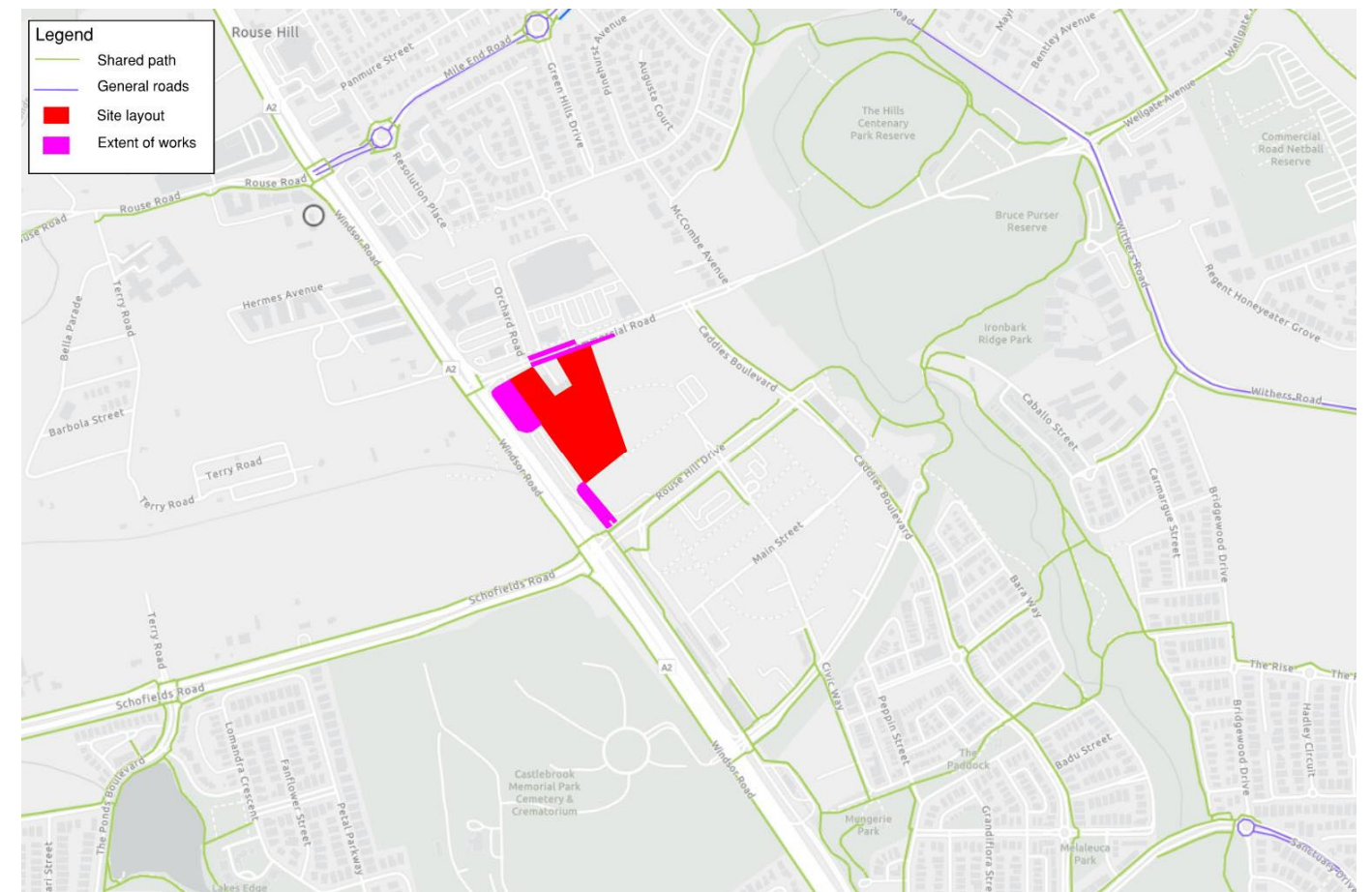


Figure 4: Cycling network

2.4 Travel behaviour

The travel environment around the proposed Rouse Hill Hospital site reflects a suburban setting with increasing access to multimodal transport options, influenced by the nearby Rouse Hill Town Centre and residential growth in surrounding suburbs.

2.4.1 Mode of travel to work

Australian Bureau of Statistics (ABS) 2016¹ Census data has been used to understand travel behaviour near the Site. The Site is located within the Rouse Hill – Beaumont Hills Statistical Area 2 (SA2, code 115041302). The mode of travel for people who work in the Rouse Hill – Beaumont Hills SA2 is shown in Table 3.

The data shows that a majority of the people who work near the Site travel to work using a car or private vehicle. Note the 2016 Census data was taken prior to the opening of Sydney Metro Northwest, which opened in 2019 (10 minute walk from the site). Census data from 2021 is not considered to be comparable as there are higher levels of vehicular trips and less public transport trips due to the impacts of COVID-19.

¹ 2016 census data has been used as 2021 census data is affected by the impact of the COVID-19 pandemic on travel patterns and is therefore not considered to be an accurate representation of travel

Table 3: Mode of travel to work to Rouse Hill – Beaumont Hills SA2 (ABS 2016 Census)

Mode of transport	Percentage of workers
Train	1%
Bus	5%
Ferry	<1%
Light rail	<1%
Taxi or rideshare	<1%
Car (driver)	80%
Car (passenger)	8%
Truck	2%
Motorbike or scooter	<1%
Bicycle	<1%
Walked only	2%
Other mode	<2%

2.4.2 Worker place of usual residence

ABS 2016 census data have also been used to understand the place of usual residence for workers in the Rouse Hill – Beaumont Hills SA2. The top three places of usual residence by Statistical Area 3 (SA3) are shown in Table 4.

Most workers in the Rouse Hill – Beaumont Hills SA2 live locally in the Rouse Hill, Baulkham Hills and Blacktown areas.

Table 4: Top 3 places of usual residence (ABS 2016 Census)

Place of residence (SA3)	Percentage of workers
Rouse Hill – McGraths Hill	33%
Blacktown – North	18%
Baulkham Hills	13%

2.5 Existing road network performance

This section outlines the existing road network performance of key intersections which connect the Site to the arterial road network (Windsor Road) to the west as well as to the east. The following key intersections have been assessed using SIDRA Intersection 9.1 as a network intersection model:

1. Windsor Road / Commercial Road
2. Commercial Road / The Fiddler Access
3. Commercial Road / Health Co Access
4. Commercial Road / Caddies Boulevard

As part of this assessment, an iterative modelling process was undertaken in coordination with TfNSW to refine the traffic modelling and better represent current and future network conditions. This included wider network modelling, incorporating the Windsor Road / Mile End Road / Rouse Road and Windsor Road / Schofields Drive / Rouse Hill

Drive intersections into the linked SIDRA network. While these intersections were included to capture broader network impacts, this report focuses on the assessment and presentation of results for four key intersections immediately surrounding the site, which are most directly affected by the proposed development.

2.5.1 Modelled road layout

The modelled existing road layout for the key intersections is shown in Figure 5.

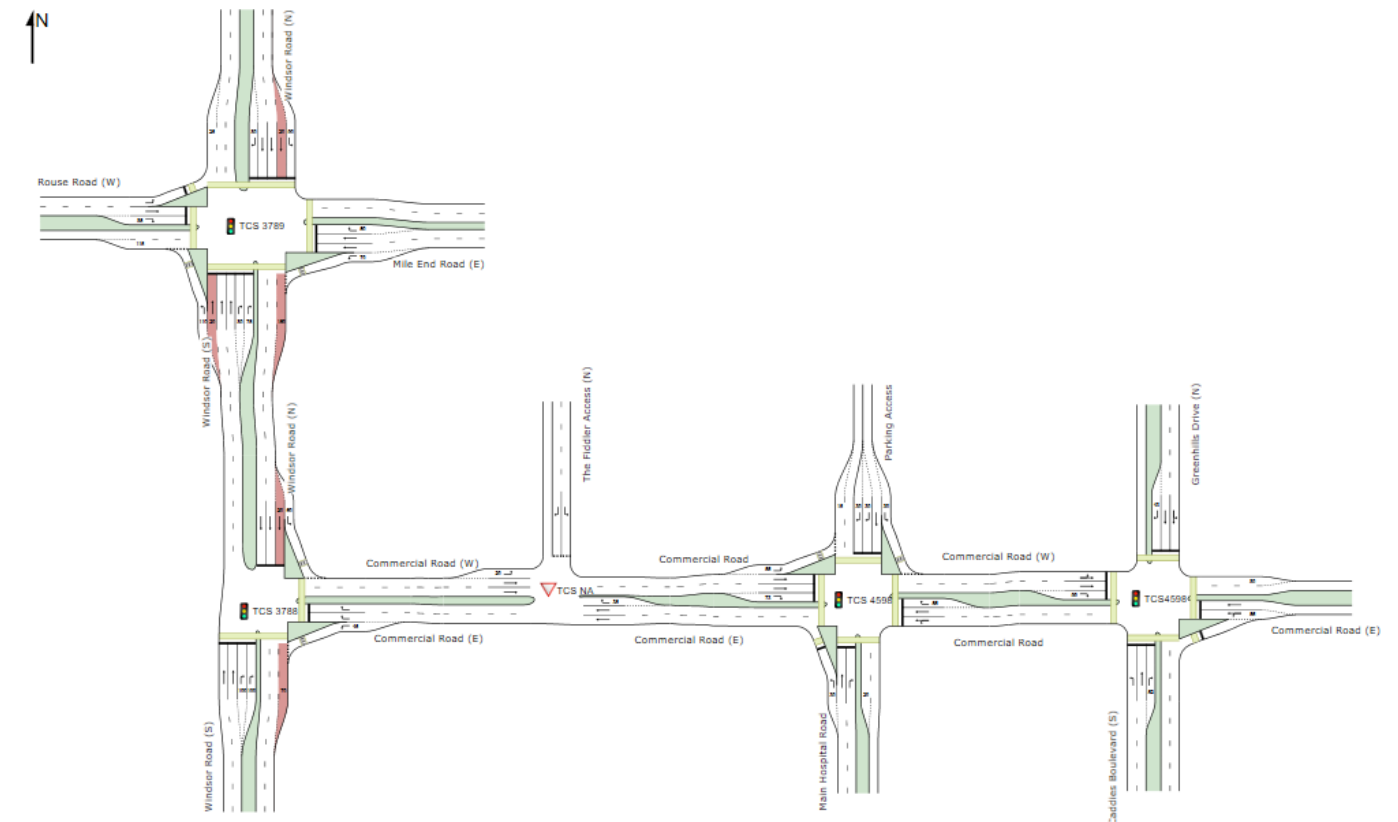


Figure 5: Modelled road layout – existing

2.5.2 Existing traffic volumes

For the Windsor Road / Commercial Road, Commercial Road / The Fiddler, Commercial Road / Health Co Access and Commercial Road / Caddies Boulevard intersections, intersection count surveys were commissioned on Tuesday 25 June 2024, Wednesday 26 June 2024 and Thursday 27 June 2024 from 7am to 10am and 3pm to 6pm.

Based on the surveys, the following weekday peak hours (total highest overall traffic volume through the surveyed intersections) were identified.

- AM Peak – 8:00am to 9:00am
- PM Peak – 4:45pm to 5:45pm

For the purposes of this study, the above peak hour times on the peak day (Wednesday 26 June 2024) were used for traffic modelling. The key findings were:

- Major arterial roads such as Windsor Road experience high traffic volumes with circa 3,700 to 4,000 vehicles in two-way flow during weekday peak periods highlighting its role as a key regional connector.
- In contrast, Commercial Road and Caddies Boulevard, which function as local and collector roads, experience moderate traffic volumes, with up to 1,300 to 1,400 two-way flow and 900 to 1,000 two-way flows respectively during peak periods.

2.5.3 Model calibration and validation

Calibration and validation of the network intersection model has been undertaken based on a comparison against queue length surveys, survey camera footage and Google traffic and TomTom data.

For the Windsor Road / Commercial Road, Commercial Road / The Fiddler, Commercial Road / Health Co Access and Commercial Road / Caddies Boulevard intersections, queue length surveys were commissioned on Tuesday 25 June 2024, Wednesday 26 June 2024 and Thursday 27 June 2024 from 7am to 10am and 3pm to 6pm (alongside the intersection count surveys). These surveys recorded the maximum queue on each intersection approach lane at five-minute intervals.

The following parameters were adjusted as part of calibration of the model:

- Windsor Road / Commercial Road intersection: basic saturation flow increased to 2,200 through car units/hour on Windsor Road through lanes to calibrate queue lengths on Windsor Road.
- Commercial Road / Caddies Boulevard intersection (existing unsignalised layout): increased critical gap and follow-up headway factors for the south approach left turn to 6 seconds and 3.5 seconds respectively to calibrate queue lengths on Caddies Boulevard.

As noted in Table 11.7 of the *Traffic Modelling Guidelines* (RMS, 2013), given the subjective nature of collecting and calculating queue lengths, the suggested criteria for queue length validation is a comparison between modelled and observed queue lengths only.

The modelled 95th percentile queue lengths generally align with the maximum queues identified in the queue length surveys and Google traffic and TomTom data. Therefore, the models are deemed to be sufficiently calibrated and validated for this study.

2.5.4 Existing road network performance

The intersection performance of the key access intersections is assessed in this report using the following metrics:

- Degree of saturation
- Average delay
- Level of Service
- 95th percentile queue length

In urban areas, the traffic capacity of the major road network is generally a function of the performance of key intersections. This performance is quantified in terms of Level of Service (LoS) and is based on the delay per vehicle. For signalised intersections, LoS is calculated as the average delay across all movements. For unsignalised intersections, LoS is calculated as the maximum delay of all movements. LoS ranges from A = very good to F = unsatisfactory (refer to Table 5). Another common measure of intersection performance is the degree of saturation (DoS), which provides an overall measure of the capability of the intersection to accommodate additional traffic. A DoS of 1.0 indicates that an intersection is operating at capacity.

Table 5: Level of Service criteria for intersections

Level of Service	Average delay (s)	Description
A	Less than 14	Good operation.
B	15 to 28	Good with acceptable delays and spare capacity.
C	29 to 42	Satisfactory.
D	43 to 56	Operating near capacity.
E	57 to 70	At capacity. At signals, incidents will cause excessive delays. Roundabouts require other control mode.
F	Greater than 71	Unsatisfactory with excessive queuing.

The traffic modelling results for the existing 2024 scenario are summarised in Table 6. Detailed SIDRA modelling outputs are shown in Appendix B.

Table 6: Traffic modelling results – existing

Intersection	AM peak hour				PM peak hour			
	DoS	Average delay (s)	Level of Service	95 th % queue (m)	DoS	Average delay (s)	Level of Service	95 th % queue (m)
Windsor Road / Commercial Road	0.85	25	B	310m (north approach)	0.96	38	D	360m (north approach)
Commercial Road / The Fiddler Access	0.32	40	C	<5m (north approach)	0.77	56	F	20m (north approach)
Commercial Road / Health Co Access	0.22	5	A	20m (east approach)	0.31	7	A	20m (north approach)
Commercial Road / Caddies Boulevard	0.90	66	E	40m (south approach)	1.00	91	F	100m (south approach)

In the existing 2024 scenario, the signalised Windsor Road / Commercial Road and Commercial Road / Health Co Access intersections perform relatively well, with the LoS B or better. However, the intersections at Commercial Road / The Fiddler Access is operating near capacity, with LoS F at PM peak hour with 56 seconds delay. Moreover, the unsignalised intersection Commercial Road / Caddies Boulevard experiences a poorer performance, with LoS E at AM peak with 66 seconds delay, and LoS F at PM peak with 91 seconds delay, primarily due to delays for right turning vehicles giving way to multiple lanes of traffic on Commercial Road. Delays are lower for other movements.

2.6 Nearby developments

Several nearby developments are planned in the vicinity of the Site. Where publicly available information is available on the expected transport generation and distribution of these projects, these have been added to future background traffic assumptions within this assessment.

The *Rouse Hill Precinct Plan* was adopted by The Hills Shire Council in 2023, establishing a 20-year framework for Rouse Hill to grow into mixed use strategic centre with both residential and employment opportunities.

The plan outlines the anticipated dwellings and employment uptake in various areas across Rouse Hill. The key developments identified within this framework which have already been planned or approved include:

- Northern Residential Precinct
- Northern Frame Precinct
- Rouse Hill Town Centre Expansion
- Tallawong Station Release Area

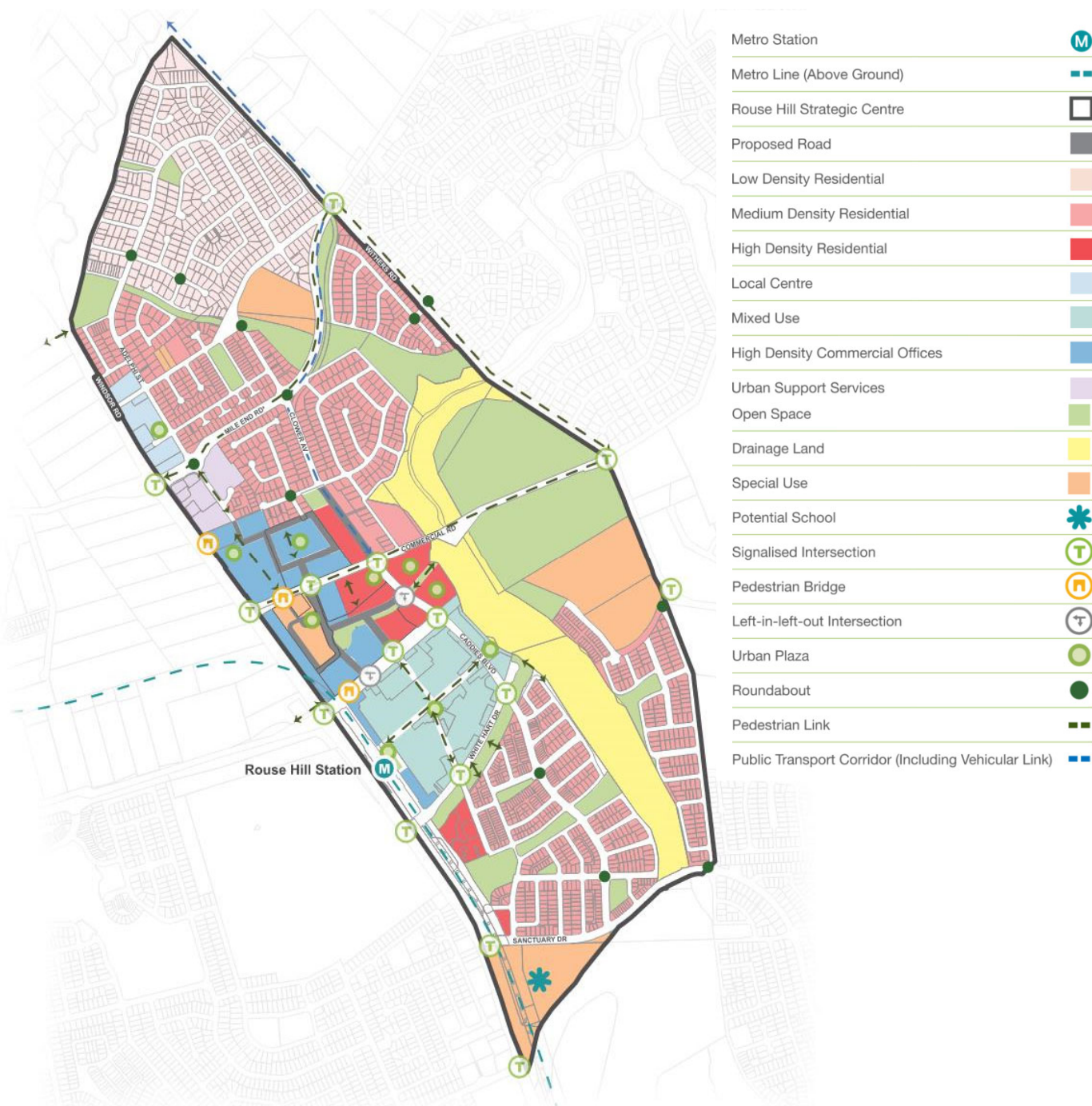


Figure 6: Rouse Hill Strategic Centre structure Plan

2.6.1 Northern Residential Precinct

Lendlease GPT (Rouse Hill) Pty Ltd is proposing the construction and operation of a mixed-use development including a maximum of 400 apartments and 4,000m² of new public open space. The development is bounded by Commercial Road to the north, Caddies Boulevard to the west and Rouse Hill Drive to the south.

The development application was approved on 15 October 2024; however, specific construction commencement dates are not confirmed yet. The *Rouse Hill Northern Residential Precinct Level 2 Precinct DA Traffic and Transport Study* (SCT, 2022) identified that the development is expected to generate less than 84 peak hour vehicle trips during the AM and PM peak hours. In addition, the study concluded that the development would have a negligible change on the performance of intersections near the development.

2.6.2 Northern Frame Precinct

In 2019, the *Northern Precinct of the Rouse Hill Town Centre: Concept Plan Traffic and Transport Assessment* (AECOM, 2019) was prepared to support the concept plan development application for the Northern Precinct of the

Rouse Hill Town Centre. The report undertook a traffic impact assessment, including traffic generation and distribution assumptions for traffic generated by the development.

As of the time of writing this report, there is no active development application nor confirmed yields for the Northern Frame Precinct. However, the *Rouse Hill Precinct Plan* outlines the expected residential and employment uptake for precincts in Rouse Hill, including for the Northern Frame Precinct (area C in Figure 6). Based on the uptake assumptions in the *Rouse Hill Precinct Plan* (assuming linear growth up to 2041), it is assumed that the Northern Frame Precinct would generate up to 172 vehicle trips in the peak hours in 2029 and 613 vehicle trips in the peak hours in 2039.

2.6.2.1 Commercial Road / Caddies Boulevard Intersection Upgrade

As part of the development consent conditions for the Northern Frame Precinct, The Hills Shire Council, TfNSW and GPT are currently planning to upgrade Commercial Road / Caddies Boulevard intersection. This study has adopted the most recent proposed layout of the intersection, as described in section 4.2.1.

This intersection is currently unsignalised and the proposed upgrade would aim to accommodate traffic generated by growth of the Rouse Hill Town Centre. The key features of the upgrade are summarised below.

- Traffic signals at the intersection.
- New approach from the north connecting to Greenhills Drive.
- Pedestrian crossings on all approaches.

2.6.3 Rouse Hill Town Centre Expansion

GPT Rouse Hill Pty Ltd has commenced a \$200 million expansion of the Rouse Hill Town Centre, adding over 10,500m² of retail space to the Hill shopping hub. The development is located between the existing retail centre and Rouse Hill Drive (located approximately 150 metres south of the Site). The expansion will grow the centre to over 80,000 sqm and will include a revitalised town green, upgraded amenities, end of trip facilities and an additional 200 parking spaces. Construction began in May 2025, with completion expected by late 2026.

The *Rouse Hill Town Centre Stage 2 DA* (AECOM, 2023) identified that the development is expected to generate 219 vehicles in the AM peak, 335 vehicles in the PM peak, and 440 vehicles during the weekend peak. The assessment concluded that intersection performance at nearby intersections to the development would generally remain similar between the ‘baseline’ and ‘baseline with development’ scenarios.

2.6.4 Tallawong Station Release Area

The Tallawong Station Release Area (previously known as the Cudgegong Road/Area 20 Release Area) forms part of the North West Growth Area and is planned to deliver approximately 4,400 new dwellings alongside supporting infrastructure and public amenities. The precinct is centred around Tallawong Metro Station and is bounded by Schofields Road to the north and Tallawong Road to the west. The Tallawong Station Precinct South began construction in 2021, and the development is being delivered in stages. While specific development applications vary across sub-precincts, the area is undergoing staged residential and mixed-use development. The indicative layout plan for Area 20 is shown in the Figure 7.

The North West Growth Centre Amendment of the Area 20 Precinct Plan (2015) estimates that the local road network including key intersections with Windsor Road, Commercial Road, Rouse Road, and Schofields Road, would operate at acceptable levels under full development conditions.

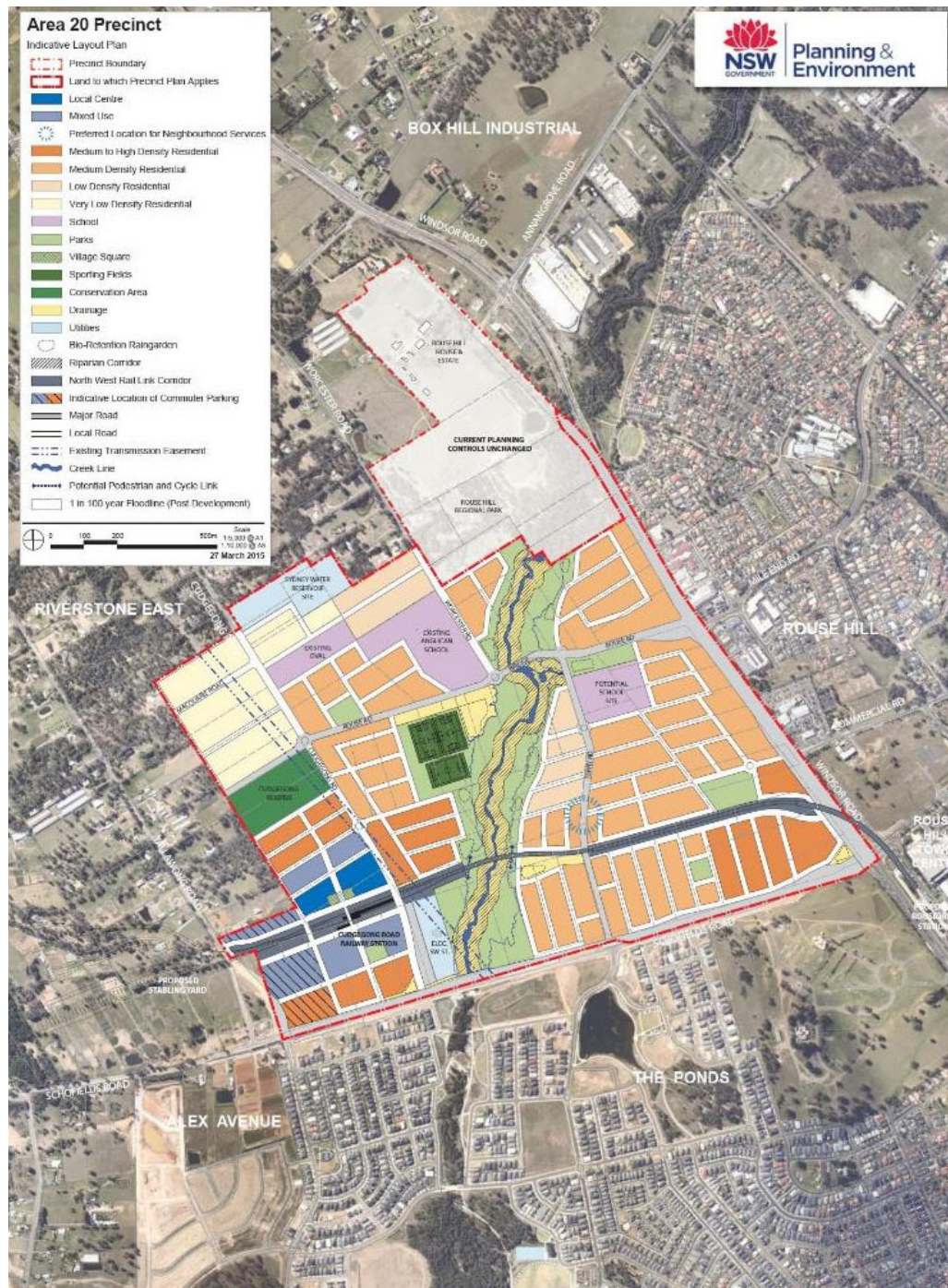


Figure 7: Area 20 precinct- final indicative layout plan (NSW Government Planning and Environment, 2015)

3. Proposed scheme

The Proposal includes a new hospital campus comprising of the Rouse Hill Hospital, ancillary retail/commercial uses, multi-storey car park (MSCP) with 659 spaces, loading dock and ancillary works to Commercial Road to enable vehicular access to the site. The full-build out of the Proposal is expected to include an emergency department, operating theatres, ambulatory treatment spaces and ambulatory care and outpatient clinics.

The proposed development layout for level 00 (lower ground floor with loading dock) and level 01 (ground floor including main entry) are shown in Figure 8 and Figure 9 respectively. The key transport and transport elements proposed are highlighted in the following sections.

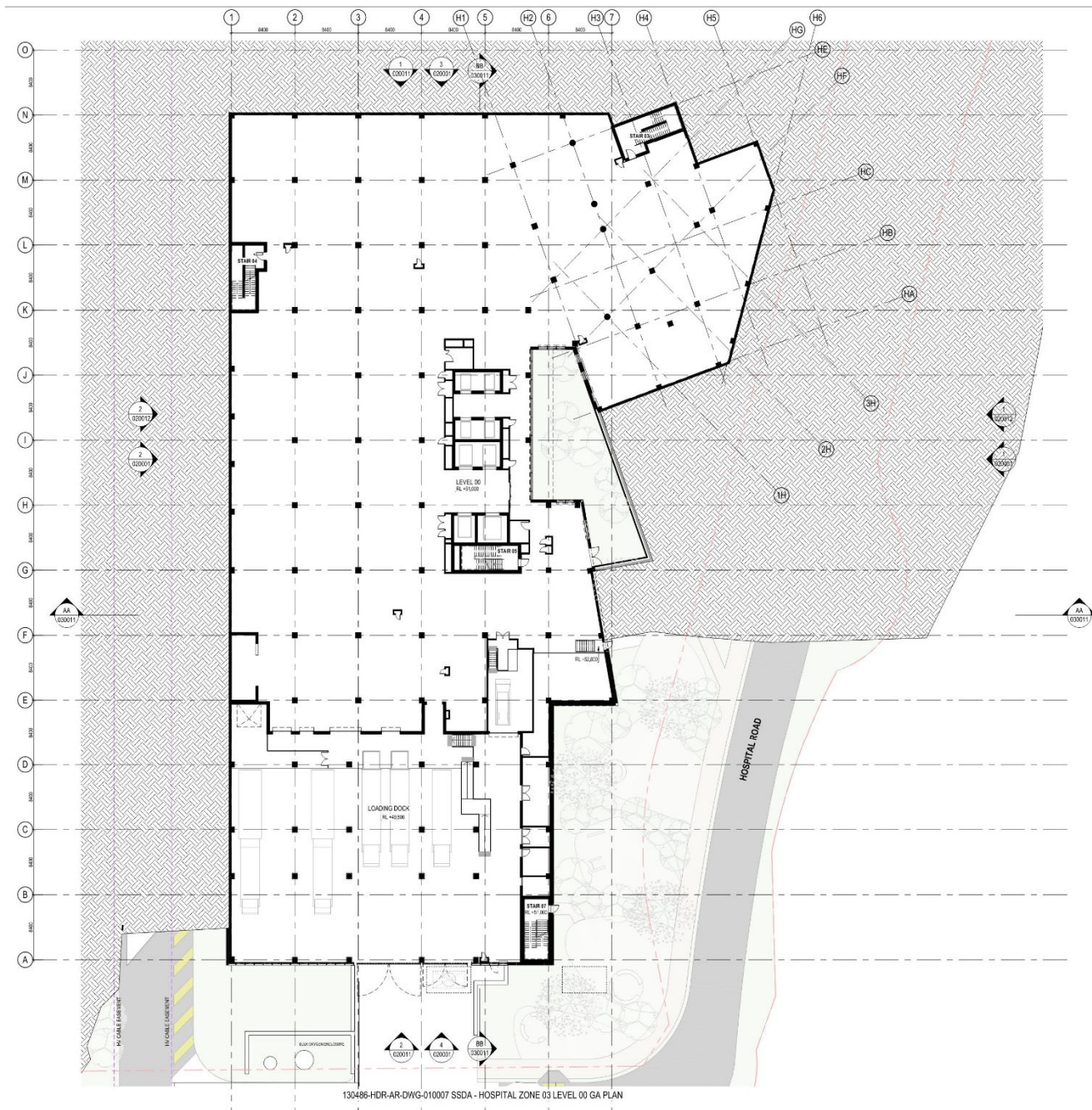


Figure 8: Level 00 – General arrangement plan (source: HDR, 07/08/2025)

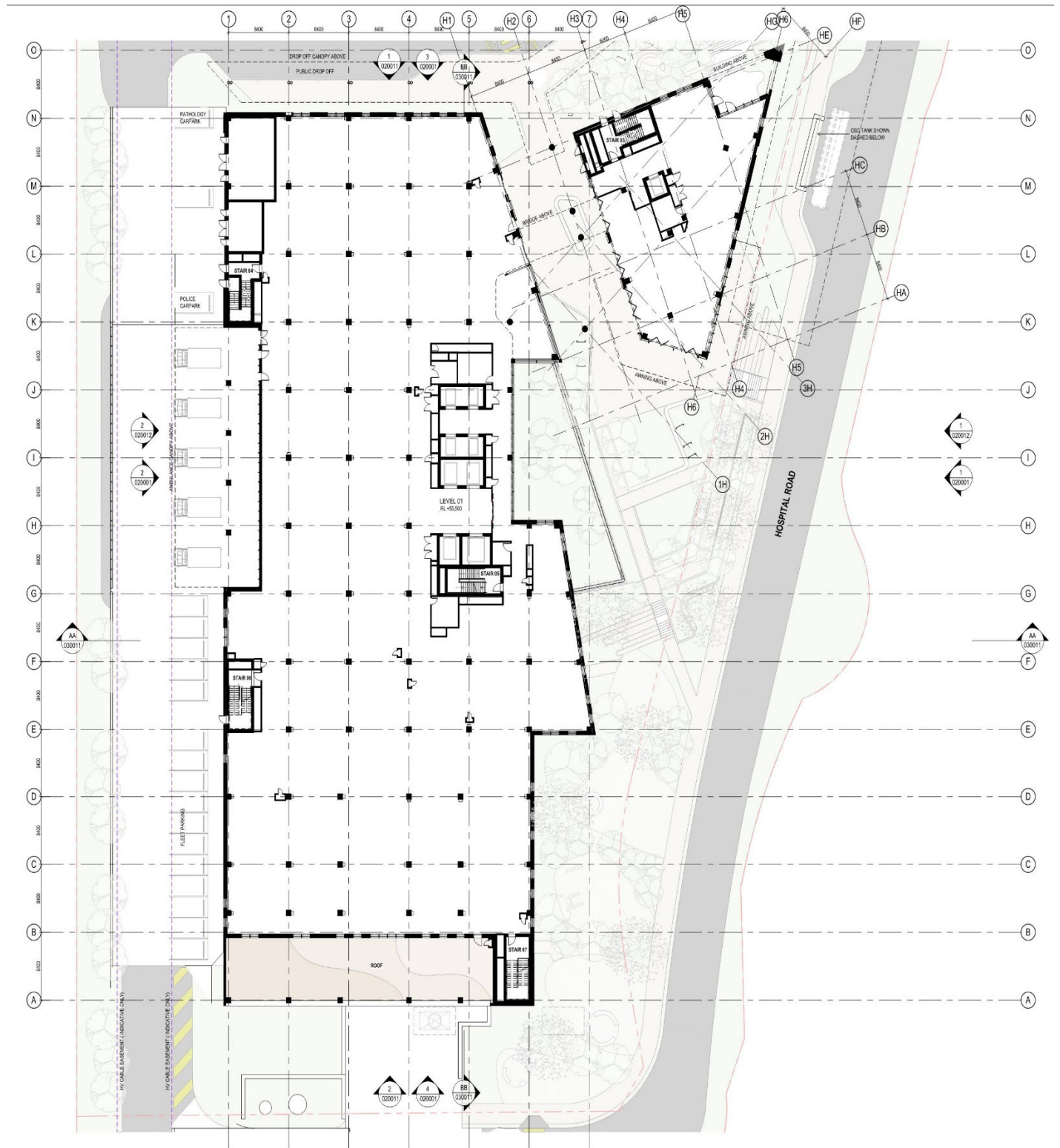


Figure 9: Level 01 – General arrangement plan (source: HDR, 07/08/2025)

Swept paths analysis of all key vehicle movements is provided in Appendix A.

3.1 Proposed road network

To enable vehicular access to the site, a right-hand turn lane from Commercial Road through to the Main Hospital Access Road intersection is proposed. This will comprise minor works, including realignment of existing median strip, kerb and gutter, footpath and lane marking to provide access from Commercial Road into Hospital Road which is the dedicated road providing access to the hospital. The proposal does not include a connection from Hospital Road to the adjoining Northern Frame site to the east, in order to maximise safety and security for this internal private road and the broader hospital campus.

Hospital Road will provide access to the Site and facilitate internal circulation by connecting to another internal road located on the southern side of the MSCP. This internal road as shown in Figure 10 serves as the primary route for staff, patients, and visitors for pick up/ drop off or access the MSCP. The internal road network located further south of this access route is only expected to be used by fleet and servicing vehicles.

All emergency vehicles will have right of way primarily via Hospital Road. In the unlikely event of extensive traffic, emergency vehicles can access the hospital in an expedited manner via Windsor Road, as detailed in 3.6.

A June 2025 NSW media release confirmed a project for the planning of critical road infrastructure around the future Rouse Hill Hospital. This includes the planning of an upgrade of the Commercial Road/ Main Hospital Access Road intersection by TfNSW to be undertaken in consultation with the Rouse Hill Hospital project.



Figure 10: Site plan proposed (source: HDR, 07/08/25)

3.2 Pick up/ drop off

Pick up and drop-off facilities are proposed to be located on the northern side of the hospital building via future internal road. This zone would accommodate up to seven vehicles at any one time, with a minimum bay width of 3.2 metres to ensure accessible parking compliance. A multi-storey car park (MSCP) is proposed at the north-western part of the site accessed via future internal road. Vehicle access to the drop off area and MSCP is shown in Figure 11.

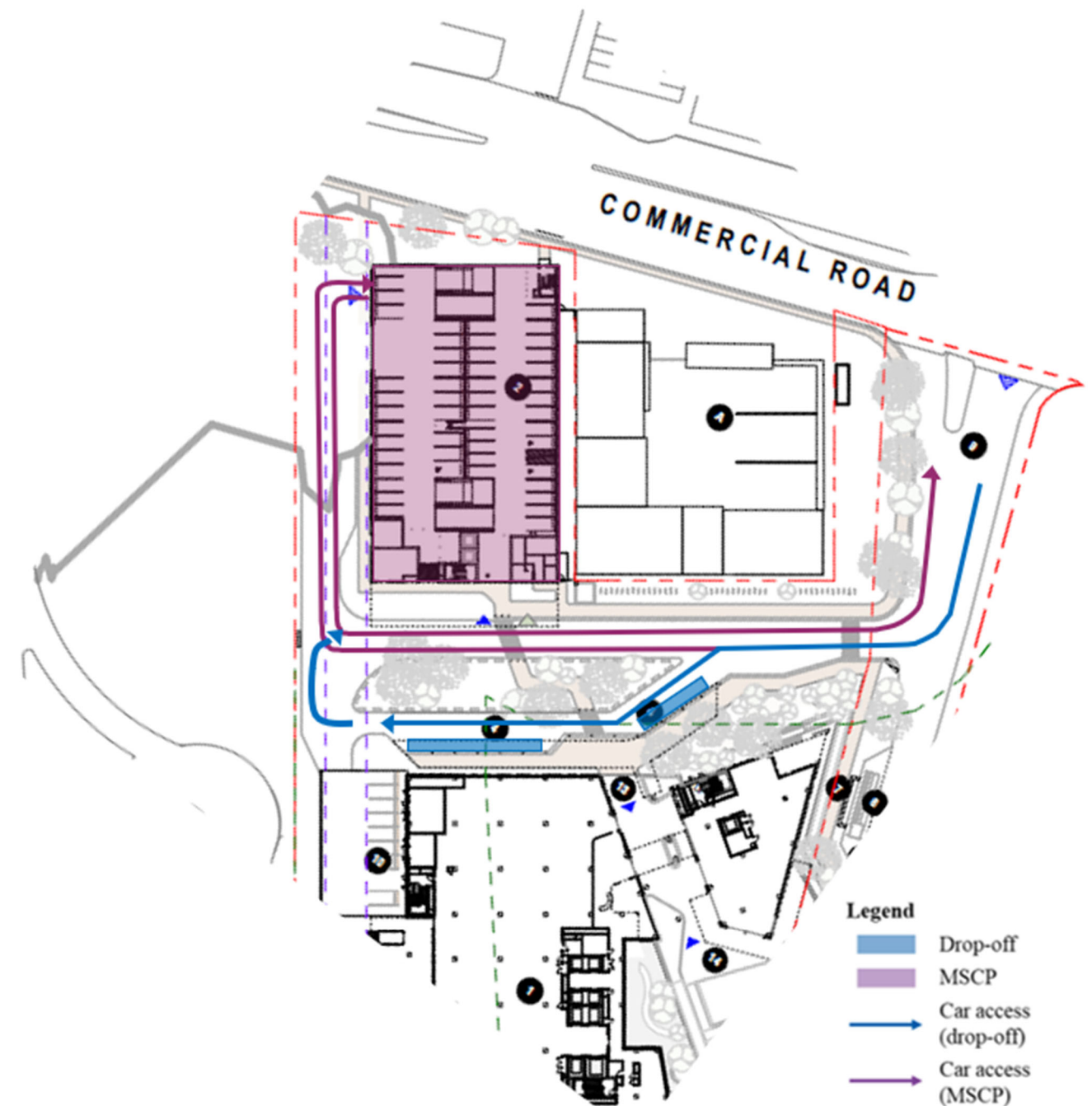


Figure 11: Drop-off and MSCP access

3.3 New multi-storey car park

A 659-space multi-storey car park across 10 floor levels will be located in the north-western section of the hospital site as shown in Figure 11. The general arrangement plan of the multi-storey car park at level 00 is shown in Figure 12. This facility would accommodate staff, patients, and visitors, with access controlled by an Automatic Number Plate Recognition (ANPR) system. The MSCP includes a single-entry lane and two boom-gated exit lanes to support efficient vehicle movement during peak hours.

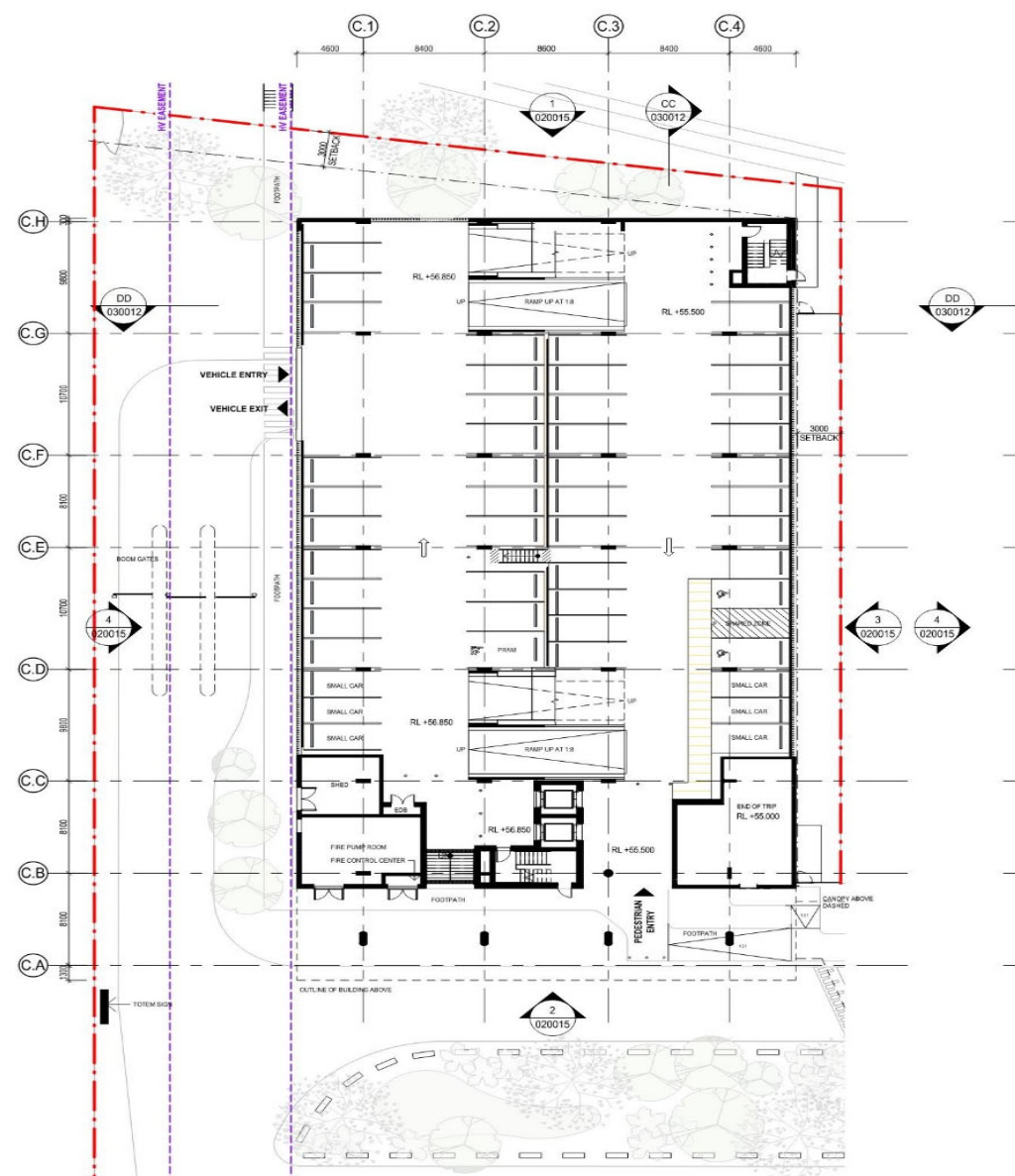


Figure 12: Car park level 00 – General arrangement plan (source: HDR, 5/06/2025)

3.3.1 Internal design

The proposed MSCP has been designed in accordance with AS/NZS 2890.1 (2004), AS/NZS 2890.2 (2018) and AS/NZS 2890.6 (2022) which incorporates following internal design characteristics.

- The design of car parking spaces, circulation roadways and ramps and driveways meet the requirements specified in AS2890.1. Typical car parking spaces are designed to meet HINSW Design Guidelines (2.5m width) Accessible and parents with prams parking spaces would be provided with minimum 5.4m x 3.2m dimensions per the DCP.
- The design of the loading dock, including circulation roadways, ramps, access driveways, service areas and service bays meet the requirements specified in AS2890.2 for 12.5m HRVs.

- Hospital Road and future internal road have been designed to accommodate clockwise circulation of a 17.8m articulated oxygen tanker vehicle.
- Accessible car parking spaces are provided with an adjoining shared space and meet the requirements specified in AS2890.6.
- Minimum sight lines and splays for pedestrian safety as outlined in AS2890.1 and AS2890.2 are met at car park and loading dock driveways, respectively.

3.3.2 Parking requirements

Parking requirements has been determined through a first principles approach based on expected site usage. Furthermore, the Site lies within The Hills Shire Council LGA and therefore is subject to *The Hills Development Control Plan 2012* (DCP). Part C Section 1 of the DCP outlines the parking rates that the development is subject to provide. This section details the requirements per the DCP as well as the proposed parking to be provided within the Site.

3.3.2.1 First Principles

A first principles assessment has been undertaken to estimate the parking accumulation on site across a standard working day. The detailed assumptions used to develop the profile are discussed in Section 4.3.2, and include data from:

- Schedule of Accommodation (SoA) and other project-specific information provided by HI.
- Previous traffic generation and arrival/departure profile surveys for different staff and patient types for a range of other hospitals in Sydney (such as Concord Hospital, Westmead Hospital, Blacktown Hospital, Sutherland Hospital, St George Hospital and Princes of Wales Hospital).

Based on these assumptions, the resulting parking accumulation profile for staff, patients and visitors is shown in Figure 13. From the profile, the overall peak parking accumulation at the site is estimated to be 615 vehicles.

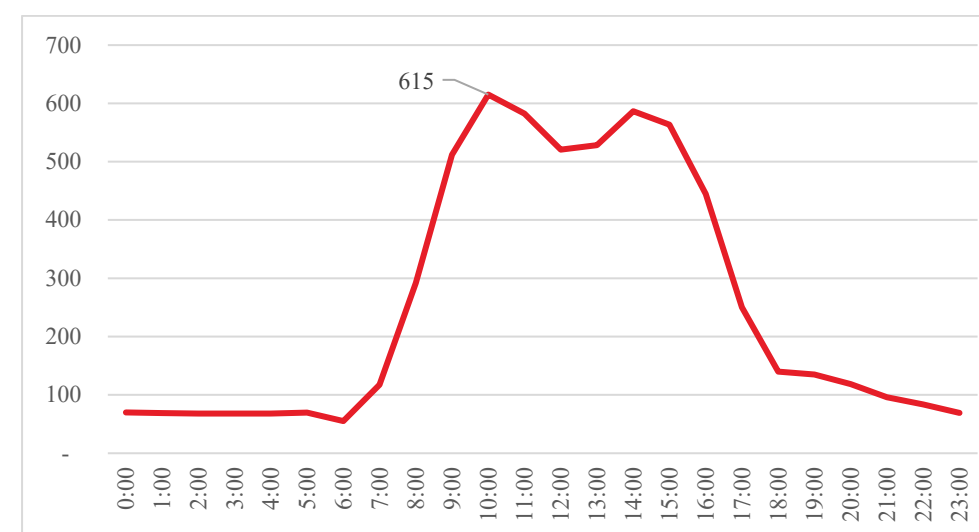


Figure 13: Daily parking accumulation profile for staff, patients and visitors

The peak parking accumulation at the Site is expected to be 615 vehicles. This demand is driven by daytime staff parking demand, with patients and visitors forming a smaller portion of demand.

3.3.2.2 DCP parking rates

The minimum car parking rates as required by the DCP for hospitals has been calculated based on indicative beds and staff numbers provided by HI. It is assumed that the retail and commercial uses on-site are ancillary to the Rouse Hill Hospital, and that retail and commercial trips generated would be linked/multi-purpose trips. Therefore, no additional car parking spaces for the retail and commercial uses have been assumed. This analysis indicates the proposed MSCP will meet the DCP requirements.

The required minimum number of parking spaces from the DCP is 574 parking spaces based on indicative beds and staff provided by HI. This total includes provision for parents with prams parking spaces, in accordance with the DCP:

- Parents with prams parking spaces (minimum 5.4m x 3.2m): 1 per 100 spaces.

The number of accessible parking spaces (20) is compliant with the access requirements.

The proposal includes the provision of 659 total car park spaces which will be sufficient to accommodate the estimated peak demand. The key features of the MSCP include are outlined in Table 7.

Table 7: Key features of the MSCP

Item	Proposed spaces
Standard car spaces	520
Small car spaces	100
Accessible car parking	20
Parents with pram	10
Fleet	9
Total car park	659

There are 26 on grade parking spaces, including 1 police, 1 pathology, 4 maintenance, 4 fleet, 7 drop off and 5 ambulance.

3.3.3 Car park queuing

Car park entry would consist of one lane and facilitated via an ANPR system. Therefore, no vehicle queues are expected at the entry to the MSCP.

Car park exit would be facilitated by two boom-gate controlled lanes. Appendix D of AS2890.1 outlines the capacity provision at car park entries and exits and the number of lanes required to service peak hour vehicle movements. For a ticket/token acceptance unit and boom gate, the maximum capacity of each lane is 300 vehicles/hour (equating to a capacity of 600 vehicles/hour for the MSCP).

Using the first principles assessment of the likely parking accumulation profile of the Proposal outlined in Section 3.3.2.1, the resulting parking departures profile for staff, patients and visitors is shown in Figure 14.

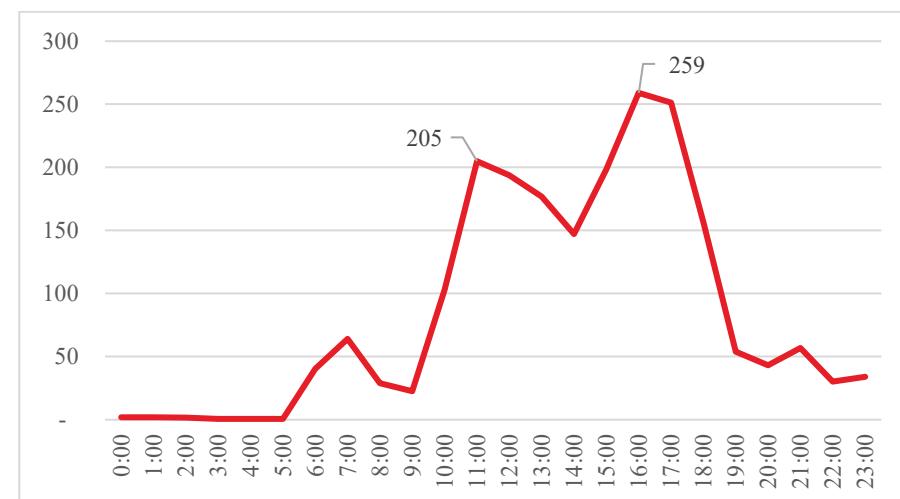


Figure 14: Daily parking departures profile for staff, patients and visitors

The peak parking departures at the Site is expected to be 259 vehicles. Therefore, the two boom-gate controlled exit lanes are expected to accommodate the likely peak hour vehicle movements of the MSCP, with redundancy in the event of an incident blocking one of the exit lanes.

3.4 Bicycle parking and End of Trip facilities

The 10 bicycle parking spaces and end-of-trip (EoT) facilities such as change rooms to support active transport would be provided on the southern side of the MSCP on Level 00. This location can be directly accessed via the cycleways outlined in Section 2.3.

Additionally, 20 external bicycle parking spaces would also be accommodated on site, bringing the total to 30 bicycle parking space.

Austrroads *Bicycle Parking Facilities: Updating the Austrroads Guide to Traffic Management* (Austrroads, 2016) has been used to guide the provision of bicycle parking and end of trip facilities on the Site.

3.5 Motorcycle parking facilities

As per the DCP, it is assumed that 1 motorcycle space per 50 car parking spaces is required. Therefore, for 659 car parking spaces, 14 motorcycle parking spaces would be provided.

The location of these spaces are indicatively proposed on levels 1, 3, 5 and 7 of MSCP.

3.6 Ambulance care

Within the site, the most direct access would be via Hospital Road and the internal road that connects to the MSCP. For resilience the ring road around the main hospital building would provide a secondary access route for ambulances to designated bays on the western side of the hospital. Five ambulance bays are provided and sized according to NSW Ambulance access requirements.

In special circumstances, where access on Commercial Road or Hospital Road is restricted, access for emergency vehicles only could be provided via the adjacent bus layover. Access via the T-way would only occur in exceptional circumstances and would be controlled to prevent access at other times.

This secondary route would require appropriate traffic management, so access is limited to emergency vehicles only. TfNSW has reviewed the proposed use of emergency vehicle access from the T-Way and has indicated likely support for a right-in and left-out access arrangement, subject to draft conditions being imposed in any future Development Consent. The primary and secondary access routes for ambulance are shown in Figure 15.

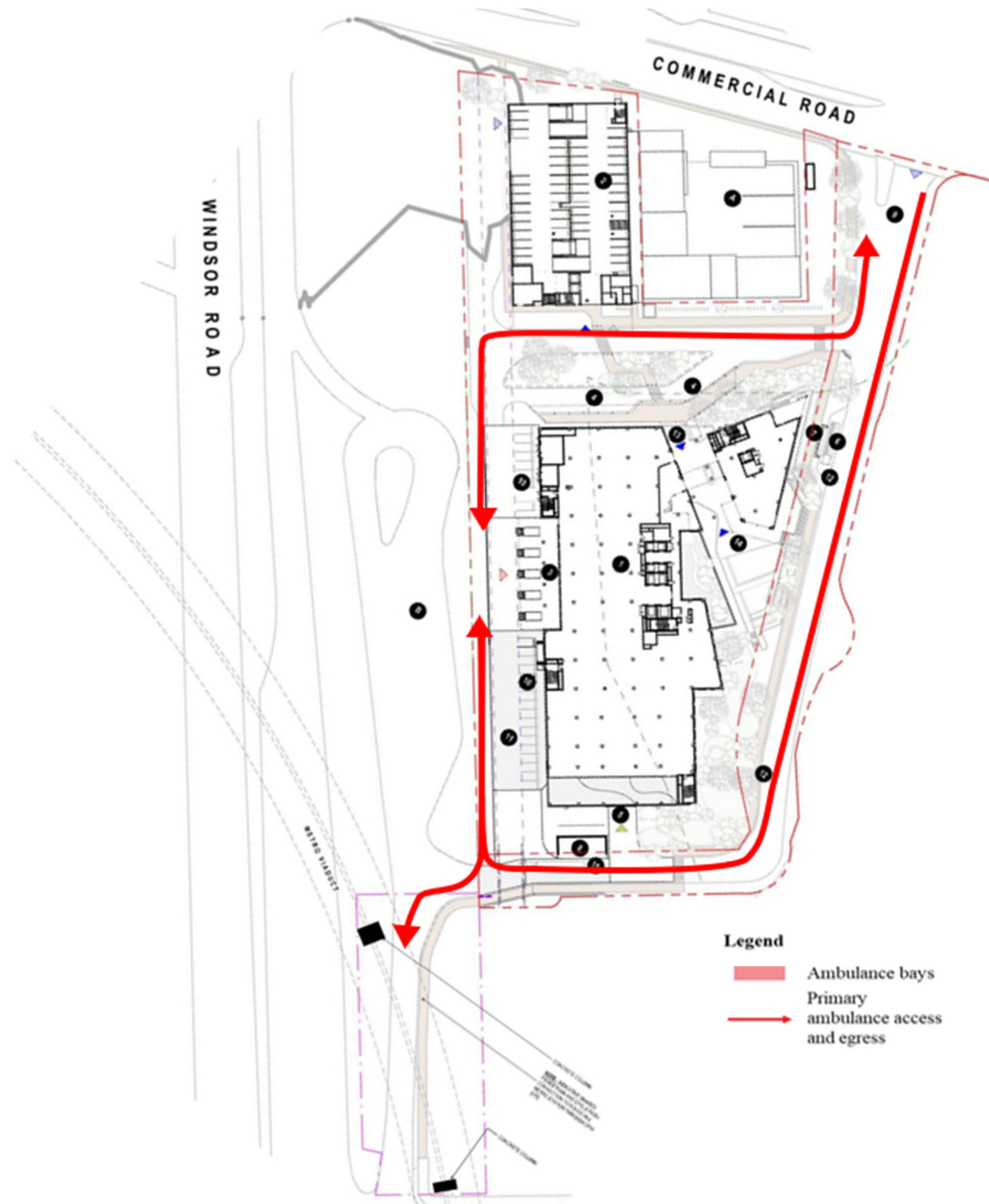


Figure 15: Ambulance access

3.7 Other emergency vehicle access

There is a provision for fire emergency vehicles within the site. A fire truck bay area will be provided near fire boosters and hydrants, on Hospital Road close to main hospital building entry south. The fire truck would follow the ring road and exit to Commercial Road via future internal road. Figure 16 shows the vehicle access route for other emergency services.

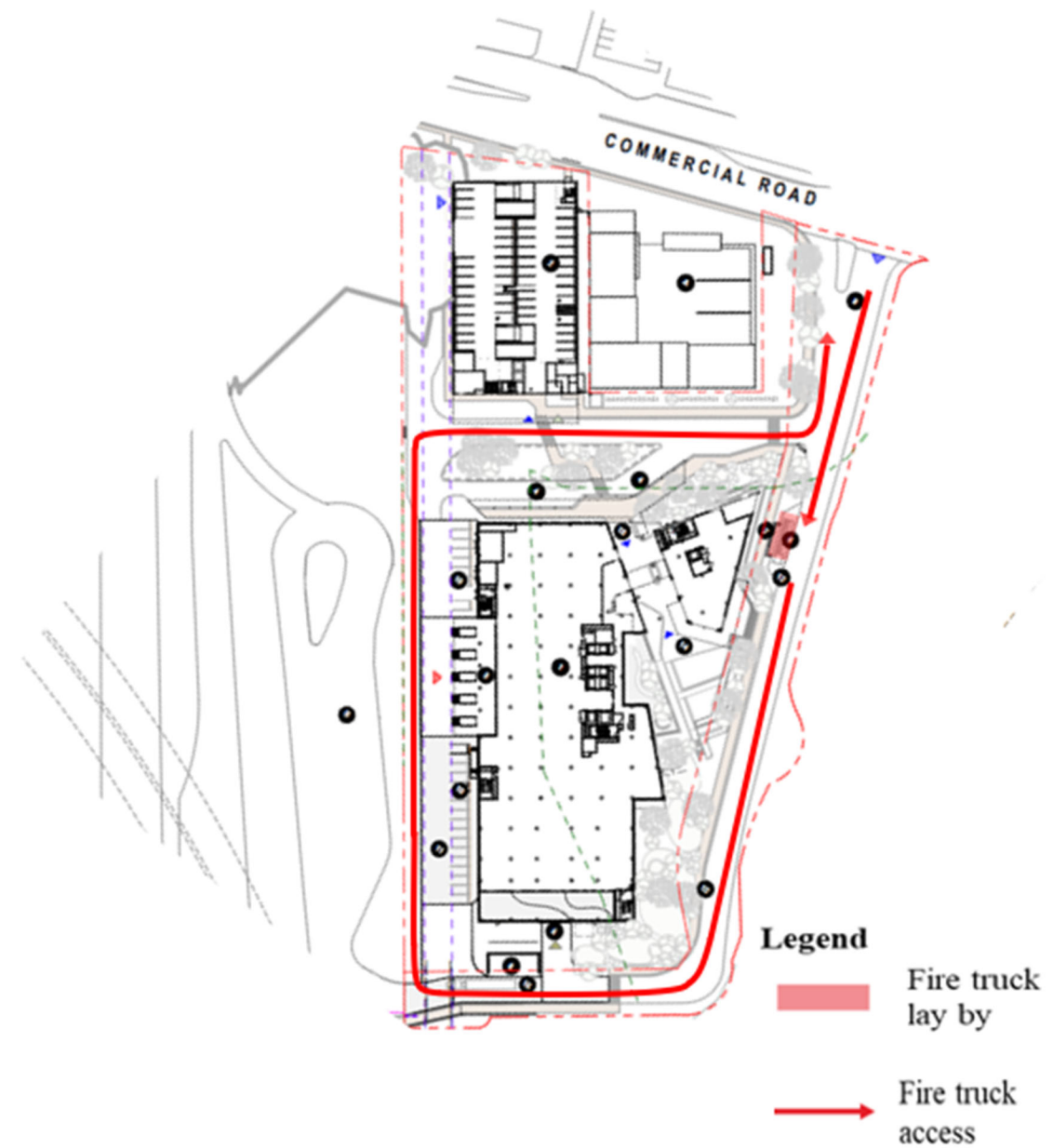


Figure 16: Ground level emergency vehicle access

3.8 Loading dock

The loading dock includes provision for service vehicles, vans and couriers, waste vehicles and hearse vehicles. The access to loading dock is via Hospital Road, south of the site. Vehicles would reverse park into loading bays and includes 5 bays. Immediately west of the loading dock, there's an additional dedicated bay designed for articulated oxygen tanker vehicles up to 17.8m in length. The oxygen tanker would travel in a forward-only direction via Hospital Road around the ring road, except when reversing into the dedicated bay located near the loading dock to the southwest of the site.

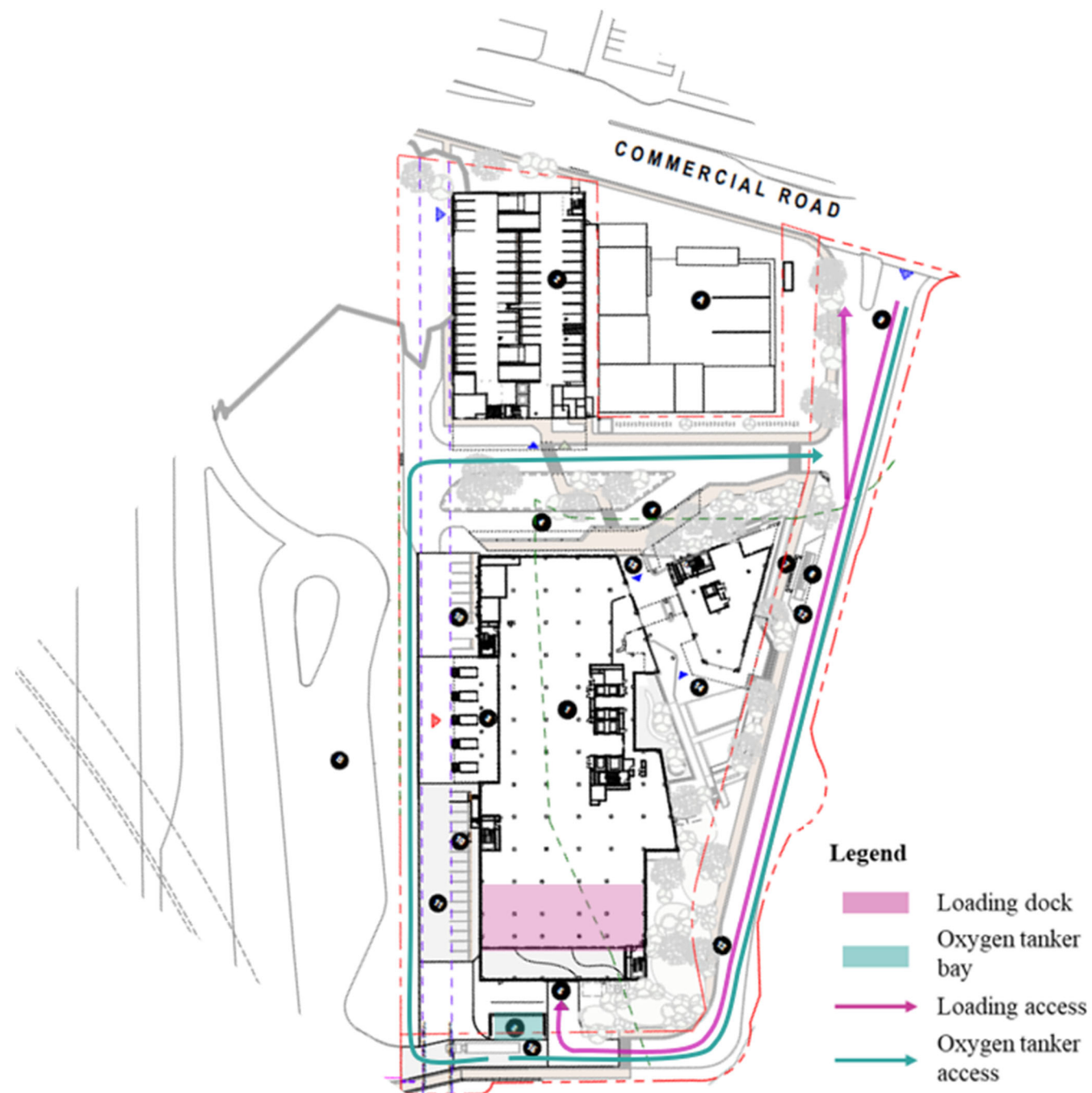


Figure 17: Lower ground loading and servicing access

3.9 Pedestrian access

Pedestrian access to the site is proposed from Commercial Road, with footpaths provided along Hospital Road and future internal road as shown in Figure 18. Pedestrian crossings will facilitate safe access to Rouse Hill Hospital.

Furthermore, a new shared pedestrian and cycle path will be constructed along the southern boundary of the hospital as shown in the Figure 18. This path will offer a shorter and more convenient route to the Rouse Hill Metro Station, which is located within a 5–10-minute walk of the main hospital building. This connection will enhance public transport accessibility for patients, staff, and visitors alike.

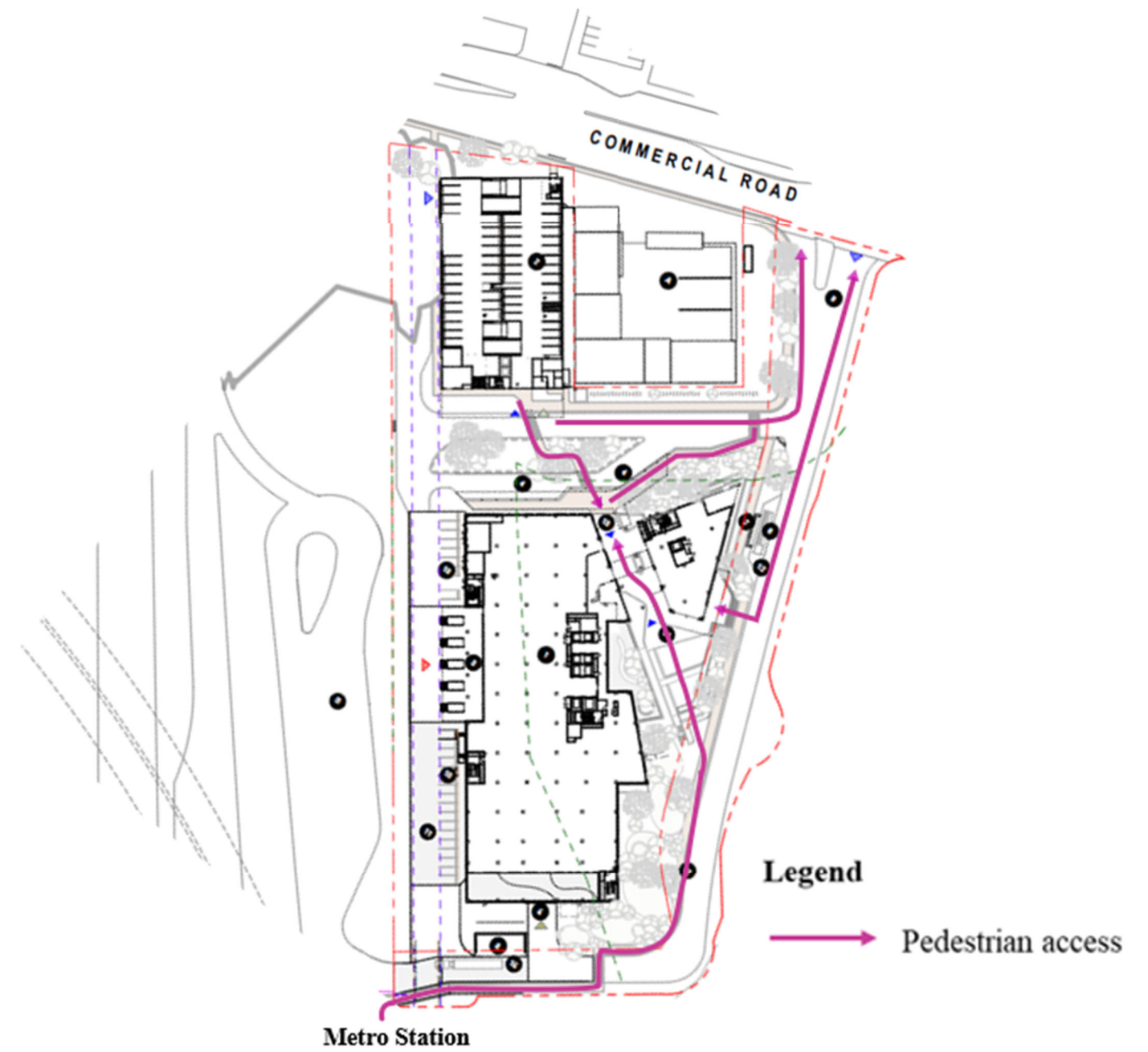


Figure 18: Pedestrian access

3.10 Cycling access

Cyclist access to the MSCP would be on-road via future internal road to the MSCP. Bicycle parking spaces and end of trip facilities (including showers, change rooms and lockers) would be provided in the MSCP. The path will connect into the existing cycle path, ensuring seamless access to the hospital's EoT facilities. Cyclists can reach these facilities via Commercial Road/Health Co Access and future internal road.

Additionally, the cycleway shown along the southern boundary of the hospital in Figure 19 is a shared path with pedestrian which allows connection into existing T-way that runs along Windsor Road. This further allows convenient connection to the Rouse Hill Metro Station.

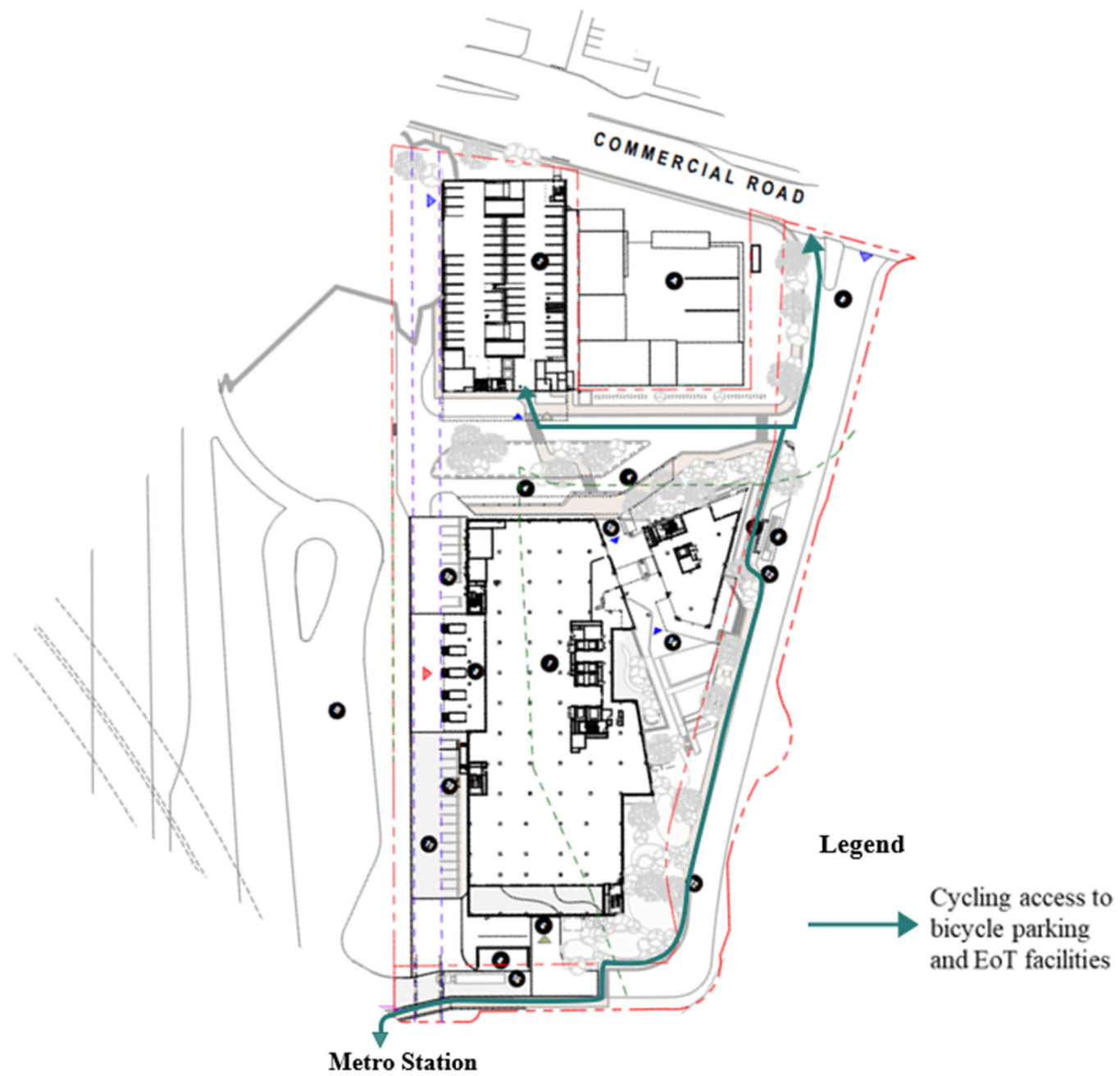


Figure 19: Cyclist access

3.11 Commercial Road Access

To enable vehicular access to the site, a right-hand turn lane from Commercial Road through to the Main Hospital Access Road intersection is proposed. This will comprise minor works, including realignment of existing median strip, kerb and gutter, footpath and lane marking to provide access from Commercial Road into Hospital Road.

There is an ongoing NSW Government project relating to the planning of critical road infrastructure around the future Rouse Hill Hospital. This includes the planning of an upgrade of the Commercial Road/ Main Hospital Access Road intersection by TfNSW to be undertaken in consultation with the Rouse Hill Hospital project.

4. Transport and accessibility assessment

4.1 Impacts on the road network

This section investigates the likely impacts the Proposal would have on road safety and capacity of the road network, including consideration of cumulative traffic impacts at key intersections.

The following scenarios have been considered in this assessment:

- Existing 2024 scenario (discussed in Section 2.5)
- Future 2029 scenario without the Proposal (year of opening)
- Future 2029 scenario with the Proposal (with the addition of traffic generation of the development)
- Future 2039 scenario without the Proposal
- Future 2039 scenario with the Proposal

4.2 Future road network performance without the proposal

4.2.1 Modelled road layout

The modelled road layout for the future road network without the Proposal is shown in Figure 20. The only change to the existing layout is the upgrade of the Commercial Road / Caddies Boulevard intersection to a signalised intersection. As discussed in Section 2.6.2.1, the intersection is expected to be upgraded to accommodate traffic generated by the growth of the Rouse Hill Town Centre. The design of this intersection is currently being planned by TfNSW, Council and landowners, and the latest planned layout (provided by TfNSW in August 2024) has been assumed for this study.

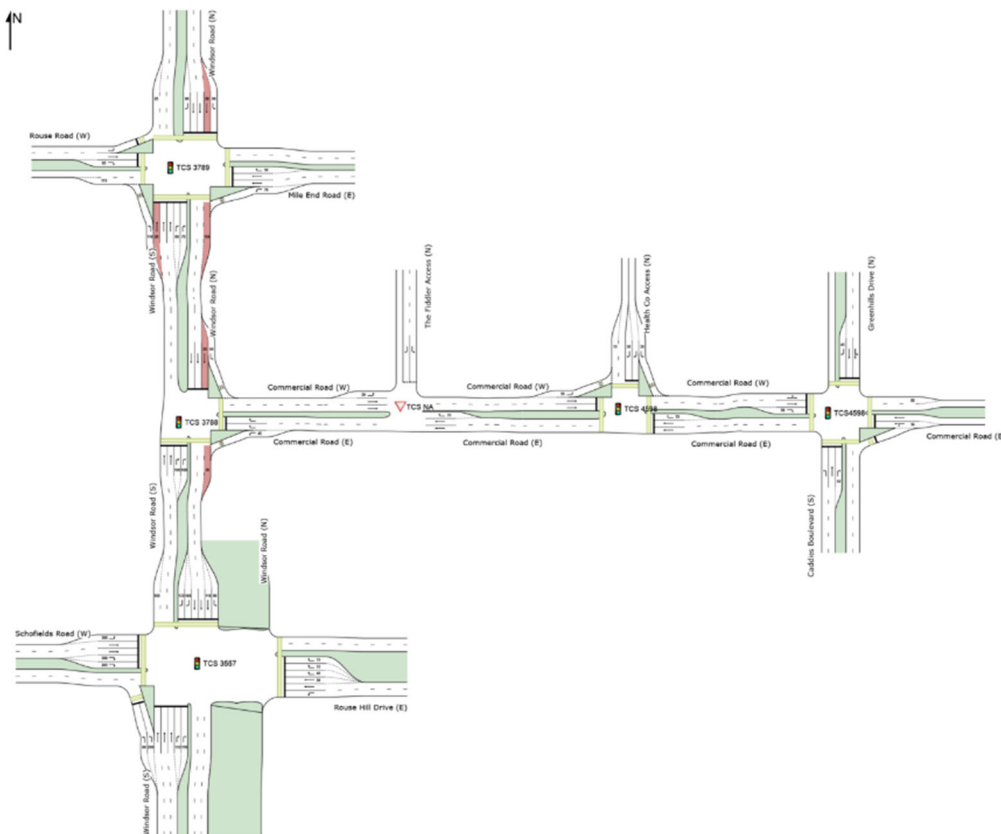


Figure 20: Modelled road layout – future without the Proposal

4.2.2 Future traffic volumes

To estimate future traffic volumes without the Proposal, traffic forecasts from TfNSW's strategic models were reviewed. These models consider common planning assumptions for committed land use and transport projects, such as TfNSW's Travel Zone Projections 2022 and Sydney Metro City and Southwest. 2021, 2026, 2036 and 2041 link volumes were provided from the Strategic Traffic Forecasting Model (STFM) and interpolated to estimate 2024, 2029 and 2039 link volumes. To estimate future year demand without the Proposal, a percentage growth was then calculated between the 2024, 2029 and 2039 STFM link volumes and applied to the existing 2024 traffic volumes. To estimate intersection turning volumes, turning proportions from the 2024 traffic surveys were assumed as a starting point and then manually adjusted to balance inflow and outflow volumes.

Traffic generation and distribution for the Northern Residential Precinct, Northern Frame Precinct and Rouse Hill Town Centre expansion projects have also been added to the future traffic volumes without the Proposal.

4.3 Future road network performance with the proposal

4.3.1 Modelled road layout

As discussed in Section 3.11, as part of the Proposal, the Commercial Road / Health Co Access intersection would be upgraded with a new southern approach to facilitate traffic access to the Site. The existing unsignalised access road from Commercial Road adjacent to the Mungerie Park substation would also be removed. The modelled road layout for the future road network with the Proposal is shown in Figure 20.

Following discussions with TfNSW's Land Use Planning and Network Operations teams, emergency traffic signal phasing has not been assumed.

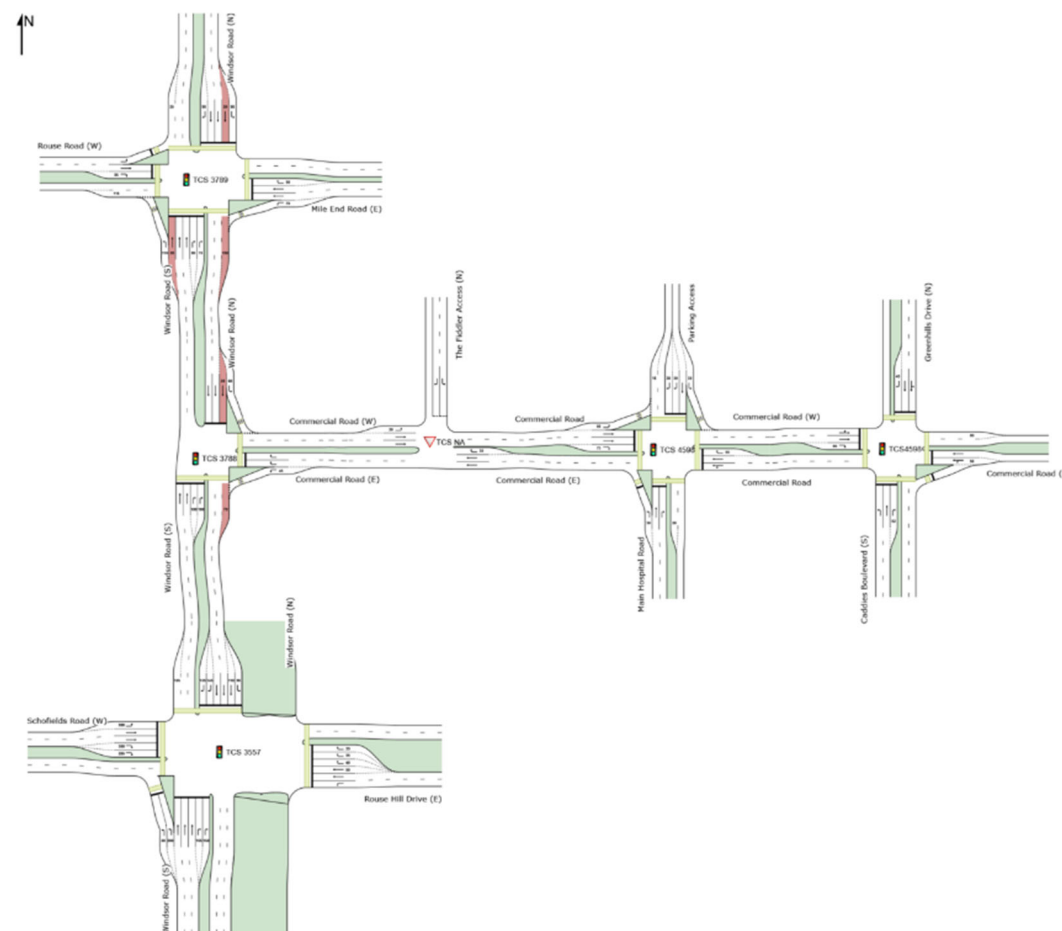


Figure 21: Modelled road layout – future with the Proposal

4.3.2 Traffic generation of the proposal (First Principles Method)

The first-principles methodology undertaken to estimate traffic generation of the Proposal is summarised below.

- **Estimate daily person trips:** using the estimated number of staff, patients and visitors, estimate daily person trips to the Site.
- **Estimate peak hour person trips:** apply daily departure/arrival profiles for staff, patients and visitors to generate a profile across the day and estimate peak hour person trips.
- **Estimate peak hour traffic demand:** apply car (driver) mode share and vehicle occupancy factors to convert peak hour person trips to peak hour traffic demand.

4.3.2.1 Daily person trips

The assumptions of the daily person trips have been based on.

- SoA including indicative number of beds and staff, and other project-specific information provided by HI.
- Previous traffic generation and arrival/departure profile surveys for different staff and patient types for a range of other hospitals in Sydney (such as Concord Hospital, Westmead Hospital, Blacktown Hospital, Sutherland Hospital, St George Hospital and Princes of Wales Hospital).

The resulting number of daily person trips are approximately 1611 staff trips, 3169 patient trips and 1,144 visitor trips (in and out).

4.3.2.2 Peak hour person trips

The assumptions for the daily departure and arrival profiles for the various types of staff, patients and visitors have been based on previous surveys of a range of comparable hospitals in Sydney. The daily departure/arrival profiles for staff, patients and visitors are shown in Figure 22 and Figure 23.

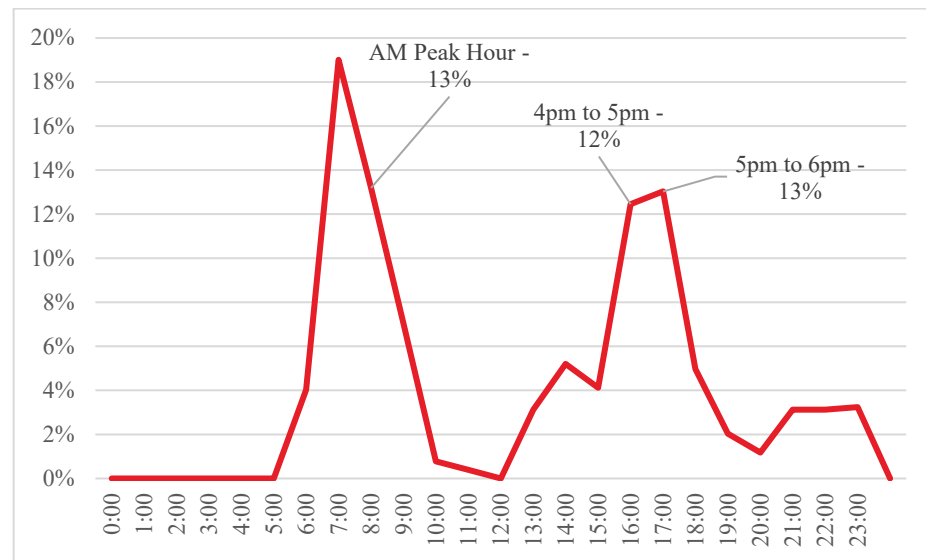


Figure 22: Daily departure/arrival profile for staff (note percentages are rounded)

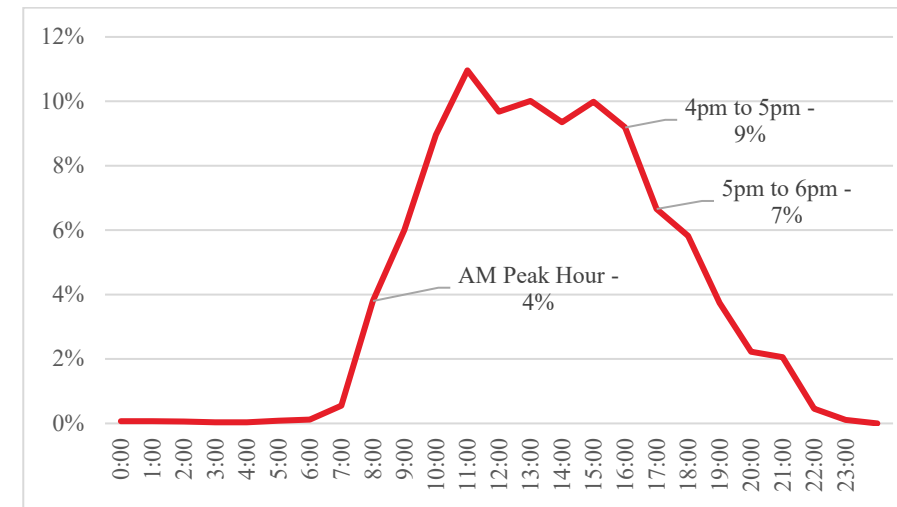


Figure 23: Daily departure/arrival profile for patients and visitors (note percentages are rounded)

The resulting number of peak hour person trips are approximately:

- AM peak hour (8am to 9am): 212 staff and 164 patient and visitor person trips.
- PM peak hour (4:45pm to 5:45pm): 208 staff and 315 patient and visitor person trips.

4.3.2.3 Peak hour traffic generation

During the peak hours, the inbound and outbound split of person trips have been assumed based on the daily departure and arrival profiles for the various types of staff, patients and visitors and is shown in Table 8.

Table 8: Assumed in/ out distribution

Peak hour period	AM peak hour		PM peak hour	
	In	Out	In	Out
Staff	89% (daytime shift)	11% (nighttime shift)	18% (nighttime shift)	83% (daytime shift)
Patients and visitors	87%	13%	26%	76%

The traffic generation assumptions for staff, patients and visitors are shown in Table 9 and are based on previous surveys of a range of comparable hospitals in Sydney. The mode share ties into the close proximity of the Metro and the car parking demand.

Table 9: Traffic generation assumptions

Type	Car (driver) mode share	Vehicle occupancy
Staff	<ul style="list-style-type: none"> 50% for daytime shift* 95% for nighttime shift 	<ul style="list-style-type: none"> 1.09 for daytime shift 1.0 for nighttime shift
Patients	84%	1.0
Visitors	60%*	1.2

*Due to proximity to nearby public transport services including Sydney Metro (800m, 10 minute walk) and T-way bus services. For staff, assume travel demand management measures are implemented to further reduce staff car (driver) mode share.

The resulting number of peak hour vehicle trips are approximately:

- AM peak hour: 233 vehicle trips (consisting of 104 staff, and 129 patient and visitor trips).
- PM peak hour: 331 vehicle trips (consisting of 105 staff, and 226 patient and visitor trips).

4.3.2.4 Traffic generation summary

A summary of the above first-principles traffic generation is shown in Table 10.

Table 10 Traffic generation summary

User	Staff	Patients	Visitors	Total
Daily person trips (in and out)	1611	3169	1144	5924
Peak hour person trips (in and out)	AM peak: 212 PM peak: 208	AM peak: 164 PM peak: 315	AM peak: 164 PM peak: 315	AM peak: 376 PM peak: 523
Peak hour traffic generation (in and out)	AM peak: 104 PM peak: 101	AM peak: 129 PM peak: 226	AM peak: 129 PM peak: 226	AM peak: 233 PM peak: 327

4.4 Traffic distribution

The origins and destinations of vehicle trips have been assumed based on the below sources.

- Staff – based on Travel to Work Census data.
- Patients and visitors – based on the distribution of TZIP22 population estimates across travel zones in nearby suburbs including Rouse Hill, Tallawong, Schofields, The Ponds, North Kellyville, Riverstone and Marsden Park.

Based on the above origins and destinations, vehicle trips have been distributed across the various access roads into the Site:

- To/from the north and northwest – via Windsor Road (north) and the future Greenhills Drive extension.
- To/from the south and southwest – via Windsor Road (south) and Caddies Boulevard.
- To/from the east – via Commercial Road (east).

The assumed trip distribution for staff, patient and visitors in the AM and PM peak hour is shown in Figure 24 and Figure 25. Note the distributions are different between the AM and PM peak hours due to a different proportion of staff, patient and visitors in each peak. In addition, a proportion of trips are assumed to use Greenhills Drive, Commercial Road and Caddies Boulevard as an alternative route to the busier Windsor Road.

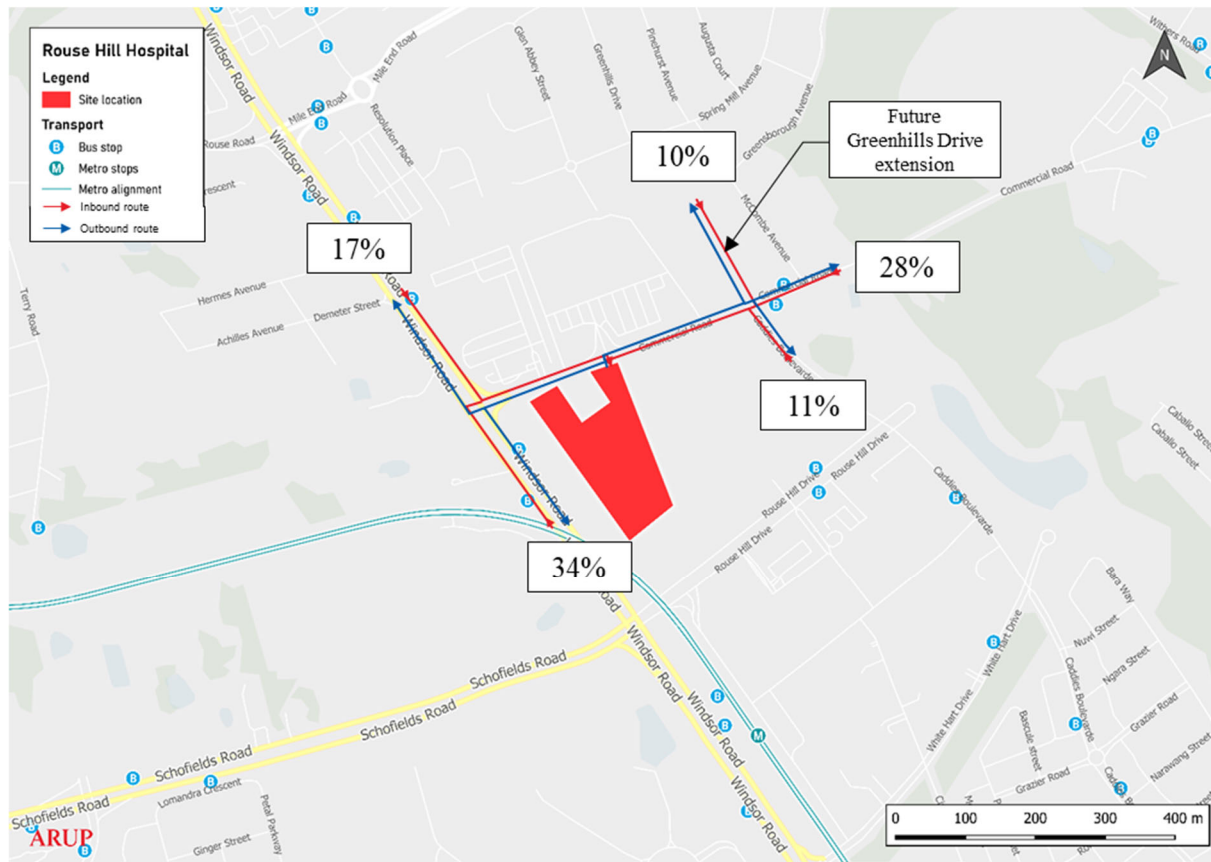


Figure 24: Assumed trip distribution – AM peak hour

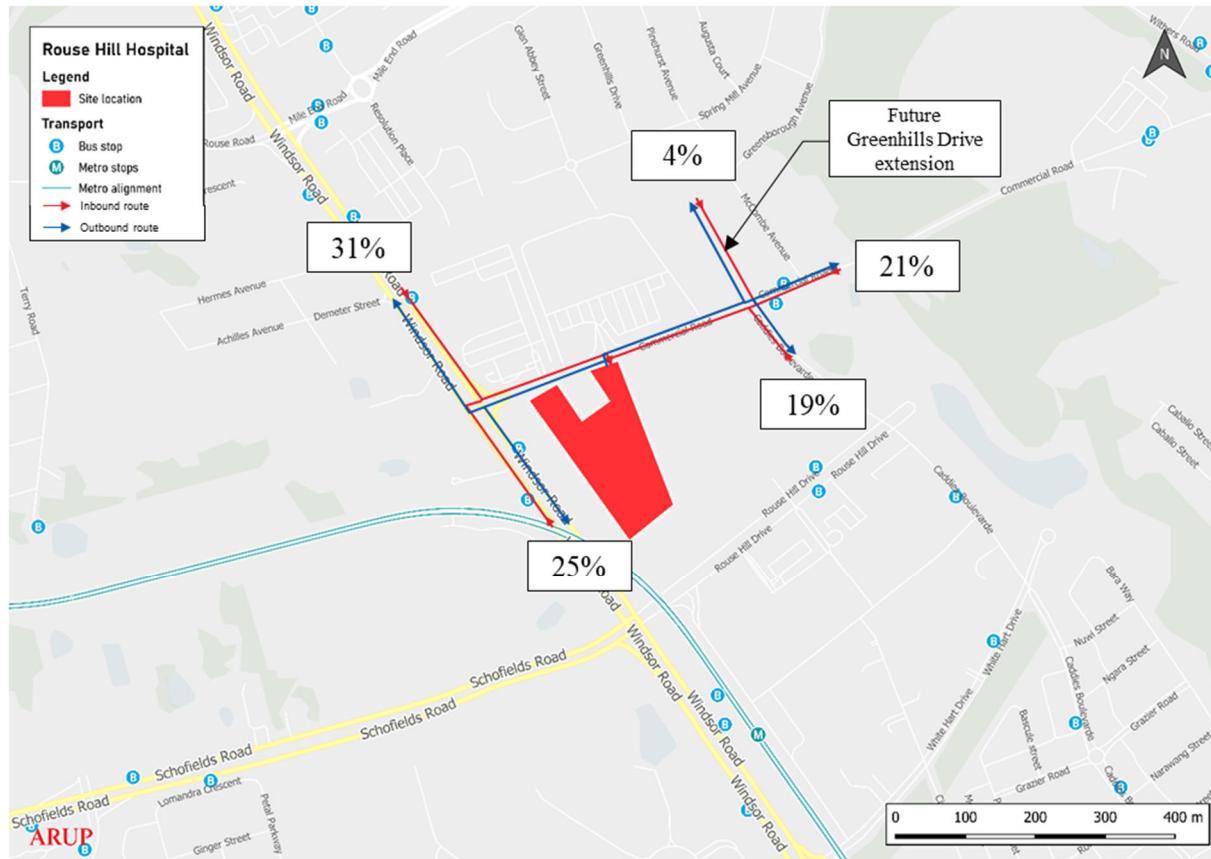


Figure 25: Assumed trip distribution – PM peak hour

4.4.1 Overall traffic generation

The traffic generation of the Proposal during the AM and PM peak hours is shown in Figure 26 and Figure 27.

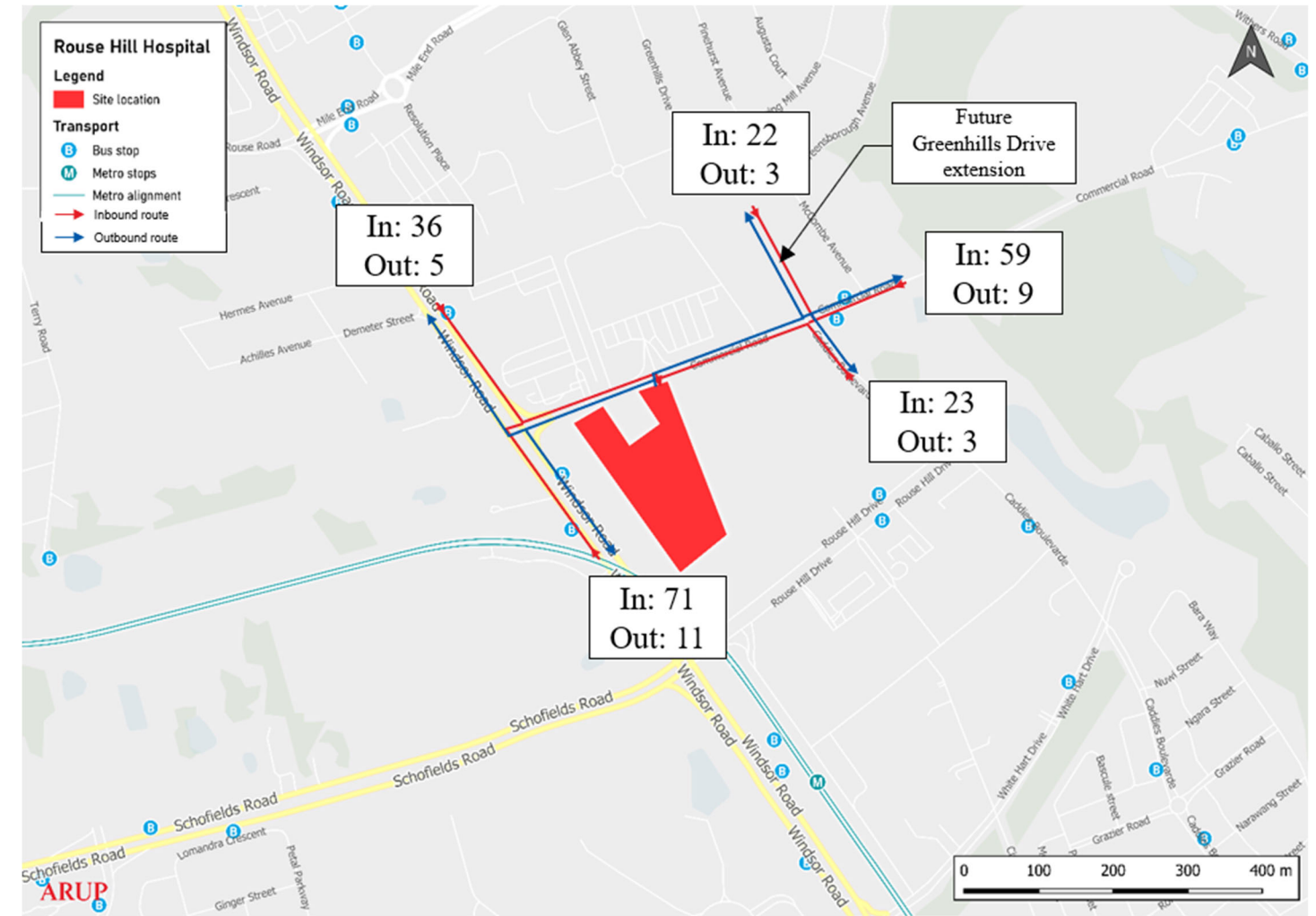


Figure 26: Assumed overall traffic generation – AM peak hour

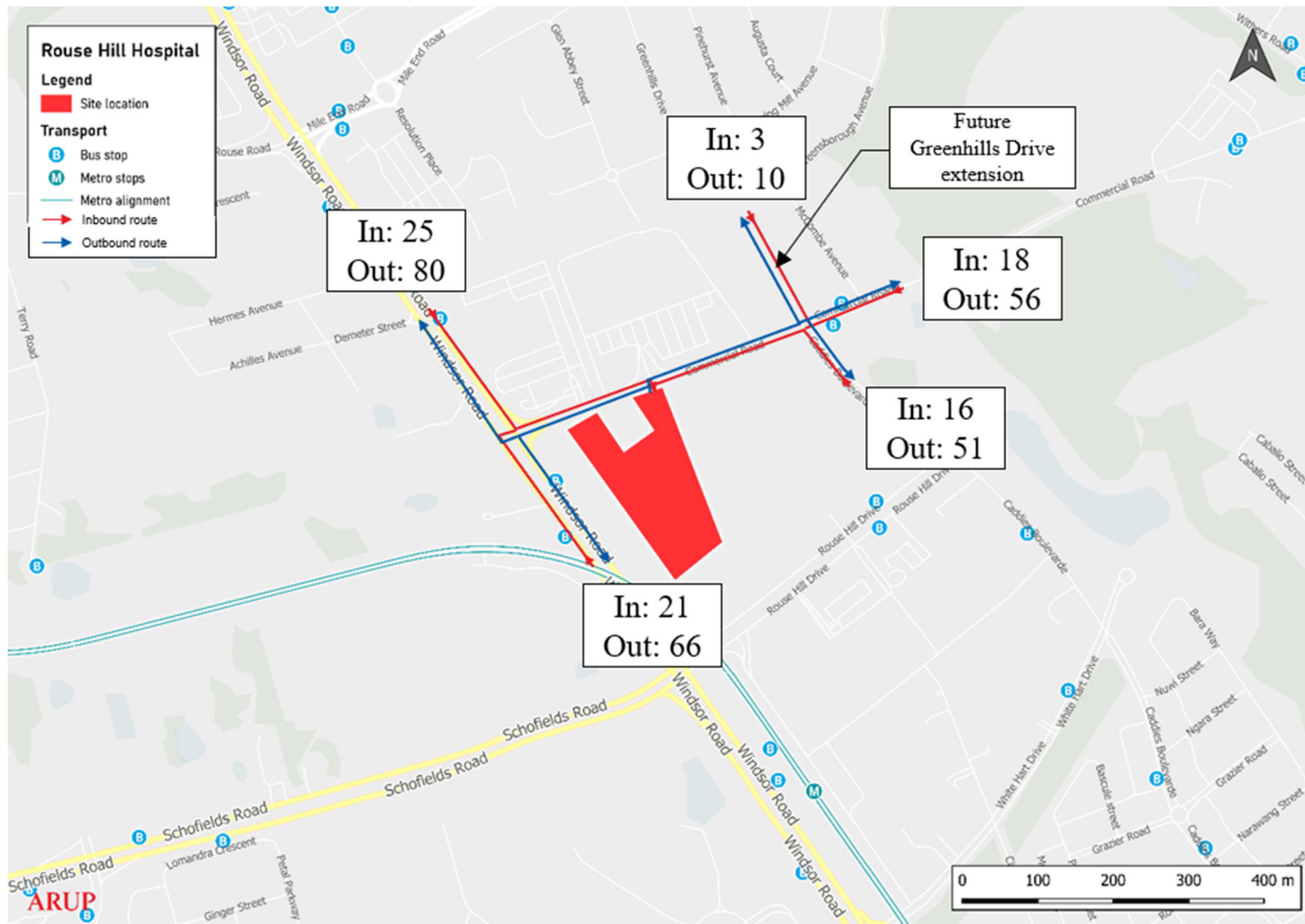


Figure 27: Assumed overall traffic generation – PM peak hour

4.4.2 Future road network performance

The traffic modelling results for each scenario are shown in Table 11 and summarised below. The impact on intersections is expected to be minimal compared to the effects of background traffic growth.. Detailed SIDRA modelling outputs are shown in Appendix B.

Table 11: Traffic modelling results – existing and future

Peak hour	Scenario	Windsor Road / Commercial Road				Commercial Road / The Fiddler				Commercial Road / Health Co Access				Commercial Road / Caddies Boulevard			
		DoS	Average delay (s)	LoS	95th% queue (m)	DoS	Average delay (s)	LoS	95th% queue (m)	DoS	Average delay (s)	LoS	95th% queue (m)	DoS	Average delay (s)	LoS	95th% queue (m)
AM Peak	Existing 2024	0.85	25	B	310m (north)	0.32	40	C	<5m (north)	0.22	5	A	20m (east)	0.90	66	E	40m (south)
	Future 2029 Without Proposal	0.91	34	C	340m (north)	0.66	75	F	10m (north)	0.24	5	A	30m (west)	0.75	35 ^{†††}	C	140m (east)
	Future 2029 With Proposal	0.91	31	C	280m (north)	0.49	51 [†]	D	10m (north)	0.70	30 ^{††}	C	120m (east)	0.84	36	C	160m (east)
	Future 2039 Without Proposal	1.24	59	E	380m (north)	0.90	127	F	120m (east)	0.45	7	A	50m (west)	0.91	44	D	230m (east)
	Future 2039 With Proposal	1.32	64	E	370m (north)	0.65	65 [†]	E	120m (east)	1.31	164 ^{††}	F ^{††}	350m (east)	1.07	86	F	340m (east)
PM Peak	Existing 2024	0.96	38	D	360m (north)	0.77	56	D	20m (north)	0.31	7	A	20m (north)	1.00	91	F	100m (south)
	Future 2029 Without Proposal	0.90	37	C	410m (north)	2.28	>200	F	190m (north)	0.25	8	A	40m (west)	0.71	31 ^{†††}	C	100m (west)
	Future 2029 With Proposal	0.91	43	D	440m (north)	2.26 [†]	>200	F	180m (north)	0.69	31 ^{††}	C	110m (east)	0.83	34	C	130m (west)
	Future 2039 Without Proposal	2.26	163	F	450m (north)	>2.0	>200	F	300m (north)	0.31	8	A	50m (east)	0.79	34	C	140m (south)
	Future 2039 With Proposal	1.77	131	F	490m (north)	>2.0	>200	F	300m (north)	0.82	35 ^{††}	C	160m (east)	0.90	38	C	160m (west)

Note: as advised by TfNSW, green split priority has been allocated to coordinated movements for intersections along Windsor Road.

[†]Improvement in AM peak with development is due to changes to phasing for new southern leg at Commercial Road / Health Co Access intersection providing more gaps to turn right. However, increase in delay in PM peak due to higher overall traffic volumes on Commercial Road with less gaps.

^{††} Increase in average delay due to proposed upgrade of the Commercial Road / Health Co Access intersection. This upgrade would include a new southern approach and traffic signal changes to facilitate access to the Site, which are likely to increase average delay.

^{†††} Reduction in delay due to assumed upgrade of the Commercial Road / Caddies Boulevard intersection to a signalised intersection.

In 2029, the assessed intersections are generally able to accommodate additional traffic generated by the Proposal, while noting the following:

- The Commercial Road / The Fiddler intersection currently operates poorly due to the give-way priority for the right-turn from The Fiddler and is expected to worsen as a result of background traffic growth on Commercial Road, even without the Proposal (190m queue length equivalent to 32 cars in future 2029 without proposal PM peak).

In 2039, the Commercial Road / The Fiddler intersection and Windsor Road / Commercial Road intersections are expected to significantly worsen, even without the proposal. These intersections are estimated to perform at LoS E and LoS F at AM and PM peak periods respectively. The queue lengths are likely to extend to adjacent intersections. This performance is primarily due to background traffic growth, particularly in the Northwest Growth Area.

- Traffic generated by the Proposal would slightly worsen average delay. However, it should be noted that traffic generated by the Proposal is expected to be relatively low compared to background traffic volumes.
- The proposed Commercial Road / Health Co Access intersection is expected to operate satisfactorily in all modelled scenarios.

The Commercial Road / Caddies Boulevard intersection is expected to operate satisfactorily with the proposed upgrade. Planning for the upgrade is currently being undertaken by TfNSW, Council and landowners (outside of the scope of the Proposal).

4.5 Impacts on parking and access

As discussed in Section 3.3.2.1, the peak parking accumulation at the Site is expected to be 615 vehicles. The Proposal includes the provision of a MSCP with 659 parking spaces which will be sufficient to accommodate the estimated peak demand. Accessible, parents with pram and motorcycle parking spaces would be provided per DCP requirements for the proposed parking spaces. Therefore, parking is expected to be accommodated within the Site.

In special circumstances, where access on Commercial Road or Hospital Road is restricted, access for emergency vehicles only could be provided via the adjacent bus layover. Access via the T-way would only occur in exceptional circumstances and would be controlled to prevent access at other times. There is a potential for minor conflicts between emergency vehicles and buses within the bus layover area, particularly during peak periods when layover demand is high. However, this risk is considered low, as such interactions are expected to be infrequent and manageable with appropriate access design and operational controls.

4.6 Impacts on public transport, walking and cycling

As discussed in Section 3.9, pedestrian access for the Site is proposed from Commercial Road. Pedestrian access will be enhanced through new footpaths along Hospital Road and future internal road, and safe crossings will support access to the MSCP and hospital. Cyclist access will be provided via future internal road, with dedicated bicycle parking and end-of-trip facilities located within the MSCP.

The Rouse Hill Hospital development is expected to have minimal impact on public transport, walking, and cycling networks. The site benefits from strong connectivity, with Rouse Hill Station located within a 5–10-minute walk and a bus stop positioned near the main site access on Commercial Road.

4.7 Travel demand management

To manage travel demand generated by the Proposal, travel demand management measures are proposed to be implemented. Measures would aim to promote sustainable travel choices for staff and visitors and are detailed in a framework Green Travel Plan as shown in Appendix C. The Green Travel Plan would support broader sustainability objectives by encouraging shifts away from single-occupant vehicle use and include indicative mode share targets to monitor and guide uptake of active and public transport over time.

5. Outline construction traffic management plan

This section summarises an outline Construction Traffic Management Plan (CTMP) to manage the potential transport impacts during construction of the Proposal. At the time of writing this report, construction planning has not been finalised, and this section provides an overview of the key principles, construction working hours and vehicle routes and a high-level estimation of potential construction numbers.

A detailed CTMP would be prepared as part of the detailed design phase.

5.1 Key principles

The following traffic management principles would be adopted during the construction period of this development:

- Disruption to all road users during the construction period would be kept to a minimum.
- Traffic control would need to be provided to manage and regulate traffic movements during construction.
- Construction and delivery vehicles entering or leaving the site compound and/or construction sites would use arterial roads. These movements would be scheduled to non-peak traffic periods where possible.
- In most cases, property access would be maintained throughout the construction period with suitable alternative access arrangements provided otherwise.
- Clear signage and alternate pedestrian routes should be organised if footpaths are affected.

5.2 Proposed working hours

Depending on the construction stage, the size of the workforce which includes both construction and design personnel will vary. Construction would be undertaken during standard working hours which are assumed to be as follows:

- Monday to Friday: between 7am to 6pm.
- Saturday: between 8am to 1pm.
- Sunday and public holidays: no work.

In some circumstances it may be necessary to undertake night works to minimise the disruption construction has on traffic. Further assessment of these requirements would be undertaken once the detailed design stage is undertaken and the requirements are known. All night works would be undertaken in accordance with the TfNSW *Environmental Noise Management Manual (2001): Practice Note vii – Roadworks outside normal hours*, as well as the *Office of Environment and Heritage Interim Construction Noise Guideline (DECC 2009)*.

5.3 Construction parking

The Hills Development Control Plan (DCP) 2012, establishes objectives and development controls for parking within the Shire. Whilst the DCP does not specify requirements for construction worker parking, it emphasises the need to provide sufficient parking that is convenient for the use of residents, employees, and visitors of the development. Developers are expected to ensure that parking provisions do not adversely affect the surrounding area.

For the Rouse Hill Hospital development, contractor and visitor parking is expected to be provided on-site, with designated areas located near the north-western corner of the site, at the intersection of Windsor Road and Commercial Road. Based on the assumption made in Section 5.5.2, a maximum of 100 construction workers will be on-site per day. It is estimated that approximately 80 on-site parking spaces should be made available to accommodate peak demand, whilst accounting for workers who may travel to the site by public and active transport, and carpool. A detailed CTMP will be provided by contractors detailing the access to parking during construction of the hospital access road.

5.4 Heavy vehicle access routes

Heavy vehicle access to the site is proposed primarily via state roads such as Windsor Road and Schofields Road. These are approved routes for heavy vehicles with a focus on movement as per TfNSW's restricted access vehicle routes, as shown in Figure 28. The routes are subject to contractor staging plan and CTMP

Prior to completion of upgrade of Commercial Road / Health Co access intersection, construction vehicles are expected to travel via Rouse Hill Drive and Caddies Boulevard, accessed from either Windsor Road or Schofields Road, before turning onto Commercial Road to reach the site. Access is via existing driveway from Commercial Road near the Mungerie Park substation. This driveway operates as a left-in, left-out intersection, meaning all construction vehicles must enter the site by turning left from Commercial Road and exit by turning left back onto Commercial Road. From there, vehicles will proceed to Windsor Road, where they can either continue along Windsor Road or turn onto Schofields Road, depending on their destination. Once the upgrade of the Commercial Road / Health Co access intersection is complete, vehicle access would be via the upgraded intersection.

The key access routes using these restricted access vehicle routes are shown in Figure 29 (prior to completion of the upgrade of the Commercial Road / Health Co access intersection) and Figure 30 (after completion of the upgrade of the Commercial Road / Health Co access intersection).

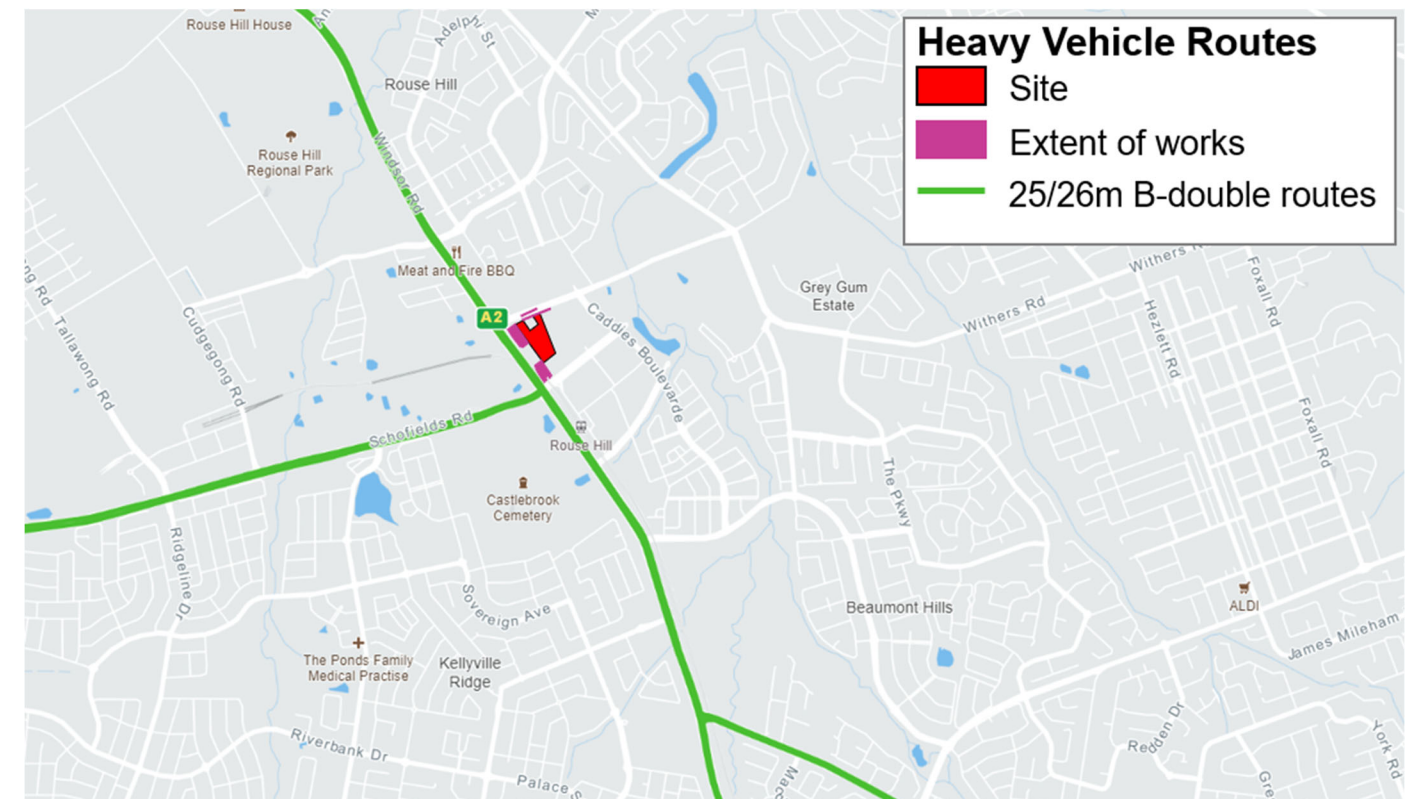


Figure 28: TfNSW 25/26m B-double routes



Figure 29: Heavy vehicle access routes (prior to completion of upgrade of Commercial Road / Health Co access intersection)



Figure 30: Heavy vehicle access routes (after completion of upgrade of Commercial Road / Health Co access intersection)

5.5 Traffic generation

The traffic generation during the construction period of the Proposal has been considered to determine the potential construction impact. Assumptions have been made around the construction vehicles, number of workers and traffic generation as the Site is in the early design phase. In the absence of information, the volumes of vehicles expected to be generated during construction have been informed by Arup's experience of a similar scope. This assessment represents a conservative scenario, and it is expected that construction traffic generation would be less over the majority of the construction phase.

5.5.1 Heavy construction vehicles

The number of heavy vehicles will be up to 60 per day (factoring 300m³ concrete slab pours, which cannot be reduced throughout the peak hours). Continuity of vehicle movements through the concrete pours within the SSDA site hours is mandatory for quality and safety purposes.

The final construction vehicle numbers are subject to staging, WHS and Industrial relations impacts, which will be developed by the Main Works contractor prior to the commencement of the works.

During the AM and PM peak hours, it is anticipated that up to 5 vehicles (5 inbound and 5 outbound movements) would access the Site. Heavy construction vehicles would be scheduled to non-peak traffic periods where possible and are assumed to occupy the Site for less than one hour.

The Main Works Principal Contractor will deploy a traffic management team who would be responsible for managing traffic movements through the access gate and onto Commercial Road. This access will operate as left in / left out only. A designated heavy vehicle staging area will be utilized to ensure vehicles are staged and presented to site in the appropriate 'just in time' fashion.

The Contractor will stage the works (including the access road) to maintain business continuity for all site activities.

5.5.2 Construction workers

In addition to heavy construction vehicles, workers accessing the Site would generate additional light vehicles. Light vehicles would include cars, vans and utility vehicles. During the peak construction stage, a maximum workforce of up to 100 personnel could be expected on Site per day.

The typical working hours are 7am to 6pm, with personnel arriving to the Site before 7am and after 6pm. For a worst-case assessment, it is assumed that all workers would drive their own vehicle and that 50% would arrive during the AM peak hour (7:15am to 8:15am) and 50% would depart during the PM peak hour (4:15pm to 5:15pm).

Therefore, construction workers are expected to generate an additional 50 inbound trips in the AM peak hour and 50 outbound trips in the PM peak hour.

5.5.3 Overall traffic generation

The overall construction traffic generation is shown below in Table 12.

Table 12: Overall construction traffic generation

Type	AM peak hour		PM peak hour	
	In	Out	In	Out
Heavy construction vehicles	5	5	5	5
Construction workers (light vehicles)	50	-	-	50
Total	55	5	5	55

The traffic generation during construction is expected to be lower than during operation and thus likely to have lower impact on the road network than during operation. Construction planning and timeframes for construction have not yet been finalised. Therefore, the cumulative construction traffic with nearby developments should be considered as part of a detailed CTMP once further construction planning inputs are available.

6. Conclusion

This Transport and Accessibility Impact Assessment (TAIA) evaluates the transport implications of the proposed Rouse Hill Hospital, located at the corner of Windsor Road and Commercial Road. The assessment considered existing transport conditions, including the local road network, public transport services, active transport facilities, and travel behaviour patterns. SIDRA modelling and traffic analysis were undertaken for both existing and future conditions, with and without the Proposal, accounting for planned development in the surrounding area.

Car parking demand was estimated using a first-principles approach informed by hospital land use assumptions, industry surveys, and The Hills Shire Development Control Plan (DCP) rates. The proposed Multi-Storey Car Park (MSCP) with 659 spaces is expected to meet future parking needs, including staff, visitors, and service vehicles. Site access is supported by the proposed upgrade of the Commercial Road / Health Co Access intersection, which will facilitate full vehicle access to the hospital campus.

The following scenarios were assessed:

- Existing 2024 scenario
- Future 2029 without the Proposal
- Future 2029 with the Proposal
- Future 2039 without the Proposal
- Future 2039 with the Proposal

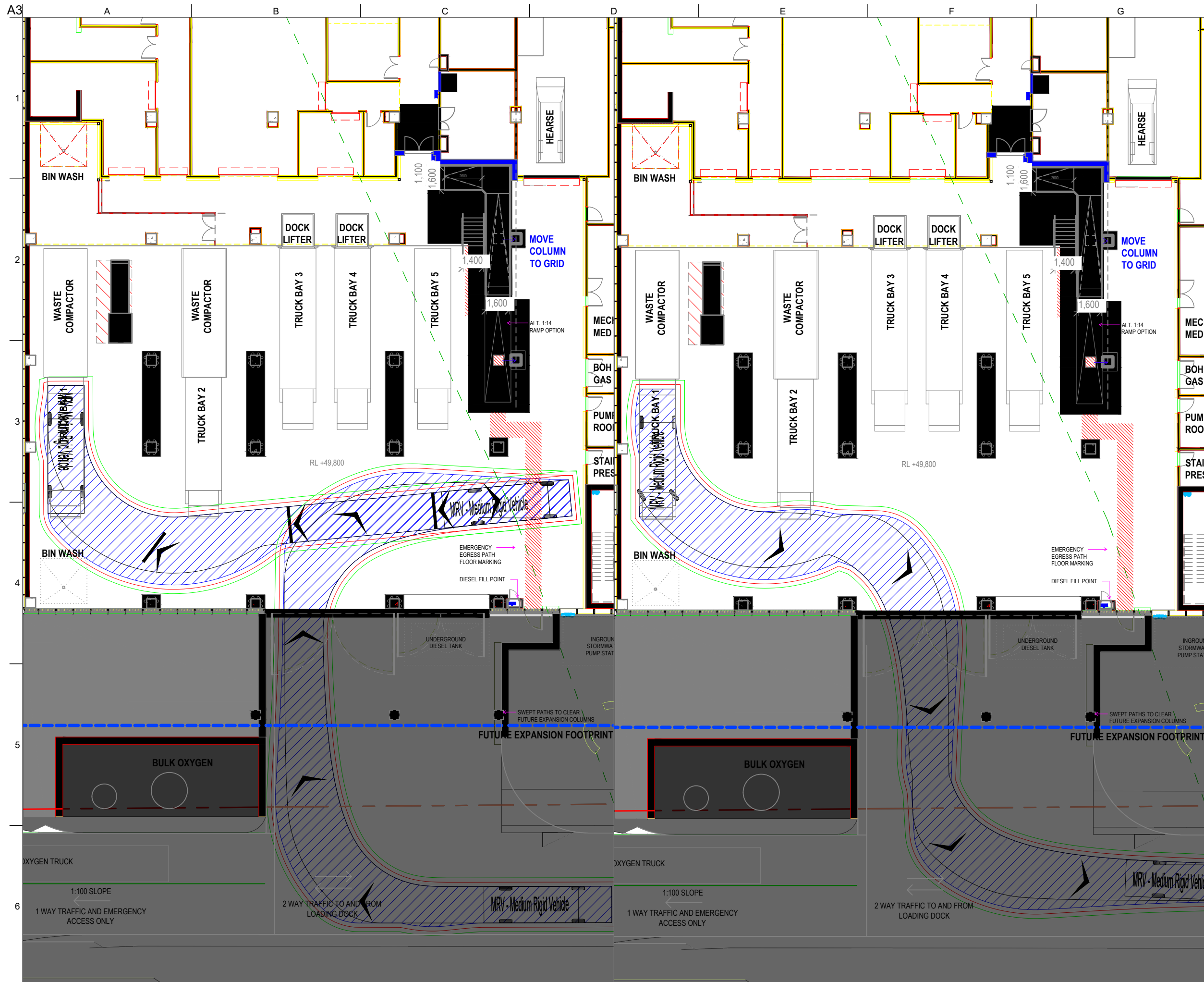
Traffic generation associated with the Proposal is expected to be modest relative to the background growth. In 2029, the local road network is generally expected to accommodate additional traffic. By 2039, intersections such as Windsor Road / Commercial Road and Commercial Road / The Fiddler are forecast to experience operational strain due to background traffic growth; however, the hospital's contribution is marginal. The upgraded Commercial Road / Health Co Access intersection is expected to perform satisfactorily in all modelled scenarios.

The traffic generation during construction is expected to be lower than during operation and thus likely to have lower impact on the road network than during operation. A CTMP would be prepared as part of the detailed design phase.

Overall, the hospital development is not expected to significantly worsen network conditions.

Appendix A

Swept Paths



- Legend**
- Body Envelope
 - 300mm Envelope
 - 600mm Envelope
 - Wheel Envelope

Design Vehicle(s)

MRV - Medium Rigid Vehicle
 Overall Length 8.800m
 Overall Width 2.500m
 Overall Body Height 3.633m
 Min Body Ground Clearance 0.428m
 Track Width 2.500m
 Lock to Lock Time 4.00 sec
 Curb to Curb Turning Radius 10.000m

F	14/08/25	AS	SO	SO
E	02/07/25	AS	SO	SO
D	01/07/25	AS	SO	SO
C	09/04/25	JT	JT	JT
B	15/02/25	JT	JT	JT
A	31/10/24	JW	CL	CL

For information

Issue	Date	By	Chkd	Appd

ARUP

Arup, Level 5, 151 Clarence St
 Sydney, NSW, 2000
 Tel +61(02)9320 9320 Fax +61(02)9320 9321
 www.arup.com.au

Client
Health Infrastructure NSW

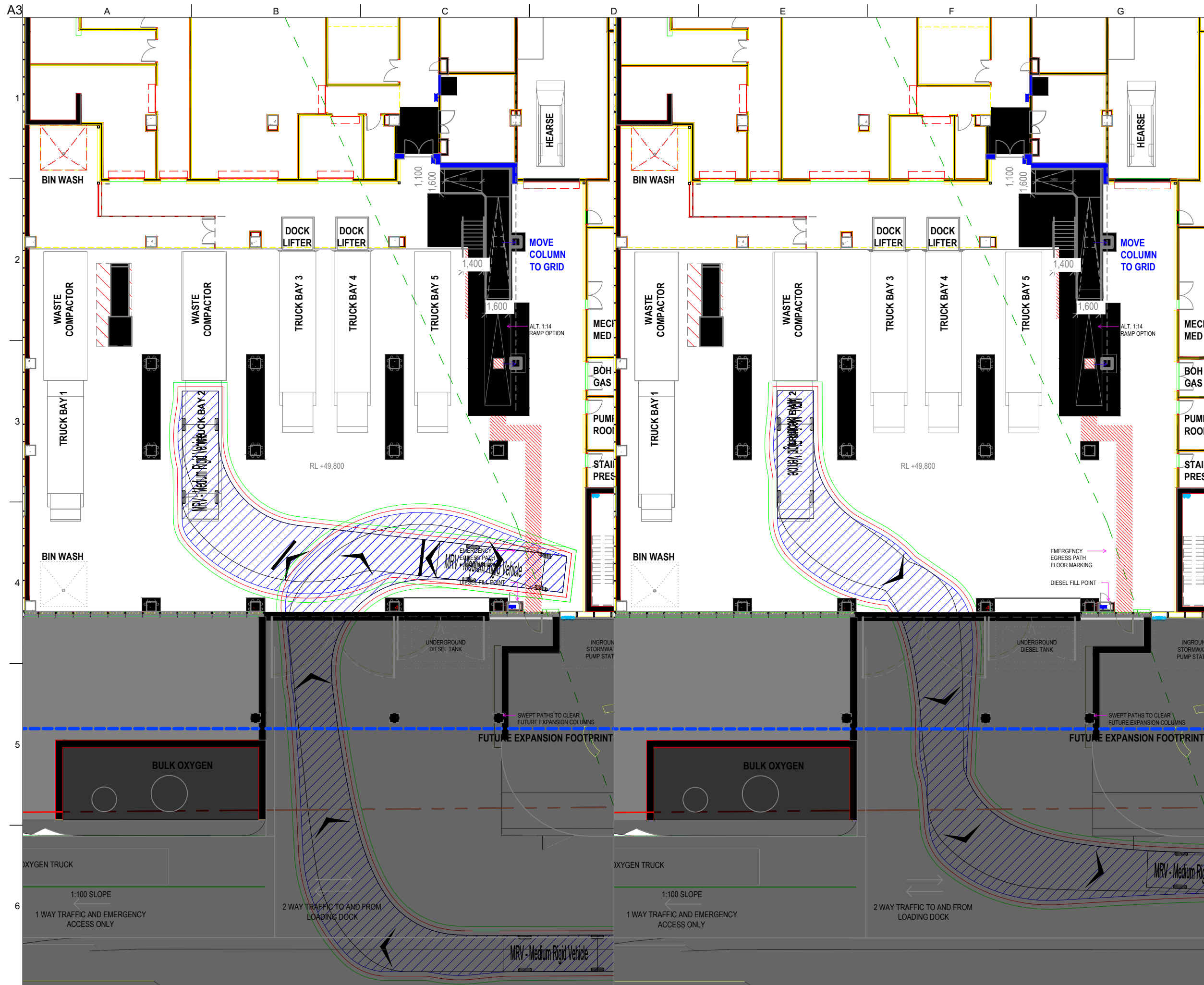
Job Title
Rouse Hill Hospital

Drawing Title
MRV 1 Turning Paths

Scale at A3 1:250
 Discipline Transport

Drawing Status
Draft

Job No 286539-00	Drawing No SKT001	Issue F
----------------------------	-----------------------------	-------------------



- Legend**
- Body Envelope
 - 300mm Envelope
 - 600mm Envelope
 - Wheel Envelope

Design Vehicle(s)

MRV - Medium Rigid Vehicle
 Overall Length 8.800m
 Overall Width 2.500m
 Overall Body Height 3.633m
 Min Body Ground Clearance 0.428m
 Track Width 2.500m
 Lock to Lock Time 4.00 sec
 Curb to Curb Turning Radius 10.000m

F	14/08/25	AS	SO	SO
E	02/07/25	AS	SO	SO
D	01/07/25	AS	SO	SO
C	09/04/25	JT	JT	JT
B	15/02/25	JT	JT	JT
A	09/12/24	CL	JRT	JRT

For information

Issue	Date	By	Chkd	Appd

ARUP

Arup, Level 5, 151 Clarence St
 Sydney, NSW, 2000
 Tel +61(02)9320 9320 Fax +61(02)9320 9321
 www.arup.com.au

Client
Health Infrastructure NSW

Job Title
Rouse Hill Hospital

Drawing Title
MRV 2 Turning Paths

Scale at A3
1:250

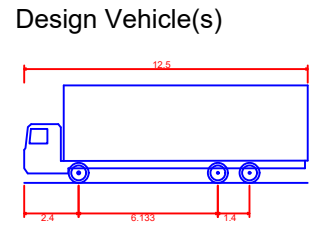
Discipline
Transport

Drawing Status
Draft

Job No 286539-00	Drawing No SKT002	Issue E
----------------------------	-----------------------------	-------------------



- Legend**
- Body Envelope
 - 300mm Envelope
 - 600mm Envelope
 - Wheel Envelope



HRV - Heavy Rigid Vehicle
 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

F	14/08/25	AS	SO	SO
E	02/07/25	AS	SO	SO
D	01/07/25	AS	SO	SO
C	09/04/25	JT	JT	JT
B	15/02/25	JT	JT	JT
A	09/12/24	CL	JRT	JRT

For information

Issue	Date	By	Chkd	Appd

ARUP

Arup, Level 5, 151 Clarence St
 Sydney, NSW, 2000
 Tel +61(02)9320 9320 Fax +61(02)9320 9321
 www.arup.com.au

Client
Health Infrastructure NSW

Job Title
Rouse Hill Hospital

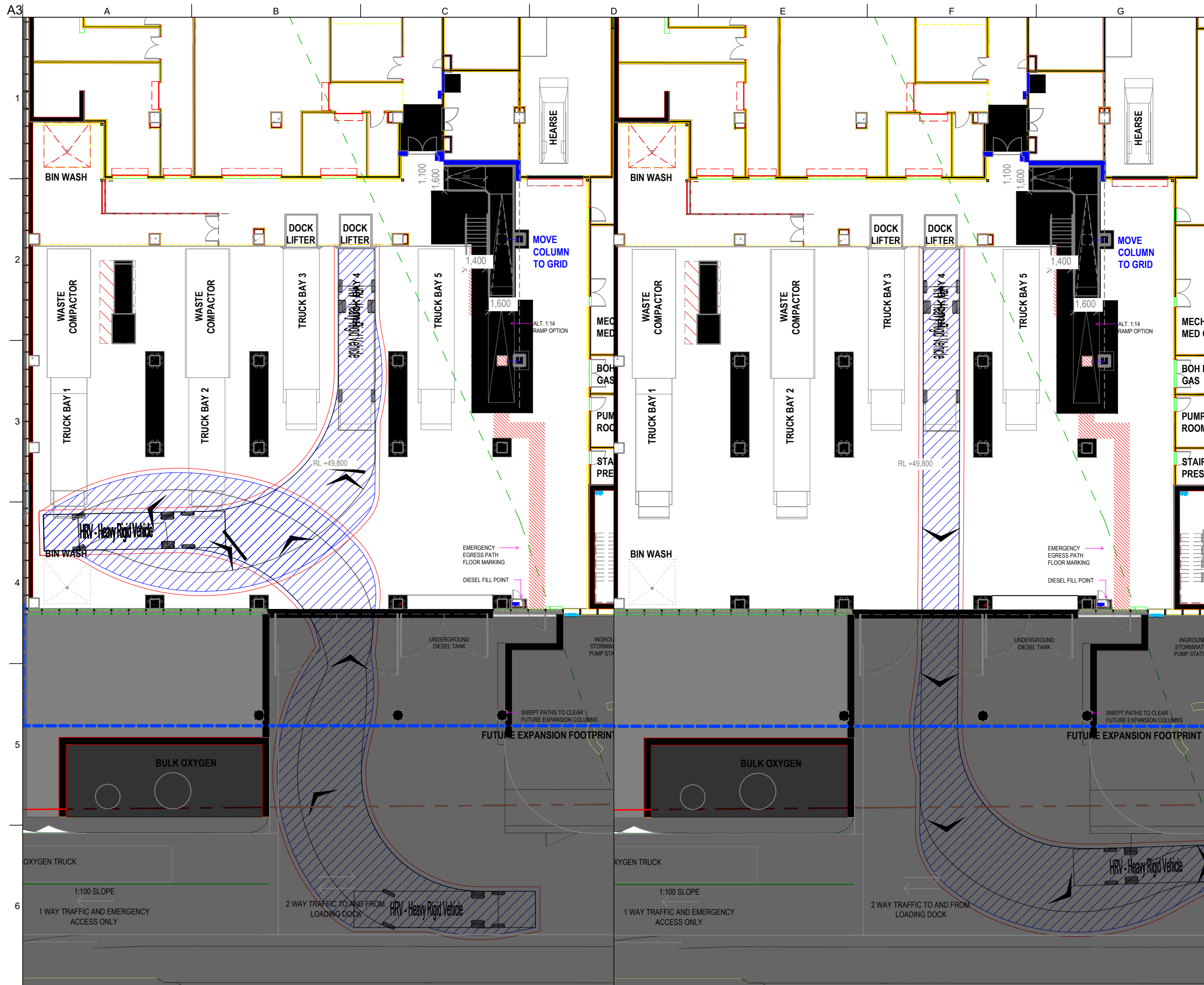
Drawing Title
HRV 3 Turning Paths

Scale at A3
 1:250

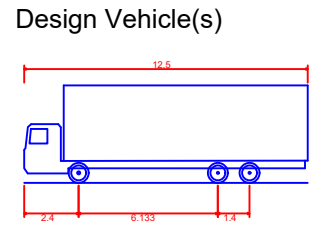
Discipline
 Transport

Drawing Status
Draft

Job No 286539-00	Drawing No SKT003	Issue E
----------------------------	-----------------------------	-------------------



- Legend**
- Body Envelope
 - 300mm Envelope
 - 600mm Envelope
 - Wheel Envelope



HRV - Heavy Rigid Vehicle
 Overall Length 12.500m
 Overall Width 2.500m
 Overall Body Height 6.155m
 Min Body Ground Clearance 0.417m
 Track Width 2.500m
 Lock to Lock Time 6.00 sec
 Curb to Curb Turning Radius 12.500m

F	14/08/25	AS	SO	SO
E	02/07/25	AS	SO	SO
D	01/07/25	AS	SO	SO
C	09/04/25	JT	JT	JT
B	15/02/25	JT	JT	JT
A	09/12/24	CL	JRT	JRT

For information

Issue	Date	By	Chkd	Appd

ARUP

Arup, Level 5, 151 Clarence St
 Sydney, NSW, 2000
 Tel +61(02)9320 9320 Fax +61(02)9320 9321
 www.arup.com.au

Client
Health Infrastructure NSW

Job Title
Rouse Hill Hospital

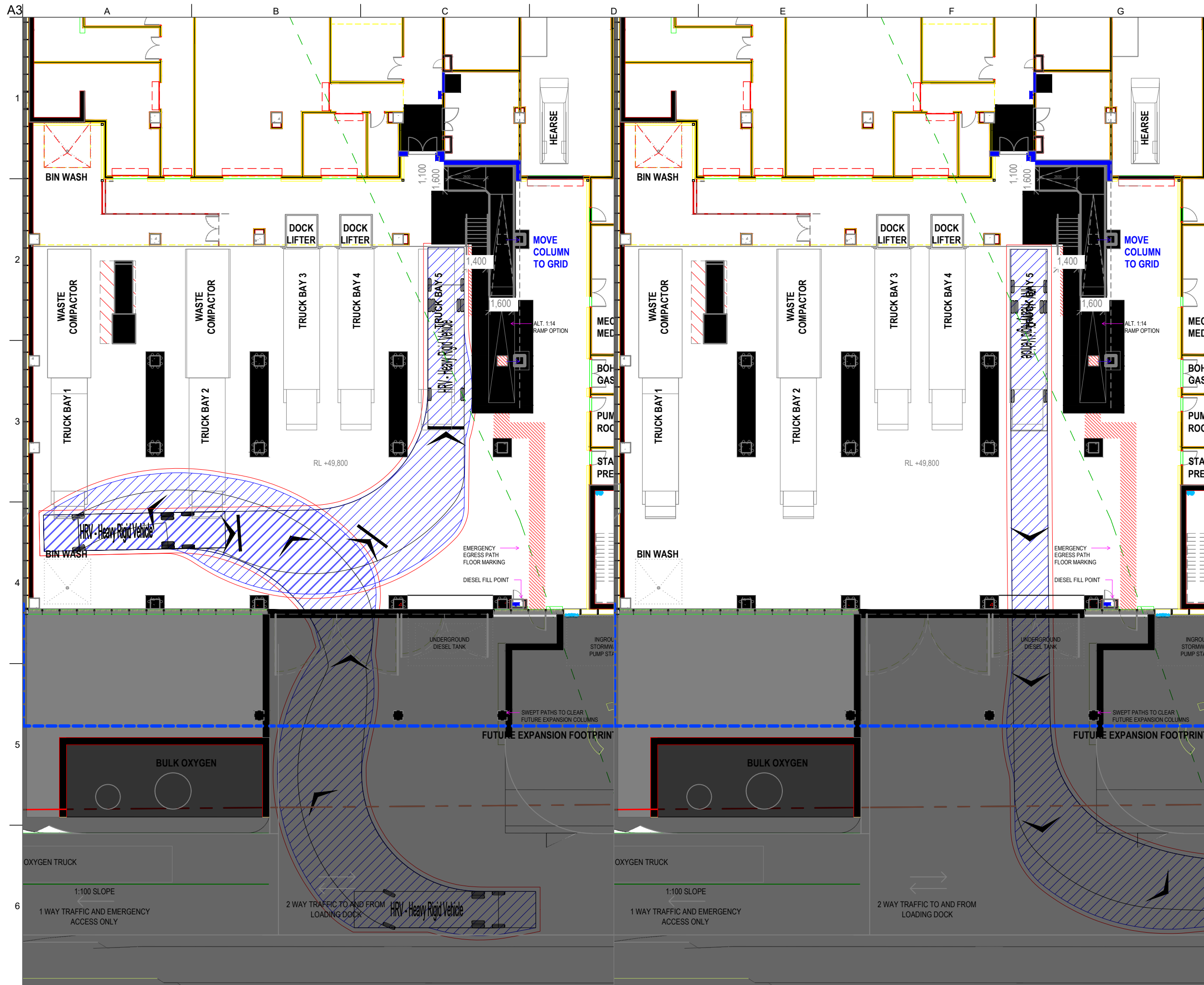
Drawing Title
HRV 4 Turning Paths

Scale at A3
 1:250

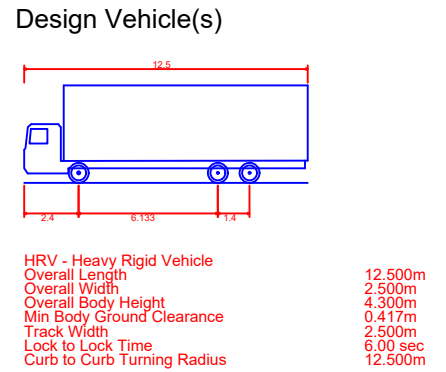
Discipline
 Transport

Drawing Status
Draft

Job No 286539-00	Drawing No SKT004	Issue E
----------------------------	-----------------------------	-------------------



- Legend**
- Body Envelope
 - 300mm Envelope
 - 600mm Envelope
 - Wheel Envelope



F	14/08/25	AS	SO	SO
E	02/07/25	AS	SO	SO
D	01/07/25	AS	SO	SO
C	09/04/25	JT	JT	JT
B	15/02/25	JT	JT	JT
A	09/12/24	CL	JRT	JRT

For information

Issue	Date	By	Chkd	Appd

ARUP

Arup, Level 5, 151 Clarence St
 Sydney, NSW, 2000
 Tel +61(02)9320 9320 Fax +61(02)9320 9321
 www.arup.com.au

Client
Health Infrastructure NSW

Job Title
Rouse Hill Hospital

Drawing Title
HRV 5 Turning Paths

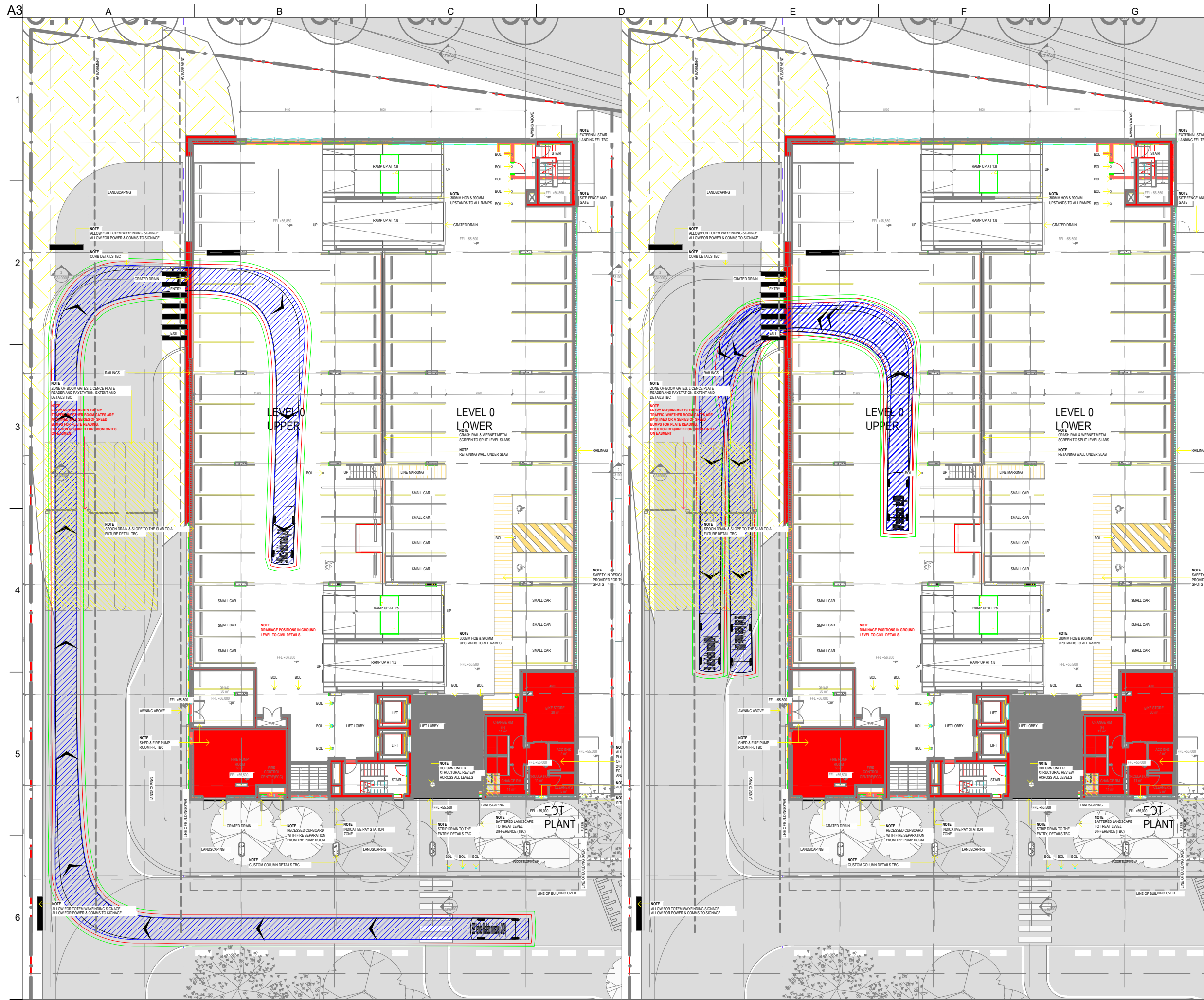
Scale at A3 **1:250**

Discipline **Transport**

Drawing Status

Draft

Job No 286539-00	Drawing No SKT005	Issue E
----------------------------	-----------------------------	-------------------



- Legend**
- Body Envelope
 - 300mm Envelope
 - 600mm Envelope
 - Wheel Envelope

Design Vehicle(s)

B99 Vehicle (Realistic min radius) (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: 6.250m

B	14/08/25	AS	SO	SO
A	13/09/24	JW	CL	CL

For information

Issue	Date	By	Chkd	Appd

ARUP

Arup, Level 5, 151 Clarence St
 Sydney, NSW, 2000
 Tel +61(02)9320 9320 Fax +61(02)9320 9321
 www.arup.com.au

Client
Health Infrastructure NSW

Job Title
Rouse Hill Hospital

Drawing Title
**B99 Turning Paths
 Ground Floor**

Scale at A3
1:500

Discipline
Transport

Drawing Status
Draft

Job No 286539-00	Drawing No SKT001	Issue B
----------------------------	-----------------------------	-------------------

Appendix B

SIDRA Traffic Modelling Results

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2039 Future (+10 Years) with Hospital PM)]

Network: N101 [2039 Future with Hospital PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Caddies Boulevard (S)															
1	L2	All MCs	561	3.5	561	3.5	0.688	25.5	LOS B	19.6	141.0	0.85	0.84	0.85	21.4
2	T1	All MCs	286	2.0	286	2.0	0.673	35.6	LOS C	11.9	84.4	0.97	0.83	0.99	30.5
3	R2	All MCs	130	4.1	130	4.1	*0.824	55.3	LOS D	6.4	46.4	1.00	0.97	1.33	28.4
Approach			977	3.2	977	3.2	0.824	32.5	LOS C	19.6	141.0	0.91	0.85	0.96	26.6
East: Commercial Road (E)															
4	L2	All MCs	419	1.6	419	1.6	0.766	34.1	LOS C	20.1	143.0	0.92	0.88	0.97	35.1
5	T1	All MCs	436	4.1	436	4.1	0.766	42.0	LOS C	20.1	143.0	0.97	0.91	1.06	30.9
Approach			855	2.9	855	2.9	0.766	38.1	LOS C	20.1	143.0	0.95	0.89	1.02	31.4
North: Greenhills Drive (N)															
7	L2	All MCs	212	2.0	212	2.0	0.338	26.8	LOS B	7.0	50.0	0.76	0.76	0.76	38.5
8	T1	All MCs	141	2.0	141	2.0	*0.338	34.5	LOS C	7.0	50.0	0.89	0.73	0.89	31.3
9	R2	All MCs	84	2.0	84	2.0	0.694	53.7	LOS D	4.0	28.5	1.00	0.85	1.17	20.5
Approach			437	2.0	437	2.0	0.694	34.5	LOS C	7.0	50.0	0.85	0.77	0.88	33.5
West: Commercial Road (W)															
10	L2	All MCs	60	1.8	59	1.8	0.433	28.0	LOS B	7.9	55.4	0.88	0.75	0.88	30.8
11	T1	All MCs	615	0.3	599	0.3	*0.895	43.5	LOS D	22.7	159.3	0.97	1.02	1.18	31.5
12	R2	All MCs	303	0.7	295	0.7	*0.848	50.3	LOS D	14.3	100.9	1.00	0.99	1.25	20.2
Approach			978	0.5	953	0.5	0.895	44.6	LOS D	22.7	159.3	0.97	0.99	1.18	28.5
All Vehicles			3248	2.1	3222	2.1	0.895	37.8	LOS C	22.7	159.3	0.93	0.89	1.03	29.7

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:16:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2024 Existing Base AM)]

Network: N101 [2024 AM
Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Windsor Road (S)															
2	T1	All MCs	1522	9.6	1522	9.6	0.505	2.7	LOS A	10.5	79.5	0.22	0.21	0.22	68.8
3	R2	All MCs	369	1.1	369	1.1	*0.829	73.9	LOS F	13.1	92.6	1.00	0.89	1.15	14.8
Approach			1892	8.0	1892	8.0	0.829	16.6	LOS B	13.1	92.6	0.38	0.34	0.40	40.2
East: Commercial Road (E)															
4	L2	All MCs	359	3.8	359	3.8	0.719	38.0	LOS C	20.2	146.3	0.94	1.04	0.94	10.8
6	R2	All MCs	373	8.8	373	8.8	*0.835	78.6	LOS F	15.4	116.1	1.00	1.03	1.20	5.0
Approach			732	6.3	732	6.3	0.835	58.7	LOS E	20.2	146.3	0.97	1.04	1.07	6.3
North: Windsor Road (N)															
7	L2	All MCs	228	3.7	228	3.7	0.162	14.9	LOS B	1.5	11.0	0.14	0.65	0.14	57.3
8	T1	All MCs	1787	8.2	1787	8.2	*0.847	21.2	LOS B	41.3	305.5	0.69	0.65	0.70	49.6
Approach			2016	7.7	2016	7.7	0.847	20.4	LOS B	41.3	305.5	0.63	0.65	0.64	41.1
All Vehicles			4639	7.6	4639	7.6	0.847	24.9	LOS B	41.3	305.5	0.58	0.58	0.61	32.1

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Windsor Road (S)											
P1	Full	22	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	27	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
All Pedestrians		49	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:22

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2024 Existing Base AM)]

Network: N101 [2024 AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
East: Commercial Road (E)															
5	T1	All MCs	699	6.2	699	6.2	0.313	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.7
6	R2	All MCs	16	6.7	16	6.7	0.029	8.5	LOS A	0.1	0.7	0.46	0.66	0.46	23.1
Approach			715	6.2	715	6.2	0.313	0.2	NA	0.1	0.7	0.01	0.01	0.01	48.0
North: The Fiddler Access (N)															
7	L2	All MCs	7	14.3	7	14.3	0.008	3.2	LOS A	0.0	0.2	0.34	0.38	0.34	20.0
9	R2	All MCs	19	5.6	19	5.6	0.275	40.4	LOS C	0.6	4.1	0.90	0.97	0.99	4.5
Approach			26	8.0	26	8.0	0.275	30.0	LOS C	0.6	4.1	0.75	0.81	0.81	5.7
West: Commercial Road (W)															
10	L2	All MCs	33	6.5	33	6.5	0.019	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.1
11	T1	All MCs	551	2.3	551	2.3	0.144	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			583	2.5	583	2.5	0.144	0.3	NA	0.0	0.0	0.00	0.03	0.00	47.7
All Vehicles			1324	4.6	1324	4.6	0.313	0.8	NA	0.6	4.1	0.02	0.04	0.02	43.9

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:22

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. EXISTING_Commercial Road / Health Co Access (Site Folder: 2024 Existing Base AM)]

Network: N101 [2024 AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	652	6.8	652	6.8	0.217	1.8	LOS A	3.0	22.5	0.23	0.20	0.23	45.1
6	R2	All MCs	105	0.0	105	0.0	*0.145	7.2	LOS A	1.1	7.7	0.32	0.61	0.32	33.4
Approach			757	5.8	757	5.8	0.217	2.6	LOS A	3.0	22.5	0.24	0.26	0.24	42.5
North: Health Co Access (N)															
7	L2	All MCs	32	0.0	32	0.0	0.029	1.8	LOS A	0.1	0.8	0.08	0.28	0.08	25.8
9	R2	All MCs	73	1.4	73	1.4	*0.149	39.8	LOS C	1.5	10.3	0.92	0.70	0.92	6.5
Approach			104	1.0	104	1.0	0.149	28.3	LOS B	1.5	10.3	0.67	0.57	0.67	8.5
West: Commercial Road (W)															
10	L2	All MCs	144	0.7	144	0.7	0.108	5.1	LOS A	0.5	3.3	0.14	0.54	0.14	29.1
11	T1	All MCs	428	2.7	428	2.7	*0.154	3.8	LOS A	2.8	19.8	0.32	0.27	0.32	32.1
Approach			573	2.2	573	2.2	0.154	4.1	LOS A	2.8	19.8	0.28	0.34	0.28	30.9
All Vehicles			1434	4.0	1434	4.0	0.217	5.1	LOS A	3.0	22.5	0.29	0.31	0.29	34.2

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
East: Commercial Road (E)											
P2	Full	6	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
North: Health Co Access (N)											
P3	Full	2	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
West: Commercial Road (W)											
P4	Full	4	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
All Pedestrians		13	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:22

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA2 [4. EXISTING Commercial Road / Caddies Boulevard (Site Folder: 2024 Existing Base AM)]

Network: N101 [2024 AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
South: Caddies Boulevard (S)															
1	L2	All MCs	182	12.1	182	12.1	0.411	13.6	LOS A	2.0	15.1	0.69	0.95	0.95	29.3
3	R2	All MCs	151	5.6	151	5.6	0.902	65.7	LOS E	5.7	42.1	0.98	1.54	2.87	26.3
Approach			333	9.2	333	9.2	0.902	37.2	LOS C	5.7	42.1	0.82	1.21	1.82	26.9
East: Commercial Road (E)															
4	L2	All MCs	436	0.7	436	0.7	0.236	4.5	LOS A	0.0	0.0	0.00	0.47	0.00	46.5
5	T1	All MCs	545	3.7	545	3.7	0.290	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			981	2.4	981	2.4	0.290	2.1	NA	0.0	0.0	0.00	0.21	0.00	48.1
West: Commercial Road (W)															
11	T1	All MCs	365	3.2	365	3.2	0.127	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
12	R2	All MCs	106	0.0	106	0.0	0.106	6.9	LOS A	0.4	3.0	0.51	0.68	0.51	40.1
Approach			472	2.5	472	2.5	0.127	1.8	NA	0.4	3.0	0.12	0.15	0.12	48.5
All Vehicles			1785	3.7	1785	3.7	0.902	8.6	NA	5.7	42.1	0.18	0.38	0.37	43.5

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:22

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2024 Existing Base PM)]

Network: N101 [2024 PM
Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Windsor Road (S)															
2	T1	All MCs	1601	4.0	1601	4.0	0.559	10.3	LOS A	25.5	185.0	0.51	0.47	0.51	49.8
3	R2	All MCs	406	0.3	406	0.3	*0.960	98.0	LOS F	16.1	113.0	1.00	0.98	1.31	11.7
Approach			2007	3.3	2007	3.3	0.960	28.0	LOS B	25.5	185.0	0.61	0.57	0.67	29.9
East: Commercial Road (E)															
4	L2	All MCs	322	4.6	322	4.6	0.493	29.0	LOS C	14.0	101.9	0.73	0.89	0.73	12.7
6	R2	All MCs	438	4.1	438	4.1	*0.617	59.7	LOS E	15.1	109.2	0.96	0.87	0.96	6.4
Approach			760	4.3	760	4.3	0.617	46.6	LOS D	15.1	109.2	0.86	0.88	0.86	7.6
North: Windsor Road (N)															
7	L2	All MCs	274	0.4	274	0.4	0.193	33.3	LOS C	5.6	39.4	0.42	0.61	0.42	52.1
8	T1	All MCs	1686	4.9	1686	4.9	*0.782	47.0	LOS D	50.2	362.3	0.94	0.80	0.94	30.3
Approach			1960	4.3	1960	4.3	0.782	45.1	LOS D	50.2	362.3	0.86	0.78	0.86	25.7
All Vehicles			4727	3.9	4727	3.9	0.960	38.1	LOS C	50.2	362.3	0.75	0.71	0.78	24.3

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Windsor Road (S)											
P1	Full	18	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	40	64.2	LOS F	0.2	0.2	0.96	0.96	246.1	200.0	0.81
All Pedestrians		58	64.2	LOS F	0.2	0.2	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:08

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2024 Existing Base PM)]

Network: N101 [2024 PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
East: Commercial Road (E)															
5	T1	All MCs	679	4.8	679	4.8	0.227	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
6	R2	All MCs	97	0.0	97	0.0	0.180	9.2	LOS A	0.6	4.2	0.53	0.77	0.53	22.5
Approach			776	4.2	776	4.2	0.227	1.2	NA	0.6	4.2	0.07	0.10	0.07	41.2
North: The Fiddler Access (N)															
7	L2	All MCs	67	0.0	67	0.0	0.064	3.1	LOS A	0.3	1.9	0.34	0.42	0.34	20.0
9	R2	All MCs	66	1.6	66	1.6	0.771	56.4	LOS D	2.4	16.8	0.96	1.27	1.67	3.4
Approach			134	0.8	134	0.8	0.771	29.5	LOS C	2.4	16.8	0.65	0.84	1.00	5.7
West: Commercial Road (W)															
10	L2	All MCs	143	0.0	143	0.0	0.077	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.3
11	T1	All MCs	538	0.4	538	0.4	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			681	0.3	681	0.3	0.138	1.0	NA	0.0	0.0	0.00	0.11	0.00	42.9
All Vehicles			1591	2.3	1591	2.3	0.771	3.5	NA	2.4	16.8	0.09	0.16	0.12	32.0

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:08

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full -

TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. EXISTING_Commercial Road / Health Co Access (Site Folder: 2024 Existing Base PM)]

Network: N101 [2024 PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec		m					km/h
East: Commercial Road (E)															
5	T1	All MCs	624	5.1	624	5.1	0.205	1.8	LOS A	2.9	21.0	0.23	0.20	0.23	45.2
6	R2	All MCs	106	0.0	106	0.0	*0.153	7.3	LOS A	1.1	7.8	0.33	0.61	0.33	33.4
Approach			731	4.3	731	4.3	0.205	2.6	LOS A	2.9	21.0	0.24	0.26	0.24	42.5
North: Health Co Access (N)															
7	L2	All MCs	105	0.0	105	0.0	0.102	1.8	LOS A	0.4	2.7	0.09	0.29	0.09	25.7
9	R2	All MCs	154	0.7	154	0.7	*0.313	41.0	LOS C	3.2	22.3	0.94	0.74	0.94	6.4
Approach			259	0.4	259	0.4	0.313	25.1	LOS B	3.2	22.3	0.60	0.56	0.60	9.2
West: Commercial Road (W)															
10	L2	All MCs	115	0.0	115	0.0	0.086	5.1	LOS A	0.4	2.6	0.14	0.53	0.14	29.2
11	T1	All MCs	480	0.4	480	0.4	*0.169	3.8	LOS A	3.1	22.1	0.32	0.28	0.32	32.0
Approach			595	0.4	595	0.4	0.169	4.1	LOS A	3.1	22.1	0.29	0.33	0.29	31.1
All Vehicles			1584	2.2	1584	2.2	0.313	6.8	LOS A	3.2	22.3	0.32	0.33	0.32	30.1

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
		ped/h	sec			m		sec	m	m/sec	
East: Commercial Road (E)											
P2	Full	7	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
North: Health Co Access (N)											
P3	Full	5	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
West: Commercial Road (W)											
P4	Full	4	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
All Pedestrians		17	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:08

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA2 [4. EXISTING Commercial Road / Caddies Boulevard (Site Folder: 2024 Existing Base PM)]

Network: N101 [2024 PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
South: Caddies Boulevard (S)															
1	L2	All MCs	302	4.2	302	4.2	0.500	11.3	LOS A	3.1	22.7	0.65	0.93	0.98	31.4
3	R2	All MCs	245	6.0	245	6.0	1.000	90.6	LOS F	13.9	102.2	1.00	2.20	4.81	22.4
Approach			547	5.0	547	5.0	1.000	46.8	LOS D	13.9	102.2	0.81	1.50	2.69	24.0
East: Commercial Road (E)															
4	L2	All MCs	320	1.6	320	1.6	0.175	4.5	LOS A	0.0	0.0	0.00	0.47	0.00	46.5
5	T1	All MCs	427	4.2	427	4.2	0.228	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			747	3.1	747	3.1	0.228	2.0	NA	0.0	0.0	0.00	0.20	0.00	48.1
West: Commercial Road (W)															
11	T1	All MCs	482	0.2	482	0.2	0.163	0.5	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
12	R2	All MCs	126	0.0	126	0.0	0.108	6.2	LOS A	0.5	3.2	0.46	0.63	0.46	40.5
Approach			608	0.2	608	0.2	0.163	1.7	NA	0.5	3.2	0.10	0.13	0.10	48.7
All Vehicles			1903	2.7	1903	2.7	1.000	14.8	NA	13.9	102.2	0.26	0.55	0.80	39.7

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.

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:30:08

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full -

TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2029 Future (Hospital Opening Year) Base AM)]

Network: N101 [2029 Future
Base AM Peak (Network Folder:
SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1670	9.3	1670	9.3	0.758	9.0	LOS A	34.8	263.1	0.55	0.52	0.55	52.1
3	R2	All MCs	419	1.2	419	1.2	*0.841	80.1	LOS F	15.2	107.1	1.00	0.92	1.15	13.9
Approach			2089	7.7	2089	7.7	0.841	23.2	LOS B	34.8	263.1	0.64	0.60	0.67	33.5
East: Commercial Road (E)															
4	L2	All MCs	411	3.5	411	3.5	0.636	37.0	LOS C	20.4	146.9	0.86	0.84	0.86	12.0
6	R2	All MCs	430	8.0	430	8.0	*0.912	89.0	LOS F	19.6	146.9	1.00	1.07	1.34	4.6
Approach			841	5.8	841	5.8	0.912	63.6	LOS E	20.4	146.9	0.93	0.96	1.11	5.8
North: Windsor Road (N)															
7	L2	All MCs	269	3.5	241	3.5	0.176	29.6	LOS C	2.2	16.0	0.19	0.66	0.19	56.2
8	T1	All MCs	1945	7.9	1749	8.1	*0.847	34.1	LOS C	45.5	336.1	0.80	0.74	0.81	41.1
Approach			2214	7.4	1990	7.5	0.847	33.5	LOS C	45.5	336.1	0.73	0.73	0.73	31.3
All Vehicles			5144	7.2	4920	7.6	0.912	34.3	LOS C	45.5	336.1	0.73	0.71	0.77	26.0

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Windsor Road (S)											
P1	Full	22	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	27	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
All Pedestrians		49	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:29:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2029 Future (Hospital Opening Year) Base AM)]

Network: N101 [2029 Future Base AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	809	5.9	809	5.9	0.291	0.0	LOS A	1.4	10.7	0.00	0.00	0.00	49.8
6	R2	All MCs	17	6.7	17	6.7	0.034	9.1	LOS A	0.1	0.8	0.50	0.68	0.50	22.5
Approach			826	5.9	826	5.9	0.291	0.2	NA	1.4	10.7	0.01	0.01	0.01	48.0
North: The Fiddler Access (N)															
7	L2	All MCs	8	14.3	8	14.3	0.009	3.4	LOS A	0.0	0.3	0.37	0.40	0.37	19.8
9	R2	All MCs	20	5.6	20	5.6	0.660	74.4	LOS F	0.9	6.8	0.97	1.08	1.21	2.6
Approach			28	8.0	28	8.0	0.660	54.6	LOS D	0.9	6.8	0.80	0.89	0.98	3.4
West: Commercial Road (W)															
10	L2	All MCs	35	6.5	34	6.3	0.019	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.1
11	T1	All MCs	637	2.3	612	2.2	0.160	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			672	2.5	645	2.5	0.160	0.2	NA	0.0	0.0	0.00	0.03	0.00	47.8
All Vehicles			1526	4.4	1499	4.5	0.660	1.3	NA	1.4	10.7	0.02	0.04	0.02	41.7

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.

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:29:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. EXISTING_Commercial Road / Health Co Access (Site Folder: 2029 Future (Hospital Opening Year) Base AM)]

Network: N101 [2029 Future Base AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	758	6.4	758	6.4	0.239	1.1	LOS A	2.7	20.2	0.18	0.16	0.18	47.0
6	R2	All MCs	113	0.0	113	0.0	*0.142	6.3	LOS A	1.0	6.7	0.28	0.60	0.28	34.3
Approach			871	5.6	871	5.6	0.239	1.7	LOS A	2.7	20.2	0.19	0.22	0.19	44.4
North: Health Co Access (N)															
7	L2	All MCs	34	0.0	34	0.0	0.032	1.8	LOS A	0.1	0.8	0.08	0.29	0.08	25.8
9	R2	All MCs	78	1.4	78	1.4	*0.241	44.9	LOS D	1.7	12.0	0.97	0.72	0.97	5.9
Approach			112	1.0	112	1.0	0.241	31.8	LOS C	1.7	12.0	0.70	0.59	0.70	7.8
West: Commercial Road (W)															
10	L2	All MCs	154	0.7	149	0.7	0.112	5.1	LOS A	0.5	3.4	0.14	0.54	0.14	29.1
11	T1	All MCs	506	2.6	487	2.6	*0.183	4.9	LOS A	3.6	25.8	0.37	0.31	0.37	29.1
Approach			661	2.2	635	2.2	0.183	5.0	LOS A	3.6	25.8	0.31	0.37	0.31	29.1
All Vehicles			1644	3.9	1619	4.0	0.241	5.1	LOS A	3.6	25.8	0.28	0.30	0.28	34.3

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
East: Commercial Road (E)											
P2	Full	6	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
North: Health Co Access (N)											
P3	Full	2	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
West: Commercial Road (W)											
P4	Full	4	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
All Pedestrians		13	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:29:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2029 Future (Hospital Opening Year) Base AM)]

Network: N101 [2029 Future Base AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Caddies Boulevard (S)															
1	L2	All MCs	278	10.1	278	10.1	0.404	24.9	LOS B	8.7	65.8	0.75	0.77	0.75	21.8
2	T1	All MCs	97	2.0	97	2.0	0.207	29.4	LOS C	3.4	24.3	0.84	0.66	0.84	32.7
3	R2	All MCs	132	4.6	132	4.6	*0.744	51.7	LOS D	6.2	45.0	1.00	0.90	1.19	29.2
Approach			507	7.1	507	7.1	0.744	32.7	LOS C	8.7	65.8	0.83	0.79	0.88	27.5
East: Commercial Road (E)															
4	L2	All MCs	364	1.1	364	1.1	0.745	30.5	LOS C	19.4	137.7	0.91	0.85	0.94	35.9
5	T1	All MCs	497	3.8	497	3.8	*0.745	39.6	LOS C	19.4	137.7	0.95	0.88	1.01	31.7
Approach			861	2.7	861	2.7	0.745	35.7	LOS C	19.4	137.7	0.93	0.87	0.98	32.0
North: Greenhills Drive (N)															
7	L2	All MCs	86	2.0	86	2.0	0.297	28.1	LOS B	5.1	36.5	0.84	0.73	0.84	36.8
8	T1	All MCs	197	2.0	197	2.0	*0.297	32.3	LOS C	5.1	36.5	0.85	0.71	0.85	32.3
9	R2	All MCs	66	2.0	66	2.0	0.361	47.5	LOS D	2.8	20.2	0.97	0.75	0.97	22.0
Approach			349	2.0	349	2.0	0.361	34.1	LOS C	5.1	36.5	0.87	0.72	0.87	32.0
West: Commercial Road (W)															
10	L2	All MCs	32	2.0	31	2.0	0.245	23.9	LOS B	4.2	30.2	0.82	0.68	0.82	31.8
11	T1	All MCs	359	3.2	347	3.1	0.505	30.6	LOS C	9.6	69.1	0.88	0.74	0.88	35.4
12	R2	All MCs	161	0.6	156	0.6	*0.690	48.4	LOS D	7.0	49.4	1.00	0.86	1.10	20.6
Approach			552	2.3	533	2.3	0.690	35.4	LOS C	9.6	69.1	0.91	0.77	0.94	31.4
All Vehicles			2269	3.5	2250	3.5	0.745	34.7	LOS C	19.4	137.7	0.90	0.80	0.93	31.1

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:29:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2029 Future (Hospital Opening Year) Base PM)]

Network: N101 [2029 Future
Base PM Peak (Network Folder:
SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1766	3.9	1766	3.9	0.572	1.3	LOS A	8.8	63.6	0.13	0.12	0.13	74.4
3	R2	All MCs	457	0.3	457	0.3	*0.823	79.3	LOS F	16.2	113.6	1.00	0.90	1.08	14.0
Approach			2223	3.1	2223	3.1	0.823	17.3	LOS B	16.2	113.6	0.31	0.28	0.32	39.4
East: Commercial Road (E)															
4	L2	All MCs	362	4.2	346	4.4	0.569	37.3	LOS C	16.6	120.3	0.81	1.08	0.81	11.2
6	R2	All MCs	494	3.8	471	3.9	*0.901	84.2	LOS F	20.3	146.9	1.00	1.09	1.29	4.7
Approach			856	4.0	816	4.1	0.901	64.3	LOS E	20.3	146.9	0.92	1.09	1.08	5.8
North: Windsor Road (N)															
7	L2	All MCs	351	0.5	351	0.5	0.252	31.2	LOS C	8.3	58.7	0.47	0.61	0.47	50.5
8	T1	All MCs	1839	4.7	1839	4.7	*0.828	49.3	LOS D	56.9	409.7	0.98	0.83	0.98	29.0
Approach			2190	4.0	2190	4.0	0.828	46.4	LOS D	56.9	409.7	0.90	0.80	0.90	25.2
All Vehicles			5269	3.6	5229	3.7	0.901	36.8	LOS C	56.9	409.7	0.65	0.62	0.68	25.0

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Windsor Road (S)											
P1	Full	18	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	40	64.2	LOS F	0.2	0.2	0.96	0.96	246.1	200.0	0.81
All Pedestrians		58	64.2	LOS F	0.2	0.2	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:28:51

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2029 Future (Hospital Opening Year) Base PM)]

Network: N101 [2029 Future Base PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	779	4.7	779	4.7	0.248	0.0	LOS A	0.9	6.5	0.00	0.00	0.00	49.9
6	R2	All MCs	105	0.0	105	0.0	0.225	10.7	LOS A	0.8	5.3	0.61	0.82	0.63	21.0
Approach			884	4.1	884	4.1	0.248	1.3	NA	0.9	6.5	0.07	0.10	0.07	40.6
North: The Fiddler Access (N)															
7	L2	All MCs	75	0.0	75	0.0	0.075	3.4	LOS A	0.3	2.2	0.38	0.45	0.38	19.6
9	R2	All MCs	72	1.6	72	1.6	2.278	1215.5	LOS F	26.6	188.8	1.00	4.75	10.34	0.2
Approach			147	0.8	147	0.8	2.278	596.3	LOS F	26.6	188.8	0.68	2.55	5.25	0.3
West: Commercial Road (W)															
10	L2	All MCs	160	0.0	160	0.0	0.086	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.3
11	T1	All MCs	649	0.5	649	0.5	0.167	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			809	0.4	809	0.4	0.167	0.9	NA	0.0	0.0	0.00	0.10	0.00	43.3
All Vehicles			1840	2.2	1840	2.2	2.278	48.8	NA	26.6	188.8	0.09	0.30	0.46	6.3

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:28:51

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. EXISTING_Commercial Road / Health Co Access (Site Folder: 2029 Future (Hospital Opening Year) Base PM)]

Network: N101 [2029 Future Base PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	719	4.9	719	4.9	0.252	3.2	LOS A	4.5	32.7	0.31	0.27	0.31	42.0
6	R2	All MCs	116	0.0	116	0.0	*0.185	9.9	LOS A	1.8	12.5	0.44	0.65	0.44	30.9
Approach			835	4.2	835	4.2	0.252	4.1	LOS A	4.5	32.7	0.33	0.32	0.33	39.6
North: Health Co Access (N)															
7	L2	All MCs	114	0.0	114	0.0	0.117	2.1	LOS A	0.6	4.3	0.13	0.32	0.13	25.3
9	R2	All MCs	167	0.7	167	0.7	*0.240	35.7	LOS C	3.2	22.4	0.89	0.72	0.89	7.1
Approach			282	0.4	282	0.4	0.240	22.1	LOS B	3.2	22.4	0.58	0.56	0.58	10.1
West: Commercial Road (W)															
10	L2	All MCs	128	0.0	128	0.0	0.096	5.3	LOS A	0.5	3.3	0.17	0.55	0.17	29.0
11	T1	All MCs	584	0.6	584	0.6	*0.242	8.0	LOS A	5.6	39.5	0.47	0.41	0.47	23.0
Approach			712	0.5	712	0.5	0.242	7.5	LOS A	5.6	39.5	0.42	0.43	0.42	24.4
All Vehicles			1829	2.2	1829	2.2	0.252	8.2	LOS A	5.6	39.5	0.40	0.40	0.40	28.2

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
East: Commercial Road (E)											
P2	Full	7	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
North: Health Co Access (N)											
P3	Full	5	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
West: Commercial Road (W)											
P4	Full	4	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
All Pedestrians		17	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:28:51

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2029 Future (Hospital Opening Year) Base PM)]

Network: N101 [2029 Future Base PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]			v/c	sec			[Veh. veh	[Dist] m			
			veh/h	% veh/h	veh/h	%									
South: Caddies Boulevard (S)															
1	L2	All MCs	375	3.9	375	3.9	0.485	24.3	LOS B	11.8	85.6	0.77	0.79	0.77	22.0
2	T1	All MCs	240	2.0	240	2.0	*0.513	32.2	LOS C	9.3	65.9	0.91	0.76	0.91	31.7
3	R2	All MCs	85	3.8	85	3.8	*0.613	51.6	LOS D	3.9	28.4	1.00	0.81	1.08	29.2
Approach			700	3.3	700	3.3	0.613	30.3	LOS C	11.8	85.6	0.85	0.78	0.86	27.8
East: Commercial Road (E)															
4	L2	All MCs	319	1.8	319	1.8	0.574	24.6	LOS B	14.5	103.3	0.82	0.79	0.82	36.8
5	T1	All MCs	393	4.4	393	4.4	0.574	31.7	LOS C	14.5	103.3	0.89	0.78	0.89	32.9
Approach			712	3.2	712	3.2	0.574	28.5	LOS C	14.5	103.3	0.86	0.78	0.86	34.5
North: Greenhills Drive (N)															
7	L2	All MCs	180	2.0	180	2.0	0.228	22.8	LOS B	4.9	35.2	0.67	0.73	0.67	39.8
8	T1	All MCs	101	2.0	101	2.0	0.216	29.5	LOS C	3.6	25.5	0.84	0.66	0.84	32.7
9	R2	All MCs	66	2.0	66	2.0	0.465	50.3	LOS D	3.0	21.1	1.00	0.76	1.00	21.3
Approach			347	2.0	347	2.0	0.465	30.0	LOS C	4.9	35.2	0.78	0.72	0.78	35.1
West: Commercial Road (W)															
10	L2	All MCs	47	2.0	47	2.0	0.340	25.9	LOS B	6.2	43.5	0.84	0.72	0.84	31.4
11	T1	All MCs	492	0.2	492	0.2	*0.702	32.8	LOS C	14.9	104.3	0.93	0.81	0.95	34.6
12	R2	All MCs	189	0.5	189	0.5	*0.707	47.0	LOS D	8.4	59.4	1.00	0.87	1.10	20.9
Approach			728	0.4	728	0.4	0.707	36.0	LOS C	14.9	104.3	0.94	0.82	0.98	31.4
All Vehicles			2487	2.2	2487	2.2	0.707	31.4	LOS C	14.9	104.3	0.87	0.78	0.88	32.2

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	[Dist] m					
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:28:51

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2039 Future (+10 Years) Base AM)]

Network: N101 [2039 Future
Base AM Peak (Network Folder:
SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1865	9.3	1778	9.4	0.897	17.1	LOS B	50.7	383.6	0.72	0.72	0.77	39.6
3	R2	All MCs	517	1.2	492	1.2	* 0.895	82.2	LOS F	18.8	133.0	1.00	0.97	1.27	13.6
Approach			2382	7.5	2270	7.6	0.897	31.2	LOS C	50.7	383.6	0.78	0.77	0.88	28.0
East: Commercial Road (E)															
4	L2	All MCs	407	3.6	406	3.6	0.635	42.7	LOS D	20.4	146.9	0.86	1.07	0.86	12.2
6	R2	All MCs	519	7.1	518	7.1	* 1.241	306.8	LOS F	19.8	146.9	1.00	1.77	2.45	1.4
Approach			925	5.6	924	5.6	1.241	190.8	LOS F	20.4	146.9	0.94	1.46	1.75	2.1
North: Windsor Road (N)															
7	L2	All MCs	319	3.2	268	3.3	0.198	27.4	LOS B	2.6	18.4	0.18	0.66	0.18	55.9
8	T1	All MCs	2207	7.7	1859	8.0	* 0.900	32.0	LOS C	47.5	351.4	0.76	0.73	0.80	44.1
Approach			2526	7.1	2127	7.4	0.900	31.4	LOS C	47.5	351.4	0.69	0.72	0.72	32.6
All Vehicles			5833	7.0	5321	7.7	1.241	59.0	LOS E	50.7	383.6	0.77	0.87	0.97	17.5

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.

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

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Windsor Road (S)											
P1	Full	22	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	27	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
All Pedestrians		49	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:27:55

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2039 Future (+10 Years) Base AM)]
 Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2039 Future Base AM Peak (Network Folder: SSDA)]

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	893	5.6	891	5.6	0.241	0.0	LOS A	16.7	122.4	0.00	0.00	0.00	49.9
6	R2	All MCs	17	6.7	17	6.7	0.039	10.2	LOS A	0.1	0.9	0.55	0.73	0.55	21.3
Approach			910	5.6	908	5.6	0.241	0.2	NA	16.7	122.4	0.01	0.01	0.01	48.1
North: The Fiddler Access (N)															
7	L2	All MCs	8	14.3	8	14.3	0.010	3.7	LOS A	0.0	0.3	0.40	0.42	0.40	19.4
9	R2	All MCs	21	5.6	21	5.6	0.899	127.0	LOS F	1.0	7.6	0.99	1.24	1.61	1.6
Approach			29	8.1	29	8.1	0.899	91.6	LOS F	1.0	7.6	0.82	1.00	1.26	2.1
West: Commercial Road (W)															
10	L2	All MCs	37	6.5	34	6.5	0.019	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.1
11	T1	All MCs	783	2.2	712	2.3	0.186	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			820	2.4	746	2.4	0.186	0.2	NA	0.0	0.0	0.00	0.02	0.00	48.1
All Vehicles			1759	4.2	1683	4.3	0.899	1.8	NA	16.7	122.4	0.02	0.04	0.03	39.1

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.

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:27:55

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. EXISTING_Commercial Road / Health Co Access (Site Folder: 2039 Future (+10 Years) Base AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2039 Future Base AM Peak (Network Folder: SSDA)]

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	841	6.1	839	6.1	*0.450	1.4	LOS A	5.8	42.7	0.24	0.21	0.24	46.2
6	R2	All MCs	115	0.0	115	0.0	0.136	7.1	LOS A	1.2	8.4	0.32	0.61	0.32	33.5
Approach			956	5.3	954	5.3	0.450	2.1	LOS A	5.8	42.7	0.25	0.26	0.25	43.7
North: Health Co Access (N)															
7	L2	All MCs	35	0.0	35	0.0	0.033	2.1	LOS A	0.2	1.2	0.12	0.30	0.12	25.4
9	R2	All MCs	80	1.4	80	1.4	*0.419	47.6	LOS D	2.1	14.7	0.98	0.74	0.98	5.7
Approach			114	1.0	114	1.0	0.419	33.8	LOS C	2.1	14.7	0.72	0.61	0.72	7.4
West: Commercial Road (W)															
10	L2	All MCs	164	0.7	150	0.7	0.112	5.1	LOS A	0.5	3.4	0.14	0.54	0.14	29.1
11	T1	All MCs	644	2.5	588	2.6	0.267	10.1	LOS A	6.4	45.5	0.53	0.46	0.53	20.2
Approach			808	2.1	737	2.2	0.267	9.1	LOS A	6.4	45.5	0.45	0.47	0.45	22.3
All Vehicles			1878	3.7	1806	3.8	0.450	7.0	LOS A	6.4	45.5	0.36	0.37	0.36	31.2

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
East: Commercial Road (E)											
P2	Full	6	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
North: Health Co Access (N)											
P3	Full	2	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
West: Commercial Road (W)											
P4	Full	4	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
All Pedestrians		13	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:27:55

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2039 Future (+10 Years) Base AM)]

Network: N101 [2039 Future Base AM Peak (Network Folder: SSSA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Caddies Boulevard (S)															
1	L2	All MCs	402	8.9	402	8.9	0.534	24.3	LOS B	12.9	97.3	0.78	0.80	0.78	22.1
2	T1	All MCs	121	2.0	121	2.0	0.260	29.9	LOS C	4.3	30.9	0.85	0.68	0.85	32.5
3	R2	All MCs	174	4.6	174	4.6	*0.886	58.3	LOS E	9.0	65.2	1.00	1.06	1.44	27.7
Approach			698	6.6	698	6.6	0.886	33.7	LOS C	12.9	97.3	0.85	0.84	0.96	26.8
East: Commercial Road (E)															
4	L2	All MCs	500	0.8	500	0.8	0.907	51.3	LOS D	31.8	225.0	1.00	1.05	1.27	30.8
5	T1	All MCs	463	3.9	463	3.9	*0.907	60.4	LOS E	31.8	225.0	1.00	1.14	1.36	26.6
Approach			963	2.3	963	2.3	0.907	55.7	LOS D	31.8	225.0	1.00	1.09	1.31	27.0
North: Greenhills Drive (N)															
7	L2	All MCs	103	2.0	103	2.0	0.475	30.3	LOS C	7.4	52.6	0.92	0.78	0.92	35.5
8	T1	All MCs	267	2.0	267	2.0	*0.475	38.0	LOS C	7.4	52.6	0.93	0.77	0.93	30.5
9	R2	All MCs	60	2.0	60	2.0	0.561	52.7	LOS D	2.8	19.9	1.00	0.78	1.06	20.8
Approach			431	2.0	431	2.0	0.561	38.2	LOS C	7.4	52.6	0.94	0.77	0.94	30.9
West: Commercial Road (W)															
10	L2	All MCs	86	2.0	79	2.0	0.243	27.7	LOS B	4.3	31.0	0.81	0.72	0.81	31.4
11	T1	All MCs	329	3.2	303	3.2	0.503	30.9	LOS C	9.6	68.7	0.88	0.75	0.88	35.2
12	R2	All MCs	278	1.1	255	1.1	*0.894	56.7	LOS E	13.2	93.3	1.00	1.07	1.39	18.8
Approach			693	2.2	637	2.2	0.894	40.9	LOS C	13.2	93.3	0.92	0.87	1.08	28.5
All Vehicles			2784	3.3	2728	3.4	0.907	43.9	LOS D	31.8	225.0	0.93	0.93	1.11	27.9

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec			sec	m	m/sec			
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:27:55

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2039 Future (+10 Years) Base PM)]

Network: N101 [2039 Future
Base PM Peak (Network Folder:
SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1962	3.8	1962	3.8	* 0.948	24.4	LOS B	62.7	453.1	0.66	0.74	0.79	32.6
3	R2	All MCs	527	0.4	527	0.4	0.831	79.7	LOS F	18.7	131.1	1.00	0.91	1.08	13.9
Approach			2489	3.1	2489	3.1	0.948	36.1	LOS C	62.7	453.1	0.73	0.77	0.85	25.4
East: Commercial Road (E)															
4	L2	All MCs	400	4.0	375	4.2	0.688	63.3	LOS E	19.6	142.4	0.88	0.85	0.88	12.2
6	R2	All MCs	666	3.1	624	3.3	* 2.264	1236.7	LOS F	20.4	146.9	1.00	2.85	4.62	0.3
Approach			1066	3.5	999	3.6	2.264	796.4	LOS F	20.4	146.9	0.96	2.10	3.22	0.5
North: Windsor Road (N)															
7	L2	All MCs	418	0.6	389	0.6	0.284	29.2	LOS C	9.4	66.1	0.46	0.64	0.46	49.9
8	T1	All MCs	2084	4.6	1941	4.7	0.829	25.6	LOS B	44.0	317.5	0.71	0.66	0.71	48.0
Approach			2502	3.9	2330	4.0	0.829	26.2	LOS B	44.0	317.5	0.67	0.66	0.67	36.1
All Vehicles			6057	3.5	5818	3.6	2.264	162.7	LOS F	62.7	453.1	0.75	0.95	1.19	7.4

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Windsor Road (S)											
P1	Full	18	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	40	64.2	LOS F	0.2	0.2	0.96	0.96	246.1	200.0	0.81
All Pedestrians		58	64.2	LOS F	0.2	0.2	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:24:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2039 Future (+10 Years) Base PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2039 Future Base PM Peak (Network Folder: SSDA)]

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	980	4.4	980	4.4	0.525	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.3
6	R2	All MCs	121	0.0	121	0.0	0.293	12.8	LOS A	1.1	7.4	0.68	0.88	0.78	19.2
Approach			1100	3.9	1100	3.9	0.525	1.5	NA	1.1	7.4	0.07	0.10	0.09	39.7
North: The Fiddler Access (N)															
7	L2	All MCs	85	0.0	85	0.0	0.088	3.7	LOS A	0.4	2.6	0.42	0.48	0.42	19.4
9	R2	All MCs	83	1.6	83	1.6	5.206	3890.0	LOS F	42.8	303.6	1.00	3.94	8.67	0.1
Approach			167	0.8	167	0.8	5.206	1924.7	LOS F	42.8	303.6	0.70	2.19	4.50	0.1
West: Commercial Road (W)															
10	L2	All MCs	180	0.0	174	0.0	0.094	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.3
11	T1	All MCs	767	0.6	743	0.6	0.192	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			946	0.5	917	0.5	0.192	0.9	NA	0.0	0.0	0.00	0.10	0.00	43.5
All Vehicles			2214	2.2	2185	2.2	5.206	148.5	NA	42.8	303.6	0.09	0.26	0.39	2.3

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:24:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. EXISTING_Commercial Road / Health Co Access (Site Folder: 2039 Future (+10 Years) Base PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2039 Future Base PM Peak (Network Folder: SSDA)]

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	911	4.6	911	4.6	0.310	2.8	LOS A	5.5	40.0	0.30	0.27	0.30	42.9
6	R2	All MCs	133	0.0	133	0.0	*0.219	9.4	LOS A	2.0	14.0	0.43	0.65	0.43	31.3
Approach			1044	4.0	1044	4.0	0.310	3.6	LOS A	5.5	40.0	0.32	0.32	0.32	40.5
North: Health Co Access (N)															
7	L2	All MCs	131	0.0	131	0.0	0.143	2.2	LOS A	0.7	5.1	0.14	0.32	0.14	25.2
9	R2	All MCs	192	0.7	192	0.7	*0.312	38.1	LOS C	3.8	26.8	0.92	0.74	0.92	6.8
Approach			323	0.4	323	0.4	0.312	23.5	LOS B	3.8	26.8	0.60	0.57	0.60	9.7
West: Commercial Road (W)															
10	L2	All MCs	144	0.0	140	0.0	0.108	5.4	LOS A	0.6	4.2	0.18	0.55	0.18	28.9
11	T1	All MCs	694	0.6	675	0.6	*0.275	7.8	LOS A	6.5	45.6	0.47	0.41	0.47	23.4
Approach			838	0.5	815	0.5	0.275	7.4	LOS A	6.5	45.6	0.42	0.44	0.42	24.7
All Vehicles			2205	2.2	2182	2.2	0.312	8.0	LOS A	6.5	45.6	0.40	0.40	0.40	28.8

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
East: Commercial Road (E)											
P2	Full	7	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
North: Health Co Access (N)											
P3	Full	5	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
West: Commercial Road (W)											
P4	Full	4	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90
All Pedestrians		17	39.2	LOS D	0.0	0.0	0.93	0.93	221.0	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:24:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2039 Future (+10 Years) Base PM)]

Network: N101 [2039 Future Base PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Caddies Boulevard (S)															
1	L2	All MCs	544	3.6	544	3.6	0.684	26.1	LOS B	19.1	137.9	0.86	0.84	0.86	21.1
2	T1	All MCs	286	2.0	286	2.0	0.641	34.2	LOS C	11.6	82.3	0.96	0.81	0.96	31.0
3	R2	All MCs	130	4.1	130	4.1	*0.732	51.4	LOS D	6.1	44.1	1.00	0.89	1.17	29.2
Approach			961	3.2	961	3.2	0.732	32.0	LOS C	19.1	137.9	0.91	0.84	0.93	26.9
East: Commercial Road (E)															
4	L2	All MCs	419	1.6	419	1.6	0.680	28.1	LOS B	17.6	125.0	0.86	0.82	0.86	36.6
5	T1	All MCs	418	4.2	418	4.2	0.680	36.4	LOS C	17.6	125.0	0.94	0.82	0.95	32.3
Approach			836	2.9	836	2.9	0.680	32.2	LOS C	17.6	125.0	0.90	0.82	0.90	33.4
North: Greenhills Drive (N)															
7	L2	All MCs	212	2.0	212	2.0	0.341	26.8	LOS B	7.0	49.8	0.76	0.76	0.76	38.4
8	T1	All MCs	141	2.0	141	2.0	*0.341	34.3	LOS C	7.0	49.8	0.89	0.73	0.89	31.2
9	R2	All MCs	81	2.0	81	2.0	0.667	53.3	LOS D	3.8	27.2	1.00	0.84	1.14	20.6
Approach			434	2.0	434	2.0	0.667	34.2	LOS C	7.0	49.8	0.85	0.76	0.87	33.6
West: Commercial Road (W)															
10	L2	All MCs	50	2.0	48	2.0	0.374	26.7	LOS B	6.9	48.3	0.85	0.72	0.85	31.3
11	T1	All MCs	556	0.2	544	0.2	*0.772	34.8	LOS C	17.3	121.4	0.95	0.86	1.01	34.0
12	R2	All MCs	250	0.7	244	0.7	*0.794	48.3	LOS D	11.3	79.9	1.00	0.94	1.18	20.6
Approach			855	0.5	836	0.5	0.794	38.3	LOS C	17.3	121.4	0.96	0.88	1.05	30.5
All Vehicles			3086	2.2	3066	2.2	0.794	34.1	LOS C	19.1	137.9	0.91	0.83	0.95	31.0

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:24:52

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
 (Site Folder: 2029 Future (Hospital Opening Year) with Hospital AM)]

Network: N101 [2029 Future with Hospital AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1670	9.3	1670	9.3	0.764	8.4	LOS A	34.0	256.8	0.54	0.51	0.54	53.2
3	R2	All MCs	494	1.3	493	1.3	*0.857	79.4	LOS F	17.9	126.9	1.00	0.93	1.15	14.0
Approach			2164	7.5	2164	7.5	0.857	24.6	LOS B	34.0	256.8	0.65	0.60	0.68	32.4
East: Commercial Road (E)															
4	L2	All MCs	422	3.5	422	3.5	0.603	26.8	LOS B	18.6	133.7	0.75	0.80	0.75	14.7
6	R2	All MCs	436	7.9	436	7.9	*0.906	85.4	LOS F	19.7	146.9	1.00	1.06	1.32	4.6
Approach			858	5.7	858	5.7	0.906	56.6	LOS E	19.7	146.9	0.88	0.94	1.04	6.5
North: Windsor Road (N)															
7	L2	All MCs	306	3.3	272	3.3	0.202	23.1	LOS B	2.9	21.2	0.21	0.66	0.21	55.3
8	T1	All MCs	1945	7.9	1731	8.1	*0.875	27.0	LOS B	37.9	279.7	0.67	0.64	0.70	48.9
Approach			2251	7.3	2002	7.4	0.875	26.5	LOS B	37.9	279.7	0.61	0.64	0.63	35.9
All Vehicles			5273	7.1	5023	7.5	0.906	30.8	LOS C	37.9	279.7	0.67	0.67	0.72	27.8

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Windsor Road (S)											
P1	Full	22	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	27	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
All Pedestrians		49	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:21:46

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2029 Future (Hospital Opening Year) with Hospital AM)]

Network: N101 [2029 Future with Hospital AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	826	5.8	826	5.8	0.412	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.6
6	R2	All MCs	17	6.7	17	6.7	0.038	10.2	LOS A	0.1	0.8	0.56	0.73	0.56	21.3
Approach			843	5.8	843	5.8	0.412	0.3	NA	0.1	0.8	0.01	0.01	0.01	47.7
North: The Fiddler Access (N)															
7	L2	All MCs	8	14.3	8	14.3	0.009	3.7	LOS A	0.0	0.3	0.40	0.42	0.40	19.4
9	R2	All MCs	20	5.6	20	5.6	0.487	51.2	LOS D	0.7	5.2	0.94	1.02	1.09	3.7
Approach			28	8.0	28	8.0	0.487	37.9	LOS C	0.7	5.2	0.79	0.85	0.90	4.7
West: Commercial Road (W)															
10	L2	All MCs	35	6.5	33	6.3	0.019	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.1
11	T1	All MCs	749	2.2	717	2.2	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			784	2.4	750	2.4	0.188	0.2	NA	0.0	0.0	0.00	0.02	0.00	48.1
All Vehicles			1655	4.2	1621	4.3	0.487	0.9	NA	0.7	5.2	0.02	0.03	0.02	43.6

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.

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:21:46

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. FUTURE Commercial Road / Main Hospital Road / Health Co Access (Site Folder: 2029 Future (Hospital Opening Year) with Hospital AM)]

Network: N101 [2029 Future with Hospital AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Main Hospital Road															
1	L2	All MCs	17	1.9	17	1.9	0.027	22.9	LOS B	0.4	3.2	0.64	0.66	0.64	11.8
2	T1	All MCs	32	0.0	32	0.0	*0.069	29.2	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
3	R2	All MCs	16	1.9	16	1.9	0.135	50.0	LOS D	0.7	5.1	0.97	0.69	0.97	5.9
Approach			65	1.0	65	1.0	0.135	32.8	LOS C	1.1	7.6	0.81	0.64	0.81	11.2
East: Commercial Road															
4	L2	All MCs	109	1.9	109	1.9	0.700	25.9	LOS B	16.9	123.7	0.92	0.82	0.92	22.2
5	T1	All MCs	758	6.4	758	6.4	*0.700	31.1	LOS C	16.9	123.7	0.92	0.81	0.93	20.1
6	R2	All MCs	113	0.0	113	0.0	*0.687	56.9	LOS E	5.3	36.8	1.00	0.85	1.13	15.0
Approach			981	5.2	981	5.2	0.700	33.5	LOS C	16.9	123.7	0.93	0.82	0.95	18.5
North: Parking Access															
7	L2	All MCs	34	0.0	34	0.0	0.030	6.3	LOS A	0.3	1.8	0.25	0.59	0.25	27.5
8	T1	All MCs	32	0.0	32	0.0	0.069	29.0	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
9	R2	All MCs	78	1.4	78	1.4	*0.321	50.9	LOS D	1.8	12.5	0.99	0.73	0.99	5.7
Approach			144	0.8	144	0.8	0.321	35.6	LOS C	1.8	12.5	0.77	0.67	0.77	9.0
West: Commercial Road															
10	L2	All MCs	154	0.7	148	0.7	0.101	6.5	LOS A	1.0	6.7	0.23	0.61	0.23	32.2
11	T1	All MCs	506	2.6	485	2.6	0.371	24.0	LOS B	8.0	57.5	0.80	0.67	0.80	11.8
12	R2	All MCs	112	1.9	107	1.9	0.664	51.7	LOS D	5.0	35.2	1.00	0.84	1.11	9.4
Approach			773	2.1	741	2.1	0.664	24.5	LOS B	8.0	57.5	0.71	0.68	0.73	13.4
All Vehicles			1962	3.5	1930	3.6	0.700	30.2	LOS C	16.9	123.7	0.83	0.75	0.85	16.0

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Main Hospital Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

P1B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road										
P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Parking Access										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:21:46

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2029 Future (Hospital Opening Year) with Hospital AM)]

Network: N101 [2029 Future with Hospital AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Caddies Boulevard (S)															
1	L2	All MCs	302	9.4	302	9.4	0.448	26.0	LOS B	9.7	73.7	0.78	0.79	0.78	21.2
2	T1	All MCs	97	2.0	97	2.0	0.207	29.4	LOS C	3.4	24.3	0.84	0.66	0.84	32.7
3	R2	All MCs	132	4.6	132	4.6	*0.837	56.0	LOS D	6.5	47.5	1.00	0.99	1.36	28.2
Approach			530	6.9	530	6.9	0.837	34.1	LOS C	9.7	73.7	0.84	0.81	0.93	26.7
East: Commercial Road (E)															
4	L2	All MCs	364	1.1	364	1.1	0.805	33.6	LOS C	22.4	159.4	0.93	0.90	1.02	34.9
5	T1	All MCs	559	3.6	559	3.6	*0.805	42.5	LOS C	22.4	159.4	0.98	0.95	1.10	30.9
Approach			923	2.6	923	2.6	0.805	39.0	LOS C	22.4	159.4	0.96	0.93	1.07	30.9
North: Greenhills Drive (N)															
7	L2	All MCs	86	2.0	86	2.0	0.297	28.6	LOS C	5.1	36.5	0.84	0.73	0.84	36.8
8	T1	All MCs	197	2.0	197	2.0	*0.297	32.1	LOS C	5.1	36.5	0.85	0.71	0.85	32.3
9	R2	All MCs	89	2.0	89	2.0	0.550	49.7	LOS D	4.0	28.4	1.00	0.78	1.02	21.5
Approach			373	2.0	373	2.0	0.550	35.5	LOS C	5.1	36.5	0.88	0.73	0.89	31.3
West: Commercial Road (W)															
10	L2	All MCs	35	2.0	34	2.0	0.233	23.2	LOS B	4.2	30.2	0.79	0.67	0.79	32.4
11	T1	All MCs	369	3.1	355	3.1	0.480	28.9	LOS C	9.6	69.2	0.85	0.72	0.85	36.0
12	R2	All MCs	165	0.6	159	0.6	*0.774	51.5	LOS D	7.5	52.7	1.00	0.93	1.21	19.9
Approach			569	2.3	548	2.3	0.774	35.1	LOS C	9.6	69.2	0.89	0.78	0.95	31.5
All Vehicles			2395	3.4	2374	3.4	0.837	36.4	LOS C	22.4	159.4	0.91	0.84	0.98	30.4

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:21:46

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2029 Future (Hospital Opening Year) with Hospital PM)]

Network: N101 [2029 Future with Hospital PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1766	3.9	1766	3.9	0.608	1.8	LOS A	11.0	79.8	0.16	0.15	0.16	72.3
3	R2	All MCs	479	0.4	479	0.4	*0.906	87.3	LOS F	18.2	128.1	1.00	0.96	1.24	12.9
Approach			2245	3.1	2245	3.1	0.906	20.0	LOS B	18.2	128.1	0.34	0.32	0.39	36.5
East: Commercial Road (E)															
4	L2	All MCs	432	3.7	415	3.7	0.653	47.8	LOS D	20.3	146.9	0.88	1.08	0.88	10.1
6	R2	All MCs	578	3.3	555	3.4	*0.890	81.5	LOS F	20.4	146.9	1.00	1.07	1.24	5.0
Approach			1009	3.5	970	3.6	0.890	67.1	LOS E	20.4	146.9	0.95	1.07	1.08	5.6
North: Windsor Road (N)															
7	L2	All MCs	377	0.5	374	0.5	0.271	31.7	LOS C	9.1	63.6	0.48	0.61	0.48	50.3
8	T1	All MCs	1839	4.7	1822	4.7	*0.881	60.8	LOS E	61.4	442.2	0.99	0.91	1.03	24.5
Approach			2216	4.0	2196	4.0	0.881	55.8	LOS D	61.4	442.2	0.91	0.86	0.93	22.2
All Vehicles			5471	3.5	5411	3.6	0.906	43.0	LOS D	61.4	442.2	0.68	0.68	0.73	22.1

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Windsor Road (S)											
P1	Full	18	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	40	64.2	LOS F	0.2	0.2	0.96	0.96	246.1	200.0	0.81
All Pedestrians		58	64.2	LOS F	0.2	0.2	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:20:45

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2029 Future (Hospital Opening Year) with Hospital PM)]

Network: N101 [2029 Future with Hospital PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	932	4.0	932	4.0	0.249	0.0	LOS A	5.1	36.8	0.00	0.00	0.00	49.9
6	R2	All MCs	105	0.0	105	0.0	0.237	11.3	LOS A	0.8	5.3	0.63	0.84	0.66	20.4
Approach			1037	3.6	1037	3.6	0.249	1.2	NA	5.1	36.8	0.06	0.09	0.07	41.3
North: The Fiddler Access (N)															
7	L2	All MCs	75	0.0	75	0.0	0.080	3.5	LOS A	0.3	2.3	0.40	0.46	0.40	19.5
9	R2	All MCs	72	1.6	72	1.6	2.259	1198.6	LOS F	26.5	187.8	1.00	4.72	10.23	0.2
Approach			147	0.8	147	0.8	2.259	588.0	LOS F	26.5	187.8	0.69	2.55	5.21	0.3
West: Commercial Road (W)															
10	L2	All MCs	160	0.0	159	0.0	0.086	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.3
11	T1	All MCs	697	0.5	694	0.5	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			857	0.4	854	0.4	0.188	0.9	NA	0.0	0.0	0.00	0.10	0.00	43.6
All Vehicles			2042	2.1	2038	2.1	2.259	43.5	NA	26.5	187.8	0.08	0.27	0.41	6.9

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:20:45

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. FUTURE Commercial Road / Main Hospital Road / Health Co Access (Site Folder: 2029 Future (Hospital Opening Year) with Hospital PM)]

Network: N101 [2029 Future with Hospital PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Main Hospital Road															
1	L2	All MCs	153	0.7	153	0.7	0.237	24.1	LOS B	4.5	31.5	0.70	0.74	0.70	11.3
2	T1	All MCs	32	0.0	32	0.0	*0.069	29.2	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
3	R2	All MCs	123	0.7	123	0.7	*0.667	50.2	LOS D	5.6	39.5	1.00	0.84	1.10	5.9
Approach			308	0.7	308	0.7	0.667	35.1	LOS C	5.6	39.5	0.83	0.77	0.87	8.7
East: Commercial Road															
4	L2	All MCs	39	0.7	39	0.7	0.687	25.1	LOS B	15.0	109.1	0.93	0.82	0.94	21.5
5	T1	All MCs	719	4.9	719	4.9	*0.687	31.9	LOS C	15.0	109.1	0.94	0.82	0.95	19.1
6	R2	All MCs	116	0.0	116	0.0	*0.622	52.7	LOS D	5.2	36.5	1.00	0.82	1.06	15.4
Approach			874	4.1	874	4.1	0.687	34.4	LOS C	15.0	109.1	0.95	0.82	0.96	18.0
North: Parking Access															
7	L2	All MCs	114	0.0	114	0.0	0.112	8.2	LOS A	1.4	9.7	0.36	0.64	0.36	23.6
8	T1	All MCs	32	0.0	32	0.0	0.069	29.0	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
9	R2	All MCs	167	0.7	167	0.7	0.453	48.0	LOS D	3.7	25.7	0.98	0.77	0.98	6.0
Approach			313	0.4	313	0.4	0.453	31.6	LOS C	3.7	25.7	0.74	0.70	0.74	9.2
West: Commercial Road															
10	L2	All MCs	128	0.0	128	0.0	0.088	6.5	LOS A	0.8	5.7	0.23	0.60	0.23	32.3
11	T1	All MCs	584	0.6	582	0.6	0.500	28.2	LOS B	10.6	74.7	0.88	0.74	0.88	10.4
12	R2	All MCs	48	0.7	48	0.7	0.262	47.4	LOS D	2.1	14.5	0.96	0.74	0.96	10.1
Approach			761	0.5	758	0.5	0.500	25.8	LOS B	10.6	74.7	0.77	0.72	0.77	12.4
All Vehicles			2255	1.9	2253	1.9	0.687	31.2	LOS C	15.0	109.1	0.84	0.76	0.85	14.1

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Main Hospital Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

P1B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road										
P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Parking Access										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:20:45

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2029 Future (Hospital Opening Year) with Hospital PM)]

Network: N101 [2029 Future with Hospital PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Caddies Boulevard (S)															
1	L2	All MCs	392	3.8	392	3.8	0.482	23.0	LOS B	12.0	86.7	0.75	0.78	0.75	22.7
2	T1	All MCs	240	2.0	240	2.0	*0.513	32.2	LOS C	9.3	65.9	0.91	0.76	0.91	31.7
3	R2	All MCs	85	3.8	85	3.8	*0.715	54.1	LOS D	4.1	29.4	1.00	0.87	1.20	28.6
Approach			717	3.2	717	3.2	0.715	29.7	LOS C	12.0	86.7	0.83	0.79	0.86	27.9
East: Commercial Road (E)															
4	L2	All MCs	319	1.8	319	1.8	0.626	27.7	LOS B	15.4	109.8	0.86	0.81	0.86	36.1
5	T1	All MCs	412	4.2	412	4.2	0.626	34.2	LOS C	15.4	109.8	0.92	0.80	0.92	32.3
Approach			731	3.2	731	3.2	0.626	31.3	LOS C	15.4	109.8	0.90	0.80	0.90	33.5
North: Greenhills Drive (N)															
7	L2	All MCs	180	2.0	180	2.0	0.217	21.7	LOS B	4.7	33.8	0.64	0.72	0.64	40.3
8	T1	All MCs	101	2.0	101	2.0	0.216	29.5	LOS C	3.6	25.5	0.84	0.66	0.84	32.7
9	R2	All MCs	69	1.9	69	1.9	0.570	52.3	LOS D	3.2	22.8	1.00	0.79	1.05	20.9
Approach			350	2.0	350	2.0	0.570	30.0	LOS C	4.7	33.8	0.77	0.72	0.78	35.0
West: Commercial Road (W)															
10	L2	All MCs	57	1.8	57	1.8	0.400	27.8	LOS B	7.2	50.6	0.87	0.74	0.87	30.9
11	T1	All MCs	551	0.3	550	0.3	*0.825	38.0	LOS C	18.9	132.5	0.97	0.92	1.08	33.0
12	R2	All MCs	242	0.5	242	0.5	*0.785	47.9	LOS D	11.2	78.5	1.00	0.93	1.17	20.7
Approach			851	0.4	848	0.4	0.825	40.1	LOS C	18.9	132.5	0.97	0.91	1.09	29.9
All Vehicles			2649	2.1	2647	2.1	0.825	33.5	LOS C	18.9	132.5	0.89	0.82	0.93	31.3

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:20:45

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2039 Future (+10 Years) with Hospital AM)]

Network: N101 [2039 Future
with Hospital AM Peak (Network
Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1865	9.3	1826	9.3	0.872	12.2	LOS A	45.2	341.5	0.65	0.64	0.68	46.3
3	R2	All MCs	592	1.3	579	1.3	* 0.885	77.7	LOS F	21.7	153.6	1.00	0.96	1.22	14.2
Approach			2457	7.3	2405	7.4	0.885	28.0	LOS B	45.2	341.5	0.73	0.71	0.81	30.0
East: Commercial Road (E)															
4	L2	All MCs	418	3.5	412	3.6	0.644	46.4	LOS D	20.4	146.9	0.84	1.08	0.84	12.1
6	R2	All MCs	524	7.1	517	7.1	* 1.318	376.4	LOS F	19.8	146.9	1.00	1.91	2.71	1.1
Approach			942	5.5	928	5.5	1.318	230.1	LOS F	20.4	146.9	0.93	1.54	1.88	1.8
North: Windsor Road (N)															
7	L2	All MCs	356	3.1	297	3.2	0.226	28.2	LOS B	3.2	23.3	0.20	0.66	0.20	55.0
8	T1	All MCs	2207	7.7	1843	8.1	* 0.906	34.4	LOS C	50.4	372.8	0.80	0.77	0.84	42.0
Approach			2563	7.0	2140	7.4	0.906	33.6	LOS C	50.4	372.8	0.71	0.75	0.75	31.3
All Vehicles			5962	6.9	5473	7.5	1.318	64.4	LOS E	50.4	372.8	0.76	0.87	0.97	16.3

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Windsor Road (S)											
P1	Full	22	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	27	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
All Pedestrians		49	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 07 October 2025 11:48:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2039 Future (+10 Years) with Hospital AM)]

Network: N101 [2039 Future with Hospital AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	909	5.5	862	5.5	0.233	0.0	LOS A	16.7	122.4	0.00	0.00	0.00	49.9
6	R2	All MCs	17	6.7	16	6.7	0.042	11.6	LOS A	0.1	0.8	0.61	0.78	0.61	20.1
Approach			927	5.5	878	5.5	0.233	0.2	NA	16.7	122.4	0.01	0.01	0.01	47.9
North: The Fiddler Access (N)															
7	L2	All MCs	8	14.3	8	14.3	0.010	4.1	LOS A	0.0	0.3	0.43	0.44	0.43	18.7
9	R2	All MCs	21	5.6	21	5.6	0.605	64.4	LOS E	1.3	9.3	0.96	1.06	1.17	3.0
Approach			29	8.1	29	8.1	0.605	47.1	LOS D	1.3	9.3	0.81	0.88	0.96	3.9
West: Commercial Road (W)															
10	L2	All MCs	37	6.5	34	6.4	0.020	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.1
11	T1	All MCs	895	2.2	827	2.2	0.216	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			932	2.3	861	2.4	0.216	0.2	NA	0.0	0.0	0.00	0.02	0.00	48.3
All Vehicles			1888	4.0	1768	4.3	0.605	1.0	NA	16.7	122.4	0.02	0.03	0.02	43.2

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 07 October 2025 11:48:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. FUTURE Commercial Road / Main Hospital Road / Health Co Access (Site Folder: 2039 Future (+10 Years) with Hospital AM)]

Network: N101 [2039 Future with Hospital AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Main Hospital Road															
1	L2	All MCs	17	1.9	17	1.9	0.056	25.1	LOS B	0.5	3.4	0.67	0.68	0.67	11.0
2	T1	All MCs	32	0.0	32	0.0	*0.069	29.2	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
3	R2	All MCs	16	1.9	16	1.9	0.135	50.0	LOS D	0.7	5.1	0.97	0.69	0.97	5.9
Approach			65	1.0	65	1.0	0.135	33.4	LOS C	1.1	7.6	0.81	0.64	0.81	11.1
East: Commercial Road															
4	L2	All MCs	109	1.9	108	1.9	*1.314	326.5	LOS F	48.0	350.9	1.00	2.50	3.56	3.1
5	T1	All MCs	841	6.1	827	6.1	1.314	331.2	LOS F	48.0	350.9	1.00	2.46	3.57	2.5
6	R2	All MCs	115	0.0	114	0.0	*0.917	64.4	LOS E	6.0	42.3	1.00	1.04	1.61	12.9
Approach			1066	5.0	1048	5.0	1.314	301.8	LOS F	48.0	350.9	1.00	2.31	3.36	2.9
North: Parking Access															
7	L2	All MCs	35	0.0	35	0.0	0.032	6.7	LOS A	0.3	2.1	0.27	0.60	0.27	26.6
8	T1	All MCs	32	0.0	32	0.0	0.069	29.0	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
9	R2	All MCs	80	1.4	80	1.4	0.654	56.5	LOS E	2.0	14.2	1.00	0.83	1.23	5.1
Approach			146	0.8	146	0.8	0.654	38.7	LOS C	2.0	14.2	0.79	0.72	0.91	8.3
West: Commercial Road															
10	L2	All MCs	164	0.7	152	0.7	0.103	6.5	LOS A	1.0	6.9	0.23	0.61	0.23	32.2
11	T1	All MCs	644	2.5	596	2.5	0.428	23.1	LOS B	9.9	70.6	0.80	0.68	0.80	12.2
12	R2	All MCs	112	1.9	104	1.9	0.855	58.9	LOS E	5.2	37.2	1.00	0.96	1.44	8.4
Approach			920	2.1	852	2.1	0.855	24.5	LOS B	9.9	70.6	0.72	0.70	0.78	13.2
All Vehicles			2196	3.4	2111	3.5	1.314	163.5	LOS F	48.0	350.9	0.87	1.50	2.07	3.8

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Main Hospital Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

P1B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road										
P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Parking Access										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 07 October 2025 11:48:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS4598 [4. FUTURE Commercial Road / Greenhills Drive / Caddies Boulevard (Site Folder: 2039 Future (+10 Years) with Hospital AM)]

Network: N101 [2039 Future with Hospital AM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Caddies Boulevard (S)															
1	L2	All MCs	426	8.5	426	8.5	0.953	66.6	LOS E	27.0	203.0	1.00	1.17	1.52	11.2
2	T1	All MCs	121	2.0	121	2.0	0.285	31.8	LOS C	4.5	32.0	0.87	0.70	0.87	31.8
3	R2	All MCs	174	4.6	174	4.6	0.984	80.0	LOS F	10.8	78.6	1.00	1.25	1.81	23.9
Approach			721	6.5	721	6.5	0.984	64.0	LOS E	27.0	203.0	0.98	1.11	1.48	18.8
East: Commercial Road (E)															
4	L2	All MCs	500	0.8	500	0.8	* 1.067	128.0	LOS F	54.1	383.1	1.00	1.60	2.03	18.8
5	T1	All MCs	525	3.7	525	3.7	1.067	134.8	LOS F	54.1	383.1	1.00	1.68	2.10	15.7
Approach			1025	2.3	1025	2.3	1.067	131.5	LOS F	54.1	383.1	1.00	1.64	2.07	16.6
North: Greenhills Drive (N)															
7	L2	All MCs	103	2.0	103	2.0	0.475	31.4	LOS C	7.4	52.6	0.92	0.78	0.92	35.5
8	T1	All MCs	267	2.0	267	2.0	* 0.475	37.5	LOS C	7.4	52.6	0.93	0.77	0.93	30.5
9	R2	All MCs	83	2.0	83	2.0	0.739	54.5	LOS D	4.0	28.8	1.00	0.89	1.25	20.4
Approach			454	2.0	454	2.0	0.739	39.3	LOS C	7.4	52.6	0.94	0.79	0.98	30.3
West: Commercial Road (W)															
10	L2	All MCs	89	2.0	83	2.0	0.227	24.4	LOS B	4.3	30.4	0.76	0.70	0.76	32.6
11	T1	All MCs	339	3.1	316	3.2	0.468	28.2	LOS B	9.6	68.9	0.85	0.72	0.85	36.2
12	R2	All MCs	281	1.1	263	1.1	* 1.072	133.2	LOS F	21.2	149.7	1.00	1.50	2.20	10.3
Approach			709	2.2	662	2.2	1.072	69.4	LOS E	21.2	149.7	0.90	1.03	1.37	22.0
All Vehicles			2910	3.3	2862	3.3	1.072	85.5	LOS F	54.1	383.1	0.96	1.23	1.59	19.6

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Caddies Boulevard (S)											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road (E)											

P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
P2B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Greenhills Drive (N)										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road (W)										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 07 October 2025 11:48:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 3788 [1. EXISTING Windsor Road / Commercial Road
(Site Folder: 2039 Future (+10 Years) with Hospital PM)]

Network: N101 [2039 Future
with Hospital PM Peak (Network
Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Windsor Road (S)															
2	T1	All MCs	1962	3.8	1925	3.9	0.865	4.0	LOS A	32.8	237.0	0.34	0.33	0.35	64.6
3	R2	All MCs	549	0.4	538	0.4	* 0.886	86.5	LOS F	19.8	138.8	1.00	0.94	1.14	13.0
Approach			2511	3.1	2463	3.1	0.886	22.0	LOS B	32.8	237.0	0.49	0.46	0.52	34.6
East: Commercial Road (E)															
4	L2	All MCs	469	3.5	444	3.6	0.790	77.0	LOS F	20.3	146.9	0.97	1.10	1.01	8.1
6	R2	All MCs	750	2.9	710	3.0	* 1.774	788.9	LOS F	20.5	146.9	1.00	2.56	3.86	0.5
Approach			1219	3.1	1154	3.2	1.774	514.9	LOS F	20.5	146.9	0.99	2.00	2.76	0.8
North: Windsor Road (N)															
7	L2	All MCs	445	0.6	416	0.6	0.306	34.6	LOS C	10.7	75.1	0.49	0.64	0.49	49.0
8	T1	All MCs	2084	4.6	1950	4.7	* 0.903	60.9	LOS E	67.4	486.3	0.99	0.94	1.04	24.7
Approach			2529	3.9	2365	4.0	0.903	56.3	LOS D	67.4	486.3	0.90	0.89	0.94	22.1
All Vehicles			6258	3.4	5982	3.6	1.774	130.7	LOS F	67.4	486.3	0.75	0.93	1.12	8.9

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Windsor Road (S)											
P1	Full	18	64.2	LOS F	0.1	0.1	0.96	0.96	246.0	200.0	0.81
East: Commercial Road (E)											
P2	Full	40	64.2	LOS F	0.2	0.2	0.96	0.96	246.1	200.0	0.81
All Pedestrians		58	64.2	LOS F	0.2	0.2	0.96	0.96	246.0	200.0	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:16:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS NA [2. EXISTING Commercial Road / The Fiddler Access (Site Folder: 2039 Future (+10 Years) with Hospital PM)]
 Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2039 Future with Hospital PM Peak (Network Folder: SSDA)]

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Commercial Road (E)															
5	T1	All MCs	1133	3.9	1133	3.9	0.604	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.0
6	R2	All MCs	121	0.0	121	0.0	0.304	13.2	LOS A	1.0	7.2	0.70	0.89	0.79	18.9
Approach			1254	3.5	1254	3.5	0.604	1.4	NA	1.0	7.2	0.07	0.09	0.08	40.2
North: The Fiddler Access (N)															
7	L2	All MCs	85	0.0	85	0.0	0.108	3.8	LOS A	0.4	2.7	0.43	0.50	0.43	19.1
9	R2	All MCs	83	1.6	83	1.6	4.578	3319.8	LOS F	41.5	294.4	1.00	4.15	9.12	0.1
Approach			167	0.8	167	0.8	4.578	1642.9	LOS F	41.5	294.4	0.71	2.30	4.73	0.1
West: Commercial Road (W)															
10	L2	All MCs	180	0.0	173	0.0	0.093	4.6	LOS A	0.0	0.0	0.00	0.53	0.00	31.3
11	T1	All MCs	815	0.6	782	0.6	0.242	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			995	0.5	955	0.5	0.242	0.8	NA	0.0	0.0	0.00	0.10	0.00	43.7
All Vehicles			2416	2.1	2376	2.1	4.578	116.8	NA	41.5	294.4	0.09	0.25	0.37	2.8

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:16:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

MOVEMENT SUMMARY

Site: TCS 4598 [3. FUTURE Commercial Road / Main Hospital Road / Health Co Access (Site Folder: 2039 Future (+10 Years) with Hospital PM)]

Network: N101 [2039 Future with Hospital PM Peak (Network Folder: SSDA)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Main Hospital Road															
1	L2	All MCs	153	0.7	153	0.7	0.243	24.8	LOS B	4.6	32.1	0.71	0.74	0.71	11.1
2	T1	All MCs	32	0.0	32	0.0	*0.069	29.2	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
3	R2	All MCs	123	0.7	123	0.7	0.751	52.9	LOS D	5.8	41.0	1.00	0.89	1.20	5.6
Approach			308	0.7	308	0.7	0.751	36.5	LOS C	5.8	41.0	0.84	0.79	0.92	8.4
East: Commercial Road															
4	L2	All MCs	39	0.7	39	0.7	*0.818	30.1	LOS C	21.9	158.7	0.98	0.95	1.10	19.7
5	T1	All MCs	911	4.6	911	4.6	0.818	39.2	LOS C	21.9	158.7	0.98	0.95	1.11	17.3
6	R2	All MCs	133	0.0	133	0.0	*0.803	62.7	LOS E	6.4	44.9	1.00	0.93	1.28	14.4
Approach			1083	3.9	1083	3.9	0.818	41.8	LOS C	21.9	158.7	0.99	0.95	1.13	15.7
North: Parking Access															
7	L2	All MCs	131	0.0	131	0.0	0.134	9.0	LOS A	1.8	12.4	0.39	0.65	0.39	22.5
8	T1	All MCs	32	0.0	32	0.0	0.069	29.0	LOS C	1.1	7.6	0.81	0.60	0.81	14.9
9	R2	All MCs	192	0.7	192	0.7	0.585	50.0	LOS D	4.3	30.5	1.00	0.80	1.04	5.7
Approach			355	0.4	355	0.4	0.585	33.0	LOS C	4.3	30.5	0.76	0.72	0.78	8.8
West: Commercial Road															
10	L2	All MCs	144	0.0	139	0.0	0.096	6.7	LOS A	1.0	6.8	0.24	0.61	0.24	32.0
11	T1	All MCs	694	0.6	669	0.6	0.535	27.1	LOS B	12.1	85.3	0.87	0.75	0.87	10.7
12	R2	All MCs	48	0.7	47	0.7	0.285	48.7	LOS D	2.0	14.3	0.97	0.74	0.97	9.8
Approach			886	0.5	854	0.5	0.535	25.0	LOS B	12.1	85.3	0.78	0.72	0.78	12.6
All Vehicles			2632	1.9	2599	1.9	0.818	34.4	LOS C	21.9	158.7	0.87	0.83	0.94	13.3

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.

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

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

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Main Hospital Road											
P1	Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

P1B Slip/ Bypass	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
East: Commercial Road										
P2 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
North: Parking Access										
P3 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
West: Commercial Road										
P4 Full	53	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90
All Pedestrians	263	39.3	LOS D	0.1	0.1	0.94	0.94	221.1	200.0	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ARUP AUSTRALIA SERVICES PTY LTD | Licence: NETWORK / Enterprise Level 4 | Processed: 06 October 2025 16:16:48

Project: Z:\SYD\Projects\286000\286539-00 Rouse Hill Hospital\Work\Internal\Traffic Modelling\251006 Rouse Hill Hospital Traffic Mode - Full - TfNSW - 1000FTE - Issue.sip9

Appendix C

Green Travel Plan

Health Infrastructure NSW

Rouse Hill Hospital

Green Travel Plan

Reference: 286539-00

Final | 27 October 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 286539-00

Arup Australia Pty Ltd | ABN 76 625 912 665

Arup Australia Pty Ltd
Level 5
151 Clarence Street
Sydney
NSW, 2000
Australia
arup.com



Document Verification

Project title Rouse Hill Hospital
Document title Green Travel Plan
Job number 286539-00
Document ref 286539-00
File reference Final

Revision	Date	Filename	250627_Rouse Hill Hospital GTP.docx		
Draft	27 June 2025	Description	Draft report		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			
Final	17/07/2025	Filename	250717_Rouse Hill Hospital GTP.docx		
		Description	Report updated with TSA and Architectus comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			
Final	14/08/2025	Filename	250814_Rouse Hill Hospital GTP.docx		
		Description	Report updated with TSA and Architectus comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			
Final	01/09/2025	Filename	250901_Rouse Hill Hospital GTP.docx		
		Description	Report updated with TSA and Architectus comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton Sam Oswald	Eric Rivers
		Signature			

Final	26/09/2025	Filename	250926_Rouse Hill Hospital GPT.docx		
		Description	Report updated with TSA comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Wendy Zheng	Eric Rivers
		Signature			

Final	27/10/2025	Filename	251027_Rouse Hill Hospital GPT.docx		
		Description	Report updated with TSA comments		
			Prepared by	Checked by	Approved by
		Name	Abhilasa Sharma Swar	Bryony Dalton	Eric Rivers
		Signature			

Issue Document Verification with Document

1.	Introduction	1
1.1	What is a Green Travel Plan?	1
1.2	Green Travel Plan objectives	1
1.3	Who is responsible?	1
1.4	Who does the Green Travel Plan apply to?	1
1.5	Planning context	1
2.	Existing transport conditions	2
2.1	Site location and road network	2
2.2	Public Transport	2
2.3	Walking and Cycling	3
2.4	Travel behaviour	4
3.	Proposed scheme	5
4.	Travel demand management	6
4.1	Principles	6
4.2	Monitoring	6
4.3	Governance	6
5.	Management measures	7
5.1	Remode	7
5.2	Reduce	7
5.3	Target mode share	8
6.	Conclusion	9

Tables

Table 1: Public transport facilities	2
Table 2: Mode of travel to work to Rouse Hill – Beaumont Hills SA2 (ABS 2016 Census)	4
Table 3: Top 3 places of usual residence (ABS 2016 Census)	4
Table 4: TDM principles	6
Table 5: Target mode share	8
Table 6: Framework implementation plan – measures	9
Table 7: Framework implementation plan – monitoring and governance	9

Figures

Figure 1: Site location	2
Figure 2: Region 1 bus services near the Site (Source: Busways)	2
Figure 3: Region 4 bus services near the Site (Source: Hills District Bus Timetables)	3
Figure 4: Sydney Metro Northwest and City and Southwest excerpt (Source: TfNSW, 2022)	3
Figure 5: Cycling network	3
Figure 6: Pedestrian access	5

1. Introduction

This report outlines a preliminary framework Green Travel Plan (GTP) that aims to address travel demand and outlines potential sustainable travel initiatives for the Proposal. The GTP has been developed in consultation with the Western Sydney Local Health District (WSLHD) to ensure alignment with broader health service objectives.

1.1 What is a Green Travel Plan?

A GTP is a package of measures put in place by an employer/building manager to encourage more sustainable travel whilst commuting to and from a site. It allows an organisation to demonstrate a commitment and a proactive step towards improving environmental sustainability by reducing the environmental impact associated with travel to and from the site.

The key element of this plan is reducing reliance on private vehicles and maximising the use of public transport and other sustainable modes of transport. The GTP would contribute to a healthier and higher quality of life for building staff and visitors whilst reducing air and noise pollution.

1.2 Green Travel Plan objectives

The objectives of this GTP are to:

- **Encourage the use of more sustainable transport modes** i.e. walking, cycling, public transport and carpooling in place of higher energy consumption travel modes such as single occupant car travel and taxi.
- **Raise awareness of sustainable modes of transportation** for employees or visitors who commute to, from and within the Site.
- **Reduce traffic congestion and air pollution** around the Site to enhance safer and more enjoyable journeys.
- **Travel Demand Management (TDM)** which includes management measures to reduce travel demand, such as by remodeling, reducing or retiming trips.
- **Develop, implement, monitor, evaluate and review** the progress of the travel plan strategy.

A framework of potential management measures is also outlined to help achieve the objectives of the GTP.

1.3 Who is responsible?

As a constantly evolving strategy, the success of the plan will rely on ongoing monitoring and review. A robust governance structure could include a nominated GTP representative or committee consisting of staff and/or building management.

1.4 Who does the Green Travel Plan apply to?

The GTP applies to all staff and visitors who travel to and from the Site.

1.5 Planning context

This report has been prepared to address Section 10 *Traffic Transport and Accessibility* of the Planning Secretary's Environmental Assessment Requirements (SEARs) for the Proposal issued under State Significant Development application SSD-XXXXXXXXX as outlined below.

Provide a transport accessibility impact assessment which includes:

- *Measures to promote sustainable travel choices for employees and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high-quality end-of-trip facilities, and implementing a Green Travel Plan.*

2. Existing transport conditions

2.1 Site location and road network

The site is located at the corner of Windsor Road and Commercial Road, Rouse Hill, within The Hills Shire Council Local Government Area (LGA), and is near the Blacktown City Council LGA to the west of Windsor Road.

The surrounding road network includes state and local roads that provide regional and local connectivity. Windsor Road and Old Windsor Road are key state roads offering north-south links to Sydney’s motorway network, including the M2 and M7, with posted speed limits of 80 km/h. Schofields Road, also a state road, provides an important east-west connection to Schofields, Marsden Park, and Mount Druitt. Local access is primarily via Commercial Road (60 km/h), linking Rouse Hill to North Kellyville, with connections to the town centre via Caddies Boulevard and Rouse Hill Drive.

The location of the Site is shown in Figure 1.

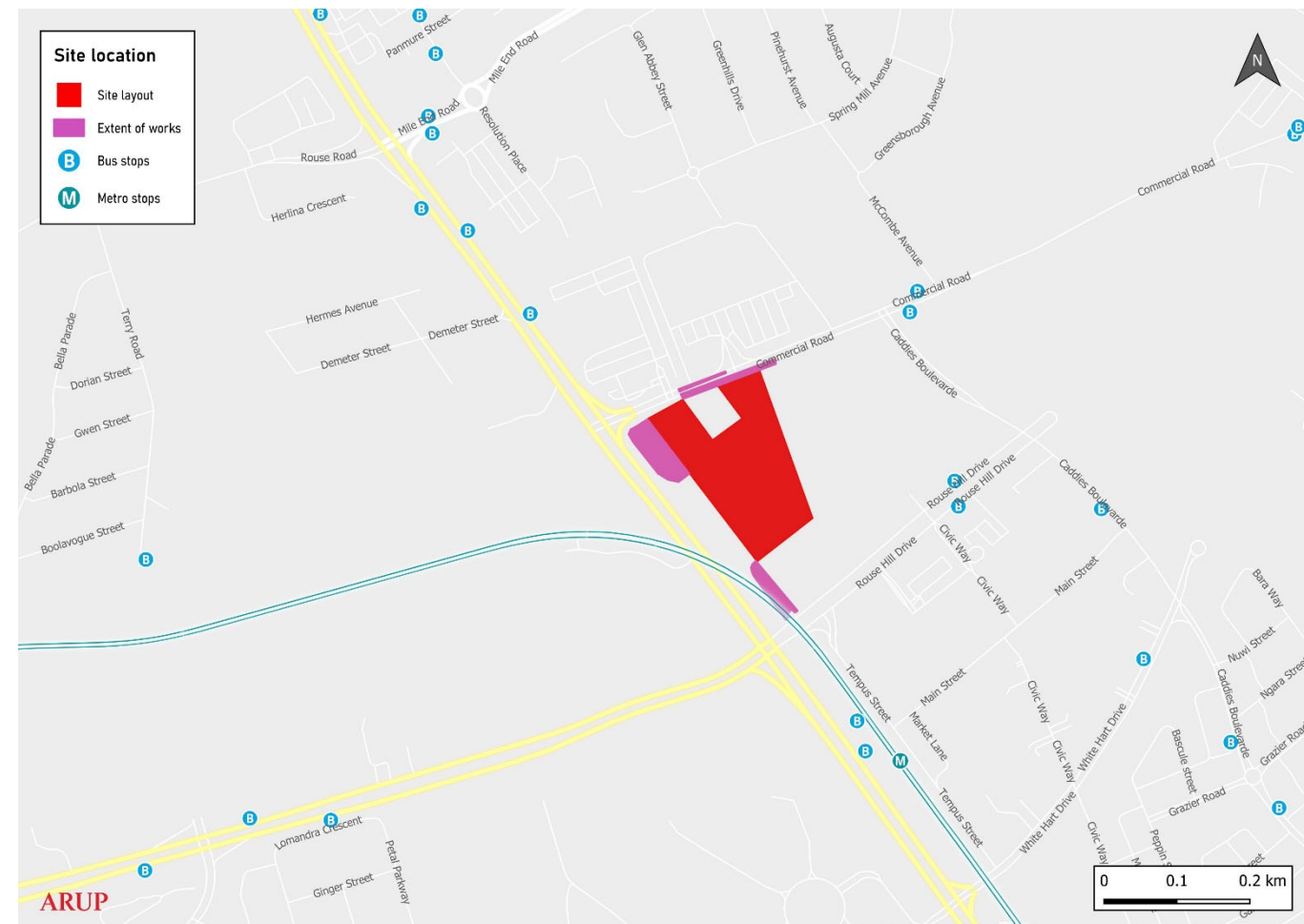


Figure 1: Site location

2.2 Public Transport

The site is well-served by both Sydney Metro and bus services, offering strong connectivity to key regional and metropolitan destinations. Public transport facilities in the vicinity of the proposed site are listed in Table 1.

Table 1: Public transport facilities

Mode	Service details	Frequency
Sydney Metro North West and Bankstown line	<ul style="list-style-type: none"> From Sydenham to Tallawong Key intermediate stops- Central, Barangaroo, Chatswood, Macquarie Park, Epping, Castle Hill, and Rouse Hill Rouse Hill Station is approximately 300 meters south of the site 	Every 4 minutes during peak hours
Local Bus Services	Bus stops near the Site are serviced by Region 1 and Region 4 routes as shown in Figure 2 and Figure 3 and operated by CDC NSW and Busways. These provide connections to suburbs such as Blacktown, Norwest, Kellyville, and Castle Hill.	Typically, every 15–30 mins, varies by route
North-West T-way	The T-way station at Rouse Hill Station (approx. 250 metres south of the Site) offers rapid bus connections via dedicated bus lanes and separate roadways to Parramatta, Blacktown, and other regional centres.	Every 10–20 mins during peak periods
Night Bus (N92)	NightRide route N92 operates between Tallawong Station, Macquarie Park, and Town Hall, providing overnight services when Metro is not operating. Services run from Rouse Hill Station, within 300 metres of the Site.	Approximately every 60 mins overnight



Figure 2: Region 1 bus services near the Site (Source: Busways)

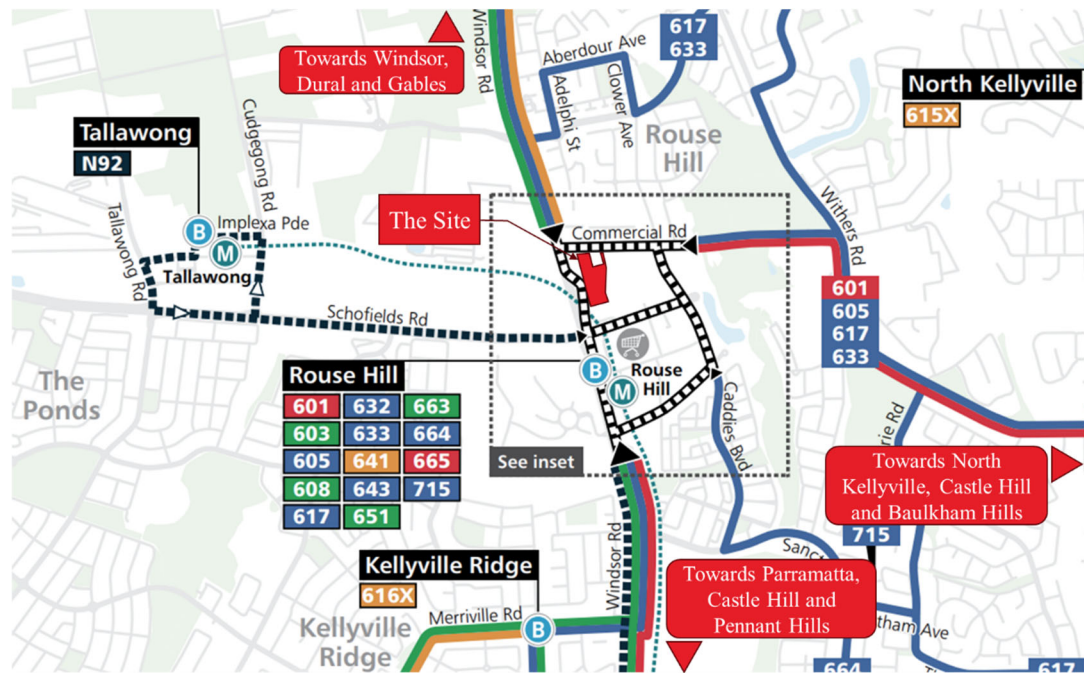


Figure 3: Region 4 bus services near the Site (Source: Hills District Bus Timetables)

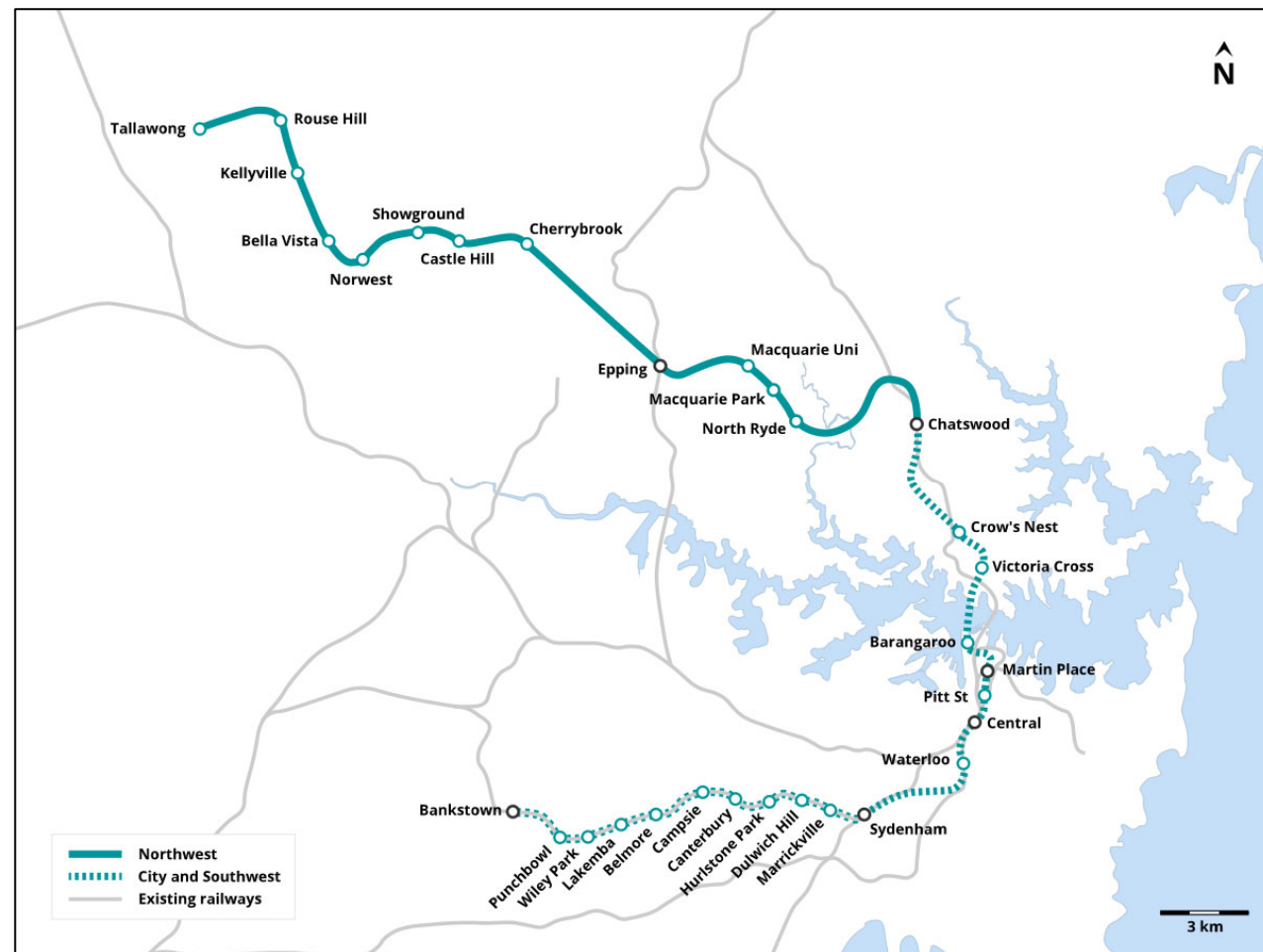


Figure 4: Sydney Metro Northwest and City and Southwest excerpt (Source: TfNSW, 2022)

2.3 Walking and Cycling

The area surrounding the proposed Rouse Hill Hospital site supports active transport due to its proximity to major public infrastructure and residential communities. The local urban density, combined with the walkability of the precinct and the proximity to Rouse Hill Station and Town Centre, encourages a significant proportion of trips to be made by walking or cycling.

- Walking
 - The Site is within 10 minutes walking distance of Rouse Hill Station and Rouse Hill Town Centre, making it highly accessible on foot for residents and transit users.
 - The pedestrian network is well established, with continuous footpaths along Windsor Road, Commercial Road, Rouse Hill Drive, and Caddies Boulevard. However, some intersections, such as Commercial Road / Caddies Boulevard, lack pedestrian crossings.
- Cycling
 - The cycling network near the site includes shared paths along Windsor Road, Schofields Road, Rouse Hill Drive, Caddies Boulevard, and local parks and residential streets. These paths provide connections to surrounding suburbs including Kellyville, The Ponds, and Schofields.
 - The Hills Shire Bike Plan was adopted in November 2023 that outlines strategic directions for cycling infrastructure within the Shire, emphasizing the development of safe, convenient, and accessible transport options.

Cycling access around the Site includes various shared paths connecting the Site to the wider cycling network as shown in Figure 5.

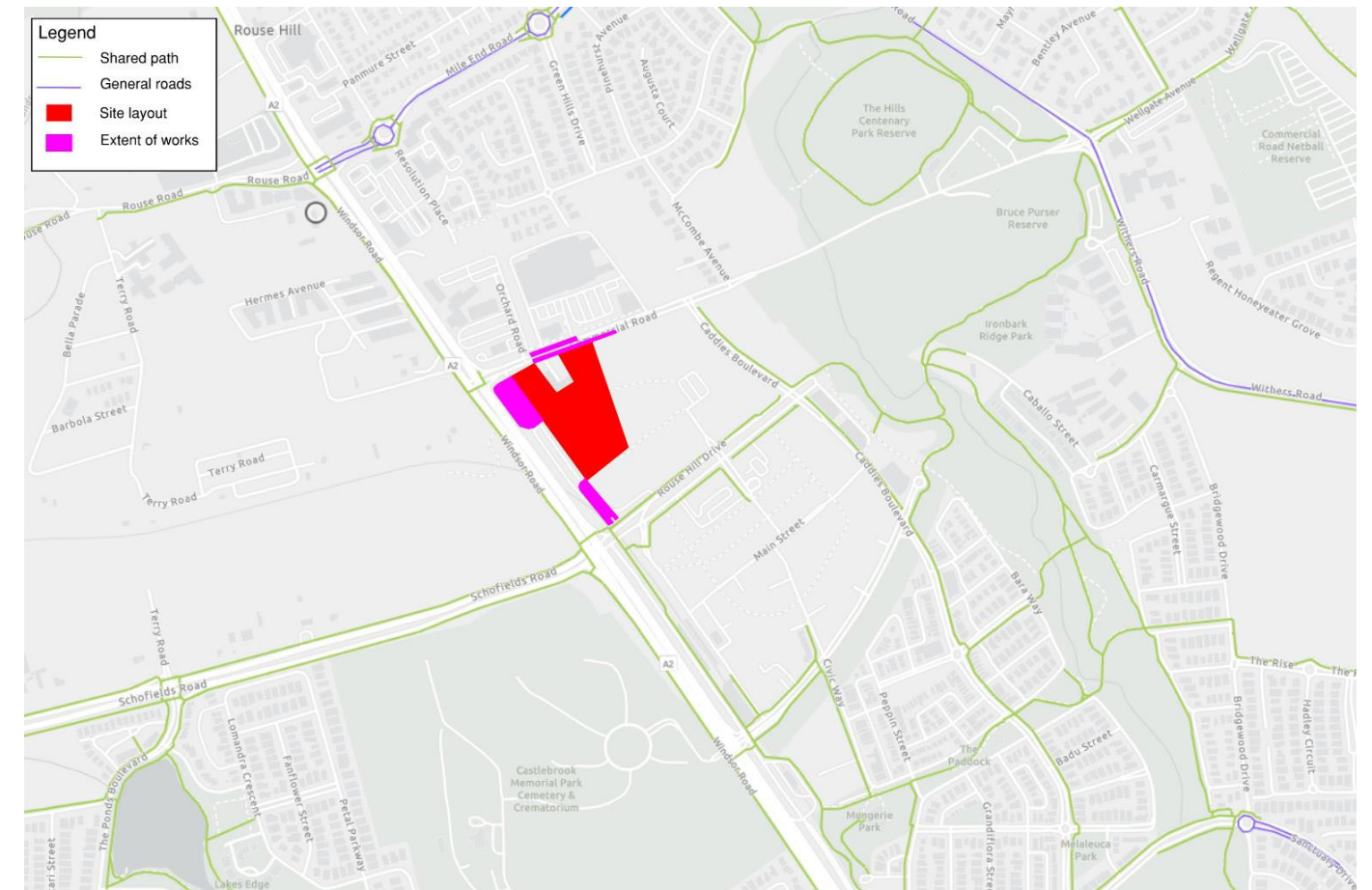


Figure 5: Cycling network

2.4 Travel behaviour

2.4.1 Mode of travel to work

Australian Bureau of Statistics (ABS) 2016¹ Census data has been used to understand travel behaviour near the Site. The Site is located within the Rouse Hill – Beaumont Hills Statistical Area 2 (SA2, code 115041302). The mode of travel for people who work in the Rouse Hill – Beaumont Hills SA2 is shown in Table 2.

The data shows that a majority of the people who work near the Site travel to work using a car or private vehicle. Note the 2016 Census data was taken prior to the opening of Sydney Metro Northwest, which opened in 2019.

Table 2: Mode of travel to work to Rouse Hill – Beaumont Hills SA2 (ABS 2016 Census)

Mode of transport	Percentage of workers
Train	1%
Bus	5%
Ferry	<1%
Light rail	<1%
Taxi or rideshare	<1%
Car (driver)	80%
Car (passenger)	8%
Truck	2%
Motorbike or scooter	<1%
Bicycle	<1%
Walked only	2%
Other mode	<1%

2.4.2 Worker place of usual residence

ABS 2016 census data have also been used to understand the place of usual residence for workers in the Rouse Hill – Beaumont Hills SA2. The top three places of usual residence by Statistical Area 3 (SA3) are shown in Table 3.

Most workers in the Rouse Hill – Beaumont Hills SA2 live locally in the Rouse Hill, Baulkham Hills and Blacktown areas.

Table 3: Top 3 places of usual residence (ABS 2016 Census)

Place of residence (SA3)	Percentage of workers
Rouse Hill – McGraths Hill	33%
Blacktown – North	18%
Baulkham Hills	13%

¹ 2016 census data has been used as 2021 census data is affected by the impact of the COVID-19 pandemic on travel patterns and is therefore not considered to be an accurate representation of travel

3. Proposed scheme

The Proposal includes a new hospital campus comprising of the Rouse Hill Hospital, ancillary retail/commercial uses, multi-storey car park (MSCP) with 659 spaces, loading dock and ancillary works to Commercial Road to enable vehicular access to the site. The full-build out of the Proposal is expected to include an emergency department, operating theatres, ambulatory treatment spaces and ambulatory care and outpatient clinics.

The Proposal aims to integrate with the wider pedestrian, cycling and public transport network to encourage sustainable travel choices for staff and visitors. Pedestrian access to the site is proposed from Commercial Road, with footpaths provided along Hospital Road and future internal road, as shown in Figure 6. Additionally, pedestrians using the footpath along Commercial Road can access northern end of MSCP, as shown in Figure 6. Pedestrian crossings will facilitate safe access to the MSCP and Rouse Hill Hospital. Furthermore, a new shared pedestrian and cycle path will be constructed along the southern boundary of the hospital. This path will offer a shorter and more convenient route to the Rouse Hill Metro Station, which is located within a 5–10-minute walk of the main hospital building. This connection will enhance public transport accessibility for patients, staff, and visitors alike.

Cyclist access to the MSCP would be via future internal road to the MSCP as shown in Figure 7. The 10 bicycle parking spaces and end-of-trip (EoT) facilities such as change rooms to support active transport would be provided on the southern side of the MSCP on Level 00. Additionally, 20 external bicycle parking spaces would also be accommodated on site, bringing the total to 30 bicycle parking space.

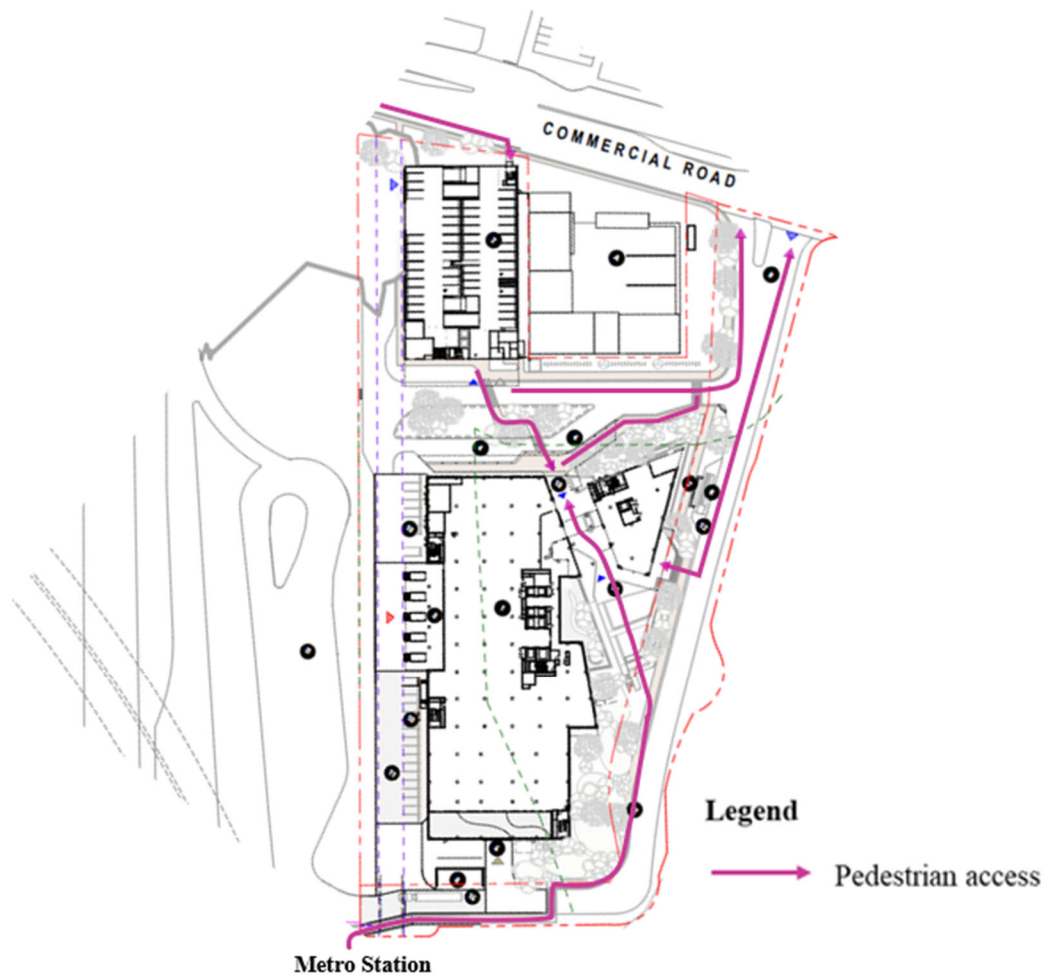


Figure 6: Pedestrian access

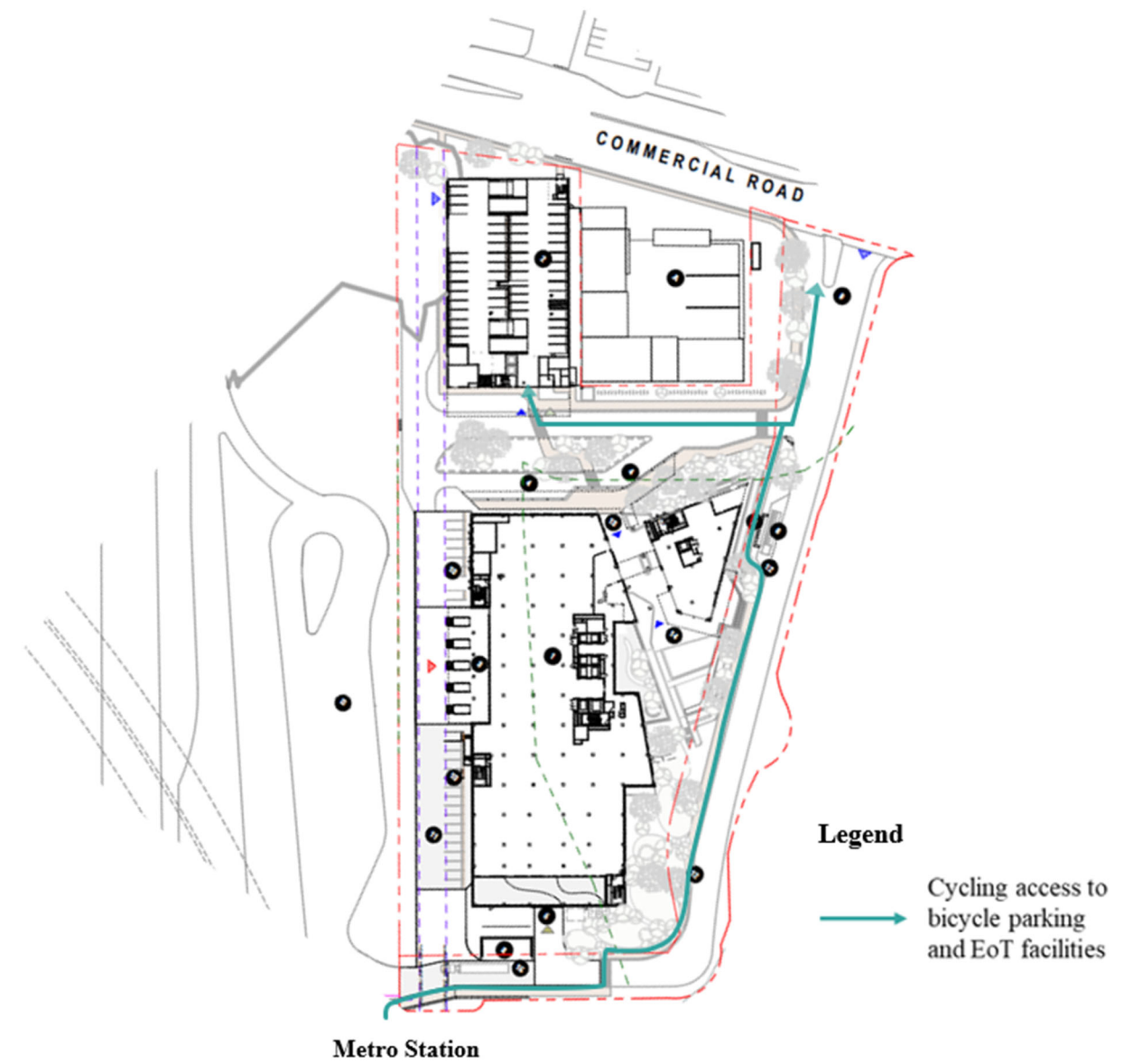






Figure 7: Cyclist access

4. Travel demand management

4.1 Principles

As outlined in the *Guide to Transport Impact Assessment*, (TfNSW, 2024), TDM management measures can be grouped as part of four key principles as shown in Table 4.

Table 4: TDM principles

Principles					
	Remode	Using another mode of transport		Reduce	Reducing the number of trips
	Retime	Retiming trips to non-peak hours		Reroute	Using alternative routes to access the Proposal

Remode and reduce are the most relevant TDM principles to this GTP as they focus specifically on sustainable travel or reducing travel altogether.

4.2 Monitoring

The GTP is a live document and its successful implementation would rely on ongoing monitoring and review. Although the objectives of the GTP would not change, targets and measures may be changed to reflect an ambition for continued progress.

Monitoring mechanisms could include periodic travel surveys to understand the travel behaviour of staff and visitors and success of the measures. The survey could be distributed 3 months post-occupation as well as yearly or following key transport network changes (such as new bus routes).

4.3 Governance

A key part of an effective GTP is to nominate personnel to champion and administer the plan. A robust governance structure would contribute to the success of the plan and could include a nominated GTP representative or committee. A representative or committee could consist of staff and/or the Western Sydney Local Health District (WSLHD), who would:

- Manage and implement the GTP measures.
- Periodically update the GTP as new or safer transport routes become available.
- Engage with staff and visitors, promote the GTP and solicit feedback.
- Achieve target mode shares, monitor performance and make decisions on the GTP.
- Raise improvements to public transport or walking and cycling facilities with Council or Transport for NSW.

5. Management measures

To meet the objectives and targets of the GTP, this section outlines the potential management measures that could be considered for implementation at the Proposal. The measures have been grouped into the remode and reduce TDM principles, which are the most relevant to this GTP as they focus specifically on sustainable travel or reducing travel altogether and are discussed below.

5.1 Remode

The principle of remode aims to promote non-private vehicle modes of travel, such as public transport, walking or cycling. Measures to remode travel are discussed below.

5.1.1 Education and awareness

Education and awareness of the availability of sustainable travel modes would be crucial in encouraging staff and visitors at the Proposal to adopt travel plan measures. It is important that staff and visitors are made aware of the need to reduce car dependency where possible.

A new development provides an opportunity to offer staff advice on travel modes to and from the Site. At this time, new travel habits are being established, and people may particularly welcome information about the travel services and facilities available to them.

Potential measures to encourage education and awareness include:

- Provide travel information for visitors travelling to and from the Site using sustainable forms of transport, as well as outlining the benefits, objectives and measures of the wider GTP. A website or app associated with the development could include links to the Transport for NSW Trip Planner to promote sustainable travel.
- A Travel Access Guide (TAG) could also be provided to staff and visitors to highlight sustainable travel methods. The purpose of a TAG is to highlight sustainable travel methods in a legible and easy to read format and would include the following:
 - Map showing key public transport, walking and cycling routes to the development.
 - Information on end of trip facilities, events and programs.
- Provide an overview of the GTP and TAG as part of all staff induction programs. Induction may also include a visit to bicycle parking and end of trip facilities to increase awareness.
- Events such as National Bike Week, Bike2Work Days and Walk to Work day could be promoted to staff.
- Other incentives to encourage sustainable travel may also include discount vouchers for a local bicycle retailer.

5.1.2 Promotion of public transport

The use of train and bus services could be promoted via the following measures:

- Outline public transport services in a TAG to enable staff and visitors to assess route options and to plan a public transport route to work.
- Provide links to journey planning websites (such as Transport for NSW's Trip Planner) and real-time public transport service data on a website or app associated with the development.

5.1.3 Promotion of walking

Walking could be promoted via the following measures:

- Outline walking networks in a TAG and paths to key destinations (such as bus stops).
- Participate in regular events such as 'Walk to Work Day'.

5.1.4 Promotion of cycling

As discussed in Section 2.3 and 3, the Site is located near the wider off-road cycling network and will provide easily accessible bicycle parking and end of trip facilities for cyclists. The provision of secure bicycle parking and end of trip facilities are expected to encourage staff and visitors to cycle.

Cycling could also be promoted via the following measures:

- Outline cycling facilities in the TAG to enable cyclists to assess route options and to plan how to cycle to work.
- Facilitate a bike-sharing program within the Site. Bikes could be made available to staff, which would be booked for a specific period of time. A bike-sharing program would provide access to a bike for staff who do not own one and could encourage long-term adoption of cycling.
- Form a Cycling Group consisting of staff who cycle to work regularly. The Cycling Group could advocate for cycling for staff, including organising cycling events and notifying building management/WSLHD of maintenance and issues relating to the provision of on-site cycling facilities.
- Participate in regular events such as 'Ride to Work Day'.

5.2 Reduce

The principle of reduce aims to reduce the overall number of trips generated. Measures to reduce travel are discussed below.

5.2.1 Carpooling

Carpooling (or ride sharing) involves carrying additional vehicle passengers while undertaking a journey with low additional distance. Carpooling enables a reduction in separate vehicle trips to a similar destination and is generally cost-effective, particularly to and from areas that are not well served by public transport.

Carpooling could be facilitated in the Proposal by building management/WSLHD to connect staff travelling to and from a similar destination.

To further encourage carpooling, the most desirable parking spaces near access points could be designated to vehicles that have higher than one person occupancy.

5.3 Target mode share

A target mode share for the staff and visitors for the Proposal has been estimated in Table 5 and considers the potential measures to encourage sustainable travel to and from the Site. The indicative mode share targets are informed by Arup’s experience delivering comparable hospital projects and supported by data from previous hospital transport surveys, particularly those located near major public transport connections

Table 5: Target mode share

Mode of transport	Staff (day shift)		Visitors	Relevant measures
	Existing staff mode share (2016 Census)	Target mode share	Target mode share	
Train	1%	18%	10%	Increase due to Sydney Metro services (and extension to the Sydney CBD and Bankstown), and education and awareness of public transport services near the Proposal.
Bus	5%	8%	7%	
Ferry	<1%	<1%	<1%	
Light rail	<1%	<1%	<1%	
Taxi or rideshare	<1%	<1%	<1%	
Car (driver)	80%	50%	60%	Decrease as a result of measures encouraging walking, cycling and public transport.
Car (passenger)	8%	15%	15%	Increase as a result of carpooling.
Truck	2%	1%	<1%	
Motorbike or scooter	<1%	<1%	<1%	
Bicycle	<1%	2%	2%	Increase due to measures such as education and awareness, bike sharing, regular events and health worker accommodation.
Walked only	<1%	5%	5%	Increase due to measures such as health worker accommodation, education and awareness and regular events.
Other mode	2%	<1%	<1%	

The target mode share is aspirational with the goal of encouraging a reduction in car dependency. The target is recommended to be reviewed periodically to reflect the actual travel behaviour of staff and visitors as well as to encourage a continual shift away from private vehicle travel.

It should be noted that this target mode share considers data from the 2016 ABS Census, which was undertaken prior to the opening of Sydney Metro Northwest, which opened in 2019. Following occupation of the Proposal, travel surveys or other data collection methods could be used to provide a site-specific understanding of workers to further refine these target mode shares.

6. Conclusion

This report outlines a framework GTP that aims to address travel demand and outlines potential sustainable travel initiatives for the Proposal. The key element of this plan is reducing reliance on private vehicles and maximising the use of public transport and other sustainable modes of transport. The GTP would contribute to a healthier and higher quality of life for building staff and visitors whilst reducing air and noise pollution.

This GTP summarises the key services around the Site and outlines initiatives and measures which could promote sustainable transport using public transport, walking and cycling. A target mode share for the Proposal has been estimated and considers the potential measures to encourage sustainable travel to and from the Site. The potential management measures and monitoring actions are summarised in the framework implementation plan shown in Table 6 and Table 7.

The GTP is a live document, and its successful implementation would rely on ongoing monitoring and review. Although the objectives of the GTP would not change, targets and measures may be changed to reflect an ambition for continued progress. Monitoring mechanisms may include periodic travel surveys to understand the travel behaviour of staff and visitors and success of the measures, as well as a working group who meets regularly to discuss measures. A robust governance structure would also be in place to contribute to the success of the plan.

Estimated resourcing has been provided alongside those responsible but the funding will be allocated when the working group meets to discuss the measures on a regular basis.

Table 6: Framework implementation plan – measures

No.	Measure	Timing	Responsibility	Indicators
Remode				
RM1	Prepare and distribute TAG with information on sustainable transport	<ul style="list-style-type: none"> Distribute to all new staff or as part of staff induction Update yearly or following key transport network changes 	Nominated GTP representative or committee	Percentage of staff aware of TAG and events Mode shares for walking, cycling and public transport
RM2	Provide links to Transport for NSW Trip Planner via a website or app associated with the development	<ul style="list-style-type: none"> Ongoing from occupation Update links as required 		
RM3	Promote walking and cycling events	<ul style="list-style-type: none"> Ongoing from occupation Ongoing promotion of events as required 		
RM4	Facilitate bike-sharing within the development	Ongoing from occupation	Building management/ WSLHD	
RM5	Provide incentives such as discount vouchers for a local bicycle retailer			
Reduce				
RD1	Facilitate carpooling for staff in the development	Ongoing from occupation	Nominated GTP representative or committee	Number of staff carpooling instead of driving

Table 7: Framework implementation plan – monitoring and governance

No.	Action	Timing	Responsibility	Estimated resourcing
Monitoring and governance				
MG1	Managing and implementing the GTP and measures in Table 6.	Ongoing from occupation	Nominated GTP representative or committee	20 hours / month
MG2	A working group organised by the nominated GTP representative, or committee will meet regularly to discuss the proposed measures	<ul style="list-style-type: none"> Every 6 months or as required 		4 hours/ year
MG3	Monitoring, including distributing travel survey, Automatic Number Plate Recognition (ANPR) and analysing findings	<ul style="list-style-type: none"> Review findings 3 months post-occupation Review findings minimum yearly or following key transport changes 		10 hours / year
MG4	Review and revision of targets, GTP and transport routes	Review minimum yearly at strata committee meetings for 5 years post-occupancy		10 hours / year
MG5	Funding of GTP implementation	Ongoing from occupation		Building management/ WSLHD