

Mulgrave Private Hospital

Transport Impact Assessment – Stage 2B



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onemilegrid

ABN: 79 168 115 679

(03) 9939 8250
Wurundjeri Woiworung Country
56 Down Street
COLLINGWOOD, VIC 3066
www.onemilegrid.com.au

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- APPENDIX A SWEPT PATHS
- APPENDIX B SIDRA RESULTS

1 INTRODUCTION

onemilegrid has been requested by Health Science Planning Consultants to undertake a Transport Impact Assessment of the proposed amendments to the Mulgrave Private Hospital expansion. For the purposes of this report, this amendment is referred to Stage 2B.

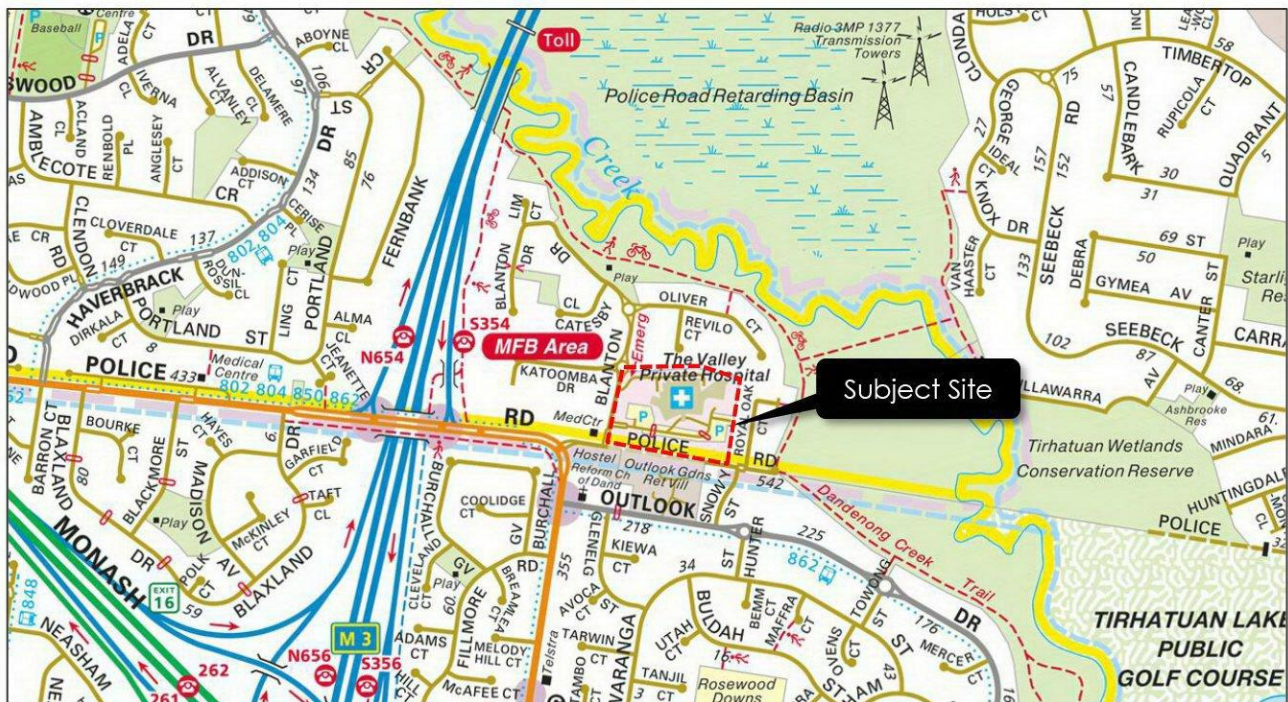
As part of this assessment the subject site has been inspected with due consideration of the development proposal, traffic and parking data has been sourced and relevant background reports have been reviewed.

2 EXISTING CONDITIONS

2.1 Site Location

The Mulgrave Private Hospital is located on the north-eastern corner of the Blanton Drive / Police Road intersection, as shown in Figure 1.

Figure 1 Site Location



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The hospital is irregular in shape and is bound by Blanton Drive to the east and Police Road to the south.

Vehicular access to the site is provided from Blanton Drive along the site's western boundary.

Land use in the immediate vicinity of the site is generally standard density residential in nature.

An aerial view of the subject site is provided in Figure 2.

Figure 2 Site Context (24 April 2023)

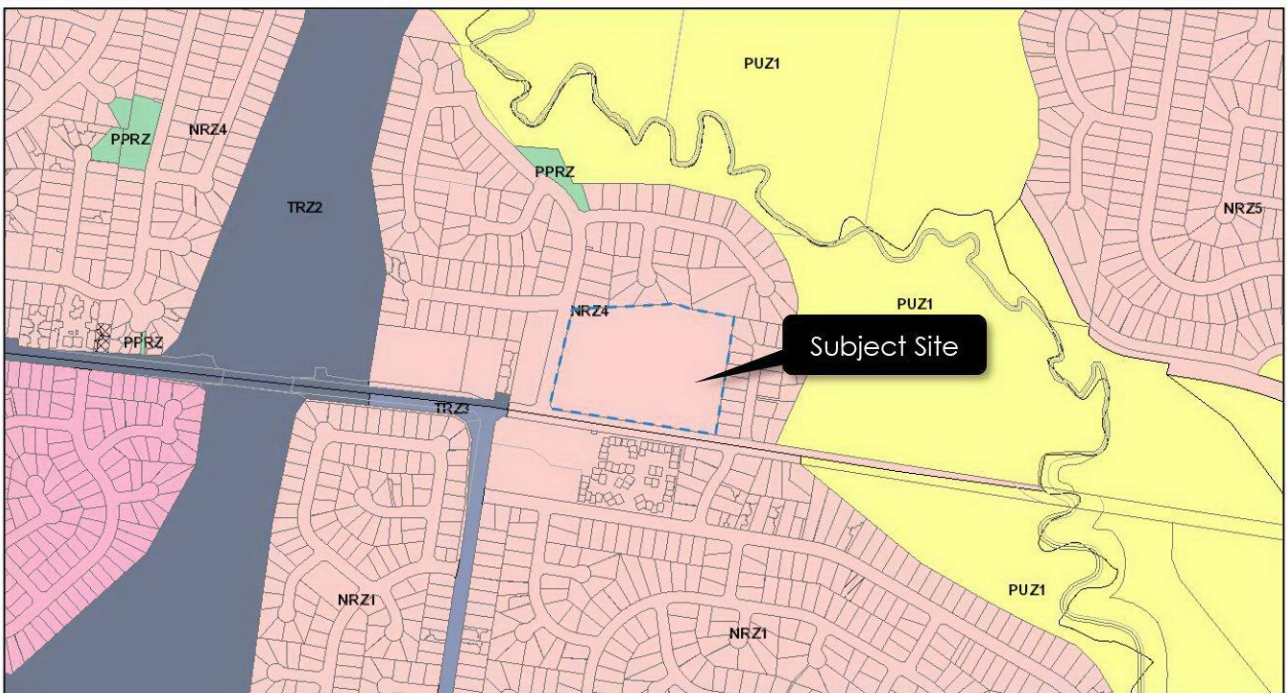


Copyright Nearmap

2.2 Planning Zones and Overlays

It is shown in Figure 3 that the site is located within a Neighbourhood Residential Zone (NRZ4).

Figure 3 Planning Scheme Zones



2.3 Road Network

2.3.1 Blanton Drive

Blanton Drive is a local road generally aligned north-south, running north of Police Road and terminating to the north of the site. Blanton Drive provides a single traffic lane and a kerbside parking lane in each direction adjacent to the site. Kerbside parking is provided on both sides of the road, with the eastern side generally restricted to 2-hour parking between 8:00am and 6:00pm, Monday to Friday, whilst the western side is unrestricted where parking is permitted.

The cross-section of Blanton Drive at the frontage of the site is shown in Figure 4.

Figure 4 Blanton Drive, looking south from the subject site



2.3.2 Police Road

Police Road is a local road generally aligned east-west, running between Princes Highway and Royal Oak Court. East of Monash Freeway, Police Road is a designated arterial road.

Between Blanton Drive and Snowy Street, the road is generally only used for pedestrian movements.

In the vicinity of the site, Police Road allows for a single traffic lane in each direction.

The cross-section of Police Road at the frontage of the site is shown in Figure 5.

Figure 5 Police Road, looking east from the subject site showing discontinuation of road



2.4 Sustainable Transport

2.4.1 Public Transport

Public transport in the vicinity of the site is limited to bus services. Several bus routes operate from Gladstone Road / Police Road which provide connections to Waverley Gardens Shopping Centre where additional bus services are provided. In addition, the bus routes provide access to both Dandenong Station and Oakleigh Station where heavy rail connections are provided.

The full public transport provision in the vicinity of the site is shown in Figure 6 and detailed in Table 1.

Figure 6 Public Transport Provision

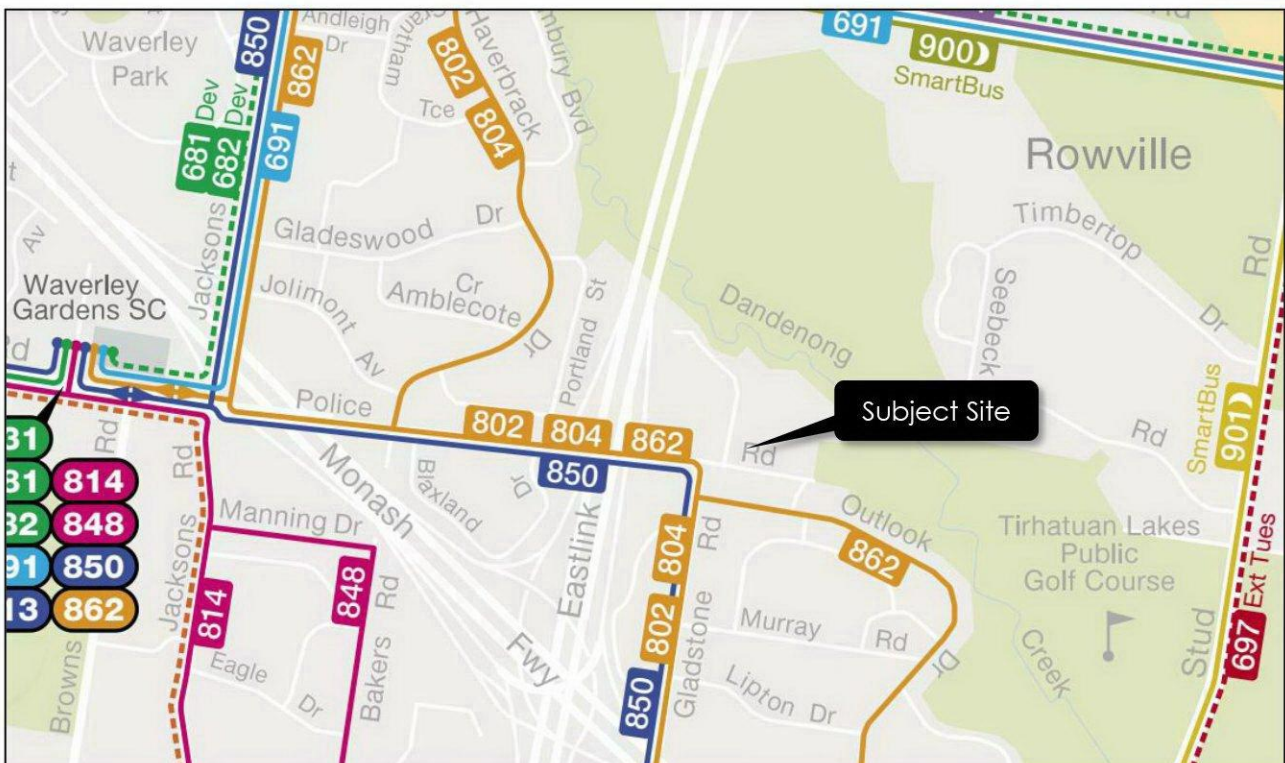


Table 1 Public Transport Provision

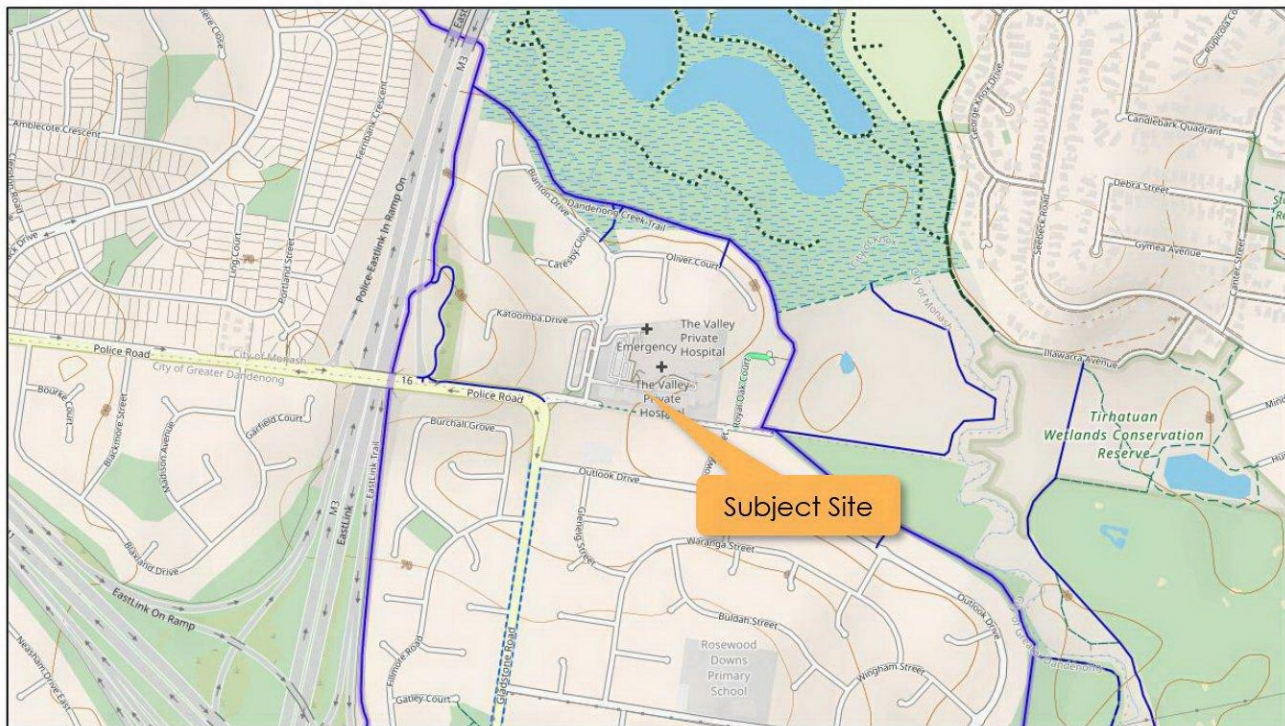
Mode	Route No.	Route Description	Nearest Stop/Station
Bus	802	Dandenong - Chadstone via Mulgrave & Oakleigh	Gladstone Road
	804	Dandenong - Chadstone via Wheelers Hill & Oakleigh	
	850	Dandenong - Glen Waverley via Mulgrave & Brandon Park	
	862	Dandenong - Chadstone via North Dandenong & Oakleigh	

2.4.2 Walking and Bicycle Facilities

An extract of the existing bicycle and pedestrian facilities in the vicinity of the site is shown in Figure 7.

The map shows that off-road shared paths are currently provided along Dandenong Creek Trail and the Eastlink Trail which provide further connections to a wider bicycle network, providing good bicycle access to the subject site.

Figure 7 Walking and Cycling Routes



Copyright OpenStreetMap

3 EXISTING HOSPITAL

3.1 General

The Mulgrave Private Hospital is a major provider of health services within Melbourne's southeast. The hospital provides acute, sub-acute and ambulatory services and is understood to provide approximately 239 points of care and 7 consulting suites.

A summary of the existing services provided at the hospital is provided in Table 2.

Table 2 Mulgrave Private Hospital – Existing Services

<i>Patient Treatment Function Area</i>	<i>Existing Services</i>
Overnight Beds	176 beds
Rapid Assessment Unit	7 beds
Emergency Department	12 beds
Day Procedure Theatres	3 theatres
Operating Theatres	7 theatres
Day Surgery Centre Recovery Beds	14 beds
Main Theatre Recovery Beds	10 beds
Consulting Suites	7 suites
Medical Imaging	10 rooms
Total	219 beds 10 theatres 7 consulting suites 10 medical imaging rooms

3.2 Site Access & Circulation

Vehicular access to the site is facilitated via two fully-directional crossovers to Blanton Drive which are connected by an internal road network.

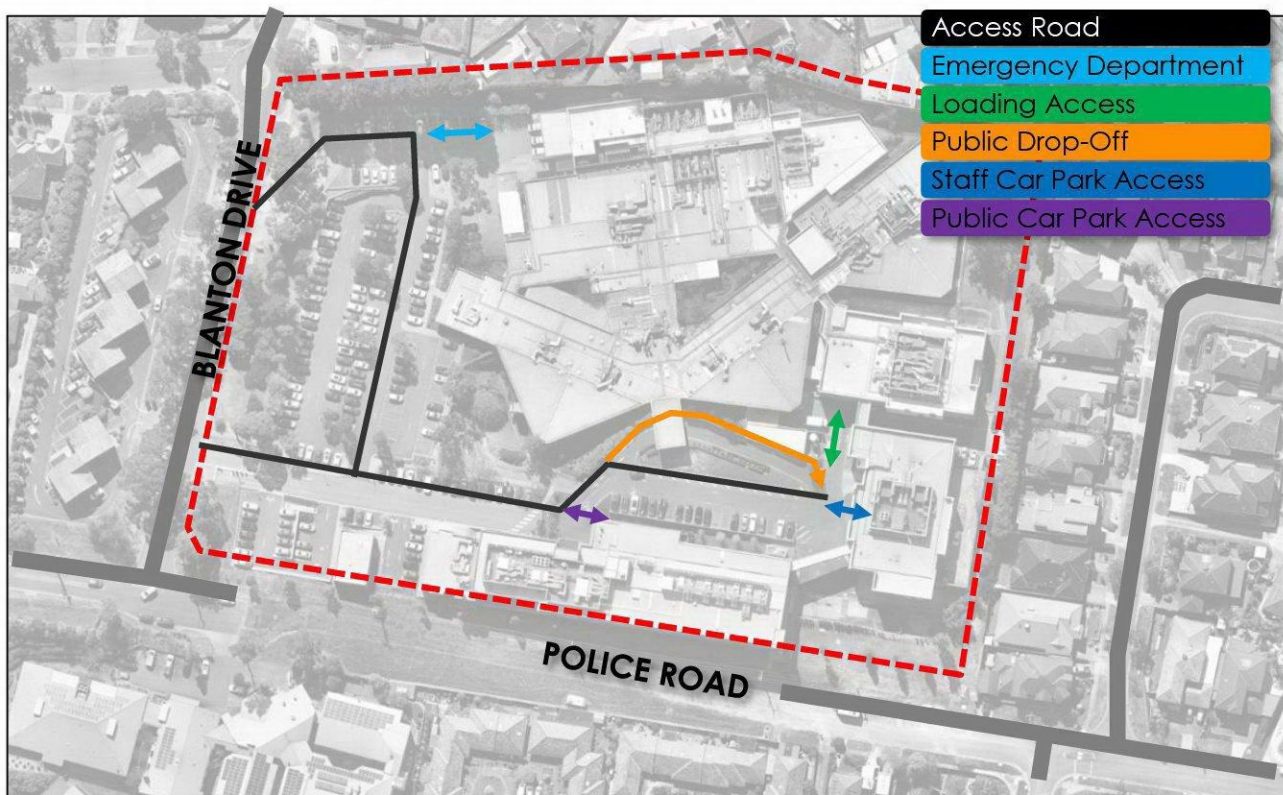
The northern crossover is generally used to access the emergency department and is used by both ambulances and private vehicles.

The southern crossover is generally used to access all parking areas on-site including the at-grade parking along the site's western boundary, the multi-deck car parking along the site's southern boundary and the public drop-off area.

In addition, the southern crossover is used to access the loading area located in the south-eastern corner of the site.

The hospital vehicular access arrangements for all vehicle users are shown in Figure 8.

Figure 8 Mulgrave Private - Hospital Vehicle Access Arrangements



3.3 Car Parking

3.3.1 Existing Parking Provision

onemilegrid commissioned Trans Traffic Surveys to collect an inventory of on-site parking provision and undertake car parking occupancy surveys on Thursday 1st September 2022.

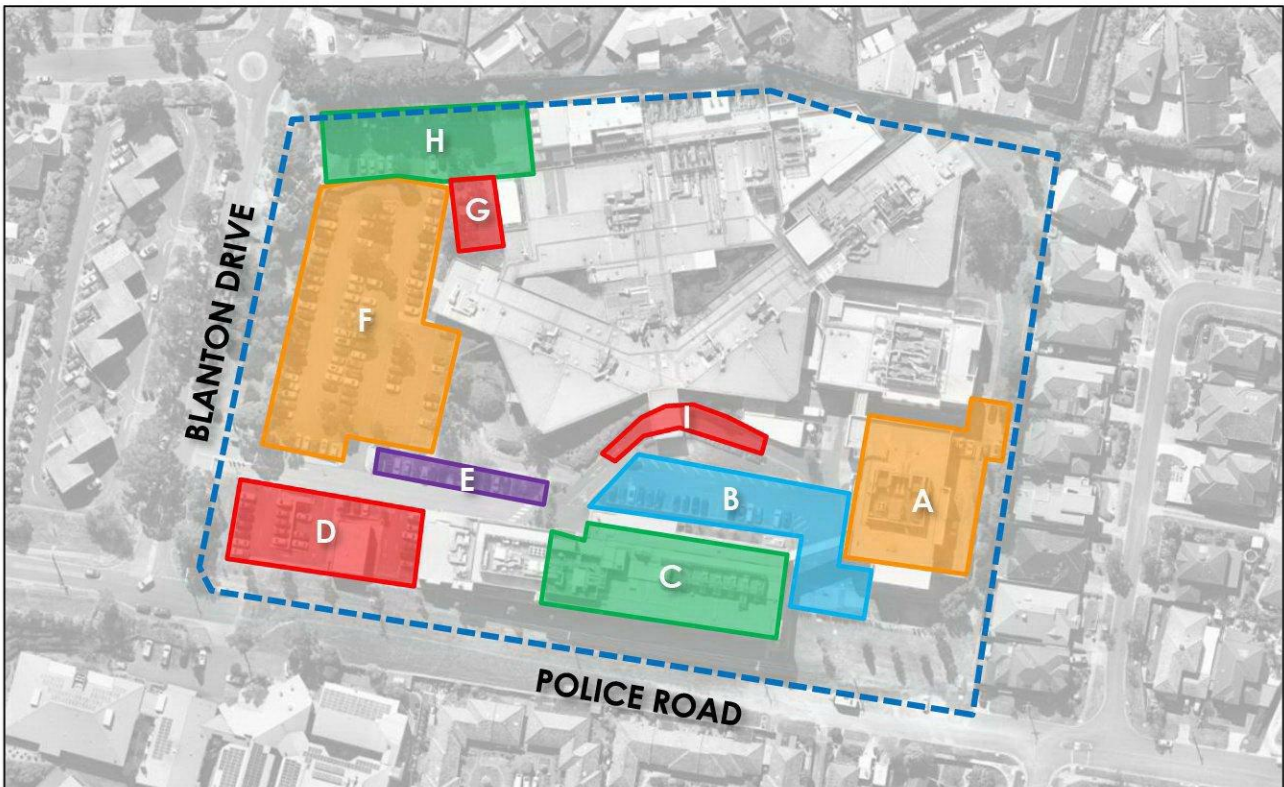
The surveys identified a total of 491 parking spaces on-site which includes parking at ground level and podium car parks. It is noted that this is a net reduction of three car parking spaces than what was previously accommodated on-site due to the formalisation of doctor parking along the site's northern boundary and the removal of car parking adjacent to the emergency department to accommodate a building portable.

A summary of the car parking provided on-site is provided in Table 3 and shown in Figure 9.

Table 3 Existing Car Parking Inventory

<i>Area</i>	<i>Description</i>	<i>Capacity</i>
Off-Street		
A	Reserved: Staff	135 spaces
B	2P: Ticket	22 spaces
	P: Ticket	4 spaces
	Accessible	1 space
C	P: Ticket	136 spaces
D	P: Ticket	28 spaces
E	P: Ticket	17 spaces
F	P: Ticket	86 spaces
	Seniors	23 spaces
G	P: Ticket	3 spaces
	Accessible	4 spaces
H	Reserved: Doctors	18 spaces
	Reserved: Hospital Only	2 spaces
	Reserved: Emergency Only	2 spaces
	P Ticket	5 spaces
I	Drop-off Only	5 spaces
Total		491 spaces

Figure 9 On-Site Car Parking Locations

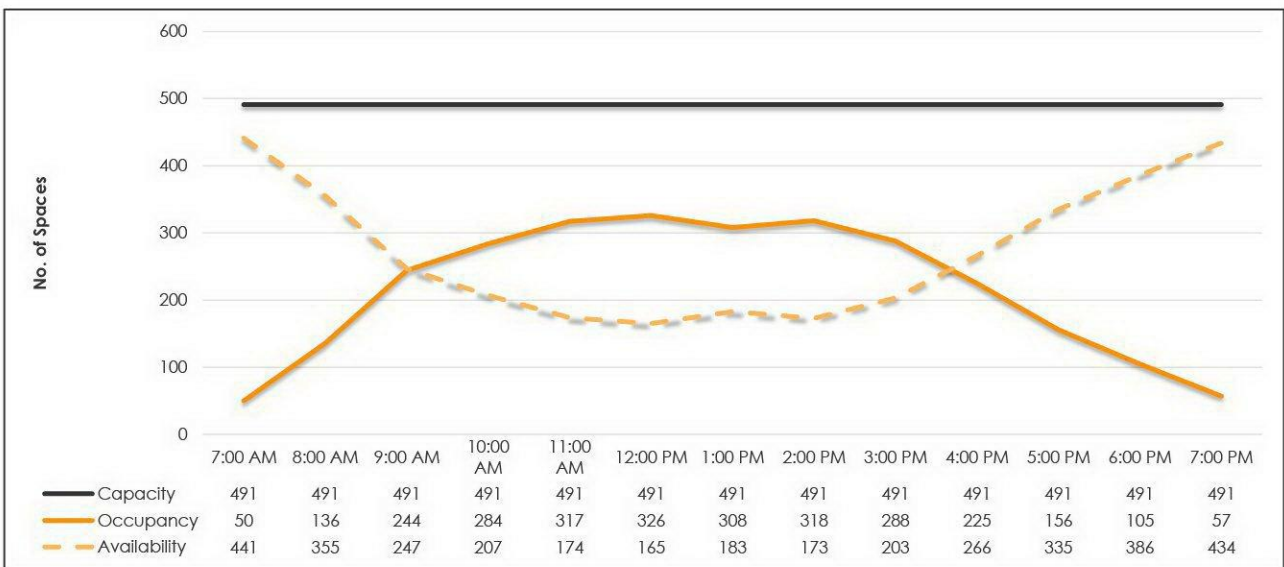


3.3.2 Existing Car Parking Occupancy

As shown in Figure 10 below, the surveys (shown in Figure 10 below) identified that peak car parking occupancy occurred at 12:00 PM when 326 spaces were occupied, leaving no fewer than 165 spaces available for use.

Furthermore, car parking occupancy was generally consistent between 10:00AM and 3:00PM where between 58% and 66% of parking was occupied.

Figure 10 Existing Car Parking Occupancy Profile



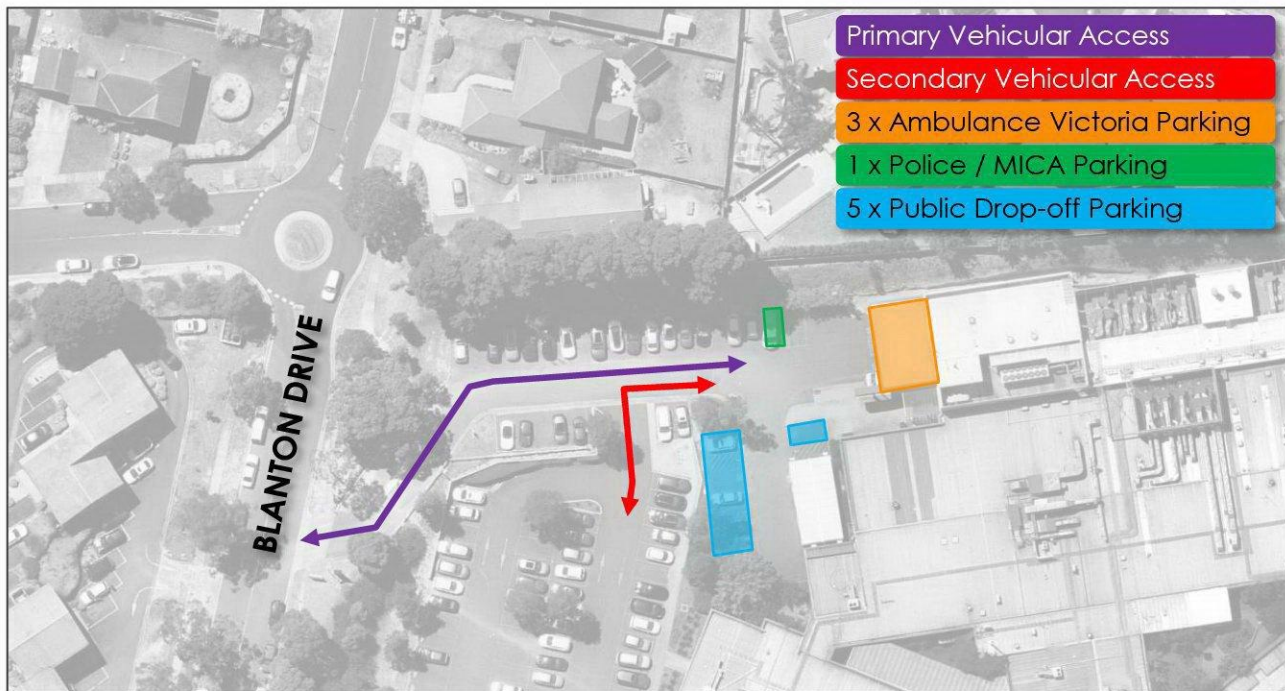
3.4 Emergency Department

The emergency department is located centrally along the site's northern boundary, with primary access generally provided from the northern Blanton Drive crossover. The emergency department provides six parking spaces (inclusive of four accessible bays) for public drop-off. In addition, the following parking spaces are provided for emergency vehicles:

- 3 x Ambulance Victoria vehicles; and
- 1 x MICA / Police vehicle.

A view of the emergency department parking is shown below in Figure 11.

Figure 11 Emergency Department



3.5 Loading and Waste Collection

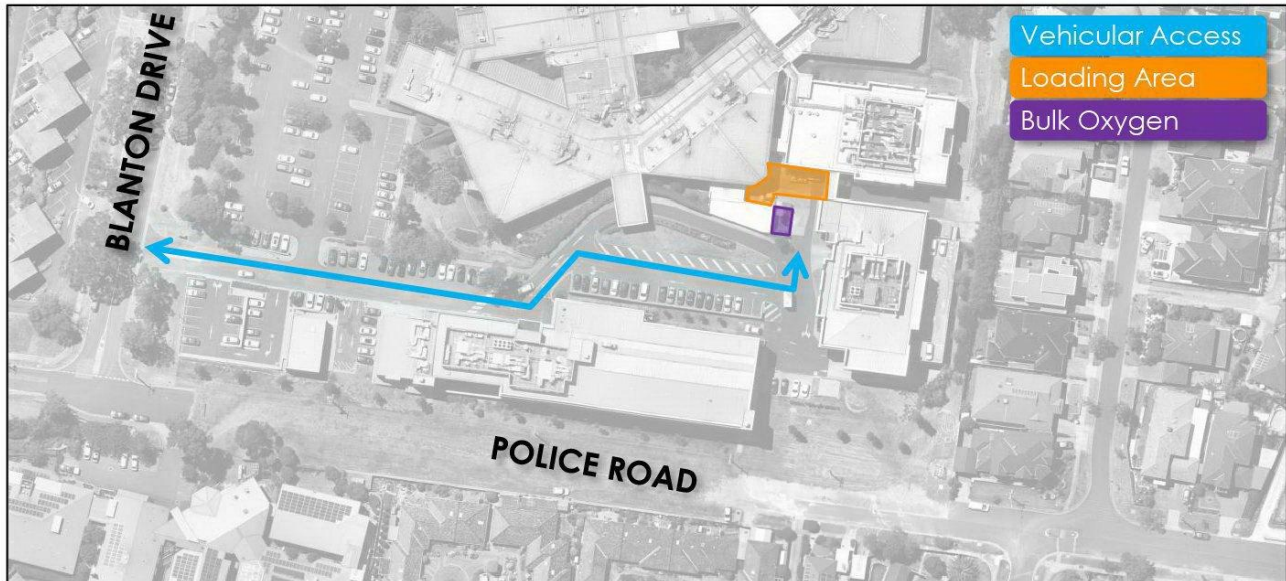
All loading on-site is accommodated via a designated loading area in the south-eastern portion of the site, with vehicular access facilitated via the southern Blanton Drive crossover.

The loading area is used for linen and food deliveries and waste collection, and has been designed to accommodate a 12.5m Heavy Rigid vehicle.

The bulk oxygen is also located adjacent to the loading area.

A view of the site's existing loading and waste collection arrangement is shown in Figure 12.

Figure 12 Existing Loading and Waste Collection Arrangements



4 PLANNING BACKGROUND

4.1 Original Planning Permit (TPA/50096)

A Planning Permit (TPA/50096) was granted for the emergency department redevelopment at the Mulgrave Private Hospital. The approved permit comprised of the following:

- Increasing the hospital's floor area from 12,684 m² to 14,542 m² (net increase of 1,349 m²);
- Increase of 14 emergency department beds (short stay unit);
- Convert the existing ambulance bays to service parking bays;
- Provide four ambulance bays (inclusive of 2 x CPAV) adjacent to the reconfigured emergency department;
- Reconfigure the car parking adjacent to the emergency department and construct a new basement car parking in the south-eastern corner of the site, which will increase the site's car parking provision by 18 spaces.

4.2 Secondary Consent (Stage 1)

Secondary consent was approved in November 2022 to amend the endorsed architectural plans which were approved as part of Planning Permit TPA/50096. The secondary consent architectural set comprised of the following:

- Increasing the hospital's floor area from 12,684 m² to 13,284 m² (net increase of 600 m²) by expanding the emergency department and construction of a service platform;
- Increase of 14 emergency department beds (short stay unit);
- The existing ambulance bays are to be retained;
- Reconfigure the car parking adjacent to the emergency department which result in the removal of 14 car parking spaces;
- Construct an additional basement level with 35 car parking spaces in the south-eastern corner of the site.

It is noted that three of the car parking spaces adjacent to the emergency department have already been removed (as identified in the car parking surveys), therefore the above works will result in an increase of 24 car parking spaces on-site (515 spaces total).

In addition, the above works will result in a total of 233 beds on-site.

4.3 DAAM1 (Stage 2A)

Approval has been received from Monash City Council under Planning Permit TPA/50096/A to make the following changes to the approved development.

- Demolish the bayside heart (RASU) building which results in the removal of 7 beds;
- Demolish 41 at-grade car parking spaces and adjacent landscaping to the south-west of the main building;
- Reconfiguration of the Emergency Department building which results in the following:
 - ✦ Increase in the hospital's floor area from 13,284 m² to 14,513 m² (net increase of 1,229 m²);
 - ✦ Increase of 12 emergency department beds;
- Construct 41 car parking spaces within a new car park to the south-west of the main building;
- Construct 4 ambulance bays (3 x AV and 1 X CPAV) adjacent to the ED expansion;
- Construct 4 drop-off bays adjacent to the ED expansion;

The above proposed changes result in a net increase of 5 beds (238 beds total) and a net increase of 4 car parking spaces (519 car parking spaces total).

A Transport Impact Assessment was prepared by **onemilegrid** to accompany the DAAM1 application which determined that the site is expected to have a demand for 353 car parking spaces at the completion of the DAAM1 works.

Furthermore, a recent RFI response was submitted to Council (220529RFI002B-F) which proposes to delay the basement car park in the south-eastern corner of the site proposed as part of the secondary consent to a future stage, therefore there is now expected to be a reduction of 11 parking spaces as part of the secondary consent. In addition, a temporary car park will be constructed in the south-eastern corner of the site with 30 parking spaces as part of DAAM1 (Stage 2A) resulting in a net increase of 34 car parking spaces for DAAM1.

A summary of the changes proposed on site as part of the above approvals are shown below.

Table 4 Summary of Approved Additional Services

<i>Patient Treatment Function Area</i>	<i>Existing Services</i>	<i>Additional Services (Secondary Consent)</i>	<i>Additional Services (DAAM1)</i>	<i>Services After DAAM1</i>
Overnight Beds	176 beds	-	-	176 beds
Rapid Assessment Unit	7 beds	-	-7	-
Emergency Department	12 beds	+14	+12	38 beds
Day Procedure Theatres	3 theatres	-	-	3 theatres
Operating Theatres	7 theatres	-	-	7 theatres
Day Surgery Centre Recovery Beds	14 beds	-	-	14 beds
Main Theatre Recovery Beds	10 beds	-	-	10 beds
Operating Theatre Hold Bays	-	-	-	-
Consulting Suites	7 suites	-	-	7 suites
Medical Imaging	10 rooms	-	-	10 rooms
Total	219 beds 10 theatres 7 consulting suites 10 medical imaging rooms	+14 beds	+5 beds	238 beds 10 theatres 7 consulting suites 10 medical imaging rooms

Table 5 Summary of Additional Parking

<i>Existing Parking</i>	<i>Additional Parking (Secondary Consent)</i>	<i>Additional Parking (DAAM1)</i>	<i>Parking After DAAM1</i>
491 ¹	-11	+34	514

¹Includes recent removal of three car parking spaces

5.2 Additional Services

The proposed points of care which are to be provided at the completion of the proposed amendments is show in Table 6.

Table 6 Summary of Existing and Additional Services

Patient Treatment Function Area	Existing Services	Services After DAAM1	Additional Services (Stage 2B)	Total Services
Overnight Beds	176 beds	176 beds	+78 beds	252 beds
Rapid Assessment Unit	7 beds	-	-	-
Emergency Department	12 beds	38 beds	-	38 beds
Day Procedure Theatres	3 theatres	3 theatres	-	3 theatres
Operating Theatres	7 theatres	7 theatres	+6 theatres	13 theatres
Day Surgery Centre Recovery Beds	14 beds	14 beds	-	14 beds
Main Theatre Recovery Beds	10 beds	10 beds	+17 beds	27 beds
Consulting Suites	7 suites	7 suites	-	7 suites
Medical Imaging	10 rooms	10 rooms	-	10 rooms
Total	219 beds 10 theatres 7 consulting suites 10 medical imaging rooms	238 beds 10 theatres 7 consulting suites 10 medical imaging rooms	+95 beds +6 theatres	333 beds 16 theatres 7 consulting suites 10 medical imaging rooms

5.3 Staffing Numbers

The Mulgrave Private Hospital has advised that an additional 66 staff will be required to cater for the additional points of care as part of Stage 2B.

5.4 Car Parking

As part of Stage 2B, it is proposed to make several changes to the on-site car parking, as summarised below:

- Reconfigure the doctor car parking along the site's northern boundary, resulting in a net decrease of 16 car parking spaces.
- Demolish the existing at-grade car parking along the site's western boundary - removal of 67 car parking spaces.
- Demolish 42 ground level car parking spaces provided as part of DAAM1.
- Removal of 2 car parking spaces along site's main accessway.
- Removal of 15 car parking spaces along the site's southern boundary.
- Construct a new multi-deck car park along the site's western boundary. The multi-deck car parking will comprise of 309 car parking spaces over four levels.

A summary of the proposed changes to the on-site car parking provision is provided below.

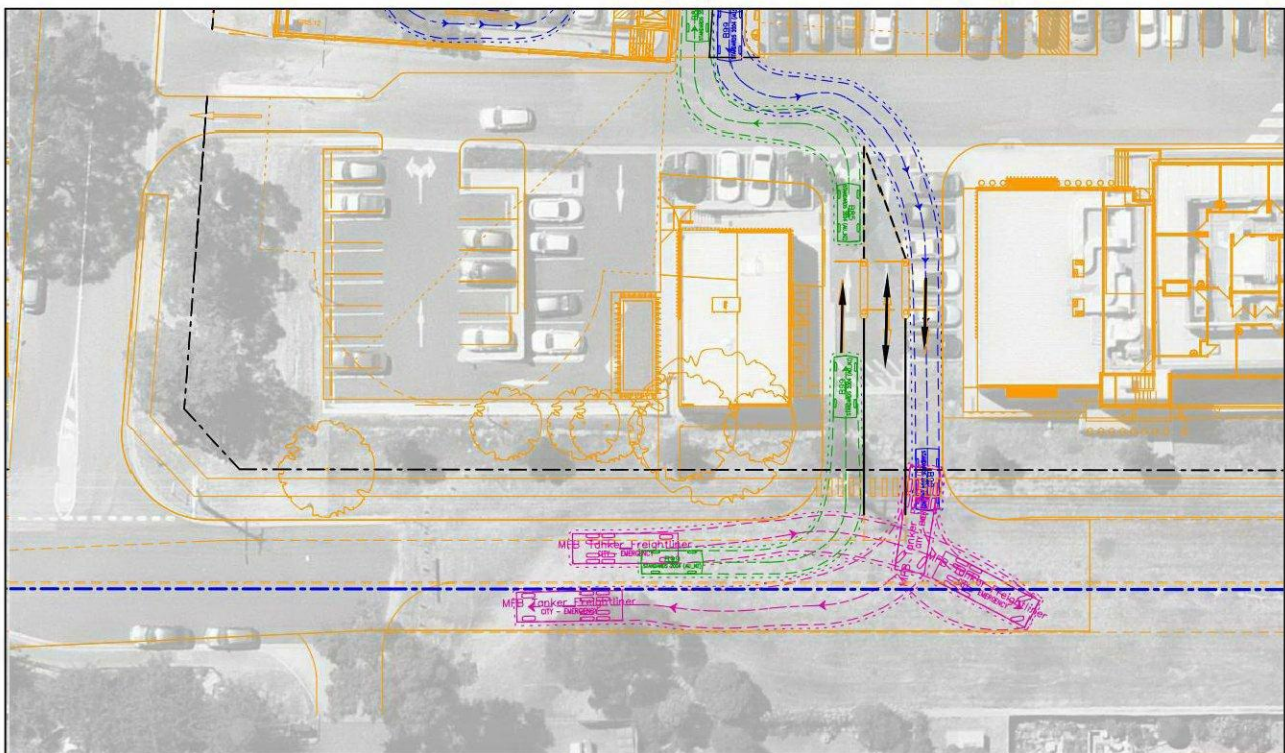
Table 7 Changes to Car Parking Provision

<i>Car Parking after DAAM1</i>	<i>Parking Displacement</i>	<i>Parking Increase</i>	<i>Net Total</i>
514	-142	+309	681

5.5 External Works

As part of the proposed hospital expansion, it is proposed to extend Police Road west from Blanton Drive with the road terminating approximately 80 metres west of Blanton Drive. The road will be provided with a 10.7 metre carriageway which will be constant with the existing road cross-section. The Police Road extension will be used to facilitate primary vehicle access to the site via the new boom gates.

A view of the proposed Police Road works are shown in Figure 14.

Figure 14 Proposed Police Road Extension

5.6 Vehicle Access

As part of the Stage 2B works, it is proposed to modify the existing site access arrangements which includes:

- Relocating the primary site access to Police Road. The new site access will comprise of a three-lane boom gate system, with the central lane accommodating inbound movements during the AM peak hour and outbound movements during the PM peak hour;
- The southern Blanton Drive access will be restricted to exit-out movements only; and
- The northern Blanton Drive access will be maintained, noting this access is generally only used by ambulances and doctors.

5.7 Ambulance

It is proposed to expand the emergency department parking area which was provided as part of Stage 2B. The works will comprise of retaining the 4 x ambulance bays (inclusive of 1 x CPAV) adjacent to the emergency department and providing 2 x overflow ambulance bays to the west of the emergency department.

5.8 Loading

It is proposed to provide two additional loading bays to the north of the emergency department as part of the Stage 2B works. The two loading bays will accommodate loading vehicles up to an 8.8m Medium Rigid Vehicle (MRV).

5.9 Bicycle Parking

A total of 12 additional bicycle parking spaces are proposed on-site as part of the Stage 2B works. The bicycle parking spaces will be provided in horizontal bicycle racks located within the multi-deck car park ramp undercroft. Access to bicycle parking will be provided from the adjacent the emergency department building.

In addition, two showers (one male and one female) and eight lockers are proposed on level one for staff use.

6 DESIGN ASSESSMENT

6.1 Monash Planning Scheme – Clause 52.06

onemilegrid has undertaken an assessment of the car parking layout and access for the proposed development with due consideration of the Design Standards detailed within Clause 52.06-9 of the Planning Scheme. A review of those relevant Design Standards is provided in the following section.

6.1.1 Design Standard 1: Accessways

A summary of the assessment for Design Standard 1 is provided in Table 8.

Table 8 Clause 52.06-9 Design Assessment – Design Standard 1

<i>Requirement</i>	<i>Comments</i>
Be at least 3 metres wide.	Satisfied – minimum width of access is 3 metres
Have an internal radius of at least 4 metres at changes of direction or intersection or be at least 4.2 metres wide.	Satisfied – swept paths are attached which shows circulation within the car park
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forward direction with one manoeuvre.	Satisfied
Provide at least 2.1 metres headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8 metres.	Satisfied
If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction.	Satisfied
Provide a passing area at the entrance at least 6.1 metres wide and 7 metres long if the accessway serves ten or more car parking spaces and is either more than 50 metres long or connects to a road in a Transport Zone 2 or Transport Zone 3.	Satisfied
Have a corner splay or area at least 50 per cent clear of visual obstructions extending at least 2 metres along the frontage road from the edge of an exit lane and 2.5 metres along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	Satisfied
If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6 metres from the road carriageway.	Satisfied

6.1.2 Design Standard 2: Car Parking Spaces

All standard 90-degree car spaces on-site are proposed with a minimum width of 2.6 metres, length of 4.9 metres and are accessed from aisles of no less than 6.4 metres. Spaces adjacent to walls have been suitably widened in accordance with Design Standard 2 of the Planning Scheme.

The accessible bays are provided with a length of 5.4 metres and a width of 2.4 metres, and an adjacent shared area of the same dimensions, in accordance with the Australian Standard for Parking facilities, Part 6: Off-street parking for people with disabilities (AS 2890.6:2022). Furthermore, a height clearance of no less than 2.5 metres is provided above the centre of the accessible bay and adjacent shared area, in accordance with the Australian Standard.

6.2 Bicycle Parking

Bicycle parking is provided within on-ground bicycle hoops.

The horizontal bicycle hoops are designed in accordance with the Australian Standards, provided at one metre centres, with an envelope of 1.8 metres provided for bicycles and a 1.5 metre access aisle.

6.3 Loading

Swept paths are attached in Appendix A showing an 8.8 metre Medium Rigid Vehicle accessing the site and reversing into each of the respective loading bays to the north of the emergency department.

6.4 Oxygen Delivery

The northern car parking area has been redesigned to accommodate up to a 16.5 metre bulk oxygen delivery vehicle.

Swept paths are attached in Appendix A showing the bulk oxygen delivery vehicle accessing the site from the northern Blanton Drive access.

7 LOADING

Clause 65 (Decision Guidelines) of the Monash Planning Scheme identifies that *"Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate: The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts."*

It is proposed to provide an additional loading area to the north of the emergency department. The loading area has been designed to accommodate the following loading vehicles:

- 2 x 8.8m Medium Rigid Vehicles.

In addition, the existing loading area located centrally within the site will be retained.

Swept path diagrams have been provided in Appendix A showing an 8.8m MRV accessing the site and the vehicle reversing into the loading bays.

The provision for loading is therefore considered appropriate for the proposed hospital expansion.

8 BICYCLE PARKING

The bicycle parking requirements for the subject site are identified in Clause 52.34 of the Monash Planning Scheme, which specifies the following requirements for the proposed hospital expansion. It is noted that the bicycle parking requirements are applied to the additional services only which includes all points of care (beds and operating theatres).

Table 9 Clause 52.34 – Bicycle Parking Requirements

<i>Component</i>	<i>No</i>	<i>Requirement</i>	<i>Total</i>
Hospital	101 beds	1 space per 15 beds for employees	7
		1 space per 30 beds for visitors	3
Total			10

Furthermore, where 5 or more employee bicycle spaces are provided, employee facilities are required in accordance with Clause 52.34 of the Monash Planning Scheme, as identified below.

Table 10 Clause 52.34 – Bicycle Facility Requirements

<i>Facility</i>	<i>Employee Bicycle Spaces</i>	<i>Requirement</i>	<i>Total</i>
Showers	7 spaces	1 shower for the first 5 employee bicycle spaces; plus 1 to each 10 employee bicycle spaces thereafter	1

Showers must have access to a communal change room, or combined shower and change room

It is proposed to provide 12 bicycle parking spaces on-site and two showers which is in excess of the Planning Scheme requirements.

Furthermore, all bicycle parking is provided in a horizontal arrangement in excess of the Australian Standard.

9 CAR PARKING

9.1 Statutory Car Parking Requirements

9.1.1 Car Parking Requirements – Clause 52.06

Clause 52.06 of the Monash Planning Scheme sets out the car parking requirements for the various land uses, however hospital is not one of the uses defined in the table for calculating a requirement. In such cases, Clause 52.06-5A states that:

'Where a use of land is not specified in Table 1 or where a car parking requirement is not specified for the use in another provision of the planning scheme or in a schedule to the Parking Overlay, before a new use commences or the floor area or site area of an existing use is increased, car parking spaces must be provided to the satisfaction of the responsible authority.'

Furthermore, Clause 52.06 also specifies that:

'Where an existing use is increased by the measure specified in Column C of Table 1 for that use, the car parking requirement only applies to the increase, provided the existing number of car parking spaces currently being provided in connection with the existing use is not reduced'.

As noted above, the car parking for the proposed points of care are not listed within Clause 52.06 of the Planning Scheme, therefore car parking is to be provided to the satisfaction of the responsible authority.

A review of additional car parking demands likely to be generated as a result of the proposal follows.

9.2 Car Parking Demand Assessment

9.2.1 Empirical Assessment

9.2.1.1 Hospital Visitor Parking Demand

Based on previous case studies undertaken by **onemilegrid** and other traffic consultants at a range of hospitals throughout Victoria, a visitor parking demand rate of 0.55 spaces per bed is recommended.

Applying the above rate to the additional 101 points of care proposed as part of Stage 2B results in a visitor car parking demand for 56 car parking spaces.

9.2.1.2 Hospital Staff Parking Demand

A review of the Journey to Work data from the 2021 ABS Census indicates that 85% of people working within the City of Monash drove to work.

Based on the additional 66 staff expected on-site for Stage 2B, it is expected that the site will generate a demand for 56 staff parking spaces.

9.3 Total Car Parking Demand

A summary of the car parking demands based on an empirical assessment is shown below.

Table 11 Total Parking Demand

<i>Stage</i>	<i>Visitor</i>	<i>Staff</i>	<i>Total</i>
Stage 2B	56	55	111

As shown above, the proposed expansion is expected to have a car parking demand for an additional 101 car parking spaces.

9.4 Car Parking Provision

It is proposed to provide make several changes to the car parking provision on-site as part of Stage 2B, which will be in addition to the changes provided as earlier stages of the expansion. The changes during Stage 2B include constructing a multi-deck car park in the western portion of the site.

The car parking adequacy for Stage 2B is provided in the table below.

Table 12 Car Parking Adequacy

<i>Stage</i>	<i>Parking Demand</i>	<i>Parking Displacement</i>	<i>Parking Increase</i>	<i>Summary</i>
Existing Supply = 491 spaces Existing Demand = 326 spaces Existing Surplus = 165 spaces				
Up to DAAM1 (including temporary car park)	27	11	34	Supply = 514 spaces Demand = 353 spaces Surplus = 171 spaces
Stage 2B	111	142	309	Supply = 681 spaces Demand = 464 spaces Surplus = 217 spaces

Based on the above, there is sufficient car parking for each stage of the proposal with a surplus of 217 spaces anticipated at the completion of works on-site.

10 TRAFFIC

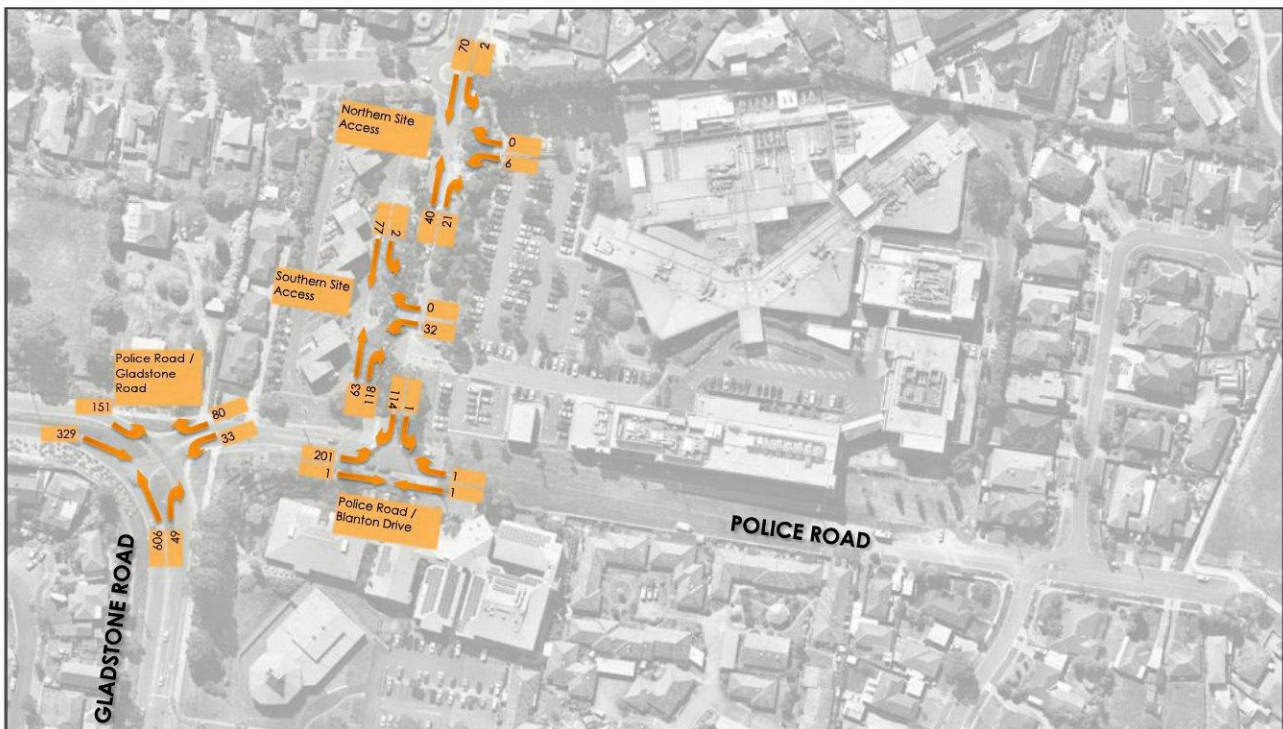
10.1 Existing Traffic Volumes

In order to understand existing traffic conditions in the vicinity of the site, **onemilegrid** commissioned traffic movement surveys on Thursday 1st September 2022 at the following locations:

- Blanton Drive / Northern Site Access;
- Blanton Drive / Southern Site Access; and
- Police Road / Gladstone Road.

The existing traffic volumes in the vicinity of the site during the AM and PM peak are shown

Figure 15 Existing Traffic Volumes – AM Peak



10.3 Anticipated Traffic Generation

For the purposes of this assessment, the traffic generation rates identified above will be adopted. The traffic generation will be applied to the anticipated car parking demand of 138 which includes the additional parking demand associated with both DAAM1 and Stage 2B.

Considering the above, the projected traffic generated by the expansion is summarised in Table 14.

Table 14 Proposed Expansion Traffic Generation

Peak	Parking Demand	Generation / Space			Vehicle Movements		
		In	Out	Total	In	Out	Total
AM Peak (8:00AM-9:00AM)	138	0.43	0.12	0.55	59	17	76
PM Peak (4:15PM-5:15PM)	spaces	0.17	0.34	0.51	23	47	70

It is expected that all the above traffic movements will be generated through the Police Road site access.

10.4 Base Case Traffic Volumes

10.4.1 Traffic Growth

For the purposes of establishing a traffic volume growth rate for the external road network, SCATS counts have been reviewed at the intersection of Gladstone Road / Outlook Drive which is located approximately 100 metres south of the Police Road / Gladstone Road intersection.

The SCATS data shows that between Thursday 6th September 2018 and 7th September 2023, the traffic volumes have reduced by approximately 17.5%. It is expected that this is a result of changes to the arterial road network in the vicinity which has reduced traffic volumes along Police Road.

Nevertheless, a comparison of the traffic volumes between 2022 and 2023 is shown in Table 15 below. It is noted that the surveyed date (1st September 2022) and several weeks within proximity of this date are unable to be utilised due to errors observed in the SCATS data.

Table 15 Outlook Drive / Gladstone Road Intersection - SCAT's Data Comparison

Date	Daily Traffic Volumes
Thursday 3 rd November 2022	12,624 vpd
Thursday 10 th November 2022	13,008 vpd
Thursday 31 st August 2023	12,765 vpd
Thursday 7 th September 2023	12,406 vpd

As shown above, the traffic volumes in both 2022 and 2023 are comparable, and therefore, no growth has been adopted along Gladstone Road.

Nevertheless, it is understood that a residential development comprising of 27 dwellings is proposed at 501-521 Police Road, Mulgrave. A traffic report was prepared by Quantum Traffic for the development which estimated that the site will generate approximately 216 vehicles / day, with 22 movements occurring during the peak hours.

10.4.2 Traffic Redistribution

As noted above, it is proposed to construct a new site access to Police Road with the existing southern Balston Drive site access being restricted to exit movements only. Therefore, all existing inbound traffic will need to be redistributed to Police Road.

The base case traffic volumes are shown in Figure 17 and Figure 18 which include the additional traffic generated by the residential development at 501-521 Police Road based on the existing traffic distribution at the Police Road / Gladstone Road intersection and the redistribution of traffic as a result of the modified site access arrangements.

Figure 17 Base Case Traffic Volumes – AM Peak

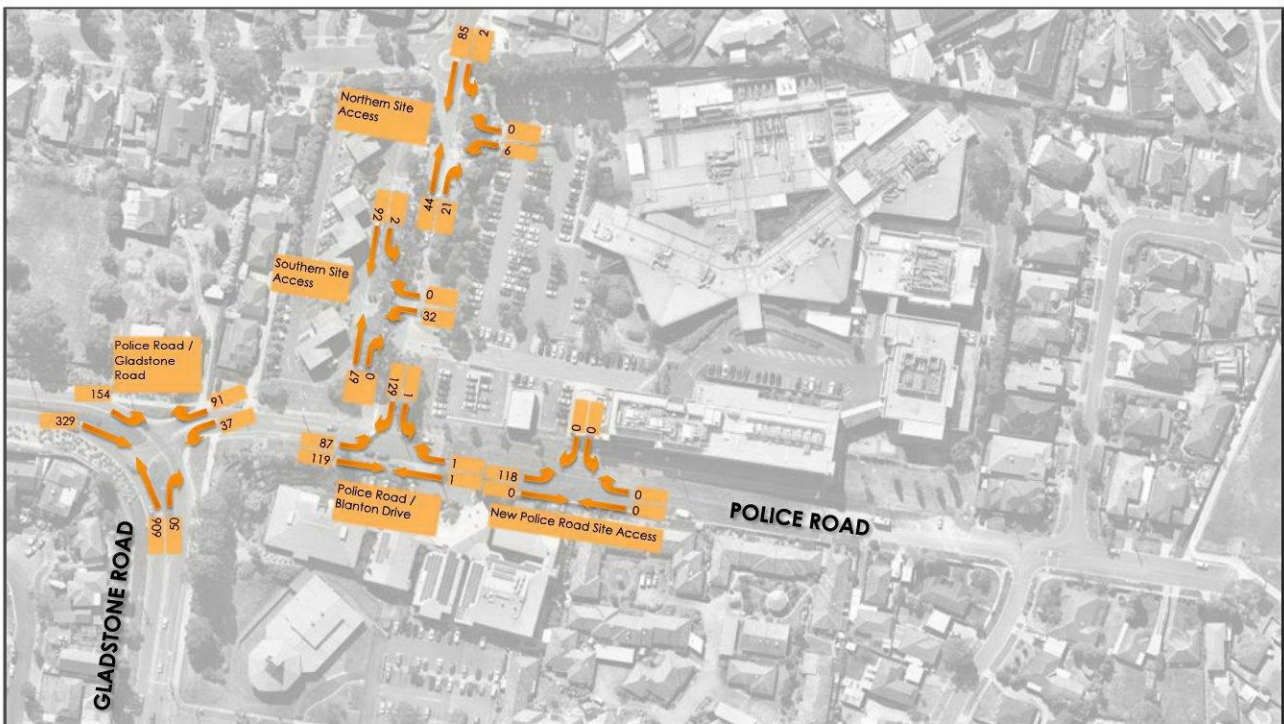
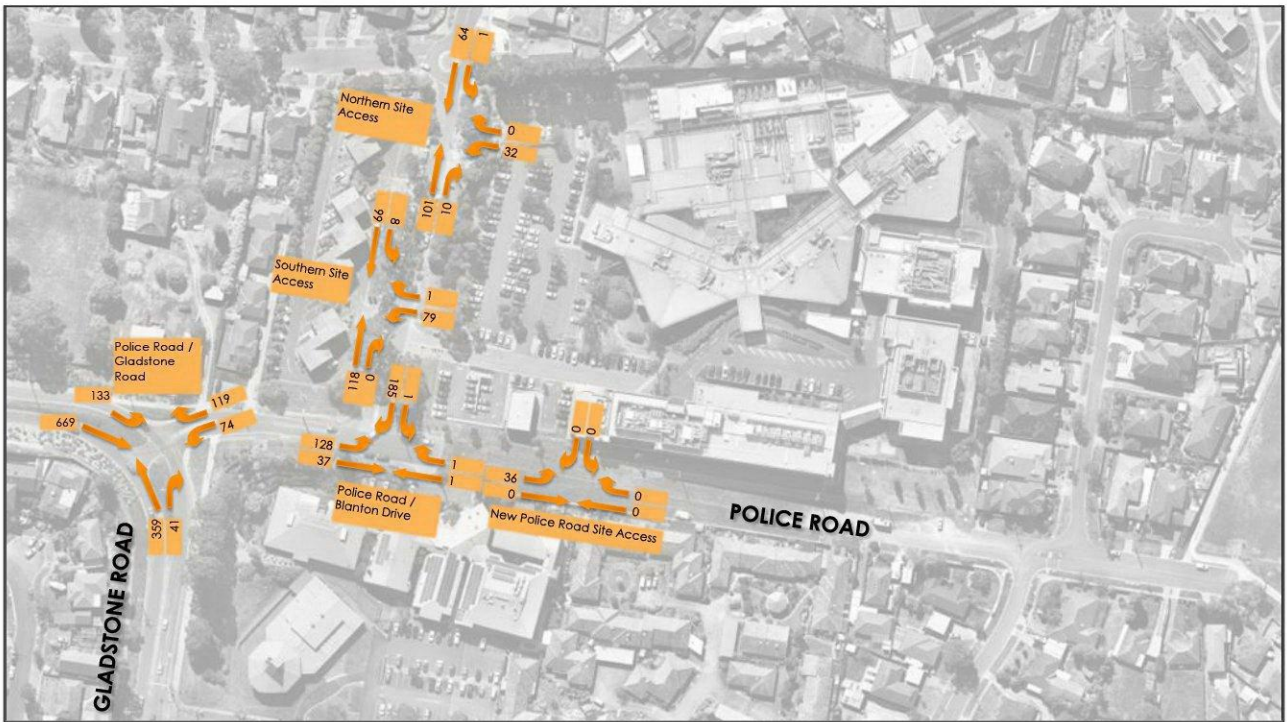


Figure 18 Base Case Traffic Volumes – PM Peak



10.5 Resultant Traffic Volumes

Based on the above, the future intersection volumes at the surrounding intersections can be calculated by combining the base case traffic volumes with the traffic generated by the proposed hospital expansion.

The resultant peak hour traffic volumes are shown in the figures below.

Figure 19 Resultant Traffic Volumes – AM Peak

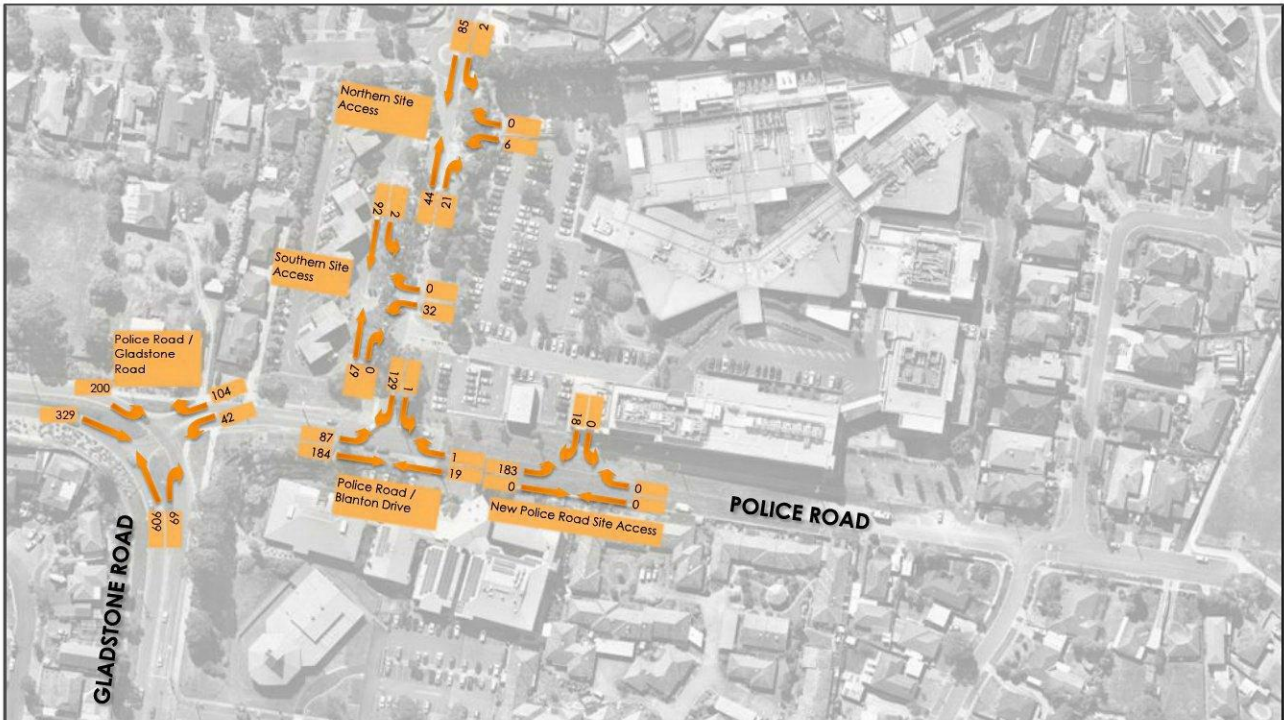
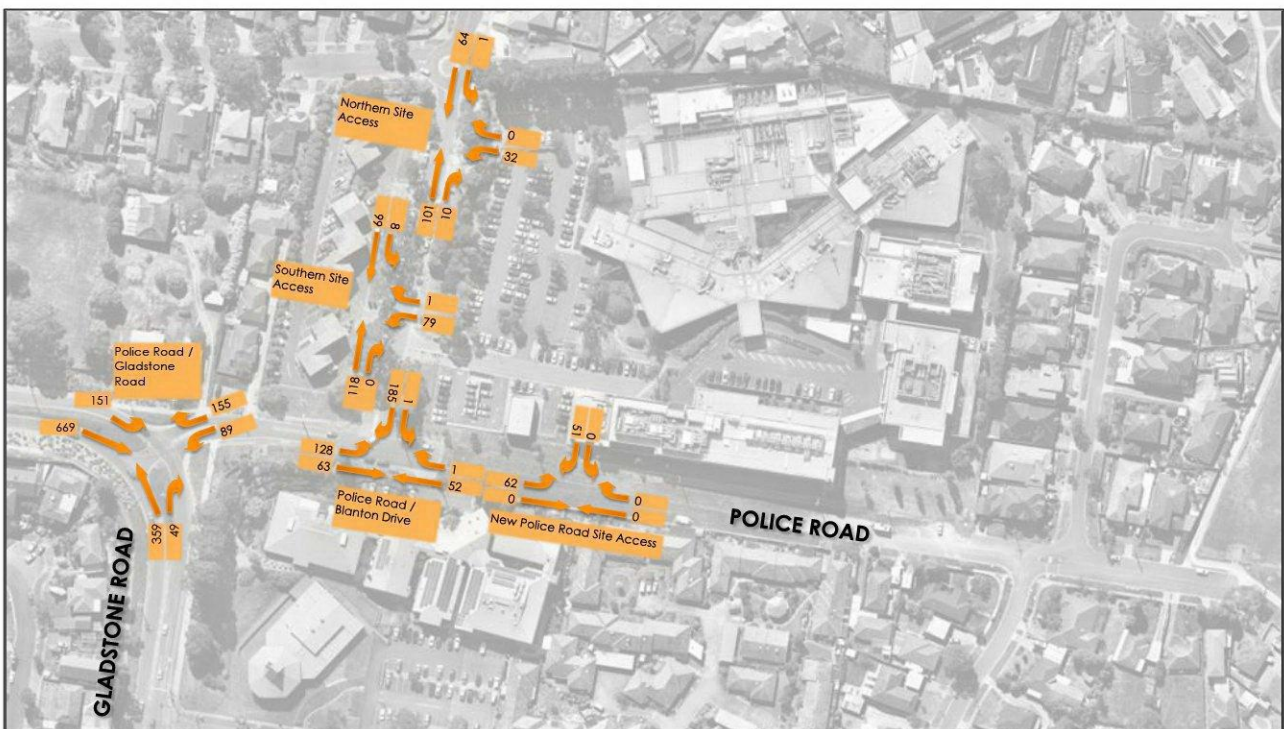


Figure 20 Resultant Traffic Volumes – PM Peak



10.6 Traffic Impact

To assess the operation of the Police Road / Gladstone Road and the Police Road / Blanton Drive intersections the traffic volumes have been input into SIDRA Intersection, a traffic modelling software package.

The SIDRA Intersection software package has been developed to provide information on the capacity of an intersection with regard to a number of parameters. Those parameters considered relevant are, Degree of Saturation (DoS), 95th Percentile Queue, and Average Delay, and Level of Service (LoS), as described in Table 16 below.

Table 16 SIDRA Intersection Parameters

Parameter	Description														
Degree of Saturation (DoS)	The DoS represents the ratio of the traffic volume making a particular movement compared to the maximum capacity for that particular movement. The value of the DoS has a corresponding rating depending on the ratio as shown below.														
	<table border="1"> <thead> <tr> <th>Degree of Saturation</th> <th>Rating</th> </tr> </thead> <tbody> <tr> <td>Up to 0.60</td> <td>Excellent</td> </tr> <tr> <td>0.61 – 0.70</td> <td>Very Good</td> </tr> <tr> <td>0.71 – 0.80</td> <td>Good</td> </tr> <tr> <td>0.81 – 0.90</td> <td>Fair</td> </tr> <tr> <td>0.91 – 1.00</td> <td>Poor</td> </tr> <tr> <td>Above 1.00</td> <td>Very Poor</td> </tr> </tbody> </table>	Degree of Saturation	Rating	Up to 0.60	Excellent	0.61 – 0.70	Very Good	0.71 – 0.80	Good	0.81 – 0.90	Fair	0.91 – 1.00	Poor	Above 1.00	Very Poor
	Degree of Saturation	Rating													
	Up to 0.60	Excellent													
	0.61 – 0.70	Very Good													
	0.71 – 0.80	Good													
	0.81 – 0.90	Fair													
0.91 – 1.00	Poor														
Above 1.00	Very Poor														
It is noted that whilst the range of 0.91 – 1.00 is rated as 'poor', it is acceptable for critical movements at an intersection to be operating within this range during high peak periods, reflecting actual conditions in a significant number of suburban signalised intersections.															
Average Delay (seconds)	Average delay is the time delay that can be expected for all vehicles undertaking a particular movement in seconds. This includes time taken to accelerate or decelerate, time taken to undertake the manoeuvre, and delay at a hold line or stop line.														
95th Percentile (95%ile) Queue	95%ile queue represents the maximum queue length in metres that can be expected in 95% of observed queue lengths in the peak hour.														

The results of the analysis are provided in the table below.

Table 17 SIDRA Analysis – Police Road / Gladstone Road

Approach	Existing Conditions			Future Conditions		
	DoS	Avg Delay (sec)	Queue (m)	DoS	Avg Delay (sec)	Queue (m)
AM Peak						
Gladstone Road – Southeast	0.360	9.4	0.8	0.371	10.2	1.2
Police Road – Northeast	0.170	6.8	1.8	0.230	17.6	2.5
Police Road - Northwest	0.267	1.8	0	0.295	2.2	0
PM Peak						
Gladstone Road – Southeast	0.218	15.3	1.1	0.224	16.3	1.5
Police Road – Northeast	0.492	23.2	6.6	0.680	27.7	11.2
Police Road - Northwest	0.438	1.0	0	0.453	1.2	0

As shown above, the intersection of Police Road / Gladstone Road will operate under 'very good' conditions after the expansion of the hospital with manageable delays and queues on all approaches.

Table 18 SIDRA Analysis – Police Road / Blanton Drive

Approach	Existing Conditions			Future Conditions		
	DoS	Avg Delay (sec)	Queue (m)	DoS	Avg Delay (sec)	Queue (m)
AM Peak						
Police Road - East	0.001	3.3	0	0.011	0.4	0.1
Blanton Drive - North	0.104	5.9	2.5	0.136	6.6	3.3
Police Road - West	0.116	5.6	0	0.151	1.8	0
PM Peak						
Police Road - East	0.001	3.1	0	0.029	0.1	0.1
Blanton Drive - North	0.158	5.8	4	0.181	6.3	4.7
Police Road - West	0.089	5.5	0	0.108	3.8	0

As shown above, the intersection of Police Road / Blanton Drive will operate under 'excellent' conditions after the expansion of the hospital with negligible delays and queues on all approaches.

10.7 Queuing Assessment

To ensure the operation of the proposed boom gate system along Police Road can accommodate the expected traffic volumes generated by the closure of the Blanton Drive site access and construction of the multi-deck car park, an analysis of the boom gates has been undertaken to ensure that there is sufficient capacity to accommodate all queuing on-site.

AS 2890.1:2004 states that a ticket boom gate system will generally have capacity to service approximately 300 vehicles per hour, equating to a service time of approximately 12 seconds per vehicle.

Noting this, with 183 inbound movements expected during the AM peak hour and the provision of two entry boom gates during the AM peak hour, each boom gate is expected generate a 98th percentile queue of 2.31 vehicles.

Given the provision of two boom gates, this equates to two vehicles being processed by the boom gates, and approximately one vehicle queued behind the vehicles at the boom gate, which will be comfortably accommodated on-site.

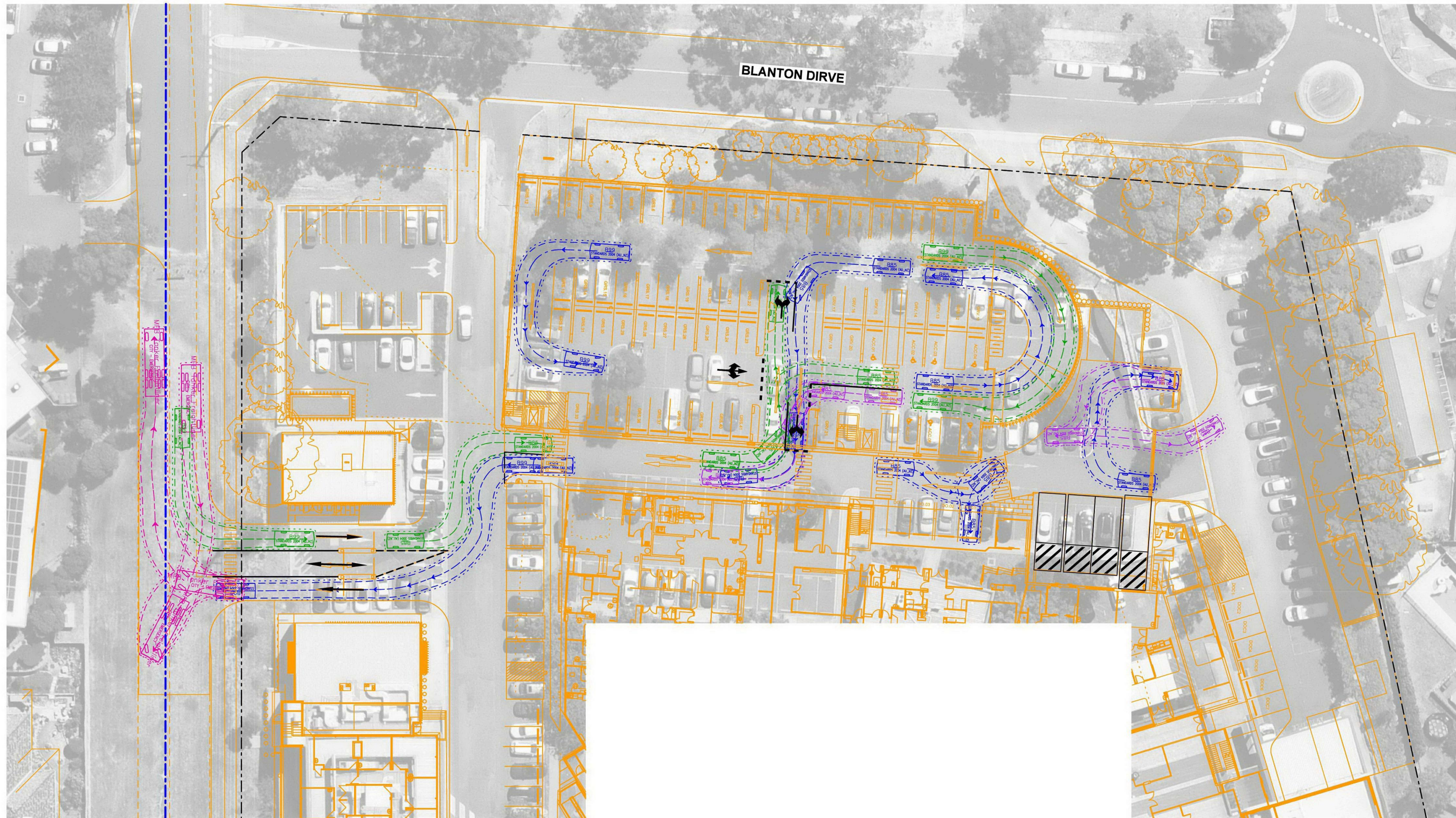
11 CONCLUSION

It is proposed to upgrade and expand the Mulgrave Private Hospital by increasing the number of services provided at the hospital. A total of 681 car parking spaces will be provided on-site at the completion of works.

Considering the analysis presented above, it is concluded that:

- The proposed car parking design is considered appropriate;
- The proposed provision of bicycle parking is in excess of the Planning Scheme requirements;
- The proposed provision of car parking results in a surplus of 217 parking spaces based on a Car Parking Demand assessment; and
- The anticipated traffic volumes generated by the development is expected to be accommodated by the external road network.

Appendix A Swept Paths



CAD File: N:\Project\220529\Drawings\220529SPA200.dgn

Date Plotted: 19-12-2023 17:21:59

MFB Tanker Freightliner meters Width : 2.50 Track : 2.45 Lock to Lock Time : 6.0 Steering Angle : 39.7	B85 meters Width : 1.87 Track : 1.77 Lock to Lock Time : 6.0 Steering Angle : 34.1	B99 meters Width : 1.94 Track : 1.84 Lock to Lock Time : 6.0 Steering Angle : 33.9

SWEPT PATH LEGEND
 - - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
 ······ 300mm CLEARANCE ENVELOPE SHOWN DOTTED



Wurundjeri Woiwurrung Country
 56 Down Street, Collingwood, VIC 3066
 Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
 Phone (03) 9939 8250

Scale: 1:500 @ A3

Drawing Title MULGRAVE PRIVATE HOSPITAL GROUND LEVEL SWEEP PATH ANALYSIS		
Designed TCW	Approved JS	Melway Ref 81 D6
Project Number 220529	Drawing Number SPA200	Revision D

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onemilegrid operates from Wurundjeri Woiwurrung Country of the Kulin nation. We acknowledge and extend our appreciation to the Wurundjeri People, the Traditional Owners of the land. We pay our respects to leaders and Elders past, present and emerging for they hold the memories, the traditions, the culture, and the hopes of all Wurundjeri Peoples.

Aerial Photography
Aerial photography provided by Nearmap.



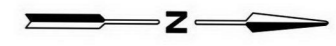
MEZZANINE



LEVEL 1



LEVEL 2



Model	Width (meters)	Track (meters)	Lock to Lock Time	Steering Angle
B85	1.87	1.77	6.0	34.1
B89	1.94	1.84	6.0	33.9

SWEPT PATH LEGEND
 - - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
 300mm CLEARANCE ENVELOPE SHOWN DOTTED

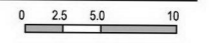
CAD File: N:\Projects\2023\220529\Drawings\220529SPA201.dgn

Date Plotted: 19-12-2023 17:22:56



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 56 Down Street, Collingwood, VIC 3066
 Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
 Phone (03) 9939 8250

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 1:500 @ A3



Drawing Title
**MULGRAVE PRIVATE HOSPITAL
 MEZZANINE, LEVEL 1 & LEVEL 2
 SWEPT PATH ANALYSIS**

Designed	Approved	Melway Ref
TCW	JS	81 D6

Project Number	Drawing Number	Revision
220529	SPA201	D



ENTRY MANOEUVRES



EXIT MANOEUVRES

CAD File: N:\Projects\2022\220529\Drawings\220529SPA202.dgn

Date Plotted: 19-12-2023 17:24:17

Ambulance Victoria	Ambulance CPAV
Width : 2.39 meters	Width : 2.85 meters
Track : 2.29 meters	Track : 2.75 meters
Lock to Lock Time : 6.0	Lock to Lock Time : 6.0
Steering Angle : 43.2	Steering Angle : 45.3

SWEPT PATH LEGEND
 - - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
 - - - - - 600mm CLEARANCE ENVELOPE SHOWN DOTTED

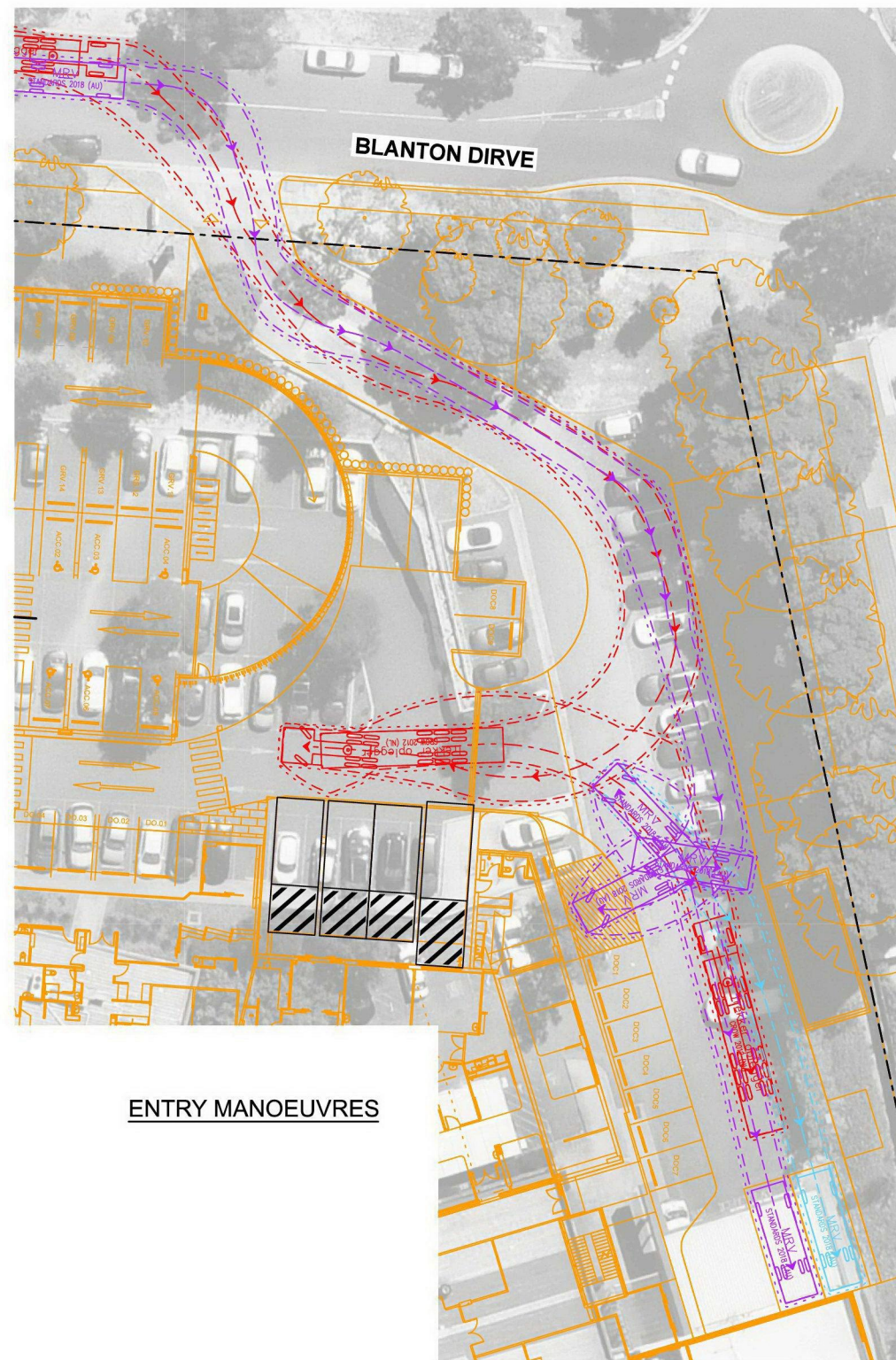


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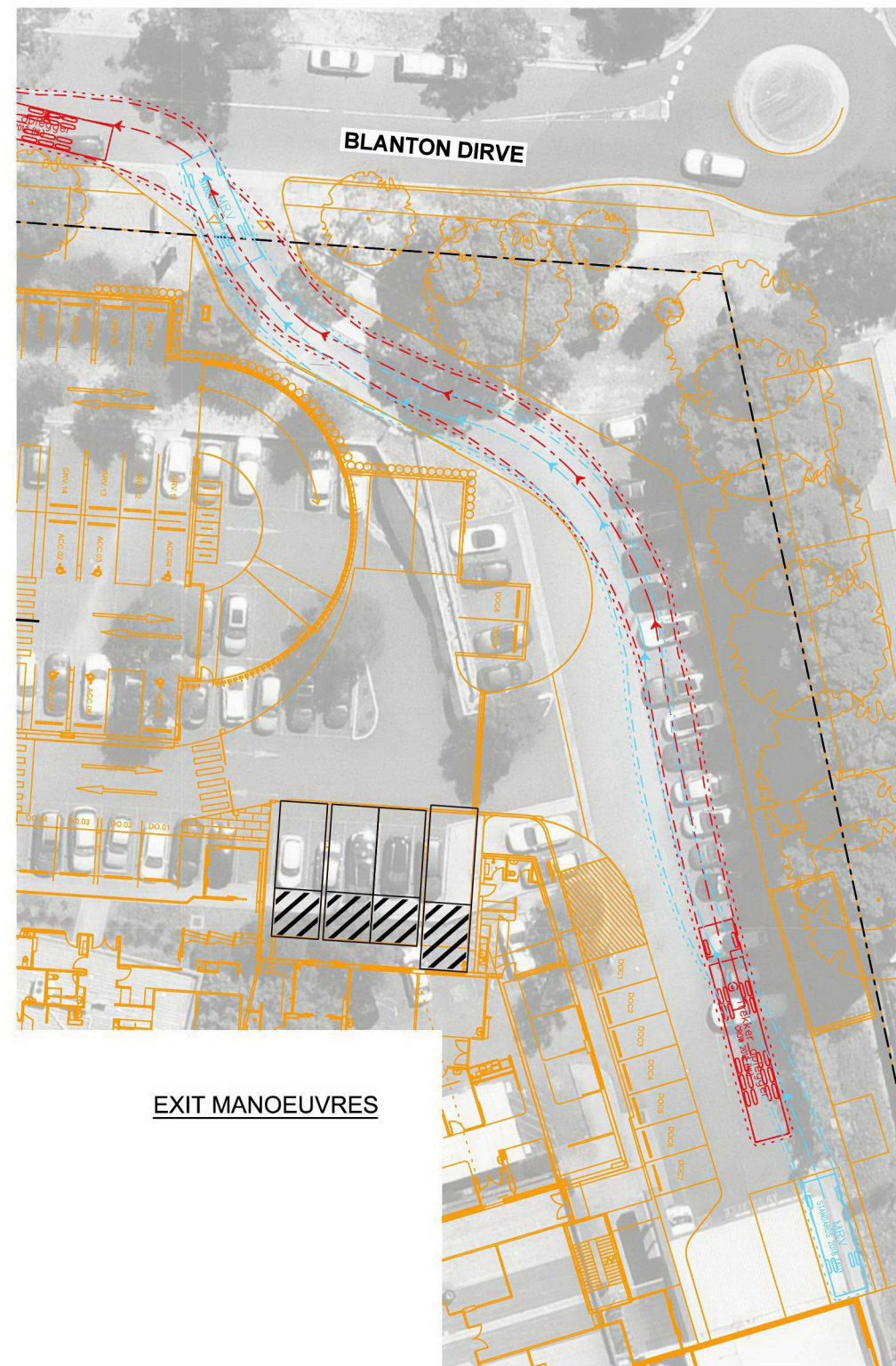
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 0 2.5 5.0 10

Drawing Title
**MULGRAVE PRIVATE HOSPITAL
 EMERGENCY AREA
 SWEEP PATH ANALYSIS**

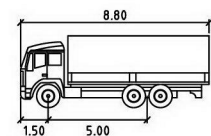
Designed TCW	Approved JS	Meiway Ref 81 D6
Project Number 220529	Drawing Number SPA202	Revision D



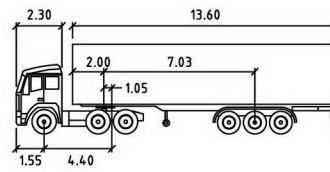
ENTRY MANOEUVRES



EXIT MANOEUVRES



MRV	: 1.50	meters
Width	: 2.50	
Track	: 2.50	
Lock to Lock Time	: 6.0	
Steering Angle	: 34.0	



Trekker oplegger		meters
Tractor Width	: 2.30	
Trailer Width	: 2.00	
Tractor Track	: 1.55	
Trailer Track	: 4.40	
Lock to Lock Time	: 6.0	
Steering Angle	: 22.6	
Articulating Angle	: 70.0	

SWEPT PATH LEGEND
 - - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
 - - - - - 300mm CLEARANCE ENVELOPE SHOWN DOTTED



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 Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
 Phone: (03) 9939 8250

Scale: 1:500 @ A3
 0 2.5 5.0 10

Drawing Title
**MULGRAVE PRIVATE HOSPITAL
 LOADING AREA
 SWEPT PATH ANALYSIS**

Designed TCW	Approved JS	Meiway Ref 81 D6
Project Number 220529	Drawing Number SPA203	Revision D

Appendix B *SIDRA Results*

Appendix B *SIDRA Results*

MOVEMENT SUMMARY

Site: 101 [PoliBlanAMExEx (Site Folder: Police Road / Blanton Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Police Road / Blanton Drive
AM Peak, Existing Volumes, Existing Geometry
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.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: Police Road - East															
5	T1	All MCs	1	2.0	1	2.0	0.001	0.5	LOS A	0.0	0.0	0.27	0.32	0.27	56.5
6	R2	All MCs	1	2.0	1	2.0	0.001	6.1	LOS A	0.0	0.0	0.27	0.32	0.27	53.8
Approach			2	2.0	2	2.0	0.001	3.3	NA	0.0	0.0	0.27	0.32	0.27	55.1
North: Blanton Drive - North															
7	L2	All MCs	1	2.0	1	2.0	0.104	5.6	LOS A	0.4	2.5	0.14	0.57	0.14	52.5
9	R2	All MCs	120	2.0	120	2.0	0.104	5.9	LOS A	0.4	2.5	0.14	0.57	0.14	52.2
Approach			121	2.0	121	2.0	0.104	5.9	LOS A	0.4	2.5	0.14	0.57	0.14	52.2
West: Police Road - West															
10	L2	All MCs	212	2.0	212	2.0	0.116	5.6	LOS A	0.0	0.0	0.00	0.57	0.00	52.8
11	T1	All MCs	1	2.0	1	2.0	0.116	0.0	LOS A	0.0	0.0	0.00	0.57	0.00	55.0
Approach			213	2.0	213	2.0	0.116	5.6	NA	0.0	0.0	0.00	0.57	0.00	52.8
All Vehicles			336	2.0	336	2.0	0.116	5.7	NA	0.4	2.5	0.05	0.57	0.05	52.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Organisation: ONE MILE GRID | Licence: NETWORK / 1PC | Processed: Tuesday, 26 September 2023 4:03:01 PM

Project: N:\Projects\2022\220529\Sidra\220529SID001.sip9

MOVEMENT SUMMARY

Site: 101 [PoliBlanPMExEx (Site Folder: Police Road / Blanton Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Police Road / Blanton Drive
PM Peak, Existing Volumes, Existing Geometry
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.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: Police Road - East															
5	T1	All MCs	1	2.0	1	2.0	0.001	0.3	LOS A	0.0	0.0	0.23	0.31	0.23	56.6
6	R2	All MCs	1	2.0	1	2.0	0.001	5.9	LOS A	0.0	0.0	0.23	0.31	0.23	54.0
Approach			2	2.0	2	2.0	0.001	3.1	NA	0.0	0.0	0.23	0.31	0.23	55.3
North: Blanton Drive - North															
7	L2	All MCs	1	2.0	1	2.0	0.158	5.6	LOS A	0.6	4.0	0.14	0.57	0.14	52.5
9	R2	All MCs	186	2.0	186	2.0	0.158	5.8	LOS A	0.6	4.0	0.14	0.57	0.14	52.2
Approach			187	2.0	187	2.0	0.158	5.8	LOS A	0.6	4.0	0.14	0.57	0.14	52.2
West: Police Road - West															
10	L2	All MCs	161	2.0	161	2.0	0.089	5.6	LOS A	0.0	0.0	0.00	0.57	0.00	52.8
11	T1	All MCs	1	2.0	1	2.0	0.089	0.0	LOS A	0.0	0.0	0.00	0.57	0.00	55.0
Approach			162	2.0	162	2.0	0.089	5.5	NA	0.0	0.0	0.00	0.57	0.00	52.8
All Vehicles			352	2.0	352	2.0	0.158	5.7	NA	0.6	4.0	0.08	0.57	0.08	52.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: N:\Projects\2022\220529\Sidra\220529SID001.sip9

MOVEMENT SUMMARY

▽ Site: 101 [PoliBlanAMExFu (Site Folder: Police Road / Blanton Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Police Road / Blanton Drive
AM Peak, Future Volumes, Existing Geometry
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.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: Police Road - East															
5	T1	All MCs	20	2.0	20	2.0	0.011	0.1	LOS A	0.0	0.1	0.05	0.05	0.05	59.5
6	R2	All MCs	1	2.0	1	2.0	0.011	6.4	LOS A	0.0	0.1	0.05	0.05	0.05	56.6
Approach			21	2.0	21	2.0	0.011	0.4	NA	0.0	0.1	0.05	0.05	0.05	59.4
North: Blanton Drive - North															
7	L2	All MCs	1	2.0	1	2.0	0.136	6.2	LOS A	0.5	3.3	0.33	0.64	0.33	52.0
9	R2	All MCs	136	2.0	136	2.0	0.136	6.6	LOS A	0.5	3.3	0.33	0.64	0.33	51.7
Approach			137	2.0	137	2.0	0.136	6.6	LOS A	0.5	3.3	0.33	0.64	0.33	51.7
West: Police Road - West															
10	L2	All MCs	92	2.0	92	2.0	0.151	5.6	LOS A	0.0	0.0	0.00	0.19	0.00	55.8
11	T1	All MCs	194	2.0	194	2.0	0.151	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	58.2
Approach			285	2.0	285	2.0	0.151	1.8	NA	0.0	0.0	0.00	0.19	0.00	57.4
All Vehicles			443	2.0	443	2.0	0.151	3.2	NA	0.5	3.3	0.10	0.32	0.10	55.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: N:\Projects\2022\220529\Sidra\220529SID001.sip9

MOVEMENT SUMMARY

Site: 101 [PoliBlanPMExFu (Site Folder: Police Road / Blanton Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Police Road / Blanton Drive
PM Peak, Future Volumes, Existing Geometry
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.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: Police Road - East															
5	T1	All MCs	55	2.0	55	2.0	0.029	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.8
6	R2	All MCs	1	2.0	1	2.0	0.029	5.7	LOS A	0.0	0.1	0.01	0.01	0.01	56.9
Approach			56	2.0	56	2.0	0.029	0.1	NA	0.0	0.1	0.01	0.01	0.01	59.8
North: Blanton Drive - North															
7	L2	All MCs	1	2.0	1	2.0	0.181	5.8	LOS A	0.7	4.7	0.28	0.61	0.28	52.1
9	R2	All MCs	195	2.0	195	2.0	0.181	6.3	LOS A	0.7	4.7	0.28	0.61	0.28	51.8
Approach			196	2.0	196	2.0	0.181	6.3	LOS A	0.7	4.7	0.28	0.61	0.28	51.8
West: Police Road - West															
10	L2	All MCs	135	2.0	135	2.0	0.108	5.6	LOS A	0.0	0.0	0.00	0.39	0.00	54.2
11	T1	All MCs	66	2.0	66	2.0	0.108	0.0	LOS A	0.0	0.0	0.00	0.39	0.00	56.5
Approach			201	2.0	201	2.0	0.108	3.8	NA	0.0	0.0	0.00	0.39	0.00	54.9
All Vehicles			453	2.0	453	2.0	0.181	4.4	NA	0.7	4.7	0.12	0.44	0.12	54.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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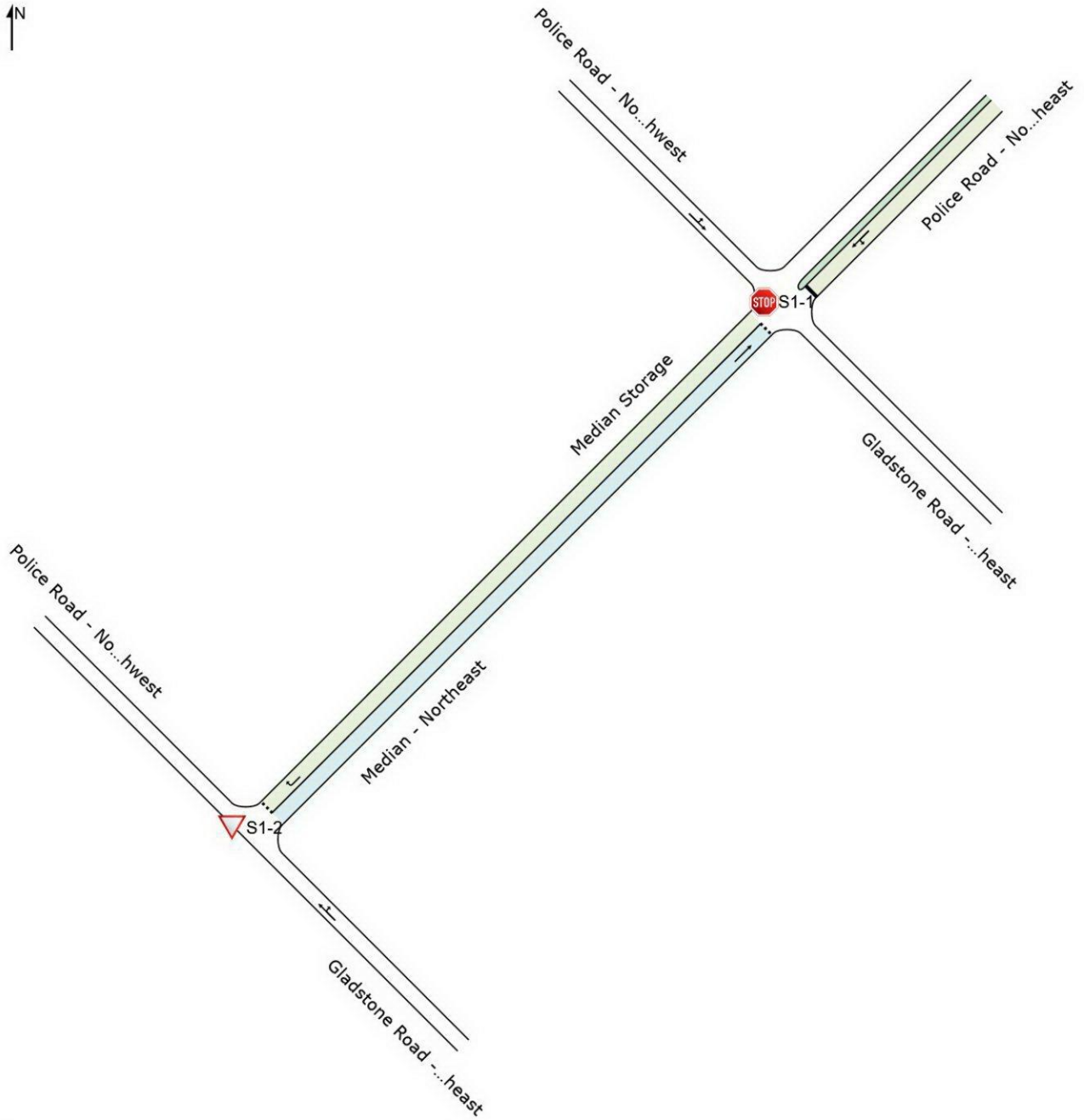
Project: N:\Projects\2022\220529\Sidra\220529SID001.sip9

NETWORK LAYOUT

■ Network: SCTI-B [Existing - AM Peak (Network Folder: General)]

Staged Crossing at T Intersection Type B
 Network Category: (None)

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



SITES IN NETWORK		
Site ID	CCG ID	Site Name
▽ S1-2	NA	PoliGladAMExEx - Part 1
STOP S1-1	NA	PoliGladAMExEx - Part 2

MOVEMENT SUMMARY

Site: S1-2 [PoliGladAMExEx - Part 1 (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: SCTI-B [Existing - AM Peak (Network Folder: General)]

Police Road / Gladstone Road
AM Peak, Existing Volumes, Existing Geometry
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	Aver. 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				
SouthEast: Gladstone Road - Southeast															
2	T1	All MCs	638	2.0	638	2.0	0.360	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
3	R2	All MCs	52	2.0	52	2.0	0.360	5.8	LOS A	0.0	0.0	0.00	0.05	0.00	59.0
Approach			689	2.0	689	2.0	0.360	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.3
NorthEast: Median - Northeast															
1	R2	All MCs	84	2.0	84	2.0	0.147	5.6	LOS A	0.2	1.6	0.58	0.65	0.58	44.4
Approach			84	2.0	84	2.0	0.147	5.6	LOS A	0.2	1.6	0.58	0.65	0.58	44.4
All Vehicles			774	2.0	774	2.0	0.360	1.1	NA	0.2	1.6	0.06	0.11	0.06	58.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 Site: S1-1 [PoliGladAMExEx - Part 2 (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

■ ■ Network: SCTI-B [Existing - AM Peak (Network Folder: General)]

Police Road / Gladstone Road
AM Peak, Existing Volumes, Existing Geometry
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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
NorthEast: Police Road - Northeast															
1	L2	All MCs	35	2.0	35	2.0	0.170	10.3	LOS B	0.3	1.8	0.50	0.98	0.50	49.8
2	T1	All MCs	84	2.0	84	2.0	0.170	11.2	LOS B	0.3	1.8	0.50	0.98	0.50	45.6
Approach			119	2.0	119	2.0	0.170	10.9	LOS B	0.3	1.8	0.50	0.98	0.50	47.4
NorthWest: Police Road - Northwest															
3	L2	All MCs	159	2.0	159	2.0	0.267	5.6	LOS A	0.0	0.0	0.00	0.19	0.00	55.8
4	T1	All MCs	346	2.0	346	2.0	0.267	0.1	LOS A	0.0	0.0	0.00	0.19	0.00	58.2
Approach			505	2.0	505	2.0	0.267	1.8	NA	0.0	0.0	0.00	0.19	0.00	57.4
SouthWest: Median Storage															
5	T1	All MCs	52	2.0	52	2.0	0.082	3.6	LOS A	0.1	0.8	0.52	0.47	0.52	47.2
Approach			52	2.0	52	2.0	0.082	3.6	LOS A	0.1	0.8	0.52	0.47	0.52	47.2
All Vehicles			676	2.0	676	2.0	0.267	3.6	NA	0.3	1.8	0.13	0.35	0.13	55.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: S1-2 [PoliGladPMExEx - Part 1 (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: SCTI-B [Existing - PM Peak (Network Folder: General)]

Police Road / Gladstone Road
PM Peak, Existing Volumes, Existing Geometry
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	Aver. 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				
SouthEast: Gladstone Road - Southeast															
2	T1	All MCs	378	2.0	378	2.0	0.218	0.1	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
3	R2	All MCs	40	2.0	40	2.0	0.218	5.8	LOS A	0.0	0.0	0.00	0.06	0.00	58.8
Approach			418	2.0	418	2.0	0.218	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.3
NorthEast: Median - Northeast															
1	R2	All MCs	119	2.0	119	2.0	0.147	3.1	LOS A	0.2	1.8	0.46	0.47	0.46	47.2
Approach			119	2.0	119	2.0	0.147	3.1	LOS A	0.2	1.8	0.46	0.47	0.46	47.2
All Vehicles			537	2.0	537	2.0	0.218	1.2	NA	0.2	1.8	0.10	0.15	0.10	57.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 Site: S1-1 [PoliGladPMExEx - Part 2 (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

■ ■ Network: SCTI-B [Existing - PM Peak (Network Folder: General)]

Police Road / Gladstone Road
 PM Peak, Existing Volumes, Existing Geometry
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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
NorthEast: Police Road - Northeast															
1	L2	All MCs	76	2.0	76	2.0	0.492	18.4	LOS C	0.9	6.6	0.79	1.12	1.18	45.0
2	T1	All MCs	119	2.0	119	2.0	0.492	20.1	LOS C	0.9	6.6	0.79	1.12	1.18	38.2
Approach			195	2.0	195	2.0	0.492	19.4	LOS C	0.9	6.6	0.79	1.12	1.18	41.7
NorthWest: Police Road - Northwest															
3	L2	All MCs	132	2.0	132	2.0	0.438	5.7	LOS A	0.0	0.0	0.00	0.09	0.00	56.4
4	T1	All MCs	704	2.0	704	2.0	0.438	0.2	LOS A	0.0	0.0	0.00	0.09	0.00	58.8
Approach			836	2.0	836	2.0	0.438	1.0	NA	0.0	0.0	0.00	0.09	0.00	58.4
SouthWest: Median Storage															
5	T1	All MCs	40	2.0	40	2.0	0.122	9.5	LOS A	0.2	1.1	0.74	0.74	0.74	41.1
Approach			40	2.0	40	2.0	0.122	9.5	LOS A	0.2	1.1	0.74	0.74	0.74	41.1
All Vehicles			1071	2.0	1071	2.0	0.492	4.7	NA	0.9	6.6	0.17	0.30	0.24	54.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: S1-2 [PoliGladAMExFu - Part 1 (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: SCTI-B [Future - AM Peak (Network Folder: General)]

Police Road / Gladstone Road
AM Peak, Future Volumes, Existing Geometry
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	Aver. 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				
SouthEast: Gladstone Road - Southeast															
2	T1	All MCs	638	2.0	638	2.0	0.371	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	59.2
3	R2	All MCs	73	2.0	73	2.0	0.371	5.9	LOS A	0.0	0.0	0.00	0.07	0.00	58.6
Approach			711	2.0	711	2.0	0.371	0.7	NA	0.0	0.0	0.00	0.07	0.00	59.2
NorthEast: Median - Northeast															
1	R2	All MCs	109	2.0	109	2.0	0.191	5.7	LOS A	0.3	2.2	0.60	0.66	0.60	44.2
Approach			109	2.0	109	2.0	0.191	5.7	LOS A	0.3	2.2	0.60	0.66	0.60	44.2
All Vehicles			820	2.0	820	2.0	0.371	1.4	NA	0.3	2.2	0.08	0.15	0.08	57.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 Site: S1-1 [PoliGladAMExFu - Part 2 (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

■ Network: SCTI-B [Future - AM Peak (Network Folder: General)]

Police Road / Gladstone Road
AM Peak, Future Volumes, Existing Geometry
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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				
NorthEast: Police Road - Northeast															
1	L2	All MCs	44	2.0	44	2.0	0.230	10.4	LOS B	0.4	2.5	0.54	0.99	0.54	49.5
2	T1	All MCs	109	2.0	109	2.0	0.230	11.9	LOS B	0.4	2.5	0.54	0.99	0.54	45.1
Approach			154	2.0	154	2.0	0.230	11.5	LOS B	0.4	2.5	0.54	0.99	0.54	47.0
NorthWest: Police Road - Northwest															
3	L2	All MCs	211	2.0	211	2.0	0.295	5.6	LOS A	0.0	0.0	0.00	0.22	0.00	55.4
4	T1	All MCs	346	2.0	346	2.0	0.295	0.1	LOS A	0.0	0.0	0.00	0.22	0.00	57.8
Approach			557	2.0	557	2.0	0.295	2.2	NA	0.0	0.0	0.00	0.22	0.00	56.9
SouthWest: Median Storage															
5	T1	All MCs	73	2.0	73	2.0	0.126	4.3	LOS A	0.2	1.2	0.55	0.55	0.55	46.3
Approach			73	2.0	73	2.0	0.126	4.3	LOS A	0.2	1.2	0.55	0.55	0.55	46.3
All Vehicles			783	2.0	783	2.0	0.295	4.2	NA	0.4	2.5	0.16	0.40	0.16	54.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: S1-2 [PoliGladPMExFu - Part 1 (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: SCTI-B [Future - PM Peak (Network Folder: General)]

Police Road / Gladstone Road
PM Peak, Future Volumes, Existing Geometry
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	Aver. 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				
SouthEast: Gladstone Road - Southeast															
2	T1	All MCs	378	2.0	378	2.0	0.224	0.1	LOS A	0.0	0.0	0.00	0.08	0.00	59.2
3	R2	All MCs	52	2.0	52	2.0	0.224	5.8	LOS A	0.0	0.0	0.00	0.08	0.00	58.6
Approach			429	2.0	429	2.0	0.224	0.7	NA	0.0	0.0	0.00	0.08	0.00	59.2
NorthEast: Median - Northeast															
1	R2	All MCs	163	2.0	163	2.0	0.201	3.2	LOS A	0.4	2.5	0.47	0.48	0.47	47.0
Approach			163	2.0	163	2.0	0.201	3.2	LOS A	0.4	2.5	0.47	0.48	0.47	47.0
All Vehicles			593	2.0	593	2.0	0.224	1.4	NA	0.4	2.5	0.13	0.19	0.13	56.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 Site: S1-1 [PoliGladPMExFu - Part 2 (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

■ Network: SCTI-B [Future - PM Peak (Network Folder: General)]

Police Road / Gladstone Road
PM Peak, Future Volumes, Existing Geometry
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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
NorthEast: Police Road - Northeast															
1	L2	All MCs	94	2.0	94	2.0	0.680	22.0	LOS C	1.6	11.2	0.86	1.23	1.66	42.9
2	T1	All MCs	163	2.0	163	2.0	0.680	24.5	LOS C	1.6	11.2	0.86	1.23	1.66	35.3
Approach			257	2.0	257	2.0	0.680	23.6	LOS C	1.6	11.2	0.86	1.23	1.66	38.9
NorthWest: Police Road - Northwest															
3	L2	All MCs	159	2.0	159	2.0	0.453	5.7	LOS A	0.0	0.0	0.00	0.11	0.00	56.2
4	T1	All MCs	704	2.0	704	2.0	0.453	0.2	LOS A	0.0	0.0	0.00	0.11	0.00	58.7
Approach			863	2.0	863	2.0	0.453	1.2	NA	0.0	0.0	0.00	0.11	0.00	58.2
SouthWest: Median Storage															
5	T1	All MCs	52	2.0	52	2.0	0.168	10.5	LOS B	0.2	1.5	0.77	0.77	0.77	40.2
Approach			52	2.0	52	2.0	0.168	10.5	LOS B	0.2	1.5	0.77	0.77	0.77	40.2
All Vehicles			1172	2.0	1172	2.0	0.680	6.5	NA	1.6	11.2	0.22	0.38	0.40	53.3

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