TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

TRAFFIC IMPACT ASSESSMENT

Proposed Residential Development (SSD-119545240)
40 – 76 William Street, Leichhardt

Reference: 19.588r06v03
Date: January 2026

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TRAFFIX

CONTENTS

1. INTRODUCTION

TRAFFIX has been commissioned by Anprisa to undertake a transport impact assessment (TIA) in support of a State Significant Development Application (SSDA) for the proposed construction of a five to eleven storey residential flat building at 40-76 William Street Leichardt (SSD-119545240). The development involves the demolition of existing structures while partially retaining and adaptively reusing the existing industrial warehouse façade. The project will deliver a total of 203 residential units, including 10 affordable housing units and will incorporate two basement levels. The proposal also includes associated public domain improvements. The development is located within the Inner West Council Local Government Area (LGA) and has been assessed under that Council's controls.

This report documents the findings of our investigations and should be read in the context of the Environmental Impact Statement, prepared separately. Reference should also be made to the Preliminary Construction Traffic and Pedestrian Management Plan, prepared by TRAFFIX, and submitted separately.

The following technical documents have been utilised in the preparation of this assessment:

- Transport for NSW Guide to Transport Impact Assessment (2024).
- Australian Standard – Parking facilities Part 1: Off-street car parking (2001).
- Australian Standard – Parking facilities Part 2: Off-street commercial vehicle facilities (2018).

The report is structured as follows:

- Section 2: Documents SEARs Requirements
- Section 3: Describes the site and its location
- Section 4: Summarises the relevant statutory policies and strategic plans
- Section 5: Documents existing traffic conditions
- Section 6: Describes the proposed development
- Section 7: Assesses the parking requirements
- Section 8: Assesses traffic impacts
- Section 9: Discusses access and internal design aspects
- Section 10: Presents the overall study conclusions

2. SEARS REQUIREMENTS

The Planning Secretary's Environmental Assessment Requirements (SEARs) outlines the transport and accessibility requirements for the SSD as stated below in **Table 1**.

Table 1: SEARs Requirements and References

SEARs Requirements	Reference
Provide a Transport Impact Assessment (TIA) in accordance with the processes and methodology recommended in the *Guide to Transport Impact Assessment* (GTIA) published by TfNSW.	**Refer to this report**
If the construction of the development would cause interruptions to regular pedestrian and transport routes (including public transport, active transport or general traffic), a preliminary Construction Traffic (or Transport) Management Plan (CTMP) should be prepared as part of the TIA to mitigate any such impacts.	**Refer to Preliminary CTPMP prepared separately**

3. LOCATION AND SITE

The subject site is known as 40-76 William Street, Leichhardt (Lot 2 on DP789576) and is located on the southern side of William Street, about 200 metres west of Norton Street. It is also located 300 metres southwest of Leichhardt North Light Rail Station and 4.9 kilometres west of the Sydney Central Business District.

The site has a total site area of approximately 6,930.3m^2 and accommodates three (3) buildings currently being used as self-storage facility. It has a northern frontage of 89 metres to William Street, an eastern frontage of 6.0 metres to Francis Street and a western frontage of 45 metres to North Street. It is bounded to the south and east by residential developments.

Vehicular access to the site is currently provided on all three (3) street frontages.

A Location Plan is presented in **Figure 1** and a Site Plan is presented in **Figure 2** which provides an appreciation of the general character of roads and other key attributes in proximity to the site.

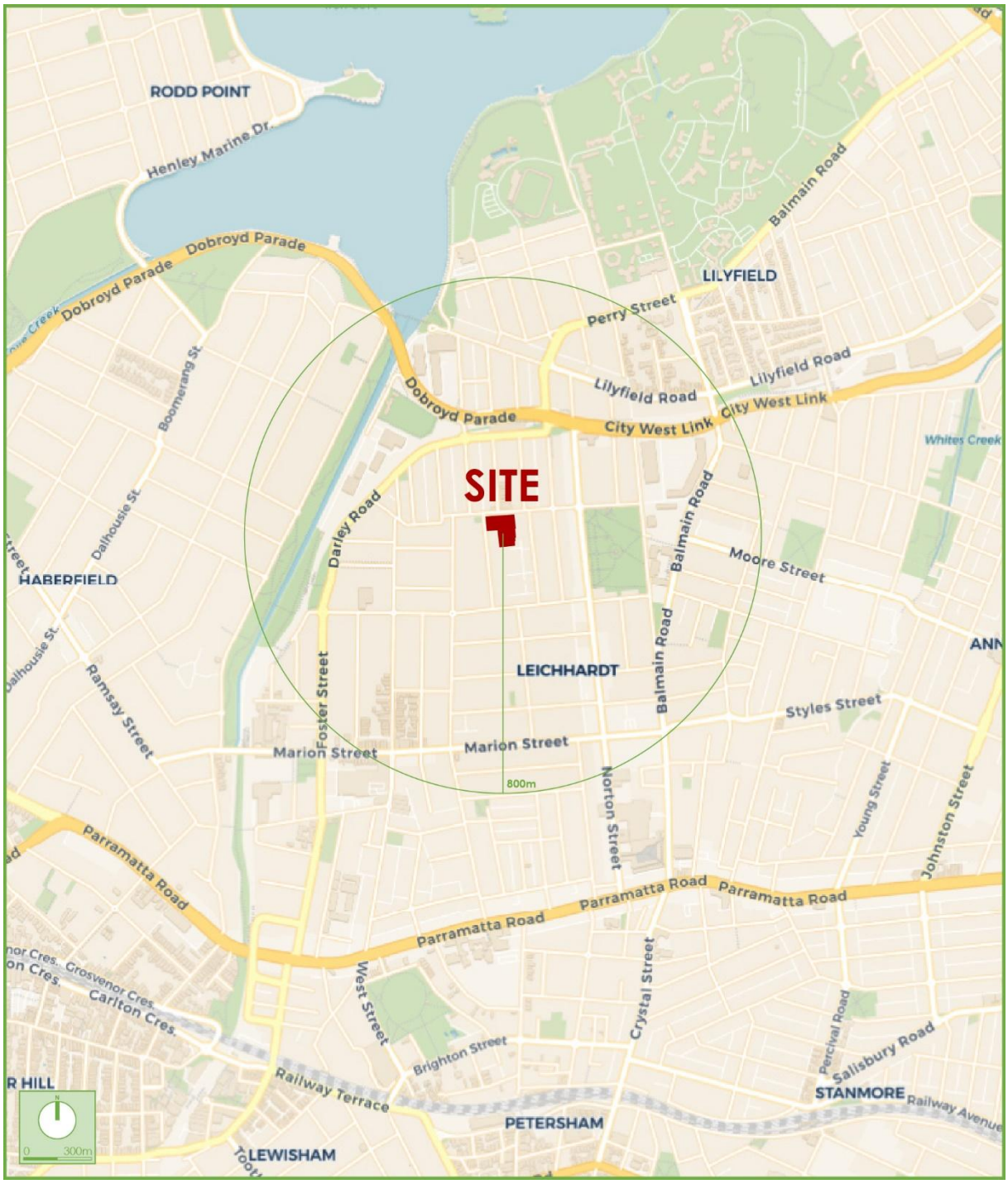


Figure 1: Location Plan

Figure 2: Site Plan

4. STRATEGIC CONTEXT

4.1 Strategic Plans

4.1.1 Future Transport Strategy 2056

This transport strategy document presents a vision for the transport system across NSW. The strategy outlines ideas to revitalise six (6) key cities, connect regional communities, and encourage thriving local neighbourhoods. The Six Cities Region includes the Lower Hunter and Greater Newcastle City, the Central Coast City, the Illawarra-Shoalhaven City, the Western Parkland City, the Central River City, and the Eastern Harbour City. The 30-minute concept outlined in the strategy will provide more 24/7 travel choices and seamless connections between transport modes, including walking and cycling. The key destinations that should be accessible by public transport within 30-minutes of cities is shown in **Figure 3** below:

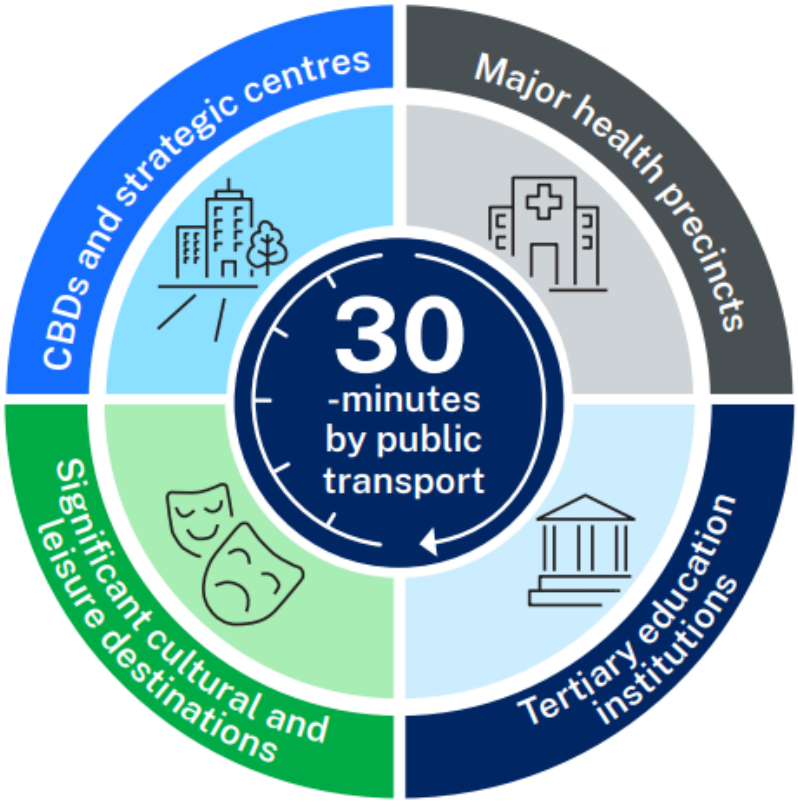


Figure 3: Key Destinations with 30-minutes of Cities

(Source: future.transport.nsw.gov.au)

4.1.2 State Infrastructure Strategy 2022 – 2042

The State Infrastructure Strategy is a 20-year infrastructure plan for the NSW Government which provides recommendations to best grow the State's economy, enhance productivity and improve living standards.

Specifically, in relation to integrating land use and infrastructure planning the strategy identifies the provision and use of infrastructure with the Greater Sydney Commission's three cities vision and the 10 Regional Plans is critical to maximising the effectiveness, efficiency, and endurance of both new and existing infrastructure. A summary of the key recommendations is presented below:

- Link integrated strategic land use and infrastructure planning;
- Support efficient development through shared-use corridors;
- Identify and protect corridors; and
- Strengthen government planning processes.

In summary, this document serves to support the three cities vision that is envisaged by the Future Transport Strategy 2056, looking beyond current projects and identifies policies and strategies that are required to provide infrastructure that will meet the demands of a growing population and economy.

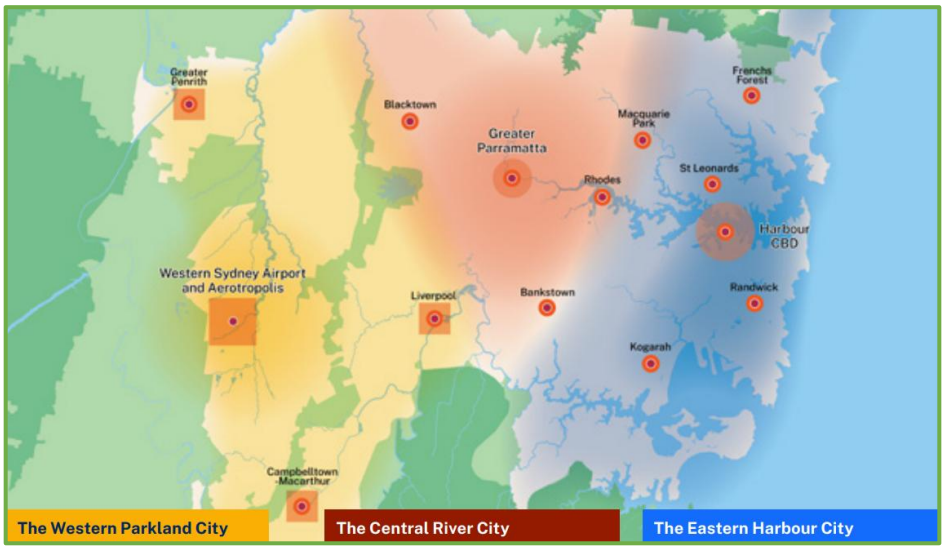


Figure 4: Three City Model

(Source: infrastructure.nsw.gov.au)

4.1.3 Eastern City District Plan

The Eastern City District Plan positions the Harbour CBD as Sydney's global economic hub, while planning for over 1.1 million residents by 2036. The district includes Bayside, Burwood, Canada Bay, Inner West, Randwick, Strathfield, Woollahra, Waverly and City of Sydney local government areas. It sets housing targets to ensure supply and affordability, prioritises sustainable growth through green infrastructure and climate resilience, and promotes accessible transport via public, walking, and cycling networks.

The plan also supports key innovation precincts such as Camperdown-Ultimo and Randwick, safeguards Sydney Airport and Port Botany as critical gateways, and advances the "30-minute city" concept to connect people to jobs and services.

4.1.4 Inner West Council's Community Strategic Plan

The Inner West Council's Community Strategic Plan sets out a 20-year vision developed with strong community input, focusing on sustainability, liveability, creativity, health, and good governance. It aims to create an ecologically sustainable Inner West, progressing toward zero emissions, zero waste, and active participation in tackling climate change. The plan emphasises connected, liveable neighbourhoods where people can move easily by walking, cycling and public transport, supported by high-quality public spaces. It also promotes creative communities and a strong local economy, with vibrant main streets, thriving businesses, and cultural vitality.

4.1.5 Going Places - Integrated Transport Strategy for Inner West 2020

The Going Places – Integrated Transport Strategy (2020) provides a 20-year framework to address transport challenges in the Inner West through a focus on active and sustainable travel. It recognises increasing congestion, parking pressures and limited cycling infrastructure, and prioritises walking, cycling, and public transport over private vehicles. The strategy sets out actions to integrate transport and land use planning, improve safety with area-wide 40 km/h limits, revitalise main streets, and expand active travel networks.

The plan also supports improved public transport services, shared mobility, smart parking management, and efficient freight movement, while harnessing technology to reduce emissions. Implementation of the plan is staged, with progress monitored against Council's

sustainability and liveability goals, aligning with the vision of achieving net zero emissions by 2050

4.2 Development Control Plan – Leichhardt

This plan provides development controls for developments within the previous Leichhardt Council Local Government Area. In relation to transport planning, this plan provides on-site parking provisions for various types of developments with an emphasis on public transport and active travel, noting the following relevant parking objectives:

- In order to reduce reliance on the car, residents and workers should be within walking distance of facilities and public transport.
- Priority is to be given to the needs of pedestrians, disabled people and cyclists above the needs of the car. This must be taken into consideration in the location and design of any parking facilities.
- To set and provide acceptable levels of on-site vehicle and bicycle parking spaces.
- To integrate bicycle parking & facilities (such as showers and lockers) into developments so that cycling is a viable transport alternative.
- To implement best practice management of parking and promote walkable, cycle-able mixed use neighbourhoods.
- To accommodate on-site parking that is safe, accessible, well laid out and appropriately lit.
- To provide parking that can meet the needs of building or facility users for all modes of transport.
- The impact of car parking areas on the urban fabric of the neighbourhood should be minimised.
- To design parking for all appropriate transport modes on private properties so that it will reinforce the quality and integrity of streetscapes, the layout, siting and use of neighbouring buildings, as well as the subject site and building design and will not detract from the amenity of adjoining areas.
- To ensure the design and construction of vehicle parking, service and delivery areas and loading facilities minimises visual and amenity impacts that can be caused by traffic movements and parked vehicles.

- To provide on-site parking for a range of vehicles, including very small cars, hybrid cars and fully electric cars in multi space car parks. Spaces allocated to environmental vehicles should be marked and managed according to the specific vehicle type targeted.
- Vehicle access, manoeuvring and parking will:
    a. achieve a balance between encouraging public transport, pedestrians and cycling and catering for the needs of on-site residents and their visitors;
    b. not visually dominate the building façade or streetscape;
    c. integrate with overall site and building design;
    d. provide for a high level of residential amenity for the site and protect existing residential amenity of adjoining sites; and
    e. enable the safe, convenient and efficient movement of vehicles, pedestrians and cyclists.

5. EXISTING TRAFFIC CONDITIONS

5.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 5** with the following roads of particular interest:

- City West Link: a portion of TfNSW Main Road (MR 650) that generally runs in an east-west direction between Victoria Road in the east and Dobroyd Parade in the west. It has a speed limit of 70 km/h and accommodates 2-3 lanes of traffic in each direction.
- Darley Road: a TfNSW Main Road (MR 652) that generally runs in a north-south direction between James Street in the north and Daniel Street in the south. It has a speed limit of 50 km/h with a single lane of traffic in each direction. Parallel parking is generally available along both kerbsides.
- Norton Street: a local road and unclassified regional road (7337) that generally runs in a north-south direction between Lilyfield Road in the north and Parramatta Road in the south. It has a speed limit of 50 km/h with a single lane of traffic in each direction. Time restricted parallel parking is generally provided along both kerbsides.
- William Street: a local road that generally traverses in an east-west direction between Derbyshire Road in the east and Darley Road in the west. It is subject to a 50 km/h speed zoning, carries a single lane of traffic in each direction and generally permits on-street parking along both sides.
- James Street: a local road that traverses in a north-south direction between a cul-de-sac in the north and Allen Street in the south. It is subject to a 50km/h speed zoning. James Street permits two-way travel and accommodates on-street parking along both sides.
- Francis Street: a local road that generally runs in a north-south direction and is separated into two sections. The first section runs between Darley Road in the north and a midblock termination approximately 140 meters south of its intersection with William Street. The second section runs between

the midblock termination in the north and Allen Street in the south. It is subject to a 50km/h speed zoning, carries a single lane of traffic in each direction and has time restricted parallel parking in the vicinity of the site.

- Hubert Street: a local road that traverses in a north-south direction between Darley Road in the north and William Street in the south. It is subject to a 50km/h speed zoning. Hubert Street permits two-way travel and accommodates on-street parking along both sides.

- North Street: a local road that traverses in a north-south direction between William Street in the north and Allen Street in the south. It is subject to a 50km/h speed zoning. North Street permits two-way travel and accommodates on-street parking along both sides.

- Charles Street: a local road that traverses in a north-south direction between Darley Road in the north and William Street in the south. It is subject to a 50km/h speed zoning. Charles Street permits two-way travel and accommodates on-street parking along both sides.

- Allen Street: a local road that generally traverses in an east-west direction between Norton Street in the east and Darley Road in the west. It is subject to a 50 km/h speed zoning, carries a single lane of traffic in each direction and generally permits on-street parking along both sides

It can be seen from Figure 5 that the site is conveniently located with respect to collector and sub-arterial roads, notably Darley Road which provides a connection to the City West Link, providing further connections to the east and west.

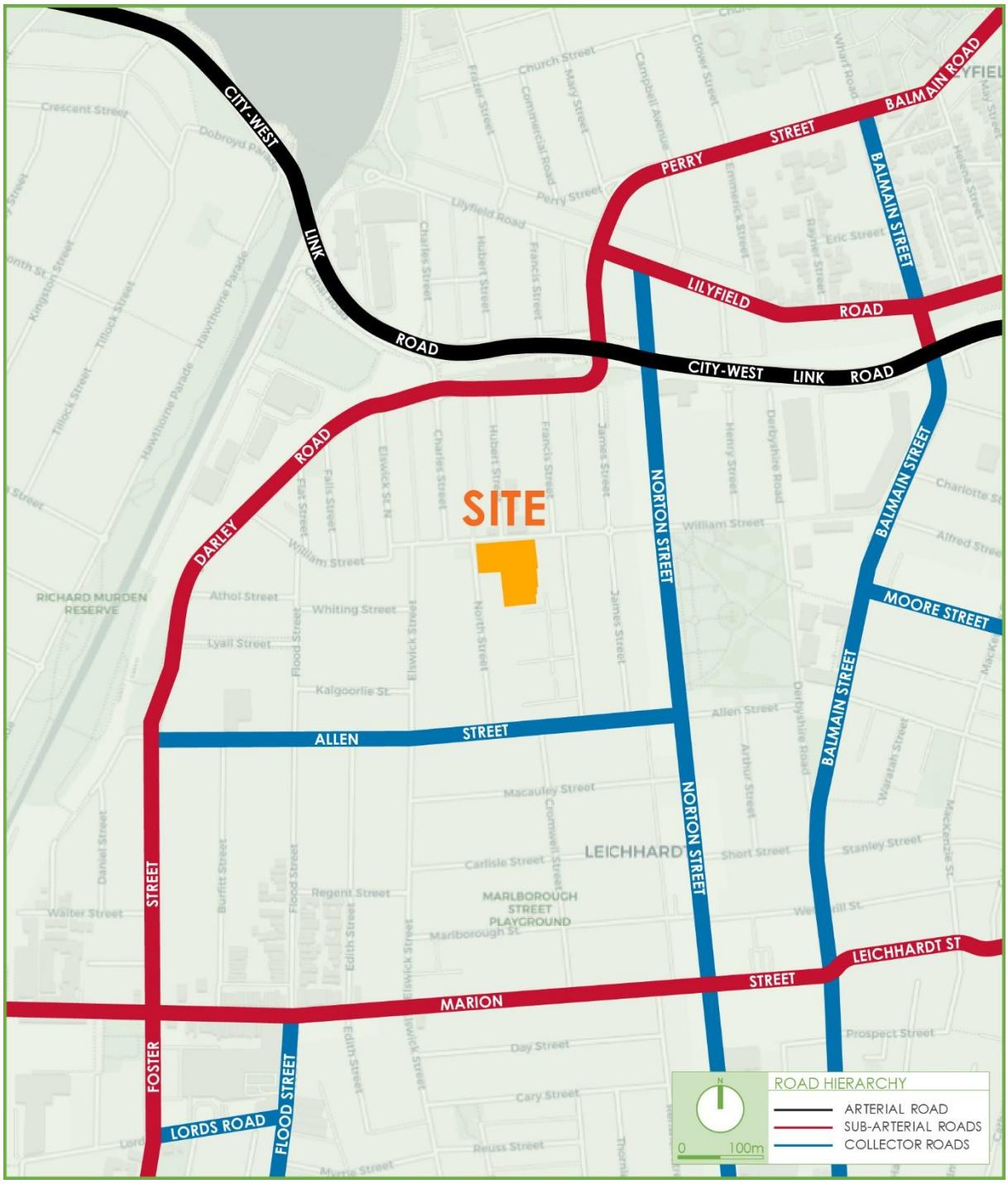


Figure 5: Road Hierarchy

5.2 Key Intersections

A number of intersections have been identified in the vicinity of the subject site which will likely be utilised by road users associated with the future development. These intersections are summarised in **Table 2.**

Table 2: Key Intersections

No.	Intersection	Control	Approach	Number of Lanes
1	William Street / Charles Street	Priority-Controlled	North	1 × all movement lane
			East	1 × all movement lane
			West	1 × all movement lane
2	William Street / North Street	Priority-Controlled	East	1 × all movement lane
			South	1 × all movement lane
			West	1 × all movement lane
3	William Street / Hubert Street	Priority-Controlled	North	1 × all movement lane
			East	1 × all movement lane
			West	1 × all movement lane
4	William Street / Francis Street	Priority-Controlled	North	1 × all movement lane
			East	1 × all movement lane
			South	1 × all movement lane
			West	1 × all movement lane
5	William Street / James Street	Roundabout	North	1 × all movement lane
			East	1 × all movement lane
			South	1 × all movement lane
			West	1 × all movement lane
6	William Street / Norton Street	Roundabout	North	1 × all movement lane
			East	1 × all movement lane
			South	1 × all movement lane
			West	1 × all movement lane

5.3 Public Transport

The existing public transport services that operate in the locality are shown in **Figure 6**. It is evident that the development benefits from reasonably good bus services with bus stops being situated within 400 metres of the site along Allen Street and Norton Street. These services provide connections to centres such as the Sydney CBD, Five Dock, Bondi Junction, Rozelle, Campsie, and Balmain.

The site is also ideally situated with respect to the Leichhardt North Light Rail Station, being only 300 metres north of the site. This Light Rail Station provides access to services on the L1 Dulwich Hill line, connecting the site to Central Railway Station, Pyrmont, Haymarket, Lewisham and Dulwich Hill Light Rail Stations.

5.4 Cycling Infrastructure

Cycling provides substantial health benefits, is sustainable and can help reduce transportation costs associated with owning / using a private car.

The site is located in proximity to separated bicycle lanes, off-road shared paths and bicycle friendly roads available throughout the area. These cycleways can be used concurrently with other bicycle routes to provide connections to various areas. The existing cycling facilities are presented in **Figure 7** and **8**, with the cycleways summarised as follows:

- On-Street Bicycle Routes: William Street, Elswick Street, Elswick Street North Charles Street, James Street, Allen Street and Norton Street are indicated as on-road cycle routes with moderate difficulty in the TfNSW Cycleway Finder or have been identified within Council's Cycling Strategy.
- Off-Road Bicycle Routes: The Hawthorne Canal Shared Path provides an off-road cycle route that traverses between Longport Street in the south and Victoria Road in the north. A shared path is also provided along Victoria Road.

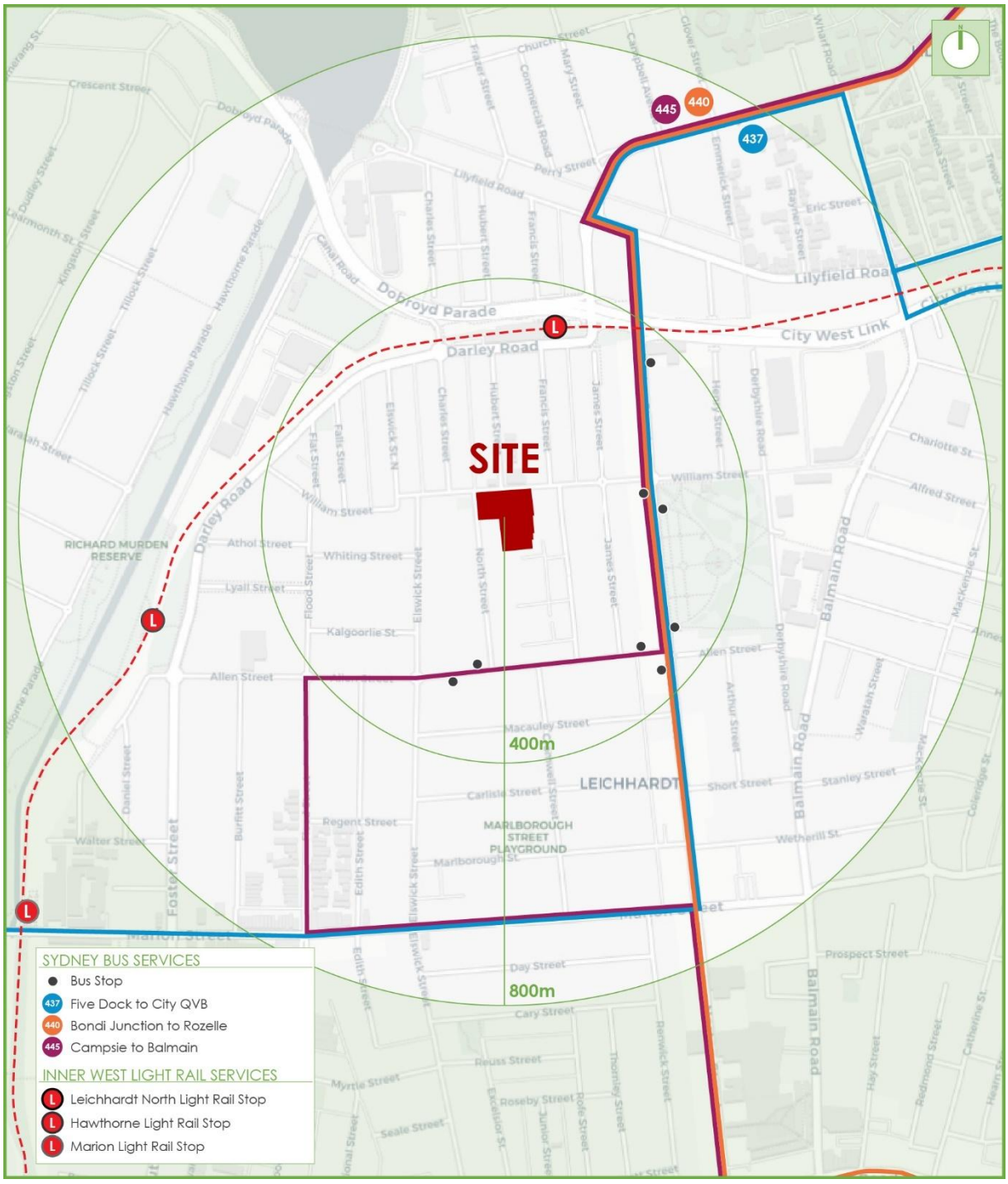


Figure 6: Public Transport

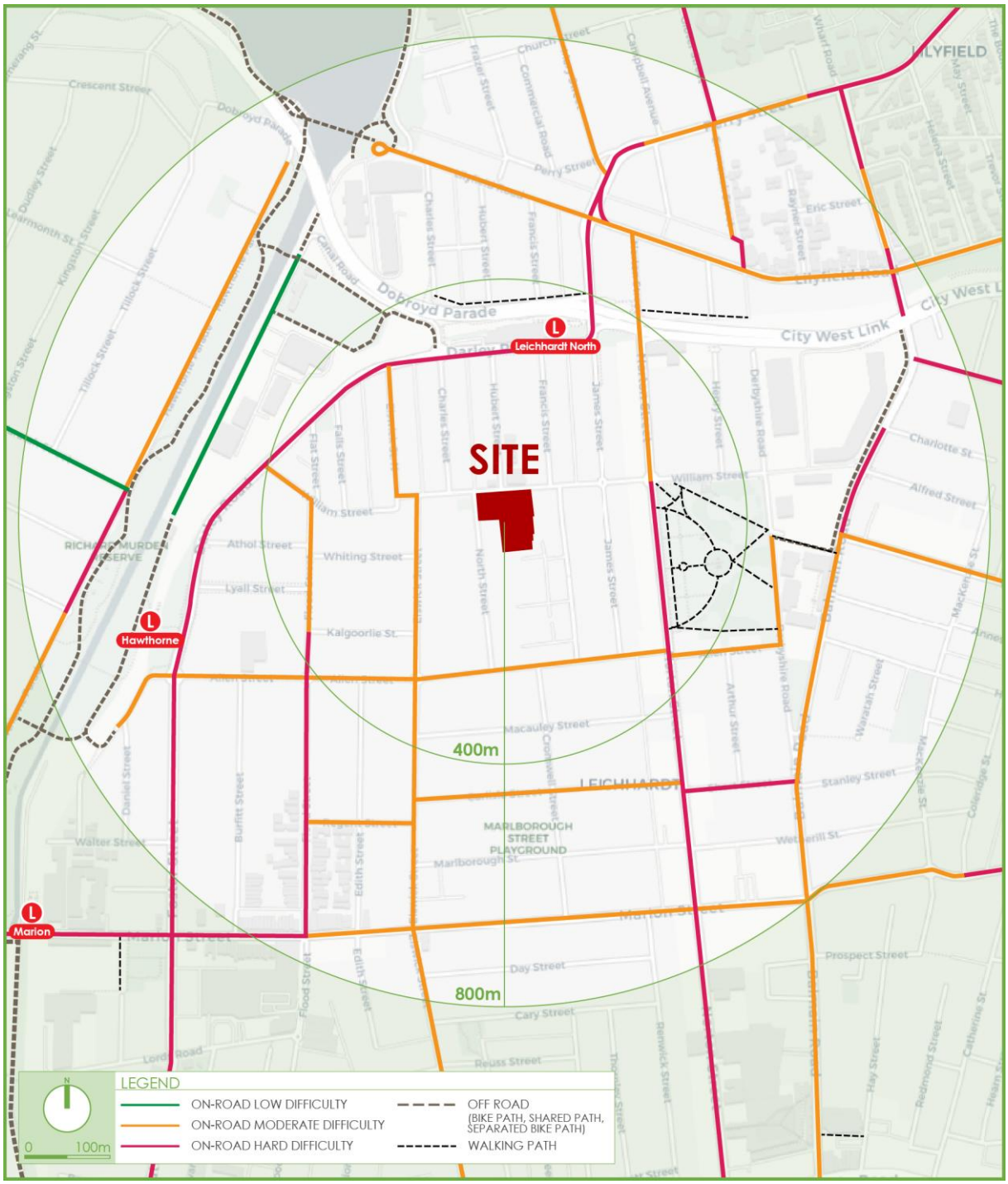


Figure 7: Existing Cycleways

(Source: TfNSW Cycleway Finder)

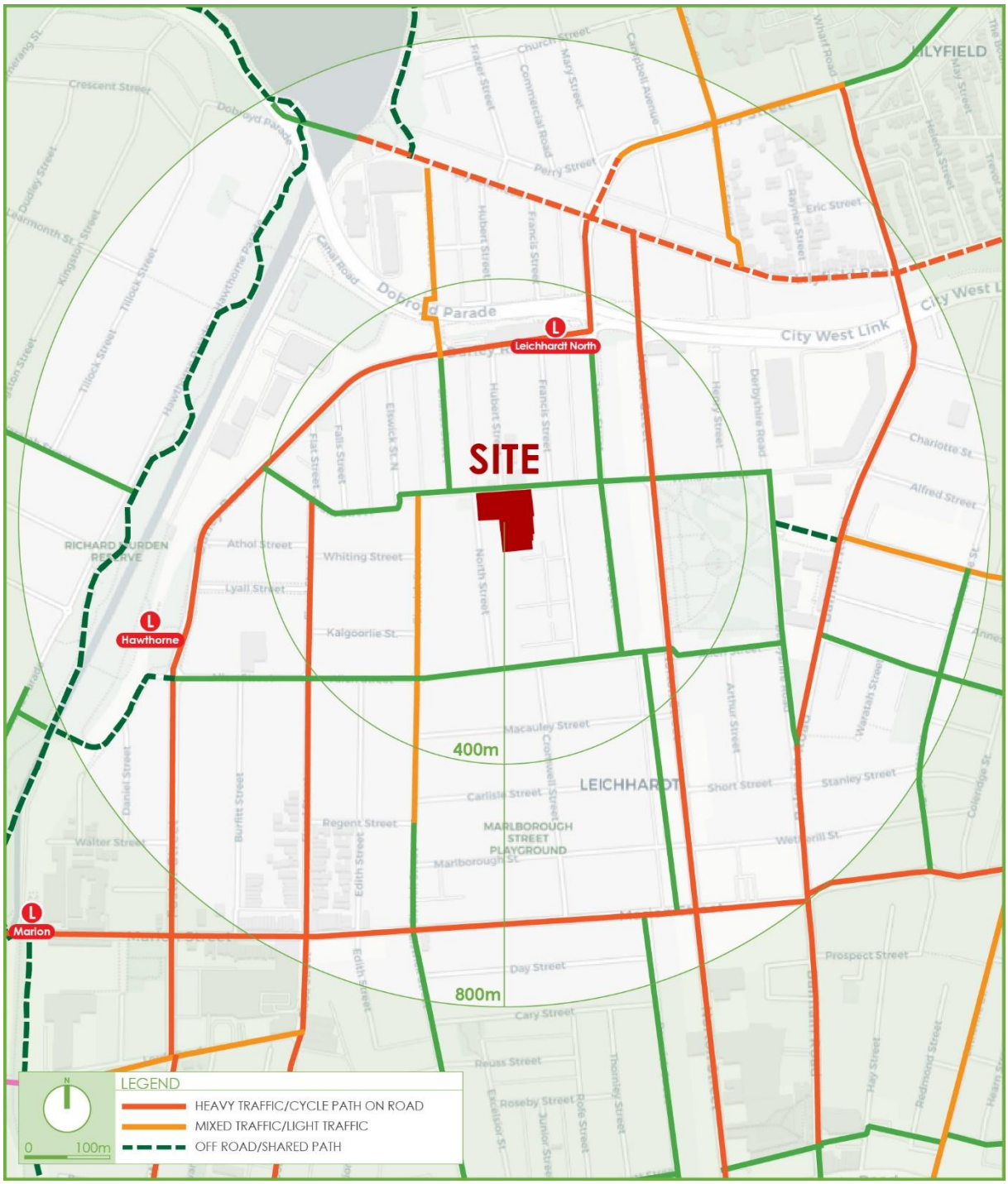


Figure 8: Existing Cycleways

(Source: IWC Cycling Strategy)

5.5 Pedestrian Infrastructure

Walking in daily transport routine helps maintain health and improves fitness. The NSW Guidelines to Walking & Cycling (2004) suggests that a 400m-800m catchment represents a comfortable walking distance. The subject site is presently accessible by pedestrian facilities, with paved pedestrian footpaths are provided along each frontage, including William Street, North Street, and Francis Street. The majority of intersections within the vicinity of the site provide pedestrian kerb ramps.

In addition to the above, a number of 'wombat' / refuges / signalised crossings are located within proximity of the site and are summarised as follows:

- Daley Road, near Lyall Street;
- Daley Road / Falls Street intersection;
- Daley Road / Elswick Street North intersection;
- Darley Road / Charles Street intersection;
- Darley Road, between Hubert Street and Francis Street;
- City West Link and James Street intersection;
- City West Link and Norton Street intersection;
- Norton Street / William Street intersection;
- Norton Street, south of Allen Street;
- Allen Street / Elswick Street intersection;
- Allen Street / Flood Street intersection;
- Darley Road, north of Allen Street; and
- William Street, west of James Street.

There are also a range of shops and services within the Leichhardt Town Centre within walkable distance of the site, all of which are accessible via paved footpaths.

5.6 Car Share Facilities

Car sharing offers a convenient, affordable, and sustainable alternate transport option to owning / using private cars. Car sharing encourages more sustainable travel habits and makes more efficient use of available parking by allowing a single vehicle to be used by a large number of people throughout the day. This reduces car ownership levels and the competition for parking spaces, which ultimately benefits everyone.

Car share generally involves signing up to a membership plan offered by car share operators. Plan fees vary depending on how frequent the user intends to use the service and affects hiring costs. Car share users are generally charged by time and distance, at a rate set by the operator.

The site is located within 400 metres of numerous GoGet car pods located within the Leichardt area. The existing GoGet car pods in the locality are presented in **Figure 9** below. Other car share service providers are also located in proximity of the site.

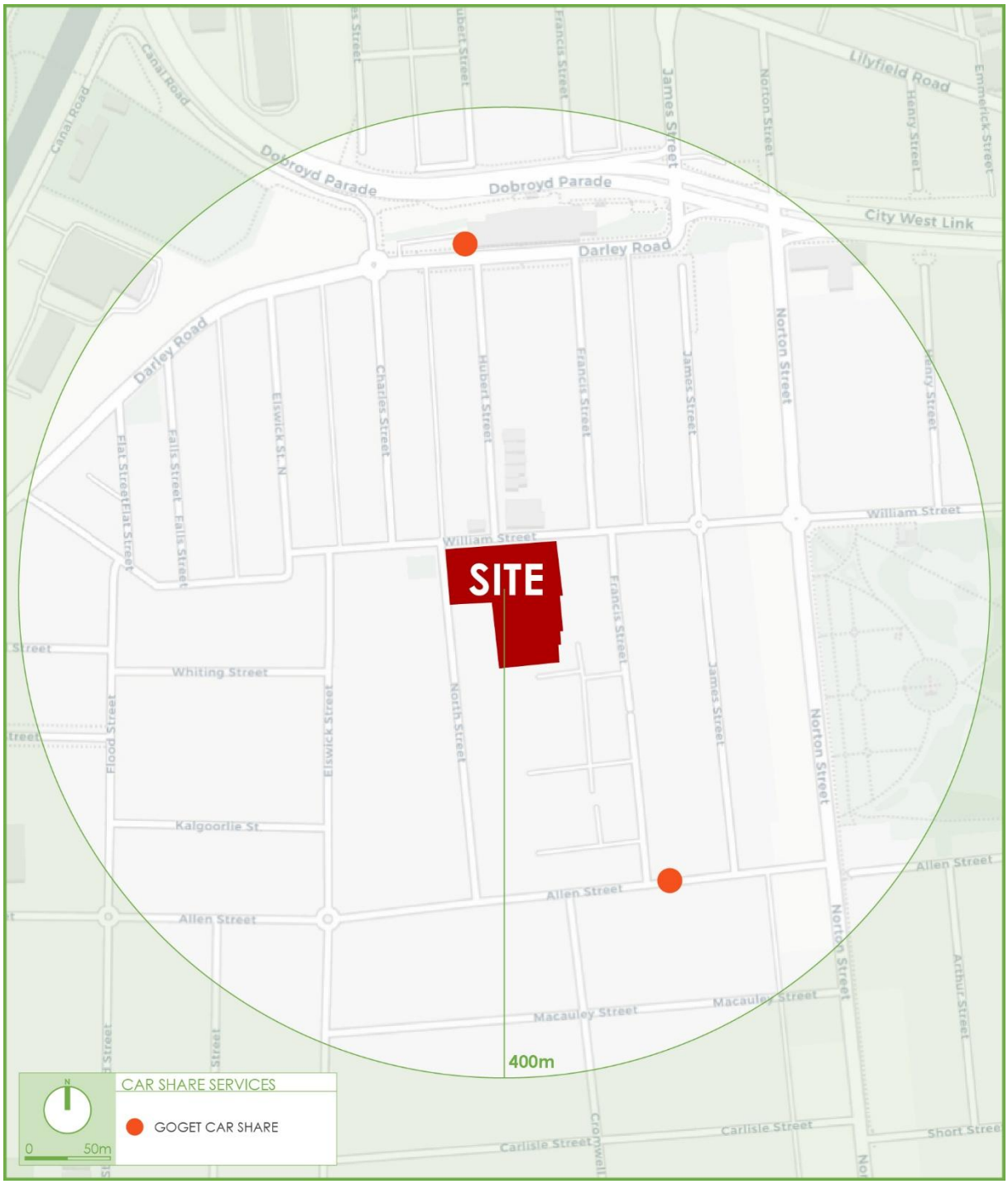


Figure 9: GoGet Carshare Pods

6. DESCRIPTION OF PROPOSED DEVELOPMENT

A detailed description of the proposed development is provided in the Environmental Impact Statement, prepared separately. In summary, the development for which approval is now sought comprises the following components:

- 203 residential apartments across five (5) buildings comprising:
  - 20 x one-bedroom apartments;
  - 130 x two-bedroom apartments;
  - 51 x three-bedroom apartments; and
  - 4 x four-bedroom apartments.
- Two (2) levels of basement car park providing 241 car parking spaces, including 224 residential, 17 visitors, and two (2) car share;
- Two (2) dedicated car wash bays on Basement 1; and
- A single service bay on Ground Floor, accessed via William Street.

The parking and traffic impacts of the proposed development are discussed in **Section 7** and **Section 8**. Reference should be made to the plans submitted separately to the Department of Planning and Environment which are presented in **Appendix A**.

7. PARKING REQUIREMENTS

7.1 Car Parking

7.1.1 Council DCP Controls

The Leichhardt Council Development Control Plan (DCP) 2013, Part C1.11 – Parking, requires parking for residential developments to be provided between the minimum and maximum rates shown in **Table 3**:

Table 3: Council DCP Parking Rates

Type	Units	Min Parking Rate	Max Parking Rate	Min Spaces Required	Max Spaces Permitted
1 Bed	20	1 space per 3 dwellings	0.5 spaces per dwelling	125	**204**
2 Bed	130	1 space per 2 dwellings	1 space per dwelling		
3+ Bed	53	1 space per dwelling	1.2 spaces per dwelling		
Visitor	203	1 space per 11 dwellings	0.125 spaces per dwelling	18	**25**
			Total	**144**	**229**

* Minimum number of car share spaces required.

As can be seen from the table above the proposed development requires a minimum of 144 parking spaces (125 residential and 18 visitor) and is permitted a maximum of 229 parking spaces (204 residential and 25 visitor) under Council's DCP controls.

7.1.2 SEPP Housing – In-fill Affordable Housing

It is understood that the proposed development provides affordable housing and that the SEPP Housing non-discretionary development standards apply. An assessment against the SEPP Housing parking requirements is presented in **Table 4** below.

Table 4: SEPP (Housing) Parking Rate and Provision

Type	Units	Minimum Parking Rate	Parking Required
Affordable Housing			
1 Bed	10	0.4 spaces per unit	6.5 (7)
2 Bed	5	0.5 space per unit	
3 Bed	0	1 space per unit	
		Subtotal	**7**
Non-Affordable (Market) Housing			
1 Bed	10	0.5 spaces per unit	209.5 (210)
2 Bed	125	1 space per unit	
3 Bed	53	1.5 spaces per unit	
		Subtotal	210
		Total	**217**

As can be seen from the table above the proposed development requires a minimum of 217 residential parking spaces based on the SEPP (Housing) parking requirements. No visitor parking is required under the SEPP.

7.1.3 Proposed Parking Provision

The proposed development provides 224 residential parking spaces and 17 visitor parking spaces for a total of 241 parking spaces, meeting the minimum requirements under the SEPP Housing.

7.2 Accessible Parking

The proposed development provides 15 accessible parking spaces. Reference is made to the access consultant's report for more information.

7.3 Car Share

The Leichhardt DCP 2013 Part C1.11, requires residential developments to provide a minimum of one (1) car share space for any residential development containing more than 50 residential units. In response, the proposed development provides two (2) car share spaces in accordance with the DCP.

7.4 Bicycle Parking

Council's DCP C1.11.3 requires bicycle parking to be provided in accordance with the minimum rates outlined in **Table 5** below.

Table 5: Council Bicycle Parking Rates

Type	Units	Minimum Parking Rate	Minimum Spaces Required	Proposed Provision
Residents	203	1 space per 2 units	102	**164**
Visitors	203	1 space per 10 units	20	**20**
		Total	**122**	**184**

Accordingly, the development requires a total of 122 bicycle parking spaces, including 102 spaces for residents and 20 spaces for visitors. In response, the development provides a total of 164 bicycle parking spaces for residents and 20 bicycle parking spaces for visitors in accordance with the DCP.

7.5 Motorcycle Parking

Council's DCP requires motorcycle parking to be provided as 5% of the parking requirement. Therefore, the development is required to provide between seven (7) and 12 motorcycle spaces in accordance with Council's minimum and maximum parking requirements. In response, the development provides eighteen (18) motorcycle spaces in accordance with Council's requirement.

7.6 Car Wash Bay

Council's DCP E1.2.4 C4 specifies that car wash bays must be provided for multi-unit residential developments. As this development has more than 16 units, a dedicated car wash bay must be provided at a rate of 1 bay per 60 dwellings or part thereof. Hence for 203 units, four (4) dedicated car wash bays are required. In response, the proposed development provides two (2) dedicated car wash bays on Basement 1, which is considered sufficient for the scale of the development.

7.7 Electric Vehicle Spaces

Council's DCP C1.11 O11 states that *"on-site parking for a range of vehicles, including very small cars, hybrid cars and fully electric cars in multi space car parks"*. As such, the development provides provision for electric vehicle infrastructure in accordance with the National Construction Code.

7.8 Waste Collection and Servicing

The Leichhardt DCP 2013 does not stipulate specific loading/service bay rates for waste vehicles. The proposed development includes one (1) dedicated service bay at ground floor level with a vehicle turntable, enabling trucks up to a 9.5m Ashfield Council waste vehicle to enter and exit the site in a forward direction at all times.

In summary, all servicing and waste collection will be fully accommodated onsite, which is considered acceptable and appropriate.

8. TRAFFIC AND TRANSPORT IMPACTS

8.1 Existing Site Generation

The TfNSW Guide to Transport Impact Assessment (2024) does not specify a traffic generation rate for self-storage facilities. Therefore, reliance is made on the parking and traffic study prepared by Aurecon. Aurecon conducted an investigation into the parking and traffic impacts of self-storage facilities in the *Self Storage Facility Traffic and Parking Study* prepared for the Self Storage Association of Australia. The report surveyed 32 storage facilities around Australia which informed the recommendations provided in the report. The recommendations included traffic generation rates based on the maximum leasable area (MLA) of the developments. For developments between 6,000m^2 and 9,500m^2 of MLA the Aurecon report recommends the following traffic generation rates:

- 15 - 30 vehicle trips per hour during the AM peak period; and
- 20 - 30 vehicle trips per hour during the PM peak period.

The application of the lower range (conservative assessment) rate to the 10,060m^2 of self-storage facility total lettable floor area predicts the following generation:

- 15 vehicle trips during the AM peak period (8 in, 7 out); and
- 20 vehicle trips during the PM peak period (10 in, 10 out).

8.2 Development Trip Generation

The impacts of the proposed development on the external road network have been assessed having regard for the proposed development summarised in Section 6 above. Reference is made to the TfNSW Guide to Transport Impact Assessment (2024) High-Density Residential Dwellings trip rates for sites with high public transport accessibility.

The relevant trip rates are as follows:

- 0.19 vehicle trips per dwelling during the AM peak period; and
- 0.15 vehicle trips per dwelling during the PM peak period.

Application of these trip rates to the 203 residential dwellings, and adopting an 80:20 split, results in the following predicted trip generation volumes:

- 39 vehicle trips during the AM peak period (8 in, 31 out); and
- 30 vehicle trips during the PM peak period (24 in, 6 out).

8.3 Peak Period Intersection Performance

8.3.1 Net Traffic Impacts

As mentioned in Section 8.1 above, the existing self-storage development generates in the order of 15-20 vehicle trips in the AM and PM peak periods, and these trips already occur across the local road network. Therefore, the net traffic impacts are as follows:

- +24 vehicle trips during the AM peak period (0 in, +24 out); and
- +10 vehicle trips during the PM peak period (+14 in, -4 out).

It is clear from the above volumes that the net traffic impacts associated with the development are moderate. Whilst TRAFFIX considered that SIDRA modelling is not required for such a minor increase in traffic, the above trips have been distributed at key intersections near the site. This is detailed further below in Section 8.3.3.

8.3.2 Traffic Surveys

For the purpose of assessing the traffic impacts of the subject proposal, surveys were undertaken at key intersections near the subject site. These surveys were performed during the network peak periods between 7:00am to 9:00am and 4:00pm to 6:00pm during a weekday in July 2024. The following intersections were surveyed:

- Priority-controlled – William Street / Charles Street;
- Priority-controlled – William Street / North Street;
- Priority-controlled – William Street / Hubert Street;
- Priority-controlled – William Street / Francis Street;
- Roundabout – William Street / James Street; and
- Roundabout – William Street / Norton Street.

8.3.3 Trip Distribution

In order to assess the traffic impacts in SIDRA Intersection 9.1, traffic has been distributed at the William Street access in line with Australian Bureau of Statistics SA2 "place of employment" data. Based on the place of employment data, the following splits have been adopted:

- 69% travel north-bound via William Street and Norton Street;
- 28.5% travel south-bound via William Street and Norton Street; and
- 2.5% travel south-bound via William Street and Elswick Street.

It is expected that limited (if any) filtering will occur between William Street and Darley Road in the AM and PM peak periods, noting the right-turn required onto Darley Road and the existing queues observed from City West Link.

Figures 10 and **11** below outline the net AM and PM volumes:

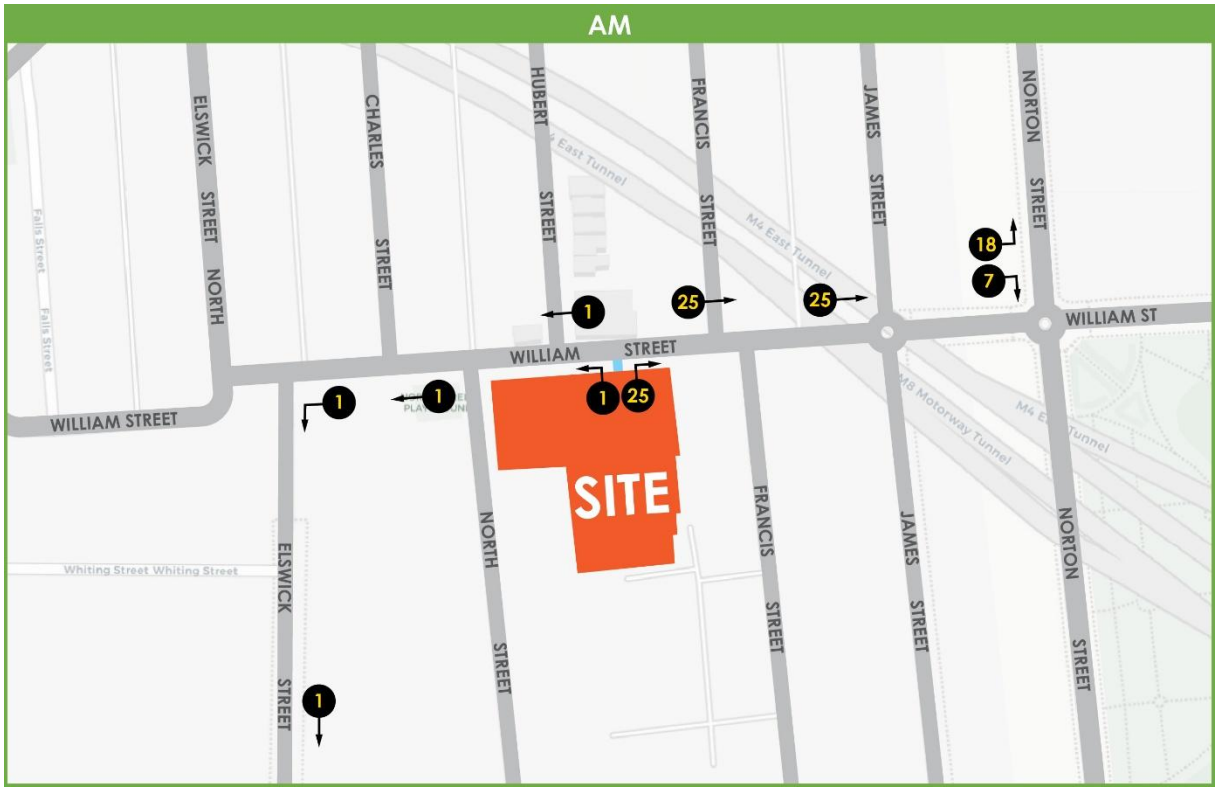


Figure 10: Net AM Volumes

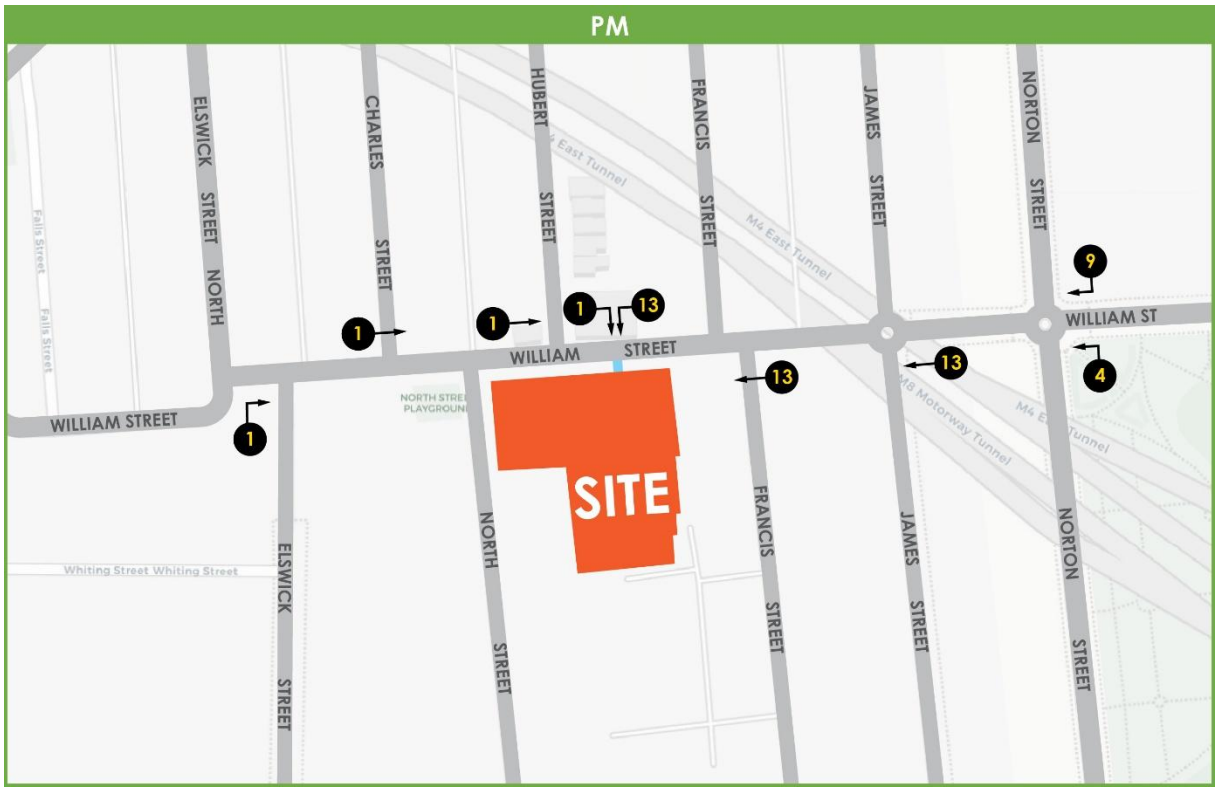


Figure 11: Net PM Volumes

8.3.4 Modelling Scenarios

In order to assess the potential traffic impacts of the proposed development, the following scenarios were identified:

- 2024 Base Case; and
- 2024 Base Case plus Development.

8.3.5 SIDRA Intersection Analysis

The surveys were analysed using the SIDRA Intersection 9.1 computer program to determine their performance characteristics under existing traffic conditions. The SIDRA model produces a range of outputs, the most useful of which are the Degree of Saturation (DoS) and Average Vehicle Delay per vehicle (AVD). The AVD is in turn related to a level of service (LoS) criteria. These performance measures can be interpreted using the following explanations:

DoS the DoS is a measure of the operational performance of individual intersections. As both queue length and delay increase rapidly as DoS approaches 1, it is usual to

attempt to keep DoS to less than 0.9. When DoS exceeds 0.9 residual queues can be anticipated, as occurs at many major intersections throughout the metropolitan area during peak periods. In this regard, a practical limit at 1.1 can be assumed. For intersections controlled by roundabout or give way / stop control, satisfactory intersection operation is generally indicated by a DoS of 0.8 or less.

AVD the AVD for individual intersections provides a measure of the operational performance of an intersection. In general, levels of acceptability of AVD for individual intersections depend on the time of day (motorists generally accept higher delays during peak commuter periods) and the road system being modelled (motorists are more likely to accept longer delays on side streets than on the main road system).

LoS this is a comparative measure which provides an indication of the operating performance of an intersection as shown in **Table 6**.

Table 6: Intersection Performance Indicators (TfNSW)

Level of Service (LoS)	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

A summary of the modelled results is provided in **Table 7** for the 'Base Case' and 'Base Case + Development' scenarios, respectively.

Reference should also be made to the SIDRA outputs provided in **Appendix B** which provide detailed results for each movement.

Table 7: Intersection Performance at Key Intersections

Intersection	Control Type	Scenario	Period	Degree of Saturation (DoS)	Intersection Delay	Level of Service
William Street / Charles Street	Priority-Controlled	Base Case	AM	0.022	5.3	A
			PM	0.029	5.3	A
		Base Case + Dev	AM	0.022	5.3	A
			PM	0.029	5.3	A
William Street / North Street	Priority-Controlled	Base Case	AM	0.014	5.6	A
			PM	0.015	5.6	A
		Base Case + Dev	AM	0.014	5.6	A
			PM	0.015	5.6	A
William Street / Hubert Street	Priority-Controlled	Base Case	AM	0.014	5.3	A
			PM	0.023	5.4	A
		Base Case + Dev	AM	0.014	5.3	A
			PM	0.023	5.4	A
William Street / Francis Street	Priority-Controlled	Base Case	AM	0.022	5.6	A
			PM	0.017	5.8	A
		Base Case + Dev	AM	0.022	5.8	A
			PM	0.051	6.0	A
William Street / James Street	Roundabout	Base Case	AM	0.024	10.0	A
			PM	0.027	9.9	A
		Base Case + Dev	AM	0.024	10.1	A
			PM	0.028	10.0	A
William Street / Norton Street	Roundabout	Base Case	AM	0.213	10.4	A
			PM	0.074	10.1	A
		Base Case + Dev	AM	0.226	10.5	A
			PM	0.063	10.2	A
	Wombat Crossing	Base Case	AM	0.281	3.6	A
			PM	0.287	3.5	A
		Base Case + Dev	AM	0.281	3.6	A
			PM	0.290	3.6	A

It can be seen from Table 7 that the six (6) key intersections in the vicinity of the site currently operate at LoS 'A' in the AM and PM peak periods. During the 'Base Case plus Development' scenario, key intersections in the vicinity of the site will continue to operate at existing levels of service. As discussed above, the additional traffic generated by the proposal would have minimal impacts on the existing road network. Accordingly, no concerns are raised in terms of intersection performance.

Based on the above results, no infrastructure upgrades are considered necessary to facilitate the proposed development. These results are expected noting the moderate increase in traffic associated with developments of this nature (residential with high public transport accessibility) and the distribution of traffic through the local network.

9. ACCESS AND INTERNAL DESIGN ASPECTS

9.1 Site Vehicular Access

9.1.1 Light Vehicles

The proposed development provides 239 Class 1A parking spaces with access to William Street, a local road. The William Street access will therefore require a Category 2 driveway under AS2890.1 (2004), being a combined entry and exit width of 6.0 to 9.0m. A 2.0m by 2.5m visual splay will also be provided in accordance with Figure 3.3 of AS2890.1 (2004) for two-way driveways.

In response, a 7.2m wide driveway and visual splay is provided in accordance with AS2890.1 (2004) requirements.

With respect to the driveway location on William Street, the proposed location is considered compliant with Figure 3.1 of AS2890.1 (2004) and is located on a straight length of road with good visibility to the east and west.

9.1.2 Commercial Vehicles

The development proposes a single service bay accessed from William Street. Swept path analysis demonstrates that a 9.5m Ashfield Council waste vehicle can enter and exit the site in a forward direction. A visual splay is also provided at the commercial vehicle access point to assist with pedestrian safety.

9.2 Internal Design

The on-site car parking complies with the requirements of AS2890.1 (2004), AS2890.2 (2018), AS2890.3 (2015), and AS2890.6 (2009), with the following characteristics noteworthy:

- All standard car parking spaces are designed in accordance with User Class 1A. These spaces are to be provided with a minimum length of 5.4m, a minimum width of 2.4m and a minimum aisle width of 5.8m.
- All accessible parking spaces are designed in accordance with AS2890.6 (2022), being 5.4m long, 2.4m wide, and situated adjacent to a dedicated shared area.

- Motorcycle spaces are designed in accordance with AS2890.1 (2004), being 2.5m long and 1.2m wide.
- All bicycle parking spaces are designed in accordance with the requirements of AS2890.3 (2015).
- All spaces located adjacent to obstructions of greater than 150mm in height are provided with an additional width of 300mm.
- Dead-end aisles are provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS2890.1 (2004).
- The internal light vehicle ramps are designed in accordance with Clause 2.5.3 of AS2890.1 (2004).
- A minimum clear head height of 2.2m is provided for all areas within the basement car park as required by AS2890.1 (2004).
- A minimum clear head height of 2.5m is provided above all accessible spaces in accordance with AS2890.6 (2022).
- The ground floor service/loading bay is to be designed in accordance with AS2890.2 (2018) with a minimum width of 3.5m and minimum length of 9.5m. A head height clearance of 4.5m is provided in accordance with AS 2890.2 (2018). The area is also sufficient to allow a 9.5m truck to rotate on the proposed turntable.
- Swept path analysis of critical vehicle movements is presented in **Appendix C**.

In summary, the internal configuration of the car park and loading areas has been designed in accordance with AS2890.1 (2004), AS2890.2 (2018), AS2890.3 (2015) and AS2890.6 (2022). It is however envisaged that a standard condition of consent could be imposed requiring compliance with these standards and as such any minor amendments considered necessary (if any) can be dealt with prior to the release of any Construction Certificate.

10. CONCLUSIONS

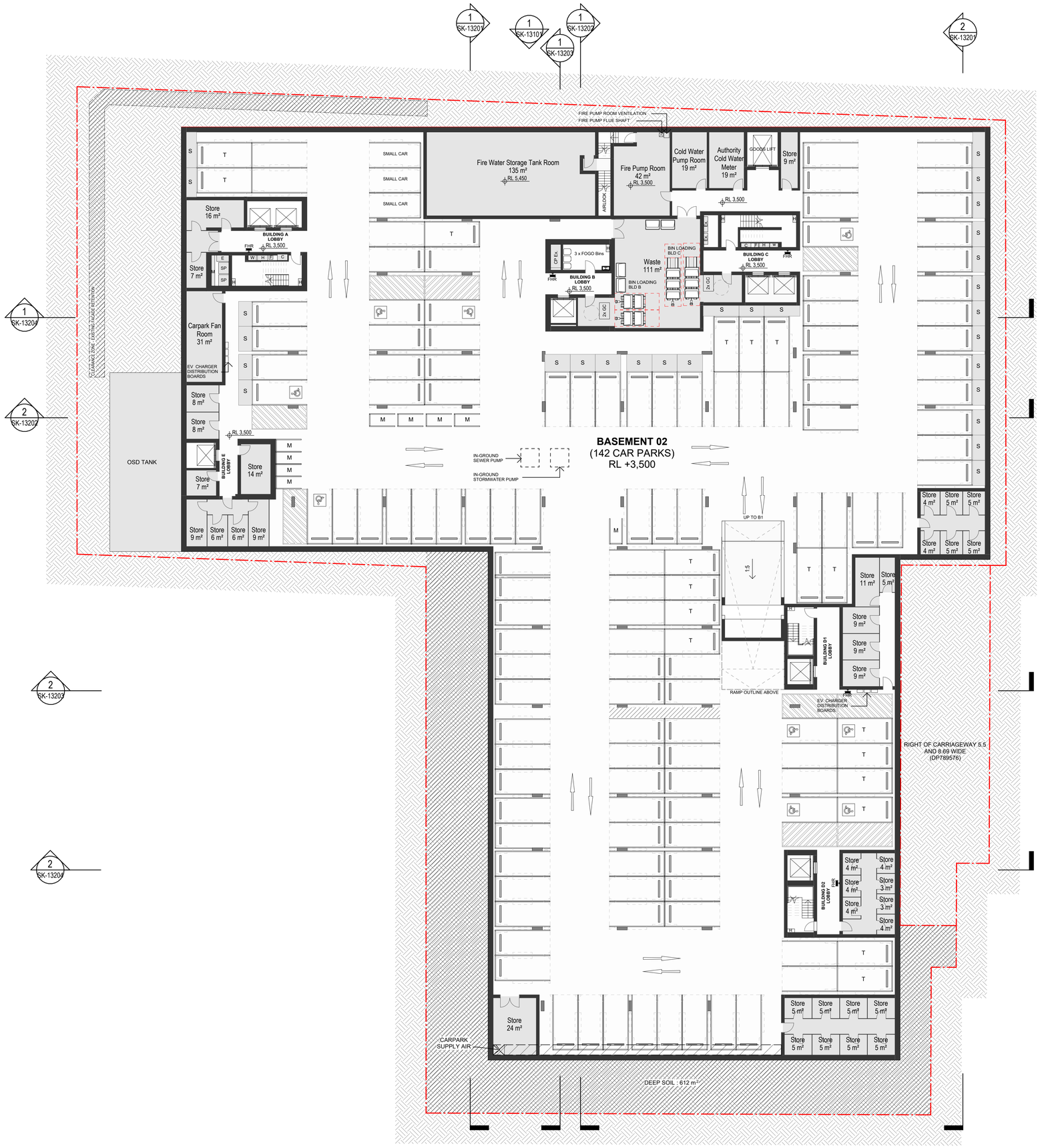
The following matters are noteworthy:

- The proposal seeks approval to construct a residential development at 40-76 William Street in Leichhardt, containing 203 apartments, and two levels of basement car parking accommodating 241 parking spaces.
- The subject site is well connected to the public transport network with reliable access to regular bus and light rail services. These, along with existing pedestrian and cycle links, ensure the site is ideally situated for a high-density residential development as it provides a good opportunity to encourage future tenants / visitors to use sustainable transport modes.
- The proposed development provides 241 car parking spaces, including 224 residential parking spaces, 17 visitor parking spaces, and two (2) car share parking spaces, which complies with the minimum requirements of SEPP (Housing). As such, all normal parking demands will be readily accommodated on-site, while the amenity of the locality will be protected.
- The proposed development is estimated to generate 24 additional vehicle trips per hour during the AM peak period, and 10 additional vehicle trips per hour during the PM peak period.
- SIDRA Intersection 9.1 analysis has been undertaken and the results are presented in Section 8.3.5. The analysis confirms that the additional traffic movements will have negligible impacts to key intersections in proximity of the site. As such, no external improvements are required to support the proposed development scheme.
- The light and commercial vehicle access to William Street complies with the requirements of AS2890.1 (2004).
- The basement car park has been assessed to comply with the requirements of AS2890.1 (2004), AS2890.2 (2018), AS2890.3 (2015), and AS2890.6 (2022).

This traffic impact assessment therefore demonstrates that the subject planning proposal is supportable on traffic planning grounds.

APPENDIX A

Architectural Plans



Recent revision history

#	Status	Description	Date
A		For Information	29/09/25

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Project
40-76 William Street

Client
Ceerose

Issuer
WOODS BAGOT

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Sheet number
SK-12098

Revision
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Status

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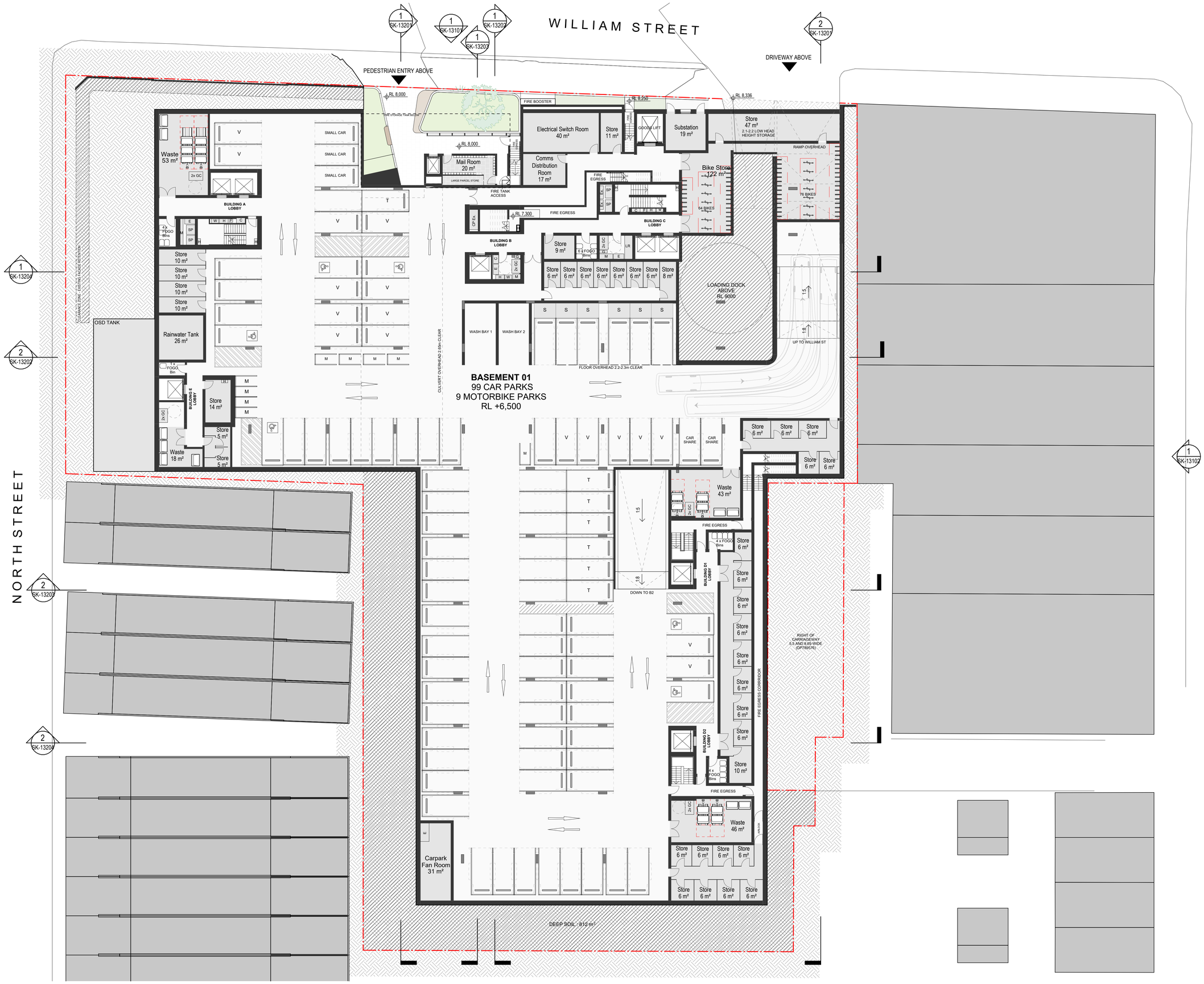

Recent revision history

#	Status	Description	Date
A		For Information	29/09/25

Project
40-76 William Street

Client
Ceerose

Issuer
W—B
WOODS BAGOT

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Sheet title
Basement 01

Sheet number
SK-12099

Revision
A

Status

Date generated 01/10/2025 5:00:16 PM

WILLIAM STREET

NORTH STREET

FRANCIS STREET

PROPOSED PEDESTRIAN PATH

PROPOSED DRIVEWAY

FINAL LANDSCAPE LAYOUT UNDER REVIEW

3 Bed A.GR.01 138 m²
POS A.GR.01 14 m²
3 Bed A.GR.02 118 m²
POS A.GR.02 11 m²
2 Bed - A C.GR.02 99 m²
Wellness Amenity
Residence Workshop
44 Bikes
BIKE STORE
BUILDING A GROUND FLOOR LOBBY
FIRE EGRESS
2 Bed A.GR.03 86 m²
POS A.GR.03 19 m²
GAS METER & REGULATER ROOM
BOH / Utilities 89 m²
BUILDING E GROUND FLOOR LOBBY
2 Bed E.GR.01 87 m²
POS E.GR.01 41 m²
FIRE BOOSTER
LOBBY WAITING AREA (TBD)
PLATFORM LIFT
BM 17 m²
FCC
BUILDING B GROUND FLOOR LOBBY
POS B.GR.01 10 m²
2 Bed B.GR.01 85 m²
BUILDING C GROUND FLOOR LOBBY
GOODS LIFT
Substation 19 m²
LOADING DOCK 120x 660L Bins 25x 240L Bins
MEZZANINE SLAB ABOVE
Condensers 58 m²
DRIVEWAY
SHIELD WALL
3 Bed D1.GR.04 118 m²
POS D1.GR.04 25 m²
POS D1.GR.04 12 m²
POS D1.GR.05 9 m²
POS D1.GR.03 26 m²
2 Bed D1.GR.03 85 m²
BUILDING D1 GROUND FLOOR
2 Bed - A D1.GR.05 81 m²
1 Bed - A D1.GR.01 52 m²
POS D1.GR.01 9 m²
POS D1.GR.02 26 m²
2 Bed D1.GR.02 91 m²
POS D1.GR.02 9 m²
2 Bed D2.GR.04 91 m²
POS D2.GR.04 26 m²
POS D2.GR.04 9 m²
POS D2.GR.05 9 m²
2 Bed D2.GR.03 85 m²
BUILDING D2 GROUND FLOOR
1 Bed - A D2.GR.05 52 m²
2 Bed - A D2.GR.01 81 m²
POS D2.GR.03 26 m²
POS D2.GR.01 9 m²
POS D2.GR.02 25 m²
3 Bed D2.GR.02 118 m²
POS D2.GR.02 12 m²
PARK
CARPARK SUPPLY AIR
BBQ
SHADING PERGOLA ABOVE
SHADING OUTLINE ABOVE
FLOOD BARRIER
RIGHT OF CARRIAGEWAY 5.5 AND 8.69 WIDE (DP789576)
VISUAL SPLAY SIGHT TRIANGLE

Recent revision history

#	Status	Description	Date
A		For Information	29/09/25

Project
40-76 William Street

Client
Ceerose

Issuer
W—B
WOODS BAGOT

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Sheet number
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Revision
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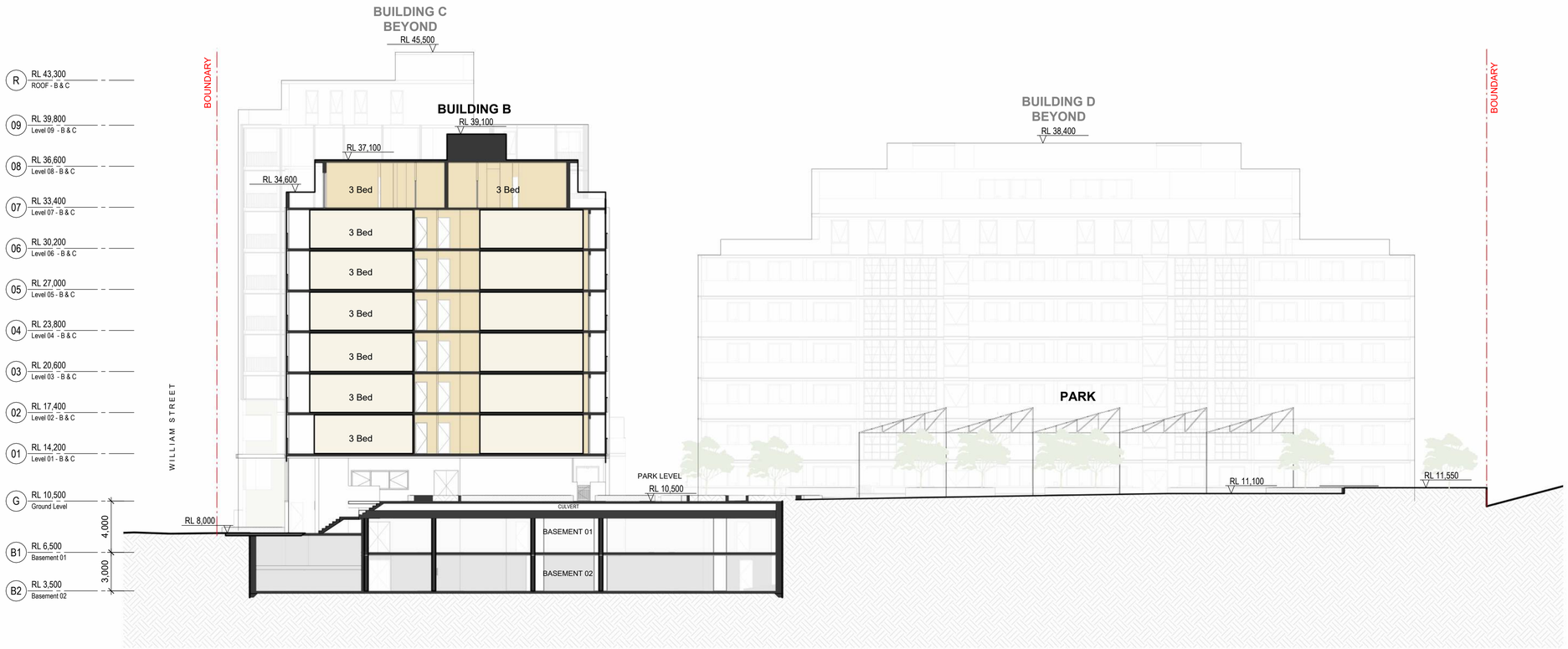

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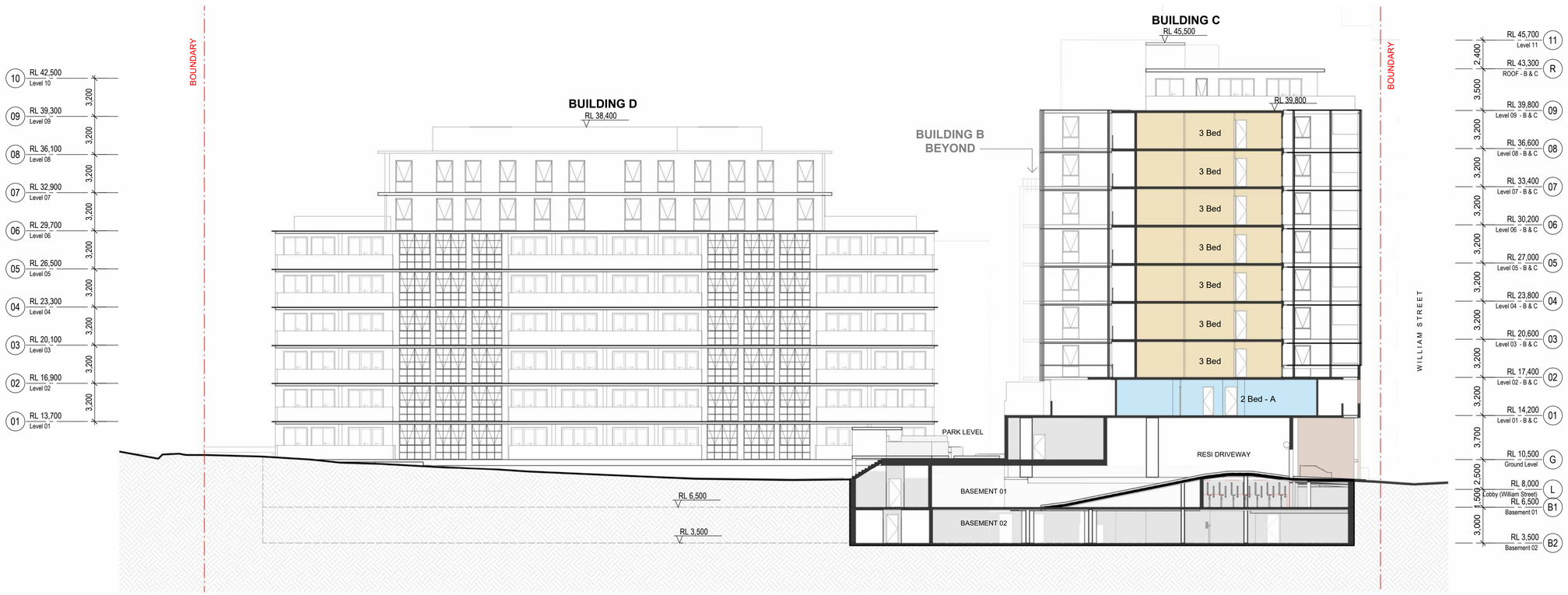

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Recent revision history

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Project
40-76 William Street

Client
Ceerose

Issuer
W–B
WOODS BAGOT

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Section A & B

Sheet number
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Revision
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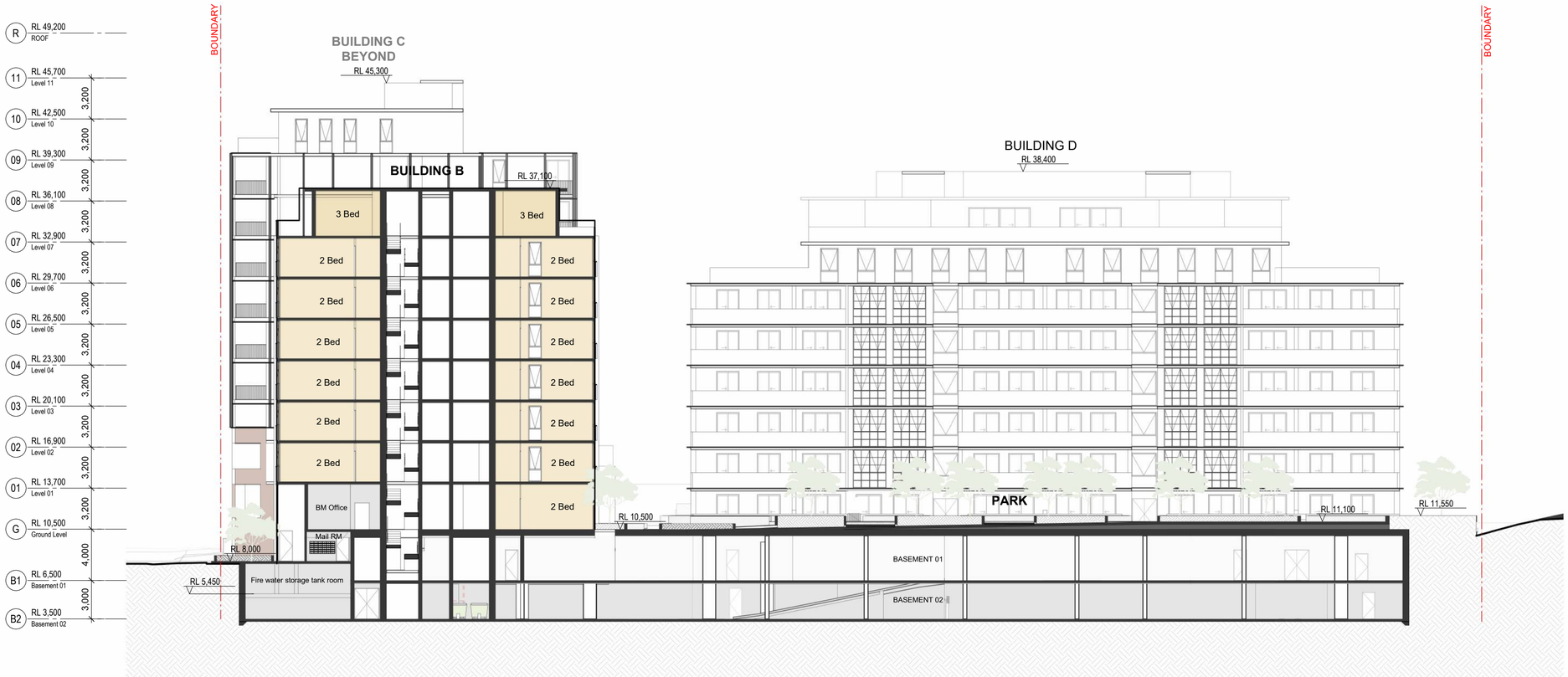
Status



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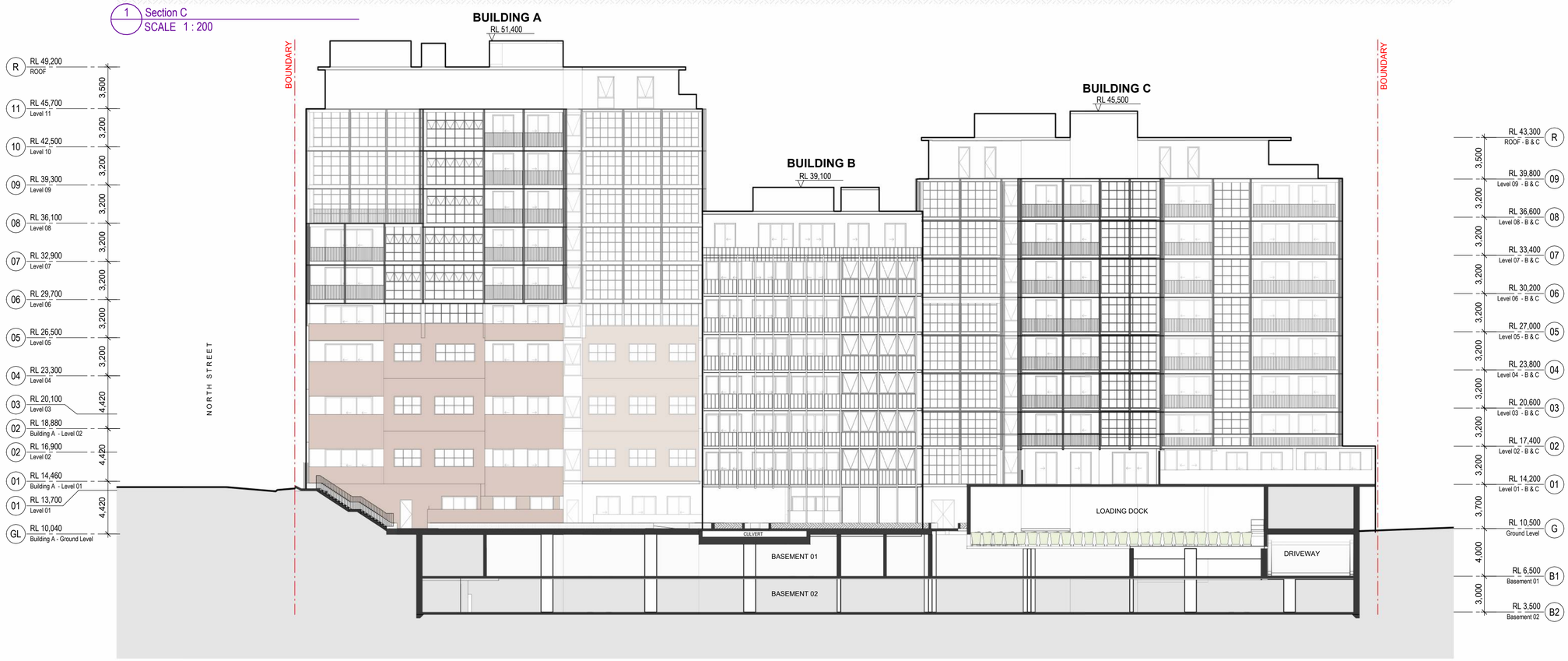

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Date generated 01/10/2025 5:10:24 PM

Recent revision history

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Project
40-76 William Street

Client
Ceerose

Issuer
W—B
WOODS BAGOT

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Sheet title
Section C & D

Sheet number
SK-13202

Revision
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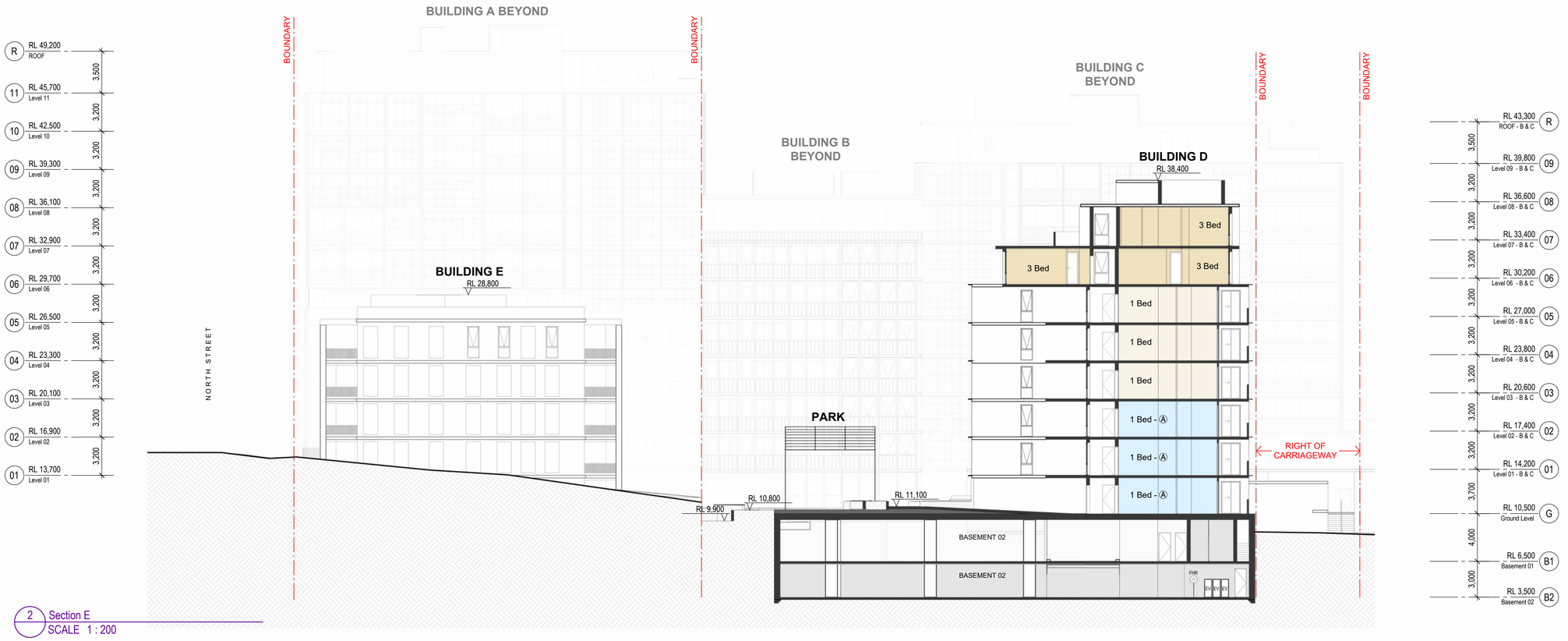

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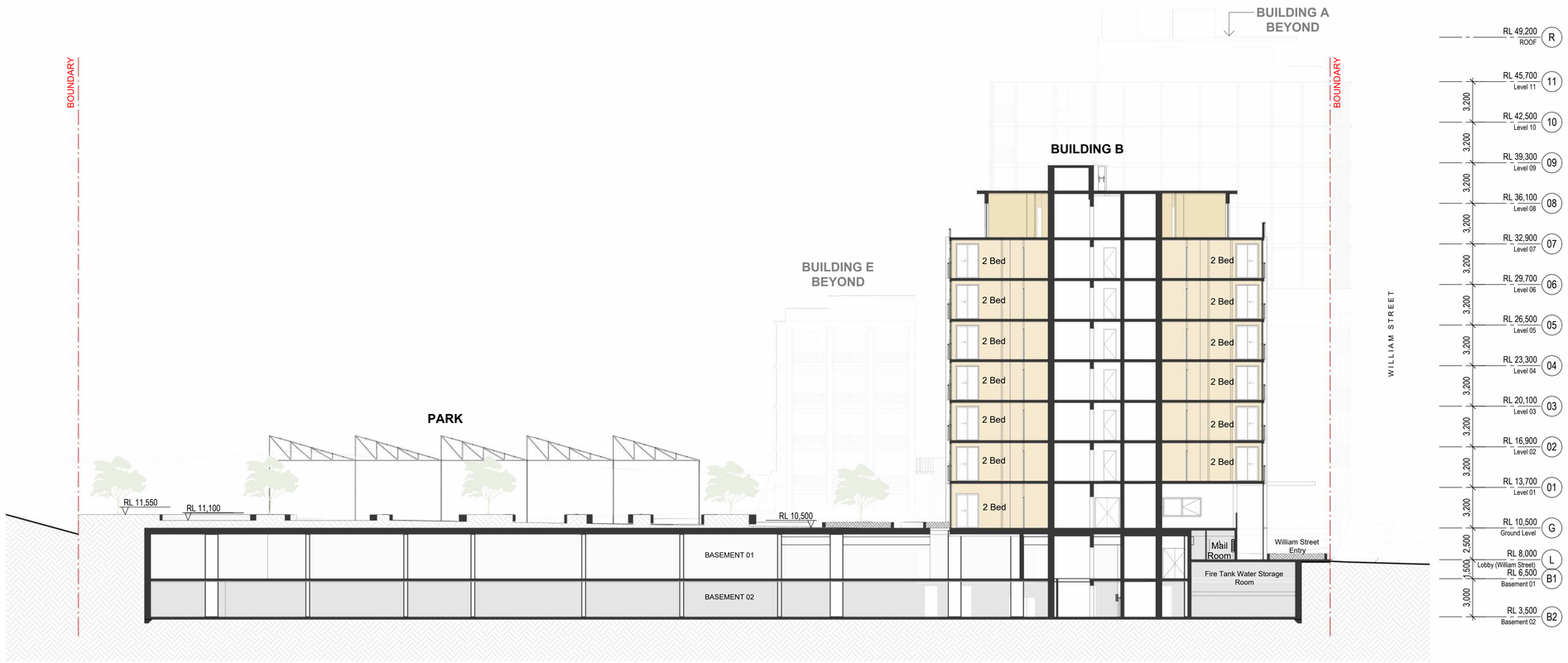

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Recent revision history

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A		For Information	29/09/25

Notes

Contractor must verify all dimensions on site before commencing work or preparing shop drawings.

Do not scale drawings.

Project
40-76 William Street

Client
Ceerose

Issuer
W–B
WOODS BAGOT

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Section E & F

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Revision
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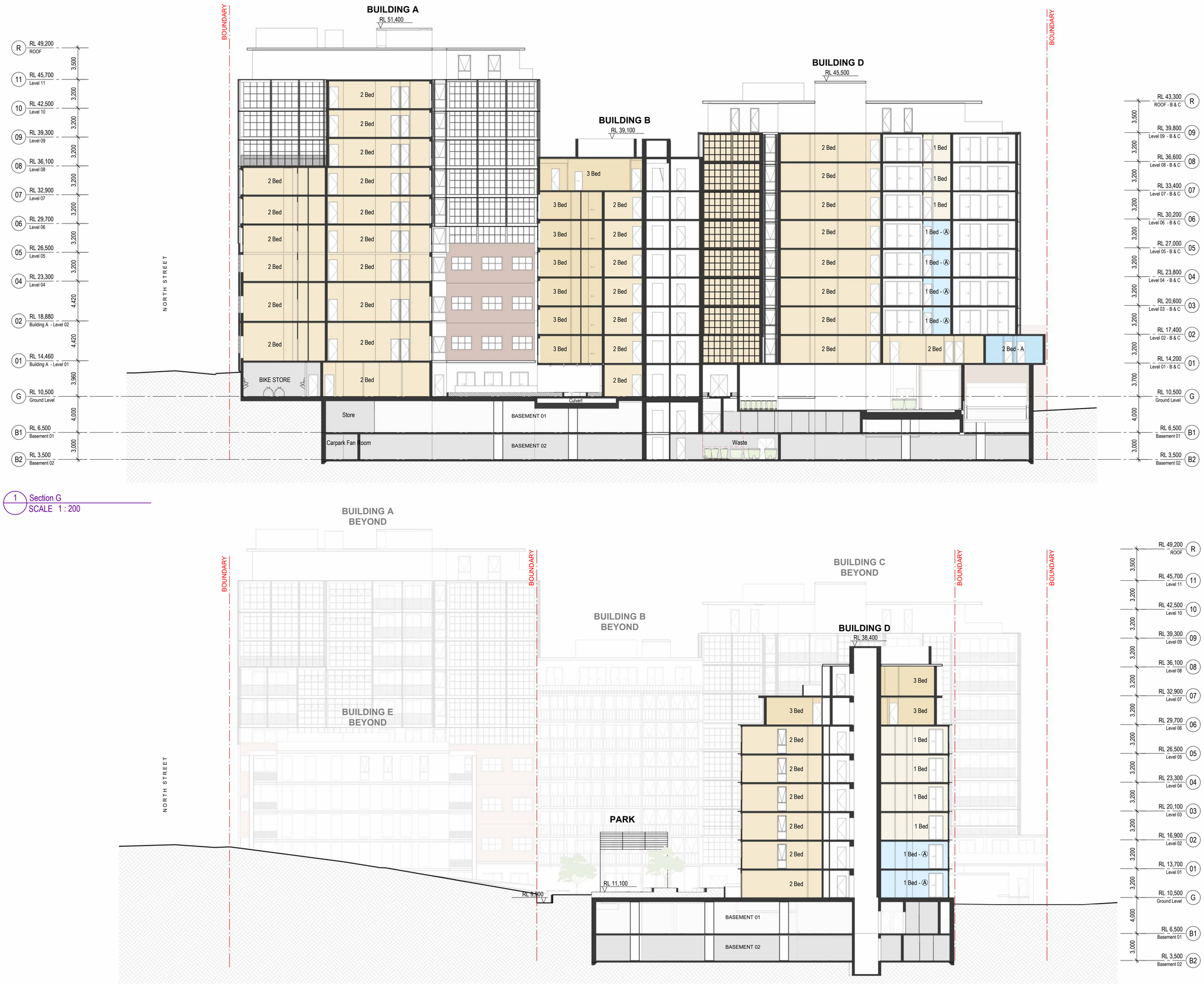

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Recent revision history

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Project
40-76 William Street

Client
Ceerose

Issuer
W—B
WOODS BAGOT

Project number
122105

Size check
25mm

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Sheet title
Section G & H

Sheet number
SK-13204

Revision
A

Status

APPENDIX B

SIDRA Outputs

MOVEMENT SUMMARY

Site: 101a [101a - William St x Norton St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x Norton Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
1	L2	All MCs	32	0.0	32	0.0	0.308	2.2	LOS A	1.9	14.0	0.37	0.49	0.37	18.0
2	T1	All MCs	238	10.6	238	10.6	0.308	2.6	LOS A	1.9	14.0	0.37	0.49	0.37	40.1
3	R2	All MCs	57	7.4	57	7.4	0.308	5.0	LOS A	1.9	14.0	0.37	0.49	0.37	36.5
3u	U	All MCs	16	0.0	16	0.0	0.308	6.3	LOS A	1.9	14.0	0.37	0.49	0.37	19.8
Approach			342	8.6	342	8.6	0.308	3.1	LOS A	1.9	14.0	0.37	0.49	0.37	37.5
East: William Street															
4	L2	All MCs	44	4.8	44	4.8	0.124	7.1	LOS A	0.7	5.0	0.59	0.65	0.59	31.7
5	T1	All MCs	23	0.0	23	0.0	0.124	6.5	LOS A	0.7	5.0	0.59	0.65	0.59	27.8
6	R2	All MCs	36	5.9	36	5.9	0.124	9.7	LOS A	0.7	5.0	0.59	0.65	0.59	37.5
Approach			103	4.1	103	4.1	0.124	7.9	LOS A	0.7	5.0	0.59	0.65	0.59	33.3
North: Norton Street															
7	L2	All MCs	44	9.5	44	9.5	0.438	5.6	LOS A	2.8	20.2	0.40	0.55	0.40	39.4
8	T1	All MCs	368	4.9	368	4.9	0.438	5.2	LOS A	2.8	20.2	0.40	0.55	0.40	36.8
9	R2	All MCs	73	4.3	73	4.3	0.438	8.0	LOS A	2.8	20.2	0.40	0.55	0.40	26.3
9u	U	All MCs	6	0.0	6	0.0	0.438	9.4	LOS A	2.8	20.2	0.40	0.55	0.40	40.2
Approach			492	5.1	492	5.1	0.438	5.7	LOS A	2.8	20.2	0.40	0.55	0.40	34.9
West: William Street															
10	L2	All MCs	86	1.2	86	1.2	0.197	6.1	LOS A	1.1	8.1	0.55	0.62	0.55	35.6
11	T1	All MCs	28	3.7	28	3.7	0.197	6.0	LOS A	1.1	8.1	0.55	0.62	0.55	34.4
12	R2	All MCs	60	3.5	60	3.5	0.197	9.1	LOS A	1.1	8.1	0.55	0.62	0.55	22.3
12u	U	All MCs	3	0.0	3	0.0	0.197	10.4	LOS A	1.1	8.1	0.55	0.62	0.55	20.1
Approach			178	2.4	178	2.4	0.197	7.2	LOS A	1.1	8.1	0.55	0.62	0.55	32.5
All Vehicles			1115	5.7	1115	5.7	0.438	5.3	LOS A	2.8	20.2	0.43	0.55	0.43	35.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101b [101b - Norton St Wombat Crossing_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: Norton Street x Wombat Crossing
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Pedestrian Crossing (Unsignalised)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
2	T1	All MCs	326	12.6	326	12.6	0.281	3.6	LOS A	1.3	10.3	0.18	0.45	0.18	46.1
Approach			326	12.6	326	12.6	0.281	3.6	LOS A	1.3	10.3	0.18	0.45	0.18	46.1
North: Norton Street															
8	T1	All MCs	381	8.8	381	8.8	0.322	1.3	LOS A	1.6	12.2	0.19	0.38	0.19	47.4
Approach			381	8.8	381	8.8	0.322	1.3	LOS A	1.6	12.2	0.19	0.38	0.19	47.4
All Vehicles			707	10.6	707	10.6	0.322	2.4	NA	1.6	12.2	0.18	0.41	0.18	46.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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: Akçelik M1.
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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MOVEMENT SUMMARY

Site: 102a [102a - William St x Norton Street_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x Norton Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
1	L2	All MCs	44	0.0	44	0.0	0.297	2.4	LOS A	1.8	13.3	0.39	0.47	0.39	18.1
2	T1	All MCs	256	5.8	256	5.8	0.297	2.7	LOS A	1.8	13.3	0.39	0.47	0.39	40.6
3	R2	All MCs	16	0.0	16	0.0	0.297	5.1	LOS A	1.8	13.3	0.39	0.47	0.39	37.2
3u	U	All MCs	11	0.0	11	0.0	0.297	6.5	LOS A	1.8	13.3	0.39	0.47	0.39	20.0
Approach			326	4.5	326	4.5	0.297	2.9	LOS A	1.8	13.3	0.39	0.47	0.39	37.6
East: William Street															
4	L2	All MCs	18	0.0	18	0.0	0.062	7.5	LOS A	0.4	2.5	0.62	0.65	0.62	31.0
5	T1	All MCs	14	0.0	14	0.0	0.062	7.1	LOS A	0.4	2.5	0.62	0.65	0.62	23.4
6	R2	All MCs	19	0.0	19	0.0	0.062	10.1	LOS A	0.4	2.5	0.62	0.65	0.62	37.2
Approach			51	0.0	51	0.0	0.062	8.4	LOS A	0.4	2.5	0.62	0.65	0.62	31.4
North: Norton Street															
7	L2	All MCs	32	13.3	32	13.3	0.452	5.0	LOS A	3.1	22.5	0.32	0.52	0.32	39.5
8	T1	All MCs	402	4.7	402	4.7	0.452	4.6	LOS A	3.1	22.5	0.32	0.52	0.32	37.2
9	R2	All MCs	122	0.9	122	0.9	0.452	7.4	LOS A	3.1	22.5	0.32	0.52	0.32	26.5
9u	U	All MCs	13	0.0	13	0.0	0.452	8.8	LOS A	3.1	22.5	0.32	0.52	0.32	40.5
Approach			568	4.3	568	4.3	0.452	5.3	LOS A	3.1	22.5	0.32	0.52	0.32	34.2
West: William Street															
10	L2	All MCs	60	0.0	60	0.0	0.138	5.6	LOS A	0.8	5.4	0.50	0.62	0.50	35.8
11	T1	All MCs	7	0.0	7	0.0	0.138	5.5	LOS A	0.8	5.4	0.50	0.62	0.50	34.6
12	R2	All MCs	63	0.0	63	0.0	0.138	8.6	LOS A	0.8	5.4	0.50	0.62	0.50	22.6
12u	U	All MCs	1	0.0	1	0.0	0.138	10.0	LOS A	0.8	5.4	0.50	0.62	0.50	16.6
Approach			132	0.0	132	0.0	0.138	7.1	LOS A	0.8	5.4	0.50	0.62	0.50	31.5
All Vehicles			1077	3.6	1077	3.6	0.452	4.9	LOS A	3.1	22.5	0.38	0.52	0.38	34.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 102b [102b - Norton St Wombat Crossing_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: Norton Street x Wombat Crossing
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Pedestrian Crossing (Unsignalised)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
2	T1	All MCs	340	8.7	340	8.7	0.287	3.5	LOS A	1.4	10.3	0.18	0.45	0.18	46.1
Approach			340	8.7	340	8.7	0.287	3.5	LOS A	1.4	10.3	0.18	0.45	0.18	46.1
North: Norton Street															
8	T1	All MCs	472	6.0	472	6.0	0.393	1.3	LOS A	2.2	16.1	0.21	0.38	0.21	47.4
Approach			472	6.0	472	6.0	0.393	1.3	LOS A	2.2	16.1	0.21	0.38	0.21	47.4
All Vehicles			812	7.1	812	7.1	0.393	2.3	NA	2.2	16.1	0.19	0.41	0.19	46.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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: Akçelik M1.
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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MOVEMENT SUMMARY

Site: 201 [201 - William St x James St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x James Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: James Street															
1	L2	All MCs	7	0.0	7	0.0	0.027	5.0	LOS A	0.1	0.9	0.28	0.57	0.28	28.2
2	T1	All MCs	4	0.0	4	0.0	0.027	4.5	LOS A	0.1	0.9	0.28	0.57	0.28	41.0
3	R2	All MCs	18	0.0	18	0.0	0.027	7.2	LOS A	0.1	0.9	0.28	0.57	0.28	28.2
3u	U	All MCs	1	0.0	1	0.0	0.027	9.7	LOS A	0.1	0.9	0.28	0.57	0.28	43.4
Approach			31	0.0	31	0.0	0.027	6.4	LOS A	0.1	0.9	0.28	0.57	0.28	30.5
East: William Street															
4	L2	All MCs	14	0.0	14	0.0	0.093	3.9	LOS A	0.5	3.3	0.09	0.48	0.09	40.3
5	T1	All MCs	96	1.1	96	1.1	0.093	3.7	LOS A	0.5	3.3	0.09	0.48	0.09	18.7
6	R2	All MCs	11	0.0	11	0.0	0.093	6.6	LOS A	0.5	3.3	0.09	0.48	0.09	37.8
6u	U	All MCs	8	12.5	8	12.5	0.093	8.1	LOS A	0.5	3.3	0.09	0.48	0.09	15.9
Approach			128	1.6	128	1.6	0.093	4.3	LOS A	0.5	3.3	0.09	0.48	0.09	22.8
North: James Street															
7	L2	All MCs	16	0.0	16	0.0	0.024	4.8	LOS A	0.1	0.8	0.33	0.55	0.33	23.3
8	T1	All MCs	1	0.0	1	0.0	0.024	4.5	LOS A	0.1	0.8	0.33	0.55	0.33	41.7
9	R2	All MCs	7	0.0	7	0.0	0.024	7.5	LOS A	0.1	0.8	0.33	0.55	0.33	28.4
9u	U	All MCs	1	0.0	1	0.0	0.024	10.0	LOS A	0.1	0.8	0.33	0.55	0.33	41.4
Approach			25	0.0	25	0.0	0.024	5.8	LOS A	0.1	0.8	0.33	0.55	0.33	26.0
West: William Street															
10	L2	All MCs	5	0.0	5	0.0	0.120	4.2	LOS A	0.6	4.4	0.16	0.44	0.16	38.2
11	T1	All MCs	142	2.2	142	2.2	0.120	3.5	LOS A	0.6	4.4	0.16	0.44	0.16	15.9
12	R2	All MCs	6	0.0	6	0.0	0.120	6.4	LOS A	0.6	4.4	0.16	0.44	0.16	39.9
12u	U	All MCs	1	0.0	1	0.0	0.120	7.8	LOS A	0.6	4.4	0.16	0.44	0.16	17.5
Approach			155	2.0	155	2.0	0.120	3.7	LOS A	0.6	4.4	0.16	0.44	0.16	17.5
All Vehicles			339	1.6	339	1.6	0.120	4.3	LOS A	0.6	4.4	0.16	0.47	0.16	21.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 202 [202 - William St x James St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x James Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: James Street															
1	L2	All MCs	8	0.0	8	0.0	0.027	5.3	LOS A	0.1	0.9	0.32	0.58	0.32	28.2
2	T1	All MCs	4	0.0	4	0.0	0.027	4.7	LOS A	0.1	0.9	0.32	0.58	0.32	40.9
3	R2	All MCs	15	0.0	15	0.0	0.027	7.4	LOS A	0.1	0.9	0.32	0.58	0.32	28.2
3u	U	All MCs	2	0.0	2	0.0	0.027	9.9	LOS A	0.1	0.9	0.32	0.58	0.32	43.4
Approach			29	0.0	29	0.0	0.027	6.6	LOS A	0.1	0.9	0.32	0.58	0.32	31.1
East: William Street															
4	L2	All MCs	17	0.0	17	0.0	0.124	3.9	LOS A	0.6	4.5	0.08	0.46	0.08	40.5
5	T1	All MCs	148	0.7	148	0.7	0.124	3.7	LOS A	0.6	4.5	0.08	0.46	0.08	18.9
6	R2	All MCs	11	0.0	11	0.0	0.124	6.6	LOS A	0.6	4.5	0.08	0.46	0.08	38.1
6u	U	All MCs	5	0.0	5	0.0	0.124	8.1	LOS A	0.6	4.5	0.08	0.46	0.08	16.1
Approach			181	0.6	181	0.6	0.124	4.0	LOS A	0.6	4.5	0.08	0.46	0.08	22.3
North: James Street															
7	L2	All MCs	8	0.0	8	0.0	0.013	4.5	LOS A	0.1	0.4	0.28	0.52	0.28	23.5
8	T1	All MCs	2	0.0	2	0.0	0.013	4.2	LOS A	0.1	0.4	0.28	0.52	0.28	42.0
9	R2	All MCs	3	0.0	3	0.0	0.013	7.3	LOS A	0.1	0.4	0.28	0.52	0.28	28.7
9u	U	All MCs	1	0.0	1	0.0	0.013	9.7	LOS A	0.1	0.4	0.28	0.52	0.28	41.8
Approach			15	0.0	15	0.0	0.013	5.4	LOS A	0.1	0.4	0.28	0.52	0.28	28.3
West: William Street															
10	L2	All MCs	3	0.0	3	0.0	0.085	4.2	LOS A	0.4	3.0	0.15	0.44	0.15	38.3
11	T1	All MCs	101	0.0	101	0.0	0.085	3.5	LOS A	0.4	3.0	0.15	0.44	0.15	15.9
12	R2	All MCs	4	0.0	4	0.0	0.085	6.3	LOS A	0.4	3.0	0.15	0.44	0.15	40.0
12u	U	All MCs	1	0.0	1	0.0	0.085	7.8	LOS A	0.4	3.0	0.15	0.44	0.15	17.5
Approach			109	0.0	109	0.0	0.085	3.7	LOS A	0.4	3.0	0.15	0.44	0.15	17.4
All Vehicles			335	0.3	335	0.3	0.124	4.2	LOS A	0.6	4.5	0.13	0.47	0.13	22.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 301 [301 - William St x Francis St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Francis Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	3	0.0	3	0.0	0.022	4.8	LOS A	0.1	0.5	0.28	0.51	0.28	23.8
2	T1	All MCs	2	0.0	2	0.0	0.022	4.5	LOS A	0.1	0.5	0.28	0.51	0.28	40.0
3	R2	All MCs	16	0.0	16	0.0	0.022	5.6	LOS A	0.1	0.5	0.28	0.51	0.28	34.5
Approach			21	0.0	21	0.0	0.022	5.4	LOS A	0.1	0.5	0.28	0.51	0.28	33.0
East: William Street															
4	L2	All MCs	6	0.0	6	0.0	0.049	4.3	LOS A	0.1	0.4	0.05	0.08	0.05	43.1
5	T1	All MCs	88	1.2	88	1.2	0.049	0.0	LOS A	0.1	0.4	0.05	0.08	0.05	46.9
6	R2	All MCs	6	0.0	6	0.0	0.049	4.4	LOS A	0.1	0.4	0.05	0.08	0.05	45.0
Approach			101	1.0	101	1.0	0.049	0.6	NA	0.1	0.4	0.05	0.08	0.05	46.3
North: Francis Street															
7	L2	All MCs	5	0.0	5	0.0	0.011	4.9	LOS A	0.0	0.3	0.26	0.49	0.26	29.9
8	T1	All MCs	2	0.0	2	0.0	0.011	4.4	LOS A	0.0	0.3	0.26	0.49	0.26	40.2
9	R2	All MCs	5	0.0	5	0.0	0.011	5.6	LOS A	0.0	0.3	0.26	0.49	0.26	30.9
Approach			13	0.0	13	0.0	0.011	5.1	LOS A	0.0	0.3	0.26	0.49	0.26	32.0
West: William Street															
10	L2	All MCs	3	0.0	3	0.0	0.063	4.6	LOS A	0.0	0.1	0.01	0.02	0.01	45.9
11	T1	All MCs	123	1.7	123	1.7	0.063	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	49.2
12	R2	All MCs	1	0.0	1	0.0	0.063	4.6	LOS A	0.0	0.1	0.01	0.02	0.01	45.3
Approach			127	1.7	127	1.7	0.063	0.2	NA	0.0	0.1	0.01	0.02	0.01	48.9
All Vehicles			262	1.2	262	1.2	0.063	1.0	NA	0.1	0.5	0.05	0.10	0.05	43.6

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

MOVEMENT SUMMARY

Site: 302 [302 - William St x Francis St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Francis Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	1	0.0	1	0.0	0.014	5.0	LOS A	0.0	0.3	0.32	0.53	0.32	23.7
2	T1	All MCs	1	0.0	1	0.0	0.014	4.6	LOS A	0.0	0.3	0.32	0.53	0.32	39.8
3	R2	All MCs	11	0.0	11	0.0	0.014	5.8	LOS A	0.0	0.3	0.32	0.53	0.32	34.2
Approach			13	0.0	13	0.0	0.014	5.7	LOS A	0.0	0.3	0.32	0.53	0.32	33.5
East: William Street															
4	L2	All MCs	13	0.0	13	0.0	0.083	4.2	LOS A	0.1	0.6	0.04	0.08	0.04	43.1
5	T1	All MCs	147	0.7	147	0.7	0.083	0.0	LOS A	0.1	0.6	0.04	0.08	0.04	46.8
6	R2	All MCs	11	0.0	11	0.0	0.083	4.2	LOS A	0.1	0.6	0.04	0.08	0.04	45.0
Approach			171	0.6	171	0.6	0.083	0.6	NA	0.1	0.6	0.04	0.08	0.04	46.2
North: Francis Street															
7	L2	All MCs	12	0.0	12	0.0	0.017	4.8	LOS A	0.1	0.4	0.22	0.49	0.22	30.0
8	T1	All MCs	1	0.0	1	0.0	0.017	4.6	LOS A	0.1	0.4	0.22	0.49	0.22	40.2
9	R2	All MCs	7	0.0	7	0.0	0.017	5.8	LOS A	0.1	0.4	0.22	0.49	0.22	31.0
Approach			20	0.0	20	0.0	0.017	5.1	LOS A	0.1	0.4	0.22	0.49	0.22	30.9
West: William Street															
10	L2	All MCs	5	0.0	5	0.0	0.051	4.9	LOS A	0.1	0.4	0.06	0.09	0.06	44.7
11	T1	All MCs	88	0.0	88	0.0	0.051	0.1	LOS A	0.1	0.4	0.06	0.09	0.06	46.4
12	R2	All MCs	7	0.0	7	0.0	0.051	5.0	LOS A	0.1	0.4	0.06	0.09	0.06	43.8
Approach			101	0.0	101	0.0	0.051	0.7	NA	0.1	0.4	0.06	0.09	0.06	45.9
All Vehicles			304	0.3	304	0.3	0.083	1.1	NA	0.1	0.6	0.07	0.13	0.07	42.8

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

MOVEMENT SUMMARY

Site: 401 [401 - William St x Hubert St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Hubert Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	97	1.1	97	1.1	0.049	0.0	LOS A	0.0	0.3	0.03	0.03	0.03	48.1
6	R2	All MCs	5	0.0	5	0.0	0.049	4.8	LOS A	0.0	0.3	0.03	0.03	0.03	45.9
Approach			102	1.0	102	1.0	0.049	0.3	NA	0.0	0.3	0.03	0.03	0.03	47.8
North: North Street															
7	L2	All MCs	14	0.0	14	0.0	0.014	4.9	LOS A	0.1	0.4	0.22	0.50	0.22	37.8
9	R2	All MCs	5	0.0	5	0.0	0.014	5.3	LOS A	0.1	0.4	0.22	0.50	0.22	37.0
Approach			19	0.0	19	0.0	0.014	5.0	LOS A	0.1	0.4	0.22	0.50	0.22	37.6
West: William Street															
10	L2	All MCs	8	0.0	8	0.0	0.060	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	45.2
11	T1	All MCs	114	1.9	114	1.9	0.060	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	48.7
Approach			122	1.7	122	1.7	0.060	0.2	NA	0.0	0.0	0.00	0.04	0.00	48.2
All Vehicles			243	1.3	243	1.3	0.060	0.6	NA	0.1	0.4	0.03	0.07	0.03	46.1

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

MOVEMENT SUMMARY

Site: 402 [402 - William St x Hubert St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Hubert Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	136	0.0	136	0.0	0.074	0.0	LOS A	0.1	0.8	0.05	0.07	0.05	46.6
6	R2	All MCs	16	6.7	16	6.7	0.074	4.8	LOS A	0.1	0.8	0.05	0.07	0.05	45.0
Approach			152	0.7	152	0.7	0.074	0.5	NA	0.1	0.8	0.05	0.07	0.05	46.3
North: North Street															
7	L2	All MCs	17	0.0	17	0.0	0.023	4.8	LOS A	0.1	0.6	0.20	0.50	0.20	37.9
9	R2	All MCs	13	0.0	13	0.0	0.023	5.4	LOS A	0.1	0.6	0.20	0.50	0.20	37.1
Approach			29	0.0	29	0.0	0.023	5.0	LOS A	0.1	0.6	0.20	0.50	0.20	37.5
West: William Street															
10	L2	All MCs	4	0.0	4	0.0	0.044	3.4	LOS A	0.0	0.0	0.00	0.03	0.00	45.4
11	T1	All MCs	85	0.0	85	0.0	0.044	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	49.1
Approach			89	0.0	89	0.0	0.044	0.2	NA	0.0	0.0	0.00	0.03	0.00	48.8
All Vehicles			271	0.4	271	0.4	0.074	0.9	NA	0.1	0.8	0.05	0.10	0.05	44.8

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

MOVEMENT SUMMARY

Site: 501 [501 - William St x North St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x North Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North Street															
1	L2	All MCs	7	0.0	7	0.0	0.014	4.8	LOS A	0.0	0.3	0.23	0.50	0.23	28.1
2	T1	All MCs	1	0.0	1	0.0	0.014	4.4	LOS A	0.0	0.3	0.23	0.50	0.23	42.4
3	R2	All MCs	7	0.0	7	0.0	0.014	5.6	LOS A	0.0	0.3	0.23	0.50	0.23	38.9
Approach			16	0.0	16	0.0	0.014	5.1	LOS A	0.0	0.3	0.23	0.50	0.23	33.5
East: William Street															
4	L2	All MCs	2	50.0	2	50.0	0.049	3.4	LOS A	0.0	0.1	0.01	0.02	0.01	44.3
5	T1	All MCs	100	0.0	100	0.0	0.049	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	49.2
6	R2	All MCs	1	0.0	1	0.0	0.049	3.5	LOS A	0.0	0.1	0.01	0.02	0.01	45.4
Approach			103	1.0	103	1.0	0.049	0.1	NA	0.0	0.1	0.01	0.02	0.01	48.7
North: North Street															
7	L2	All MCs	4	0.0	4	0.0	0.005	4.9	LOS A	0.0	0.1	0.22	0.48	0.22	22.7
8	T1	All MCs	1	0.0	1	0.0	0.005	4.4	LOS A	0.0	0.1	0.22	0.48	0.22	42.5
9	R2	All MCs	1	0.0	1	0.0	0.005	5.6	LOS A	0.0	0.1	0.22	0.48	0.22	22.3
Approach			6	0.0	6	0.0	0.005	4.9	LOS A	0.0	0.1	0.22	0.48	0.22	26.0
West: William Street															
10	L2	All MCs	1	0.0	1	0.0	0.057	3.1	LOS A	0.0	0.2	0.02	0.02	0.02	45.2
11	T1	All MCs	111	1.9	111	1.9	0.057	0.0	LOS A	0.0	0.2	0.02	0.02	0.02	48.8
12	R2	All MCs	3	0.0	3	0.0	0.057	3.1	LOS A	0.0	0.2	0.02	0.02	0.02	46.3
Approach			115	1.8	115	1.8	0.057	0.1	NA	0.0	0.2	0.02	0.02	0.02	48.4
All Vehicles			240	1.3	240	1.3	0.057	0.6	NA	0.0	0.3	0.03	0.06	0.03	42.0

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

MOVEMENT SUMMARY

Site: 502 [502 - William St x North St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x North Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North Street															
1	L2	All MCs	7	0.0	7	0.0	0.015	4.9	LOS A	0.1	0.4	0.26	0.51	0.26	28.1
2	T1	All MCs	1	0.0	1	0.0	0.015	4.4	LOS A	0.1	0.4	0.26	0.51	0.26	42.3
3	R2	All MCs	8	0.0	8	0.0	0.015	5.6	LOS A	0.1	0.4	0.26	0.51	0.26	38.8
Approach			17	0.0	17	0.0	0.015	5.2	LOS A	0.1	0.4	0.26	0.51	0.26	33.7
East: William Street															
4	L2	All MCs	18	0.0	18	0.0	0.071	3.4	LOS A	0.0	0.2	0.01	0.08	0.01	45.6
5	T1	All MCs	127	0.0	127	0.0	0.071	0.0	LOS A	0.0	0.2	0.01	0.08	0.01	45.9
6	R2	All MCs	3	0.0	3	0.0	0.071	3.5	LOS A	0.0	0.2	0.01	0.08	0.01	44.5
Approach			148	0.0	148	0.0	0.071	0.5	NA	0.0	0.2	0.01	0.08	0.01	45.7
North: North Street															
7	L2	All MCs	1	0.0	1	0.0	0.005	4.8	LOS A	0.0	0.1	0.26	0.49	0.26	22.6
8	T1	All MCs	1	0.0	1	0.0	0.005	4.4	LOS A	0.0	0.1	0.26	0.49	0.26	42.4
9	R2	All MCs	3	0.0	3	0.0	0.005	5.5	LOS A	0.0	0.1	0.26	0.49	0.26	22.2
Approach			5	0.0	5	0.0	0.005	5.2	LOS A	0.0	0.1	0.26	0.49	0.26	26.5
West: William Street															
10	L2	All MCs	1	0.0	1	0.0	0.040	3.0	LOS A	0.0	0.1	0.01	0.01	0.01	45.3
11	T1	All MCs	80	0.0	80	0.0	0.040	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	49.2
12	R2	All MCs	1	0.0	1	0.0	0.040	3.1	LOS A	0.0	0.1	0.01	0.01	0.01	46.3
Approach			82	0.0	82	0.0	0.040	0.1	NA	0.0	0.1	0.01	0.01	0.01	48.9
All Vehicles			253	0.0	253	0.0	0.071	0.8	NA	0.1	0.4	0.03	0.09	0.03	42.0

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

MOVEMENT SUMMARY

Site: 601 [601 - William St x Charles St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Charles Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	89	0.0	89	0.0	0.056	0.1	LOS A	0.1	0.7	0.08	0.11	0.08	46.5
6	R2	All MCs	16	0.0	16	0.0	0.056	3.3	LOS A	0.1	0.7	0.08	0.11	0.08	43.3
Approach			105	0.0	105	0.0	0.056	0.6	NA	0.1	0.7	0.08	0.11	0.08	45.6
North: Charles Street															
7	L2	All MCs	16	6.7	16	6.7	0.022	4.9	LOS A	0.1	0.6	0.22	0.52	0.22	36.3
9	R2	All MCs	12	0.0	12	0.0	0.022	5.3	LOS A	0.1	0.6	0.22	0.52	0.22	37.1
Approach			27	3.8	27	3.8	0.022	5.1	LOS A	0.1	0.6	0.22	0.52	0.22	36.7
West: William Street															
10	L2	All MCs	25	0.0	25	0.0	0.067	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	44.4
11	T1	All MCs	104	1.0	104	1.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	45.1
Approach			129	0.8	129	0.8	0.067	0.9	NA	0.0	0.0	0.00	0.11	0.00	44.8
All Vehicles			262	0.8	262	0.8	0.067	1.2	NA	0.1	0.7	0.06	0.15	0.06	43.3

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

MOVEMENT SUMMARY

Site: 602 [602 - William St x Charles St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Charles Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	115	0.0	115	0.0	0.075	0.1	LOS A	0.2	1.1	0.09	0.13	0.09	45.9
6	R2	All MCs	26	0.0	26	0.0	0.075	3.2	LOS A	0.2	1.1	0.09	0.13	0.09	43.1
Approach			141	0.0	141	0.0	0.075	0.7	NA	0.2	1.1	0.09	0.13	0.09	44.9
North: Charles Street															
7	L2	All MCs	19	0.0	19	0.0	0.029	4.7	LOS A	0.1	0.7	0.18	0.51	0.18	36.6
9	R2	All MCs	18	0.0	18	0.0	0.029	5.3	LOS A	0.1	0.7	0.18	0.51	0.18	37.3
Approach			37	0.0	37	0.0	0.029	5.0	LOS A	0.1	0.7	0.18	0.51	0.18	36.9
West: William Street															
10	L2	All MCs	36	0.0	36	0.0	0.052	4.6	LOS A	0.0	0.0	0.00	0.20	0.00	43.1
11	T1	All MCs	63	0.0	63	0.0	0.052	0.0	LOS A	0.0	0.0	0.00	0.20	0.00	41.8
Approach			99	0.0	99	0.0	0.052	1.7	NA	0.0	0.0	0.00	0.20	0.00	42.5
All Vehicles			277	0.0	277	0.0	0.075	1.6	NA	0.2	1.1	0.07	0.20	0.07	42.1

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

MOVEMENT SUMMARY

Site: 701 [701 - Darley Rd x William St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x William Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: William Street															
4	L2	All MCs	16	0.0	16	0.0	0.045	5.3	LOS A	0.1	1.1	0.44	0.62	0.44	43.8
6	R2	All MCs	20	5.3	20	5.3	0.045	8.4	LOS A	0.1	1.1	0.44	0.62	0.44	43.2
Approach			36	2.9	36	2.9	0.045	7.0	LOS A	0.1	1.1	0.44	0.62	0.44	43.4
NorthEast: Darley Road															
7	L2	All MCs	11	10.0	11	10.0	0.132	4.7	LOS A	0.0	0.0	0.00	0.02	0.00	48.1
8	T1	All MCs	241	2.6	241	2.6	0.132	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.8
Approach			252	2.9	252	2.9	0.132	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.7
SouthWest: Darley Road															
2	T1	All MCs	417	3.3	417	3.3	0.232	0.1	LOS A	0.2	1.1	0.04	0.05	0.04	49.7
3	R2	All MCs	18	5.9	18	5.9	0.232	5.7	LOS A	0.2	1.1	0.04	0.05	0.04	47.9
Approach			435	3.4	435	3.4	0.232	0.3	NA	0.2	1.1	0.04	0.05	0.04	49.6
All Vehicles			722	3.2	722	3.2	0.232	0.6	NA	0.2	1.1	0.05	0.07	0.05	49.2

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

MOVEMENT SUMMARY

Site: 702 [702 - Darley Rd x William St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x William Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: William Street															
4	L2	All MCs	19	0.0	19	0.0	0.072	7.0	LOS A	0.2	1.6	0.62	0.80	0.62	41.9
6	R2	All MCs	17	6.3	17	6.3	0.072	13.7	LOS A	0.2	1.6	0.62	0.80	0.62	41.3
Approach			36	2.9	36	2.9	0.072	10.1	LOS A	0.2	1.6	0.62	0.80	0.62	41.6
NorthEast: Darley Road															
7	L2	All MCs	23	0.0	23	0.0	0.312	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	48.2
8	T1	All MCs	580	1.1	580	1.1	0.312	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	49.7
Approach			603	1.0	603	1.0	0.312	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.6
SouthWest: Darley Road															
2	T1	All MCs	492	0.9	492	0.9	0.265	0.1	LOS A	0.1	1.0	0.04	0.04	0.04	49.7
3	R2	All MCs	11	0.0	11	0.0	0.265	7.7	LOS A	0.1	1.0	0.04	0.04	0.04	48.1
Approach			502	0.8	502	0.8	0.265	0.3	NA	0.1	1.0	0.04	0.04	0.04	49.7
All Vehicles			1141	1.0	1141	1.0	0.312	0.6	NA	0.2	1.6	0.03	0.06	0.03	49.3

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

MOVEMENT SUMMARY

Site: 801 [801 - Darley Rd x Charles St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Charles Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Charles Street															
1	L2	All MCs	3	0.0	3	0.0	0.041	5.2	LOS A	0.2	1.6	0.41	0.59	0.41	40.8
2	T1	All MCs	4	0.0	4	0.0	0.041	5.0	LOS A	0.2	1.6	0.41	0.59	0.41	37.2
3	R2	All MCs	35	0.0	35	0.0	0.041	8.2	LOS A	0.2	1.6	0.41	0.59	0.41	28.2
3u	U	All MCs	1	0.0	1	0.0	0.041	10.9	LOS A	0.2	1.6	0.41	0.59	0.41	40.1
Approach			43	0.0	43	0.0	0.041	7.7	LOS A	0.2	1.6	0.41	0.59	0.41	30.8
East: Darley Road															
4	L2	All MCs	12	0.0	12	0.0	0.183	3.8	LOS A	0.9	6.7	0.07	0.44	0.07	39.4
5	T1	All MCs	239	4.0	239	4.0	0.183	3.7	LOS A	0.9	6.7	0.07	0.44	0.07	42.5
6	R2	All MCs	17	6.3	17	6.3	0.183	6.8	LOS A	0.9	6.7	0.07	0.44	0.07	36.3
6u	U	All MCs	4	0.0	4	0.0	0.183	8.7	LOS A	0.9	6.7	0.07	0.44	0.07	19.9
Approach			272	3.9	272	3.9	0.183	3.9	LOS A	0.9	6.7	0.07	0.44	0.07	41.6
North: Charles Street															
7	L2	All MCs	11	0.0	11	0.0	0.024	5.4	LOS A	0.1	0.9	0.56	0.57	0.56	34.7
8	T1	All MCs	5	0.0	5	0.0	0.024	5.0	LOS A	0.1	0.9	0.56	0.57	0.56	38.0
9	R2	All MCs	3	0.0	3	0.0	0.024	8.1	LOS A	0.1	0.9	0.56	0.57	0.56	39.1
9u	U	All MCs	1	0.0	1	0.0	0.024	12.1	LOS A	0.1	0.9	0.56	0.57	0.56	41.3
Approach			20	0.0	20	0.0	0.024	6.0	LOS A	0.1	0.9	0.56	0.57	0.56	36.9
West: Darley Road															
10	L2	All MCs	15	0.0	15	0.0	0.346	4.1	LOS A	2.4	17.4	0.26	0.41	0.26	40.4
11	T1	All MCs	446	2.6	446	2.6	0.346	4.0	LOS A	2.4	17.4	0.26	0.41	0.26	36.7
12	R2	All MCs	2	50.0	2	50.0	0.346	7.8	LOS A	2.4	17.4	0.26	0.41	0.26	41.6
12u	U	All MCs	1	0.0	1	0.0	0.346	9.8	LOS A	2.4	17.4	0.26	0.41	0.26	46.6
Approach			464	2.7	464	2.7	0.346	4.0	LOS A	2.4	17.4	0.26	0.41	0.26	37.0
All Vehicles			799	2.9	799	2.9	0.346	4.3	LOS A	2.4	17.4	0.21	0.44	0.21	38.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 802 [802 - Darley Rd x Charles St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Charles Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Charles Street															
1	L2	All MCs	7	0.0	7	0.0	0.065	8.5	LOS A	0.5	3.3	0.69	0.65	0.69	38.5
2	T1	All MCs	5	0.0	5	0.0	0.065	8.3	LOS A	0.5	3.3	0.69	0.65	0.69	35.3
3	R2	All MCs	37	0.0	37	0.0	0.065	11.5	LOS A	0.5	3.3	0.69	0.65	0.69	26.2
3u	U	All MCs	2	0.0	2	0.0	0.065	14.2	LOS A	0.5	3.3	0.69	0.65	0.69	37.4
Approach			52	0.0	52	0.0	0.065	10.8	LOS A	0.5	3.3	0.69	0.65	0.69	29.9
East: Darley Road															
4	L2	All MCs	20	0.0	20	0.0	0.438	4.0	LOS A	3.2	22.6	0.17	0.43	0.17	38.8
5	T1	All MCs	586	1.1	586	1.1	0.438	3.8	LOS A	3.2	22.6	0.17	0.43	0.17	42.1
6	R2	All MCs	16	0.0	16	0.0	0.438	7.0	LOS A	3.2	22.6	0.17	0.43	0.17	36.0
6u	U	All MCs	22	0.0	22	0.0	0.438	8.9	LOS A	3.2	22.6	0.17	0.43	0.17	19.6
Approach			644	1.0	644	1.0	0.438	4.1	LOS A	3.2	22.6	0.17	0.43	0.17	41.2
North: Charles Street															
7	L2	All MCs	23	0.0	23	0.0	0.061	6.0	LOS A	0.3	2.3	0.61	0.64	0.61	33.9
8	T1	All MCs	11	0.0	11	0.0	0.061	5.6	LOS A	0.3	2.3	0.61	0.64	0.61	37.2
9	R2	All MCs	13	0.0	13	0.0	0.061	8.7	LOS A	0.3	2.3	0.61	0.64	0.61	38.4
9u	U	All MCs	1	0.0	1	0.0	0.061	12.8	LOS A	0.3	2.3	0.61	0.64	0.61	40.5
Approach			47	0.0	47	0.0	0.061	6.8	LOS A	0.3	2.3	0.61	0.64	0.61	36.3
West: Darley Road															
10	L2	All MCs	7	0.0	7	0.0	0.392	4.3	LOS A	3.0	21.4	0.32	0.43	0.32	40.2
11	T1	All MCs	493	2.8	493	2.8	0.392	4.2	LOS A	3.0	21.4	0.32	0.43	0.32	32.0
12	R2	All MCs	7	0.0	7	0.0	0.392	7.3	LOS A	3.0	21.4	0.32	0.43	0.32	42.5
12u	U	All MCs	1	0.0	1	0.0	0.392	10.0	LOS A	3.0	21.4	0.32	0.43	0.32	46.3
Approach			508	2.7	508	2.7	0.392	4.2	LOS A	3.0	21.4	0.32	0.43	0.32	32.3
All Vehicles			1252	1.6	1252	1.6	0.438	4.5	LOS A	3.2	22.6	0.27	0.45	0.27	36.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 901 [901 - Darley Rd x Hubert St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Hubert Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hubert Street															
1	L2	All MCs	7	0.0	7	0.0	0.018	5.4	LOS A	0.1	0.4	0.43	0.57	0.43	35.8
3	R2	All MCs	7	0.0	7	0.0	0.018	8.2	LOS A	0.1	0.4	0.43	0.57	0.43	34.3
Approach			15	0.0	15	0.0	0.018	6.8	LOS A	0.1	0.4	0.43	0.57	0.43	35.1
East: Darley Road															
4	L2	All MCs	6	0.0	6	0.0	0.143	2.5	LOS A	0.0	0.0	0.00	0.01	0.00	45.2
5	T1	All MCs	266	4.0	266	4.0	0.143	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.5
Approach			273	3.9	273	3.9	0.143	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.3
West: Darley Road															
11	T1	All MCs	487	2.4	487	2.4	0.255	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	49.9
12	R2	All MCs	1	0.0	1	0.0	0.255	4.6	LOS A	0.0	0.1	0.00	0.00	0.00	45.3
Approach			488	2.4	488	2.4	0.255	0.0	NA	0.0	0.1	0.00	0.00	0.00	49.8
All Vehicles			776	2.8	776	2.8	0.255	0.2	NA	0.1	0.4	0.01	0.02	0.01	48.6

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

MOVEMENT SUMMARY

Site: 902 [902 - Darley Rd x Hubert St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Hubert Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hubert Street															
1	L2	All MCs	7	0.0	7	0.0	0.033	7.2	LOS A	0.1	0.8	0.62	0.75	0.62	31.4
3	R2	All MCs	7	14.3	7	14.3	0.033	15.0	LOS B	0.1	0.8	0.62	0.75	0.62	29.5
Approach			15	7.1	15	7.1	0.033	11.1	LOS A	0.1	0.8	0.62	0.75	0.62	30.5
East: Darley Road															
4	L2	All MCs	8	0.0	8	0.0	0.334	2.6	LOS A	0.0	0.0	0.00	0.01	0.00	45.2
5	T1	All MCs	640	0.8	640	0.8	0.334	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.6
Approach			648	0.8	648	0.8	0.334	0.0	NA	0.0	0.0	0.00	0.01	0.00	49.5
West: Darley Road															
11	T1	All MCs	540	0.6	540	0.6	0.296	0.2	LOS A	0.3	1.9	0.06	0.07	0.06	47.0
12	R2	All MCs	17	0.0	17	0.0	0.296	8.1	LOS A	0.3	1.9	0.06	0.07	0.06	44.5
Approach			557	0.6	557	0.6	0.296	0.5	NA	0.3	1.9	0.06	0.07	0.06	46.8
All Vehicles			1220	0.8	1220	0.8	0.334	0.4	NA	0.3	1.9	0.03	0.04	0.03	47.3

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

MOVEMENT SUMMARY

Site: 1001 [1001 - Darley Rd x Francis St_EX_AM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Francis Street
Period: AM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	1	0.0	1	0.0	0.017	5.6	LOS A	0.1	0.4	0.56	0.66	0.56	28.9
3	R2	All MCs	7	0.0	7	0.0	0.017	10.1	LOS A	0.1	0.4	0.56	0.66	0.56	33.8
Approach			8	0.0	8	0.0	0.017	9.5	LOS A	0.1	0.4	0.56	0.66	0.56	33.2
East: Darley Road															
4	L2	All MCs	8	0.0	8	0.0	0.025	4.6	LOS A	0.0	0.0	0.00	0.10	0.00	44.9
5	T1	All MCs	272	3.9	272	3.9	0.123	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.4
Approach			280	3.8	280	3.8	0.123	0.1	NA	0.0	0.0	0.00	0.02	0.00	49.0
West: Darley Road															
11	T1	All MCs	505	2.3	505	2.3	0.132	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	49.9
12	R2	All MCs	1	0.0	1	0.0	0.132	3.0	LOS A	0.0	0.1	0.00	0.00	0.00	44.7
Approach			506	2.3	506	2.3	0.132	0.0	NA	0.0	0.1	0.00	0.00	0.00	49.9
All Vehicles			795	2.8	795	2.8	0.132	0.2	NA	0.1	0.4	0.01	0.01	0.01	49.0

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

MOVEMENT SUMMARY

Site: 1002 [1002 - Darley Rd x Francis St_EX_PM (Site Folder: Existing Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Francis Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	5	0.0	5	0.0	0.032	8.0	LOS A	0.1	0.8	0.67	0.78	0.67	26.2
3	R2	All MCs	6	0.0	6	0.0	0.032	17.1	LOS B	0.1	0.8	0.67	0.78	0.67	30.8
Approach			12	0.0	12	0.0	0.032	13.0	LOS A	0.1	0.8	0.67	0.78	0.67	28.8
East: Darley Road															
4	L2	All MCs	12	0.0	12	0.0	0.056	4.6	LOS A	0.0	0.0	0.00	0.06	0.00	45.5
5	T1	All MCs	643	0.8	643	0.8	0.282	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.5
Approach			655	0.8	655	0.8	0.282	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.3
West: Darley Road															
11	T1	All MCs	518	0.4	518	0.4	0.137	0.1	LOS A	0.1	0.6	0.02	0.02	0.02	49.2
12	R2	All MCs	6	0.0	6	0.0	0.137	6.4	LOS A	0.1	0.6	0.04	0.04	0.04	44.0
Approach			524	0.4	524	0.4	0.137	0.2	NA	0.1	0.6	0.02	0.02	0.02	49.0
All Vehicles			1191	0.6	1191	0.6	0.282	0.3	NA	0.1	0.8	0.01	0.02	0.01	48.5

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

MOVEMENT SUMMARY

Site: 103a [103a - William St x Norton St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x Norton Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
1	L2	All MCs	32	0.0	32	0.0	0.308	2.2	LOS A	1.9	14.0	0.37	0.49	0.37	18.0
2	T1	All MCs	238	10.6	238	10.6	0.308	2.6	LOS A	1.9	14.0	0.37	0.49	0.37	40.1
3	R2	All MCs	57	7.4	57	7.4	0.308	5.0	LOS A	1.9	14.0	0.37	0.49	0.37	36.5
3u	U	All MCs	16	0.0	16	0.0	0.308	6.3	LOS A	1.9	14.0	0.37	0.49	0.37	19.8
Approach			342	8.6	342	8.6	0.308	3.1	LOS A	1.9	14.0	0.37	0.49	0.37	37.5
East: William Street															
4	L2	All MCs	44	4.8	44	4.8	0.125	7.2	LOS A	0.7	5.1	0.60	0.65	0.60	31.6
5	T1	All MCs	23	0.0	23	0.0	0.125	6.6	LOS A	0.7	5.1	0.60	0.65	0.60	27.7
6	R2	All MCs	36	5.9	36	5.9	0.125	9.8	LOS A	0.7	5.1	0.60	0.65	0.60	37.5
Approach			103	4.1	103	4.1	0.125	8.0	LOS A	0.7	5.1	0.60	0.65	0.60	33.3
North: Norton Street															
7	L2	All MCs	44	9.5	44	9.5	0.442	5.6	LOS A	2.8	20.5	0.41	0.56	0.41	39.4
8	T1	All MCs	368	4.9	368	4.9	0.442	5.2	LOS A	2.8	20.5	0.41	0.56	0.41	36.7
9	R2	All MCs	73	4.3	73	4.3	0.442	8.1	LOS A	2.8	20.5	0.41	0.56	0.41	26.2
9u	U	All MCs	6	0.0	6	0.0	0.442	9.4	LOS A	2.8	20.5	0.41	0.56	0.41	40.2
Approach			492	5.1	492	5.1	0.442	5.7	LOS A	2.8	20.5	0.41	0.56	0.41	34.8
West: William Street															
10	L2	All MCs	105	1.0	105	1.0	0.226	6.2	LOS A	1.3	9.4	0.56	0.63	0.56	36.3
11	T1	All MCs	28	3.7	28	3.7	0.226	6.1	LOS A	1.3	9.4	0.56	0.63	0.56	34.5
12	R2	All MCs	67	3.1	67	3.1	0.226	9.1	LOS A	1.3	9.4	0.56	0.63	0.56	22.4
12u	U	All MCs	3	0.0	3	0.0	0.226	10.5	LOS A	1.3	9.4	0.56	0.63	0.56	20.2
Approach			204	2.1	204	2.1	0.226	7.2	LOS A	1.3	9.4	0.56	0.63	0.56	33.1
All Vehicles			1141	5.5	1141	5.5	0.442	5.4	LOS A	2.8	20.5	0.44	0.56	0.44	35.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 103b [103b - Norton St Wombat Crossing_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: Norton Street x Wombat Crossing
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Pedestrian Crossing (Unsignalised)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
2	T1	All MCs	326	12.6	326	12.6	0.281	3.6	LOS A	1.3	10.3	0.18	0.45	0.18	46.1
Approach			326	12.6	326	12.6	0.281	3.6	LOS A	1.3	10.3	0.18	0.45	0.18	46.1
North: Norton Street															
8	T1	All MCs	388	8.7	388	8.7	0.328	1.3	LOS A	1.7	12.5	0.19	0.38	0.19	47.5
Approach			388	8.7	388	8.7	0.328	1.3	LOS A	1.7	12.5	0.19	0.38	0.19	47.5
All Vehicles			715	10.5	715	10.5	0.328	2.4	NA	1.7	12.5	0.18	0.41	0.18	46.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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: Akçelik M1.
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: 104a [104a - William St x Norton Street_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x Norton Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
1	L2	All MCs	48	0.0	48	0.0	0.304	2.5	LOS A	1.9	13.7	0.41	0.47	0.41	18.0
2	T1	All MCs	256	5.8	256	5.8	0.304	2.8	LOS A	1.9	13.7	0.41	0.47	0.41	40.5
3	R2	All MCs	16	0.0	16	0.0	0.304	5.2	LOS A	1.9	13.7	0.41	0.47	0.41	37.1
3u	U	All MCs	11	0.0	11	0.0	0.304	6.5	LOS A	1.9	13.7	0.41	0.47	0.41	19.7
Approach			331	4.5	331	4.5	0.304	3.0	LOS A	1.9	13.7	0.41	0.47	0.41	37.3
East: William Street															
4	L2	All MCs	18	0.0	18	0.0	0.063	7.6	LOS A	0.4	2.6	0.62	0.65	0.62	30.9
5	T1	All MCs	14	0.0	14	0.0	0.063	7.2	LOS A	0.4	2.6	0.62	0.65	0.62	23.4
6	R2	All MCs	19	0.0	19	0.0	0.063	10.2	LOS A	0.4	2.6	0.62	0.65	0.62	37.1
Approach			51	0.0	51	0.0	0.063	8.5	LOS A	0.4	2.6	0.62	0.65	0.62	31.3
North: Norton Street															
7	L2	All MCs	32	13.3	32	13.3	0.459	5.0	LOS A	3.2	23.1	0.32	0.52	0.32	39.5
8	T1	All MCs	402	4.7	402	4.7	0.459	4.6	LOS A	3.2	23.1	0.32	0.52	0.32	37.2
9	R2	All MCs	132	0.8	132	0.8	0.459	7.5	LOS A	3.2	23.1	0.32	0.52	0.32	26.5
9u	U	All MCs	13	0.0	13	0.0	0.459	8.8	LOS A	3.2	23.1	0.32	0.52	0.32	40.5
Approach			578	4.2	578	4.2	0.459	5.4	LOS A	3.2	23.1	0.32	0.52	0.32	34.0
West: William Street															
10	L2	All MCs	60	0.0	60	0.0	0.138	5.6	LOS A	0.8	5.4	0.50	0.62	0.50	35.8
11	T1	All MCs	7	0.0	7	0.0	0.138	5.5	LOS A	0.8	5.4	0.50	0.62	0.50	34.6
12	R2	All MCs	63	0.0	63	0.0	0.138	8.6	LOS A	0.8	5.4	0.50	0.62	0.50	22.6
12u	U	All MCs	1	0.0	1	0.0	0.138	10.0	LOS A	0.8	5.4	0.50	0.62	0.50	16.6
Approach			132	0.0	132	0.0	0.138	7.1	LOS A	0.8	5.4	0.50	0.62	0.50	31.5
All Vehicles			1091	3.6	1091	3.6	0.459	5.0	LOS A	3.2	23.1	0.38	0.52	0.38	34.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 104b [104b - Norton St Wombat Crossing_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: Norton Street x Wombat Crossing
Period: PM Peak
Scenario: Existing + Development
Site Category: Existing Design
Pedestrian Crossing (Unsignalised)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Norton Street															
2	T1	All MCs	344	8.6	344	8.6	0.290	3.6	LOS A	1.4	10.5	0.18	0.45	0.18	46.2
Approach			344	8.6	344	8.6	0.290	3.6	LOS A	1.4	10.5	0.18	0.45	0.18	46.2
North: Norton Street															
8	T1	All MCs	472	6.0	472	6.0	0.393	1.3	LOS A	2.2	16.1	0.21	0.38	0.21	47.4
Approach			472	6.0	472	6.0	0.393	1.3	LOS A	2.2	16.1	0.21	0.38	0.21	47.4
All Vehicles			816	7.1	816	7.1	0.393	2.3	NA	2.2	16.1	0.19	0.41	0.19	46.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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: Akçelik M1.
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: 203 [203 - William St x James St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x James Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: James Street															
1	L2	All MCs	7	0.0	7	0.0	0.027	5.0	LOS A	0.1	0.9	0.28	0.57	0.28	28.2
2	T1	All MCs	4	0.0	4	0.0	0.027	4.5	LOS A	0.1	0.9	0.28	0.57	0.28	41.0
3	R2	All MCs	18	0.0	18	0.0	0.027	7.2	LOS A	0.1	0.9	0.28	0.57	0.28	28.2
3u	U	All MCs	1	0.0	1	0.0	0.027	9.7	LOS A	0.1	0.9	0.28	0.57	0.28	43.4
Approach			31	0.0	31	0.0	0.027	6.4	LOS A	0.1	0.9	0.28	0.57	0.28	30.5
East: William Street															
4	L2	All MCs	14	0.0	14	0.0	0.093	3.9	LOS A	0.5	3.3	0.09	0.48	0.09	40.3
5	T1	All MCs	96	1.1	96	1.1	0.093	3.7	LOS A	0.5	3.3	0.09	0.48	0.09	18.7
6	R2	All MCs	11	0.0	11	0.0	0.093	6.6	LOS A	0.5	3.3	0.09	0.48	0.09	37.8
6u	U	All MCs	8	12.5	8	12.5	0.093	8.1	LOS A	0.5	3.3	0.09	0.48	0.09	15.8
Approach			128	1.6	128	1.6	0.093	4.3	LOS A	0.5	3.3	0.09	0.48	0.09	22.8
North: James Street															
7	L2	All MCs	16	0.0	16	0.0	0.024	5.0	LOS A	0.1	0.8	0.36	0.55	0.36	23.2
8	T1	All MCs	1	0.0	1	0.0	0.024	4.6	LOS A	0.1	0.8	0.36	0.55	0.36	41.6
9	R2	All MCs	7	0.0	7	0.0	0.024	7.7	LOS A	0.1	0.8	0.36	0.55	0.36	28.3
9u	U	All MCs	1	0.0	1	0.0	0.024	10.1	LOS A	0.1	0.8	0.36	0.55	0.36	41.3
Approach			25	0.0	25	0.0	0.024	5.9	LOS A	0.1	0.8	0.36	0.55	0.36	26.0
West: William Street															
10	L2	All MCs	5	0.0	5	0.0	0.139	4.2	LOS A	0.7	5.1	0.17	0.44	0.17	38.4
11	T1	All MCs	168	1.9	168	1.9	0.139	3.6	LOS A	0.7	5.1	0.17	0.44	0.17	15.9
12	R2	All MCs	6	0.0	6	0.0	0.139	6.4	LOS A	0.7	5.1	0.17	0.44	0.17	40.1
12u	U	All MCs	1	0.0	1	0.0	0.139	7.8	LOS A	0.7	5.1	0.17	0.44	0.17	17.6
Approach			181	1.7	181	1.7	0.139	3.7	LOS A	0.7	5.1	0.17	0.44	0.17	17.4
All Vehicles			365	1.4	365	1.4	0.139	4.3	LOS A	0.7	5.1	0.16	0.47	0.16	21.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 204 [204 - William St x James St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x James Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: James Street															
1	L2	All MCs	8	0.0	8	0.0	0.028	5.3	LOS A	0.1	0.9	0.34	0.58	0.34	28.2
2	T1	All MCs	4	0.0	4	0.0	0.028	4.8	LOS A	0.1	0.9	0.34	0.58	0.34	40.9
3	R2	All MCs	15	0.0	15	0.0	0.028	7.5	LOS A	0.1	0.9	0.34	0.58	0.34	28.2
3u	U	All MCs	2	0.0	2	0.0	0.028	10.0	LOS A	0.1	0.9	0.34	0.58	0.34	43.4
Approach			29	0.0	29	0.0	0.028	6.7	LOS A	0.1	0.9	0.34	0.58	0.34	31.1
East: William Street															
4	L2	All MCs	17	0.0	17	0.0	0.133	3.9	LOS A	0.7	4.8	0.08	0.46	0.08	40.6
5	T1	All MCs	162	0.6	162	0.6	0.133	3.7	LOS A	0.7	4.8	0.08	0.46	0.08	18.9
6	R2	All MCs	11	0.0	11	0.0	0.133	6.6	LOS A	0.7	4.8	0.08	0.46	0.08	38.2
6u	U	All MCs	5	0.0	5	0.0	0.133	8.1	LOS A	0.7	4.8	0.08	0.46	0.08	16.1
Approach			195	0.5	195	0.5	0.133	4.0	LOS A	0.7	4.8	0.08	0.46	0.08	22.1
North: James Street															
7	L2	All MCs	8	0.0	8	0.0	0.013	4.5	LOS A	0.1	0.4	0.28	0.52	0.28	23.5
8	T1	All MCs	2	0.0	2	0.0	0.013	4.2	LOS A	0.1	0.4	0.28	0.52	0.28	42.0
9	R2	All MCs	3	0.0	3	0.0	0.013	7.3	LOS A	0.1	0.4	0.28	0.52	0.28	28.7
9u	U	All MCs	1	0.0	1	0.0	0.013	9.7	LOS A	0.1	0.4	0.28	0.52	0.28	41.8
Approach			15	0.0	15	0.0	0.013	5.4	LOS A	0.1	0.4	0.28	0.52	0.28	28.3
West: William Street															
10	L2	All MCs	3	0.0	3	0.0	0.085	4.2	LOS A	0.4	3.0	0.15	0.44	0.15	38.3
11	T1	All MCs	101	0.0	101	0.0	0.085	3.5	LOS A	0.4	3.0	0.15	0.44	0.15	15.9
12	R2	All MCs	4	0.0	4	0.0	0.085	6.3	LOS A	0.4	3.0	0.15	0.44	0.15	40.0
12u	U	All MCs	1	0.0	1	0.0	0.085	7.8	LOS A	0.4	3.0	0.15	0.44	0.15	17.5
Approach			109	0.0	109	0.0	0.085	3.7	LOS A	0.4	3.0	0.15	0.44	0.15	17.4
All Vehicles			348	0.3	348	0.3	0.133	4.2	LOS A	0.7	4.8	0.13	0.47	0.13	22.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 303 [303 - William St x Francis St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x Francis Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	3	0.0	3	0.0	0.022	4.8	LOS A	0.1	0.5	0.29	0.52	0.29	23.8
2	T1	All MCs	2	0.0	2	0.0	0.022	4.6	LOS A	0.1	0.5	0.29	0.52	0.29	39.9
3	R2	All MCs	16	0.0	16	0.0	0.022	5.8	LOS A	0.1	0.5	0.29	0.52	0.29	34.4
Approach			21	0.0	21	0.0	0.022	5.5	LOS A	0.1	0.5	0.29	0.52	0.29	32.9
East: William Street															
4	L2	All MCs	6	0.0	6	0.0	0.049	4.1	LOS A	0.1	0.4	0.05	0.08	0.05	43.1
5	T1	All MCs	88	1.2	88	1.2	0.049	0.0	LOS A	0.1	0.4	0.05	0.08	0.05	46.8
6	R2	All MCs	6	0.0	6	0.0	0.049	5.4	LOS A	0.1	0.4	0.05	0.08	0.05	44.9
Approach			101	1.0	101	1.0	0.049	0.6	NA	0.1	0.4	0.05	0.08	0.05	46.2
North: Francis Street															
7	L2	All MCs	5	0.0	5	0.0	0.012	5.0	LOS A	0.0	0.3	0.28	0.50	0.28	29.9
8	T1	All MCs	2	0.0	2	0.0	0.012	4.6	LOS A	0.0	0.3	0.28	0.50	0.28	40.1
9	R2	All MCs	5	0.0	5	0.0	0.012	5.7	LOS A	0.0	0.3	0.28	0.50	0.28	30.9
Approach			13	0.0	13	0.0	0.012	5.2	LOS A	0.0	0.3	0.28	0.50	0.28	31.9
West: William Street															
10	L2	All MCs	3	0.0	3	0.0	0.076	4.6	LOS A	0.0	0.1	0.00	0.02	0.00	46.3
11	T1	All MCs	149	1.4	149	1.4	0.076	0.0	LOS A	0.0	0.1	0.00	0.02	0.00	51.0
12	R2	All MCs	1	0.0	1	0.0	0.076	4.6	LOS A	0.0	0.1	0.00	0.02	0.00	45.9
Approach			154	1.4	154	1.4	0.076	0.1	NA	0.0	0.1	0.00	0.02	0.00	50.7
All Vehicles			288	1.1	288	1.1	0.076	0.9	NA	0.1	0.5	0.05	0.10	0.05	44.6

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

MOVEMENT SUMMARY

Site: 304 [304 - William St x Francis St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x Francis Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	1	0.0	1	0.0	0.014	5.0	LOS A	0.0	0.3	0.33	0.53	0.33	23.7
2	T1	All MCs	1	0.0	1	0.0	0.014	4.7	LOS A	0.0	0.3	0.33	0.53	0.33	39.7
3	R2	All MCs	11	0.0	11	0.0	0.014	5.9	LOS A	0.0	0.3	0.33	0.53	0.33	34.1
Approach			13	0.0	13	0.0	0.014	5.7	LOS A	0.0	0.3	0.33	0.53	0.33	33.5
East: William Street															
4	L2	All MCs	13	0.0	13	0.0	0.089	4.1	LOS A	0.1	0.6	0.04	0.07	0.04	43.4
5	T1	All MCs	161	0.7	161	0.7	0.089	0.0	LOS A	0.1	0.6	0.04	0.07	0.04	47.8
6	R2	All MCs	11	0.0	11	0.0	0.089	4.6	LOS A	0.1	0.6	0.04	0.07	0.04	45.2
Approach			184	0.6	184	0.6	0.089	0.5	NA	0.1	0.6	0.04	0.07	0.04	47.0
North: Francis Street															
7	L2	All MCs	12	0.0	12	0.0	0.017	4.8	LOS A	0.1	0.4	0.22	0.49	0.22	30.0
8	T1	All MCs	1	0.0	1	0.0	0.017	4.7	LOS A	0.1	0.4	0.22	0.49	0.22	40.2
9	R2	All MCs	7	0.0	7	0.0	0.017	5.8	LOS A	0.1	0.4	0.22	0.49	0.22	31.0
Approach			20	0.0	20	0.0	0.017	5.2	LOS A	0.1	0.4	0.22	0.49	0.22	30.9
West: William Street															
10	L2	All MCs	5	0.0	5	0.0	0.051	4.6	LOS A	0.1	0.4	0.06	0.09	0.06	44.6
11	T1	All MCs	88	0.0	88	0.0	0.051	0.0	LOS A	0.1	0.4	0.06	0.09	0.06	46.3
12	R2	All MCs	7	0.0	7	0.0	0.051	6.0	LOS A	0.1	0.4	0.06	0.09	0.06	43.8
Approach			101	0.0	101	0.0	0.051	0.7	NA	0.1	0.4	0.06	0.09	0.06	45.8
All Vehicles			318	0.3	318	0.3	0.089	1.1	NA	0.1	0.6	0.07	0.12	0.07	43.2

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

MOVEMENT SUMMARY

Site: 403 [403 - William St x Hubert St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Hubert Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	98	1.1	98	1.1	0.050	0.0	LOS A	0.0	0.3	0.03	0.03	0.03	48.2
6	R2	All MCs	5	0.0	5	0.0	0.050	4.8	LOS A	0.0	0.3	0.03	0.03	0.03	45.9
Approach			103	1.0	103	1.0	0.050	0.3	NA	0.0	0.3	0.03	0.03	0.03	47.9
North: North Street															
7	L2	All MCs	14	0.0	14	0.0	0.014	4.9	LOS A	0.1	0.4	0.22	0.50	0.22	37.8
9	R2	All MCs	5	0.0	5	0.0	0.014	5.3	LOS A	0.1	0.4	0.22	0.50	0.22	37.0
Approach			19	0.0	19	0.0	0.014	5.0	LOS A	0.1	0.4	0.22	0.50	0.22	37.6
West: William Street															
10	L2	All MCs	8	0.0	8	0.0	0.060	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	45.2
11	T1	All MCs	114	1.9	114	1.9	0.060	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	48.7
Approach			122	1.7	122	1.7	0.060	0.2	NA	0.0	0.0	0.00	0.04	0.00	48.2
All Vehicles			244	1.3	244	1.3	0.060	0.6	NA	0.1	0.4	0.03	0.07	0.03	46.1

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

MOVEMENT SUMMARY

Site: 404 [404 - William St x Hubert St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Hubert Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	136	0.0	136	0.0	0.074	0.0	LOS A	0.1	0.8	0.05	0.07	0.05	46.6
6	R2	All MCs	16	6.7	16	6.7	0.074	4.8	LOS A	0.1	0.8	0.05	0.07	0.05	45.0
Approach			152	0.7	152	0.7	0.074	0.5	NA	0.1	0.8	0.05	0.07	0.05	46.3
North: North Street															
7	L2	All MCs	17	0.0	17	0.0	0.023	4.8	LOS A	0.1	0.6	0.20	0.50	0.20	37.9
9	R2	All MCs	13	0.0	13	0.0	0.023	5.4	LOS A	0.1	0.6	0.20	0.50	0.20	37.1
Approach			29	0.0	29	0.0	0.023	5.0	LOS A	0.1	0.6	0.20	0.50	0.20	37.5
West: William Street															
10	L2	All MCs	4	0.0	4	0.0	0.044	3.4	LOS A	0.0	0.0	0.00	0.02	0.00	45.5
11	T1	All MCs	86	0.0	86	0.0	0.044	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.2
Approach			91	0.0	91	0.0	0.044	0.2	NA	0.0	0.0	0.00	0.02	0.00	48.9
All Vehicles			272	0.4	272	0.4	0.074	0.9	NA	0.1	0.8	0.05	0.10	0.05	44.9

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

MOVEMENT SUMMARY

Site: 503 [503 - William St x North St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x North Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North Street															
1	L2	All MCs	7	0.0	7	0.0	0.014	4.8	LOS A	0.0	0.3	0.24	0.50	0.24	28.1
2	T1	All MCs	1	0.0	1	0.0	0.014	4.4	LOS A	0.0	0.3	0.24	0.50	0.24	42.4
3	R2	All MCs	7	0.0	7	0.0	0.014	5.6	LOS A	0.0	0.3	0.24	0.50	0.24	38.9
Approach			16	0.0	16	0.0	0.014	5.2	LOS A	0.0	0.3	0.24	0.50	0.24	33.5
East: William Street															
4	L2	All MCs	2	50.0	2	50.0	0.050	3.4	LOS A	0.0	0.1	0.01	0.02	0.01	44.3
5	T1	All MCs	101	0.0	101	0.0	0.050	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	49.3
6	R2	All MCs	1	0.0	1	0.0	0.050	3.5	LOS A	0.0	0.1	0.01	0.02	0.01	45.4
Approach			104	1.0	104	1.0	0.050	0.1	NA	0.0	0.1	0.01	0.02	0.01	48.8
North: North Street															
7	L2	All MCs	4	0.0	4	0.0	0.005	4.9	LOS A	0.0	0.1	0.22	0.48	0.22	22.7
8	T1	All MCs	1	0.0	1	0.0	0.005	4.4	LOS A	0.0	0.1	0.22	0.48	0.22	42.5
9	R2	All MCs	1	0.0	1	0.0	0.005	5.6	LOS A	0.0	0.1	0.22	0.48	0.22	22.3
Approach			6	0.0	6	0.0	0.005	4.9	LOS A	0.0	0.1	0.22	0.48	0.22	26.0
West: William Street															
10	L2	All MCs	1	0.0	1	0.0	0.057	3.1	LOS A	0.0	0.2	0.02	0.02	0.02	45.2
11	T1	All MCs	111	1.9	111	1.9	0.057	0.0	LOS A	0.0	0.2	0.02	0.02	0.02	48.8
12	R2	All MCs	3	0.0	3	0.0	0.057	3.1	LOS A	0.0	0.2	0.02	0.02	0.02	46.2
Approach			115	1.8	115	1.8	0.057	0.1	NA	0.0	0.2	0.02	0.02	0.02	48.4
All Vehicles			241	1.3	241	1.3	0.057	0.6	NA	0.0	0.3	0.03	0.06	0.03	42.0

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

MOVEMENT SUMMARY

Site: 504 [504 - William St x North St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x North Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: North Street															
1	L2	All MCs	7	0.0	7	0.0	0.015	4.9	LOS A	0.1	0.4	0.26	0.51	0.26	28.1
2	T1	All MCs	1	0.0	1	0.0	0.015	4.4	LOS A	0.1	0.4	0.26	0.51	0.26	42.3
3	R2	All MCs	8	0.0	8	0.0	0.015	5.6	LOS A	0.1	0.4	0.26	0.51	0.26	38.8
Approach			17	0.0	17	0.0	0.015	5.2	LOS A	0.1	0.4	0.26	0.51	0.26	33.7
East: William Street															
4	L2	All MCs	18	0.0	18	0.0	0.071	3.4	LOS A	0.0	0.2	0.01	0.08	0.01	45.6
5	T1	All MCs	127	0.0	127	0.0	0.071	0.0	LOS A	0.0	0.2	0.01	0.08	0.01	45.9
6	R2	All MCs	3	0.0	3	0.0	0.071	3.5	LOS A	0.0	0.2	0.01	0.08	0.01	44.5
Approach			148	0.0	148	0.0	0.071	0.5	NA	0.0	0.2	0.01	0.08	0.01	45.7
North: North Street															
7	L2	All MCs	1	0.0	1	0.0	0.005	4.8	LOS A	0.0	0.1	0.26	0.49	0.26	22.6
8	T1	All MCs	1	0.0	1	0.0	0.005	4.4	LOS A	0.0	0.1	0.26	0.49	0.26	42.4
9	R2	All MCs	3	0.0	3	0.0	0.005	5.6	LOS A	0.0	0.1	0.26	0.49	0.26	22.2
Approach			5	0.0	5	0.0	0.005	5.2	LOS A	0.0	0.1	0.26	0.49	0.26	26.4
West: William Street															
10	L2	All MCs	1	0.0	1	0.0	0.041	3.0	LOS A	0.0	0.1	0.01	0.01	0.01	45.3
11	T1	All MCs	81	0.0	81	0.0	0.041	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	49.3
12	R2	All MCs	1	0.0	1	0.0	0.041	3.1	LOS A	0.0	0.1	0.01	0.01	0.01	46.4
Approach			83	0.0	83	0.0	0.041	0.1	NA	0.0	0.1	0.01	0.01	0.01	49.0
All Vehicles			254	0.0	254	0.0	0.071	0.8	NA	0.1	0.4	0.03	0.09	0.03	42.0

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

MOVEMENT SUMMARY

Site: 603 [603 - William St x Charles St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: William Street x Charles Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	91	0.0	91	0.0	0.057	0.1	LOS A	0.1	0.7	0.08	0.11	0.08	46.6
6	R2	All MCs	16	0.0	16	0.0	0.057	3.3	LOS A	0.1	0.7	0.08	0.11	0.08	43.4
Approach			106	0.0	106	0.0	0.057	0.6	NA	0.1	0.7	0.08	0.11	0.08	45.7
North: Charles Street															
7	L2	All MCs	16	6.7	16	6.7	0.022	4.9	LOS A	0.1	0.6	0.22	0.52	0.22	36.3
9	R2	All MCs	12	0.0	12	0.0	0.022	5.3	LOS A	0.1	0.6	0.22	0.52	0.22	37.1
Approach			27	3.8	27	3.8	0.022	5.1	LOS A	0.1	0.6	0.22	0.52	0.22	36.7
West: William Street															
10	L2	All MCs	25	0.0	25	0.0	0.067	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	44.4
11	T1	All MCs	104	1.0	104	1.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	45.1
Approach			129	0.8	129	0.8	0.067	0.9	NA	0.0	0.0	0.00	0.11	0.00	44.8
All Vehicles			263	0.8	263	0.8	0.067	1.2	NA	0.1	0.7	0.06	0.15	0.06	43.4

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

MOVEMENT SUMMARY

Site: 604 [604 - William St x Charles St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: William Street x Charles Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: William Street															
5	T1	All MCs	115	0.0	115	0.0	0.075	0.0	LOS A	0.2	1.1	0.09	0.13	0.09	45.9
6	R2	All MCs	26	0.0	26	0.0	0.075	3.5	LOS A	0.2	1.1	0.09	0.13	0.09	43.1
Approach			141	0.0	141	0.0	0.075	0.7	NA	0.2	1.1	0.09	0.13	0.09	44.9
North: Charles Street															
7	L2	All MCs	19	0.0	19	0.0	0.029	4.7	LOS A	0.1	0.7	0.18	0.51	0.18	36.6
9	R2	All MCs	18	0.0	18	0.0	0.029	5.3	LOS A	0.1	0.7	0.18	0.51	0.18	37.3
Approach			37	0.0	37	0.0	0.029	5.0	LOS A	0.1	0.7	0.18	0.51	0.18	36.9
West: William Street															
10	L2	All MCs	36	0.0	36	0.0	0.052	4.6	LOS A	0.0	0.0	0.00	0.19	0.00	43.1
11	T1	All MCs	64	0.0	64	0.0	0.052	0.0	LOS A	0.0	0.0	0.00	0.19	0.00	41.9
Approach			100	0.0	100	0.0	0.052	1.6	NA	0.0	0.0	0.00	0.19	0.00	42.6
All Vehicles			278	0.0	278	0.0	0.075	1.6	NA	0.2	1.1	0.07	0.20	0.07	42.1

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

MOVEMENT SUMMARY

Site: 703 [703 - Darley Rd x William St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x William Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: William Street															
4	L2	All MCs	16	0.0	16	0.0	0.045	5.3	LOS A	0.1	1.1	0.44	0.62	0.44	43.8
6	R2	All MCs	20	5.3	20	5.3	0.045	8.4	LOS A	0.1	1.1	0.44	0.62	0.44	43.2
Approach			36	2.9	36	2.9	0.045	7.0	LOS A	0.1	1.1	0.44	0.62	0.44	43.4
NorthEast: Darley Road															
7	L2	All MCs	11	10.0	11	10.0	0.132	4.7	LOS A	0.0	0.0	0.00	0.02	0.00	48.1
8	T1	All MCs	241	2.6	241	2.6	0.132	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.8
Approach			252	2.9	252	2.9	0.132	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.7
SouthWest: Darley Road															
2	T1	All MCs	417	3.3	417	3.3	0.232	0.1	LOS A	0.2	1.1	0.04	0.05	0.04	49.7
3	R2	All MCs	18	5.9	18	5.9	0.232	5.7	LOS A	0.2	1.1	0.04	0.05	0.04	47.9
Approach			435	3.4	435	3.4	0.232	0.3	NA	0.2	1.1	0.04	0.05	0.04	49.6
All Vehicles			722	3.2	722	3.2	0.232	0.6	NA	0.2	1.1	0.05	0.07	0.05	49.2

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

MOVEMENT SUMMARY

Site: 704 [704 - Darley Rd x William St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x William Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: William Street															
4	L2	All MCs	19	0.0	19	0.0	0.072	7.0	LOS A	0.2	1.6	0.62	0.80	0.62	41.9
6	R2	All MCs	17	6.3	17	6.3	0.072	13.7	LOS A	0.2	1.6	0.62	0.80	0.62	41.3
Approach			36	2.9	36	2.9	0.072	10.1	LOS A	0.2	1.6	0.62	0.80	0.62	41.6
NorthEast: Darley Road															
7	L2	All MCs	23	0.0	23	0.0	0.312	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	48.2
8	T1	All MCs	580	1.1	580	1.1	0.312	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	49.7
Approach			603	1.0	603	1.0	0.312	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.6
SouthWest: Darley Road															
2	T1	All MCs	492	0.9	492	0.9	0.265	0.1	LOS A	0.1	1.0	0.04	0.04	0.04	49.7
3	R2	All MCs	11	0.0	11	0.0	0.265	7.7	LOS A	0.1	1.0	0.04	0.04	0.04	48.1
Approach			502	0.8	502	0.8	0.265	0.3	NA	0.1	1.0	0.04	0.04	0.04	49.7
All Vehicles			1141	1.0	1141	1.0	0.312	0.6	NA	0.2	1.6	0.03	0.06	0.03	49.3

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

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MOVEMENT SUMMARY

Site: 803 [803 - Darley Rd x Charles St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Charles Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Charles Street															
1	L2	All MCs	3	0.0	3	0.0	0.041	5.2	LOS A	0.2	1.6	0.41	0.59	0.41	40.8
2	T1	All MCs	4	0.0	4	0.0	0.041	5.0	LOS A	0.2	1.6	0.41	0.59	0.41	37.2
3	R2	All MCs	35	0.0	35	0.0	0.041	8.2	LOS A	0.2	1.6	0.41	0.59	0.41	28.2
3u	U	All MCs	1	0.0	1	0.0	0.041	10.9	LOS A	0.2	1.6	0.41	0.59	0.41	40.1
Approach			43	0.0	43	0.0	0.041	7.7	LOS A	0.2	1.6	0.41	0.59	0.41	30.8
East: Darley Road															
4	L2	All MCs	12	0.0	12	0.0	0.183	3.8	LOS A	0.9	6.7	0.07	0.44	0.07	39.4
5	T1	All MCs	239	4.0	239	4.0	0.183	3.7	LOS A	0.9	6.7	0.07	0.44	0.07	42.5
6	R2	All MCs	17	6.3	17	6.3	0.183	6.8	LOS A	0.9	6.7	0.07	0.44	0.07	36.3
6u	U	All MCs	4	0.0	4	0.0	0.183	8.7	LOS A	0.9	6.7	0.07	0.44	0.07	19.9
Approach			272	3.9	272	3.9	0.183	3.9	LOS A	0.9	6.7	0.07	0.44	0.07	41.6
North: Charles Street															
7	L2	All MCs	11	0.0	11	0.0	0.024	5.4	LOS A	0.1	0.9	0.56	0.57	0.56	34.7
8	T1	All MCs	5	0.0	5	0.0	0.024	5.0	LOS A	0.1	0.9	0.56	0.57	0.56	38.0
9	R2	All MCs	3	0.0	3	0.0	0.024	8.1	LOS A	0.1	0.9	0.56	0.57	0.56	39.1
9u	U	All MCs	1	0.0	1	0.0	0.024	12.1	LOS A	0.1	0.9	0.56	0.57	0.56	41.3
Approach			20	0.0	20	0.0	0.024	6.0	LOS A	0.1	0.9	0.56	0.57	0.56	36.9
West: Darley Road															
10	L2	All MCs	15	0.0	15	0.0	0.346	4.1	LOS A	2.4	17.4	0.26	0.41	0.26	40.4
11	T1	All MCs	446	2.6	446	2.6	0.346	4.0	LOS A	2.4	17.4	0.26	0.41	0.26	36.7
12	R2	All MCs	2	50.0	2	50.0	0.346	7.8	LOS A	2.4	17.4	0.26	0.41	0.26	41.6
12u	U	All MCs	1	0.0	1	0.0	0.346	9.8	LOS A	2.4	17.4	0.26	0.41	0.26	46.6
Approach			464	2.7	464	2.7	0.346	4.0	LOS A	2.4	17.4	0.26	0.41	0.26	37.0
All Vehicles			799	2.9	799	2.9	0.346	4.3	LOS A	2.4	17.4	0.21	0.44	0.21	38.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 804 [804 - Darley Rd x Charles St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Charles Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Charles Street															
1	L2	All MCs	7	0.0	7	0.0	0.065	8.5	LOS A	0.5	3.3	0.69	0.65	0.69	38.5
2	T1	All MCs	5	0.0	5	0.0	0.065	8.3	LOS A	0.5	3.3	0.69	0.65	0.69	35.3
3	R2	All MCs	37	0.0	37	0.0	0.065	11.5	LOS A	0.5	3.3	0.69	0.65	0.69	26.2
3u	U	All MCs	2	0.0	2	0.0	0.065	14.2	LOS A	0.5	3.3	0.69	0.65	0.69	37.4
Approach			52	0.0	52	0.0	0.065	10.8	LOS A	0.5	3.3	0.69	0.65	0.69	29.9
East: Darley Road															
4	L2	All MCs	20	0.0	20	0.0	0.438	4.0	LOS A	3.2	22.6	0.17	0.43	0.17	38.8
5	T1	All MCs	586	1.1	586	1.1	0.438	3.8	LOS A	3.2	22.6	0.17	0.43	0.17	42.1
6	R2	All MCs	16	0.0	16	0.0	0.438	7.0	LOS A	3.2	22.6	0.17	0.43	0.17	36.0
6u	U	All MCs	22	0.0	22	0.0	0.438	8.9	LOS A	3.2	22.6	0.17	0.43	0.17	19.6
Approach			644	1.0	644	1.0	0.438	4.1	LOS A	3.2	22.6	0.17	0.43	0.17	41.2
North: Charles Street															
7	L2	All MCs	23	0.0	23	0.0	0.061	6.0	LOS A	0.3	2.3	0.61	0.64	0.61	33.9
8	T1	All MCs	11	0.0	11	0.0	0.061	5.6	LOS A	0.3	2.3	0.61	0.64	0.61	37.2
9	R2	All MCs	13	0.0	13	0.0	0.061	8.7	LOS A	0.3	2.3	0.61	0.64	0.61	38.4
9u	U	All MCs	1	0.0	1	0.0	0.061	12.8	LOS A	0.3	2.3	0.61	0.64	0.61	40.5
Approach			47	0.0	47	0.0	0.061	6.8	LOS A	0.3	2.3	0.61	0.64	0.61	36.3
West: Darley Road															
10	L2	All MCs	7	0.0	7	0.0	0.392	4.3	LOS A	3.0	21.4	0.32	0.43	0.32	40.2
11	T1	All MCs	493	2.8	493	2.8	0.392	4.2	LOS A	3.0	21.4	0.32	0.43	0.32	32.0
12	R2	All MCs	7	0.0	7	0.0	0.392	7.3	LOS A	3.0	21.4	0.32	0.43	0.32	42.5
12u	U	All MCs	1	0.0	1	0.0	0.392	10.0	LOS A	3.0	21.4	0.32	0.43	0.32	46.3
Approach			508	2.7	508	2.7	0.392	4.2	LOS A	3.0	21.4	0.32	0.43	0.32	32.3
All Vehicles			1252	1.6	1252	1.6	0.438	4.5	LOS A	3.2	22.6	0.27	0.45	0.27	36.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 903 [903 - Darley Rd x Hubert St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Hubert Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hubert Street															
1	L2	All MCs	7	0.0	7	0.0	0.018	5.4	LOS A	0.1	0.4	0.43	0.57	0.43	35.8
3	R2	All MCs	7	0.0	7	0.0	0.018	8.2	LOS A	0.1	0.4	0.43	0.57	0.43	34.3
Approach			15	0.0	15	0.0	0.018	6.8	LOS A	0.1	0.4	0.43	0.57	0.43	35.1
East: Darley Road															
4	L2	All MCs	6	0.0	6	0.0	0.143	2.5	LOS A	0.0	0.0	0.00	0.01	0.00	45.2
5	T1	All MCs	266	4.0	266	4.0	0.143	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.5
Approach			273	3.9	273	3.9	0.143	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.3
West: Darley Road															
11	T1	All MCs	487	2.4	487	2.4	0.255	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	49.9
12	R2	All MCs	1	0.0	1	0.0	0.255	4.6	LOS A	0.0	0.1	0.00	0.00	0.00	45.3
Approach			488	2.4	488	2.4	0.255	0.0	NA	0.0	0.1	0.00	0.00	0.00	49.8
All Vehicles			776	2.8	776	2.8	0.255	0.2	NA	0.1	0.4	0.01	0.02	0.01	48.6

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

MOVEMENT SUMMARY

Site: 904 [904 - Darley Rd x Hubert St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Hubert Street
Period: PM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hubert Street															
1	L2	All MCs	7	0.0	7	0.0	0.033	7.2	LOS A	0.1	0.8	0.62	0.75	0.62	31.4
3	R2	All MCs	7	14.3	7	14.3	0.033	15.0	LOS B	0.1	0.8	0.62	0.75	0.62	29.5
Approach			15	7.1	15	7.1	0.033	11.1	LOS A	0.1	0.8	0.62	0.75	0.62	30.5
East: Darley Road															
4	L2	All MCs	8	0.0	8	0.0	0.334	2.6	LOS A	0.0	0.0	0.00	0.01	0.00	45.2
5	T1	All MCs	640	0.8	640	0.8	0.334	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.6
Approach			648	0.8	648	0.8	0.334	0.0	NA	0.0	0.0	0.00	0.01	0.00	49.5
West: Darley Road															
11	T1	All MCs	540	0.6	540	0.6	0.296	0.2	LOS A	0.3	1.9	0.06	0.07	0.06	47.0
12	R2	All MCs	17	0.0	17	0.0	0.296	8.1	LOS A	0.3	1.9	0.06	0.07	0.06	44.5
Approach			557	0.6	557	0.6	0.296	0.5	NA	0.3	1.9	0.06	0.07	0.06	46.8
All Vehicles			1220	0.8	1220	0.8	0.334	0.4	NA	0.3	1.9	0.03	0.04	0.03	47.3

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

MOVEMENT SUMMARY

Site: 1003 [1003 - Darley Rd x Francis St_FU_AM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Intersection: Darley Road x Francis Street
Period: AM Peak
Scenario: Existing + Development
Site Category: Proposed Design 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	1	0.0	1	0.0	0.017	5.6	LOS A	0.1	0.4	0.56	0.66	0.56	28.9
3	R2	All MCs	7	0.0	7	0.0	0.017	10.1	LOS A	0.1	0.4	0.56	0.66	0.56	33.8
Approach			8	0.0	8	0.0	0.017	9.5	LOS A	0.1	0.4	0.56	0.66	0.56	33.2
East: Darley Road															
4	L2	All MCs	8	0.0	8	0.0	0.025	4.6	LOS A	0.0	0.0	0.00	0.10	0.00	44.9
5	T1	All MCs	272	3.9	272	3.9	0.123	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.4
Approach			280	3.8	280	3.8	0.123	0.1	NA	0.0	0.0	0.00	0.02	0.00	49.0
West: Darley Road															
11	T1	All MCs	505	2.3	505	2.3	0.132	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	49.9
12	R2	All MCs	1	0.0	1	0.0	0.132	3.0	LOS A	0.0	0.1	0.00	0.00	0.00	44.7
Approach			506	2.3	506	2.3	0.132	0.0	NA	0.0	0.1	0.00	0.00	0.00	49.9
All Vehicles			795	2.8	795	2.8	0.132	0.2	NA	0.1	0.4	0.01	0.01	0.01	49.0

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

MOVEMENT SUMMARY

Site: 1002 [1003 - Darley Rd x Francis St_FU_PM (Site Folder: Existing + Development Models)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Intersection: Darley Road x Francis Street
Period: PM Peak
Scenario: Existing
Site Category: Existing Design
Give-Way (Two-Way)

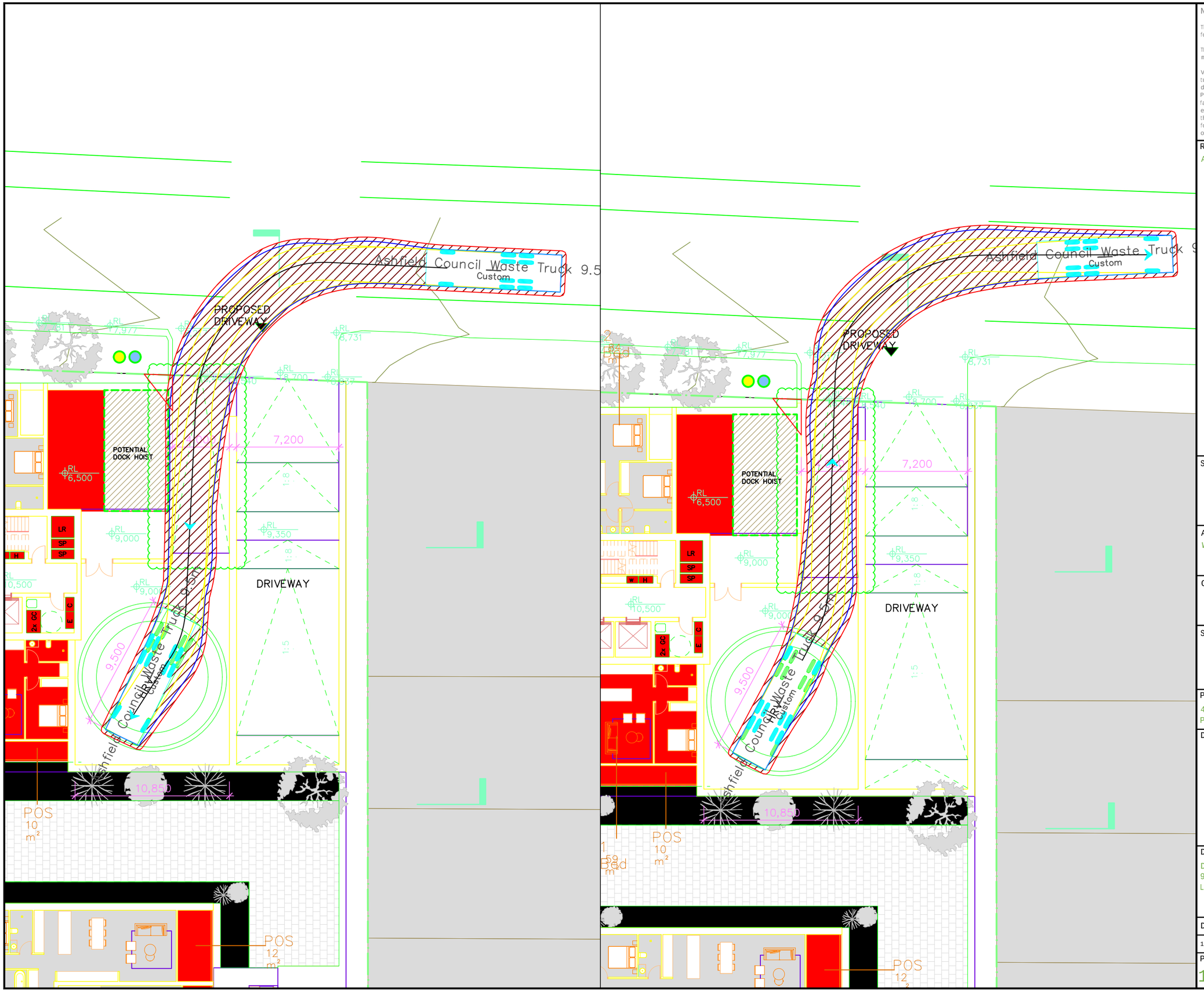
Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Francis Street															
1	L2	All MCs	5	0.0	5	0.0	0.032	8.0	LOS A	0.1	0.8	0.67	0.78	0.67	26.2
3	R2	All MCs	6	0.0	6	0.0	0.032	17.1	LOS B	0.1	0.8	0.67	0.78	0.67	30.8
Approach			12	0.0	12	0.0	0.032	13.0	LOS A	0.1	0.8	0.67	0.78	0.67	28.8
East: Darley Road															
4	L2	All MCs	12	0.0	12	0.0	0.056	4.6	LOS A	0.0	0.0	0.00	0.06	0.00	45.5
5	T1	All MCs	643	0.8	643	0.8	0.282	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.5
Approach			655	0.8	655	0.8	0.282	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.3
West: Darley Road															
11	T1	All MCs	518	0.4	518	0.4	0.137	0.0	LOS A	0.1	0.6	0.02	0.02	0.02	49.2
12	R2	All MCs	6	0.0	6	0.0	0.137	13.9	LOS A	0.1	0.6	0.04	0.04	0.04	44.0
Approach			524	0.4	524	0.4	0.137	0.2	NA	0.1	0.6	0.02	0.02	0.02	49.0
All Vehicles			1191	0.6	1191	0.6	0.282	0.3	NA	0.1	0.8	0.01	0.02	0.01	48.5

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

APPENDIX C

Swept Path Analysis



Notes:

This drawing is prepared for information purposes only. It is not to be used for construction.

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (AS/NZS 2890.1:2004 Parking facilities - Off-street car parking, and/or AS2890.2:2002 Parking facilities - Off-street commercial vehicle facilities). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

Rev.	Revision Note	By.	Date
A	Initial Design Review	AB	17-06-25

Swept Path Legend

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

Architect
Woods Bagot

Client

Scale / Plan Orientation

0 2.5 5 7.5 10m
1:250 @ A3

Project Description
40-76 William Street, Leichhardt
Proposed Residential Development

Drawing Prepared By

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Drawing Title
Design Review
9.5m HRV
Loading Dock Entry/Exit

Drawn:	Checked:	Date:
AB	BL	-

19.588d22v01 TRAFFIX [250708 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
19.588	DA	SK.01	A