



TRAFFIC IMPACT ASSESSMENT

**Proposed Industrial Development
49-61 Stephen Road, Banksmeadow (SSD-65924461)**

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CONTENTS

1. Executive Summary	1
2. Introduction	2
3. Location and Site	3
4. Assessment Requirements	6
4.1 SEARs Requirements	6
4.2 Council Requirements	7
5. Existing Traffic Conditions	9
5.1 Road Network	9
Key Intersection	12
5.2 Existing Intersection Volumes	18
5.3 Public Transport	20
6. Description of Proposed Development	23
7. Parking Requirements	25
7.1 Car Parking	25
7.2 Accessible Parking	Error! Bookmark not defined.
7.3 Motorcycle Parking	25
7.4 Bicycle Parking	26
7.5 Waste Collection and Servicing	27
8. Traffic and Transport Impacts	28
8.1 Existing Trip Generation	28
8.2 Development Trip Generation	28
8.3 Net Traffic Generation	30
8.4 Intersection Performance	31
8.5 Cumulative Impacts Scenario	39
8.6 Construction Traffic Impacts	43

9. Access and Internal Design Aspects	45
9.1 Vehicular Access	45
9.2 Internal Design	46
9.3 Summary	48
10. Consultation	49
10.1 TfNSW Comments	49
10.2 Council Comments	51
11. Conclusions	55
Appendices	
Appendix A: Architectural Plans	
Appendix B: SIDRA Outputs	
Appendix C: Swept Path Analysis	

1. EXECUTIVE SUMMARY

This Traffic Impact Assessment has been prepared by Trafix to accompany a detailed State Significant Development Application (**SSDA**) for a two-storey warehouse and distribution centre development proposal at 49-61 Stephen Road, Banksmeadow. The site is legally described as Lot A in Deposited Plan 190526, Lot 1 Deposited Plan 1095110, and Lot 1 Deposited Plan 311767.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (**SEARs**) issued for the project (**SSD-65924461**).

This report concludes that the proposed two-storey warehouse and distribution centre is suitable and warrants approval subject noting the below.

- The site is easily accessible via multiple bus routes, with bus stops located along Botany Road and Swinbourne Street which provide connections to nearby points of interest.
- The development includes a total of 240 car parking spaces. This is in line with the Council's DCP requirements, ensuring that the parking demand is adequately met on-site.
- The traffic impact of the development has been evaluated as a net change from current conditions, resulting in an increase of 67 vehicle trips per hour during the AM network peak and 92 vehicle trips per hour during the PM network peak.
- All traffic generated by the proposed development (over and above existing conditions) has been distributed across the surrounding road network. SIDRA Intersection analysis shows satisfactory outcomes for key intersections near the site, indicating no need for infrastructure upgrades or changes to signal timings.
- Vehicular access to the site will be provided via several driveways on Stephen Road and Coal Pier Road, with all truck movements to be confined to Coal Pier Road.

Additional information regarding each point is discussed in detail in the Traffic Impact Assessment below.

2. INTRODUCTION

TRAFFIX has been commissioned by ESR Australia to undertake a Traffic Impact Assessment (TIA) in support of a State Significant Development Application (SSDA) relating to a proposed industrial development at 49-61 Stephen Road, Banksmeadow. The development is located within the Bayside Council Local Government Area and has been assessed under that Council's controls.

As part of the application process, the Secretary's Environmental Assessment Requirements (SEARs) have been issued for the proposal (SSD-65924461). This TIA has been prepared to assess the traffic impacts of the proposal and respond to the relevant SEARs and Council/TfNSW comments. The report is structured as follows:

- Section 2: Describes the site and its location
- Section 3: Summarises the relevant statutory policies and strategic plans
- Section 4: Outlines the SEARs and Council/TfNSW requirements
- Section 5: Documents existing traffic conditions
- Section 6: Describes the proposed development
- Section 7: Assesses the parking requirements
- Section 8: Assesses the traffic impacts
- Section 9: Describes the preliminary construction management arrangements
- Section 10: Discusses the sustainable travel measures
- Section 11: Discusses access and internal design aspects
- Section 12: Summaries the agency consultation
- Section 13: Presents the overall study conclusions

3. LOCATION AND SITE

The subject site is located at 49-61 Stephen Road, Banksmeadow, within the Bayside local government area (**LGA**). The site is legally described as Lot A in Deposited Plan 190526, Lot 1 Deposited Plan 1095110, and Lot 1 Deposited Plan 311767.

The site is located in the Banksmeadow Industrial Precinct, approximately 10km from Sydney CBD, 1.5 kilometres from Port Botany and 3km from Sydney Airport. The site is surrounded predominantly by a mix of industrial and warehouse and distribution uses to the north, east and south, and residential land uses to the west. The site is located in close proximity to existing employment and industrial areas including the Botany Port and Sydney Domestic and International Airports.

The site has been developed and currently accommodates the Allnex Resins manufacturing site. The site presents a two-storey office building towards the Stephen Road frontage, with 20 warehouse and ancillary use buildings as well as numerous chemical storage tanks.

Due to the existing and current use of the site and the handling and manufacturing of chemical products, the site is considered contaminated and is subject to Environmental Protection Agency (EPA) notification. As part of site contamination management, a stormwater retention/remediation treatment pond is located along the Coal Pier Road frontage along the eastern boundary.

Existing planted vegetation is located along the site's boundaries predominately along the western and northern setback areas assisting in screening the development from Stephen Road and the Southgate Industrial Estate development to the north. A cleared grassed area is located to the rear of the site beside a stormwater retention and treatment pond.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**.



Figure 1: Location Plan



Figure 2: Site Plan

4. ASSESSMENT REQUIREMENTS

4.1 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
Transport and Accessibility	
Details of all daily and peak traffic volumes likely to be generated during all key stages of construction and operation, including a description of key access / haul routes, vehicle types and potential queuing impacts.	Refer to Section 7 and Preliminary Construction Traffic and Pedestrian Management Plan
An assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts on existing performance levels of nearby intersections (including maximum queue length), using a calibrated and validated SIDRA (or similar) traffic model (see TfNSW comments in Attachment 2)	Refer to Section 7
Swept path diagrams demonstrating that the largest vehicle accessing the site can manoeuvre surrounding key intersections.	Refer to Section 8
Plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network	Refer to Section 8
Details and plans of the proposed internal road network, loading docks, pedestrian and cycling facilities and on-site parking in accordance with the relevant Australian Standards	Refer to Section 8
Consideration of any parking that is required for a café use	Refer to Section 6
Details of the largest vehicle anticipated to access and move within the site, including swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site	Refer to Section 8
Details of road upgrades, infrastructure works or new roads or access points required for the development if necessary.	Refer to Section 7

4.2 Council Requirements

The Bayside Council has reviewed the above SEARs and provides the comments outlined in **Table 2** below.

Table 2: Council Requirements and References

Council Requirements	Reference
Traffic, Parking and Access	
9. A Traffic Engineer shall prepare a Traffic Report and shall include the following, but not limited to: a. Details of site access, road signs, pedestrian safety etc. b. Signal/warning system and passing bay requirement at vehicle intersection areas. c. Parking & manoeuvring of vehicles. The report should address adequacy of site and parking layout for the largest vehicle and the passenger vehicle to be accessing the site. d. The Traffic Engineer shall certify the parking layout, aisle width and dead end aisle, ramp grades and access and visibility requirement for the proposed parking facility in accordance with the Australian Standards AS/NZS 2890.1:2004, AS2890.2:2018, AS2890.3:2015 & AS/NZS 2890.6:2009.e. Specify user class for the parking modules. e. Submit details of all heavy vehicular (truck) parking areas, turning circles and manoeuvring areas. f. Safe pedestrian pathways through the site. g. Proposed signage and line marking to safely direct all vehicles in and out of the site. h. Details of the Traffic consultant and author of the report must be included.	Refer to Section 8
10. All passenger vehicle (B99) access to be via Stephen Road and all heavy vehicular (truck) access to be via Coal Pier Road.	Refer to Section 8
11. Swept Path Analysis diagrams (using Autoturn software or similar) shall be prepared by a qualified Civil Engineer and provided for the passenger vehicle (B99) entering and exiting the site from Stephen Road in a forward motion.	Refer to Section 8 and Appendix C
12. Swept Path Analysis diagrams (using Autoturn software or similar) prepared by a qualified Civil Engineer shall be provided for the largest service vehicle (B-double 26m long) accessing the site and demonstrate the area required to manoeuvre vehicle around the site and exit in a forward direction.	Refer to Section 8 and Appendix C
13. An assessment and certificate from a qualified Traffic Engineer shall be provided demonstrating compliance with Australian Standards AS2890 series for parking facility design, layout and access to the site.	Refer to Section 8
14. A Longitudinal Driveway Profile for both vehicular access is to be prepared by a qualified Civil Engineer shall be submitted to Council for assessment. The profile shall start in the centre of the road and be along the critical edge (worst case) of the driveway. Gradients and transitions shall be in accordance with AS/NZS 2890.1&AS/NZS2890.2. The profile shall include all relevant levels, grades (%), headroom clearances and lengths. The existing boundary levels shall be clearly shown on the profile, any change to the existing boundary levels requires approval from Bayside Council.	Refer to Section 8 and Appendix D

Council Requirements	Reference
15. A Longitudinal Section prepared by a qualified Civil Engineer plotting headroom clearance along the travel path of the B-double using the curved ramp vehicle to be provided. It must be demonstrated that a safe headroom clearance achieved along the entire travel path, parking and manoeuvring areas of the B-double within the site.	Refer to Section 8 and Appendix D
16. An assessment to be provided demonstrating that the curved ramp is designed in compliance with AS/NZS2890.1&AS/NZS2890.2.	Refer to Section 8

5. EXISTING TRAFFIC CONDITIONS

5.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest:

- **Botany Road:** a TfNSW Main Road (MR170) that traverses north-south between the Boundary Street in the north and Bunnerong Road at in the south. Within the vicinity of the site, it is subject to 50km/h speed zoning and generally accommodates a single lane of traffic in each direction. Botany Road generally permits unrestricted on-street parking on either side of the road.
- **Foreshore Road:** a TfNSW Main Road (MR617) that traverses northwest-southeast between the General Holmes Drive in the northwest and Botany Road in the southeast. Within the vicinity of the site, it is subject to 80km/h speed zoning and accommodates two (2) lanes of traffic in each direction. Parking is not permitted on both sides of the road.
- **Stephen Road:** an unclassified regional road (7044) that traverses north-south between the Ocean Street in the north and Botany Road in the south. Within the vicinity of the site, it is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Parking is generally permitted on both sides of the road. It is also noted that trucks are not permitted along this road.
- **Swinbourne Street:** a local road that traverses east-west between Pater Street in the east and William Street in the west. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Swinbourne Street generally permits on-street parking on either side of the road.

- Coal Pier Road: a local road that traverses north-south between McPherson Street in the south and ending in a cul-de-sac in the north. It is subject to 50km/h speed zoning and accommodates a single lane of traffic in each direction. Coal Pier Road generally permits on-street parking on either side of the road.
- McPherson Street: a local road that traverses east-west between Hill Street in the east and ending in a cul-de-sac in the west. It is subject to 50km/h speed zoning and is split into two sections by Excell Street. The eastern section between Hills Street and Excell Street accommodates a single lane of eastbound traffic, while remainder of McPherson Street accommodate a single lane of traffic in each direction. McPherson Street generally permits on-street parking on either side of the road.
- Hill Street: a local road that traverses north-south between McPherson Street in the north and Botany Road in the south. It is subject to 50km/h speed zoning and accommodates a single lane of northbound traffic. Hill Street generally permits on-street parking on either side of the road.
- Excell Street: a local road that traverses north-south between McPherson Street in the north and Botany Road in the south. It is subject to 50km/h speed zoning and accommodates a single lane of southbound traffic. Excell Street generally permits on-street parking on either side of the road.

It can be seen from Figure 3 that the site is conveniently located with respect to the main arterial road serving the region. As such, traffic can effectively be distributed onto the wider road network, minimising traffic impacts.

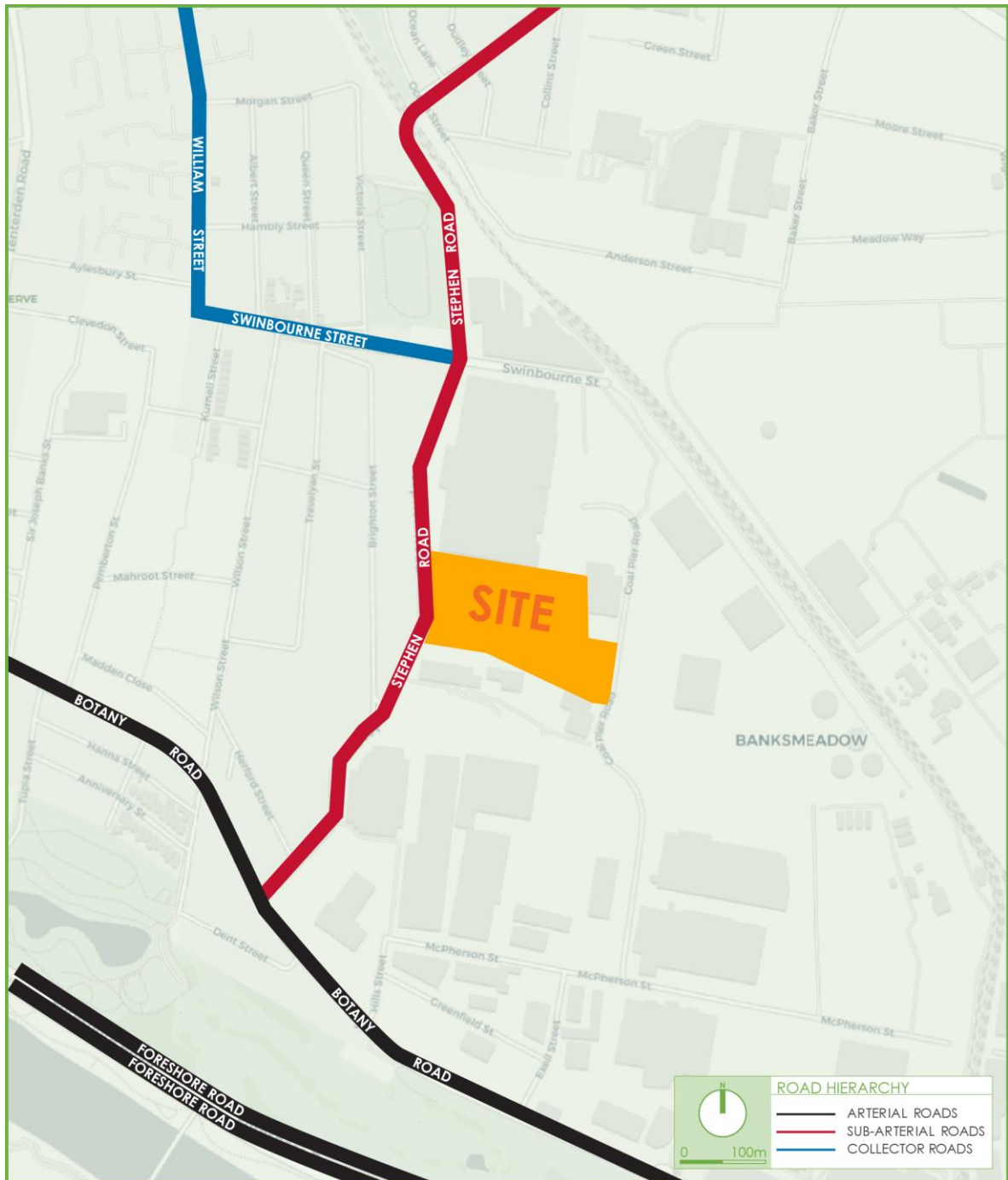


Figure 3: Road Hierarchy

Key Intersection

The key intersections in the vicinity of the site are shown below and provide an understanding of the existing road geometry and alignment.

5.1.1 Foreshore Road, Botany Road and Penrhyn Road Intersection

It can be seen from **Figure 4** that this is a four-legged signalised intersection. The main attributes of each approach are outlined as follows:

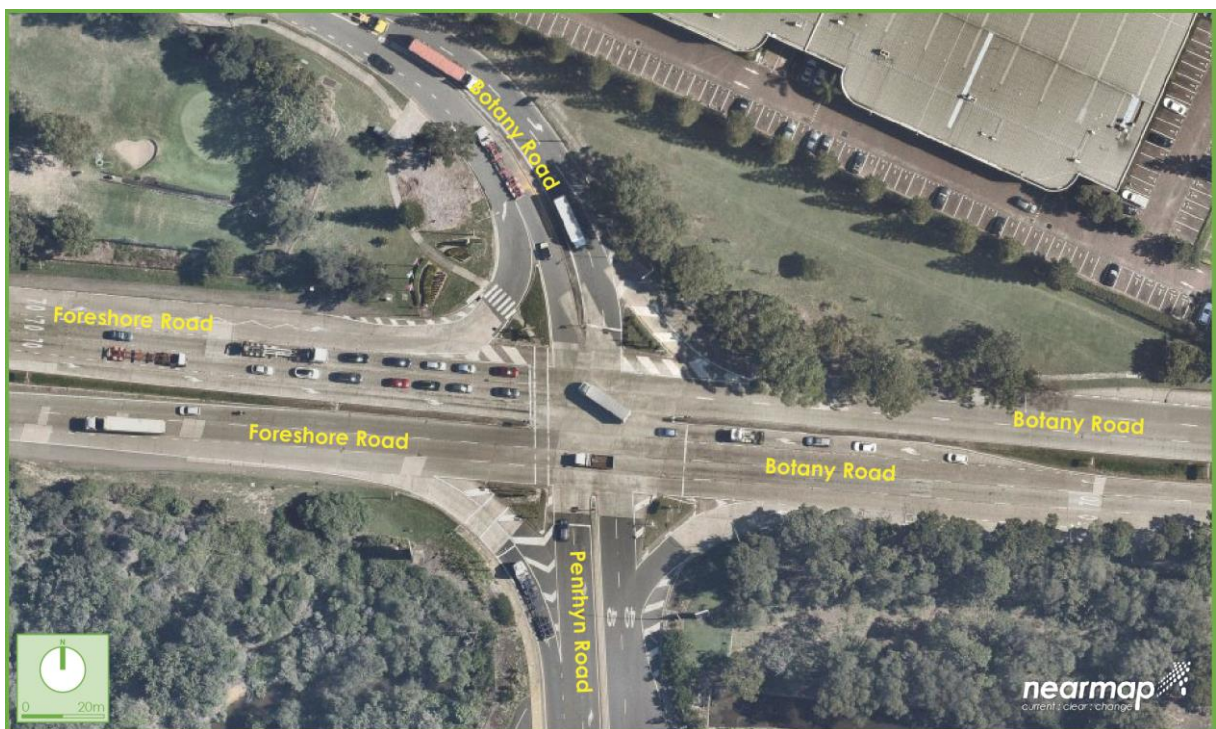


Figure 4: Intersection of Foreshore Road, Botany Road and Penrhyn Road

- Botany Road (north)
 - The northern approach provides a total of three (3) lanes, comprising a single left-turn only lane, a single through lane and a single through lane with right-turns permitted.
- Penrhyn Road (south)
 - The southern approach provides a total of three (3) lanes, comprising a single left-turn only lane, a single through lane and a single right turn lane.

➤ Foreshore Road (west)

- The eastern approach provides a total of four (4) lanes, comprising a single left-turn only lane, two (2) through lanes and a single right turn lane.

➤ Botany Road (east)

- The western approach provides a total of five (5) lanes, comprising a single left-turn only lane, three (3) through lanes and a single right turn lane.

5.1.2 Botany Road and Exell Street Intersection

It can be seen from **Figure 5** that this is a three-legged priority intersection, noting no pedestrian crossing facilities. The main attributes of each approach are outlined as follows:



Figure 5: Intersection of Botany Road and Exell Street

➤ Exell Street (north)

- The northern approach provides a single left-turn only lane.

➤ Botany Road (east - west)

- The eastern and western approach provides a single through only with no access to Exell Street.

5.1.3 Botany Road and Hills Street Intersection

It can be seen from **Figure 6** that this is a three-legged priority intersection, noting no pedestrian crossing facilities. The main attributes of each approach are outlined as follows:



Figure 6: Intersection of Botany Road and Hills Street

- Hills Street (north)
 - The northern leg is an exit lane only.
- Botany Road (east - west)
 - The eastern approach provides a single through lane with left turns permitted.
 - The western approach provides a total of two (2) lanes, comprising a single through lane and a single right turn lane.

5.1.4 Botany Road and Stephen Road Intersection

It can be seen from **Figure 7** that this is a three-legged priority intersection, noting no pedestrian crossing facilities. The main attributes of each approach are outlined as follows:



Figure 7: Intersection of Botany Road and Stephen Road

- Botany Road (north - south)
 - The northern approach provides a single through lane with left turns permitted.
 - The southern approach provides a single through lane with right turns permitted.
- Stephen Road (west)
 - The western approach provides a single lane with left-turn and right-turn movements permitted.

5.1.5 McPherson Street and Coal Pier Road Intersection

It can be seen from **Figure 8** that this is a three-legged priority intersection, noting no pedestrian crossing facilities. The main attributes of each approach are outlined as follows:



Figure 8: Intersection of McPherson Street and Coal Pier Road

- Coal Pier Road (north)
 - The northern approach provides a single lane with left-turn and right-turn movements permitted.
- McPherson Street (east - west)
 - The eastern approach provides a single through lane with left turns permitted.
 - The western approach provides a single through lane with right turns permitted.

5.1.6 Stephen Road and Swinbourne Street Intersection

It can be seen from **Figure 9** that this is a four-legged signalised intersection. The main attributes of each approach are outlined as follows:



Figure 9: Intersection of Stephen Road and Swinbourne Street

➤ Stephen Road (north - south)

- The northern approach provides a total of two (2) lanes, comprising a single through lane with left-turns permitted, and a single through lane with right-turns permitted.
- The southern approach provides a total of two (2) lanes, comprising a single through lane with left-turns permitted, and a single through lane with right-turns permitted.

➤ Swinbourne Street (east - west)

- The eastern approach provides a total of two (2) lanes, comprising a single through lane with left-turns permitted, and a single through lane with right-turns permitted.
- The western approach provides a total of two (2) lanes, comprising a single through lane with left-turns permitted, and a single through lane with right-turns permitted.

5.2 Existing Intersection Volumes

5.2.1 Peak Hour Volumes

Intersection surveys were conducted at six (6) key intersections surrounding the site on Thursday 16th November 2023. From this, traffic volume data was obtained regarding the existing peak hour conditions in the morning and evening. The total traffic volumes through each key intersection in the critical AM and PM peak hours are summarised below.

- Foreshore Road, Botany Road and Penrhyn Road
 - 3,301 vehicles in the AM peak hour; and
 - 3,271 vehicles in the PM peak hour.
- Botany Road and Excell Street
 - 1,284 vehicles in the AM peak hour; and
 - 1,346 vehicles in the PM peak hour.
- Botany Road and Hill Street
 - 1,155 vehicles in the AM peak hour; and
 - 1,090 vehicles in the PM peak hour.
- Botany Road and Stephen Road
 - 1,132 vehicles in the AM peak hour; and
 - 1,207 vehicles in the PM peak hour.
- McPherson Street and Coal Pier Road
 - 317 vehicles in the AM peak hour; and
 - 410 vehicles in the PM peak hour.
- Stephen Road and Swinbourne Street
 - 1,443 vehicles in the AM peak hour; and
 - 1,450 vehicles in the PM peak hour.

5.2.2 Daily Volumes

No recent TfNSW traffic volume counters are available in the vicinity of the site and the intersection surveys were conducted for the critical morning and evening peak periods only. It should be noted that in accordance with *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Management*, peak hour volumes are

approximately 8 to 10% of the Average Annual Daily Traffic (AADT) for urban situations. Therefore, the following daily volumes (estimates) can be derived from the peak hour (greater of AM and PM volumes) surveys:

➤ Foreshore Road, Botany Road and Penrhyn Road	33,010 to 41,263 vehicles/day
➤ Botany Road and Excell Street	13,460 to 16,825 vehicles/day
➤ Botany Road and Hill Street	11,550 to 14,438 vehicles/day
➤ Botany Road and Stephen Road	12,070 to 15,088 vehicles/day
➤ McPherson Street and Coal Pier Road	4,100 to 5,125 vehicles/day
➤ Stephen Road and Swinbourne Street	14,500 to 18,125 vehicles/day

It is noteworthy that daily traffic volumes are not a relevant consideration for the assessment of the traffic network, which is based on intersection performance during peak (hourly) periods.

5.3 Public Transport

5.3.1 Bus Services

The subject site is within 800m walking distance of several bus stops operating along Swinbourne Street and Foreshore Road. These bus services are presented in **Figure 10**, with the service frequencies outlined in **Table 3**.

Table 3: Bus Routes and Service Frequencies

Bus No.	Bus Route	Service Frequency	
		Weekdays	Weekends
307	Eastgardens to Mascot Station (Loop Service)	Every 20 minutes	Every 20 minutes
309	Port Botany to Redfern	Every 5-10 minutes	Every 10 minutes
310	Botany to Central Railway Square	Limited Services	Limited Services

5.3.2 Railway Services

The subject site is located approximately 3.4km from Sydney Domestic Airport Railway Station and approximately 3.9km from Mascot Railway Station. These station provide services along the T8 – Airport and South Line and are presented in **Figure 11**.

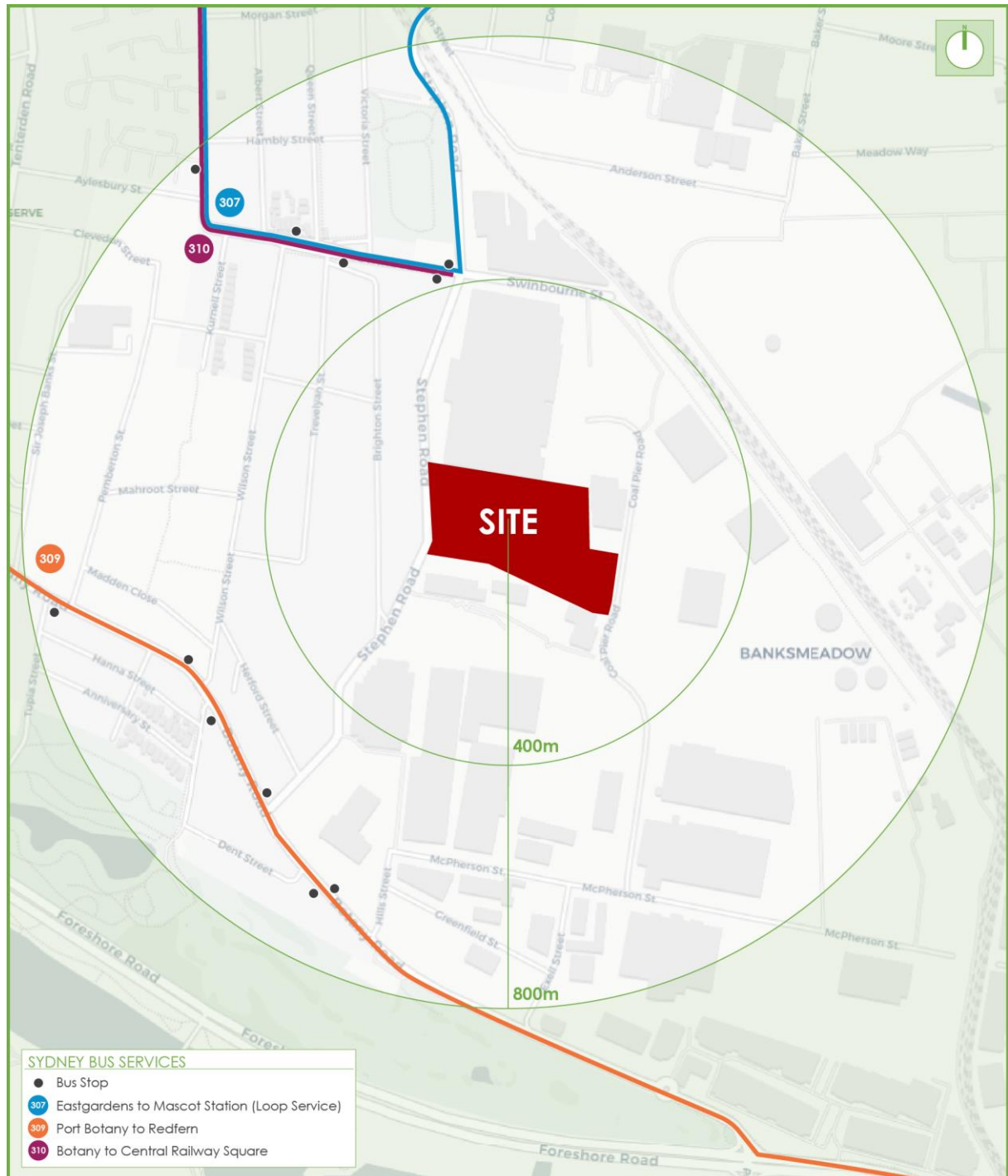


Figure 10: Public Transport



Figure 11: Public Transport

6. DESCRIPTION OF PROPOSED DEVELOPMENT

This report has been prepared to accompany an SSDA seeking consent for the construction and operation of a two-storey warehouse and distribution centre development at 49-61 Stephen Road, Banksmeadow (**SSD-65924461**).

Specifically, the project comprises:

- Demolition of all existing built form.
- Site preparation works, bulk earthworks and infrastructure/service provisions and/or augmentation.
- Extensive remediation of the site.
- Construction and operation of two two-storey warehouse and distribution centre buildings including the following key components (as shown on drawing DA01.20, Rev 7 dated 18/03/2026):
 - Approximately 45,896m² of total GFA comprising:
 - 41,702m² of warehouse area.
 - 4,024m² of ancillary office space.
 - Two warehouse buildings of two storeys containing:
 - Six (6) units within Warehouse 1 (2 levels).
 - Four (4) units within Warehouse 2 (2 levels).
- 240 car parking spaces provided
 - 93 car parking spaces provided off Stephen Road.
 - 147 carpark spaces off Coal Pier Road.
- 16 motorbike parking spaces.
- 78 bicycle parking spaces
- End of trip facilities.
- Site landscaping works totalling 5,566m² (10.2% of the site), and
- Provision of building/business identification signage.

The parking and traffic impacts arising from the development in its entirety are discussed in **Section 6** and **Section 7**. Reference should be made to the architectural plans submitted

separately to the Department of Planning and Environment which are presented at reduced scale in **Appendix A**.

7. PARKING REQUIREMENTS

7.1 Car Parking

7.1.1 Bayside DCP Assessment

The Bayside Council DCP (2022) provides parking requirements for warehouse/distribution, ancillary office and cafes as outlined in **Table 4** below:

Table 4: Bayside Council DCP Rates

Type	Yield	Parking Rate	Required Parking
Warehouse/Distribution	41,702m ²	1 space per 300m ² GFA	139
Ancillary Office	4,024m ²	1 space per 40m ² GFA	100.6 (101)
TOTAL			240

As can be seen from Table 4 above, under the Bayside Council DCP, the industrial development component is nominally required to provide a total of 240 car parking spaces. In response, the development proposes a total of 240 car parking spaces which is compliant with the parking requirements of the council DCP.

7.2 Motorcycle Parking

The Bayside Council DCP (2022) advises the below motorcycle parking rates for warehouse/distribution developments;

- One motorcycle space per 15 car parking spaces provided.

The application of the above parking rate on the required 240 car parking spaces, the proposed development is nominally required to provide 16 motorcycle parking spaces. The development proposes a total of 16 motorcycle parking spaces which is compliant with the parking requirements of the council DCP.

7.3 Bicycle Parking

The Bayside Council DCP (2022) advises the below bicycle parking rates for warehouse/distribution;

- One bicycle space per 600m² GFA

The application of the above parking rate on the proposed 41,702m² of warehouse GFA, the proposed development is nominally required to provide 67 bicycle parking spaces. The development proposes a total of 78 bicycle parking spaces which is compliant with the parking requirements of the council DCP

7.4 Waste Collection and Servicing

The Bayside Council DCP (2022) advises the below servicing facility requirements for warehouse/distribution developments;

- Ten (10) service bays (for MRVs or larger) for the first 8,000m² and 1 service bay for every additional 1,000m² warehouse/distribution GFA.

The application of the above servicing requirements, the proposed development is nominally required to provide 55 service bays. As the development consists of ten (10) warehouses which accommodate 20.0m AV each, and as such are all capable of accommodating any servicing requirements for the warehouse/distribution units, as well as the ancillary office spaces.

8. TRAFFIC AND TRANSPORT IMPACTS

8.1 Existing Trip Generation

Tube counts were undertaken at the access driveways of the existing warehouse development on between Thursday 16th May to Wednesday 22nd May 2024, which resulted in the following weekday traffic generation for the existing warehouse development:

- 14 vehicle trips in the AM site peak hour (7 in, 7 out);
- 12 vehicle trips in the PM site peak hour (6 in, 6 out);
- 11 vehicle trips in the AM network peak hour (6 in, 5 out);
- 4 vehicle trips in the PM network peak hour (2 in, 2 out); and
- 95 vehicle trips per day (48 in, 47 out).

8.2 Development Trip Generation

8.2.1 Large Format Warehousing

The impacts of the proposed development on the external road network have been assessed having regard for the yield scenarios as summarised in Section 4 above. This assessment has been undertaken in accordance with the requirements of the TfNSW GTIA and as such, the traffic generation rates published in the TfNSW GTIA have been adopted for large format warehouses between 10,000m² and 100,000m² of GFA, which are as follows:

- 0.26 vehicles trips per 100m² of GFA during the AM site peak hour;
- 0.23 vehicles trips per 100m² of GFA during the PM site peak hour;
- 0.17 vehicles trips per 100m² of GFA during the AM network peak hour;
- 0.21 vehicles trips per 100m² of GFA during the PM network peak hour; and
- 2.83 vehicles trips per 100m² of GFA each day.

The proposed development includes a total 45,896m² GFA of warehouse with ancillary office area. Application of the above rate and assumptions to the proposed area results in the following traffic generation for the proposed warehouse.

- 119 vehicle trips in the AM site peak hour (74 in, 45 out);
- 106 vehicle trips in the PM site peak hour (37 in, 69 out);
- 78 vehicle trips in the AM network peak hour (55 in, 23 out);
- 96 vehicle trips in the PM network peak hour (33 in, 63 out); and
- 1299 vehicle trips per day (650 in, 649 out).

The TfNSW GTIA also provides a vehicle classification breakdown for the proposed vehicle trips, summarised in the extract reproduced in **Figure 11** below:

	Sydney				
Classification (entry : exit)	All vehicles Class 1-11	Light Class 1	Medium Class 2-5	Long Class 6-9	Double Combo Class 10-11
Site peak hour	100% (58% : 42%)	77% (44% : 33%)	15.5% (9.5% : 6%)	6% (3.5% : 2.5%)	1.5% (1% : 0.5%)
Site AM peak hour	100% (62% : 38%)	69% (49% : 20%)	21.5% (7.5% : 14%)	7.5% (4% : 3.5%)	2% (1.5% : 0.5%)
Site PM peak hour	100% (34.5% : 66.5%)	72.5% (17.5% : 55%)	20% (13% : 7%)	5.5% (3% : 2.5%)	2% (1% : 1%)
Network AM peak hour	100% (70% : 30%)	68% (53.5% : 14.5%)	20.5% (11% : 9.5%)	9.5% (4.5% : 5%)	2% (1% : 1%)
Network PM peak hour	100% (34% : 66%)	70% (16.5% : 53.5%)	21% (13% : 8%)	7% (3.5% : 3.5%)	2% (1% : 1%)
Daily	100% (50% : 50%)	68% (34% : 34%)	20% (10% : 10%)	9% (4.5% : 4.5%)	3% (1.5% : 1.5%)

Figure 11: Vehicle Classification

The application of the vehicle classification breakdown results in the below light, medium, long and double combo vehicle trips;

- Light Vehicle (Class 1)
 - 82 vehicle trips in the AM site peak (58 in, 24 out);
 - 77 vehicle trips in the PM site peak (19 in, 58 out);
 - 53 vehicle trips in the AM peak hour (42 in, 11 out);
 - 67 vehicle trips in the PM peak hour (16 in, 51 out); and
 - 883 vehicle trips per day (442 in, 442 out).
- Medium Vehicle (Class 2-5)
 - 26 vehicle trips in the AM site peak (9 in, 17 out);
 - 21 vehicle trips in the PM site peak (14 in, 7 out);

- 16 vehicle trips in the AM peak hour (9 in, 7 out);
- 20 vehicle trips in the PM peak hour (12 in, 8 out); and
- 261 vehicle trips per day (131 in, 131 out).

➤ Long Vehicle (Class 6-9)

- 9 vehicle trips in the AM site peak (5 in, 3 out);
- 6 vehicle trips in the PM site peak (3 in, 4 out);
- 7 vehicle trips in the AM peak hour (4 in, 4 out);
- 8 vehicle trips in the PM peak hour (3 in, 3 out); and
- 116 vehicle trips per day (57 in, 57 out).

➤ Double Combo Vehicle (Class 10-11)

- 2 vehicle trips in the AM site peak (2 in, 1 out);
- 2 vehicle trips in the PM site peak (1 in, 1 out);
- 2 vehicle trips in the AM peak hour (1 in, 1 out);
- 2 vehicle trips in the PM peak hour (1 in, 1 out); and
- 39 vehicle trips per day (19 in, 19 out).

It is noted that the development does not service vehicles classified as 'Double Combo Vehicles (Class 10-11)', as such, for the purpose of a traffic and intersection performance assessment on the development, all vehicles classes 2 or above, have been grouped as 'Heavy Vehicles'.

It is also noted that the network peak traffic generation has been utilised for the net traffic generation assessment, as the development's site peak traffic generation will occur outside of the network peak period

8.3 Net Traffic Generation

Taking into account the existing approved warehouse on site which is to be demolished, the net traffic generation resultant due to the proposed development can be summarised as follows:

- +67 vehicle trips in the AM network peak hour (+49 in, +18 out); and
- +92 vehicle trips in the PM network peak hour (+31 in, +61 out).

8.4 Intersection Performance

8.4.1 Traffic Surveys

For the purposes of assessing the traffic impacts of this development, surveys were undertaken of the most critical intersections within proximity of the site. These surveys were performed during the network peak periods between 7:00am to 9:00am and 2:30pm to 6:00pm on Thursday, 16th November 2023, at the following key intersections:

- Foreshore Road, Botany Road and Penrhyn Road
- Botany Road and Excell Street
- Botany Road and Hill Street
- Botany Road and Stephen Road
- McPherson Street and Coal Pier Road
- Stephen Road and Swinbourne Street

8.4.2 Network Distribution

In order to approximate the net impacts on the surrounding key intersections, the below splits were applied to the net traffic generation. The proposed vehicle trips have been distributed across the network:

- Network Peak Traffic Generation
 - 78 vehicle trips per hour during the AM peak; and, (55 in, 23 out)
 - 96 vehicle trips per hour during the PM peak (33 in, 63 out)

Comprising of the following:

- Stephen Road Access:
 - Light Vehicles (Class 1)
 - 21 vehicle trips per hour during the AM peak; and, (16 in, 4 out)
 - 26 vehicle trips per hour during the PM peak. (6 in, 20 out)
- Coal Pier Road Access:
 - Light Vehicles (Class 1)
 - 32 vehicle trips per hour during the AM peak; and, (26 in, 7 out)
 - 41 vehicle trips per hour during the PM peak. (10 in, 31 out)

- Heavy Vehicles (Class 2+)
 - 25 vehicle trips per hour during the AM peak; and, (14 in, 12 out)
 - 30 vehicle trips per hour during the PM peak. (17 in, 13 out)

The distribution of traffic into the adjacent road network is influenced by the following factors:

- Journey to work data for residents and employees;
- Turning restrictions within the existing road network;
- Convenient connections to/from arterial roads; and
- Location of access entry and exit points.

Having regard for the above, the following distributions have been assumed:

- Light Vehicles
 - 44% of traffic will depart/arrive from the north via Stephen Road;
 - 30% of traffic will depart/arrive from the west via Botany Road; and
 - 26% of traffic will depart/arrive from the west via Foreshore Road.
- Heavy Vehicles
 - 90% of traffic will depart/arrive from the west via Foreshore Road; and
 - 10% of traffic will depart/arrive from the south via Penrhyn Road;

The resultant net traffic impacts are presented in **Figure 12** and **Figure 13** below.

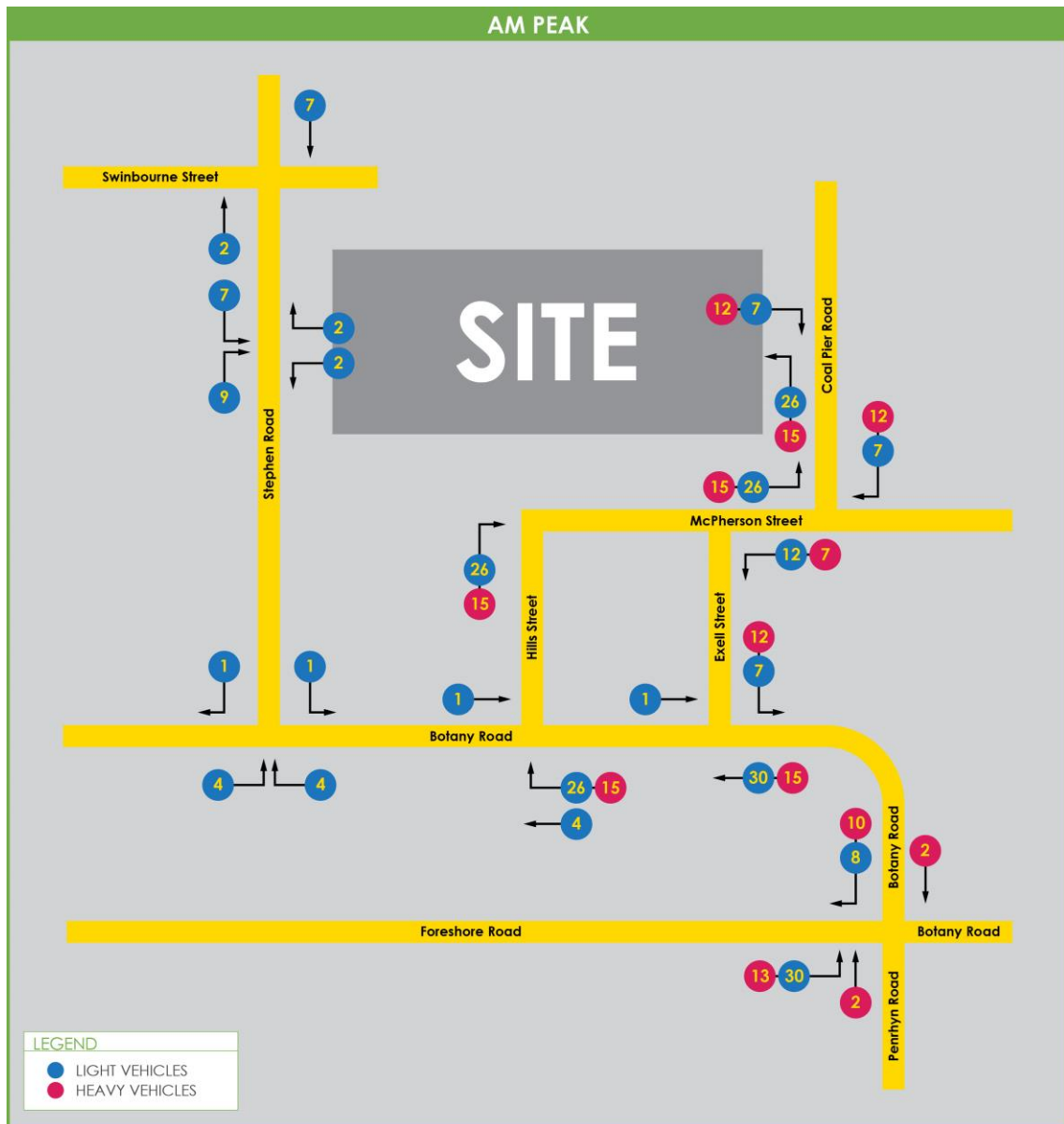


Figure 12: AM Net Traffic Trips

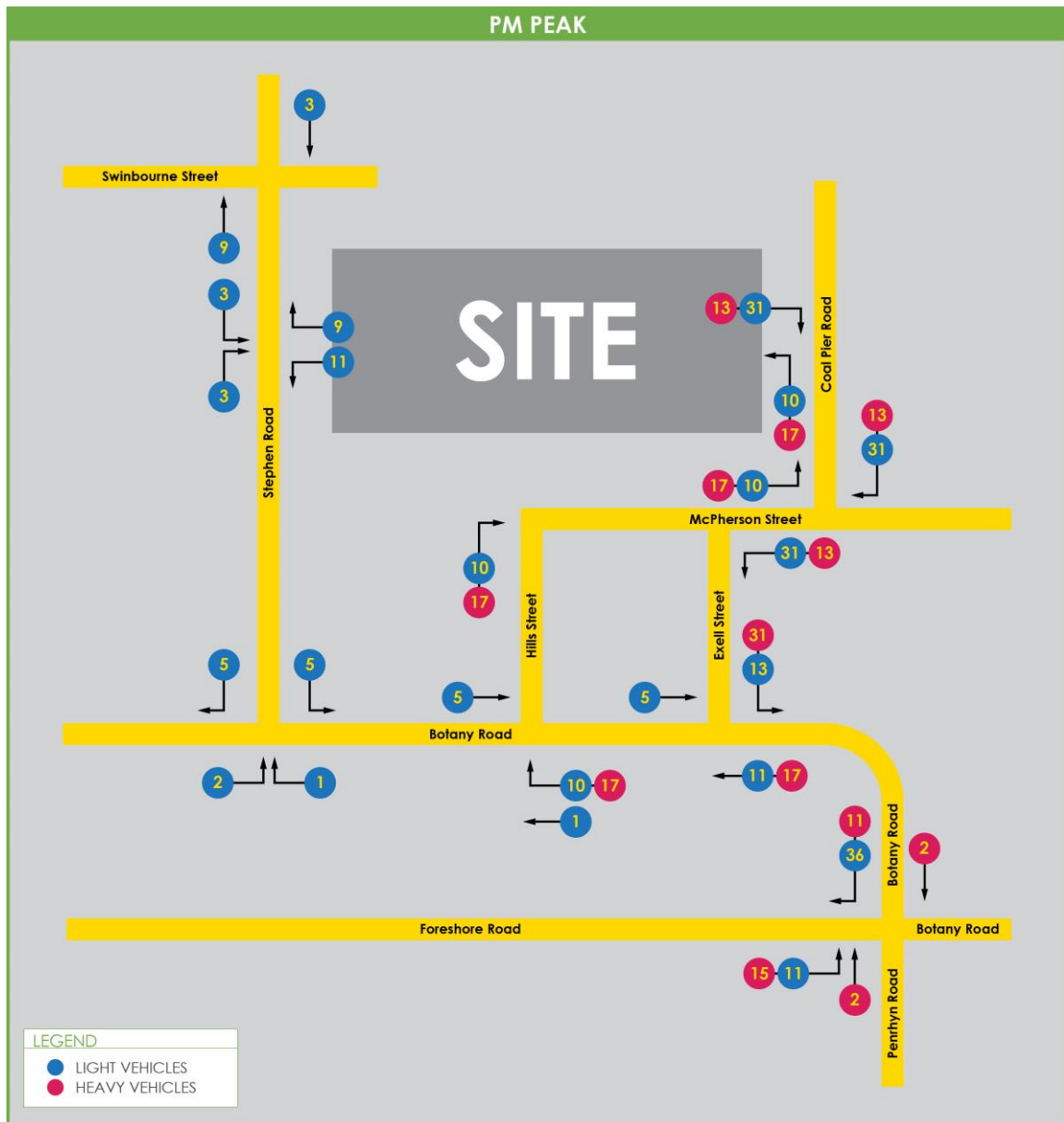


Figure 13: PM Net Traffic Trips

8.4.3 Modelling Scenarios

In order to assess the potential traffic impacts of a proposed development, the following scenarios were identified. These scenarios were undertaken in response to feedback from TfNSW during agency consultation.

- Base Case
- Base Case plus Development
- Base Case plus Development (10 Year Growth)

8.4.4 SIDRA Intersection Analysis

The surveys were analysed using the SIDRA Intersection 9 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 5**.

Table 5: 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 **Tables 7 - 8**. Reference should also be made to the SIDRA outputs provided in **Appendix B** which provide detailed results for each movement.

8.4.5 Base Case Scenario

Table 6: Base Case Scenario

Intersection	Control Type	Period	Degree of Saturation	Intersection Delay	Level of Service
Foreshore Road, Botany Road and Penrhyn Road	Signalised	AM	0.891	26.3	B
		PM	0.848	21.6	B
Botany Road and Excell Street	Priority	AM	0.441	12.0	A
		PM	0.408	7.8	A
Botany Road and Hills Street	Priority	AM	0.443	14.8	B
		PM	0.296	9.3	A
Botany Road and Stephen Road	Priority	AM	0.442	15.3	B
		PM	0.481	14.0	A
McPherson Street and Coal Pier Road	Priority	AM	0.135	6.7	A
		PM	0.145	6.4	A
Stephen Road and Swinbourne Street	Signalised	AM	0.700	23.6	B
		PM	0.785	29.9	C

It can be seen from Table 6 that the key intersections in the vicinity of the site currently operate at LoS 'B' or better in the AM and PM peak hour periods, with the exception of Foreshore Road, Botany Road and Penrhyn Road which operates at a LoS 'C' in the AM peak, and Stephen Road and Swinbourne Street which operates at a LoS 'C' in both AM and PM peaks.

8.4.6 Base Case plus Development Scenario

Table 7: Base Case + Development Scenario

Intersection	Control Type	Period	Degree of Saturation	Intersection Delay	Level of Service
Foreshore Road, Botany Road and Penrhyn Road	Signalised	AM	0.909	27.5	B
		PM	0.904	25.2	B
Botany Road and Excell Street	Priority	AM	0.478	12.5	A
		PM	0.465	8.4	A
Botany Road and Hills Street	Priority	AM	0.542	16.8	B
		PM	0.299	10.0	A
Botany Road and Stephen Road	Priority	AM	0.447	15.5	B
		PM	0.521	14.7	B
McPherson Street and Coal Pier Road	Priority	AM	0.167	7.0	A
		PM	0.205	7.2	A
Stephen Road and Swinbourne Street	Signalised	AM	0.709	23.8	B
		PM	0.800	31.4	C

It can be seen from Table 7 that the key intersections in the vicinity of the site will continue to operate at the same LoS with only minor increases in intersection delay for all intersections. It is noted the exception of Botany Road and Stephen Road which has a reduced LoS 'B' in the PM peak, however it is important to consider that the intersection only sees an increased intersection delay of less than one (1) second.

8.4.7 Base Case plus Development Scenario (10 Year Growth)

Table 8: Base Case + Development Scenario (10 Year Growth)

Intersection	Control Type	Period	Degree of Saturation	Intersection Delay	Level of Service
Foreshore Road, Botany Road and Penrhyn Road	Signalised	AM	1.162	132.2	F
		PM	1.067	83.6	F
Botany Road and Excell Street	Priority	AM	0.726	20.3	B
		PM	0.630	11.2	A
Botany Road and Hills Street	Priority	AM	0.921	47.4	D
		PM	0.373	13.1	A
Botany Road and Stephen	Priority	AM	0.607	30.4	C

Road		PM	0.716	25.1	B
McPherson Street and Coal Pier Road	Priority	AM	0.197	7.5	A
		PM	0.254	8.1	A
Stephen Road and Swinbourne Street	Signalised	AM	0.912	32.9	C
		PM	0.888	47.4	D

It can be seen from Table 8 that the majority of key intersections in the vicinity of the site will continue to operate satisfactorily with increases in intersection delay for all intersections. However, it is noted the exception of the intersection Foreshore Road/Botany Road/Penrhyn Road, which has a reduced LoS 'F' in both the AM and PM peak, Botany Road/Hills Street which has a reduced LoS 'D' in the AM peak, and Stephen Road/Swinbourne Street which has a reduced LoS 'C' and 'D' in the AM and PM peak respectively. However it is important to consider the 10 year growth of 2% on the surrounding network is considered extremely conservative for the area, with the additional traffic from the development being a very minor component of the total traffic.

8.4.8 Summary

In summary, it is evident that all intersections will continue to operate satisfactorily, with the development only increasing the intersection delay across all key intersection by a very minor amount. Based on the above results, no infrastructure upgrades or signal timing adjustments are considered necessary to facilitate the proposed development. These results are expected noting the moderate increase in traffic associated with developments of this nature (large format warehouse), and the distribution of traffic through the local network.

8.5 Cumulative Impacts Scenario

8.5.1 Nearby Approved Developments

In order to assess the cumulative impacts of nearby approved developments, the DA traffic reports/Council's Assessment Reports of the following developments were analysed in **Table 9** below.

Table 9: Nearby Approved Developments

Address	Proposed Development Description	Traffic Generation	Impacts
2 – 8 Baker Street, Banksmeadow SSD-48411467	Multi-Level Warehouse	Max increase of 9 vehicle trips per hour	Minor impacts to intersections near subject site, modelled traffic does not pass any of the intersections near subject site
Orica Southlands SSD-9691	Warehouse Estate	AM – 113 trips/hour (79 in, 34 out) PM – 122 trips (37 in, 85 out)	Under construction during surveys. Included in cumulative assessment
9 Coal Pier Road, Banksmeadow DA-2020/417	Warehouse development with eight (8) tenancies	AM – 94 trips/hour (71 in, 22 out) PM – 63 trips/hour (19 in, 44 out)	Under construction during surveys. Included in cumulative assessment

It is noted that the traffic volumes from Orica Southlands and 9 Coal Pier Road, Banksmeadow has been assessed with traffic movements traveling through the key intersections of the proposed development. The traffic generated by the above approved and under construction developments, equates to the following:

- An additional 207 vehicles per hour in AM peak traveling on the key intersections; and
- An additional 185 vehicles per hour in PM peak traveling on the key intersections;

The assumptions within each traffic report listed above have been adopted in the cumulative modelling scenario for consistency. The trip distribution of traffic onto the surrounding road network is summarised in **Figure 11** and **Figure 12** below.

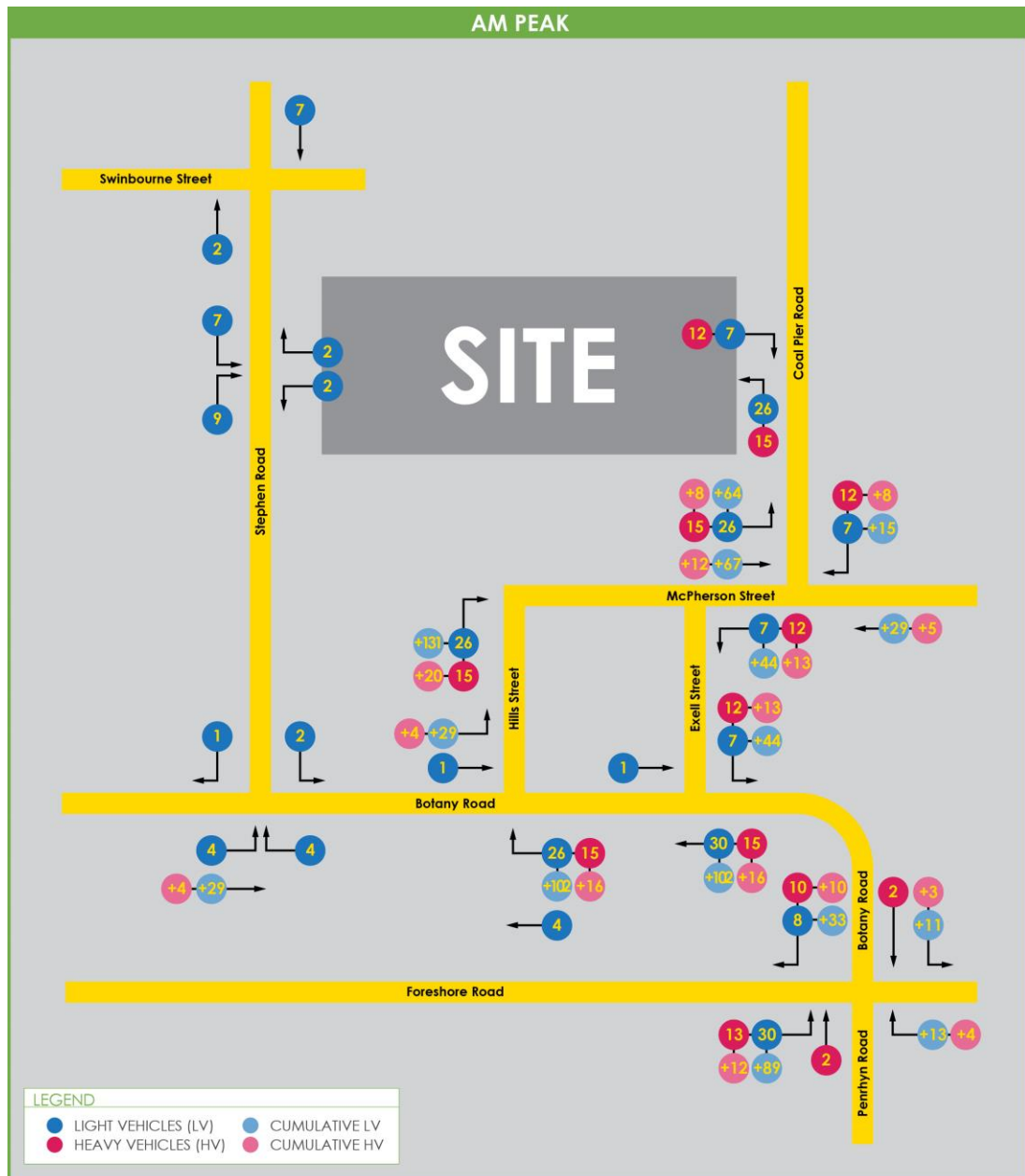


Figure 11: AM Peak Hour Traffic Distribution including Approved Developments

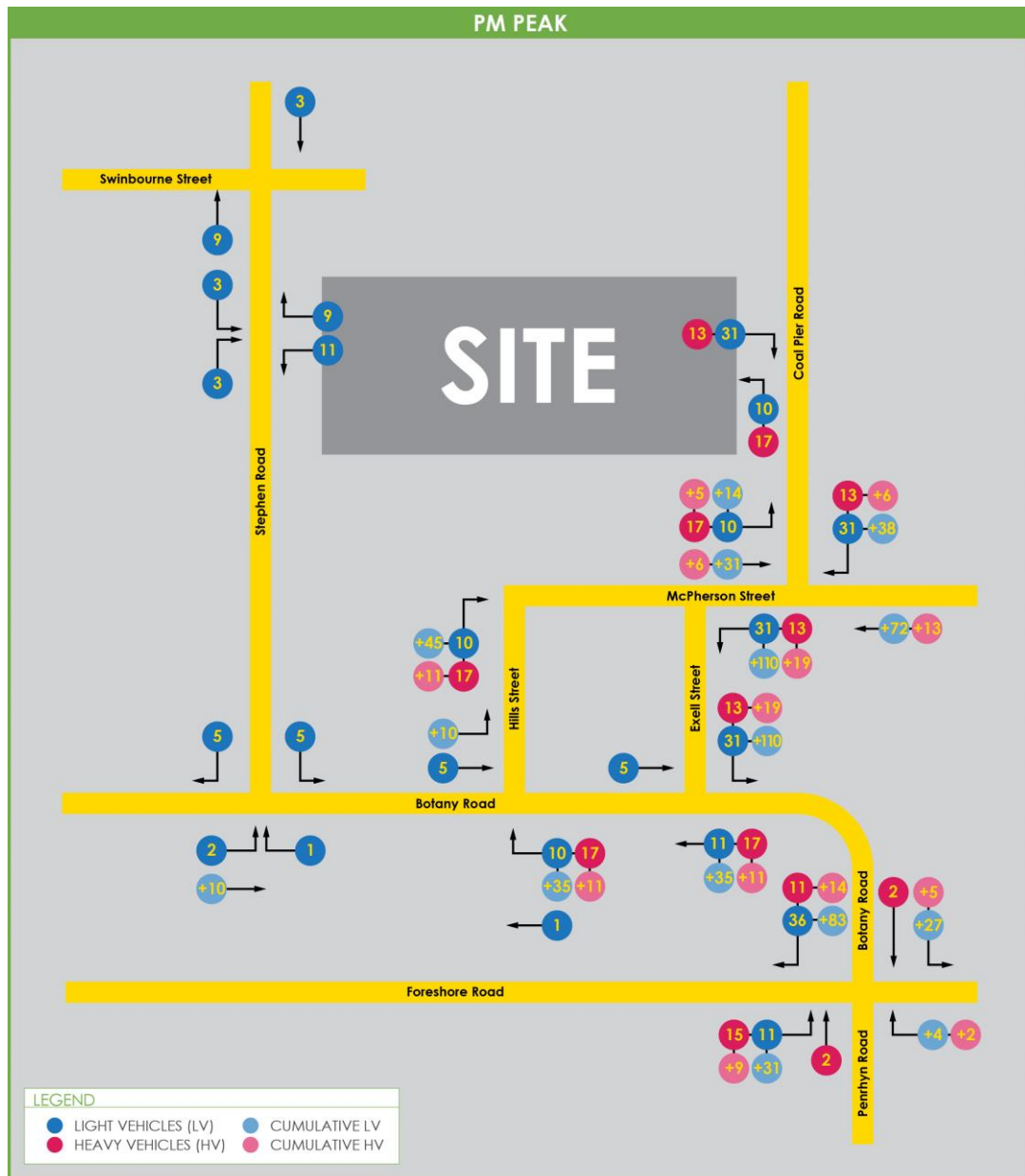


Figure 12: PM Peak Hour Traffic Distribution including Approved Developments

8.5.2 Existing Plus Development Plus Approved Developments Scenario

Table 10: Existing Plus Development Plus Approved Developments Scenario

Intersection	Control Type	Period	Degree of Saturation	Intersection Delay	Level of Service
Foreshore Road, Botany Road and Penrhyn Road	Signalised	AM	0.977	46.3	D
		PM	0.978	42.0	C
Botany Road and Excell Street	Priority	AM	0.556	13.3	A
		PM	0.604	10.0	A
Botany Road and Hills Street	Priority	AM	0.780	23.3	B
		PM	0.318	10.6	A
Botany Road and Stephen Road	Priority	AM	0.463	16.3	B
		PM	0.527	15.0	B
McPherson Street and Coal Pier Road	Priority	AM	0.258	8.8	A
		PM	0.304	8.2	A
Stephen Road and Swinbourne Street	Signalised	AM	0.709	23.8	B
		PM	0.800	31.4	C

*LoS of Priority intersections based on worst performing movement

It can be seen from Table 10 that the key intersections in the vicinity of the site will continue to operate at the same LoS with only minor increases in intersection delay for all intersections. It is noted the exception of the Foreshore Road, Botany Road and Penrhyn Road intersection which has a reduced LoS 'C' in the PM peak, however it is important to consider that the intersection only sees an increased intersection delay of six (6) seconds once all the nearby developments are operating.

8.6 Construction Traffic Impacts

Construction traffic generation of approximately 50 vehicles per day is anticipated at the peak of the works, with 40 of these vehicles to be heavy vehicles and 10 light vehicles. It is anticipated that a peak of 10 two-way truck movements may occur during a peak one hour period.

Given the anticipated construction traffic volumes being approximately half of the vehicle trips expected to be generated by the development during operation, it is therefore

reasonable to conclude the surrounding road network can satisfactorily accommodate this volume of traffic.

Furthermore, trips generated by construction staff will typically be outside of the main road network peaks. The impact of construction traffic volumes on the external network is therefore expected to be inconsequential.

9. ACCESS AND INTERNAL DESIGN ASPECTS

9.1 Vehicular Access

9.1.1 Northern Stephen Road Access (Light Vehicles and Fire Only)

The proposed northern vehicular access via Stephen Road will provide access to a multi-level car parking with 93 car parking spaces. The proposed access will therefore require a Category 1A driveway under AS2890.1 (2004), being a combined access providing an entry and exit with a width of minimum 3.0 to 5.5, as well as designed to accommodate a 12.5m Heavy Rigid Vehicle, fire trucks, to enter and exit the site. In response, the development provides a driveway width of 6.0 metres. Reference is made to the swept path analysis presented in **Appendix C**.

9.1.2 Southern Stephen Road Access (Fire Only)

The proposed southern vehicular access via Stephen Road will provide access for fire brigade. The proposed access has been designed to accommodate a 12.5m Heavy Rigid Vehicle (HRV) to enter and exit the site. In response, the development provides a driveway width of 5.2m.

9.1.3 Coal Pier Road Access (Light Vehicles Only)

The proposed vehicular access via Coal Pier Road will provide access to a multi-level car parking to 147 car parking spaces. The proposed access will therefore require a Category 1A driveway under AS2890.1 (2004), being a combined access providing an entry and exit with a width of minimum 3.0 to 5.5. In response, the development provides a driveway width of 6.5 metres.

9.1.4 Southern Coal Pier Road Access (Heavy Vehicle Ingress Only)

The proposed southern heavy vehicular access via Coal Pier Road will provide access to all the warehouses across both levels. The proposed access has been designed to accommodate a 20.0m Articulated Vehicles (AV) to enter the site. In response, the development provides a driveway width of 10.5m. Reference is made to the swept path analysis presented in **Appendix C**.

9.1.5 Northern Coal Pier Road Access (Heavy Vehicle Egress Only)

The proposed northern heavy vehicular access via Coal Pier Road will provide egress for all warehouses. The proposed access has been designed to accommodate an AV to exit the site. In response, the development provides a driveway width of 8.1m. Reference is made to the swept path analysis presented in **Appendix C**.

9.2 Internal Design

The carpark areas are to be designed in accordance with AS2890.1 (2004), AS2890.2 (2018) and AS2890.6 (2009), with the following characteristics noteworthy:

9.2.1 Parking Modules

- All staff car parking spaces are designed in accordance with AS2890.1 (2004) User Class 1A, being a minimum width of 2.4 metres and length of 5.4 metres.
- All accessible parking spaces are designed in accordance with AS2890.6 (2009), being a minimum width of 2.4 metres, length of 5.4 metres and provided an adjacent shared area with the same dimensions.
- All loading bays are to be designed in accordance with AS2890.2 (2018).
- All spaces located adjacent obstructions of greater than 150mm in height are to be provided with an additional width of 300mm.

9.2.2 Clear Head Heights

- A minimum clear head height of 2.2 metres is to be provided for all trafficable areas within the carpark areas, as required under AS2890.1 (2004).
- A minimum clear head height of 2.5 metres is to be provided for all accessible spaces, as required under AS2890.6 (2022).
- Minimum clear head height clearances within dock areas/truck travel paths are to be in accordance with AS2890.2 (2018).

9.2.3 Light Vehicle Ramps

- All vehicular accesses are to be designed in accordance with AS2890.1 (2004) and provide a maximum gradient of 1 in 20 (5%) for the initial 6.0 metres from the property boundary.
- All light vehicle ramps are designed in accordance with AS2890.1 (2004), being a maximum gradient of 1 in 4 (25%).
- All light vehicle ramps are to provide sag/summit transitions with a maximum change of grade of 1 in 8 (12.5%) over a minimum of 2.0m, as required under AS2890.1 (2004).

9.2.4 Heavy Vehicle Ramps

- All vehicular accesses are to be designed in accordance with AS2890.1 (2004) and provide a maximum gradient of 1 in 20 (5%) for the initial 6.0 metres from the property boundary.
- All heavy vehicle vehicle ramps are designed in accordance with AS2890.2 (2018), being a maximum gradient of 1 in 6.5 (15.4%).
- All heavy vehicle ramps are to provide sag/summit transitions with a maximum change of grade of 1 in 16 (6.25%) over a minimum of 10.0m, as required under AS2890.2 (2018).

9.2.5 Other Considerations

- All columns are to be located outside of the parking space design envelope, as required under AS2890.1 (2004), Figure 5.2.
- All dead-end aisles are to provide the required 1.0 metre aisle extension, as required under AS2890.1 (2004), Figure 2.3.
- Appropriate visual sight splays are to be provided at all vehicular accesses, as required under AS2890.1 (2004), Figure 3.3.
- All motorcycle parking spaces are designed in accordance with AS2890.1 (2004) being a minimum width of 1.2 metres and length of 2.5 metres.
- All bicycle parking spaces are designed in accordance with AS2890.3 (2015) being a minimum width of 0.5 metres and length of 1.8 metres.

9.3 Summary

In summary, the internal configuration of the carpark areas are 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 would be imposed requiring compliance with these standards.

10. CONSULTATION

10.1 TfNSW Comments

The Transport for New South Wales (TfNSW) has reviewed the Traffic Impact Assessment and provided comments on the 3rd April 2025, outlined in **Table 11** below.

Table 11: TfNSW Comments and Responses

TfNSW Comment	Response
Traffic Impact Assessment (TIA) Comments	
a. The traffic assessment scope generally follows the TfNSW advice letter to DPHI dated 16 January 2024 (SYD22/01604/02) with the exception of the following: "Weekly tube surveys on Stephen Road and Botany Road to understand the change in heavy and light vehicle volumes / percentages between the existing conditions and post development"	Weekly tube counts have been undertaken and provided in Appendix D
b. Following a review of the TIA dated November 2024, the following comments are made on the TIA.	
i. While tube surveys are referenced in the report in Section 8.1 of the TIA, the results are not provided. Please include the tube survey results for review.	Weekly tube counts have been undertaken and provided in Appendix D
ii. In Section 8.2 of the TIA, the site peak hour and network peak hour are referenced. Please advise what the likely site peak hour and road network peak hour are and are they expected to overlap at this site?	The TIA appropriately adopts the road network peak hour to assess the operational performance of the surrounding road network, which represents the most critical conditions for intersection and network capacity. The Guide to Traffic Impact Assessment (GTIA) provides separate traffic generation rates for the site peak hour and the road network peak hour, recognising that these periods may occur at different times and therefore may generate different traffic characteristics. For the purpose of road network capacity and intersection performance assessment, the road network peak hour is the relevant assessment period. The site peak hour rates provided in the GTIA are intended for other assessment purposes and do not necessarily correspond with the surrounding network peak periods. If the site peak hour and road network peak hour were expected to overlap, the GTIA would present the same traffic generation rates for both periods rather than separate values. Accordingly, the TIA has correctly adopted the road network peak hour for the purposes of assessing potential impacts on the surrounding transport network.

TfNSW Comment	Response												
iii. Figure 12 and Figure 13 of the TIA estimate no additional right turning vehicles from Foreshore Road into Botany Road. Please include justification for this or if additional vehicles are anticipated to use the movement, please document the change in the queue for the right turn into Botany Road.	Reference should be made to Section 8.4.2. The eastern leg of the Botany Road / Foreshore Road intersection, particularly right-turning vehicles into Botany Road, represents only a minor proportion of the surveyed traffic movements. Accordingly, the same observed proportion has been adopted to distribute the proposed development traffic.												
iv. The cycle times modelled for the two signalised intersections appear incorrect. Please confirm the cycle times on the day of the survey as a review of SCATS plan data indicates the following cycle times: <table><tr><th>Intersection TCS Number</th><th>Intersection</th><th>AM Cycle Time</th><th>PM Cycle Time</th></tr><tr><td>1525</td><td>Foreshore Road / Botany Road / Penrhyn Road</td><td>130 sec</td><td>130 sec</td></tr><tr><td>2763</td><td>Stephen Road / Swinbourne Road</td><td>100 sec</td><td>100 sec</td></tr></table>	Intersection TCS Number	Intersection	AM Cycle Time	PM Cycle Time	1525	Foreshore Road / Botany Road / Penrhyn Road	130 sec	130 sec	2763	Stephen Road / Swinbourne Road	100 sec	100 sec	Cycle times in the SIDRA models have been updated to match the cycle times on the day of the survey provided by TfNSW.
Intersection TCS Number	Intersection	AM Cycle Time	PM Cycle Time										
1525	Foreshore Road / Botany Road / Penrhyn Road	130 sec	130 sec										
2763	Stephen Road / Swinbourne Road	100 sec	100 sec										
v. While TfNSW cannot provide detailed comments on the SIDRA models without seeing the files, we note that storage at an intersection should be the length of a turn lane measured up to the point at which a vehicle can be stored within that lane and let vehicles in the other lane pass, rather than the length of the lane (i.e. including taper). TfNSW notes that the right turn bay for the Botany Road/Foreshore Road/Penrhyn Road intersection has been coded at 80m, where the likely storage for a vehicle to sit within the lane is likely closer to 61m, as shown below In other instances, the right turn bay distances seem to be out of date. For example, for the intersection of Botany Road and Hills Street the TIA has coded the Botany Road right turn bay as being 55m in length, whereas TfNSW information indicates that this is in fact over 220m in length (see image below). All distances for lane lengths and parking shall be reconfirmed, preferably with on-site verification.	The lengths of all turning lanes have been updated based on a review of the most recent available aerial photography to correspond with the available storage length that allows a vehicle to be fully accommodated within the turning lane while enabling through vehicles in the adjacent lane to pass unobstructed.												
vi. Other parameters to ensure are checked include walking speed set to 1.2m/s.	Pedestrian walking speeds have been updated to 1.2m/s as per TfNSW requirements.												

TfNSW Comment	Response
c. TfNSW also requires the provision of the electronic SIDRA files for review. These files will need to be updated to address the comments above. Details are also required on how the base model has been calibrated with on-site observations (e.g. instance queue lengths, delays, etc).	SIDRA files is to be submitted for TfNSW review with the revised DA.

10.2 Council Comments

The Bayside Council has reviewed the Traffic Impact Assessment and provided comments on the 3rd April 2025, outlined in **Table 12** below.

Table 12: Council Comments and Responses

Council Comments	Response
<u>24. Traffic, Parking and Access</u>	
a. Fire truck swept paths to Stephen Road were not provided, these swept paths for are to be provided for manoeuvring into and out of the driveways to Stephen Road. There shall be no loss of on-street parking for residents to accommodate the swept paths of the fire trucks	Reference should be made to Fire Truck swept paths provided in Appendix C .
b. The Traffic Impact Assessment (TIA) report does not undertake any future year assessment. This is not acceptable. The TIA shall be revised to undertake a future year traffic generation assessment (10 years after development completion) as per the Guide to Transport Impact Assessment, Section 3.4.1. A development of this scale needs to assess the future 10-year scenario on the intersections listed in Tables 7 & 8 of the TIA. Further traffic modelling is required to be presented for this development to properly understand the traffic impacts.	The submitted Transport Impact Assessment (TIA) is robust and comprehensive. It has been prepared in accordance with the <i>Guide to Traffic Impact Assessment (GTIA)</i> and directly responds to Transport for NSW's review comments, which did not require any further sensitivity testing or extended horizon modelling. The assessment has also accounted for surrounding committed developments, which collectively generate traffic volumes approximately double that of the proposed development. Accordingly, the TIA exceeds standard transport assessment requirements. In this context, Council's request for an additional 10-year future-year assessment is unwarranted. Notwithstanding the above, we have accommodated Council's request and undertaken a 10-year horizon assessment. Reference should be made to Section 8.4, which demonstrates that the surrounding road network will continue to operate within capacity with the proposed and committed developments, including a 10-year horizon incorporating background traffic growth (note that this results in double-counting the committed developments).

Council Comments	Response
c. It must be confirmed that all truck access for the development will be obtained from Coal Pier Road and that restrictions will be in place to prevent trucks from accessing the site from Stephen Road. The Applicant needs to provide further detail in relation to what measures will be in place to prevent trucks from attempting to enter the site via the large driveways on Stephen Road	All truck access will occur from Coal Pier Road, noting that truck access from Stephen Road will not be physically possible.
<u>25. Strategic Context</u>	
Recognition and reference to the relevant State and Bayside Transport Strategies (including SE Sydney Transport Strategy) should be cited in addition to the Greater Sydney Region Plan and Eastern City District Plan.	The proposal aligns with the strategic directions of the South East Sydney Transport Strategy and Bayside Council's Local Transport Strategy, which promote sustainable transport outcomes, mode shift, and efficient use of existing transport infrastructure. To support these objectives, a Green Travel Plan (GTP) has been separately prepared and submitted as part of the application as a proactive measure to encourage sustainable travel behaviour, prioritising walking, cycling, and public transport use. The GTP also facilitates the compliant and forward-looking provision of bicycle parking, motorcycle parking, and electric vehicle (EV) charging infrastructure within the development, demonstrating a commitment to integrated, low-emission, and future-ready transport solutions. By incorporating these measures, the development not only meets but exceeds standard transport sustainability expectations.
<u>26. Cycling networks</u>	
The site has high potential for considerable active transport mode share by employees. This has been further explored briefly in the Green Travel Plan (GTP), prepared by Traffix (dated, November 2024). Amended plans for the development should allow for the presence of (or setback from) a future bi-directional cycleway on the kerbside of Stephen Road (Route NS8 on the Bayside Bike Plan). Currently an undefined on-road cycle route exists, however, as designated in the Bayside Bike Plan 2024, Council have identified an upgrade of the road space of Stephen Road to accommodate a future cycleway link between Eastgardens and Botany Bay/Sir Joseph Banks Park. Access from this Stephen Road cycleway to the end-of-trip facilities within the development should be clear and well signposted and 'bicycle access' marked on the Site Plans adjacent to existing 'pedestrian access'.	The proposed bi-directional cycleway identified as Route NS8 within the Bayside Bike Plan 2024 appears to be located within the existing Stephen Road road reserve. Any future reallocation of carriageway space or delivery of cycling infrastructure within the public domain is a matter for Council and does not necessitate additional setback or land sterilisation by the applicant. The development has been designed to provide direct and legible bicycle access from Stephen Road to the proposed end-of-trip facilities. Bicycle access has been identified on the architectural drawings accordingly. On the above basis, no additional setback is considered warranted from a traffic engineering perspective.

Council Comments	Response
<u>27. Pedestrian Access</u>	
Future Site Plans should include detail relating to pedestrian walkways within the car park and loading areas. Designated pedestrian access corridors should be identified within the Site Plans, clearly marked within these areas of vehicular movement.	The internal car park and loading areas are designed as low-speed shared environments. Loading hardstand areas are high-risk, staff-only zones, as is typical for industrial warehouse developments, while the car park functions as a conventional low-speed environment accommodating vehicle manoeuvres and safe access to building entrances. Formal line-marked pedestrian corridors within active loading and manoeuvring areas are not proposed, as such treatments can create an implied pedestrian priority and a false sense of security within areas intended to operate as controlled shared zones. Instead, pedestrian access to building entries is clearly legible from all parking areas and supported by appropriate signage and pavement treatments at key interface points. The design intent is to minimise conflict through visibility, controlled vehicle speeds, and clear separation of user types, rather than through line marking.
<u>28. Public Transport</u>	
Bus routes 307 and 309 provide regular services and with 2 x bus stops located within 200m of the site. These stops are expected to be well utilised and were recently upgraded by Council. A path and public domain upgrade between the site and the bus stops should be considered to enhance pedestrian amenity and utility of nearby public transport services	Refer to Section 8 and Appendix C .
<u>29. Electric Vehicle (EV) Charging Spaces (TBC)</u>	
It is noted that the EIS (page 85) identifies that the development should consider equipping at least 25% of car spaces with "future EV charging capacity". This is not compliant with the BDCP 2022 rates for commercial developments: that at least 20% of the 243 parking spaces are provided with EV chargers. There is also no allocation of EV charging spaces on plans as required in the BDCP 2022. The development should be amended to meet or exceed these BDCP 2022 requirements..	Reference should be made to the updated plans provided in Appendix A XX car parking spaces are proposed to be equipped with EV chargers, in accordance with council's DCP.

Council Comments	Response
<u>30. Car Share</u>	
There is no inclusion or mention of car share in parking allocation within the development – Reference is made to the Bayside DCP 2022 and provision of car share for commercial premises requiring 1 car share space for every 1000m² of office GFA. Detail of this should be provided as part of the proposal with further detail outlined in the GTP. Location of the Car Share vehicles should be grouped together and in publicly accessible spaces (e.g. visitor parking areas adjacent to Stephen Road entrance).	Commercial premises are defined in the Bayside LEP 2022 as: - Commercial premises means any of the following: (a) business premises, (b) office premises, or (c) retail premises. A warehouse or distribution centre is separately defined as: - Warehouse or distribution centre means a building or place used mainly or exclusively for storing or handling items (whether goods or materials) pending their sale, but from which no retail sales are made, and does not include local distribution premises. Accordingly, there are no statutory car share requirements applicable to a warehouse or distribution centre under the Botany DCP 2022. It is also noted that the office spaces within the development are ancillary to the warehouse, with all parking requirements provided onsite. As such, provision of car share spaces would be considered unnecessary, excessive, and inappropriate in this context.
<u>31. Traffic, Transport and Accessibility</u>	
A summary of the traffic generation has been provided in the Traffic Impact Assessment, prepared by Trafix (dated, November 2024). Council encourages consultation with Transport for NSW (TfNSW) related to capacity of Botany Road, Excell and Hill Street intersection and the LoS of increasing volumes of heavy vehicles relying on this ingress/egress to Coal Pier Road. Enhancement of the heavy vehicle access route on Coal Pier Road to the Banksmeadow Industrial precinct should be considered by TfNSW to be inclusive as part of any early planning of any future Sydney Gateway Stage 2 (Port Botany to West Connex).	Noted.
<u>32. Bicycle Parking</u>	
The 114 Bicycle parking and 20 Motorcycle spaces are noted as meeting the BDCP 2022 requirements. Design of the paths and ramps that leading to and from the future Stephen Road cycleway (detailed as route NS8 in the Bayside Bike Plan) is requested so as to provide easily accessible end-of-trip facilities and bike parking spaces. It must be confirmed that the end of trip facilities provided comply with the requirements of Section 3.5.4 in the BDCP 2022.	Reference should be made to the updated plans shown in Appendix A, which show a total of 78 bicycle parking spaces, 16 motorcycle spaces and end of trip facilities.

11. CONCLUSIONS

The following is noteworthy:

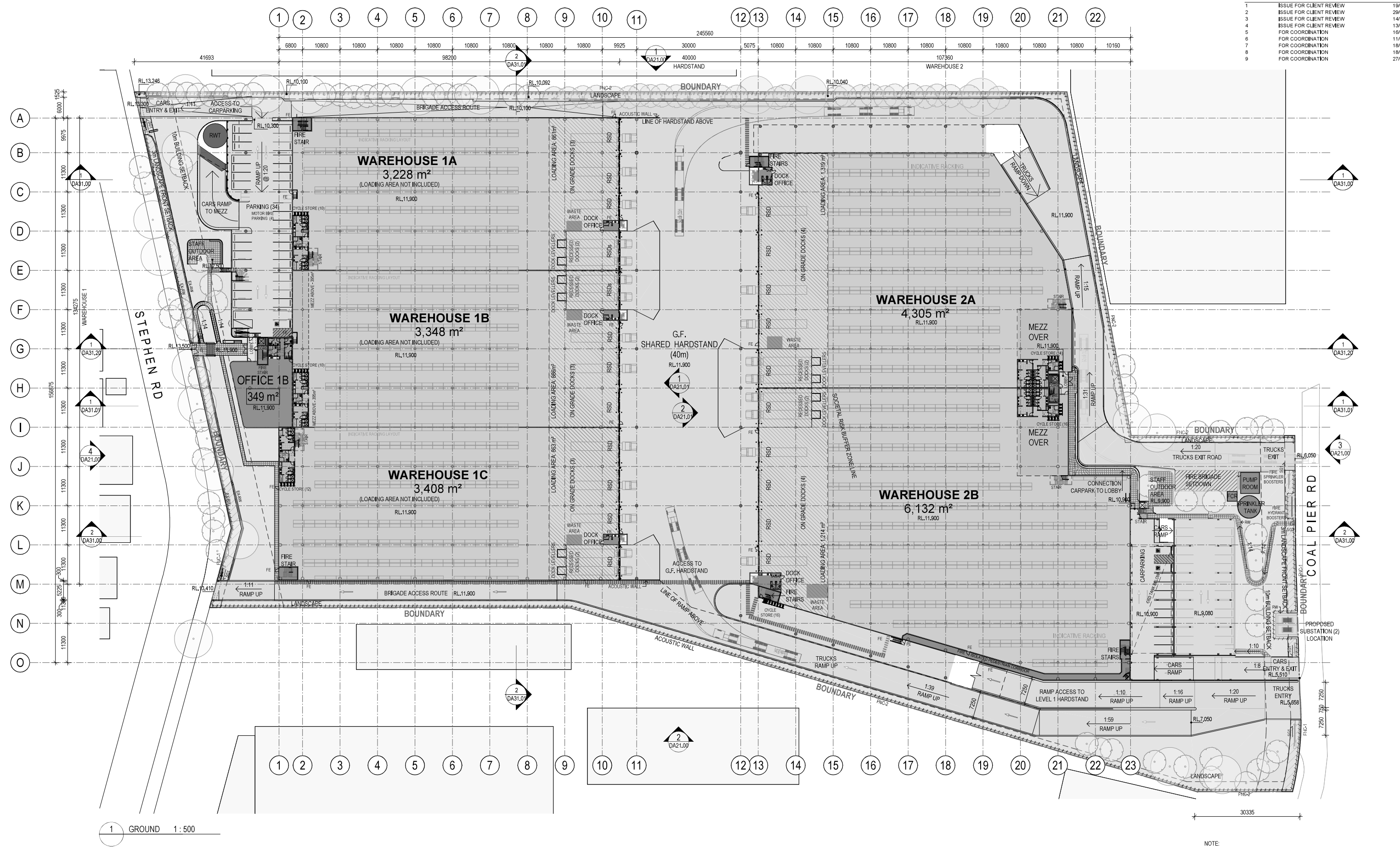
- The proposal seeks approval to construct a large format warehouse development at 49-61 Stephen Road, Banksmeadow, consisting of two (2) industrial complexes with a total of, 41,702m² GFA of warehouse floor space and 4,024m² GFA of ancillary office floor space.
- The site has convenient access to multiple bus routes with bus stops along Botany Road and Swinbourne Street. These public transport services provide connections to areas such as Eastgardens, Mascot and the Sydney CBD.
- The development provides a total of 240 car parking spaces comprising 93 car spaces located within the multi-level carpark of Stephens Road and 147 located within the multi-level carpark of Coal Pier Road which is in accordance with the requirements of Council's DCP, and all nominal car parking demands will be satisfactorily accommodated on site.
- The traffic generation arising from the development has been assessed as a net change over existing conditions and equates to an additional 67 vehicle trips per hour during the AM network peak and 92 vehicle trips per hour in the PM network peak.
- All traffic associated with the proposed development (over and above existing conditions) have been distributed across the adjacent road network and the SIDRA Intersection results demonstrate satisfactory results for key intersections in the vicinity of the site, hence no infrastructure upgrades or signal timing adjustments are considered necessary.
- Vehicular access to the site is to be provided via multiple driveways off Stephen Road and Coal Pier Road noting all truck movements are to be contained on Coal Pier Road. In addition, all driveways have been assessed to operate satisfactorily for the design vehicle.
- The off-street parking and loading areas have been assessed to generally comply with the requirements of AS 2890.1 (2004), AS 2890.2 (2018), AS 2890.3 (2015) and AS 2890.6 (2022).

This traffic impact assessment therefore demonstrates that the subject application is supportable on traffic planning grounds. TRAFFIX anticipates an ongoing involvement during the development approval process.

APPENDIX A

Architectural Plans

REVISIONS		
REV	DESCRIPTION	DATE
1	ISSUE FOR CLIENT REVIEW	19/06/2025
2	ISSUE FOR CLIENT REVIEW	29/08/2025
3	ISSUE FOR CLIENT REVIEW	14/10/2025
4	ISSUE FOR CLIENT REVIEW	13/01/2026
5	FOR COORDINATION	18/01/2026
6	FOR COORDINATION	11/02/2026
7	FOR COORDINATION	18/02/2026
8	FOR COORDINATION	18/03/2026
9	FOR COORDINATION	27/03/2026



GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
DP - DOWNPIPES
FE - FIRE EXIT
RW - RETAINING WALL
TB - TURNING BAY

GEF - GROUND EXHAUST FAN
RWT - RAINWATER TANK
SEF - SMOKE EXHAUST FAN
SG1 - SLIDING GATE
SG2 - SWING GATE
SG3 - PEDESTRIAN SWING GATE
EX-RW - EXISTING RETAINING WALL

--- SITE BOUNDARY
--- BUILDING SETBACK
--- LANDSCAPE SETBACK
--- SOCIETAL RISK BUFFER ZONE

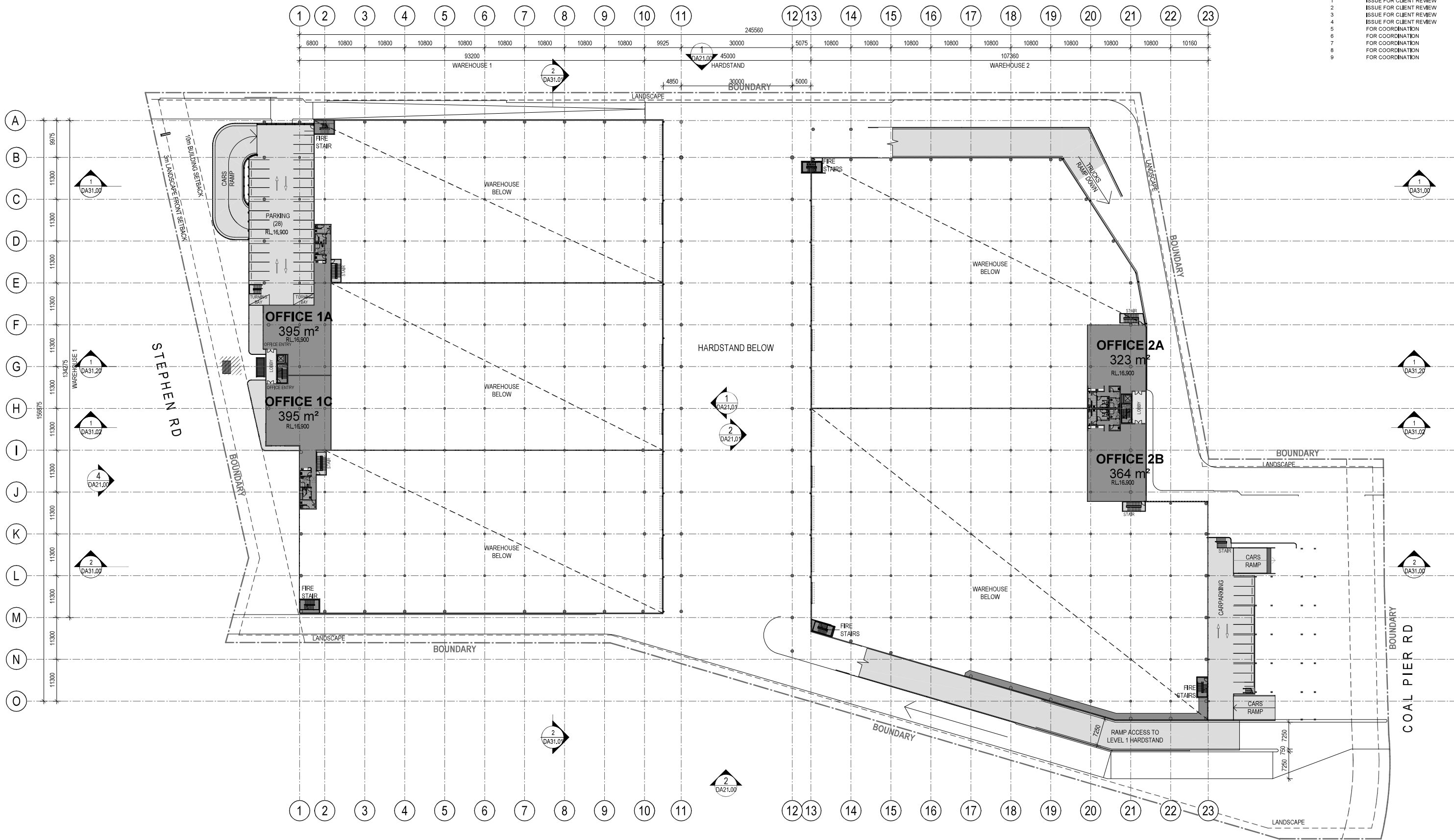
FNC-1 - PALISADE FENCE 2.4M (H)
FNC-2 - CHAINWIRE FENCE (2.1m H) + BARB
EXISTING TREES TO BE RETAINED

OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES

LANDSCAPE AREA
LOBBY AREA
WASTE STORAGE AREA

NOTE:
REFER TO SITE PLAN DA01.20 FOR AREA SCHEDULE

REVISIONS		
REV	DESCRIPTION	DATE
1	ISSUE FOR CLIENT REVIEW	19/06/2025
2	ISSUE FOR CLIENT REVIEW	29/08/2025
3	ISSUE FOR CLIENT REVIEW	14/10/2025
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7	FOR COORDINATION	18/02/2026
8	FOR COORDINATION	18/02/2026
9	FOR COORDINATION	27/03/2026



1 GROUND M - AREA 1 : 500

GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
DP - DOWNPIPES
FE - FIRE EXIT
RW - RETAINING WALL
TB - TURNING BAY

GEF - GROUND EXHAUST FAN
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EX-RW - EXISTING RETAINING WALL

--- SITE BOUNDARY
--- BUILDING SETBACK
--- LANDSCAPE SETBACK
--- SOCIETAL RISK BUFFER ZONE

FNC-1 - PALISADE FENCE 2.4M (H)
FNC-2 - CHAINWIRE FENCE (2.1m H) + BARB
EXISTING TREES TO BE RETAINED

OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES
LANDSCAPE AREA
LOBBY AREA
WASTE STORAGE AREA

FOR COORDINATION



ESR - 49 Stephen Rd Banksmeadow
49 stephen Road, Banksmeadow

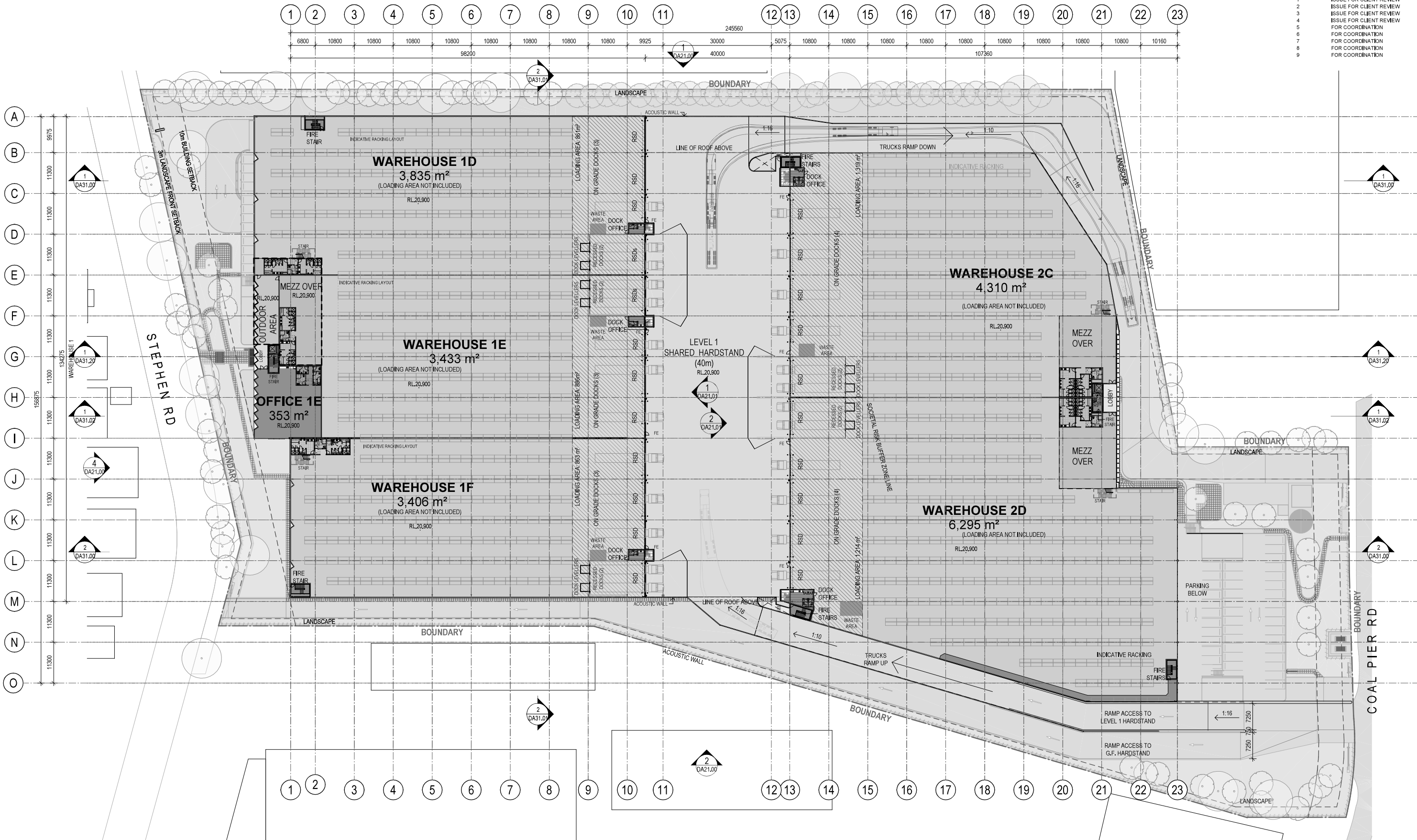
0m 6,25 13 25m



WAREHOUSE GF MEZZ PLAN

Date 27/03/2026 Scale As indicated@A1 Project No 25189 DA10.02 9

REVISIONS		
REV	DESCRIPTION	DATE
1	ISSUE FOR CLIENT REVIEW	19/06/2025
2	ISSUE FOR CLIENT REVIEW	29/08/2025
3	ISSUE FOR CLIENT REVIEW	14/10/2025
4	ISSUE FOR CLIENT REVIEW	13/01/2026
5	FOR COORDINATION	18/01/2026
6	FOR COORDINATION	11/02/2026
7	FOR COORDINATION	18/02/2026
8	FOR COORDINATION	18/02/2026
9	FOR COORDINATION	27/03/2026



GENERAL LEGEND:

COL-C - CONCRETE COLUMN
COL-S - STEEL COLUMN
RSD - ROLLER SHUTTER DOOR
DP - DOWNPIPES
FE - FIRE EXIT
RW - RETAINING WALL
TB - TURNING BAY

GEF - GROUND EXHAUST FAN
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SG1 - SLIDING GATE
SG2 - SWING GATE
SG3 - PEDESTRIAN SWING GATE
EX-RW - EXISTING RETAINING WALL

--- SITE BOUNDARY
--- BUILDING SETBACK
--- LANDSCAPE SETBACK
--- SOCIETAL RISK BUFFER ZONE

FNC-1 - PALISADE FENCE 2.4M (H)
FNC-2 - CHAINWIRE FENCE (2.1m H) + BARB
○ EXISTING TREES TO BE RETAINED

OFFICE AREA
WAREHOUSE AREA
FIRE SERVICES

LANDSCAPE AREA
LOBBY AREA
WASTE STORAGE AREA

FOR COORDINATION

sbo

ESR - 49 Stephen Rd Banksmeadow
49 stephen Road, Banksmeadow

0m

1

WAREHOUSE L1 FLOOR PLAN

Date 27/03/2026

Scale As indicated @A1

Project No 25189

DA10.03 9

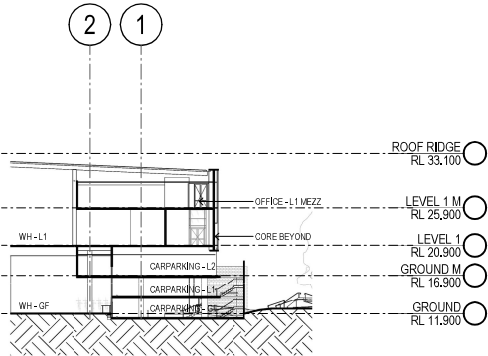
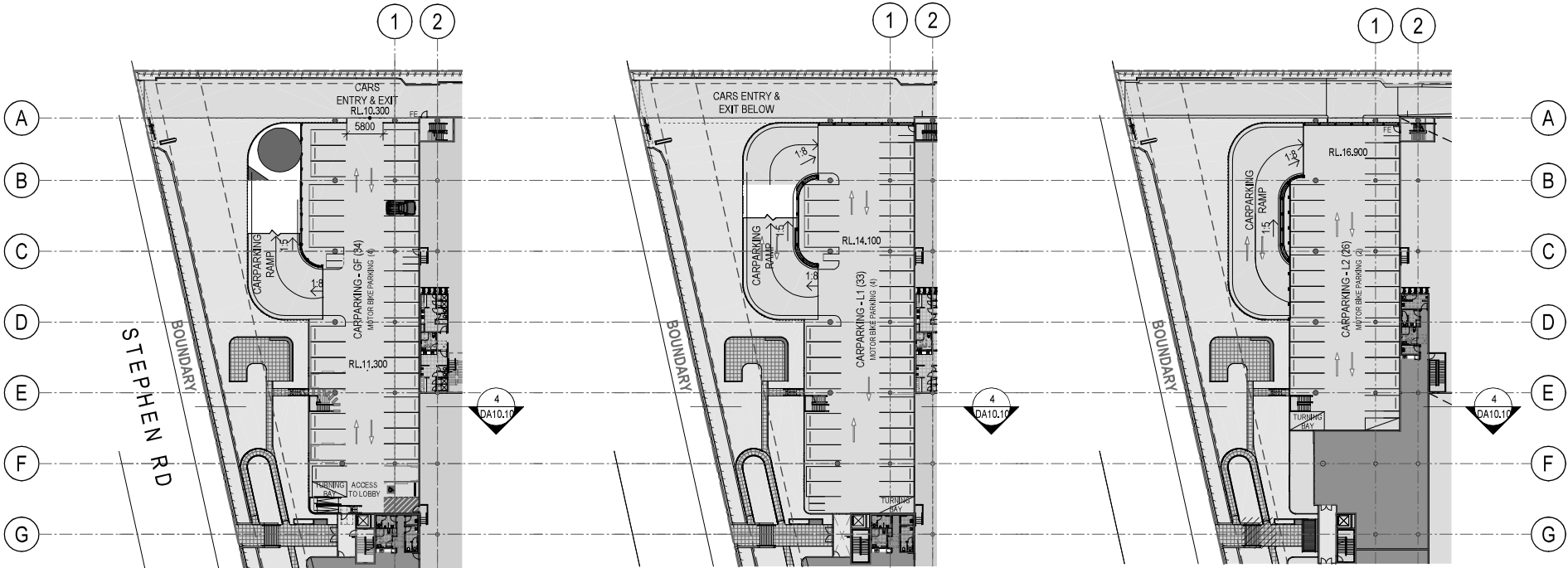
REVISIONS		
REV	DESCRIPTION	DATE
1	ISSUE FOR CLIENT REVIEW	29/08/2025
2	ISSUE FOR CLIENT REVIEW	14/10/2025
3	FOR COORDINATION	16/01/2026
4	FOR COORDINATION	11/02/2026
5	FOR COORDINATION	18/02/2026
6	FOR COORDINATION	18/03/2026
7	FOR COORDINATION	27/03/2026

CARPARKING CALCULATIONS:

- CARPARKING 1:
 - GF: 33 CAR SPACES
 - L1: 33 CAR SPACES
 - L2: 27 CAR SPACES
 - TOTAL: 93 CAR SPACES
- CARPARKING 2:
 - GF: 38 CAR SPACES
 - L1: 41 CAR SPACES
 - L2: 40 CAR SPACES
 - L3: 29 CAR SPACES
 - TOTAL: 147 CAR SPACES

TOTAL PROVIDED: 240 CAR SPACES

TOTAL MOTORBIKES: 16 SPACES

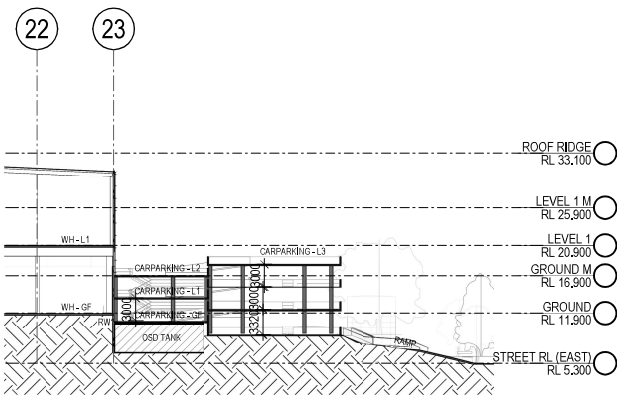
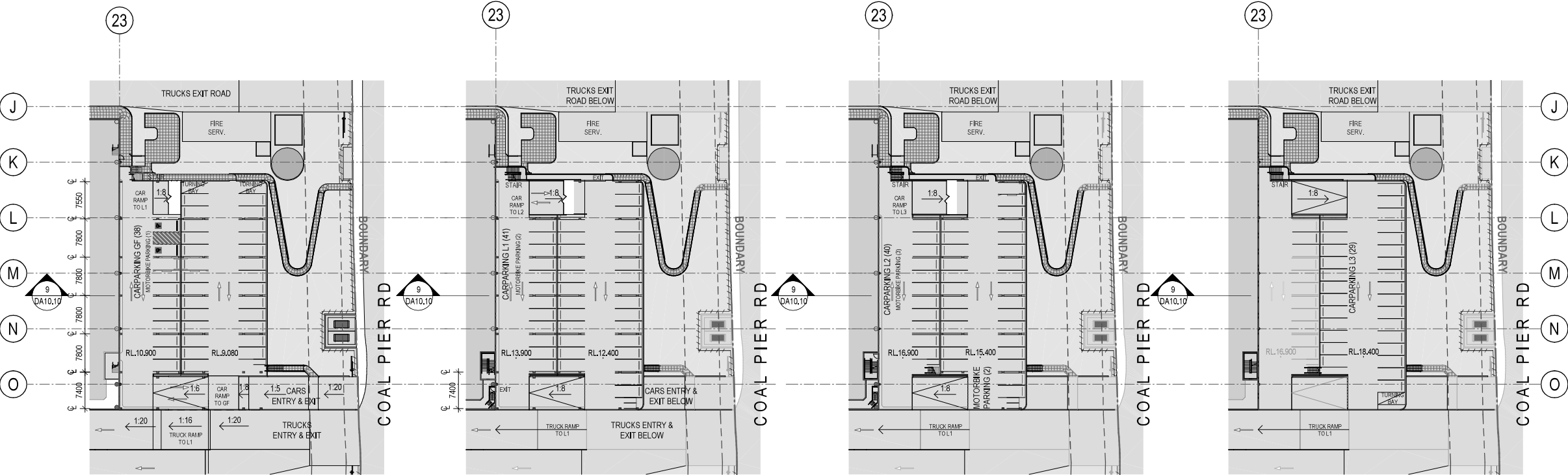


1 CARPARKING 1 LAYOUT - GF PLAN 1 : 500

2 CARPARKING 1 LAYOUT - L1 FLOOR PLAN 1 : 500

3 CARPARKING 1 LAYOUT - L2 FLOOR PLAN 1 : 500

4 SECTION 1 : 500



5 CARPARKING 2 LAYOUT - GF PLAN 1 : 500

6 CARPARKING 2 LAYOUT - L1 FLOOR PLAN 1 : 500

7 CARPARKING 2 LAYOUT - L2 FLOOR PLAN 1 : 500

8 CARPARKING 2 LAYOUT - L3 FLOOR PLAN 1 : 500

9 SECTION 1 : 500

GENERAL LEGEND:

COL-C - CONCRETE COLUMN	GEF - GROUND EXHAUST FAN	---	SITE BOUNDARY	---	FNC-1 - PALISADE FENCE 2.4M (H)	■	OFFICE AREA	■	LANDSCAPE AREA
COL-S - STEEL COLUMN	RWT - RAINWATER TANK	---	BUILDING SETBACK	---	FNC-2 - CHAINWIRE FENCE (2.1m H) + BARB	■	WAREHOUSE AREA	■	LOBBY AREA
RSD - ROLLER SHUTTER DOOR	SEF - SMOKE EXHAUST FAN	---	LANDSCAPE SETBACK	---	EXISTING TREES TO BE RETAINED	■	FIRE SERVICES	■	WASTE STORAGE AREA
DP - DOWNPIPES	SG1 - SLIDING GATE	---	SOCIETAL RISK BUFFER ZONE	---					
FE - FIRE EXIT	SG2 - SWING GATE								
RW - RETAINING WALL	SG3 - PEDESTRIAN SWING GATE								
TB - TURNING BAY	EX-RW - EXISTING RETAINING WALL								

APPENDIX B

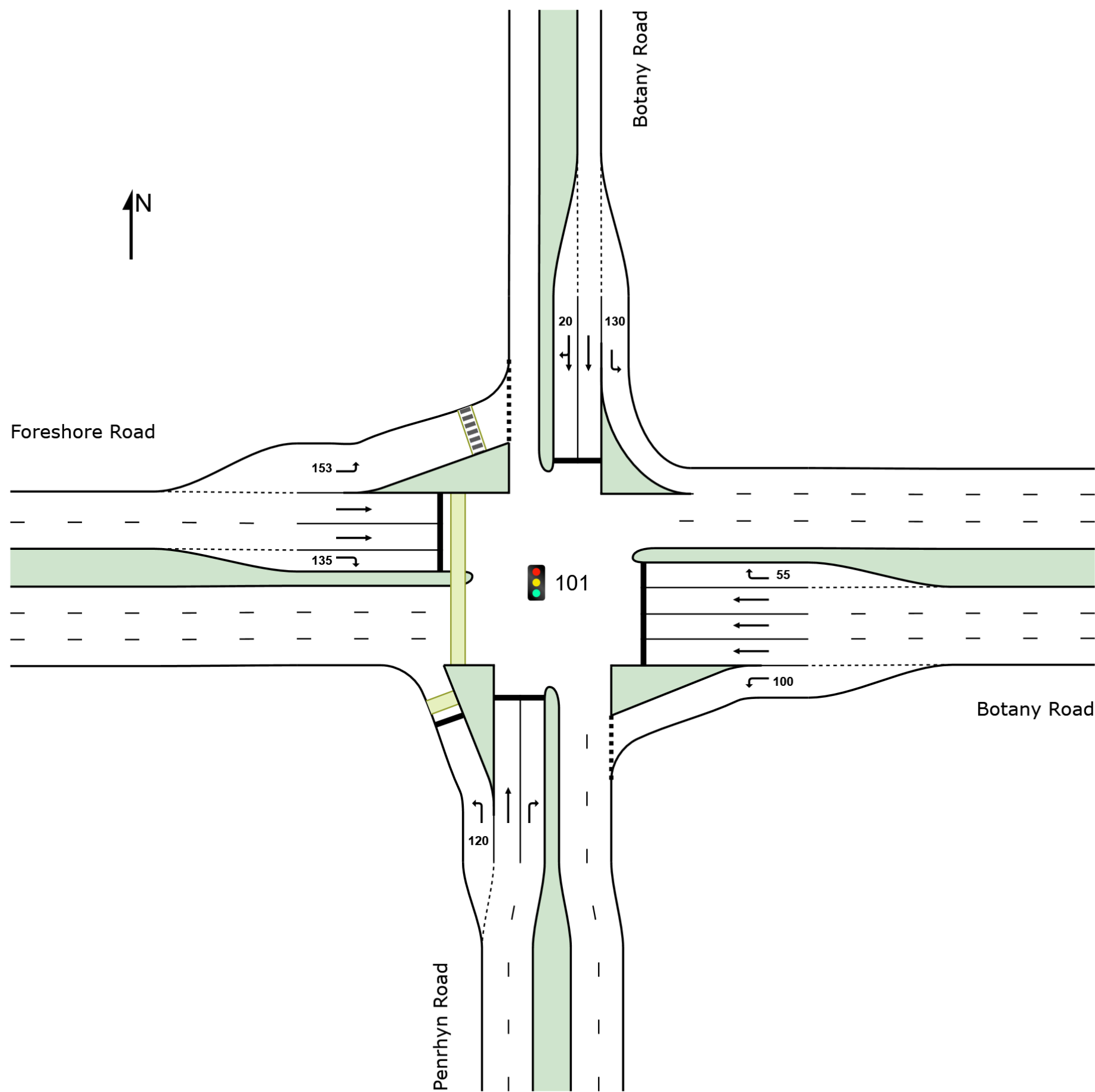
SIDRA Outputs

SITE LAYOUT

Site: 101 [101 Foreshore Rd x Botany Rd x Penrhyn Rd EX AM (Site Folder: Existing)]

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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

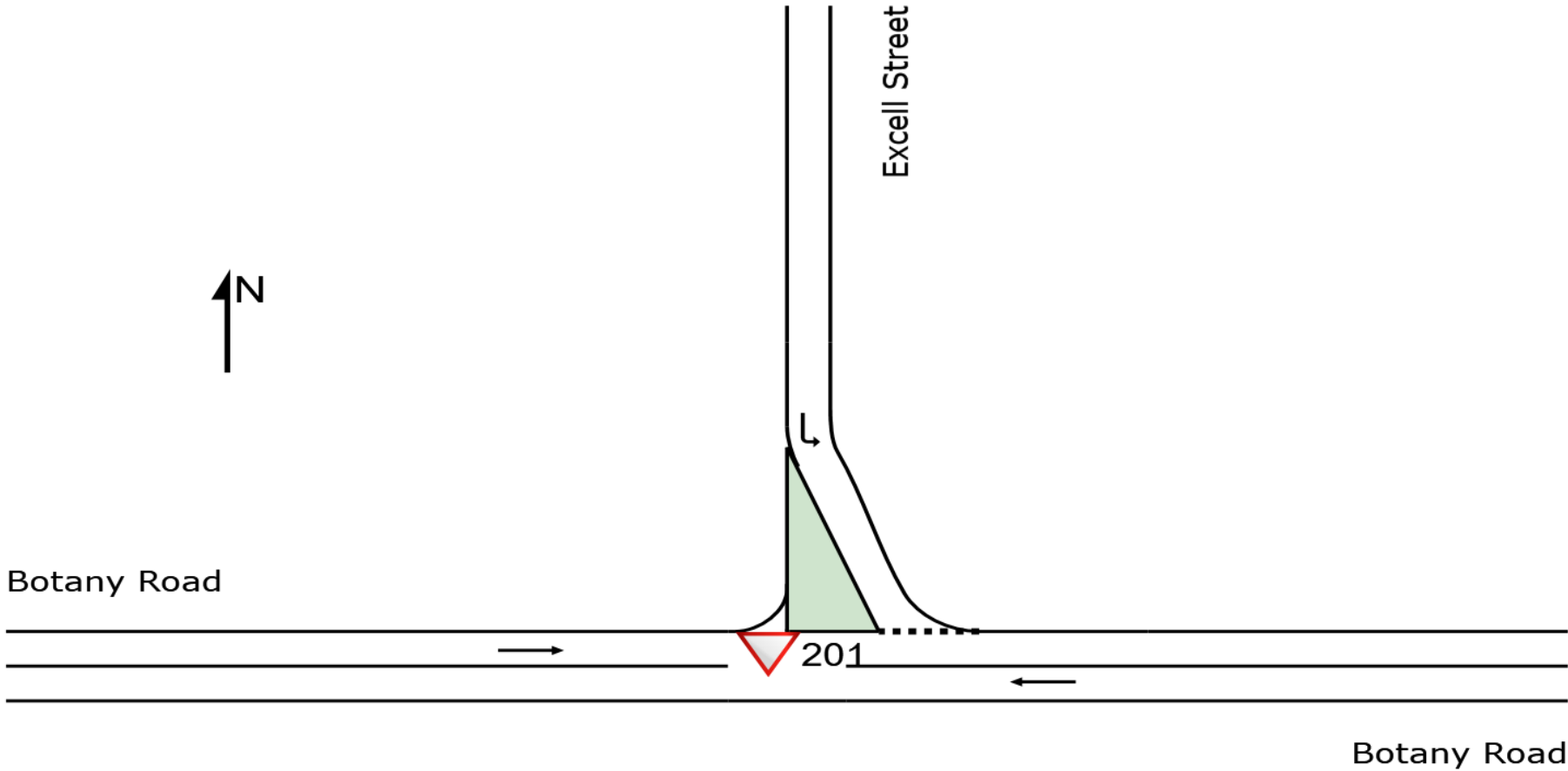


SITE LAYOUT

▽ Site: 201 [201 Botany Rd x Excell St EX AM (Site Folder: Existing)]

Intersection: Botany Road x Excell Street
Exisiting AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

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

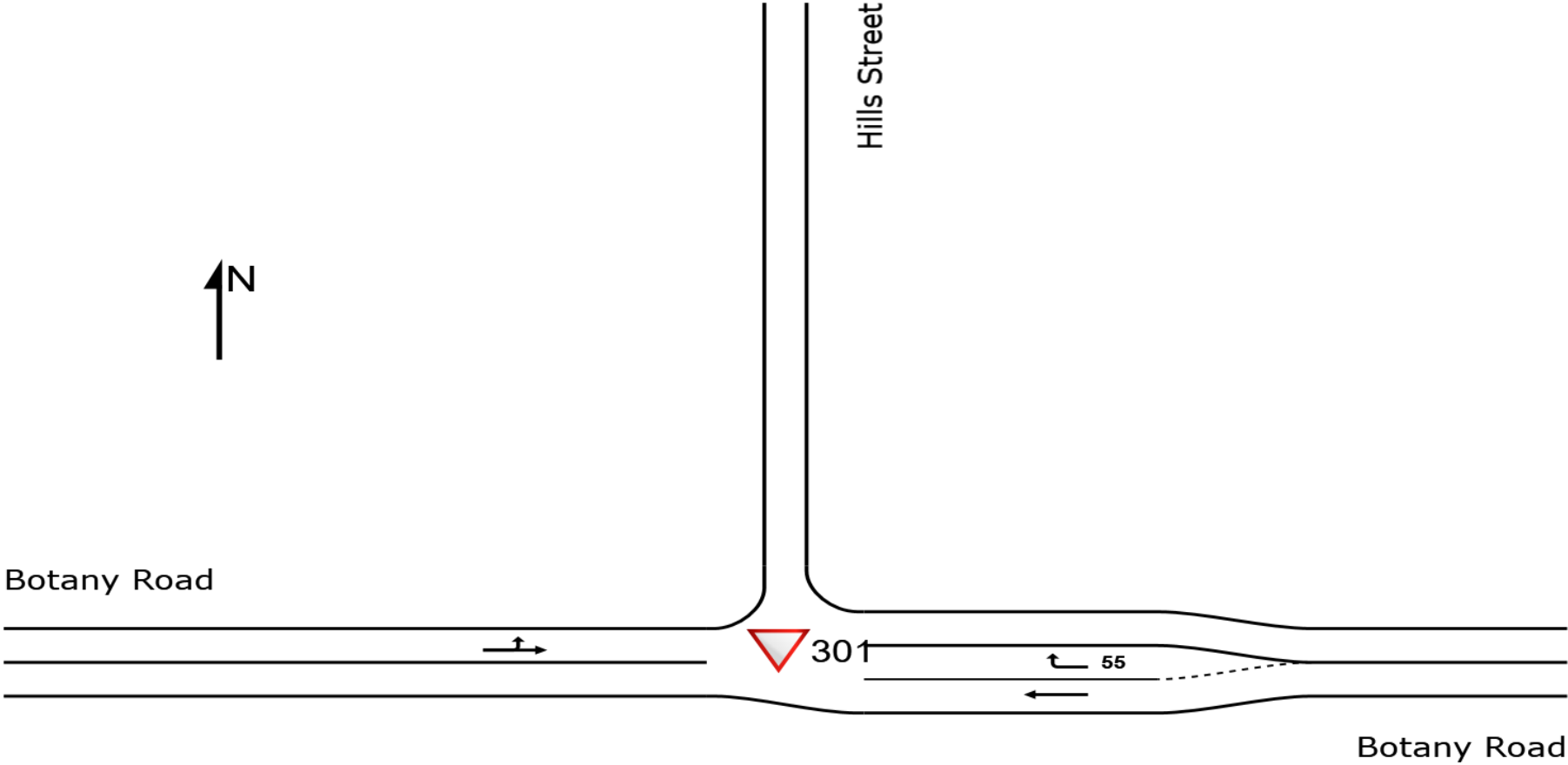


SITE LAYOUT

▽ Site: 301 [301 Botany Rd x Hills St EX AM (Site Folder: Existing)]

Intersection: Botany Road x Hills Street
Existing AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

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

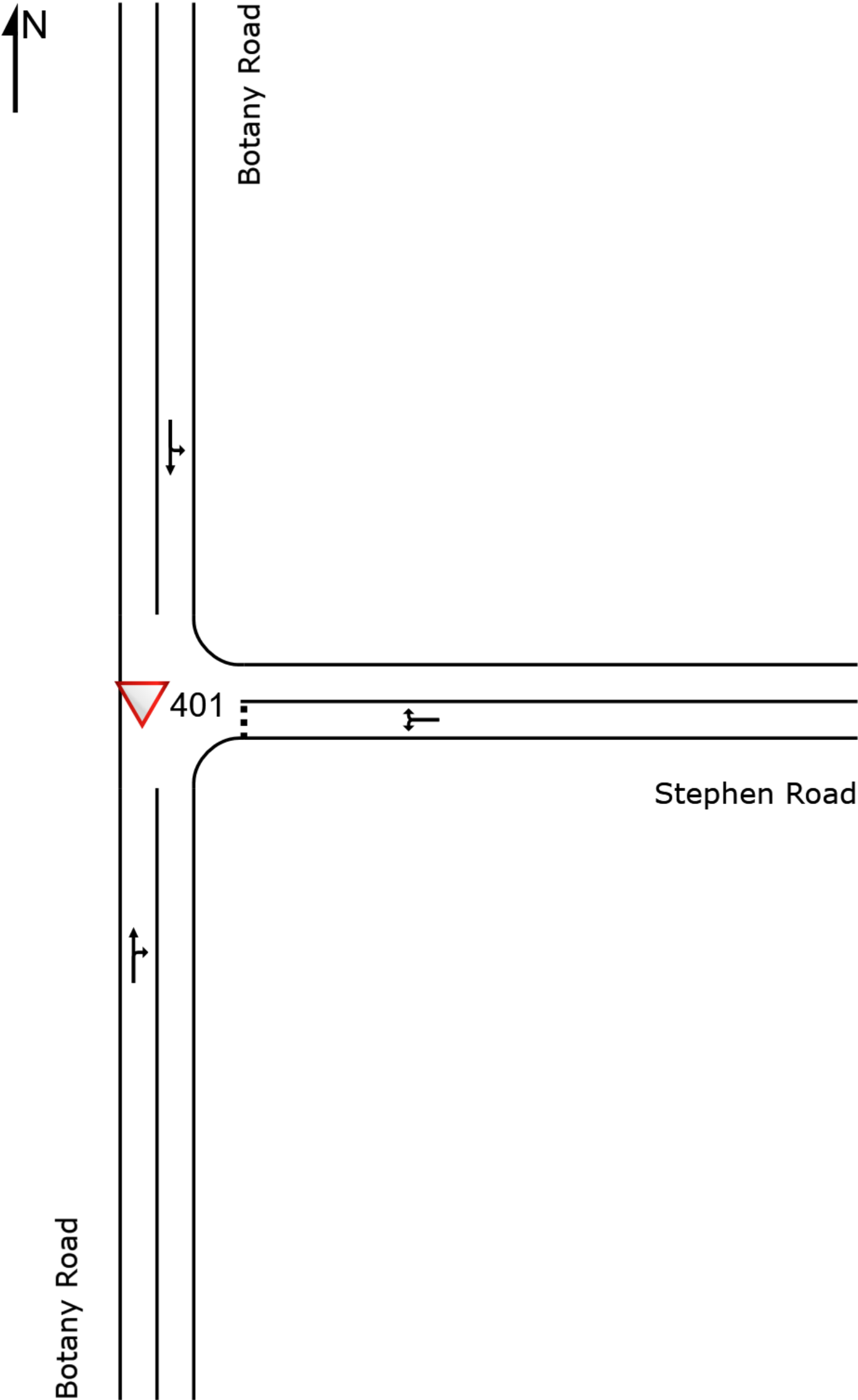


SITE LAYOUT

▽ Site: 401 [401 Botany Rd x Stephen Rd EX AM (Site Folder: Existing)]

Intersection: Botany Road x Stephen Road
Existing AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

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

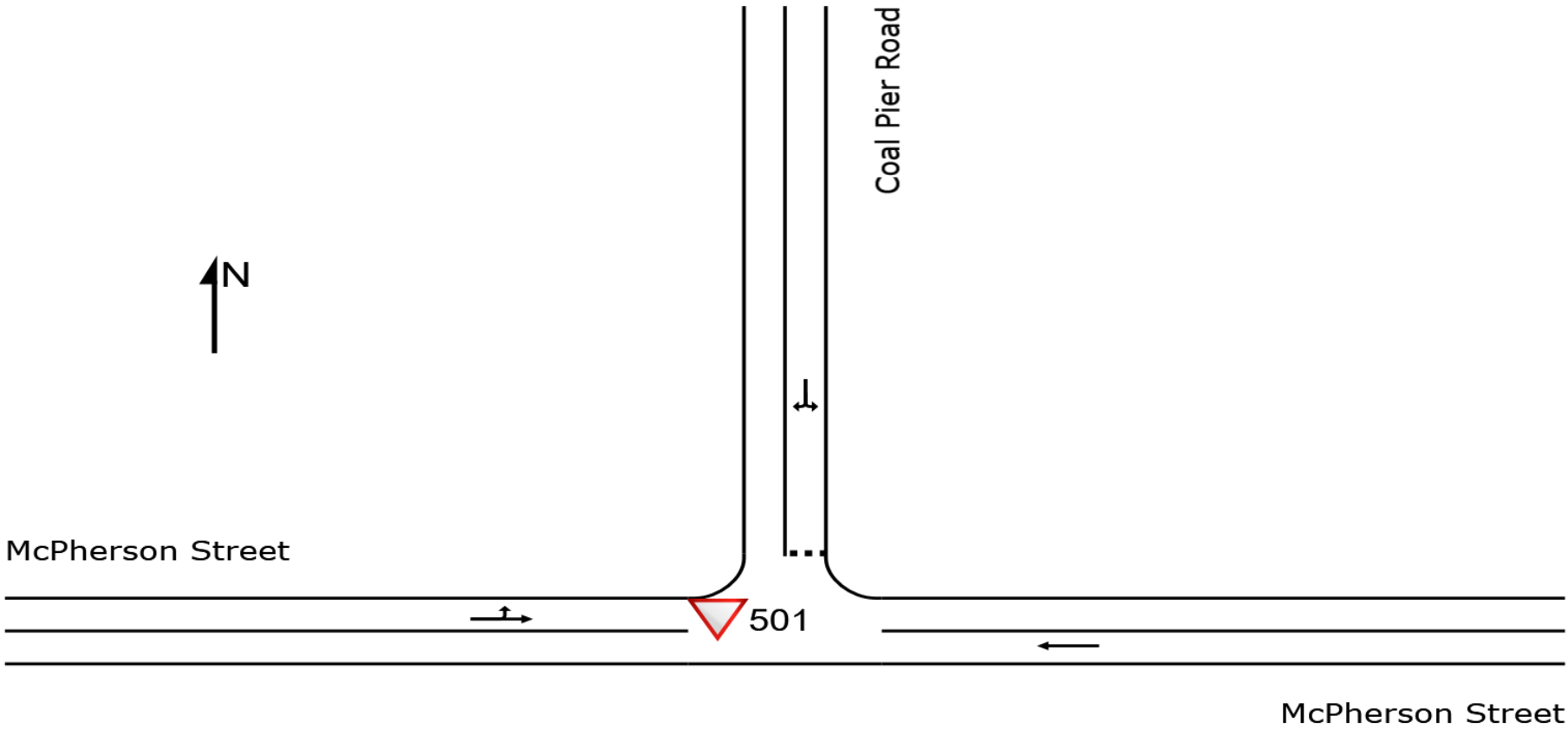


SITE LAYOUT

▽ Site: 501 [501 McPherson St x Coal Pier Rd EX AM (Site Folder: Existing)]

Intersection: McPherson Street x Coal Pier Road
Existing AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

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

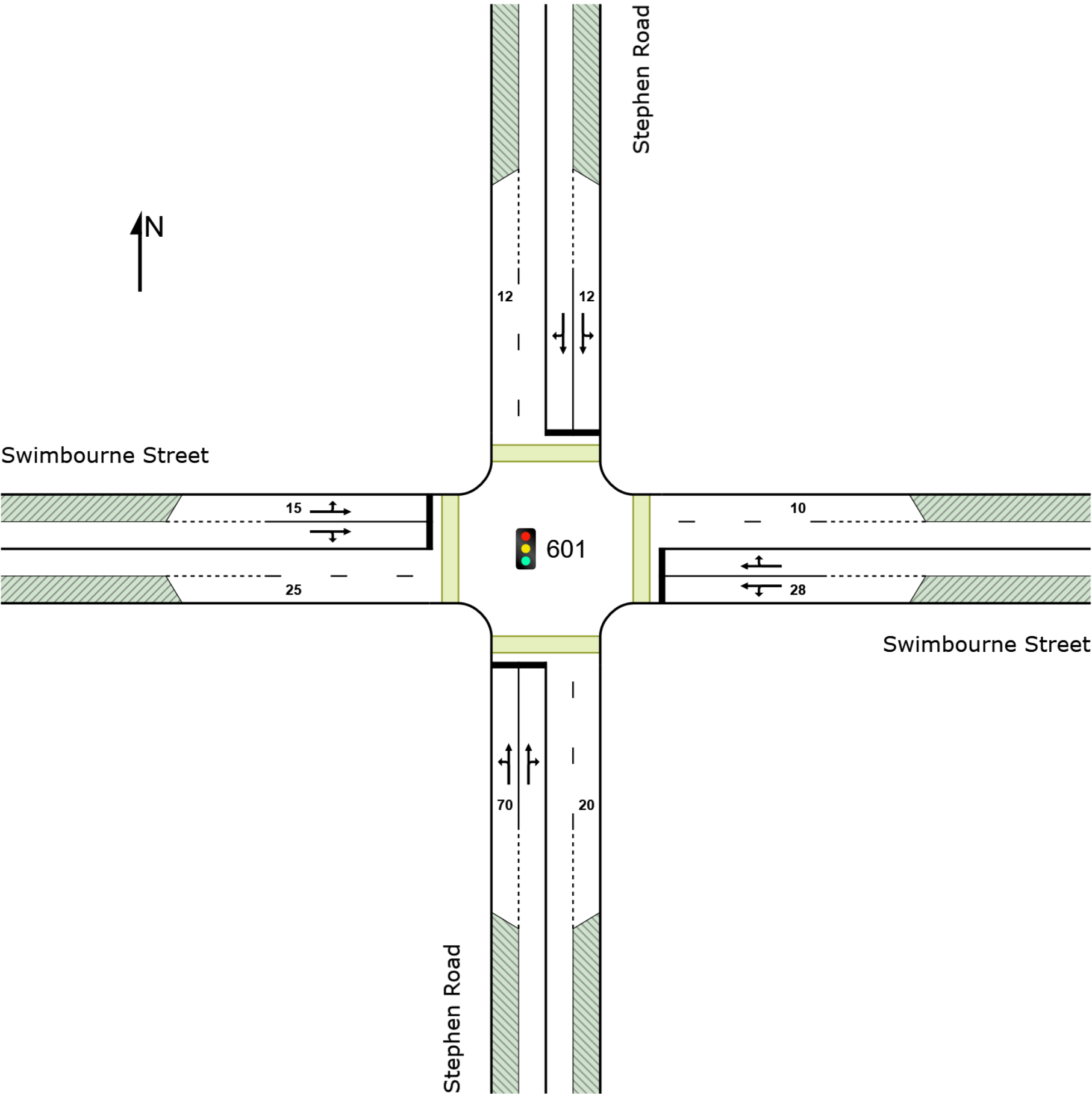


SITE LAYOUT

Site: 601 [601 Stephen Rd x Swimbourne St EX AM (Site Folder: Existing)]

Intersection: Stephen Road x Swimbourne Street
Exisiting AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

 Site: 101 [101 Foreshore Rd x Botany Rd x Penrhyn Rd EX AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	35	93.9	35	93.9	0.163	32.8	LOS C	1.2	14.6	0.86	0.67	0.86	37.8
2	T1	All MCs	16	46.7	16	46.7	0.085	33.9	LOS C	0.6	5.5	0.90	0.64	0.90	23.1
3	R2	All MCs	27	53.8	27	53.8	0.155	39.2	LOS C	1.0	10.2	0.91	0.71	0.91	25.4
Approach			78	70.3	78	70.3	0.163	35.3	LOS C	1.2	14.6	0.89	0.68	0.89	31.4
East: Botany Road															
4	L2	All MCs	46	52.3	46	52.3	0.045	8.2	LOS A	0.2	2.4	0.22	0.61	0.22	47.2
5	T1	All MCs	756	24.2	756	24.2	0.324	13.5	LOS A	6.0	50.9	0.65	0.55	0.65	58.7
6	R2	All MCs	284	25.6	284	25.6	* 0.858	49.0	LOS D	12.8	109.5	1.00	1.00	1.32	26.5
Approach			1086	25.8	1086	25.8	0.858	22.6	LOS B	12.8	109.5	0.72	0.67	0.81	49.6
North: Botany Road															
7	L2	All MCs	497	18.4	497	18.4	0.312	4.6	LOS A	0.0	0.0	0.00	0.45	0.00	44.3
8	T1	All MCs	15	50.0	15	50.0	0.082	48.4	LOS D	0.5	5.3	0.90	0.66	0.90	21.4
9	R2	All MCs	139	61.4	139	61.4	* 0.842	63.8	LOS E	6.4	67.8	1.00	1.06	1.42	33.1
Approach			651	28.3	651	28.3	0.842	18.2	LOS B	6.4	67.8	0.23	0.59	0.32	39.5
West: Foreshore Road															
10	L2	All MCs	302	22.3	302	22.3	0.369	11.4	LOS A	4.4	37.0	0.48	0.72	0.48	54.0
11	T1	All MCs	1299	14.0	1299	14.0	* 0.891	35.6	LOS C	29.7	232.9	1.00	1.06	1.24	46.5
12	R2	All MCs	59	46.4	59	46.4	0.323	42.0	LOS C	2.2	21.4	0.93	0.76	0.93	37.5
Approach			1660	16.7	1660	16.7	0.891	31.4	LOS C	29.7	232.9	0.90	0.99	1.09	47.1
All Vehicles			3475	22.9	3475	22.9	0.891	26.3	LOS B	29.7	232.9	0.72	0.81	0.85	46.4

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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped	Dist]			sec	m	m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
West: Foreshore Road												
P4	Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
All Pedestrians		2	2	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▼ Site: 201 [201 Botany Rd x Excell St EX AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	577	28.6	577	28.6	0.381	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.7
Approach			577	28.6	577	28.6	0.381	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.7
North: Excell Street															
7	L2	All MCs	261	58.5	261	58.5	0.441	12.0	LOS A	2.4	25.6	0.67	0.94	0.96	35.9
Approach			261	58.5	261	58.5	0.441	12.0	LOS A	2.4	25.6	0.67	0.94	0.96	35.9
West: Botany Road															
11	T1	All MCs	514	11.1	514	11.1	0.293	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			514	11.1	514	11.1	0.293	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			1352	27.7	1352	27.7	0.441	2.4	NA	2.4	25.6	0.13	0.18	0.18	46.4

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: 301 [301 Botany Rd x Hills St EX AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	331	18.8	331	18.8	0.201	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
6	R2	All MCs	225	46.7	225	46.7	0.443	14.8	LOS B	2.3	22.8	0.75	1.03	1.09	29.7
Approach			556	30.1	556	30.1	0.443	6.0	NA	2.3	22.8	0.30	0.42	0.44	40.5
West: Botany Road															
10	L2	All MCs	141	13.4	141	13.4	0.383	4.7	LOS A	0.0	0.0	0.00	0.11	0.00	44.0
11	T1	All MCs	519	11.2	519	11.2	0.383	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	48.6
Approach			660	11.6	660	11.6	0.383	1.1	NA	0.0	0.0	0.00	0.11	0.00	47.8
All Vehicles			1216	20.1	1216	20.1	0.443	3.3	NA	2.3	22.8	0.14	0.25	0.20	44.2

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: 401 [401 Botany Rd x Stephen Rd EX AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%		sec		veh	m				
South: Botany Road															
2	T1	All MCs	131	11.3	131	11.3	0.442	0.2	LOS A	3.2	24.5	0.48	0.57	0.52	47.9
3	R2	All MCs	477	12.8	477	12.8	0.442	6.8	LOS A	3.2	24.5	0.48	0.57	0.52	45.9
Approach			607	12.5	607	12.5	0.442	5.4	NA	3.2	24.5	0.48	0.57	0.52	46.5
East: Stephen Road															
4	L2	All MCs	240	19.3	240	19.3	0.401	6.1	LOS A	2.0	16.3	0.33	0.54	0.33	50.3
6	R2	All MCs	104	14.1	104	14.1	0.401	15.3	LOS B	2.0	16.3	0.33	0.54	0.33	55.3
Approach			344	17.7	344	17.7	0.401	8.9	LOS A	2.0	16.3	0.33	0.54	0.33	52.5
North: Botany Road															
7	L2	All MCs	187	9.6	187	9.6	0.142	5.8	LOS A	0.0	0.0	0.00	0.45	0.00	57.0
8	T1	All MCs	53	14.0	53	14.0	0.142	0.1	LOS A	0.0	0.0	0.00	0.45	0.00	57.5
Approach			240	10.5	240	10.5	0.142	4.5	NA	0.0	0.0	0.00	0.45	0.00	57.1
All Vehicles			1192	13.6	1192	13.6	0.442	6.2	NA	3.2	24.5	0.34	0.54	0.36	50.9

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 (Akcelik 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 McPherson St x Coal Pier Rd EX AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total	HV]	[Total	HV]				[Veh.	Dist]					veh
East: McPherson Street																
2	T1	All MCs	61	46.6	61	46.6	0.046	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0	
Approach			61	46.6	61	46.6	0.046	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0	
North: Coal Pier Road																
4	L2	All MCs	5	20.0	5	20.0	0.119	5.0	LOS A	0.4	4.2	0.32	0.60	0.32	46.3	
6	R2	All MCs	88	58.3	88	58.3	0.119	6.7	LOS A	0.4	4.2	0.32	0.60	0.32	45.1	
Approach			94	56.2	94	56.2	0.119	6.6	LOS A	0.4	4.2	0.32	0.60	0.32	45.2	
West: McPherson Street																
7	L2	All MCs	112	46.2	112	46.2	0.135	5.0	LOS A	0.0	0.0	0.00	0.33	0.00	47.1	
8	T1	All MCs	67	29.7	67	29.7	0.135	0.0	LOS A	0.0	0.0	0.00	0.33	0.00	48.1	
Approach			179	40.0	179	40.0	0.135	3.1	NA	0.0	0.0	0.00	0.33	0.00	47.4	
All Vehicles			334	45.7	334	45.7	0.135	3.5	NA	0.4	4.2	0.09	0.34	0.09	47.0	

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 Stephen Rd x Swimbourne St EX AM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	m				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Stephen Road															
1	L2	All MCs	27	19.2	27	19.2	0.137	30.6	LOS C	0.9	7.0	0.90	0.70	0.90	41.0
2	T1	All MCs	180	8.8	180	8.8	* 0.686	28.8	LOS C	5.5	42.2	0.99	0.87	1.13	42.2
3	R2	All MCs	6	50.0	6	50.0	0.686	33.9	LOS C	5.5	42.2	1.00	0.88	1.13	36.4
Approach			214	11.3	214	11.3	0.686	29.2	LOS C	5.5	42.2	0.98	0.85	1.10	42.0
East: Swimbourne Street															
4	L2	All MCs	8	37.5	8	37.5	0.016	6.7	LOS A	0.1	1.2	0.57	0.59	0.57	42.8
5	T1	All MCs	7	42.9	7	42.9	0.069	30.8	LOS C	0.3	2.4	0.88	0.64	0.88	37.8
6	R2	All MCs	3	0.0	3	0.0	0.069	36.6	LOS C	0.3	2.4	0.93	0.65	0.93	37.9
Approach			19	33.3	19	33.3	0.069	21.1	LOS B	0.3	2.4	0.75	0.62	0.75	39.8
North: Stephen Road															
7	L2	All MCs	25	0.0	25	0.0	0.151	26.7	LOS B	2.1	15.5	0.65	0.57	0.65	43.7
8	T1	All MCs	201	8.9	201	8.9	* 0.700	25.1	LOS B	10.9	81.9	0.78	0.72	0.81	45.1
9	R2	All MCs	313	8.1	313	8.1	0.700	31.8	LOS C	10.9	81.9	0.88	0.84	0.93	43.8
Approach			539	8.0	539	8.0	0.700	29.1	LOS C	10.9	81.9	0.83	0.78	0.87	44.3
West: Swimbourne Street															
10	L2	All MCs	656	2.4	656	2.4	0.615	15.7	LOS B	11.3	80.4	0.63	0.76	0.63	46.2
11	T1	All MCs	35	9.1	35	9.1	* 0.479	31.6	LOS C	2.7	20.2	0.98	0.76	0.98	36.6
12	R2	All MCs	57	5.6	57	5.6	0.479	38.4	LOS C	2.7	20.2	0.98	0.76	0.98	40.4
Approach			747	3.0	747	3.0	0.615	18.2	LOS B	11.3	80.4	0.67	0.76	0.67	45.4
All Vehicles			1519	6.3	1519	6.3	0.700	23.6	LOS B	11.3	81.9	0.77	0.78	0.80	44.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Stephen Road												
P1	Full	2	2	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
East: Swimbourne Street												
P2	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
North: Stephen Road												
P3	Full	10	11	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
West: Swimbourne Street												
P4	Full	5	5	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
All Pedestrians		18	19	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 102 [102 Foreshore Rd x Botany Rd x Penrhyn Rd EX PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	Flows HV]	[Total	Flows HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	58	63.6	58	63.6	0.267	26.3	LOS B	1.5	16.0	0.91	0.71	0.91	41.4
2	T1	All MCs	11	30.0	11	30.0	0.038	22.4	LOS B	0.3	2.3	0.85	0.58	0.85	28.3
3	R2	All MCs	37	77.1	37	77.1	0.165	28.4	LOS B	1.0	11.2	0.88	0.71	0.88	26.8
Approach			105	65.0	105	65.0	0.267	26.7	LOS B	1.5	16.0	0.89	0.70	0.89	35.5
East: Botany Road															
4	L2	All MCs	54	90.2	54	90.2	0.066	8.7	LOS A	0.2	2.8	0.26	0.62	0.26	46.8
5	T1	All MCs	1348	10.1	1348	10.1	0.599	14.9	LOS B	10.5	79.7	0.83	0.72	0.83	57.7
6	R2	All MCs	331	15.9	331	15.9	* 0.825	36.4	LOS C	10.9	86.9	1.00	0.98	1.29	31.0
Approach			1733	13.7	1733	13.7	0.825	18.8	LOS B	10.9	86.9	0.84	0.77	0.90	52.9
North: Botany Road															
7	L2	All MCs	422	8.7	422	8.7	0.242	4.5	LOS A	0.0	0.0	0.00	0.46	0.00	44.4
8	T1	All MCs	13	58.3	13	58.3	0.056	32.7	LOS C	0.3	3.4	0.85	0.63	0.85	25.5
9	R2	All MCs	224	23.9	224	23.9	* 0.837	46.0	LOS D	7.7	64.9	1.00	1.06	1.40	38.3
Approach			659	14.9	659	14.9	0.837	19.1	LOS B	7.7	64.9	0.36	0.67	0.49	41.0
West: Foreshore Road															
10	L2	All MCs	143	32.4	143	32.4	0.183	10.8	LOS A	1.5	13.3	0.48	0.69	0.48	54.4
11	T1	All MCs	765	19.1	765	19.1	* 0.848	30.3	LOS C	13.1	106.8	1.00	1.03	1.32	48.9
12	R2	All MCs	38	88.9	38	88.9	0.407	38.9	LOS C	1.2	14.7	0.97	0.74	0.97	38.7
Approach			946	23.9	946	23.9	0.848	27.7	LOS B	13.1	106.8	0.92	0.96	1.18	49.1
All Vehicles			3443	18.3	3443	18.3	0.848	21.6	LOS B	13.1	106.8	0.77	0.80	0.90	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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped	Dist]			sec	m	m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
West: Foreshore Road												
P4	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
All Pedestrians		2	2	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▼ Site: 202 [202 Botany Rd x Excell St EX PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	631	17.7	631	17.7	0.381	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
Approach			631	17.7	631	17.7	0.381	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.8
North: Excell Street															
7	L2	All MCs	392	17.7	392	17.7	0.408	7.8	LOS A	2.4	19.5	0.56	0.76	0.70	39.6
Approach			392	17.7	392	17.7	0.408	7.8	LOS A	2.4	19.5	0.56	0.76	0.70	39.6
West: Botany Road															
11	T1	All MCs	395	9.6	395	9.6	0.222	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			395	9.6	395	9.6	0.222	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			1417	15.5	1417	15.5	0.408	2.2	NA	2.4	19.5	0.16	0.21	0.19	46.5

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: 302 [302 Botany Rd x Hills St EX PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Queue Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	482	10.3	482	10.3	0.273	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
6	R2	All MCs	148	39.0	148	39.0	0.204	9.3	LOS A	0.8	7.9	0.60	0.78	0.60	33.8
Approach			631	17.0	631	17.0	0.273	2.2	NA	0.8	7.9	0.14	0.18	0.14	45.7
West: Botany Road															
10	L2	All MCs	126	10.8	126	10.8	0.296	4.7	LOS A	0.0	0.0	0.00	0.13	0.00	44.1
11	T1	All MCs	391	9.7	391	9.7	0.296	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	48.5
Approach			517	10.0	517	10.0	0.296	1.2	NA	0.0	0.0	0.00	0.13	0.00	47.6
All Vehicles			1147	13.9	1147	13.9	0.296	1.8	NA	0.8	7.9	0.08	0.16	0.08	46.5

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: 402 [402 Botany Rd x Stephen Rd EX PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%		sec		veh	m				km/h
South: Botany Road															
2	T1	All MCs	106	6.9	106	6.9	0.367	0.0	LOS A	2.1	16.0	0.49	0.57	0.49	47.9
3	R2	All MCs	386	10.4	386	10.4	0.367	6.7	LOS A	2.1	16.0	0.49	0.57	0.49	46.0
Approach			493	9.6	493	9.6	0.367	5.2	NA	2.1	16.0	0.49	0.57	0.49	46.5
East: Stephen Road															
4	L2	All MCs	378	11.1	378	11.1	0.481	7.2	LOS A	3.6	27.4	0.47	0.63	0.55	51.1
6	R2	All MCs	109	7.7	109	7.7	0.481	14.0	LOS A	3.6	27.4	0.47	0.63	0.55	55.4
Approach			487	10.4	487	10.4	0.481	8.7	LOS A	3.6	27.4	0.47	0.63	0.55	52.6
North: Botany Road															
7	L2	All MCs	142	6.7	142	6.7	0.160	5.7	LOS A	0.0	0.0	0.00	0.29	0.00	57.7
8	T1	All MCs	148	2.1	148	2.1	0.160	0.1	LOS A	0.0	0.0	0.00	0.29	0.00	58.4
Approach			291	4.3	291	4.3	0.160	2.9	NA	0.0	0.0	0.00	0.29	0.00	58.0
All Vehicles			1271	8.7	1271	8.7	0.481	6.0	NA	3.6	27.4	0.37	0.53	0.40	51.8

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 (Akcelik 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 McPherson St x Coal Pier Rd EX PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total	HV]	[Total	HV]				[Veh.	Dist]					veh
East: McPherson Street																
2	T1	All MCs	117	10.8	117	10.8	0.070	0.0	LOS A	0.0	0.3	0.03	0.03	0.03	49.8	
3	R2	All MCs	4	25.0	4	25.0	0.070	6.4	LOS A	0.0	0.3	0.03	0.03	0.03	48.5	
Approach			121	11.3	121	11.3	0.070	0.2	NA	0.0	0.3	0.03	0.03	0.03	49.7	
North: Coal Pier Road																
4	L2	All MCs	5	20.0	5	20.0	0.145	5.1	LOS A	0.5	4.2	0.35	0.61	0.35	46.3	
6	R2	All MCs	124	22.0	124	22.0	0.145	6.2	LOS A	0.5	4.2	0.35	0.61	0.35	45.6	
Approach			129	22.0	129	22.0	0.145	6.2	LOS A	0.5	4.2	0.35	0.61	0.35	45.6	
West: McPherson Street																
7	L2	All MCs	94	31.5	94	31.5	0.118	4.9	LOS A	0.0	0.0	0.00	0.27	0.00	47.5	
8	T1	All MCs	87	12.0	87	12.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	48.4	
Approach			181	22.1	181	22.1	0.118	2.5	NA	0.0	0.0	0.00	0.27	0.00	47.9	
All Vehicles			432	19.0	432	19.0	0.145	3.0	NA	0.5	4.2	0.11	0.31	0.11	47.5	

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 (Akcelik 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 Stephen Rd x Swimbourne St EX PM (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: Stephen Road															
1	L2	All MCs	37	8.6	37	8.6	0.155	38.9	LOS C	1.4	10.5	0.90	0.72	0.90	39.2
2	T1	All MCs	216	2.0	216	2.0	* 0.776	39.6	LOS C	9.1	65.5	1.00	0.94	1.19	39.9
3	R2	All MCs	6	50.0	6	50.0	0.776	44.7	LOS D	9.1	65.5	1.00	0.94	1.19	33.3
Approach			259	4.1	259	4.1	0.776	39.7	LOS C	9.1	65.5	0.99	0.91	1.15	39.7
East: Swimbourne Street															
4	L2	All MCs	3	33.3	3	33.3	0.094	5.5	LOS A	0.6	4.8	0.92	0.65	0.92	36.2
5	T1	All MCs	33	3.2	33	3.2	* 0.407	37.9	LOS C	1.5	10.5	0.96	0.69	0.96	34.7
6	R2	All MCs	19	0.0	19	0.0	0.407	52.4	LOS D	1.5	10.5	1.00	0.72	1.00	33.9
Approach			55	3.8	55	3.8	0.407	41.1	LOS C	1.5	10.5	0.97	0.70	0.97	34.5
North: Stephen Road															
7	L2	All MCs	6	16.7	6	16.7	0.170	29.1	LOS C	3.0	21.7	0.56	0.47	0.56	44.1
8	T1	All MCs	189	2.8	189	2.8	0.785	26.9	LOS B	20.7	151.9	0.65	0.58	0.67	45.7
9	R2	All MCs	545	6.2	545	6.2	* 0.785	38.3	LOS C	20.7	151.9	0.88	0.88	0.95	42.8
Approach			741	5.4	741	5.4	0.785	35.3	LOS C	20.7	151.9	0.82	0.80	0.88	43.5
West: Swimbourne Street															
10	L2	All MCs	440	1.7	440	1.7	0.357	12.4	LOS A	6.8	48.2	0.43	0.68	0.43	46.6
11	T1	All MCs	1	100.0	1	100.0	0.286	39.2	LOS C	1.2	8.4	0.99	0.72	0.99	32.5
12	R2	All MCs	27	0.0	27	0.0	0.286	49.2	LOS D	1.2	8.4	0.99	0.72	0.99	37.3
Approach			468	1.8	468	1.8	0.357	14.6	LOS B	6.8	48.2	0.46	0.68	0.46	46.0
All Vehicles			1523	4.0	1523	4.0	0.785	29.9	LOS C	20.7	151.9	0.74	0.78	0.80	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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Stephen Road												
P1	Full	8	8	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
East: Swimbourne Street												
P2	Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
North: Stephen Road												
P3	Full	8	8	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
West: Swimbourne Street												
P4	Full	6	6	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
All Pedestrians		23	24	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 103 [103 Foreshore Rd x Botany Rd x Penrhyn Rd EX+DEV AM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	35	93.9	35	93.9	0.167	33.1	LOS C	1.2	14.8	0.86	0.67	0.86	37.7
2	T1	All MCs	18	52.9	18	52.9	0.093	33.0	LOS C	0.6	6.4	0.89	0.64	0.89	23.5
3	R2	All MCs	27	53.8	27	53.8	0.146	38.2	LOS C	1.0	10.0	0.90	0.71	0.90	25.7
Approach			80	71.1	80	71.1	0.167	34.8	LOS C	1.2	14.8	0.88	0.68	0.88	31.4
East: Botany Road															
4	L2	All MCs	46	52.3	46	52.3	0.045	8.2	LOS A	0.2	2.4	0.22	0.61	0.22	47.2
5	T1	All MCs	756	24.2	756	24.2	0.332	14.2	LOS A	6.2	52.2	0.66	0.57	0.66	58.2
6	R2	All MCs	284	25.6	284	25.6	* 0.909	56.4	LOS D	14.0	119.5	1.00	1.08	1.47	24.5
Approach			1086	25.8	1086	25.8	0.909	24.9	LOS B	14.0	119.5	0.73	0.70	0.86	48.2
North: Botany Road															
7	L2	All MCs	497	18.4	497	18.4	0.312	4.6	LOS A	0.0	0.0	0.00	0.45	0.00	44.3
8	T1	All MCs	17	56.3	17	56.3	0.090	49.9	LOS D	0.6	6.2	0.89	0.66	0.89	21.7
9	R2	All MCs	158	60.7	158	60.7	* 0.906	73.1	LOS F	7.9	83.7	1.00	1.19	1.60	31.3
Approach			672	29.3	672	29.3	0.906	21.8	LOS B	7.9	83.7	0.26	0.63	0.40	38.2
West: Foreshore Road															
10	L2	All MCs	347	23.3	347	23.3	0.426	12.1	LOS A	5.6	46.7	0.52	0.73	0.52	53.5
11	T1	All MCs	1299	14.0	1299	14.0	* 0.891	35.6	LOS C	29.7	232.9	1.00	1.06	1.24	46.5
12	R2	All MCs	59	46.4	59	46.4	0.323	42.0	LOS C	2.2	21.4	0.93	0.76	0.93	37.5
Approach			1705	17.0	1705	17.0	0.891	31.0	LOS C	29.7	232.9	0.90	0.98	1.08	47.2
All Vehicles			3543	23.3	3543	23.3	0.909	27.5	LOS B	29.7	232.9	0.73	0.82	0.88	45.8

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.
Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
West: Foreshore Road												
P4	Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
All Pedestrians		2	2	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▼ Site: 201 [203 Botany Rd x Excell St EX+DEV AM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	624	29.0	624	29.0	0.413	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.7
Approach			624	29.0	624	29.0	0.413	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.7
North: Excell Street															
7	L2	All MCs	281	58.8	281	58.8	0.478	12.5	LOS A	2.8	29.3	0.68	0.98	1.03	35.6
Approach			281	58.8	281	58.8	0.478	12.5	LOS A	2.8	29.3	0.68	0.98	1.03	35.6
West: Botany Road															
11	T1	All MCs	516	11.0	516	11.0	0.294	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
Approach			516	11.0	516	11.0	0.294	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.8
All Vehicles			1421	28.4	1421	28.4	0.478	2.5	NA	2.8	29.3	0.14	0.19	0.20	46.2

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: 303 [303 Botany Rd x Hills St EX+DEV AM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Queue Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	336	18.5	336	18.5	0.204	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
6	R2	All MCs	268	49.4	268	49.4	0.542	16.8	LOS B	3.2	32.1	0.79	1.11	1.31	28.9
Approach			604	32.2	604	32.2	0.542	7.5	NA	3.2	32.1	0.35	0.49	0.58	39.2
West: Botany Road															
10	L2	All MCs	141	13.4	141	13.4	0.384	4.7	LOS A	0.0	0.0	0.00	0.11	0.00	44.0
11	T1	All MCs	521	11.1	521	11.1	0.384	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	48.6
Approach			662	11.6	662	11.6	0.384	1.1	NA	0.0	0.0	0.00	0.11	0.00	47.8
All Vehicles			1266	21.4	1266	21.4	0.542	4.1	NA	3.2	32.1	0.17	0.29	0.28	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: 403 [403 Botany Rd x Stephen Rd EX+DEV AM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%		sec		veh	m				
South: Botany Road															
2	T1	All MCs	131	11.3	131	11.3	0.447	0.2	LOS A	3.3	25.3	0.49	0.58	0.53	47.9
3	R2	All MCs	481	12.7	481	12.7	0.447	6.9	LOS A	3.3	25.3	0.49	0.58	0.53	45.9
Approach			612	12.4	612	12.4	0.447	5.4	NA	3.3	25.3	0.49	0.58	0.53	46.4
East: Stephen Road															
4	L2	All MCs	241	19.2	241	19.2	0.407	6.1	LOS A	2.1	16.5	0.33	0.53	0.33	50.3
6	R2	All MCs	105	14.0	105	14.0	0.407	15.5	LOS B	2.1	16.5	0.33	0.53	0.33	55.3
Approach			346	17.6	346	17.6	0.407	8.9	LOS A	2.1	16.5	0.33	0.53	0.33	52.5
North: Botany Road															
7	L2	All MCs	192	9.3	192	9.3	0.144	5.8	LOS A	0.0	0.0	0.00	0.46	0.00	57.0
8	T1	All MCs	53	14.0	53	14.0	0.144	0.1	LOS A	0.0	0.0	0.00	0.46	0.00	57.5
Approach			244	10.3	244	10.3	0.144	4.5	NA	0.0	0.0	0.00	0.46	0.00	57.1
All Vehicles			1202	13.5	1202	13.5	0.447	6.3	NA	3.3	25.3	0.34	0.54	0.37	50.9

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 (Akcelik 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 McPherson St x Coal Pier Rd EX+DEV AM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%				veh	m				km/h
East: McPherson Street															
2	T1	All MCs	61	46.6	61	46.6	0.046	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			61	46.6	61	46.6	0.046	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
North: Coal Pier Road															
4	L2	All MCs	5	20.0	5	20.0	0.150	5.0	LOS A	0.5	5.5	0.35	0.62	0.35	46.1
6	R2	All MCs	108	59.2	108	59.2	0.150	7.0	LOS A	0.5	5.5	0.35	0.62	0.35	45.0
Approach			114	57.4	114	57.4	0.150	6.9	LOS A	0.5	5.5	0.35	0.62	0.35	45.0
West: McPherson Street															
7	L2	All MCs	155	43.5	155	43.5	0.167	5.0	LOS A	0.0	0.0	0.00	0.36	0.00	46.9
8	T1	All MCs	67	29.7	67	29.7	0.167	0.1	LOS A	0.0	0.0	0.00	0.36	0.00	47.8
Approach			222	39.3	222	39.3	0.167	3.5	NA	0.0	0.0	0.00	0.36	0.00	47.1
All Vehicles			397	45.6	397	45.6	0.167	3.9	NA	0.5	5.5	0.10	0.38	0.10	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.
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 (Akcelik 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 Stephen Rd x Swimbourne St EX+DEV AM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Stephen Road															
1	L2	All MCs	27	19.2	27	19.2	0.138	30.6	LOS C	0.9	7.1	0.90	0.70	0.90	41.0
2	T1	All MCs	182	8.7	182	8.7	* 0.692	28.9	LOS C	5.6	42.7	0.99	0.88	1.13	42.3
3	R2	All MCs	6	50.0	6	50.0	0.692	34.0	LOS C	5.6	42.7	1.00	0.88	1.14	36.4
Approach			216	11.2	216	11.2	0.692	29.3	LOS C	5.6	42.7	0.98	0.85	1.10	42.0
East: Swimbourne Street															
4	L2	All MCs	8	37.5	8	37.5	0.016	6.8	LOS A	0.1	1.2	0.57	0.59	0.57	42.8
5	T1	All MCs	7	42.9	7	42.9	0.069	30.8	LOS C	0.3	2.4	0.88	0.64	0.88	37.8
6	R2	All MCs	3	0.0	3	0.0	0.069	36.6	LOS C	0.3	2.4	0.93	0.65	0.93	37.9
Approach			19	33.3	19	33.3	0.069	21.1	LOS B	0.3	2.4	0.75	0.62	0.75	39.8
North: Stephen Road															
7	L2	All MCs	25	0.0	25	0.0	0.153	26.8	LOS B	2.1	15.7	0.66	0.57	0.66	43.9
8	T1	All MCs	208	8.6	208	8.6	* 0.709	25.4	LOS B	11.2	83.9	0.79	0.73	0.82	45.3
9	R2	All MCs	313	8.1	313	8.1	0.709	32.3	LOS C	11.2	83.9	0.88	0.85	0.95	43.8
Approach			546	7.9	546	7.9	0.709	29.4	LOS C	11.2	83.9	0.84	0.79	0.89	44.4
West: Swimbourne Street															
10	L2	All MCs	656	2.4	656	2.4	0.615	15.7	LOS B	11.3	80.4	0.63	0.76	0.63	46.2
11	T1	All MCs	35	9.1	35	9.1	* 0.479	31.6	LOS C	2.7	20.2	0.98	0.76	0.98	36.6
12	R2	All MCs	57	5.6	57	5.6	0.479	38.4	LOS C	2.7	20.2	0.98	0.76	0.98	40.4
Approach			747	3.0	747	3.0	0.615	18.2	LOS B	11.3	80.4	0.67	0.76	0.67	45.4
All Vehicles			1528	6.3	1528	6.3	0.709	23.8	LOS B	11.3	83.9	0.77	0.78	0.81	44.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Stephen Road												
P1	Full	2	2	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
East: Swimbourne Street												
P2	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
North: Stephen Road												
P3	Full	10	11	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
West: Swimbourne Street												
P4	Full	5	5	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
All Pedestrians		18	19	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 104 [104 Foreshore Rd x Botany Rd x Penrhyn Rd EX+DEV PM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Queue Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	58	63.6	58	63.6	0.274	27.1	LOS B	1.5	16.2	0.92	0.70	0.92	41.0
2	T1	All MCs	13	41.7	13	41.7	0.042	20.6	LOS B	0.3	2.9	0.82	0.57	0.82	29.3
3	R2	All MCs	37	77.1	37	77.1	0.145	26.4	LOS B	0.9	10.7	0.84	0.70	0.84	27.4
Approach			107	65.7	107	65.7	0.274	26.1	LOS B	1.5	16.2	0.88	0.69	0.88	35.7
East: Botany Road															
4	L2	All MCs	54	90.2	54	90.2	0.066	8.7	LOS A	0.2	2.8	0.26	0.62	0.26	46.8
5	T1	All MCs	1348	10.1	1348	10.1	0.651	16.8	LOS B	11.1	84.6	0.88	0.76	0.88	56.5
6	R2	All MCs	331	15.9	331	15.9	* 0.884	42.1	LOS C	12.0	95.8	1.00	1.07	1.47	28.8
Approach			1733	13.7	1733	13.7	0.884	21.4	LOS B	12.0	95.8	0.88	0.82	0.97	51.3
North: Botany Road															
7	L2	All MCs	422	8.7	422	8.7	0.242	4.5	LOS A	0.0	0.0	0.00	0.46	0.00	44.4
8	T1	All MCs	15	64.3	15	64.3	0.057	33.4	LOS C	0.4	3.9	0.82	0.62	0.82	26.4
9	R2	All MCs	274	23.8	274	23.8	* 0.903	54.4	LOS D	10.5	88.5	1.00	1.21	1.59	36.3
Approach			711	15.7	711	15.7	0.903	24.3	LOS B	10.5	88.5	0.40	0.75	0.63	39.5
West: Foreshore Road															
10	L2	All MCs	171	36.4	171	36.4	0.222	10.9	LOS A	1.8	16.7	0.49	0.70	0.49	54.3
11	T1	All MCs	765	19.1	765	19.1	* 0.904	37.1	LOS C	14.7	119.4	1.00	1.13	1.51	45.8
12	R2	All MCs	38	88.9	38	88.9	0.407	38.9	LOS C	1.2	14.7	0.97	0.74	0.97	38.7
Approach			974	24.9	974	24.9	0.904	32.6	LOS C	14.7	119.4	0.91	1.04	1.31	46.6
All Vehicles			3524	18.8	3524	18.8	0.904	25.2	LOS B	14.7	119.4	0.79	0.86	0.99	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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
West: Foreshore Road												
P4	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
All Pedestrians		2	2	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▼ Site: 204 [204 Botany Rd x Excell St EX+DEV PM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	660	19.6	660	19.6	0.405	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.7
Approach			660	19.6	660	19.6	0.405	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.7
North: Excell Street															
7	L2	All MCs	438	19.0	438	19.0	0.465	8.4	LOS A	3.1	25.1	0.59	0.81	0.80	39.1
Approach			438	19.0	438	19.0	0.465	8.4	LOS A	3.1	25.1	0.59	0.81	0.80	39.1
West: Botany Road															
11	T1	All MCs	401	9.4	401	9.4	0.225	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			401	9.4	401	9.4	0.225	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			1499	16.7	1499	16.7	0.465	2.5	NA	3.1	25.1	0.17	0.24	0.24	46.2

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: 304 [304 Botany Rd x Hills St EX+DEV PM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%				v/c	sec				
East: Botany Road															
5	T1	All MCs	483	10.2	483	10.2	0.273	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
6	R2	All MCs	177	42.9	177	42.9	0.252	10.0	LOS A	1.1	10.6	0.62	0.81	0.65	33.6
Approach			660	19.0	660	19.0	0.273	2.7	NA	1.1	10.6	0.17	0.22	0.18	45.1
West: Botany Road															
10	L2	All MCs	126	10.8	126	10.8	0.299	4.7	LOS A	0.0	0.0	0.00	0.13	0.00	44.2
11	T1	All MCs	397	9.5	397	9.5	0.299	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	48.6
Approach			523	9.9	523	9.9	0.299	1.2	NA	0.0	0.0	0.00	0.13	0.00	47.7
All Vehicles			1183	14.9	1183	14.9	0.299	2.0	NA	1.1	10.6	0.09	0.18	0.10	46.2

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: 404 [404 Botany Rd x Stephen Rd EX+DEV PM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%		sec							
South: Botany Road															
2	T1	All MCs	106	6.9	106	6.9	0.371	0.0	LOS A	2.2	16.4	0.49	0.58	0.50	47.9
3	R2	All MCs	388	10.3	388	10.3	0.371	6.7	LOS A	2.2	16.4	0.49	0.58	0.50	46.0
Approach			495	9.6	495	9.6	0.371	5.3	NA	2.2	16.4	0.49	0.58	0.50	46.5
East: Stephen Road															
4	L2	All MCs	384	11.0	384	11.0	0.521	7.6	LOS A	4.6	34.8	0.50	0.66	0.65	50.7
6	R2	All MCs	129	6.5	129	6.5	0.521	14.7	LOS B	4.6	34.8	0.50	0.66	0.65	55.2
Approach			514	9.8	514	9.8	0.521	9.4	LOS A	4.6	34.8	0.50	0.66	0.65	52.4
North: Botany Road															
7	L2	All MCs	148	6.4	148	6.4	0.163	5.7	LOS A	0.0	0.0	0.00	0.29	0.00	57.7
8	T1	All MCs	148	2.1	148	2.1	0.163	0.1	LOS A	0.0	0.0	0.00	0.29	0.00	58.4
Approach			297	4.3	297	4.3	0.163	2.9	NA	0.0	0.0	0.00	0.29	0.00	58.0
All Vehicles			1305	8.5	1305	8.5	0.521	6.4	NA	4.6	34.8	0.38	0.55	0.44	51.8

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 (Akcelik 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 McPherson St x Coal Pier Rd EX+DEV PM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	m				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: McPherson Street															
2	T1	All MCs	117	10.8	117	10.8	0.070	0.0	LOS A	0.0	0.3	0.03	0.04	0.03	49.8
3	R2	All MCs	4	25.0	4	25.0	0.070	7.2	LOS A	0.0	0.3	0.03	0.04	0.03	48.5
Approach			121	11.3	121	11.3	0.070	0.3	NA	0.0	0.3	0.03	0.04	0.03	49.7
North: Coal Pier Road															
4	L2	All MCs	5	20.0	5	20.0	0.205	5.1	LOS A	0.7	6.2	0.38	0.63	0.38	46.2
6	R2	All MCs	171	24.1	171	24.1	0.205	6.5	LOS A	0.7	6.2	0.38	0.63	0.38	45.4
Approach			176	24.0	176	24.0	0.205	6.5	LOS A	0.7	6.2	0.38	0.63	0.38	45.5
West: McPherson Street															
7	L2	All MCs	122	38.8	122	38.8	0.143	4.9	LOS A	0.0	0.0	0.00	0.31	0.00	47.3
8	T1	All MCs	87	12.0	87	12.0	0.143	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	48.3
Approach			209	27.6	209	27.6	0.143	2.9	NA	0.0	0.0	0.00	0.31	0.00	47.6
All Vehicles			506	22.5	506	22.5	0.205	3.5	NA	0.7	6.2	0.14	0.35	0.14	47.2

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 (Akcelik 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 Stephen Rd x Swimbourne St EX+DEV PM (Site Folder: Existing + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%									km/h
South: Stephen Road															
1	L2	All MCs	37	8.6	37	8.6	0.159	38.0	LOS C	1.6	11.5	0.89	0.72	0.89	39.6
2	T1	All MCs	245	1.7	245	1.7	* 0.794	39.4	LOS C	10.2	73.1	1.00	0.95	1.19	40.7
3	R2	All MCs	6	50.0	6	50.0	0.794	44.6	LOS D	10.2	73.1	1.00	0.96	1.20	33.8
Approach			288	3.6	288	3.6	0.794	39.3	LOS C	10.2	73.1	0.98	0.92	1.16	40.5
East: Swimbourne Street															
4	L2	All MCs	3	33.3	3	33.3	0.079	5.5	LOS A	0.5	4.1	0.91	0.65	0.91	36.2
5	T1	All MCs	33	3.2	33	3.2	* 0.342	38.2	LOS C	1.6	11.1	0.96	0.69	0.96	34.6
6	R2	All MCs	19	0.0	19	0.0	0.342	50.1	LOS D	1.6	11.1	0.99	0.72	0.99	34.4
Approach			55	3.8	55	3.8	0.342	40.4	LOS C	1.6	11.1	0.97	0.70	0.97	34.6
North: Stephen Road															
7	L2	All MCs	6	16.7	6	16.7	0.173	30.7	LOS C	3.3	23.4	0.58	0.48	0.58	44.2
8	T1	All MCs	199	2.6	199	2.6	0.800	28.7	LOS C	21.4	157.6	0.66	0.59	0.68	45.9
9	R2	All MCs	545	6.2	545	6.2	* 0.800	41.0	LOS C	21.4	157.6	0.89	0.90	0.99	42.5
Approach			751	5.3	751	5.3	0.800	37.6	LOS C	21.4	157.6	0.83	0.81	0.90	43.3
West: Swimbourne Street															
10	L2	All MCs	440	1.7	440	1.7	0.364	13.2	LOS A	7.1	50.3	0.45	0.69	0.45	46.5
11	T1	All MCs	1	100.0	1	100.0	0.248	39.1	LOS C	1.1	8.2	0.98	0.72	0.98	32.9
12	R2	All MCs	27	0.0	27	0.0	0.248	47.9	LOS D	1.1	8.2	0.98	0.72	0.98	37.6
Approach			468	1.8	468	1.8	0.364	15.3	LOS B	7.1	50.3	0.48	0.69	0.48	45.9
All Vehicles			1562	3.9	1562	3.9	0.800	31.4	LOS C	21.4	157.6	0.76	0.79	0.82	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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Stephen Road												
P1	Full	8	8	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
East: Swimbourne Street												
P2	Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
North: Stephen Road												
P3	Full	8	8	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
West: Swimbourne Street												
P4	Full	6	6	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
All Pedestrians		23	24	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: 103 [103 Foreshore Rd x Botany Rd x Penrhyn Rd EX+DEV+10YR AM (Site Folder: Existing + 10 Year Growth)]**

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	42	93.9	42	93.9	0.223	62.5	LOS E ¹¹	2.8	35.4	0.87	0.68	0.87	29.6
2	T1	All MCs	21	51.9	21	51.9	0.099	57.6	LOS E ¹¹	1.3	13.5	0.88	0.65	0.88	16.8
3	R2	All MCs	33	53.8	33	53.8	0.182	65.5	LOS E ¹¹	2.2	22.3	0.91	0.73	0.91	19.8
Approach			97	70.9	97	70.9	0.223	62.5	LOS E ¹¹	2.8	35.4	0.88	0.69	0.88	24.2
East: Botany Road															
4	L2	All MCs	56	52.3	56	52.3	0.053	8.2	LOS A	0.4	4.4	0.15	0.60	0.15	47.2
5	T1	All MCs	921	24.2	921	24.2	0.358	28.7	LOS C	12.7	107.3	0.60	0.52	0.60	54.6
6	R2	All MCs	346	25.6	346	25.6	* 1.157	258.9	LOS F ¹¹	45.6	388.9	1.00	1.39	2.04	8.6
Approach			1324	25.8	1324	25.8	1.157	88.0	LOS F ¹¹	45.6	388.9	0.68	0.75	0.96	30.5
North: Botany Road															
7	L2	All MCs	606	18.4	606	18.4	0.381	4.6	LOS A	0.0	0.0	0.00	0.45	0.00	44.2
8	T1	All MCs	20	55.2	20	55.2	0.096	107.9	LOS F ¹¹	1.3	13.0	0.88	0.67	0.88	15.9
9	R2	All MCs	188	60.8	188	60.8	* 1.131	264.6	LOS F ¹¹	23.7	252.2	1.00	1.47	2.01	13.9
Approach			814	29.1	814	29.1	1.131	67.3	LOS E ¹¹	23.7	252.2	0.25	0.69	0.49	25.0
West: Foreshore Road															
10	L2	All MCs	414	23.2	414	23.2	0.507	51.5	LOS D ¹¹	15.7	131.9	0.60	0.76	0.60	47.8
11	T1	All MCs	1583	14.0	1583	14.0	* 1.162	229.6	LOS F ¹¹	108.3	849.0	1.00	1.76	1.96	17.5
12	R2	All MCs	72	46.4	72	46.4	0.369	92.5	LOS F ¹¹	4.8	47.2	0.94	0.78	0.94	29.9
Approach			2069	17.0	2069	17.0	1.162	189.2	LOS F ¹¹	108.3	849.0	0.92	1.52	1.65	19.9
All Vehicles			4304	23.2	4304	23.2	1.162	132.2	LOS F ¹¹	108.3	849.0	0.72	1.11	1.20	23.0

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.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.
* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		Ped	m			sec	m	m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	69.1	LOS F ¹²	0.0	0.0	0.96	0.96	235.8	200.0	0.85
West: Foreshore Road												
P4	Full	1	1	69.1	LOS F ¹²	0.0	0.0	0.96	0.96	235.8	200.0	0.85
All Pedestrians		2	3	69.1	LOS F ¹²	0.0	0.0	0.96	0.96	235.8	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.
¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▽ Site: 201 [203 Botany Rd x Excell St EX+DEV+10YR AM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of [Veh.	Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	751	28.9	751	28.9	0.496	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.6
Approach			751	28.9	751	28.9	0.496	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.6
North: Excell Street															
7	L2	All MCs	338	58.7	338	58.7	0.726	20.3	LOS B	5.5	57.6	0.85	1.35	1.88	30.9
Approach			338	58.7	338	58.7	0.726	20.3	LOS B	5.5	57.6	0.85	1.35	1.88	30.9
West: Botany Road															
11	T1	All MCs	628	11.0	628	11.0	0.358	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
Approach			628	11.0	628	11.0	0.358	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.8
All Vehicles			1717	28.3	1717	28.3	0.726	4.1	NA	5.5	57.6	0.17	0.27	0.37	44.4

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: 303 [303 Botany Rd x Hills St EX+DEV+10YR AM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	408	18.5	408	18.5	0.559	4.9	LOS A	4.7	38.2	0.83	0.74	1.09	44.6
6	R2	All MCs	318	49.0	318	49.0	0.921	47.4	LOS D ¹¹	10.2	101.4	0.97	2.03	3.80	18.2
Approach			726	31.9	726	31.9	0.921	23.5	NA	10.2	101.4	0.89	1.31	2.27	28.9
West: Botany Road															
10	L2	All MCs	172	13.4	172	13.4	0.468	4.8	LOS A	0.0	0.0	0.00	0.11	0.00	44.0
11	T1	All MCs	635	11.1	635	11.1	0.468	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	48.5
Approach			807	11.6	807	11.6	0.468	1.1	NA	0.0	0.0	0.00	0.11	0.00	47.7
All Vehicles			1533	21.2	1533	21.2	0.921	11.7	NA	10.2	101.4	0.42	0.68	1.08	36.7

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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▽ Site: 403 [403 Botany Rd x Stephen Rd EX+DEV+10YR AM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%		sec		veh	m				
South: Botany Road															
2	T1	All MCs	159	11.3	159	11.3	0.574	1.2	LOS A	6.3	48.7	0.60	0.73	0.84	47.3
3	R2	All MCs	585	12.7	585	12.7	0.574	8.7	LOS A	6.3	48.7	0.60	0.73	0.84	45.2
Approach			745	12.4	745	12.4	0.574	7.1	NA	6.3	48.7	0.60	0.73	0.84	45.8
East: Stephen Road															
4	L2	All MCs	294	19.2	294	19.2	0.607	10.3	LOS A	9.2	74.1	0.56	0.63	0.84	46.5
6	R2	All MCs	128	14.0	128	14.0	0.607	30.4	LOS C	9.2	74.1	0.56	0.63	0.84	52.8
Approach			422	17.6	422	17.6	0.607	16.4	LOS B	9.2	74.1	0.56	0.63	0.84	49.2
North: Botany Road															
7	L2	All MCs	233	9.4	233	9.4	0.175	5.8	LOS A	0.0	0.0	0.00	0.46	0.00	57.0
8	T1	All MCs	64	14.0	64	14.0	0.175	0.1	LOS A	0.0	0.0	0.00	0.46	0.00	57.5
Approach			297	10.4	297	10.4	0.175	4.6	NA	0.0	0.0	0.00	0.46	0.00	57.1
All Vehicles			1463	13.5	1463	13.5	0.607	9.2	NA	9.2	74.1	0.46	0.65	0.67	49.6

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: 503 [503 McPherson St x Coal Pier Rd EX+DEV+10YR AM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of [Veh.	Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: McPherson Street															
2	T1	All MCs	74	46.6	74	46.6	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	50.0
Approach			74	46.6	74	46.6	0.056	0.0	NA	0.0	0.0	0.00	0.00	0.00	50.0
North: Coal Pier Road															
4	L2	All MCs	6	20.0	6	20.0	0.189	5.1	LOS A	0.7	7.0	0.40	0.65	0.40	45.9
6	R2	All MCs	128	59.1	128	59.1	0.189	7.5	LOS A	0.7	7.0	0.40	0.65	0.40	44.8
Approach			134	57.2	134	57.2	0.189	7.4	LOS A	0.7	7.0	0.40	0.65	0.40	44.8
West: McPherson Street															
7	L2	All MCs	179	43.9	179	43.9	0.197	5.0	LOS A	0.0	0.0	0.00	0.36	0.00	46.9
8	T1	All MCs	82	29.7	82	29.7	0.197	0.1	LOS A	0.0	0.0	0.00	0.36	0.00	47.8
Approach			261	39.4	261	39.4	0.197	3.5	NA	0.0	0.0	0.00	0.36	0.00	47.1
All Vehicles			470	45.6	470	45.6	0.197	4.0	NA	0.7	7.0	0.11	0.38	0.11	46.7

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 Stephen Rd x Swimbourne St EX+DEV+10YR AM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting + Development AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Stephen Road															
1	L2	All MCs	33	19.2	33	19.2	0.168	31.0	LOS C	1.1	8.7	0.91	0.71	0.91	41.0
2	T1	All MCs	222	8.7	222	8.7	* 0.842	33.7	LOS C	7.6	57.7	1.00	1.04	1.39	41.2
3	R2	All MCs	8	50.0	8	50.0	0.842	38.9	LOS C	7.6	57.7	1.00	1.05	1.40	35.0
Approach			263	11.2	263	11.2	0.842	33.5	LOS C	7.6	57.7	0.99	1.00	1.33	41.1
East: Swimbourne Street															
4	L2	All MCs	10	37.5	10	37.5	0.019	6.7	LOS A	0.1	1.4	0.54	0.59	0.54	43.3
5	T1	All MCs	9	42.9	9	42.9	0.080	28.6	LOS C	0.3	2.9	0.87	0.64	0.87	38.1
6	R2	All MCs	4	0.0	4	0.0	0.080	36.2	LOS C	0.3	2.9	0.92	0.65	0.92	38.2
Approach			23	33.3	23	33.3	0.080	20.2	LOS B	0.3	2.9	0.73	0.62	0.73	40.2
North: Stephen Road															
7	L2	All MCs	31	0.0	31	0.0	0.197	30.8	LOS C	2.7	20.4	0.69	0.59	0.69	43.5
8	T1	All MCs	252	8.6	252	8.6	* 0.912	39.2	LOS C	20.6	154.2	0.86	0.91	1.13	42.6
9	R2	All MCs	381	8.1	381	8.1	0.912	53.8	LOS D ¹¹	20.6	154.2	1.00	1.16	1.48	39.7
Approach			664	7.9	664	7.9	0.912	47.2	LOS D ¹¹	20.6	154.2	0.93	1.04	1.31	40.9
West: Swimbourne Street															
10	L2	All MCs	799	2.4	799	2.4	0.762	20.6	LOS B	17.5	125.4	0.75	0.84	0.79	45.4
11	T1	All MCs	42	9.1	42	9.1	* 0.520	32.3	LOS C	3.3	24.4	0.97	0.78	0.98	36.8
12	R2	All MCs	69	5.6	69	5.6	0.520	39.0	LOS C	3.3	24.4	0.97	0.78	0.98	40.6
Approach			911	3.0	911	3.0	0.762	22.6	LOS B	17.5	125.4	0.78	0.83	0.82	44.8
All Vehicles			1861	6.3	1861	6.3	0.912	32.9	LOS C	20.6	154.2	0.86	0.92	1.06	42.7

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.
Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik 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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.
* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] 						

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 104 [104 Foreshore Rd x Botany Rd x Penrhyn Rd EX+DEV+10YR PM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	71	63.6	71	63.6	0.512	75.7	LOS F ¹¹	5.1	55.0	0.97	0.84	0.97	27.5
2	T1	All MCs	15	39.9	15	39.9	0.042	45.0	LOS D ¹¹	0.8	7.7	0.78	0.57	0.78	19.7
3	R2	All MCs	45	77.1	45	77.1	0.175	53.2	LOS D ¹¹	2.6	30.5	0.82	0.72	0.82	21.0
Approach			130	65.6	130	65.6	0.512	64.5	LOS E ¹¹	5.1	55.0	0.90	0.77	0.90	24.9
East: Botany Road															
4	L2	All MCs	65	90.2	65	90.2	0.074	18.6	LOS B	0.5	5.9	0.15	0.60	0.15	47.0
5	T1	All MCs	1644	10.1	1644	10.1	0.625	33.0	LOS C	30.3	230.2	0.74	0.68	0.74	51.8
6	R2	All MCs	403	15.9	403	15.9	* 1.059	175.6	LOS F ¹¹	45.8	364.1	1.00	1.28	1.66	12.2
Approach			2112	13.7	2112	13.7	1.059	59.8	LOS E ¹¹	45.8	364.1	0.77	0.80	0.90	38.9
North: Botany Road															
7	L2	All MCs	515	8.7	515	8.7	0.295	4.5	LOS A	0.0	0.0	0.00	0.46	0.00	44.4
8	T1	All MCs	18	63.3	18	63.3	0.058	94.0	LOS F ¹¹	1.0	10.5	0.79	0.62	0.79	18.3
9	R2	All MCs	323	23.9	323	23.9	* 1.054	197.2	LOS F ¹¹	35.8	302.0	1.00	1.31	1.67	18.4
Approach			855	15.6	855	15.6	1.054	79.1	LOS F ¹¹	35.8	302.0	0.39	0.79	0.65	25.5
West: Foreshore Road															
10	L2	All MCs	202	35.8	202	35.8	0.262	32.7	LOS C	7.2	66.2	0.57	0.73	0.57	46.4
11	T1	All MCs	933	19.1	933	19.1	* 1.067	154.8	LOS F ¹¹	52.6	428.8	1.00	1.42	1.65	22.5
12	R2	All MCs	46	88.9	46	88.9	0.620	94.7	LOS F ¹¹	3.6	44.3	1.00	0.82	1.09	26.5
Approach			1181	24.7	1181	24.7	1.067	131.6	LOS F ¹¹	52.6	428.8	0.93	1.28	1.44	24.4
All Vehicles			4278	18.7	4278	18.7	1.067	83.6	LOS F ¹¹	52.6	428.8	0.74	0.93	1.00	30.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.
* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	69.1	LOS F ¹²	0.0	0.0	0.96	0.96	235.8	200.0	0.85
West: Foreshore Road												
P4	Full	1	1	69.1	LOS F ¹²	0.0	0.0	0.96	0.96	235.8	200.0	0.85
All Pedestrians		2	3	69.1	LOS F ¹²	0.0	0.0	0.96	0.96	235.8	200.0	0.85

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

▽ Site: 204 [204 Botany Rd x Excell St EX+DEV+10YR PM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	798	19.3	798	19.3	0.488	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.6
Approach			798	19.3	798	19.3	0.488	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.6
North: Excell Street															
7	L2	All MCs	524	18.8	524	18.8	0.630	11.2	LOS A	5.3	43.0	0.71	1.06	1.27	36.9
Approach			524	18.8	524	18.8	0.630	11.2	LOS A	5.3	43.0	0.71	1.06	1.27	36.9
West: Botany Road															
11	T1	All MCs	487	9.5	487	9.5	0.274	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			487	9.5	487	9.5	0.274	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			1809	16.5	1809	16.5	0.630	3.3	NA	5.3	43.0	0.21	0.31	0.37	45.2

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: 304 [304 Botany Rd x Hills St EX+DEV+10YR PM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec							km/h
East: Botany Road															
5	T1	All MCs	589	10.2	589	10.2	0.333	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
6	R2	All MCs	209	42.3	209	42.3	0.373	13.1	LOS A	1.9	17.7	0.70	0.96	0.93	31.4
Approach			798	18.6	798	18.6	0.373	3.5	NA	1.9	17.7	0.18	0.25	0.24	44.3
West: Botany Road															
10	L2	All MCs	154	10.8	154	10.8	0.364	4.7	LOS A	0.0	0.0	0.00	0.13	0.00	44.2
11	T1	All MCs	482	9.6	482	9.6	0.364	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	48.5
Approach			636	9.9	636	9.9	0.364	1.2	NA	0.0	0.0	0.00	0.13	0.00	47.6
All Vehicles			1434	14.8	1434	14.8	0.373	2.5	NA	1.9	17.7	0.10	0.20	0.14	45.7

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 Botany Rd x Stephen Rd EX+DEV+10YR PM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%		sec		veh	m				
South: Botany Road															
2	T1	All MCs	130	6.9	130	6.9	0.482	0.8	LOS A	4.1	31.1	0.58	0.72	0.76	47.5
3	R2	All MCs	473	10.3	473	10.3	0.482	8.3	LOS A	4.1	31.1	0.58	0.72	0.76	45.4
Approach			603	9.6	603	9.6	0.482	6.7	NA	4.1	31.1	0.58	0.72	0.76	46.0
East: Stephen Road															
4	L2	All MCs	467	11.0	467	11.0	0.716	11.3	LOS A	11.4	86.4	0.74	0.90	1.39	47.9
6	R2	All MCs	153	6.7	153	6.7	0.716	25.1	LOS B	11.4	86.4	0.74	0.90	1.39	53.4
Approach			620	9.9	620	9.9	0.716	14.8	LOS B	11.4	86.4	0.74	0.90	1.39	49.9
North: Botany Road															
7	L2	All MCs	180	6.4	180	6.4	0.198	5.8	LOS A	0.0	0.0	0.00	0.29	0.00	57.7
8	T1	All MCs	181	2.1	181	2.1	0.198	0.2	LOS A	0.0	0.0	0.00	0.29	0.00	58.4
Approach			360	4.3	360	4.3	0.198	2.9	NA	0.0	0.0	0.00	0.29	0.00	58.0
All Vehicles			1584	8.5	1584	8.5	0.716	9.0	NA	11.4	86.4	0.51	0.69	0.83	50.6

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: 504 [504 McPherson St x Coal Pier Rd EX+DEV+10YR PM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%		sec		veh	m				
East: McPherson Street															
2	T1	All MCs	142	10.8	142	10.8	0.086	0.0	LOS A	0.0	0.4	0.04	0.04	0.04	49.8
3	R2	All MCs	5	25.0	5	25.0	0.086	8.1	LOS A	0.0	0.4	0.04	0.04	0.04	48.5
Approach			148	11.3	148	11.3	0.086	0.3	NA	0.0	0.4	0.04	0.04	0.04	49.7
North: Coal Pier Road															
4	L2	All MCs	6	20.0	6	20.0	0.254	5.2	LOS A	0.9	7.9	0.43	0.67	0.43	45.9
6	R2	All MCs	198	23.8	198	23.8	0.254	7.1	LOS A	0.9	7.9	0.43	0.67	0.43	45.2
Approach			204	23.7	204	23.7	0.254	7.0	LOS A	0.9	7.9	0.43	0.67	0.43	45.2
West: McPherson Street															
7	L2	All MCs	143	37.7	143	37.7	0.169	4.9	LOS A	0.0	0.0	0.00	0.30	0.00	47.3
8	T1	All MCs	107	12.0	107	12.0	0.169	0.0	LOS A	0.0	0.0	0.00	0.30	0.00	48.3
Approach			249	26.8	249	26.8	0.169	2.8	NA	0.0	0.0	0.00	0.30	0.00	47.7
All Vehicles			601	21.9	601	21.9	0.254	3.6	NA	0.9	7.9	0.16	0.36	0.16	47.1

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: 604 [604 Stephen Rd x Swimbourne St EX+DEV+10YR PM (Site Folder: Existing + 10 Year Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting + Development PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Queue Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Stephen Road															
1	L2	All MCs	45	8.6	45	8.6	0.178	65.9	LOS E ¹¹	3.1	23.1	0.89	0.73	0.89	35.5
2	T1	All MCs	293	1.8	293	1.8	* 0.888	78.1	LOS F ¹¹	22.0	157.9	1.00	1.04	1.21	34.8
3	R2	All MCs	8	50.0	8	50.0	0.888	83.7	LOS F ¹¹	22.0	157.9	1.00	1.05	1.22	26.9
Approach			345	3.7	345	3.7	0.888	76.7	LOS F ¹¹	22.0	157.9	0.98	1.00	1.17	34.8
East: Swimbourne Street															
4	L2	All MCs	4	33.3	4	33.3	0.157	5.5	LOS A	1.5	11.3	0.95	0.69	0.95	29.0
5	T1	All MCs	40	3.2	40	3.2	* 0.676	72.6	LOS F ¹¹	3.1	22.3	0.98	0.75	1.05	27.6
6	R2	All MCs	23	0.0	23	0.0	0.676	88.8	LOS F ¹¹	3.1	22.3	1.00	0.81	1.16	27.4
Approach			67	3.8	67	3.8	0.676	74.3	LOS F ¹¹	3.1	22.3	0.98	0.77	1.08	27.6
North: Stephen Road															
7	L2	All MCs	8	16.7	8	16.7	0.186	38.0	LOS C	3.0	21.5	0.47	0.41	0.47	43.7
8	T1	All MCs	240	2.7	240	2.7	* 0.859	42.3	LOS C	46.8	343.4	0.73	0.70	0.75	43.6
9	R2	All MCs	665	6.2	665	6.2	0.859	52.3	LOS D ¹¹	46.8	343.4	0.88	0.88	0.92	41.4
Approach			913	5.3	913	5.3	0.859	49.6	LOS D ¹¹	46.8	343.4	0.84	0.83	0.87	42.0
West: Swimbourne Street															
10	L2	All MCs	536	1.7	536	1.7	0.426	18.8	LOS B	14.0	99.8	0.43	0.69	0.43	45.9
11	T1	All MCs	1	100.0	1	100.0	0.590	75.7	LOS F ¹¹	2.6	18.5	1.00	0.77	1.09	25.5
12	R2	All MCs	33	0.0	33	0.0	0.590	89.2	LOS F ¹¹	2.6	18.5	1.00	0.77	1.09	31.3
Approach			571	1.8	571	1.8	0.590	23.0	LOS B	14.0	99.8	0.46	0.69	0.47	44.7
All Vehicles			1896	3.9	1896	3.9	0.888	47.4	LOS D ¹¹	46.8	343.4	0.76	0.82	0.81	40.8

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.
Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik 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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.
* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Stephen Road												
P1	Full	8	10	64.2	LOS F ¹²	0.0	0.0	0.96	0.96	230.8	200.0	0.87
East: Swimbourne Street												
P2	Full	1	1	64.1	LOS F ¹²	0.0	0.0	0.96	0.96	230.8	200.0	0.87
North: Stephen Road												
P3	Full	8	10	64.2	LOS F ¹²	0.0	0.0	0.96	0.96	230.8	200.0	0.87
West: Swimbourne Street												
P4	Full	6	8	64.1	LOS F ¹²	0.0	0.0	0.96	0.96	230.8	200.0	0.87
All Pedestrians		23	30	64.2	LOS F ¹²	0.0	0.0	0.96	0.96	230.8	200.0	0.87

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

 Site: 105 [105 Foreshore Rd x Botany Rd x Penrhyn Rd EX+DEV+APP AM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting + Development + Approved AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	35	93.9	35	93.9	0.176	45.6	LOS D	1.6	20.8	0.87	0.67	0.87	33.7
2	T1	All MCs	18	52.9	18	52.9	0.073	40.0	LOS C	0.8	8.2	0.85	0.62	0.85	21.1
3	R2	All MCs	27	53.8	27	53.8	0.124	46.3	LOS D	1.3	12.9	0.87	0.70	0.87	23.6
Approach			80	71.1	80	71.1	0.176	44.6	LOS D	1.6	20.8	0.86	0.67	0.86	28.4
East: Botany Road															
4	L2	All MCs	46	52.3	46	52.3	0.044	8.1	LOS A	0.3	2.6	0.17	0.60	0.17	47.4
5	T1	All MCs	756	24.2	756	24.2	0.321	18.1	LOS B	8.1	68.8	0.64	0.55	0.64	55.7
6	R2	All MCs	302	25.4	302	25.4	* 0.977	80.5	LOS F	17.6	150.1	1.00	1.16	1.57	19.5
Approach			1104	25.7	1104	25.7	0.977	34.7	LOS C	17.6	150.1	0.72	0.72	0.88	43.1
North: Botany Road															
7	L2	All MCs	512	18.5	512	18.5	0.321	4.6	LOS A	0.0	0.0	0.00	0.46	0.00	44.4
8	T1	All MCs	17	56.3	17	56.3	0.071	72.0	LOS F	0.8	7.8	0.85	0.65	0.85	19.6
9	R2	All MCs	203	52.3	203	52.3	* 0.967	119.2	LOS F	15.1	153.1	1.00	1.22	1.62	25.2
Approach			732	28.8	732	28.8	0.967	38.0	LOS C	15.1	153.1	0.30	0.67	0.47	33.6
West: Foreshore Road															
10	L2	All MCs	454	20.6	454	20.6	0.550	13.5	LOS A	10.3	84.6	0.54	0.74	0.54	51.6
11	T1	All MCs	1299	14.0	1299	14.0	* 0.974	71.8	LOS F	47.9	375.7	1.00	1.25	1.40	35.0
12	R2	All MCs	59	46.4	59	46.4	0.314	57.2	LOS E	2.9	28.7	0.93	0.76	0.93	33.9
Approach			1812	16.7	1812	16.7	0.974	56.7	LOS E	47.9	375.7	0.88	1.11	1.17	37.6
All Vehicles			3727	22.9	3727	22.9	0.977	46.3	LOS D	47.9	375.7	0.72	0.90	0.94	38.2

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.
Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	49.2	LOS E	0.0	0.0	0.95	0.95	215.8	200.0	0.93
West: Foreshore Road												
P4	Full	1	1	49.2	LOS E	0.0	0.0	0.95	0.95	215.8	200.0	0.93
All Pedestrians		2	2	49.2	LOS E	0.0	0.0	0.95	0.95	215.8	200.0	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▽ Site: 205 [205 Botany Rd x Excell St EX+DEV+APP AM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting + Development + Approved AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	747	26.3	747	26.3	0.481	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	51.0
Approach			747	26.3	747	26.3	0.481	0.1	NA	0.0	0.0	0.00	0.00	0.00	51.0
North: Excell Street															
7	L2	All MCs	341	52.5	341	52.5	0.556	13.3	LOS A	3.7	37.5	0.71	1.05	1.19	35.8
Approach			341	52.5	341	52.5	0.556	13.3	LOS A	3.7	37.5	0.71	1.05	1.19	35.8
West: Botany Road															
11	T1	All MCs	516	11.0	516	11.0	0.294	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
Approach			516	11.0	516	11.0	0.294	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.8
All Vehicles			1604	27.0	1604	27.0	0.556	2.9	NA	3.7	37.5	0.15	0.22	0.25	46.5

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: 305 [305 Botany Rd x Hills St EX+DEV+APP AM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing + Development + Approved AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist [Veh. m]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	336	18.5	336	18.5	0.408	2.2	LOS A	2.3	18.5	0.70	0.52	0.73	46.6
6	R2	All MCs	393	38.1	393	38.1	0.780	23.3	LOS B	6.9	64.0	0.89	1.45	2.28	26.8
Approach			728	29.0	728	29.0	0.780	13.6	NA	6.9	64.0	0.80	1.02	1.56	34.6
West: Botany Road															
10	L2	All MCs	176	13.2	176	13.2	0.404	4.8	LOS A	0.0	0.0	0.00	0.14	0.00	44.1
11	T1	All MCs	521	11.1	521	11.1	0.404	0.1	LOS A	0.0	0.0	0.00	0.14	0.00	48.8
Approach			697	11.6	697	11.6	0.404	1.3	NA	0.0	0.0	0.00	0.14	0.00	47.7
All Vehicles			1425	20.5	1425	20.5	0.780	7.6	NA	6.9	64.0	0.41	0.59	0.80	40.2

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 (Akcelik 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: 405 [405 Botany Rd x Stephen Rd EX+DEV+APP AM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing + Development + Approved AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist [Veh. m]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Botany Road															
2	T1	All MCs	131	11.3	131	11.3	0.463	0.5	LOS A	3.7	28.6	0.53	0.63	0.62	47.8
3	R2	All MCs	481	12.7	481	12.7	0.463	7.4	LOS A	3.7	28.6	0.53	0.63	0.62	45.7
Approach			612	12.4	612	12.4	0.463	5.9	NA	3.7	28.6	0.53	0.63	0.62	46.3
East: Stephen Road															
4	L2	All MCs	241	19.2	241	19.2	0.426	6.3	LOS A	2.2	17.4	0.43	0.56	0.43	50.1
6	R2	All MCs	105	14.0	105	14.0	0.426	16.3	LOS B	2.2	17.4	0.43	0.56	0.43	55.1
Approach			346	17.6	346	17.6	0.426	9.4	LOS A	2.2	17.4	0.43	0.56	0.43	52.3
North: Botany Road															
7	L2	All MCs	192	9.3	192	9.3	0.164	5.8	LOS A	0.0	0.0	0.00	0.40	0.00	57.2
8	T1	All MCs	87	13.3	87	13.3	0.164	0.1	LOS A	0.0	0.0	0.00	0.40	0.00	57.8
Approach			279	10.6	279	10.6	0.164	4.0	NA	0.0	0.0	0.00	0.40	0.00	57.3
All Vehicles			1237	13.4	1237	13.4	0.463	6.5	NA	3.7	28.6	0.38	0.56	0.43	50.9

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: 505 [505 McPherson St x Coal Pier Rd EX+DEV+APP AM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing + Development + Approved AM Peak
7:45am - 8:45am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: McPherson Street															
2	T1	All MCs	97	34.8	97	34.8	0.066	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	53.2
Approach			97	34.8	97	34.8	0.066	0.1	NA	0.0	0.0	0.00	0.02	0.00	53.2
North: Coal Pier Road															
4	L2	All MCs	5	20.0	5	20.0	0.189	5.5	LOS A	0.6	6.8	0.48	0.72	0.48	45.4
6	R2	All MCs	108	59.2	108	59.2	0.189	8.8	LOS A	0.6	6.8	0.48	0.72	0.48	44.2
Approach			114	57.4	114	57.4	0.189	8.6	LOS A	0.6	6.8	0.48	0.72	0.48	44.3
West: McPherson Street															
7	L2	All MCs	231	32.9	231	32.9	0.258	5.3	LOS A	0.0	0.0	0.00	0.33	0.00	50.0
8	T1	All MCs	151	21.7	151	21.7	0.258	0.1	LOS A	0.0	0.0	0.00	0.33	0.00	51.3
Approach			381	28.5	381	28.5	0.258	3.3	NA	0.0	0.0	0.00	0.33	0.00	50.4
All Vehicles			592	35.1	592	35.1	0.258	3.8	NA	0.6	6.8	0.09	0.35	0.09	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: 605 [605 Stephen Rd x Swimbourne St EX+DEV+APP AM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting + Development + Approved AM Peak
7:45am - 8:45am
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Stephen Road															
1	L2	All MCs	27	19.2	27	19.2	0.138	30.6	LOS C	0.9	7.1	0.90	0.70	0.90	41.0
2	T1	All MCs	182	8.7	182	8.7	* 0.692	28.9	LOS C	5.6	42.7	0.99	0.88	1.13	42.3
3	R2	All MCs	6	50.0	6	50.0	0.692	34.0	LOS C	5.6	42.7	1.00	0.88	1.14	36.4
Approach			216	11.2	216	11.2	0.692	29.3	LOS C	5.6	42.7	0.98	0.85	1.10	42.0
East: Swimbourne Street															
4	L2	All MCs	8	37.5	8	37.5	0.016	6.8	LOS A	0.1	1.2	0.57	0.59	0.57	42.8
5	T1	All MCs	7	42.9	7	42.9	0.069	30.8	LOS C	0.3	2.4	0.88	0.64	0.88	37.8
6	R2	All MCs	3	0.0	3	0.0	0.069	36.6	LOS C	0.3	2.4	0.93	0.65	0.93	37.9
Approach			19	33.3	19	33.3	0.069	21.1	LOS B	0.3	2.4	0.75	0.62	0.75	39.8
North: Stephen Road															
7	L2	All MCs	25	0.0	25	0.0	0.153	26.8	LOS B	2.1	15.7	0.66	0.57	0.66	43.9
8	T1	All MCs	208	8.6	208	8.6	* 0.709	25.4	LOS B	11.2	83.9	0.79	0.73	0.82	45.3
9	R2	All MCs	313	8.1	313	8.1	0.709	32.3	LOS C	11.2	83.9	0.88	0.85	0.95	43.8
Approach			546	7.9	546	7.9	0.709	29.4	LOS C	11.2	83.9	0.84	0.79	0.89	44.4
West: Swimbourne Street															
10	L2	All MCs	656	2.4	656	2.4	0.615	15.7	LOS B	11.3	80.4	0.63	0.76	0.63	46.2
11	T1	All MCs	35	9.1	35	9.1	* 0.479	31.6	LOS C	2.7	20.2	0.98	0.76	0.98	36.6
12	R2	All MCs	57	5.6	57	5.6	0.479	38.4	LOS C	2.7	20.2	0.98	0.76	0.98	40.4
Approach			747	3.0	747	3.0	0.615	18.2	LOS B	11.3	80.4	0.67	0.76	0.67	45.4
All Vehicles			1528	6.3	1528	6.3	0.709	23.8	LOS B	11.3	83.9	0.77	0.78	0.81	44.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Stephen Road												
P1	Full	2	2	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
East: Swimbourne Street												
P2	Full	1	1	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
North: Stephen Road												
P3	Full	10	11	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
West: Swimbourne Street												
P4	Full	5	5	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05
All Pedestrians		18	19	24.3	LOS C	0.0	0.0	0.90	0.90	191.0	200.0	1.05

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 Site: 106 [106 Foreshore Rd x Botany Rd x Penrhyn Rd EX+DEV+APP PM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Foreshore Road x Botany Road x Penrhyn Road
Exisiting + Development + Approved PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Penrhyn Road															
1	L2	All MCs	58	63.6	58	63.6	0.388	48.5	LOS D	2.7	29.4	0.96	0.72	0.96	33.7
2	T1	All MCs	13	41.7	13	41.7	0.030	26.5	LOS B	0.4	4.1	0.73	0.52	0.73	26.2
3	R2	All MCs	37	77.1	37	77.1	0.117	32.6	LOS C	1.3	15.5	0.76	0.69	0.76	25.6
Approach			107	65.7	107	65.7	0.388	40.5	LOS C	2.7	29.4	0.86	0.69	0.86	30.7
East: Botany Road															
4	L2	All MCs	54	90.2	54	90.2	0.062	8.5	LOS A	0.3	3.5	0.18	0.60	0.18	47.1
5	T1	All MCs	1348	10.1	1348	10.1	0.571	22.8	LOS B	16.7	127.2	0.79	0.70	0.79	53.4
6	R2	All MCs	337	16.3	337	16.3	* 0.957	67.8	LOS E	16.6	132.7	1.00	1.09	1.51	23.1
Approach			1739	13.8	1739	13.8	0.957	31.1	LOS C	16.7	132.7	0.81	0.77	0.91	46.9
North: Botany Road															
7	L2	All MCs	456	9.2	456	9.2	0.262	4.6	LOS A	0.0	0.0	0.00	0.47	0.00	44.8
8	T1	All MCs	15	64.3	15	64.3	0.041	55.1	LOS D	0.5	5.6	0.73	0.59	0.73	23.9
9	R2	All MCs	376	21.3	376	21.3	* 0.978	109.5	LOS F	27.0	223.8	1.00	1.25	1.59	26.6
Approach			846	15.5	846	15.5	0.978	52.1	LOS D	27.0	223.8	0.46	0.82	0.72	31.9
West: Foreshore Road															
10	L2	All MCs	213	33.7	213	33.7	0.273	12.0	LOS A	3.5	31.8	0.43	0.69	0.43	52.8
11	T1	All MCs	765	19.1	765	19.1	* 0.942	63.2	LOS E	24.3	198.3	1.00	1.16	1.43	36.8
12	R2	All MCs	38	88.9	38	88.9	0.581	63.1	LOS E	2.0	25.2	1.00	0.80	1.12	31.4
Approach			1016	24.8	1016	24.8	0.942	52.5	LOS D	24.3	198.3	0.88	1.05	1.21	38.7
All Vehicles			3708	18.7	3708	18.7	0.978	42.0	LOS C	27.0	223.8	0.75	0.86	0.95	40.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped Dist] m		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Penrhyn Road												
P1B	Slip/Bypass	1	1	44.2	LOS E	0.0	0.0	0.94	0.94	210.8	200.0	0.95
West: Foreshore Road												
P4	Full	1	1	44.2	LOS E	0.0	0.0	0.94	0.94	210.8	200.0	0.95
All Pedestrians		2	2	44.2	LOS E	0.0	0.0	0.94	0.94	210.8	200.0	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

▽ Site: 206 [206 Botany Rd x Excell St EX+DEV+APP PM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Excell Street
Exisiting + Development + Approved PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist [Veh. m]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	708	19.9	708	19.9	0.434	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	50.3
Approach			708	19.9	708	19.9	0.434	0.1	NA	0.0	0.0	0.00	0.00	0.00	50.3
North: Excell Street															
7	L2	All MCs	574	18.0	574	18.0	0.604	10.0	LOS A	5.4	43.3	0.67	0.94	1.08	38.9
Approach			574	18.0	574	18.0	0.604	10.0	LOS A	5.4	43.3	0.67	0.94	1.08	38.9
West: Botany Road															
11	T1	All MCs	401	9.4	401	9.4	0.225	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			401	9.4	401	9.4	0.225	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			1683	16.8	1683	16.8	0.604	3.5	NA	5.4	43.3	0.23	0.32	0.37	45.7

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: 306 [306 Botany Rd x Hills St EX+DEV+APP PM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Hills Street
Existing + Development + Approved PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist [Veh. m]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Botany Road															
5	T1	All MCs	483	10.2	483	10.2	0.273	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
6	R2	All MCs	225	38.8	225	38.8	0.318	10.6	LOS A	1.6	14.8	0.64	0.86	0.76	34.1
Approach			708	19.3	708	19.3	0.318	3.4	NA	1.6	14.8	0.21	0.27	0.24	44.5
West: Botany Road															
10	L2	All MCs	137	10.0	137	10.0	0.305	4.7	LOS A	0.0	0.0	0.00	0.14	0.00	44.3
11	T1	All MCs	397	9.5	397	9.5	0.305	0.1	LOS A	0.0	0.0	0.00	0.14	0.00	48.7
Approach			534	9.7	534	9.7	0.305	1.3	NA	0.0	0.0	0.00	0.14	0.00	47.7
All Vehicles			1242	15.2	1242	15.2	0.318	2.5	NA	1.6	14.8	0.12	0.22	0.14	45.8

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 (Akcelik 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: 406 [406 Botany Rd x Stephen Rd EX+DEV+APP PM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Botany Road x Stephen Road
Existing + Development + Approved PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist [Veh. m]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Botany Road															
2	T1	All MCs	106	6.9	106	6.9	0.375	0.1	LOS A	2.3	17.1	0.50	0.59	0.52	47.9
3	R2	All MCs	388	10.3	388	10.3	0.375	6.9	LOS A	2.3	17.1	0.50	0.59	0.52	46.0
Approach			495	9.6	495	9.6	0.375	5.4	NA	2.3	17.1	0.50	0.59	0.52	46.5
East: Stephen Road															
4	L2	All MCs	384	11.0	384	11.0	0.527	7.8	LOS A	4.7	35.9	0.52	0.68	0.69	50.6
6	R2	All MCs	129	6.5	129	6.5	0.527	15.0	LOS B	4.7	35.9	0.52	0.68	0.69	55.1
Approach			514	9.8	514	9.8	0.527	9.6	LOS A	4.7	35.9	0.52	0.68	0.69	52.3
North: Botany Road															
7	L2	All MCs	148	6.4	148	6.4	0.169	5.7	LOS A	0.0	0.0	0.00	0.28	0.00	57.7
8	T1	All MCs	159	2.0	159	2.0	0.169	0.1	LOS A	0.0	0.0	0.00	0.28	0.00	58.4
Approach			307	4.1	307	4.1	0.169	2.8	NA	0.0	0.0	0.00	0.28	0.00	58.0
All Vehicles			1316	8.4	1316	8.4	0.527	6.5	NA	4.7	35.9	0.39	0.55	0.46	51.8

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: 506 [506 McPherson St x Coal Pier Rd EX+DEV+APP PM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: McPherson Street x Coal Pier Road
Existing + Development + Approved PM Peak
3:00pm - 4:00pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue Dist [Veh. m]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: McPherson Street															
2	T1	All MCs	206	12.8	206	12.8	0.121	0.0	LOS A	0.0	0.3	0.02	0.03	0.02	54.1
3	R2	All MCs	4	25.0	4	25.0	0.121	7.5	LOS A	0.0	0.3	0.02	0.03	0.02	50.0
Approach			211	13.0	211	13.0	0.121	0.2	NA	0.0	0.3	0.02	0.03	0.02	54.0
North: Coal Pier Road															
4	L2	All MCs	5	20.0	5	20.0	0.304	5.6	LOS A	1.2	10.3	0.50	0.74	0.55	46.5
6	R2	All MCs	217	21.8	217	21.8	0.304	8.2	LOS A	1.2	10.3	0.50	0.74	0.55	46.3
Approach			222	21.8	222	21.8	0.304	8.2	LOS A	1.2	10.3	0.50	0.74	0.55	46.3
West: McPherson Street															
7	L2	All MCs	142	37.0	142	37.0	0.178	5.1	LOS A	0.0	0.0	0.00	0.28	0.00	48.9
8	T1	All MCs	126	13.3	126	13.3	0.178	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	50.1
Approach			268	25.9	268	25.9	0.178	2.7	NA	0.0	0.0	0.00	0.28	0.00	49.4
All Vehicles			701	20.7	701	20.7	0.304	3.7	NA	1.2	10.3	0.16	0.35	0.18	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: 606 [606 Stephen Rd x Swimbourne St EX+DEV+APP PM (Site Folder: Existing + Development + Cumulative)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Intersection: Stephen Road x Swimbourne Street
Exisiting + Development + Approved PM Peak
3:00pm - 4:00pm
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Stephen Road															
1	L2	All MCs	37	8.6	37	8.6	0.159	38.0	LOS C	1.6	11.5	0.89	0.72	0.89	39.6
2	T1	All MCs	245	1.7	245	1.7	* 0.794	39.4	LOS C	10.2	73.1	1.00	0.95	1.19	40.7
3	R2	All MCs	6	50.0	6	50.0	0.794	44.6	LOS D	10.2	73.1	1.00	0.96	1.20	33.8
Approach			288	3.6	288	3.6	0.794	39.3	LOS C	10.2	73.1	0.98	0.92	1.16	40.5
East: Swimbourne Street															
4	L2	All MCs	3	33.3	3	33.3	0.079	5.5	LOS A	0.5	4.1	0.91	0.65	0.91	36.2
5	T1	All MCs	33	3.2	33	3.2	* 0.342	38.2	LOS C	1.6	11.1	0.96	0.69	0.96	34.6
6	R2	All MCs	19	0.0	19	0.0	0.342	50.1	LOS D	1.6	11.1	0.99	0.72	0.99	34.4
Approach			55	3.8	55	3.8	0.342	40.4	LOS C	1.6	11.1	0.97	0.70	0.97	34.6
North: Stephen Road															
7	L2	All MCs	6	16.7	6	16.7	0.173	30.7	LOS C	3.3	23.4	0.58	0.48	0.58	44.2
8	T1	All MCs	199	2.6	199	2.6	0.800	28.7	LOS C	21.4	157.6	0.66	0.59	0.68	45.9
9	R2	All MCs	545	6.2	545	6.2	* 0.800	41.0	LOS C	21.4	157.6	0.89	0.90	0.99	42.5
Approach			751	5.3	751	5.3	0.800	37.6	LOS C	21.4	157.6	0.83	0.81	0.90	43.3
West: Swimbourne Street															
10	L2	All MCs	440	1.7	440	1.7	0.364	13.2	LOS A	7.1	50.3	0.45	0.69	0.45	46.5
11	T1	All MCs	1	100.0	1	100.0	0.248	39.1	LOS C	1.1	8.2	0.98	0.72	0.98	32.9
12	R2	All MCs	27	0.0	27	0.0	0.248	47.9	LOS D	1.1	8.2	0.98	0.72	0.98	37.6
Approach			468	1.8	468	1.8	0.364	15.3	LOS B	7.1	50.3	0.48	0.69	0.48	45.9
All Vehicles			1562	3.9	1562	3.9	0.800	31.4	LOS C	21.4	157.6	0.76	0.79	0.82	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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

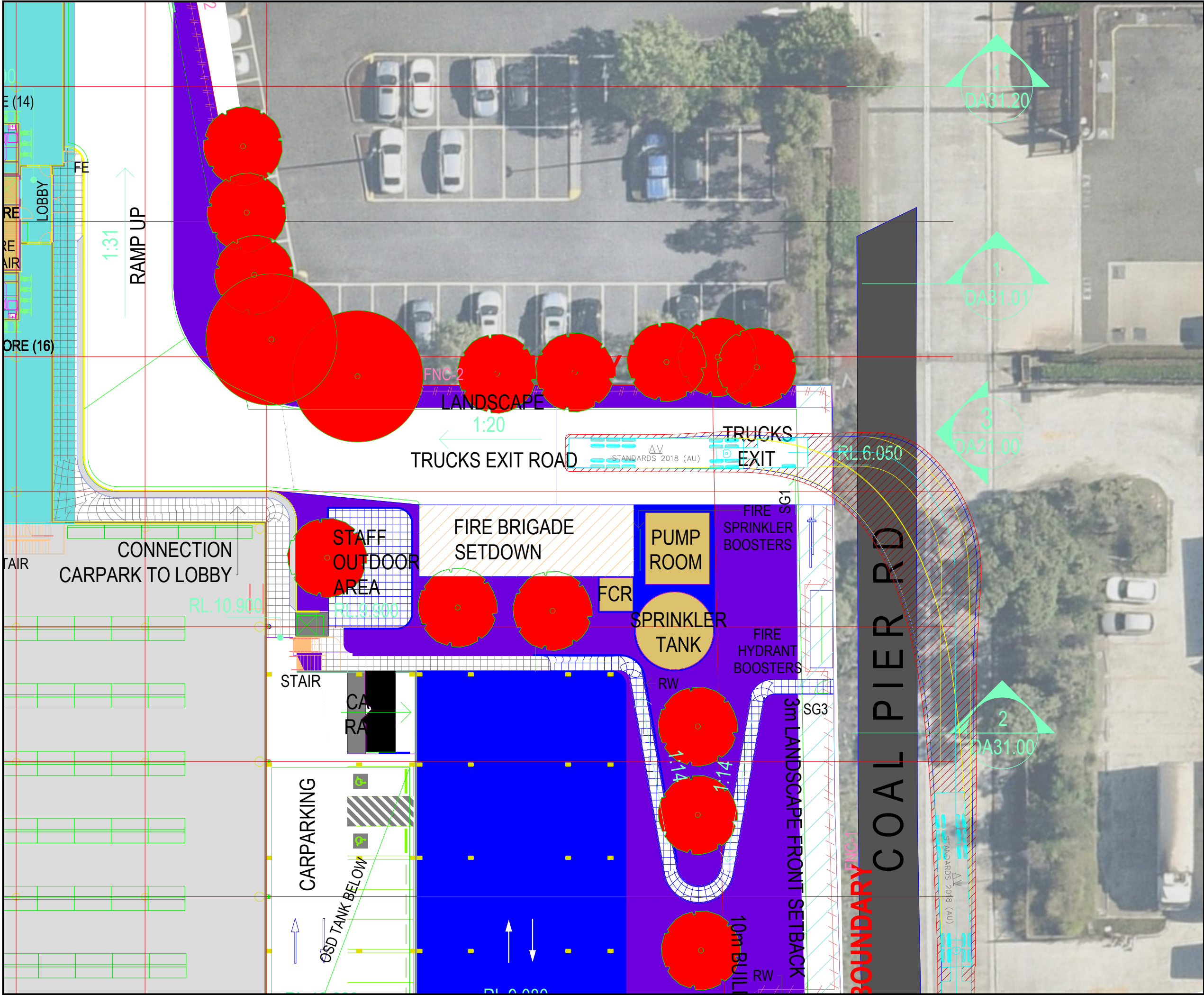
* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Stephen Road												
P1	Full	8	8	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
East: Swimbourne Street												
P2	Full	1	1	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
North: Stephen Road												
P3	Full	8	8	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
West: Swimbourne Street												
P4	Full	6	6	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00
All Pedestrians		23	24	34.2	LOS D	0.0	0.0	0.93	0.93	200.9	200.0	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect
SBA Architects

Client
ESR

Scale

0 3 6 9 12m
1:300 @ A3

Project Description
Proposed Multi-Level Industrial Development
49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By
TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

t: +61 2 8324 8700
f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
Ground Floor - Heavy Vehicle Access
20.0m Articulated Vehicle
Site Egress

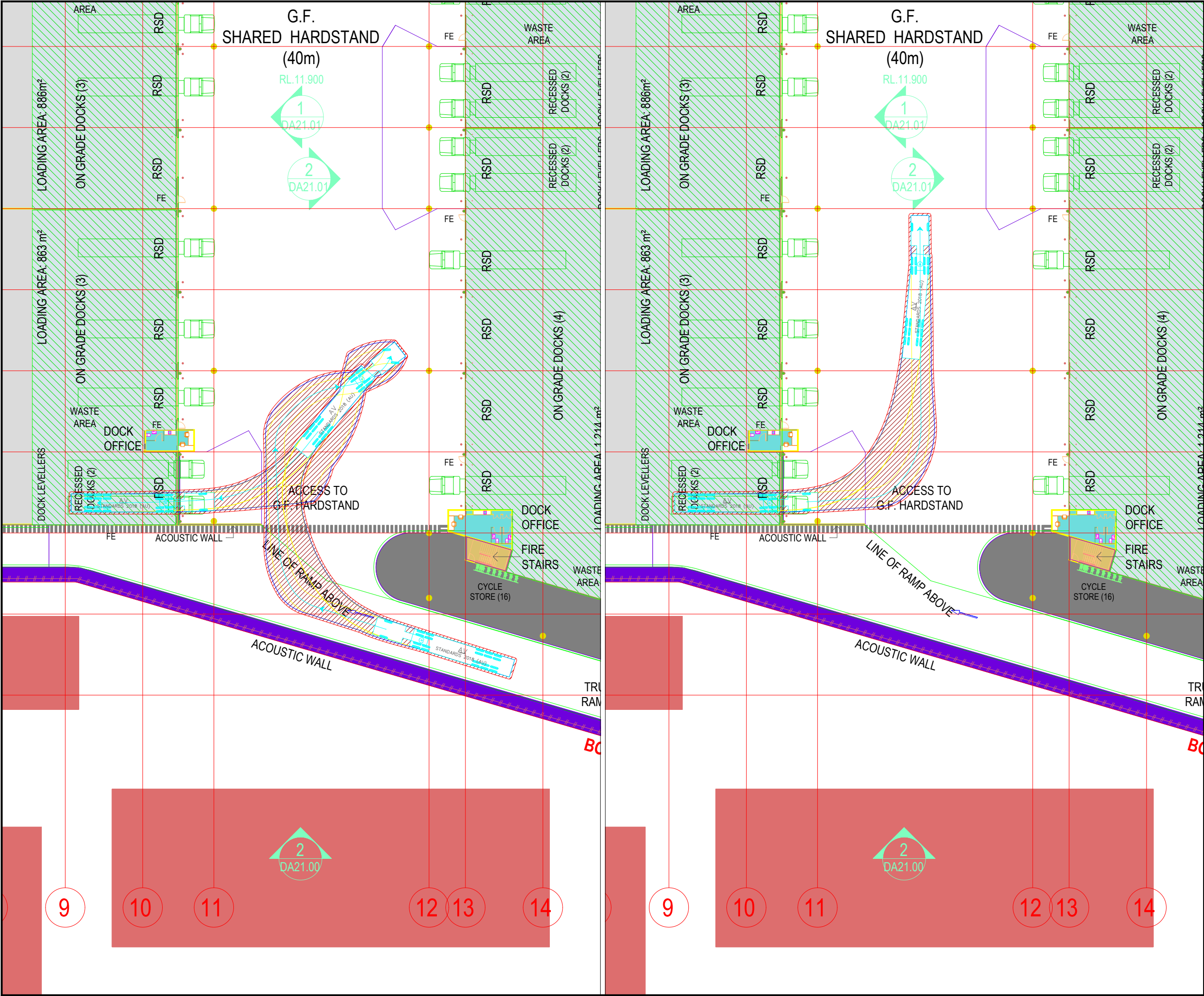
Drawn:	Checked:	Date:
SH	TY	31-03-26

23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.02	A



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Rev. Revision Note		By. Date	
A	Swept Path Analysis	SH	31-03-26
Swept Path Legend Wheel Path Vehicle Body Envelope Clearance Envelope (300mm)			
Architect SBA Architects			
Client ESR			
Scale 05101520m 1:500 @ A3			
Project Description Proposed Multi-Level Industrial Development 49 Stephen Road, Banksmeadow, NSW 2019			
Drawing Prepared By TRAFFIX TRAFFIC AND TRANSPORT PLANNERS			
Suite 2.08, 50 Holt Street Surry Hills, NSW 2010 PO Box 1124 Strawberry Hills, NSW 2012 t: +61 2 8324 8700 f: +61 2 9830 4481 w: www.traffix.com.au			
Drawing Title Swept Path Analysis Ground Floor - Fire Truck Access 12.5m Heavy Rigid Vehicle TL: Northwest Ingress BL: Southeast Egress TR: Northwest Egress BR: Southeast Ingress			
Drawn: SH		Checked: TY	Date: 31-03-26
23.255a09v01 TRAFFIX [260331 Plans] Design Review.dwg			
Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.04	A



Notes:

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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect

SBA Architects

Client

ESR

Scale

0 3 6 9 12m

1:300 @ A3

Project Description

Proposed Multi-Level Industrial Development

49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By

TRAFFIX

TRAFFIC AND TRANSPORT PLANNERS

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Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

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Drawing Title

Swept Path Analysis

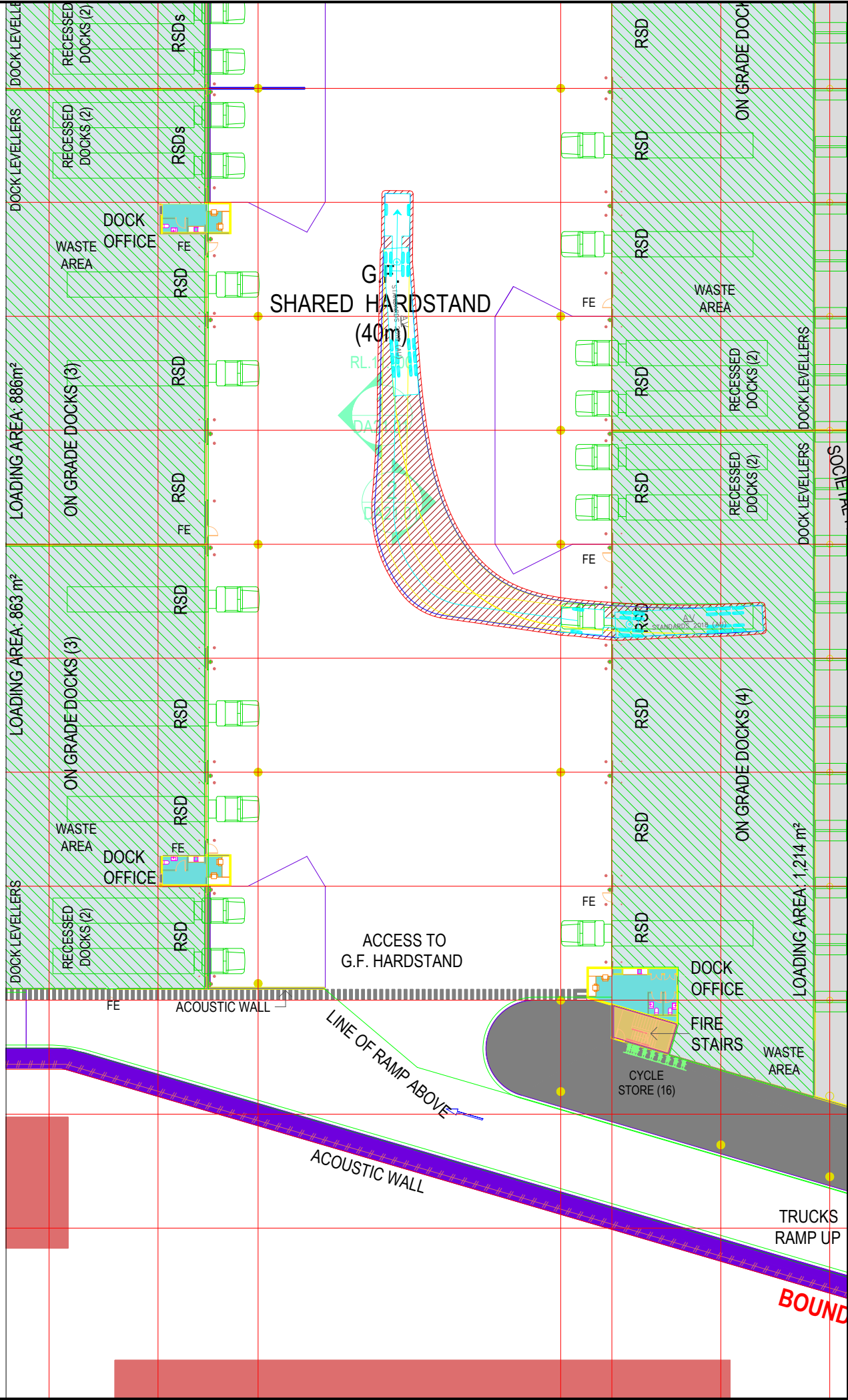
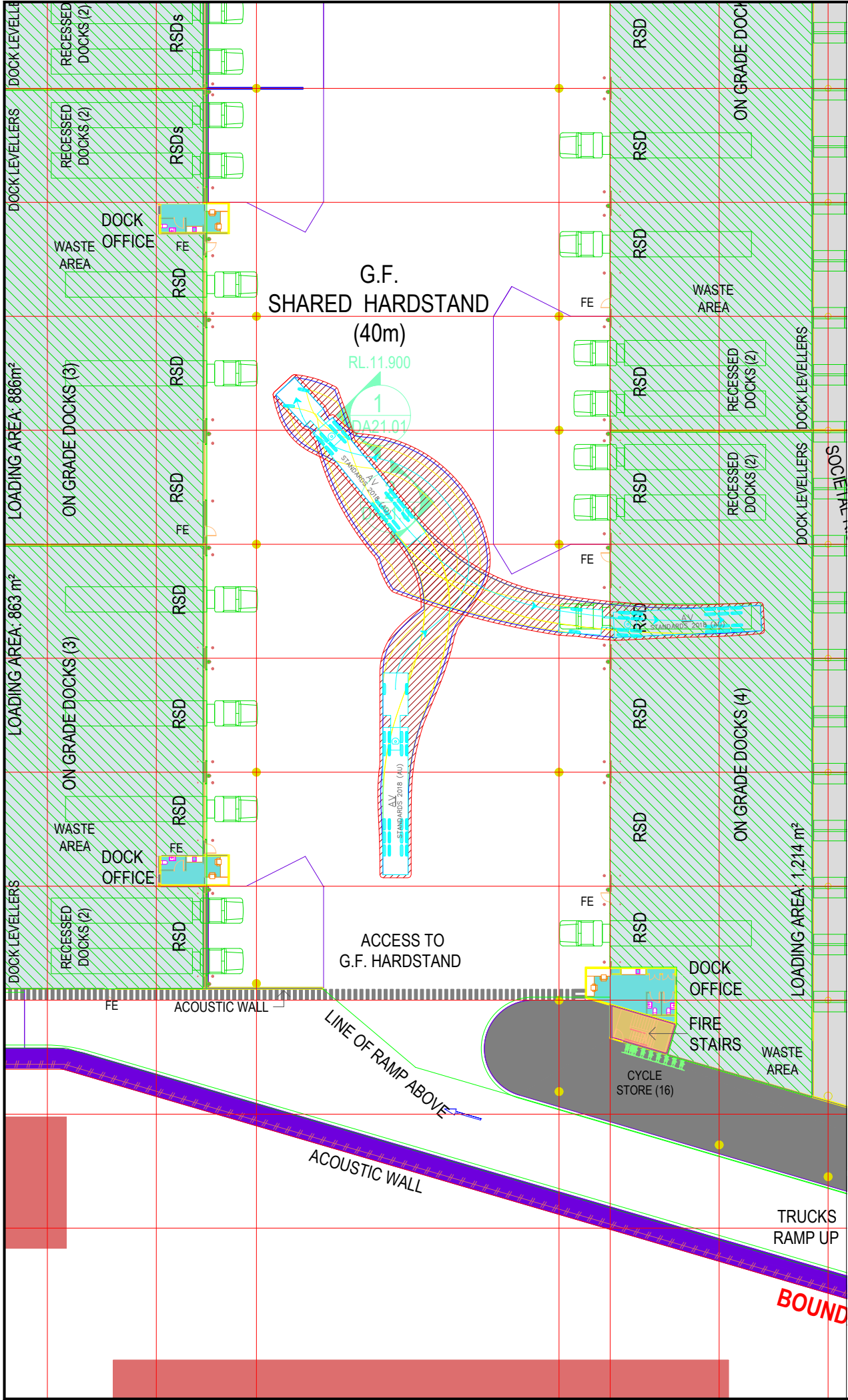
Ground Floor - Warehouse 1C

20.0m Articulated Vehicle

Left: Recessed Dock Entry Manoeuvre

Right: Recessed Dock Exit Manoeuvre

Drawn: SH	Checked: TY	Date: 31-03-26	
23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg			
Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.05	A



Notes:

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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect
SBA Architects

Client
ESR

Scale
0 3 6 9 12m
1:300 @ A3

Project Description
Proposed Multi-Level Industrial Development
49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By
TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

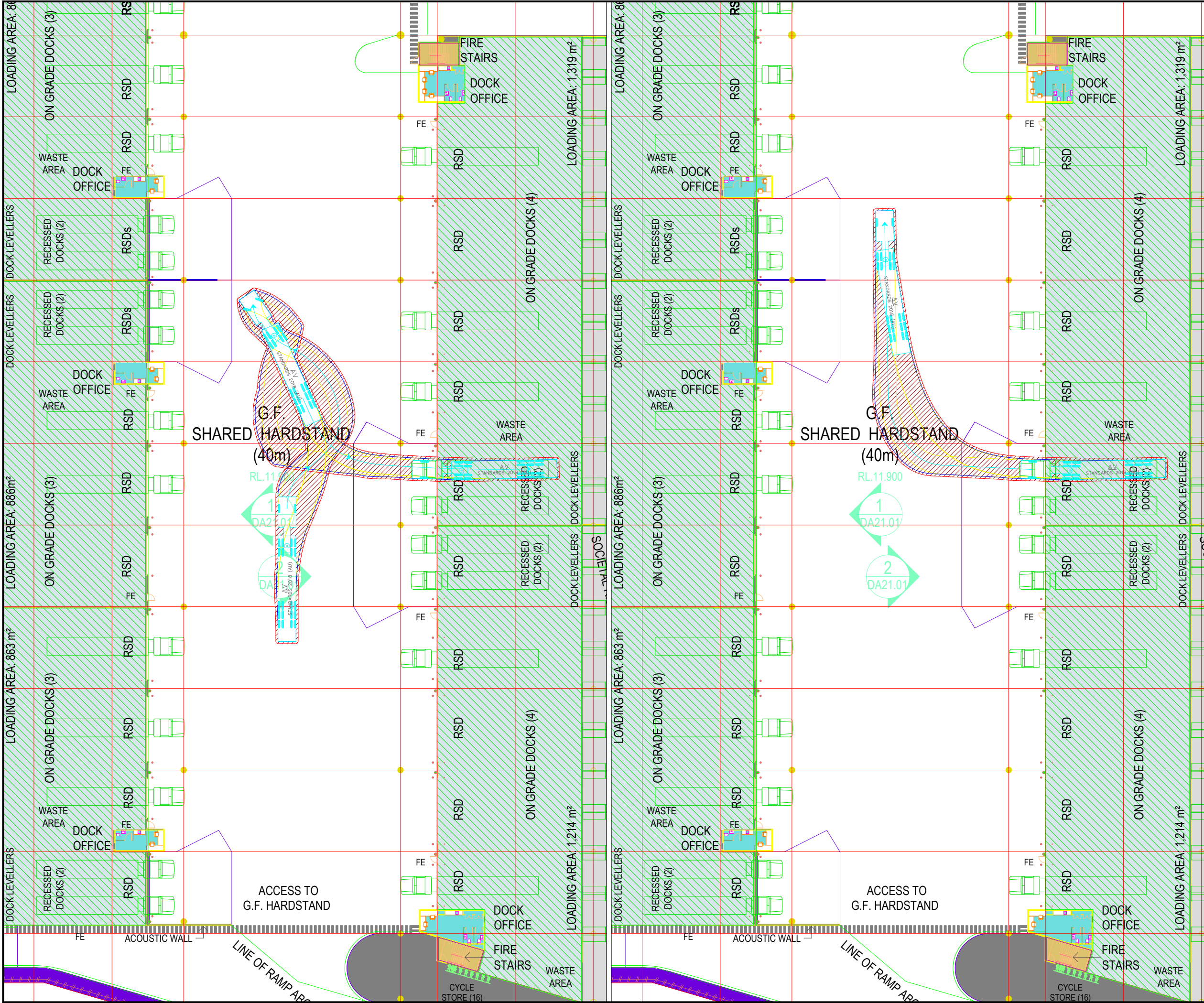
t: +61 2 8324 8700
f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
Ground Floor - Warehouse 2B
20.0m Articulated Vehicle
Left: Dock Entry Manoeuvre
Right: Dock Exit Manoeuvre

Drawn:	Checked:	Date:
SH	TY	31-03-26

23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.06	A



Notes:

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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect

SBA Architects

Client

ESR

Scale

0 3 6 9 12m

1:300 @ A3

Project Description

Proposed Multi-Level Industrial Development
49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By

TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

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w: www.traffix.com.au

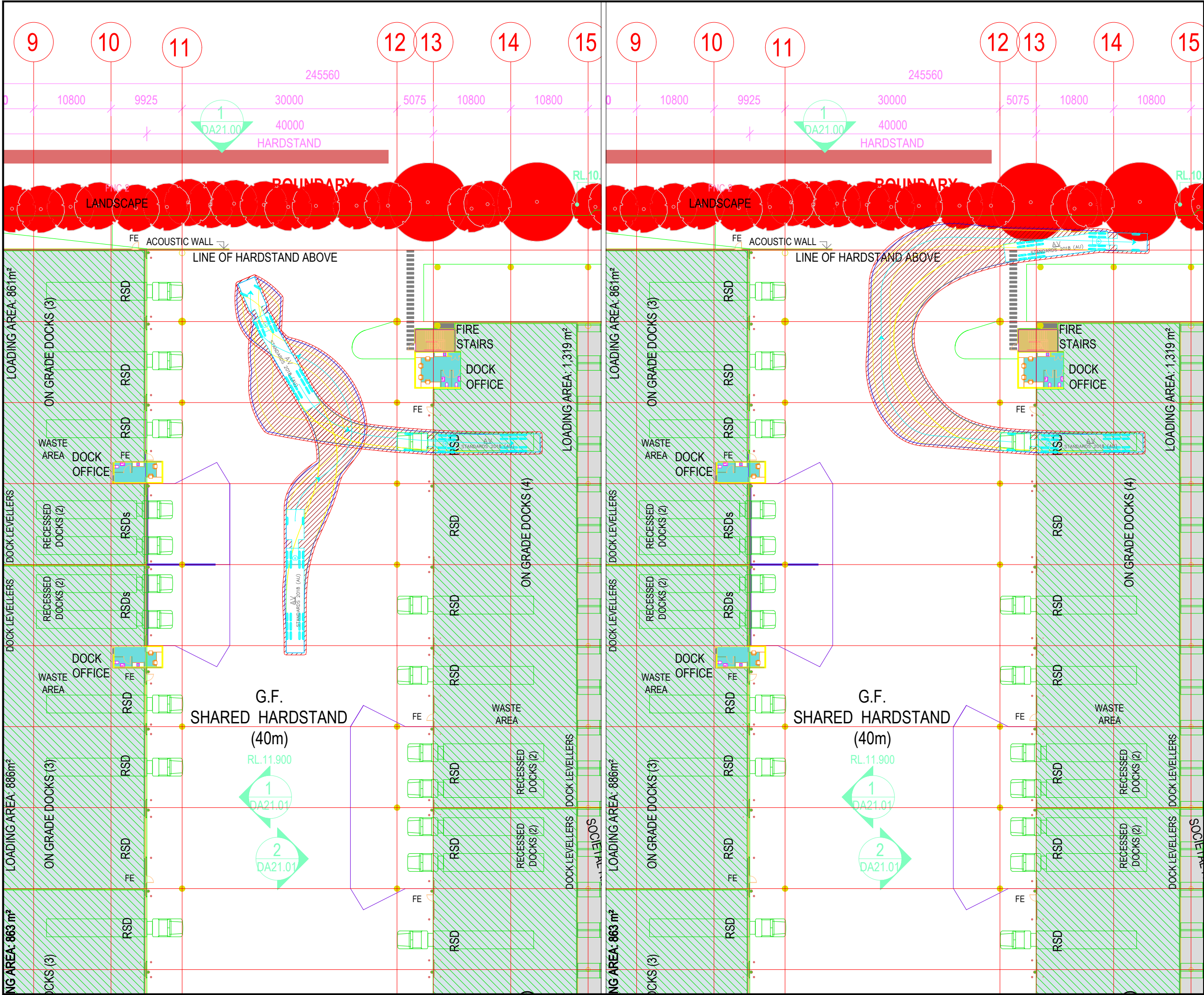
Drawing Title

Swept Path Analysis
Ground Floor - Warehouse 2A
20.0m Articulated Vehicle
Left: Recessed Dock Entry Manoeuvre
Right: Recessed Dock Exit Manoeuvre

Drawn: SH	Checked: TY	Date: 31-03-26
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23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.07	A



Notes:

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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect
SBA Architects

Client
ESR

Scale
0 3 6 9 12m
1:300 @ A3

Project Description
Proposed Multi-Level Industrial Development
49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By
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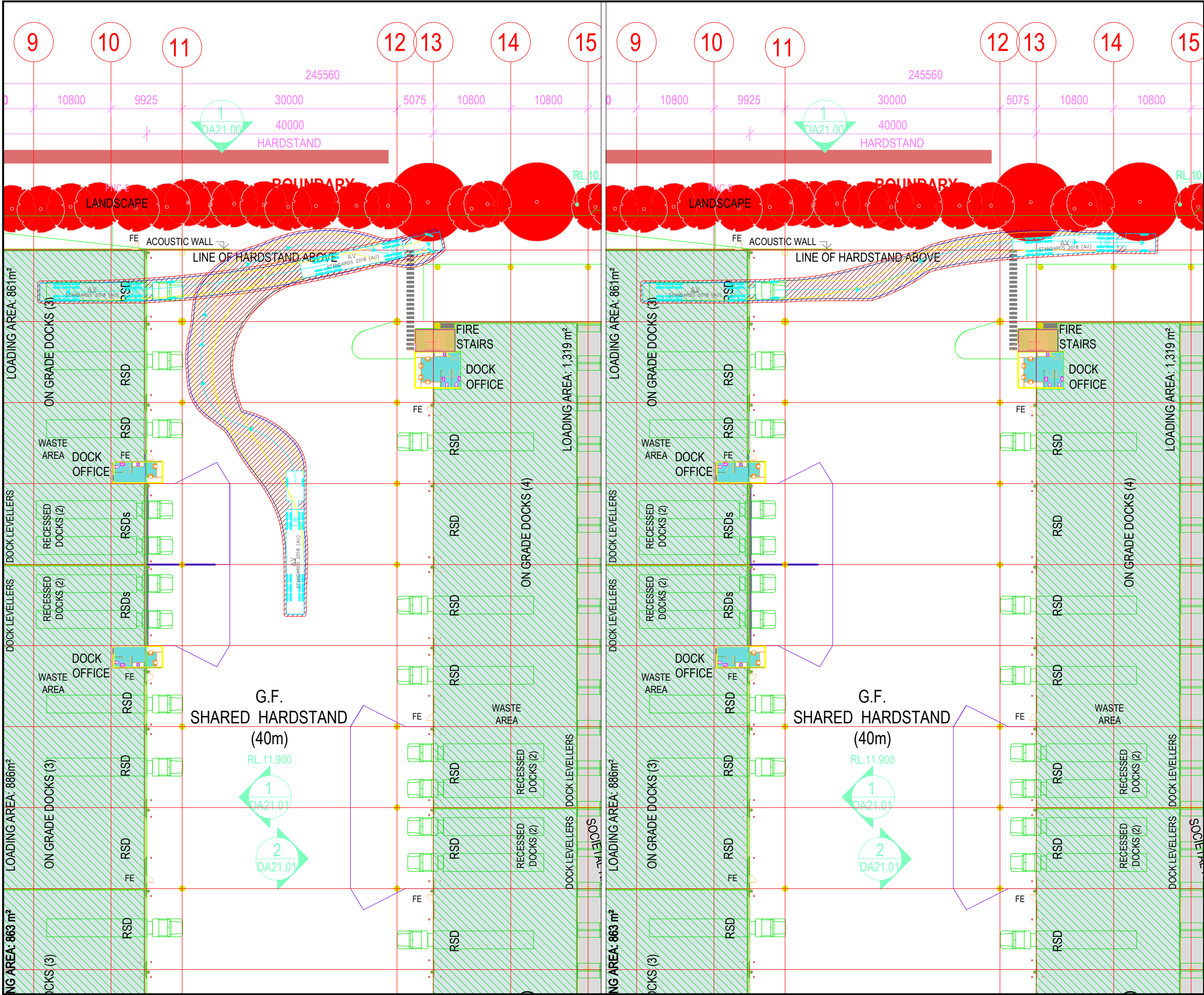
Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

t: +61 2 8324 8700
f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
Ground Floor - Warehouse 2A
20.0m Articulated Vehicle
Left: Dock Entry Manoeuvre
Right: Dock Exit Manoeuvre

Drawn: SH	Checked: TY	Date: 31-03-26
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Project No. 23.255	Drawing Phase DA	Drawing No. TX.08	Rev. A
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Notes:

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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	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect
SBA Architects

Client
ESR

Scale
0 3 6 9 12m
1:300 @ A3

Project Description
Proposed Multi-Level Industrial Development
49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By
TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

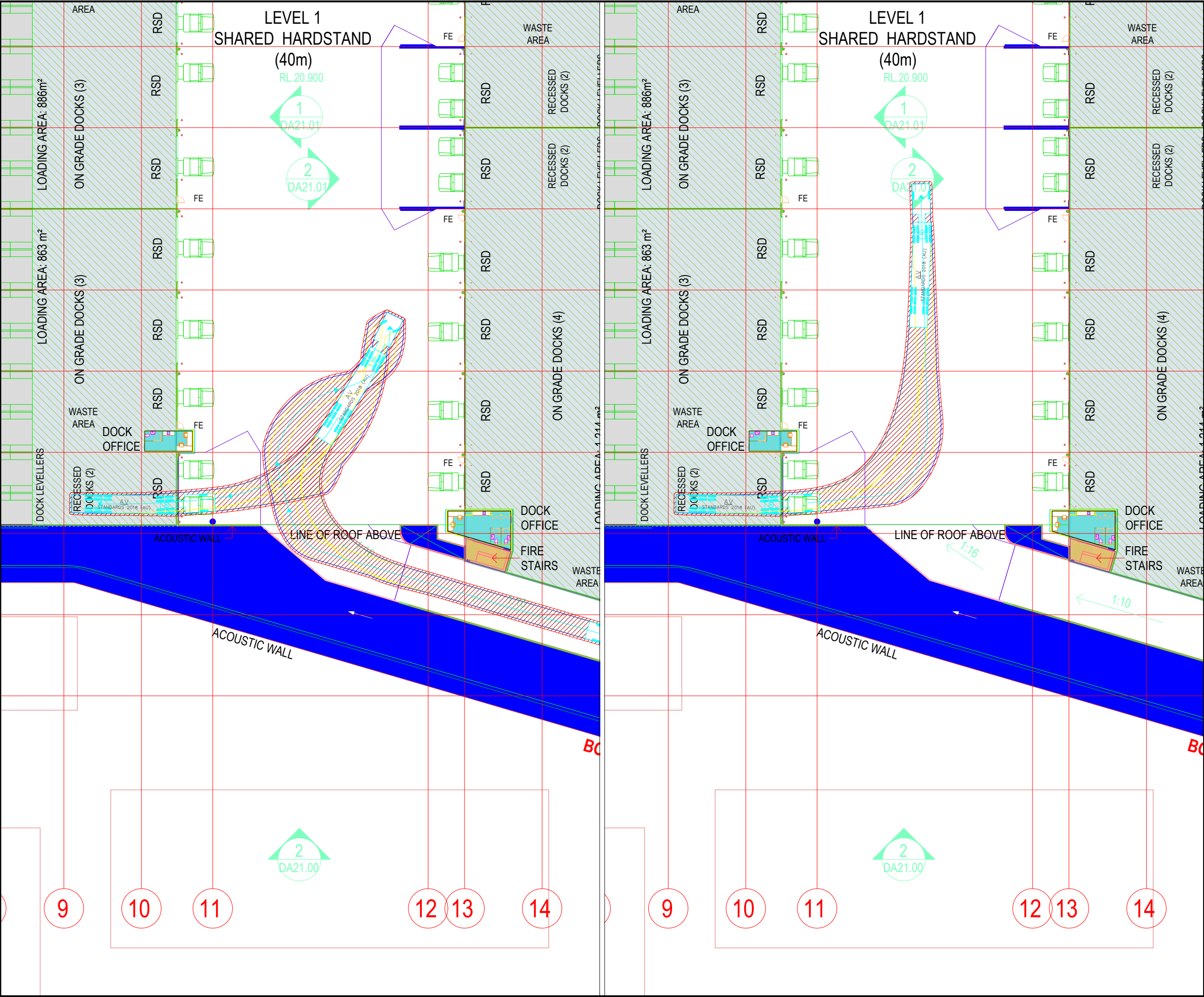
t: +61 2 8324 8700
f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
Ground Floor - Warehouse 1A
20.0m Articulated Vehicle
Left: Dock Entry Manoeuvre
Right: Dock Exit Manoeuvre

Drawn:	Checked:	Date:
SH	TY	31-03-26

23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.10	A



Notes:

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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect

SBA Architects

Client

ESR

Scale

0 3 6 9 12m

1:300 @ A3

Project Description

Proposed Multi-Level Industrial Development

49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By

TRAFFIX

TRAFFIC AND TRANSPORT PLANNERS

Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

t: +61 2 8324 8700
f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title

Swept Path Analysis

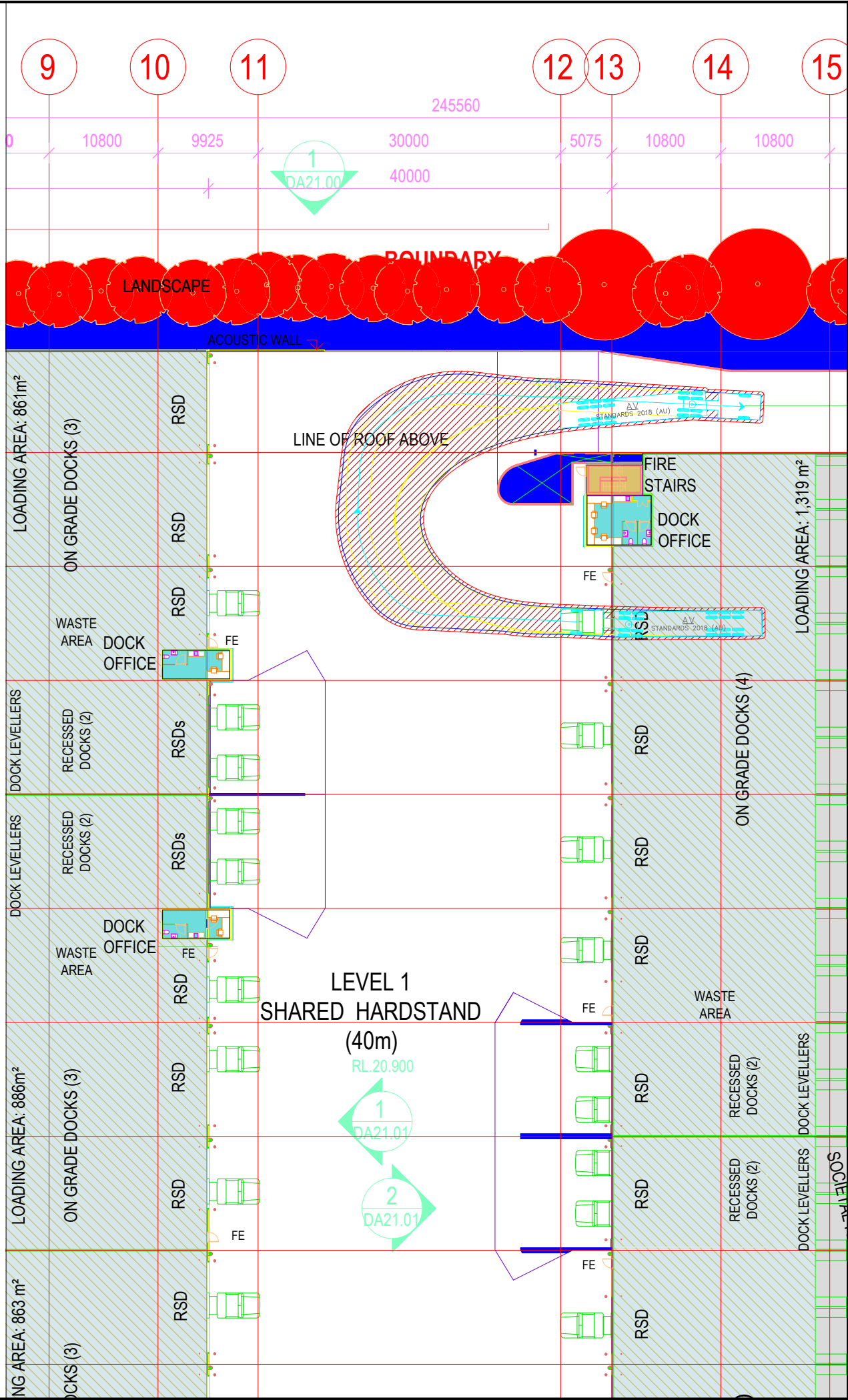
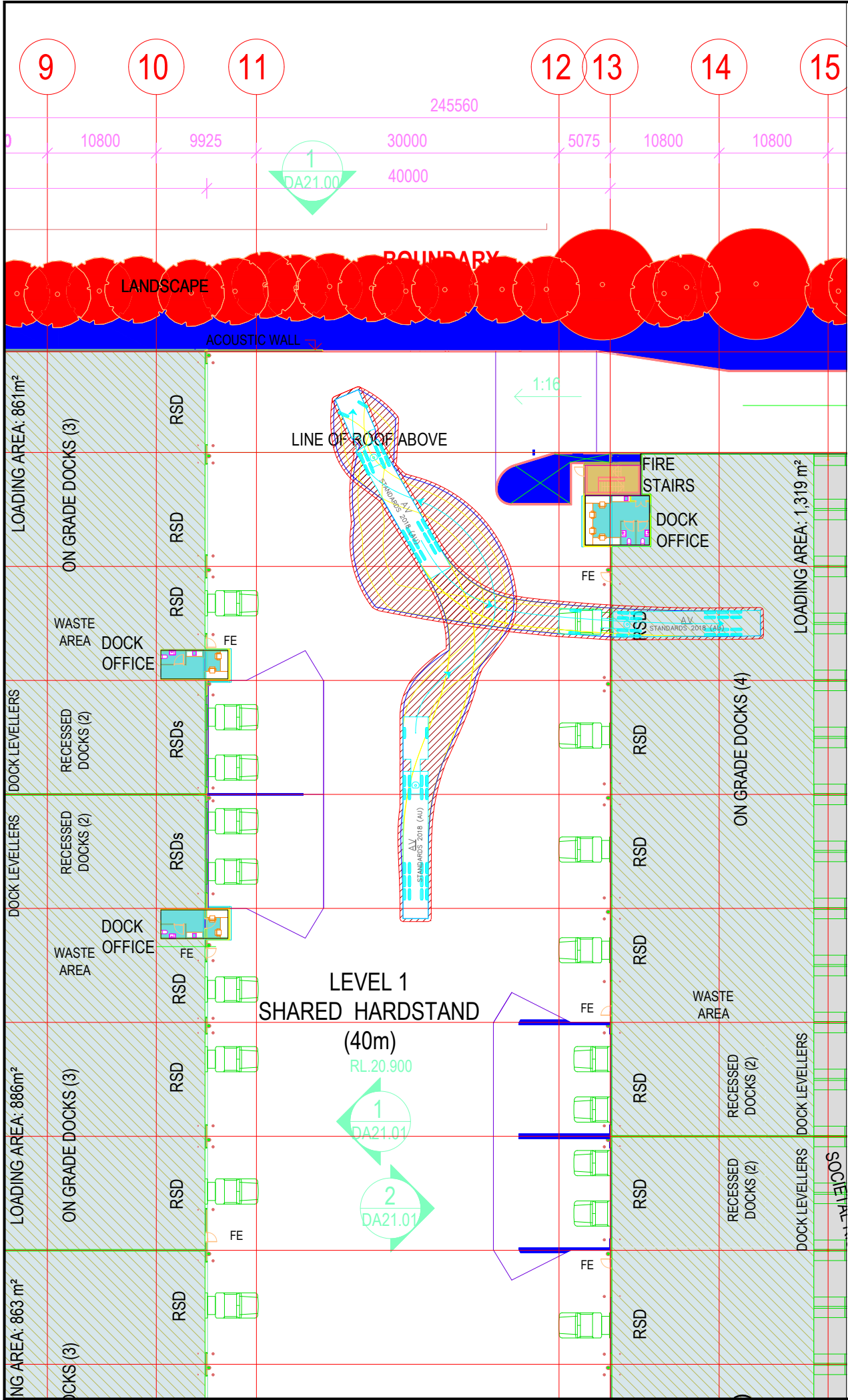
Ground Floor - Warehouse 1F

20.0m Articulated Vehicle

Left: Recessed Dock Entry Manoeuvre

Right: Recessed Dock Exit Manoeuvre

Drawn: SH	Checked: TY	Date: 31-03-26	
23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg			
Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.11	A



Notes:

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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect
SBA Architects

Client
ESR

Scale
0 3 6 9 12m
1:300 @ A3

Project Description
Proposed Multi-Level Industrial Development
49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By
TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

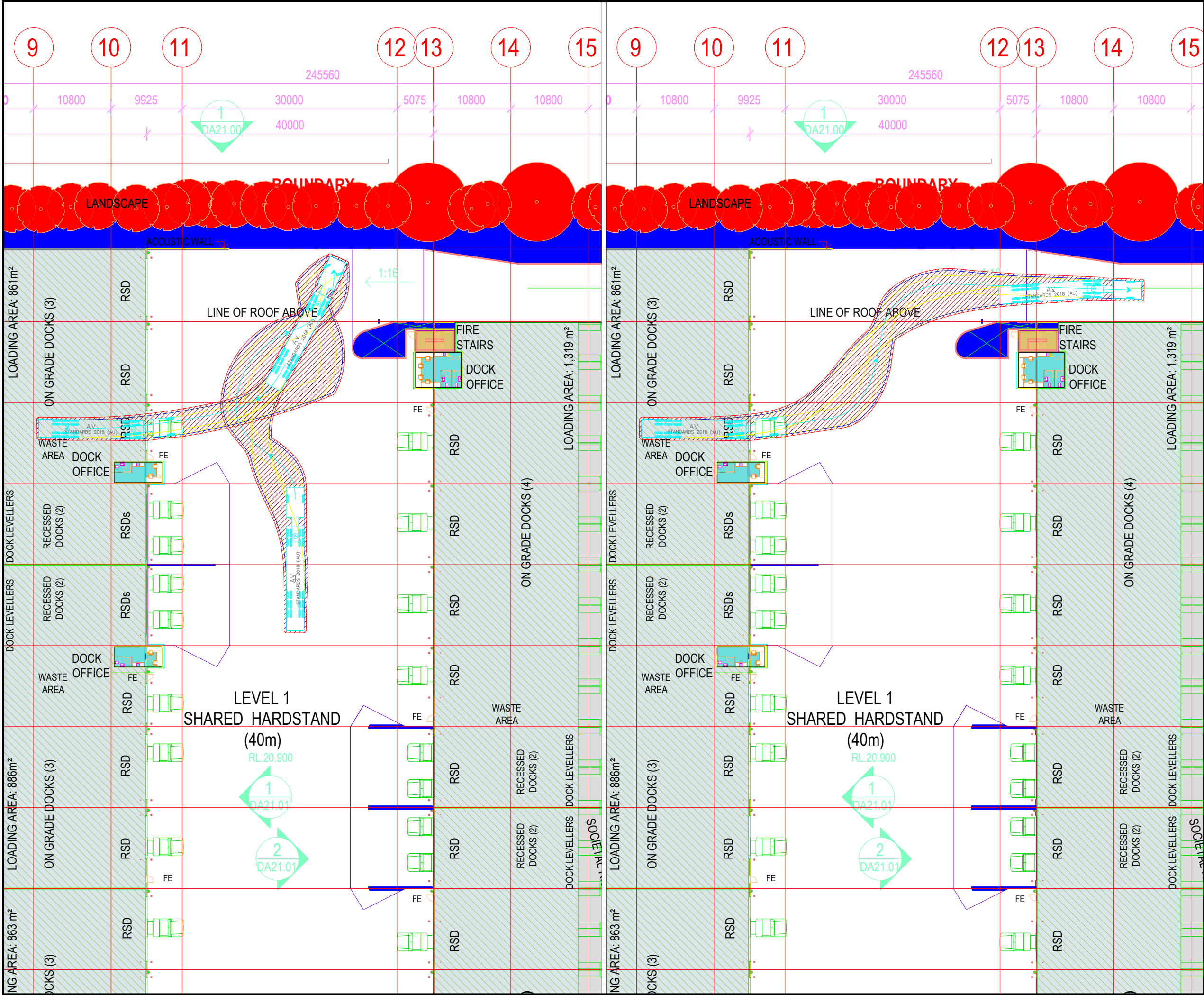
t: +61 2 8324 8700
f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
Ground Floor - Warehouse 2C
20.0m Articulated Vehicle
Left: Dock Entry Manoeuvre
Right: Dock Exit Manoeuvre

Drawn:	Checked:	Date:
SH	TY	31-03-26

23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.12	A



Notes:

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Rev.	Revision Note	By.	Date
A	Swept Path Analysis	SH	31-03-26

Swept Path Legend

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

Architect
SBA Architects

Client
ESR

Scale
0 3 6 9 12m
1:300 @ A3

Project Description
Proposed Multi-Level Industrial Development
49 Stephen Road, Banksmeadow, NSW 2019

Drawing Prepared By
TRAFFIX
TRAFFIC AND TRANSPORT PLANNERS

Suite 2.08, 50 Holt Street
Surry Hills, NSW 2010
PO Box 1124
Strawberry Hills, NSW 2012

t: +61 2 8324 8700
f: +61 2 9830 4481
w: www.traffix.com.au

Drawing Title
Swept Path Analysis
Ground Floor - Warehouse 1D
20.0m Articulated Vehicle
Left: Dock Entry Manoeuvre
Right: Dock Exit Manoeuvre

Drawn:	Checked:	Date:
SH	TY	31-03-26

23.255d09v01 TRAFFIX [260331 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
23.255	DA	TX.13	A

APPENDIX D

Tube Count Data



Vehicle Volume Report - 15min

Project: 24050 - 49-61 Stephen Road, Banksmeadow
Site: T2 - Botany Road, Between Hills Street and Exell Street
Start Date: 4/09/2024

2. T2 - Botany Road, Between Hills Street and Exell Street - -33,959415, 151,209446

Time	Mon		Tue		Wed		Thu		Fri		Sat		Sun		7 Day TOTAL	
	9-Sep		10-Sep		4-Sep		5-Sep		6-Sep		7-Sep		8-Sep			
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
0:00	4	12	6	6	5	21	6	18	1	20	6	13	12	21	40	111
0:15	9	6	5	13	5	22	5	25	4	20	3	20	8	14	39	120
0:30	2	3	8	11	5	18	4	17	3	29	6	11	9	19	37	108
0:45	8	5	6	6	5	21	5	25	7	14	8	15	6	13	45	99
1:00	6	13	3	6	4	13	2	17	5	15	4	18	4	9	28	91
1:15	8	4	1	10	1	13	3	17	4	12	7	11	5	8	29	75
1:30	1	7	1	3	2	19	2	16	2	13	4	11	3	12	15	81
1:45	6	6	3	8	3	10	3	18	0	5	4	9	7	14	26	70
2:00	5	5	2	6	3	14	6	10	1	12	4	7	5	7	26	61
2:15	5	3	6	5	3	7	3	12	5	8	2	9	7	6	31	50
2:30	6	7	1	6	3	18	3	14	4	15	1	12	2	7	20	79
2:45	1	4	4	5	7	13	5	18	2	14	3	11	5	5	27	70
3:00	2	5	3	9	5	20	3	18	3	10	2	14	6	8	24	84
3:15	1	3	7	9	7	12	7	19	11	14	9	8	4	5	46	70
3:30	6	2	12	21	10	29	10	26	8	25	9	14	8	8	63	125
3:45	5	6	9	39	5	28	11	25	8	34	6	21	4	7	48	160
4:00	5	4	6	18	2	20	6	33	13	38	6	28	6	9	44	150
4:15	5	11	7	24	7	33	7	30	3	33	8	25	4	6	41	162
4:30	12	12	17	41	19	48	14	44	10	40	21	43	12	14	105	242
4:45	12	16	22	61	24	62	22	94	30	61	24	57	14	24	148	375
5:00	12	17	26	62	23	68	23	73	20	76	19	54	11	27	134	377
5:15	16	17	30	70	21	79	29	76	23	63	28	58	11	18	158	381
5:30	19	31	53	111	43	94	31	83	58	111	45	89	25	30	274	549
5:45	17	27	42	144	52	130	61	136	71	126	58	125	20	41	321	729
6:00	8	32	42	101	48	119	47	110	42	132	59	100	15	40	261	634
6:15	21	15	58	120	65	111	63	145	55	139	58	112	29	38	349	680
6:30	19	21	74	112	66	90	59	116	65	94	58	111	39	44	380	588
6:45	28	34	84	117	83	144	78	132	62	152	81	122	67	54	483	755
7:00	34	33	78	137	79	132	79	120	72	135	91	131	42	56	475	744
7:15	39	23	91	134	103	131	97	177	88	129	108	131	37	52	563	777
7:30	30	26	105	123	101	134	88	164	86	151	87	109	36	52	533	759
7:45	35	38	127	117	126	144	157	151	133	134	140	128	57	66	775	778
8:00	32	33	132	142	71	118	158	138	116	151	142	136	60	54	711	772
8:15	37	42	145	115	158	136	153	136	155	151	169	155	64	67	881	802
8:30	49	45	151	135	149	146	162	156	156	155	139	118	76	69	882	824
8:45	55	55	110	141	123	161	118	179	95	153	83	138	102	60	686	887

9:00	41	52	104	135	68	130	101	132	92	160	98	100	56	52	560	761
9:15	57	45	95	128	77	126	89	116	99	105	86	100	106	63	609	683
9:30	60	41	78	120	82	100	83	121	87	118	87	121	90	67	567	688
9:45	57	58	65	125	76	124	79	120	76	138	96	118	94	86	543	769
10:00	65	65	69	102	83	114	82	105	82	120	76	120	105	79	562	705
10:15	68	51	75	127	78	132	78	125	98	108	76	117	83	77	556	737
10:30	66	48	88	117	73	89	101	132	61	117	94	119	85	86	568	708
10:45	58	52	85	103	62	106	96	136	85	143	88	122	77	86	551	748
11:00	57	48	56	124	37	120	89	117	70	121	84	96	91	67	484	693
11:15	63	71	84	95	89	131	93	106	75	111	88	111	94	83	586	708
11:30	77	58	85	107	99	100	79	141	58	96	87	101	89	80	574	683
11:45	75	67	71	118	34	114	77	138	53	136	85	133	64	74	459	780
12:00	66	81	62	128	52	110	69	150	81	137	84	120	78	74	492	800
12:15	76	77	105	133	85	159	67	148	77	112	75	142	79	82	564	853
12:30	100	75	96	114	78	126	82	151	90	115	85	113	62	87	593	781
12:45	70	79	74	118	84	141	89	138	88	141	81	142	73	64	559	823
13:00	65	82	83	124	87	115	82	140	69	129	85	91	70	69	541	750
13:15	69	69	80	104	78	127	79	133	85	115	98	124	85	76	574	748
13:30	67	57	78	120	83	135	78	141	104	135	76	105	69	60	555	753
13:45	76	66	59	123	83	135	93	158	75	124	83	138	82	70	551	814
14:00	65	67	98	149	65	148	90	139	79	128	72	121	76	67	545	819
14:15	78	46	75	131	72	149	75	117	62	133	101	131	70	51	533	758
14:30	60	66	87	129	88	125	97	124	79	137	94	112	59	66	564	759
14:45	73	60	91	134	95	143	107	114	105	122	98	130	53	54	622	757
15:00	65	43	95	150	110	142	91	154	103	154	81	135	55	51	600	829
15:15	59	60	89	132	80	144	106	154	93	152	114	150	54	63	595	855
15:30	64	56	90	134	67	167	80	153	92	134	80	161	54	56	527	861
15:45	75	56	83	112	78	129	96	134	78	161	113	169	58	38	581	799
16:00	73	59	95	148	86	130	85	139	77	129	86	124	51	67	553	796
16:15	69	44	90	110	95	126	93	139	76	117	104	160	48	50	575	746
16:30	66	53	88	122	88	123	93	149	95	114	97	132	54	44	581	737
16:45	59	56	84	120	90	132	90	113	91	117	92	137	66	49	572	724
17:00	52	52	95	164	100	134	83	150	109	147	90	134	58	50	587	831
17:15	51	66	76	117	84	150	86	127	102	110	93	105	62	62	554	737
17:30	55	53	80	108	100	106	77	109	85	104	87	104	44	64	528	648
17:45	34	50	61	119	61	105	73	109	71	115	80	130	48	53	428	681
18:00	59	68	56	81	58	84	79	98	57	92	67	94	45	58	421	575
18:15	48	62	47	62	71	104	67	69	76	79	40	96	57	52	406	524
18:30	40	51	61	0	57	67	63	75	44	73	55	67	46	55	366	388
18:45	46	37	36	0	51	81	55	68	50	70	56	78	37	36	331	370
19:00	36	30	40	0	43	57	42	69	41	67	38	59	33	25	273	307
19:15	32	45	33	0	31	54	30	62	47	66	39	60	28	31	240	318
19:30	29	38	37	0	38	61	29	42	30	57	31	47	21	36	215	281
19:45	24	29	29	0	35	58	28	48	37	42	32	55	24	28	209	260
20:00	29	29	31	0	34	47	35	49	35	40	32	32	25	30	221	227
20:15	16	34	27	0	29	41	29	39	34	32	31	48	23	29	189	223
20:30	29	26	26	0	23	53	19	40	29	44	27	44	27	17	180	224
20:45	20	49	14	0	21	52	18	52	29	40	17	48	19	25	138	266
21:00	26	14	23	0	22	44	22	47	31	37	36	26	20	21	180	189
21:15	21	25	16	0	27	34	20	39	22	34	30	32	21	18	157	182

21:30	26	13	23	0	14	37	29	38	18	31	34	26	34	13	178	158
21:45	10	21	10	0	13	49	14	38	18	34	28	36	17	21	110	199
22:00	16	26	7	0	12	37	11	36	11	28	28	39	20	10	105	176
22:15	14	27	11	0	6	38	6	39	11	26	20	33	13	13	81	176
22:30	13	22	7	0	11	51	5	39	14	29	21	36	17	12	88	189
22:45	11	12	13	0	11	20	7	24	14	21	20	23	17	15	93	115
23:00	14	14	8	0	7	37	13	33	9	30	21	31	20	12	92	157
23:15	7	9	9	0	4	19	7	24	13	24	15	17	17	11	72	104
23:30	11	8	11	0	7	24	6	34	8	15	12	16	16	25	71	122
23:45	4	7	6	0	6	20	9	30	7	11	10	10	13	14	55	92
07-19	2835	2642	4108	5631	3994	6025	4384	6303	4130	6028	4371	5849	3201	3044	27023	35522
06-22	3209	3097	4675	6081	4586	7076	4946	7369	4725	7069	5002	6807	3643	3514	30786	41013
06-00	3299	3222	4747	6081	4650	7322	5010	7628	4812	7253	5149	7012	3776	3626	31443	42144
00-00	3472	3448	5027	6775	4914	8134	5281	8492	5108	8061	5436	7695	3974	3958	33212	46563
Percent	50.17%	49.83%	42.59%	57.41%	37.66%	62.34%	38.34%	61.66%	38.79%	61.21%	41.40%	58.60%	50.10%	49.90%	41.63%	58.37%

Vehicle Classification Report -Hourly



Project: 24050 - 49-61 Stephen Road, Banksmeadow
Site: T2 - Botany Road, Between Hills Street and
Start Date: 4/09/2024

2. T2 - Botany Road, Between Hills Street and Exell Street - -33,959415, 151,209446

Eastbound

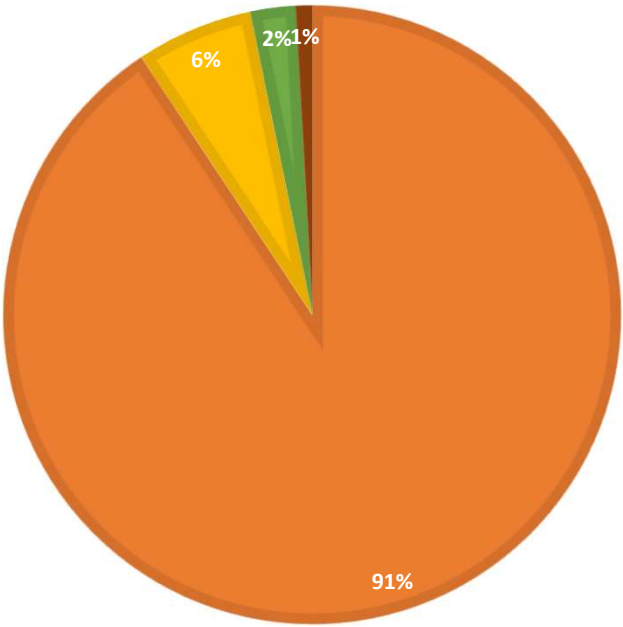
Weekday Total

		Vehicle Classification - Percentage			
	Total	Light Vehicle Class (1-2)	Small Truck Class (1-2)	Medium Truck Class (1-2)	Large Truck Class (1-2)
Percent	100.00%	90.68%	6.10%	2.37%	0.85%

			Eastbound			
	Total		Light Vehicle Class (1-2)	Small Truck Class (3)	Medium Truck Class (4-5)	Large Truck Class (6-12)
13-May						
0:00	103		74	23	1	5
1:00	60		44	13	1	2
2:00	75		50	19	5	1
3:00	133		101	17	10	5
4:00	243		207	13	20	3
5:00	670		597	47	18	8
6:00	1067		943	83	19	22
7:00	1748		1581	108	34	25
8:00	2325		2189	64	62	10
9:00	1566		1407	70	81	8
10:00	1553		1364	115	53	21
11:00	1421		1258	122	35	6
12:00	1591		1403	140	33	15
13:00	1573		1413	109	36	15
14:00	1641		1498	96	33	14
15:00	1694		1563	84	40	7
16:00	1683		1586	50	38	9
17:00	1535		1451	59	18	7
18:00	1121		1048	61	9	3
19:00	691		644	38	5	4
20:00	527		476	44	5	2
21:00	405		376	24	4	1

CLASS DISTRIBUTION

Light Vehicle Class (1-2) Small Truck Class (1-2) Medium Truck Class (1-2) Large Truck Class (1-2)



22:00	211		176	28	3	4
23:00	166		134	25	2	5
07-19	19451		17761	1078	472	140
06-22	22141		20200	1267	505	169
06-00	22518		20510	1320	510	178
00-00	23802		21583	1452	565	202