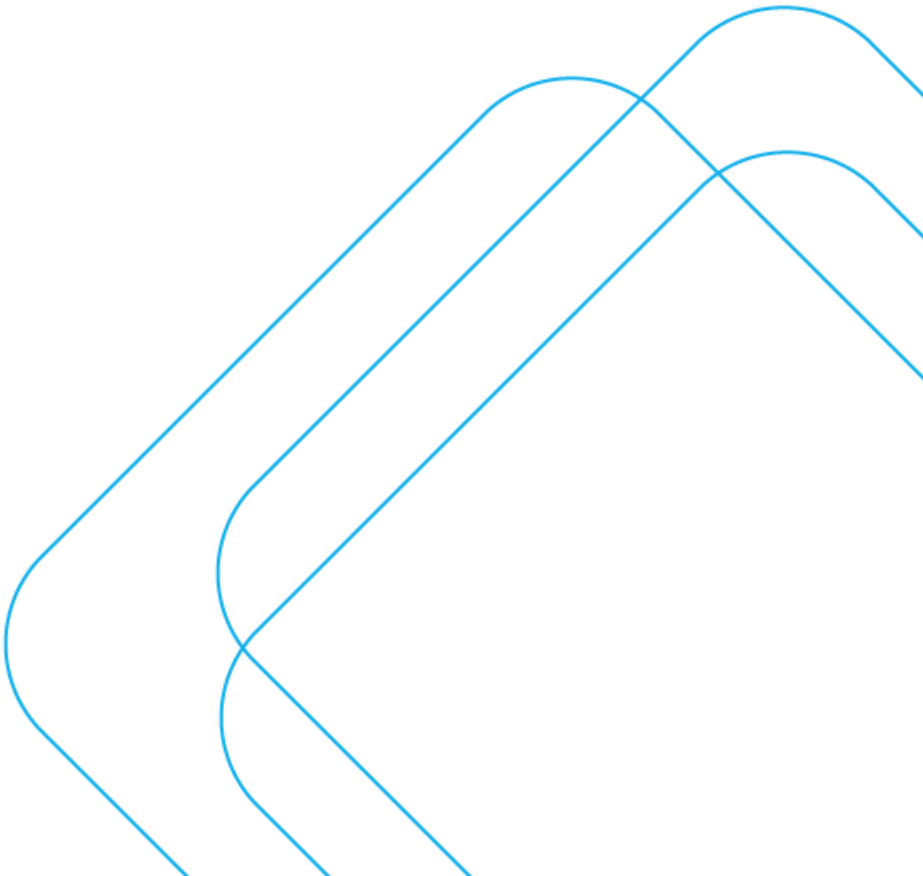
SCT Consulting

SLUDGE DEWATERING PLANT UPGRADE SSD

Traffic and Transport Impact Assessment

10 OCTOBER 2025

SCT Consulting acknowledges
the traditional owners of the lands
on which we work.
We pay our respects to Elders
past, present and emerging.



Quality Assurance

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Contents

Appendices

Executive Summary

Demast Pty Ltd (Demast) own and operate a sludge dewatering plant (SDP) at 7 Long Street, Smithfield. The SDP was previously approved under development consent (DA 2015/529) by Sydney Central City Planning Panel on 4 October 2016 and permits operation of the SDP from 7 Long Street.

This Traffic and Transport Impact Assessment (TTIA) is prepared to support a State Significant Development (SSD) application under Part 4, Division 4.7 of the NSW *Environmental Planning & Assessment Act 1979* (EP&A Act) for the Demast SDP.

Demast proposes to apply for SSD consent to:

– Receive and process up to 300,000 tpa of waste

– Expand the waste streams processed at the SDP to include groundwater, general solid waste (GSW) (non-putrescible) soils, virgin excavated natural material (VENM) and excavated natural material (ENM)

– Extinguish all previous development consents for the site and absorb into a single SSD consent.

No new construction or change to storage capacity is proposed.

The TTIA has reviewed the existing traffic and transport conditions in the vicinity of the site and the existing traffic generation from the site. The analysis indicates that the key intersections in the surrounding road network currently perform between level of service (LoS) A and LoS B in the AM peak period and between LoS A and LoS C in the PM peak period.

Combined with the existing traffic associated with the SDP, the site is estimated to ultimately generate up to 125 trucks entering and 125 trucks exiting the site on a weekday. There would be six trucks entering and exiting the site during the AM peak hour. The site's peak traffic generation is expected to occur during the PM peak hour with up to 12 trucks (eight existing trucks and four additional trucks) entering and exiting in the hour.

A worst-case scenario test was carried out with a total of 20 trucks entering and exiting the site per hour in both AM and PM peak hours. The analysis showed that there were minor increases in delay and degree of saturation (DoS) at the key intersections, indicating that the additional trucks generated during the peak hours would have a minimal impact on intersection performances.

While historical traffic patterns suggest that there would be minimal traffic growth along Cumberland Highway and Gipps Road, for the purpose of this assessment, a conservative assumption of one per cent annual growth was applied to background traffic at the Cumberland Highway | Long Street and Gipps Road | Long Street intersections for future years of 2027 and 2032. While the Gipps Road | Long Street intersection is forecast to operate close to capacity in 2027 and exceed capacity in 2032 without the proposal, the analysis indicated that the proposal would have minimal impact on traffic performance at the Cumberland Highway | Long Street and Gipps Road | Long Street intersections.

The swept path analysis of the largest vehicle type (3-axle truck and 4-axle dog trailer) anticipated to access and move within the site was undertaken and indicates that there will be sufficient space for the vehicle to enter the site, manoeuvre within the site, and exit the site. The vehicle type has a length of 19.7 m and the roads it would travel on are approved for 23 m B-double travel.

This study confirms that the proposal would not have a significant impact on the traffic and transport system around the site given that:

– There would be minimal impacts on traffic delay and degree of saturation at the surrounding intersections during the peak hours.

– There is limited impact on traffic conditions at the site access.

– The proposed larger vehicle types can be accommodated.

– There is no impact on the public transport and active transport network.

1.0 Introduction

1.1 Background

Demast Pty Ltd (Demast) own and operate a sludge dewatering plant (SDP) at 7 Long Street, Smithfield. The SDP was previously approved under development consent (DA 2015/529) by Sydney Central City Planning Panel on 4 October 2016 and permits operation of the SDP from 7 Long Street.

Demast purchased the property to the rear of 7 Long Street (10 Tait Street) in 2020 and subsequently obtained approval to use the 10 Tait Street lot for storage purposes associated with the SDP and to consolidate the 7 Long Street and 10 Tait Street lots (DA 2020/0256). Following consolidation of the two lots, the 10 Tait Street property has been amalgamated into 7 Long Street, and Lot 1 DP 1273012 now covers both parcels of land.

The subject site (the site) is situated to the west of the Cumberland Highway at Smithfield, as shown in **Figure 1-1**. The site is about 24.5 km west of the Sydney Central Business District and about 6.4 km southwest of Parramatta in the Cumberland City Council Local Government Area (LGA). The site is located within an existing industrial area, known as the Woodpark Industrial Area. General industrial land uses surround the site, including Smithfield Auto Spares, Jones & Rickard Group and Kwikfix Mechanical Pty Ltd.

Figure 1-1 Site context

Source: Element Environment, 2024

1.2 Existing consent and operations

The SDP was approved in October 2016 (DA 2015/529) as a designated development under section 4.10 of the EP&A Act as it satisfied the provisions of schedule 3 of NSW Environmental Planning and Assessment Regulation 2000. The SDP was also classified as regionally significant development in accordance with clause 7, schedule 7 of State Environmental Planning Policy (State and Regional Development) 2011 and as such was approved by the former Sydney West Regional Planning Panel.

A subsequent application for modification of the development consent was made in 2019 to alter operating hours at the SDP to a 24-hour operation. The application was approved by the Sydney West Regional Planning Panel.

The SDP is currently consented to operate under 24-hour operations, process no more than 46,720 tonnes per annum (tpa) of drilling mud and store up to 2,260 tonnes of recovered material, including 640 tonnes of treated drilling mud. The SDP and offices associated with the site operations are located at 7 Long Street, with the ancillary storage facility at the former 10 Tait Street.

A separate modification application (MOD 2022/0135) was approved by Cumberland Council in September 2022 to allow for vehicles to enter the SDP via Long Street and exit via the existing driveway of 10 Tait Street. The modification also required the installation of a new weighbridge to weigh vehicles before they exit the facility onto Tait Street. This modification altered the internal vehicle movement and access arrangements made under DA 2015/529. The approved upgrade works have been completed with trucks now exiting via Tait Street.

1.3 Purpose of this report

This Traffic and Transport Impact Assessment (TTIA) is prepared to support the Demast application to upgrade the SDP by increasing the approved processing limit of the plant to 300,000 tpa through State Significant Development (SSD) application under Part 4, Division 4.7 of the NSW *Environmental Planning & Assessment Act 1979* (EP&A Act).

1.4 Secretary's Environmental Assessment Requirements

In preparing this TTIA, the Planning Secretary's Environmental Assessment Requirements (SEARs), issued for the project (SSD-72775222) on 29 July 2024, were addressed. The key matters raised by the SEARs for consideration in the traffic and transport assessment, and the sections in this report where these matters are addressed, are outlined in **Table 1-1**.

Table 1-1 Issued SEARS and where they are addressed in this report

Requirement	Section Addressed
A quantitative traffic impact assessment prepared in accordance with relevant Transport for NSW and Austroads guidelines that includes:	
– details of all daily and peak operational traffic volumes, including a description of key access / haul routes, vehicle types and potential queuing impacts	Section 3.2, 3.3 and 4.1.2
– an assessment of the predicted impacts of development traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts on existing performance levels of nearby intersections, using a calibrated SIDRA (or similar) traffic model	Section 4.1
– plans demonstrating how all vehicle movements likely to be generated during operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network	Section 3.3 and Appendix C
– 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	Section 2.4
– details of the largest vehicle type anticipated to access and move within the site, including swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site and at key intersections	Section 3.3 and Appendix C
– details of road upgrades, infrastructure works or new roads or access points required for the development, if necessary.	Section 5.0

Further traffic comments were provided in August 2025 by DPHI. **Table 1-2** outlines the comments and the location where they are addressed in the report.

Table 1-2 Further DPHI comments and where they are addressed in this report

Requirement	Section Addressed
15. Clarify whether the 'peak hour' traffic generation described at the site coincides with the survey identified AM or PM network peak periods.	Section 3.2
16. Provide swept path diagrams that demonstrate how heavy vehicles access each loading and unloading bay within the site.	Appendix C
17. Detail timing for each heavy vehicle to traverse the site, including loading and unloading and washing of vehicles.	Section 3.4
18. Provide an assessment of the predicted impacts of development traffic on road safety, including demonstration of appropriate sighting distances.	Section 4.4

1.5 Assessment approach

The scope of this TTIA is to:

– Review existing traffic and transport conditions

– Review current traffic volume generation and distribution

– Forecast traffic volume generation, distribution, and assess potential impacts due to the traffic increase.

While it is expected that the proposed modification would generate relatively low traffic volume compared to the surrounding road network traffic, SIDRA modelling was undertaken to assess any impact on the intersection performance.

The assessed scenarios for the traffic modelling included:

– **Base year**: The base year model was developed based on traffic surveys undertaken in 2021 and 2022. The AM and PM peak hours were identified, and the SCATS data provided by TfNSW was adopted for the signal timing configuration. Intersection layouts were derived from a combination of Nearmap imagery and Google Street View.

– **With the proposal**: No background traffic growth was considered for this assessment assuming the proposal will be delivered in the short term. Therefore, additional traffic generated by the development was initially added to the base year 2021/2022 surveyed traffic volumes.

– **With the proposal and background growth**: As requested by Transport for NSW, 5 and 10 year background growth rates, based on historical traffic data along Cumberland Highway and Gipps Road, were determined for the following two intersections to assess the future intersection performance rates with the proposal:

  - Cumberland Highway | Long Street
  - Gipps Road | Long Street.

1.6 Report structure

This report has been structured into the following sections:

– **Section 2** describes the existing transport conditions for all modes of transport in the vicinity of the site.

– **Section 3** describes the proposed modification, including the trip generation and access/egress routes

– **Section 4** describes the likely traffic and transport impacts due to the proposed modification.

– **Section 5** presents the assessment conclusions, including if any road upgrades or treatments are required.

2.0 Existing conditions

2.1 Road network

The main roads in the vicinity of the site include the Cumberland Highway, Gipps Road, Long Street and Tait Street. The road network surrounding the SDP is shown in **Figure 2-1**.

Figure 2-1 Road classification

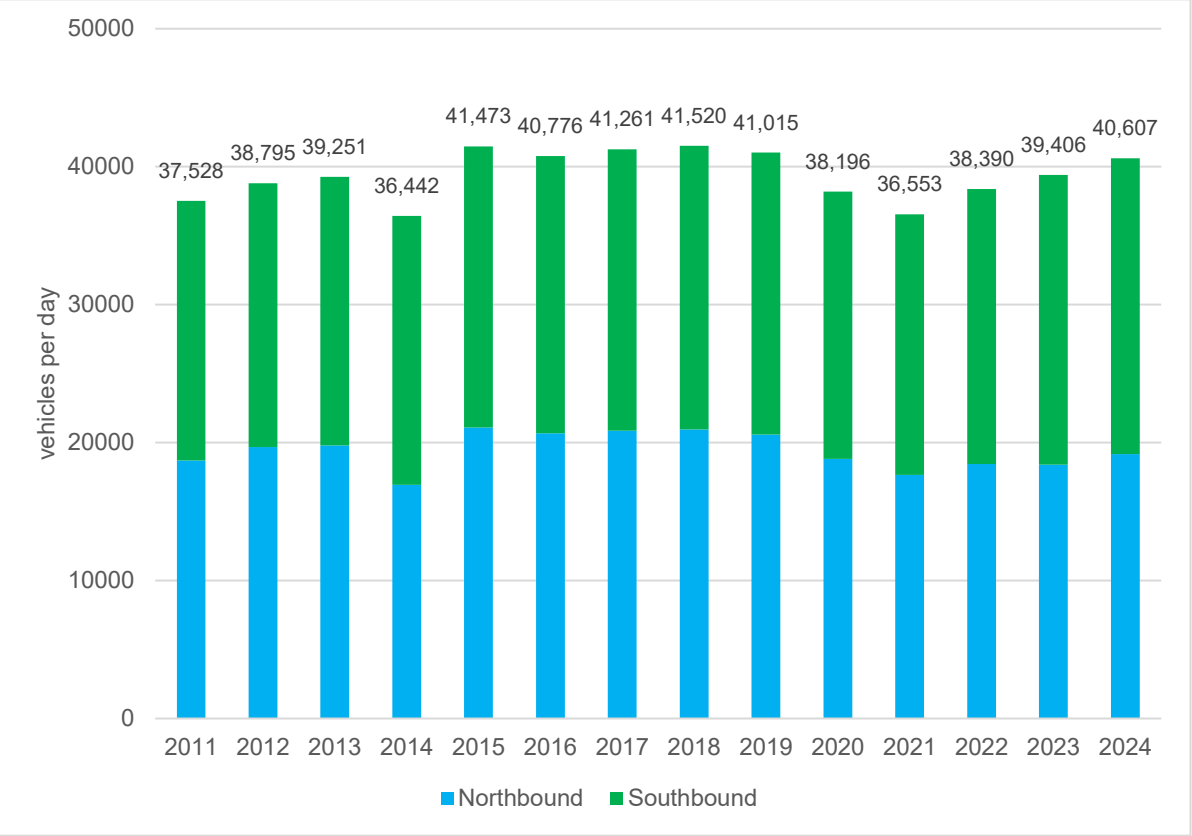
Source: TfNSW, NSW Road classification

The characteristics of the roads surrounding the subject site are:

– **Cumberland Highway** (known as **Warren Road** in the vicinity of the site) is a primary road that links the Hume Highway and Liverpool CBD to the south and Parramatta to the north. It is dominated by its movement function for local and through vehicle traffic with a posted speed limit of 70 km/h. This State Road (A28) has three travelling lanes in each direction in the vicinity of the site with a wide median. It flares with additional turning lanes when intersecting with Long Street. A footpath is provided on the western side of the road and pedestrian crossings are provided on the four legs of the intersection with Long Street. Parking is not allowed on either side of the road given the clearway conditions. The road is approved for B-double vehicles exceeding 23 m in length.

  Historic traffic data at the closest TfNSW traffic count station 100001, located on Cumberland Highway, north of Carre Avenue in Canley, south of the site, is shown **Figure 2-2**. It shows that traffic volumes along Cumberland Highway capped at about 41,500 vehicles per day between 2015 – 2019, prior to the onset of COVID-19. Post 2021, traffic flows along Cumberland Highway is shown to be approaching the pre-COVID-19 rates. Based on the historical data, it is unlikely that there would be continual traffic growth along Cumberland Highway, and that the volumes would cap at similar levels observed between 2015 – 2019.

Figure 2-2 Cumberland Highway average daily traffic volumes



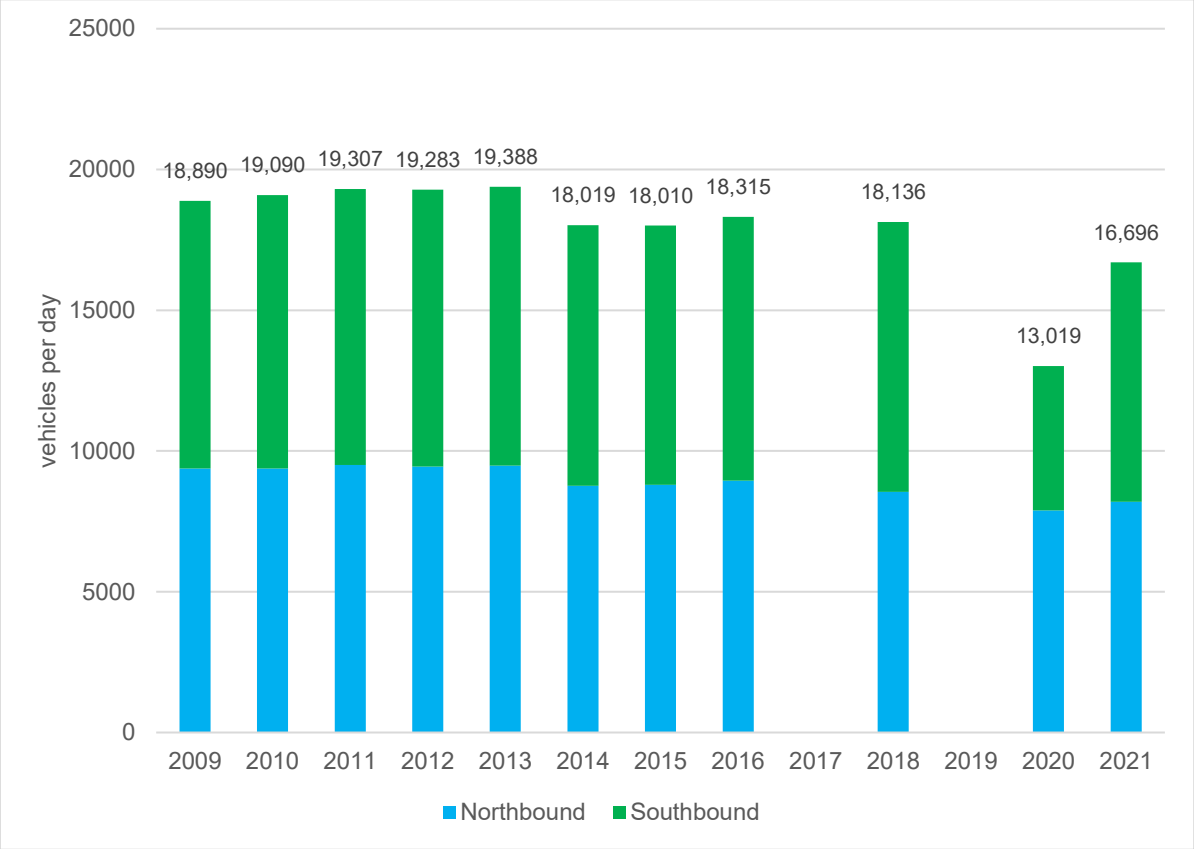
– **Gipps Road** is a State Road about 2 km west of the SDP, providing a north-south link and access to the Smithfield industrial area. Its cross section varies from one to two lanes in each direction, and it has a speed limit of 60 km/h. Parking is generally restricted on both sides of the road. The road is approved for B-double vehicles exceeding 23 m in length.

  Historical traffic data at the closest TfNSW traffic count station 66225, located on Gipps Road 280 m south of Long Street, is shown **Figure 2-3**. It shows that between 2009 and 2013, flows along Gipps Road steadily rose at about one percent per year capping at about 19,400 vehicles per day in 2013. Beyond 2013, traffic flows reduced to about 18,200 vehicles per day between 2014 and 2016. Post 2016, traffic data for Gipps Road is limited, however the flows are lower than previously reported along the corridor. As such, it is unlikely that there would be any significant growth along Gipps Road.

– **Long Street** is a distributor road with unrestricted on-street parking on both sides. It is 12.5 m wide and has one lane in each direction with a posted speed limit of 60 km/h. It widens to a four-lane approach in the eastbound direction at the signalised intersection with Cumberland Highway. It connects to Gipps Street in the west and is a key road providing access to numerous industrial sites around the area. A footpath is available for a section of Long Street near the site. Long Street is approved for B-double vehicles in excess of 23 m in length.

– **Tait Street** is a local road to the north of the site. It is a cul-de-sac with a dedicated turning circle at its western end and connects with Long Street in the south. Parking restrictions occur on both sides of the road adjacent to Tait Street Park. A speed limit of 50 km/h exists with no dedicated footpaths. According to the National Heavy Vehicle Regulator (NHVR), Tait Street is accessible for B-double vehicles sized up to 23 m in length for accessing sites within the Woodpark Industrial Area (see **Appendix A**).

Figure 2-3 Gipps Road average daily traffic volumes



2.2 Public transport network

Bus route 821 (Guildford to Smithfield Industrial Area) is the only bus service available in the proximity of the SDP. It operates only between 6am and 8am along Long Street, having four services on weekdays with 30-minute headway. No other public transport connections are available in the vicinity of the SDP.

2.3 Active transport network

Limited active transport infrastructure is available around the site. Footpaths on both sides of Long Street provide pedestrian access to the site. No footpaths are available on Tait Street, to the north of the site. An off-street shared path is only available along Prospect Creek to the south of Long Street, with limited connection opportunities.

2.4 Existing site layout and traffic generation

The layout of the site is presented in **Figure 2-4**. Regarding the requirements noted in the SEARs, the site does not have an internal road network, demarcated loading docks, pedestrian or cycle facilities. On-site parking provided at the front of the site closest to Long Street, as shown in **Figure 2-4**.

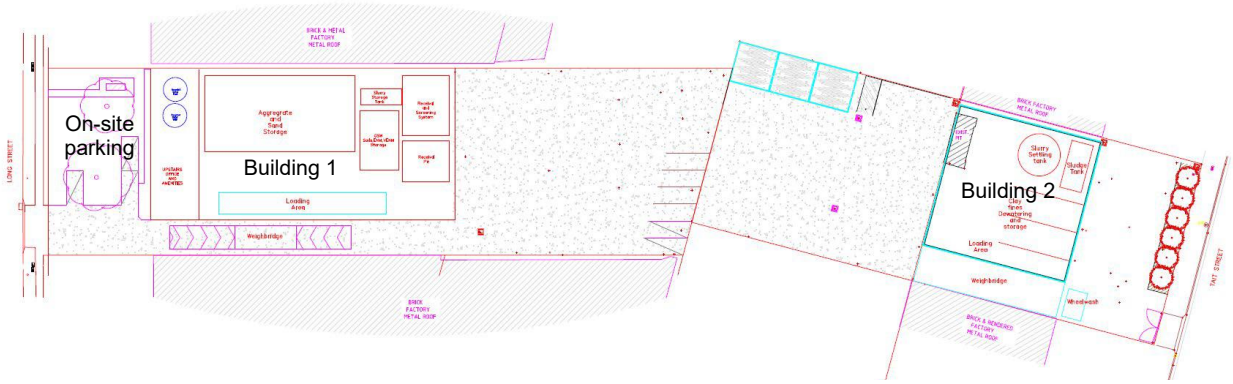
The site has two buildings, as shown in **Figure 2-4**, for offloading, processing and storage.

Trucks coming to site to offload liquid waste enter the site from Long Street, are weighed at the weighbridge adjacent to Building 1 before proceeding into the site and reversing towards the receival pit in Building 1 and unloading any material. Empty trucks are then washed and exit the site onto Tait Street.

For the dispatch of recovered materials from the site, trucks enter from Long Street, collect the recovered materials from storage areas on site and are then weighed on the weighbridge adjacent to Building 2 and proceed through to the wheel wash before exiting the site onto Tait Street.

The facility currently receives and processes up to 60 trucks daily (over 24 hours). Hourly truck traffic at the facility peaks at eight trucks per hour, generally between 2pm and 7pm, with two or fewer trucks per hour for the remainder of the day. Only one light vehicle per hour currently enters or leaves the site during peak operations.

Figure 2-4 Site layout



Source: Demast, 2024

2.5 Existing intersection performance

2.5.1 Traffic survey

Intersection surveys were conducted on 7 December 2021 to identify typical traffic demands and peak periods for the surrounding road network. The following intersections were surveyed:

– Cumberland Highway | Long Street | Herbert Place (7 December 2021)

– Gipps Road | Long Street (7 December 2021)

– Long Street | Tait Street (7 December 2021)

– Tait Street | Brittony Street (29 November 2022)

The surveys identified the weekday AM network peak period to occur from 7.45-8.45am and the PM network peak period from 4-5pm.

2.5.2 Intersection performance assessment criteria

The Degree of Saturation (DoS) is defined as the ratio of demand (arrival) flow to capacity. A DoS above 1.0 represents oversaturated conditions (i.e. demand flows exceed capacity) at an intersection. Generally, satisfactory intersection operation is achieved with a DoS of about 0.7 - 0.8. Both queue length and delays increase rapidly as DoS approaches 1.0.

Level of Service (LoS) is a measure of the average delay experienced by vehicles using an intersection. **Table 2-1** presents the LoS criteria for intersection performance.

Table 2-1 Level of Service Index

Level of Service	Average Delay per Vehicles (sec/h)	Traffic Signals / Roundabout	Give Way / Stop Signs
A	Less than 14.5	Good operation	Good operation
B	14.5 to 28.4	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	28.5 to 42.4	Satisfactory	Satisfactory, but incident study required
D	42.5 to 56.4	Operating near capacity	Near capacity and incident study required
E	56.5 to 70.4	At capacity, at signals incidents will cause excessive delays. Roundabouts require other control method.	At capacity, requires other control method
F	70.5 or greater		

Source: Guide to Traffic Generating Developments; (then) Roads and Maritime Services; 2002

2.5.3 Intersection performance

The outcomes of the intersection modelling are presented in **Table 2-2**, based on a modelling assessment using SIDRA Intersection 9 software. Full details of SIDRA outputs are presented in **Appendix B**.

Table 2-2 Intersection performance (base year)

Intersection	Peak hour	Base year 2021		
		DoS	Average delay (sec)	LOS
Long Street | Cumberland Highway	AM	0.79	23.9	B
	PM	0.75	26.1	B
Long Street | Tait Street	AM	0.29	13.6	A
	PM	0.24	11.3	A
Long Street | Gipps Road	AM	0.86	23.4	B
	PM	0.95	32.4	C
Tait Street | Britton Street	AM	0.06	5.5	A
	PM	0.06	5.9	A

The SIDRA results show that the network currently performs between LoS A and LoS B in the AM peak period and between LoS A and LoS C in the PM peak period.

3.0 Proposed modification

3.1 The proposal

Demast proposes to apply for SSD consent to:

– Receive and process up to 300,000 tpa of waste

– Expand the waste streams processed at the SDP to include groundwater, general solid waste (GSW) (non-putrescible) soils, virgin excavated natural material (VENM) and excavated natural material (ENM)

– Extinguish all previous development consents for the site and absorb into a single SSD consent.

No changes are proposed to the following matters that are already approved:

– Operating methodology or site infrastructure associated with the processing of liquid waste

– Plant and equipment

– Building and infrastructure footprints

– Vehicle parking

– Employment

– Land ownership

– Landscaping.

No new construction or change to storage capacity is proposed.

3.2 Trip generation and distribution

Combined with the existing traffic associated with the SDP, the site is estimated to ultimately generate up to 125 trucks entering and 125 trucks exiting the site on a weekday. There would be six trucks entering and exiting the site during the AM peak hour. The site's peak traffic generation is forecast to occur during the PM peak hour with up to 12 trucks (eight existing trucks and four additional trucks) entering and exiting in the hour.

The development peak hour does not coincide with the survey identified AM or PM network peak periods. To test a worst-case scenario, an additional 12 trucks were assumed to be generated entering and exiting the site as a result of the proposal during both network AM and PM peak hours. This would generate a total of 20 trucks entering and exiting the site, as presented in **Table 3-1**. This amount of trip generation is not expected to occur but was adopted to demonstrate the worst potential traffic impact of the development.

Table 3-1 Existing and proposed trip generation

Time period	Existing situation		Additional trips		Total	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
AM peak hour	8 trips	8 trips	+12 trips	+12 trips	20 trips	20 trips
PM peak hour	8 trips	8 trips	+12 trips	+12 trips	20 trips	20 trips

Source: Demast, 2024

The following assumptions were also used to forecast the traffic generation and distribution.

– All trips generated are considered to be heavy vehicle movements. No increase in light vehicles is expected.

– 1/3 of the trucks (4 trucks) would arrive from / leave to the west (Gipps Road) and 2/3 of the trucks (8 trucks) would arrive from / leave to the east (Cumberland Highway). The turning proportions (to/from the north and south) at both intersections are assumed to be consistent with the existing turning ratio of heavy vehicles at each intersection.

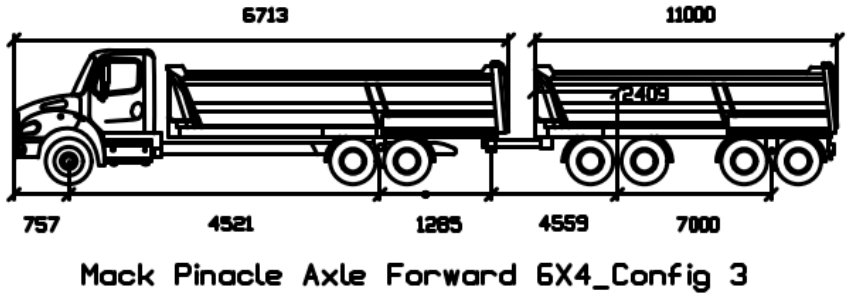
– Vehicular entry into the site is from Long Street with vehicles exiting onto Tait Street.

3.3 Swept path analysis

As requested in the SEARs, swept paths of the largest vehicle type (3-axle truck and 4-axle dog trailer) anticipated to access and move within the site was undertaken, and **Appendix C** contains diagrams of the vehicle entering, exiting and manoeuvring within the site. The trucks are proposed to enter the site from Long Street, manoeuvre into Building 1 in the site and exit the site from Tait Street.

The dimensions of the analysed 3-axle truck and 4-axle dog trailer are shown in **Figure 3-1**. As seen from the swept paths in **Appendix C**, there will be sufficient space for the largest vehicle type to enter the site, manoeuvre within the site, and exit the site. The vehicle has a length of 19.7 m and the roads it would travel on are approved for 23 m B-double travel, as discussed in **Section 2.1**.

Figure 3-1 Dimensions of example of the largest vehicle type to access the site



3.4 Truck arrival management

A booking system would be proposed for the site to balance truck arrivals during the peak hour and mitigate the possibility of vehicles spilling back onto Long Street.

The M/G/1 queue analysis considers the assumptions below to identify the possibility of queues, where:

– Total arrival demand = 20 trucks during 60 minutes

– Number of servers = 6

– Service time = 10 minutes dwell time for each truck

The analysis shows that there is a 44 per cent chance that there would be no queue at the driveway, with an average queue length of less than one vehicle. Even when there is a queue, the queueing of the truck would be fully accommodated within the driveway (around 60m long between the lot boundary and the loading dock area, equivalent to a length of three trucks) without blocking the pedestrian path or causing overspill onto Long Street.

4.0 Traffic and transport impact assessment

4.1 Road network impact

4.1.1 Intersection performance – base year

The intersection performance for the base year with and without the proposal are compared in **Table 4-1**.

Table 4-1 Intersection performance (base year and base year with the proposal)

Intersection	Peak	Base year 2021			Base year with proposal		
		DoS	Average delay (sec)	LOS	DoS	Average delay (sec)	LOS
Long Street | Cumberland Hwy	AM	0.79	25.8	B	0.78	26.0	B
	PM	0.75	30.3	C	0.78	30.9	C
Long Street | Tait Street	AM	0.29	14.0	A	0.30	21.4	B
	PM	0.24	11.3	A	0.24	16.3	B
Long Street | Gipps Road	AM	0.86	23.3	B	0.87	23.5	B
	PM	0.95	31.7	C	0.97	34.8	C
Tait Street | Britton Street	AM	0.06	5.5	A	0.06	13.5	A
	PM	0.06	5.9	A	0.06	11.5	A

The comparison shows that there are minor increases in delay and DoS across the intersections. The level of service with the proposal are forecast to remain within an acceptable range for both AM and PM peak hours. This indicates that, even with the worst-case scenario of 12 additional trucks in and 12 additional trucks out during the peak hours, which equates to about 0.2-0.6 per cent of the total traffic at the Cumberland Highway and Gipps Road intersections, the proposed increase in vehicle movements would have a minimal impact on intersection performances.

4.1.2 Queue lengths – base year

4.1.2.1 Long Street approach to Cumberland Highway

Queue lengths on the Long Street approach to Cumberland Highway were evaluated and presented in **Table 4-2**.

Table 4-2 Queue length (Long Street eastbound between Cumberland Highway and Tait Street)

Peak period	Base year	With modification
AM peak hour	51m	58m
PM peak hour	94m	103m

The additional vehicles associated with the modification result in a minor increase in the queue length during peak hours. The queue on the Long Street approach (eastbound before entering Cumberland Highway) is forecast to increase from 94 m to 103 m in the PM peak, which equates to just over one standard vehicle length.

4.1.2.2 Site access

A review of the intersection performance at the site entrance, to check the queue length on Long Street from the right turn entry into the site, was undertaken. It was found that the intersection is forecast to operate at LoS A in both peak hours with a queue length less than 2.6 m on Long Street. Hence, the impact on the road network is negligible.

4.1.3 Intersection performance – future year

As identified in **Section 2.1**, historical traffic patterns suggest that there would be minimal continual growth along Cumberland Highway and Gipps Road. However, for the purpose of this assessment, a conservative assumption of one per cent annual growth was applied to the background traffic at the intersection of Cumberland Highway | Long Street and Gipps Road | Long Street for 2027 and 2032. The intersection performance comparisons for 2027 and 2032 with and without the proposal are summarised in **Table 4-3** and **Table 4-4**.

Based on the assumed growth rate, the intersection of Gipps Road | Long Street is forecast to operate close to capacity during the 2027 PM peak hour regardless of the proposal. By 2032, this intersection is forecast to exceed capacity during the PM peak hour. The comparison between with and without proposal shows minimal differences in performances for both the intersections of Cumberland Highway | Long Street and Gipps Road | Long Street.

Table 4-3 2027 Intersection performance with and without the proposal

Intersection	Peak	2027 without proposal			2027 with proposal		
		DoS	Average delay (sec)	LOS	DoS	Average delay (sec)	LOS
Cumberland Hwy | Long Street	AM	0.83	27.7	B	0.83	27.9	B
	PM	0.79	32.0	C	0.83	32.7	C
Gipps Road | Long Street	AM	0.89	25.7	B	0.89	26.7	B
	PM	0.98	61.7	E	0.98	63.9	E

Table 4-4 2032 Intersection performance with and without the proposal

Intersection	Peak	2032 without proposal			2032 with proposal		
		DoS	Average delay (sec)	LOS	DoS	Average delay (sec)	LOS
Cumberland Hwy | Long Street	AM	0.88	31.8	C	0.88	32.1	C
	PM	0.84	34.0	C	0.88	34.7	C
Gipps Road | Long Street	AM	0.92	28.1	B	0.95	28.5	C
	PM	1.04	> 70.5	F	1.05	> 70.5	F

4.2 Public transport impact

Given the site would not generate additional public transport demand, there would be no impact on the public transport network. The additional vehicles are forecast to have minimal impact on intersection performance and therefore on travel times for the bus service in the area.

4.3 Active transport impact

Given the site would not generate additional active transport demand, there would be no impact on the active transport network. The additional vehicles entering and exiting the site are likely to have minimal impact on any active transport movement in the area.

4.4 Road safety impact

Sight distances along Tait Street from the driveway are satisfactory for the local road environment. While AS2890.1: 2004 notes that at unsignalised intersections of sub-arterial, collector or local streets, access driveways shall not be located within the sections of kerb shown in heavy lines in Figure 3.1 of AS2890.1: 2004, the driveway of 10 Tait Street is an existing driveway, and AS2890.1: 2004 also notes that this requirement shall not apply to any driveway serving a property which would otherwise be denied access due to the physical impossibility of meeting the requirement. This would apply in the case of 10 Tait Street.

With the driveway being located on the eastern edge of the property, it is clear that traffic exiting from the driveway should give way to traffic already on Tait Street, even if that traffic has turned onto Tait Street from Britton Street.

5.0 Conclusion

This study confirms that the proposal to increase the processing capacity at the SDP to 300,000 tpa of waste would not have a significant impact on the traffic and transport system around the site, given that:

– There would be minimal impacts on traffic delay and degree of saturation at the surrounding intersections during the peak hours.

– There is limited impact on traffic conditions at the site access.

– The proposed largest vehicle type can be accommodated.

– There is no impact on the public transport and active transport network.

APPENDIX A

NHVR CONFIRMATION OF THE USE OF TAIT STREET

From: NHVR Info <info@nhvr.gov.au>
Sent: Monday, 25 November 2024 11:03 AM
To: Nick Bernard <nick.bernard@sctconsulting.com.au>
Subject: FW: Enquiry 89970- #External# 19m B-double vehicle access - road segment versus area

Good Morning Nick

Thank you for your query.

In short you are able to access Tait street under the notice as it is in the shaded area of the map. (Green area)

The shaded areas are Approved Council roads/areas off the relevant gazetted Network.

Please note that we are working on improving our maps and information contained in the National Network maps as we understand that the information can be confusing and hard to interpret at times.

Hope this helps and if you have any further question please don't hesitate to contact us

Kind Regards
Stuart Bannister

Access Facilitator-Access Enquiries Team
Service Delivery
National Heavy Vehicle Regulator

P: 136487 | E: info@nhvr.gov.au
PO Box 492 | Fortitude Valley QLD 4006
Gasworks | Level 3, 76 Skyring Terrace| Newstead QLD 4006
www.nhvr.gov.au

From: Customer Enquiries < >
Sent: Friday, 22 November 2024 4:31 PM
To: NHVR Access < >
Subject: Enquiry 89970- #External# 19m B-double vehicle access - road segment versus area

NHVR
National Heavy Vehicle Regulator

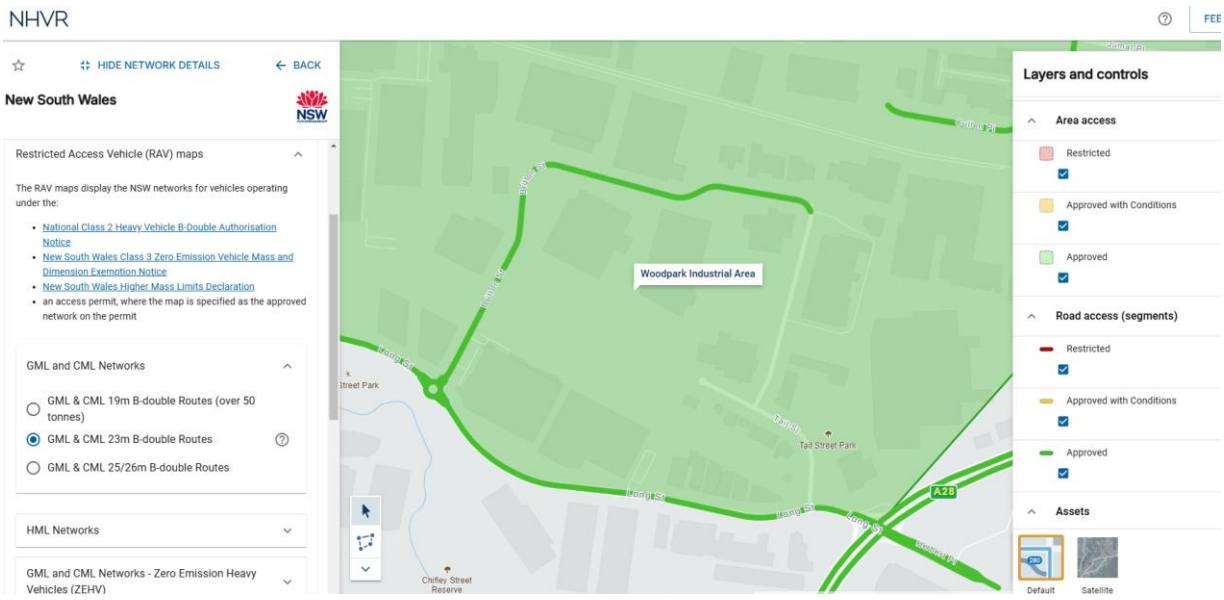
nick.bernard@sctconsulting.com.au

You don't often get email from nick.bernard@sctconsulting.com.au.
Learn why this is important
WARNING: This email originated from outside of the organisation. Do not click links or open documents unless you recognise the sender and know the content is safe.

Hi there,

In the below screenshot from the National Network Map, it indicates that the Woodpark Industrial Area is allowed to be accessed by 19m B-doubles; however, Tait St is indicated as not being on the
GML & CML 19m B-double route.
Can you confirm if this is correct or can someone use Tait Street to enter and exit the industrial area, seeing as sites in the industrial area are permitted to be accessed?

How would a site on Tait Street be able to access or exit their site if not via Tait St?



Thanks,
Nick

Nick Bernard
ASSOCIATE DIRECTOR

nick.bernard@sctconsulting.com.au
| 0431 388 643
Suite 4.03, Level 4, 157 Walker Street, North Sydney NSW 2060
Thoughtful transport solutions |
sctconsulting.com.au
| LinkedIn

SCT Consulting acknowledges the traditional owners of the lands on which we work.
We pay our respects to Elders past, present and emerging.

Disclaimer

PO Box 492
Fortitude Valley
QLD 4006

Ph: 1300 MYNHVR (1300 696 487)
Fx: (07) 3309 8777
Email: info@nhvr.gov.au

www.nhvr.gov.au
ABN 48 557 596 718

APPENDIX B

SIDRA OUTPUT

MOVEMENT SUMMARY

Site: 1AM_BY [CUM_LON_22_AM_BY (Site Folder: AM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Base Year
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	328	18.3	328	18.3	0.306	11.8	LOS A	3.6	28.8	0.24	0.65	0.24	52.1
2	T1	All MCs	2260	8.9	2260	8.9	* 0.776	25.7	LOS B	38.6	290.9	0.85	0.78	0.85	45.5
3	R2	All MCs	42	57.5	42	57.5	0.333	71.5	LOS F	2.6	27.4	0.96	0.75	0.96	24.3
Approach			2631	10.8	2631	10.8	0.776	24.7	LOS B	38.6	290.9	0.77	0.76	0.77	44.3
East: Herbert Place (E)															
4	L2	All MCs	20	42.1	20	42.1	0.043	11.5	LOS A	0.4	3.8	0.36	0.58	0.36	44.5
5	T1	All MCs	6	33.3	6	33.3	0.056	62.9	LOS E	0.4	3.5	0.95	0.64	0.95	13.5
6	R2	All MCs	20	89.5	20	89.5	0.210	67.2	LOS E	1.3	15.5	0.95	0.72	0.95	15.9
Approach			46	61.4	46	61.4	0.210	42.6	LOS D	1.3	15.5	0.70	0.65	0.70	24.3
North: Cumberland Highway (N)															
7	L2	All MCs	42	47.5	42	47.5	0.038	12.6	LOS A	0.2	2.4	0.14	0.60	0.14	45.6
8	T1	All MCs	1764	10.4	1764	10.4	0.548	17.3	LOS B	21.8	166.4	0.63	0.57	0.63	51.7
9	R2	All MCs	157	18.8	157	18.8	* 0.662	73.3	LOS F	6.8	55.5	0.99	0.87	1.03	15.2
Approach			1963	11.8	1963	11.8	0.662	21.6	LOS B	21.8	166.4	0.65	0.60	0.65	46.0
West: Long Street (W)															
10	L2	All MCs	85	53.1	85	53.1	0.331	64.0	LOS E	5.0	51.4	0.89	0.86	0.89	15.0
11	T1	All MCs	8	37.5	8	37.5	* 0.077	64.4	LOS E	0.5	4.8	0.96	0.66	0.96	13.5
12	R2	All MCs	155	35.4	155	35.4	* 0.575	69.9	LOS E	5.0	45.9	1.00	0.79	1.02	22.1
Approach			248	41.5	248	41.5	0.575	67.7	LOS E	5.0	51.4	0.96	0.81	0.97	19.6
All Vehicles			4888	13.3	4888	13.3	0.776	25.8	LOS B	38.6	290.9	0.73	0.70	0.73	42.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
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
East: Herbert Place (E)												
P2	Full	50	53	59.8	LOS E	0.2	0.2	0.96	0.96	226.4	200.0	0.88
North: Cumberland Highway (N)												

P3	Full	50	53	59.8	LOS E	0.2	0.2	0.96	0.96	226.4	200.0	0.88
West: Long Street (W)												
P4	Full	50	53	59.8	LOS E	0.2	0.2	0.96	0.96	226.4	200.0	0.88
P4B	Slip/ Bypass	50	53	42.9	LOS E	0.2	0.2	0.91	0.91	209.6	200.0	0.95
All Pedestrians		200	211	55.6	LOS E	0.2	0.2	0.94	0.94	222.2	200.0	0.90

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

MOVEMENT SUMMARY

Site: 1AM_DV [CUM_LON_22_AM_DV (Site Folder: AM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	334	19.6	334	19.6	0.319	11.8	LOS A	3.7	30.9	0.25	0.65	0.25	52.0
2	T1	All MCs	2260	8.9	2260	8.9	* 0.777	25.7	LOS B	38.7	291.5	0.85	0.78	0.85	45.5
3	R2	All MCs	42	57.5	42	57.5	0.333	71.5	LOS F	2.6	27.4	0.96	0.75	0.96	24.3
Approach			2636	11.0	2636	11.0	0.777	24.7	LOS B	38.7	291.5	0.77	0.76	0.77	44.3
East: Herbert Place (E)															
4	L2	All MCs	20	42.1	20	42.1	0.043	11.9	LOS A	0.4	3.9	0.37	0.59	0.37	44.3
5	T1	All MCs	6	33.3	6	33.3	0.056	62.9	LOS E	0.4	3.5	0.95	0.64	0.95	13.5
6	R2	All MCs	20	89.5	20	89.5	0.210	67.2	LOS E	1.3	15.5	0.95	0.72	0.95	15.9
Approach			46	61.4	46	61.4	0.210	42.7	LOS D	1.3	15.5	0.70	0.65	0.70	24.2
North: Cumberland Highway (N)															
7	L2	All MCs	42	47.5	42	47.5	0.038	12.6	LOS A	0.2	2.4	0.14	0.60	0.14	45.6
8	T1	All MCs	1764	10.4	1764	10.4	0.548	17.3	LOS B	21.8	166.4	0.63	0.57	0.63	51.7
9	R2	All MCs	160	20.2	160	20.2	* 0.686	74.2	LOS F	7.0	59.3	0.99	0.88	1.04	15.1
Approach			1966	12.0	1966	12.0	0.686	21.8	LOS B	21.8	166.4	0.65	0.60	0.66	45.9
West: Long Street (W)															
10	L2	All MCs	89	55.1	89	55.1	0.357	64.7	LOS E	5.3	57.5	0.90	0.86	0.90	14.8
11	T1	All MCs	8	37.5	8	37.5	* 0.077	64.4	LOS E	0.5	4.8	0.96	0.66	0.96	13.5
12	R2	All MCs	159	37.2	159	37.2	* 0.607	70.5	LOS F	5.2	50.1	1.00	0.81	1.04	21.9
Approach			257	43.4	257	43.4	0.607	68.3	LOS E	5.3	57.5	0.96	0.82	0.99	19.4
All Vehicles			4905	13.6	4905	13.6	0.777	26.0	LOS B	38.7	291.5	0.73	0.70	0.74	42.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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
East: Herbert Place (E)												
P2	Full	50	53	59.8	LOS E	0.2	0.2	0.96	0.96	226.4	200.0	0.88
North: Cumberland Highway (N)												

P3	Full	50	53	59.8	LOS E	0.2	0.2	0.96	0.96	226.4	200.0	0.88
West: Long Street (W)												
P4	Full	50	53	59.8	LOS E	0.2	0.2	0.96	0.96	226.4	200.0	0.88
P4B	Slip/ Bypass	50	53	42.9	LOS E	0.2	0.2	0.91	0.91	209.6	200.0	0.95
All Pedestrians		200	211	55.6	LOS E	0.2	0.2	0.94	0.94	222.2	200.0	0.90

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

MOVEMENT SUMMARY

Site: 1PM_BY [CUM_LON_22_PM_BY (Site Folder: PM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Base Year
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 142 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	142	17.8	142	17.8	0.132	8.6	LOS A	1.3	10.2	0.19	0.63	0.19	52.6
2	T1	All MCs	1840	6.2	1840	6.2	0.593	22.0	LOS B	27.7	204.3	0.72	0.65	0.72	46.8
3	R2	All MCs	16	46.7	16	46.7	0.147	75.0	LOS F	1.1	10.4	0.96	0.71	0.96	23.1
Approach			1998	7.4	1998	7.4	0.593	21.5	LOS B	27.7	204.3	0.68	0.65	0.68	46.8
East: Herbert Place (E)															
4	L2	All MCs	24	17.4	24	17.4	0.067	23.3	LOS B	0.9	6.9	0.56	0.65	0.56	38.5
5	T1	All MCs	11	50.0	11	50.0	* 0.283	81.6	LOS F	0.8	8.0	1.00	0.68	1.00	11.0
6	R2	All MCs	24	21.7	24	21.7	0.107	61.5	LOS E	1.5	12.2	0.90	0.70	0.90	18.5
Approach			59	25.0	59	25.0	0.283	49.4	LOS D	1.5	12.2	0.78	0.68	0.78	23.5
North: Cumberland Highway (N)															
7	L2	All MCs	16	60.0	16	60.0	0.015	19.6	LOS B	0.1	0.7	0.10	0.58	0.10	45.7
8	T1	All MCs	2564	6.5	2564	6.5	* 0.750	25.6	LOS B	41.3	305.6	0.77	0.70	0.77	48.5
9	R2	All MCs	113	52.3	113	52.3	* 0.628	62.5	LOS E	4.7	47.3	0.98	0.83	1.02	17.3
Approach			2693	8.8	2693	8.8	0.750	27.1	LOS B	41.3	305.6	0.77	0.71	0.77	43.0
West: Long Street (W)															
10	L2	All MCs	132	16.8	132	16.8	0.535	65.8	LOS E	7.0	55.7	0.97	0.89	0.97	16.8
11	T1	All MCs	7	85.7	7	85.7	0.248	108.0	LOS F	0.6	6.9	1.00	0.67	1.00	11.0
12	R2	All MCs	357	8.8	357	8.8	* 0.739	85.7	LOS F	12.5	94.4	1.00	0.87	1.08	22.2
Approach			496	12.1	496	12.1	0.739	80.8	LOS F	12.5	94.4	0.99	0.87	1.05	18.7
All Vehicles			5245	8.7	5245	8.7	0.750	30.3	LOS C	41.3	305.6	0.76	0.70	0.76	40.4

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. 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
East: Herbert Place (E)												
P2	Full	50	53	65.3	LOS F	0.2	0.2	0.96	0.96	231.9	200.0	0.86
North: Cumberland Highway (N)												

P3	Full	50	53	65.3	LOS F	0.2	0.2	0.96	0.96	231.9	200.0	0.86
West: Long Street (W)												
P4	Full	50	53	65.3	LOS F	0.2	0.2	0.96	0.96	231.9	200.0	0.86
P4B	Slip/ Bypass	50	53	39.5	LOS D	0.2	0.2	0.92	0.92	206.1	200.0	0.97
All Pedestrians		200	211	58.8	LOS E	0.2	0.2	0.95	0.95	225.5	200.0	0.89

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: 1PM_DV [CUM_LON_22_PM_DV (Site Folder: PM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 142 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	145	19.2	145	19.2	0.138	8.8	LOS A	1.4	11.5	0.19	0.63	0.19	52.3
2	T1	All MCs	1840	6.2	1840	6.2	0.593	22.0	LOS B	27.7	204.3	0.72	0.65	0.72	46.8
3	R2	All MCs	16	46.7	16	46.7	0.147	75.0	LOS F	1.1	10.4	0.96	0.71	0.96	23.1
Approach			2000	7.5	2000	7.5	0.593	21.5	LOS B	27.7	204.3	0.68	0.65	0.68	46.8
East: Herbert Place (E)															
4	L2	All MCs	24	17.4	24	17.4	0.068	23.9	LOS B	0.9	7.0	0.57	0.65	0.57	38.2
5	T1	All MCs	11	50.0	11	50.0	*0.283	81.7	LOS F	0.8	8.0	1.00	0.68	1.00	11.0
6	R2	All MCs	24	21.7	24	21.7	0.107	61.5	LOS E	1.5	12.2	0.90	0.70	0.90	18.5
Approach			59	25.0	59	25.0	0.283	49.7	LOS D	1.5	12.2	0.78	0.68	0.78	23.5
North: Cumberland Highway (N)															
7	L2	All MCs	16	60.0	16	60.0	0.015	19.6	LOS B	0.1	0.7	0.10	0.58	0.10	45.7
8	T1	All MCs	2564	6.5	2564	6.5	*0.750	25.6	LOS B	41.4	305.9	0.77	0.70	0.77	48.5
9	R2	All MCs	119	54.7	119	54.7	*0.683	64.8	LOS E	5.0	54.3	0.99	0.86	1.06	16.9
Approach			2699	9.0	2699	9.0	0.750	27.3	LOS B	41.4	305.9	0.77	0.71	0.78	42.9
West: Long Street (W)															
10	L2	All MCs	135	18.9	135	18.9	0.568	70.1	LOS E	7.2	60.6	0.98	0.90	0.98	16.5
11	T1	All MCs	7	85.7	7	85.7	0.248	110.4	LOS F	0.6	6.9	1.00	0.67	1.00	11.0
12	R2	All MCs	362	10.1	362	10.1	*0.776	90.7	LOS F	13.2	102.5	1.00	0.90	1.12	21.8
Approach			504	13.6	504	13.6	0.776	85.5	LOS F	13.2	102.5	0.99	0.90	1.08	17.9
All Vehicles			5262	9.0	5262	9.0	0.776	30.9	LOS C	41.4	305.9	0.76	0.70	0.77	40.0

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.

* 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
East: Herbert Place (E)												
P2	Full	50	53	65.3	LOS F	0.2	0.2	0.96	0.96	231.9	200.0	0.86
North: Cumberland Highway (N)												

P3	Full	50	53	65.3	LOS F	0.2	0.2	0.96	0.96	231.9	200.0	0.86
West: Long Street (W)												
P4	Full	50	53	65.3	LOS F	0.2	0.2	0.96	0.96	231.9	200.0	0.86
P4B	Slip/ Bypass	50	53	39.5	LOS D	0.2	0.2	0.92	0.92	206.1	200.0	0.97
All Pedestrians		200	211	58.8	LOS E	0.2	0.2	0.95	0.95	225.5	200.0	0.89

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: 1AM_DV [CUM_LON_27_AM_NoDV (Site Folder: AM Peak - 2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	345	18.3	345	18.3	0.323	12.9	LOS A	3.8	31.0	0.25	0.65	0.25	52.1
2	T1	All MCs	2373	8.9	2373	8.9	* 0.826	28.8	LOS C	43.4	326.9	0.89	0.83	0.90	44.2
3	R2	All MCs	44	57.5	44	57.5	0.350	73.8	LOS F[11]	2.8	28.9	0.97	0.75	0.97	24.3
Approach			2762	10.8	2762	10.8	0.826	27.6	LOS B	43.4	326.9	0.81	0.80	0.82	42.5
East: Herbert Place (E)															
4	L2	All MCs	21	42.1	21	42.1	0.046	12.7	LOS A	0.4	4.3	0.39	0.59	0.39	43.8
5	T1	All MCs	7	33.3	7	33.3	0.058	62.9	LOS E[11]	0.4	3.7	0.95	0.64	0.95	13.5
6	R2	All MCs	21	89.5	21	89.5	0.220	67.3	LOS E[11]	1.3	16.3	0.95	0.72	0.95	15.9
Approach			49	61.4	49	61.4	0.220	43.1	LOS D[11]	1.3	16.3	0.71	0.65	0.71	24.1
North: Cumberland Highway (N)															
7	L2	All MCs	44	47.5	44	47.5	0.040	13.4	LOS A	0.3	2.5	0.14	0.60	0.14	45.6
8	T1	All MCs	1852	10.4	1852	10.4	0.576	17.9	LOS B	23.6	179.7	0.65	0.59	0.65	51.3
9	R2	All MCs	165	18.8	165	18.8	* 0.695	74.3	LOS F[11]	7.3	59.3	0.99	0.88	1.05	15.1
Approach			2061	11.8	2061	11.8	0.695	22.3	LOS B	23.6	179.7	0.67	0.61	0.67	45.5
West: Long Street (W)															
10	L2	All MCs	90	53.1	90	53.1	0.348	64.3	LOS E[11]	5.3	54.1	0.90	0.86	0.90	15.0
11	T1	All MCs	9	37.5	9	37.5	* 0.081	64.4	LOS E[11]	0.5	5.1	0.96	0.66	0.96	13.5
12	R2	All MCs	162	35.4	162	35.4	* 0.604	70.3	LOS E[11]	5.3	48.5	1.00	0.81	1.04	22.0
Approach			261	41.5	261	41.5	0.604	68.1	LOS E[11]	5.3	54.1	0.96	0.82	0.99	19.5
All Vehicles			5133	13.3	5133	13.3	0.826	27.7	LOS B	43.4	326.9	0.76	0.73	0.77	41.6

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

P2	Full	50	58	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.4	200.0	0.88
North: Cumberland Highway (N)												
P3	Full	50	58	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.4	200.0	0.88
West: Long Street (W)												
P4	Full	50	58	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.4	200.0	0.88
P4B	Slip/ Bypass	50	58	42.9	LOS E[12]	0.2	0.2	0.91	0.91	209.6	200.0	0.95
All Pedestrians		200	232	55.6	LOS E[12]	0.2	0.2	0.95	0.95	222.2	200.0	0.90

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

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

MOVEMENT SUMMARY

Site: 1AM_DV [CUM_LON_27_AM_DV (Site Folder: AM Peak - 2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	350	19.6	350	19.6	0.336	12.9	LOS A	4.0	33.2	0.25	0.65	0.25	51.9
2	T1	All MCs	2373	8.9	2373	8.9	* 0.827	29.0	LOS C	43.6	328.3	0.89	0.83	0.90	44.1
3	R2	All MCs	44	57.5	44	57.5	0.350	73.8	LOS F[11]	2.8	28.9	0.97	0.75	0.97	24.3
Approach			2768	11.0	2768	11.0	0.827	27.6	LOS B	43.6	328.3	0.81	0.80	0.82	42.4
East: Herbert Place (E)															
4	L2	All MCs	21	42.1	21	42.1	0.047	12.7	LOS A	0.4	4.3	0.39	0.59	0.39	43.7
5	T1	All MCs	7	33.3	7	33.3	0.058	63.0	LOS E[11]	0.4	3.7	0.95	0.64	0.95	13.5
6	R2	All MCs	21	89.5	21	89.5	0.220	67.3	LOS E[11]	1.3	16.3	0.95	0.72	0.95	15.9
Approach			49	61.4	49	61.4	0.220	43.1	LOS D[11]	1.3	16.3	0.71	0.65	0.71	24.1
North: Cumberland Highway (N)															
7	L2	All MCs	44	47.5	44	47.5	0.040	13.4	LOS A	0.3	2.5	0.14	0.60	0.14	45.6
8	T1	All MCs	1852	10.4	1852	10.4	0.576	17.9	LOS B	23.6	179.7	0.65	0.59	0.65	51.3
9	R2	All MCs	167	20.1	167	20.1	* 0.719	75.2	LOS F[11]	7.5	63.2	0.99	0.89	1.07	15.0
Approach			2064	12.0	2064	12.0	0.719	22.5	LOS B	23.6	179.7	0.67	0.62	0.67	45.4
West: Long Street (W)															
10	L2	All MCs	93	55.0	93	55.0	0.375	67.3	LOS E[11]	5.6	60.2	0.90	0.87	0.90	14.8
11	T1	All MCs	9	37.5	9	37.5	* 0.081	66.6	LOS E[11]	0.5	5.1	0.96	0.66	0.96	13.5
12	R2	All MCs	167	37.2	167	37.2	* 0.636	71.0	LOS F[11]	5.5	52.8	1.00	0.83	1.07	21.8
Approach			269	43.4	269	43.4	0.636	69.6	LOS E[11]	5.6	60.2	0.97	0.83	1.01	19.2
All Vehicles			5150	13.6	5150	13.6	0.827	27.9	LOS B	43.6	328.3	0.76	0.73	0.77	41.5

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
East: Herbert Place (E)												

P2	Full	50	58	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.4	200.0	0.88
North: Cumberland Highway (N)												
P3	Full	50	58	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.4	200.0	0.88
West: Long Street (W)												
P4	Full	50	58	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.4	200.0	0.88
P4B	Slip/ Bypass	50	58	42.9	LOS E[12]	0.2	0.2	0.91	0.91	209.6	200.0	0.95
All Pedestrians		200	232	55.6	LOS E[12]	0.2	0.2	0.95	0.95	222.2	200.0	0.90

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

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

MOVEMENT SUMMARY

Site: 1AM_DV [CUM_LON_32_AM_NoDV (Site Folder: AM Peak - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	361	18.3	361	18.3	0.340	14.2	LOS A	4.3	35.0	0.26	0.66	0.26	51.8
2	T1	All MCs	2486	8.9	2486	8.9	* 0.876	36.8	LOS C	52.2	393.1	0.94	0.91	1.00	40.2
3	R2	All MCs	46	57.5	46	57.5	0.366	76.1	LOS F [11]	2.9	30.3	0.97	0.76	0.97	24.3
Approach			2894	10.8	2894	10.8	0.876	34.6	LOS C	52.2	393.1	0.86	0.88	0.91	38.7
East: Herbert Place (E)															
4	L2	All MCs	22	42.1	22	42.1	0.050	13.5	LOS A	0.5	4.7	0.41	0.60	0.41	43.2
5	T1	All MCs	7	33.3	7	33.3	0.061	63.0	LOS E [11]	0.4	3.8	0.95	0.64	0.95	13.5
6	R2	All MCs	22	89.5	22	89.5	0.231	67.4	LOS E [11]	1.4	17.1	0.96	0.72	0.96	15.8
Approach			51	61.4	51	61.4	0.231	43.5	LOS D [11]	1.4	17.1	0.72	0.66	0.72	24.0
North: Cumberland Highway (N)															
7	L2	All MCs	46	47.5	46	47.5	0.042	14.2	LOS A	0.3	2.6	0.14	0.60	0.14	45.6
8	T1	All MCs	1941	10.4	1941	10.4	0.605	18.6	LOS B	25.4	193.8	0.67	0.61	0.67	51.0
9	R2	All MCs	173	18.8	173	18.8	* 0.728	75.3	LOS F [11]	7.8	63.3	0.99	0.89	1.07	15.0
Approach			2159	11.8	2159	11.8	0.728	23.1	LOS B	25.4	193.8	0.68	0.63	0.69	45.0
West: Long Street (W)															
10	L2	All MCs	94	53.1	94	53.1	0.366	64.7	LOS E [11]	5.6	56.8	0.90	0.87	0.90	14.9
11	T1	All MCs	9	37.5	9	37.5	* 0.085	64.5	LOS E [11]	0.6	5.3	0.96	0.66	0.96	13.5
12	R2	All MCs	170	35.4	170	35.4	* 0.633	70.8	LOS F [11]	5.6	51.2	1.00	0.82	1.06	21.9
Approach			273	41.5	273	41.5	0.633	68.5	LOS E [11]	5.6	56.8	0.96	0.83	1.00	19.4
All Vehicles			5377	13.3	5377	13.3	0.876	31.8	LOS C	52.2	393.1	0.79	0.77	0.82	39.4

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.

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
East: Herbert Place (E)												

P2	Full	50	63	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.5	200.0	0.88
North: Cumberland Highway (N)												
P3	Full	50	63	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.5	200.0	0.88
West: Long Street (W)												
P4	Full	50	63	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.5	200.0	0.88
P4B	Slip/ Bypass	50	63	42.9	LOS E[12]	0.2	0.2	0.91	0.91	209.6	200.0	0.95
All Pedestrians		200	253	55.6	LOS E[12]	0.2	0.2	0.95	0.95	222.2	200.0	0.90

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

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

MOVEMENT SUMMARY

Site: 1AM_DV [CUM_LON_32_AM_DV (Site Folder: AM Peak - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	367	19.5	367	19.5	0.354	14.2	LOS A	4.5	37.4	0.27	0.66	0.27	51.7
2	T1	All MCs	2486	8.9	2486	8.9	* 0.878	37.0	LOS C	52.5	395.5	0.94	0.92	1.01	40.1
3	R2	All MCs	46	57.5	46	57.5	0.366	76.1	LOS F[11]	2.9	30.3	0.97	0.76	0.97	24.3
Approach			2899	11.0	2899	11.0	0.878	34.8	LOS C	52.5	395.5	0.86	0.88	0.91	38.6
East: Herbert Place (E)															
4	L2	All MCs	22	42.1	22	42.1	0.051	13.9	LOS A	0.5	4.9	0.42	0.60	0.42	42.9
5	T1	All MCs	7	33.3	7	33.3	0.061	63.0	LOS E[11]	0.4	3.8	0.95	0.64	0.95	13.5
6	R2	All MCs	22	89.5	22	89.5	0.231	67.4	LOS E[11]	1.4	17.1	0.96	0.72	0.96	15.8
Approach			51	61.4	51	61.4	0.231	43.7	LOS D[11]	1.4	17.1	0.72	0.66	0.72	24.0
North: Cumberland Highway (N)															
7	L2	All MCs	46	47.5	46	47.5	0.042	14.2	LOS A	0.3	2.6	0.14	0.60	0.14	45.6
8	T1	All MCs	1941	10.4	1941	10.4	0.605	18.6	LOS B	25.4	193.8	0.67	0.61	0.67	51.0
9	R2	All MCs	175	20.0	175	20.0	* 0.753	76.3	LOS F[11]	8.0	67.4	0.99	0.91	1.09	14.8
Approach			2162	12.0	2162	12.0	0.753	23.2	LOS B	25.4	193.8	0.68	0.63	0.69	44.9
West: Long Street (W)															
10	L2	All MCs	98	54.9	98	54.9	0.393	68.6	LOS E[11]	5.8	62.8	0.91	0.87	0.91	14.7
11	T1	All MCs	9	37.5	9	37.5	* 0.085	67.6	LOS E[11]	0.6	5.3	0.96	0.66	0.96	13.5
12	R2	All MCs	175	37.1	175	37.1	* 0.665	71.6	LOS F[11]	5.8	55.6	1.00	0.84	1.09	21.7
Approach			282	43.3	282	43.3	0.665	70.4	LOS E[11]	5.8	62.8	0.97	0.85	1.02	19.0
All Vehicles			5394	13.6	5394	13.6	0.878	32.1	LOS C	52.5	395.5	0.79	0.78	0.83	39.2

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.

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
East: Herbert Place (E)												

P2	Full	50	63	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.5	200.0	0.88
North: Cumberland Highway (N)												
P3	Full	50	63	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.5	200.0	0.88
West: Long Street (W)												
P4	Full	50	63	59.8	LOS E[12]	0.2	0.2	0.96	0.96	226.5	200.0	0.88
P4B	Slip/ Bypass	50	63	42.9	LOS E[12]	0.2	0.2	0.91	0.91	209.6	200.0	0.95
All Pedestrians		200	253	55.6	LOS E[12]	0.2	0.2	0.95	0.95	222.2	200.0	0.90

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

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

MOVEMENT SUMMARY

Site: 1PM_DV [CUM_LON_27_PM_NoDV (Site Folder: PM Peak_2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 142 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	149	17.8	149	17.8	0.139	9.3	LOS A	1.4	11.4	0.19	0.63	0.19	52.4
2	T1	All MCs	1932	6.2	1932	6.2	0.625	22.8	LOS B	30.0	221.2	0.74	0.67	0.74	46.4
3	R2	All MCs	17	46.7	17	46.7	0.154	75.1	LOS F[11]	1.1	10.9	0.96	0.71	0.96	23.1
Approach			2098	7.4	2098	7.4	0.625	22.3	LOS B	30.0	221.2	0.70	0.67	0.70	46.2
East: Herbert Place (E)															
4	L2	All MCs	25	17.4	25	17.4	0.075	27.0	LOS B	1.0	7.9	0.61	0.66	0.61	36.7
5	T1	All MCs	11	50.0	11	50.0	*0.297	81.7	LOS F[11]	0.8	8.4	1.00	0.69	1.00	11.0
6	R2	All MCs	25	21.7	25	21.7	0.112	61.6	LOS E[11]	1.5	12.8	0.90	0.71	0.90	18.5
Approach			62	25.0	62	25.0	0.297	51.0	LOS D[11]	1.5	12.8	0.80	0.69	0.80	23.1
North: Cumberland Highway (N)															
7	L2	All MCs	17	60.0	17	60.0	0.016	20.8	LOS B	0.1	0.7	0.10	0.58	0.10	45.7
8	T1	All MCs	2692	6.5	2692	6.5	*0.788	27.4	LOS B	45.6	336.7	0.80	0.74	0.80	47.8
9	R2	All MCs	118	52.3	118	52.3	*0.660	64.0	LOS E[11]	4.9	50.0	0.99	0.85	1.04	17.1
Approach			2827	8.8	2827	8.8	0.788	28.9	LOS C	45.6	336.7	0.81	0.74	0.81	41.9
West: Long Street (W)															
10	L2	All MCs	138	16.8	138	16.8	0.563	68.7	LOS E[11]	7.3	58.6	0.98	0.90	0.98	16.7
11	T1	All MCs	8	85.7	8	85.7	0.260	110.8	LOS F[11]	0.6	7.3	1.00	0.68	1.00	11.0
12	R2	All MCs	375	8.8	375	8.8	*0.791	91.7	LOS F[11]	13.8	103.8	1.00	0.91	1.13	21.7
Approach			521	12.1	521	12.1	0.791	85.9	LOS F[11]	13.8	103.8	0.99	0.90	1.09	17.9
All Vehicles			5508	8.7	5508	8.7	0.791	32.0	LOS C	45.6	336.7	0.78	0.73	0.79	39.4

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.

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
East: Herbert Place (E)												

P2	Full	50	58	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
North: Cumberland Highway (N)												
P3	Full	50	58	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
West: Long Street (W)												
P4	Full	50	58	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
P4B	Slip/ Bypass	50	58	39.5	LOS D	0.2	0.2	0.92	0.92	206.2	200.0	0.97
All Pedestrians		200	232	58.8	LOS E[12]	0.2	0.2	0.95	0.95	225.5	200.0	0.89

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: 1PM_DV [CUM_LON_27_PM_DV (Site Folder: PM Peak_2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 142 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	152	19.1	152	19.1	0.145	9.6	LOS A	1.5	12.8	0.20	0.63	0.20	52.1
2	T1	All MCs	1932	6.2	1932	6.2	0.625	22.8	LOS B	30.0	221.2	0.74	0.67	0.74	46.4
3	R2	All MCs	17	46.7	17	46.7	0.154	75.1	LOS F[11]	1.1	10.9	0.96	0.71	0.96	23.1
Approach			2100	7.5	2100	7.5	0.625	22.3	LOS B	30.0	221.2	0.70	0.67	0.70	46.2
East: Herbert Place (E)															
4	L2	All MCs	25	17.4	25	17.4	0.076	27.6	LOS B	1.0	8.0	0.62	0.67	0.62	36.4
5	T1	All MCs	11	50.0	11	50.0	*0.297	81.8	LOS F[11]	0.8	8.4	1.00	0.69	1.00	11.0
6	R2	All MCs	25	21.7	25	21.7	0.112	61.6	LOS E[11]	1.5	12.8	0.90	0.71	0.90	18.5
Approach			62	25.0	62	25.0	0.297	51.2	LOS D[11]	1.5	12.8	0.80	0.69	0.80	23.1
North: Cumberland Highway (N)															
7	L2	All MCs	17	60.0	17	60.0	0.016	20.9	LOS B	0.1	0.7	0.10	0.58	0.10	45.7
8	T1	All MCs	2692	6.5	2692	6.5	*0.789	27.4	LOS B	45.6	337.1	0.80	0.74	0.80	47.8
9	R2	All MCs	124	54.6	124	54.6	*0.714	66.4	LOS E[11]	5.3	57.3	0.99	0.87	1.08	16.6
Approach			2833	8.9	2833	8.9	0.789	29.1	LOS C	45.6	337.1	0.81	0.74	0.81	41.8
West: Long Street (W)															
10	L2	All MCs	142	18.8	142	18.8	0.598	72.7	LOS F[11]	7.5	63.4	0.98	0.91	0.98	16.4
11	T1	All MCs	8	85.7	8	85.7	0.260	112.9	LOS F[11]	0.6	7.3	1.00	0.68	1.00	11.0
12	R2	All MCs	380	10.0	380	10.0	*0.829	97.3	LOS F[11]	14.6	113.0	1.00	0.94	1.18	21.2
Approach			529	13.5	529	13.5	0.829	91.0	LOS F[11]	14.6	113.0	1.00	0.93	1.13	17.1
All Vehicles			5524	9.0	5524	9.0	0.829	32.7	LOS C	45.6	337.1	0.78	0.73	0.80	39.0

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. 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
East: Herbert Place (E)												

P2	Full	50	58	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
North: Cumberland Highway (N)												
P3	Full	50	58	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
West: Long Street (W)												
P4	Full	50	58	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
P4B	Slip/ Bypass	50	58	39.5	LOS D	0.2	0.2	0.92	0.92	206.2	200.0	0.97
All Pedestrians		200	232	58.8	LOS E[12]	0.2	0.2	0.95	0.95	225.5	200.0	0.89

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: 1PM_DV [CUM_LON_32_PM_NoDV (Site Folder: PM Peak_DV - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 142 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	156	17.8	156	17.8	0.147	10.5	LOS A	1.5	12.1	0.20	0.63	0.20	52.4
2	T1	All MCs	2024	6.2	2024	6.2	0.659	23.9	LOS B	32.6	240.3	0.76	0.69	0.76	45.9
3	R2	All MCs	17	46.7	17	46.7	0.161	75.2	LOS F[11]	1.2	11.5	0.96	0.71	0.96	23.1
Approach			2198	7.4	2198	7.4	0.659	23.3	LOS B	32.6	240.3	0.72	0.69	0.72	45.5
East: Herbert Place (E)															
4	L2	All MCs	27	17.4	27	17.4	0.084	31.6	LOS C	1.1	9.2	0.66	0.68	0.66	34.5
5	T1	All MCs	12	50.0	12	50.0	*0.311	81.8	LOS F[11]	0.9	8.8	1.00	0.69	1.00	11.0
6	R2	All MCs	27	21.7	27	21.7	0.118	61.7	LOS E[11]	1.6	13.4	0.90	0.71	0.90	18.5
Approach			65	25.0	65	25.0	0.311	52.9	LOS D[11]	1.6	13.4	0.82	0.69	0.82	22.6
North: Cumberland Highway (N)															
7	L2	All MCs	17	60.0	17	60.0	0.016	22.1	LOS B	0.1	0.8	0.10	0.58	0.10	45.7
8	T1	All MCs	2821	6.5	2821	6.5	*0.827	29.3	LOS C	50.2	371.0	0.84	0.77	0.84	47.1
9	R2	All MCs	124	52.3	124	52.3	*0.691	65.6	LOS E[11]	5.2	52.9	0.99	0.86	1.06	16.9
Approach			2962	8.8	2962	8.8	0.827	30.8	LOS C	50.2	371.0	0.85	0.78	0.85	40.9
West: Long Street (W)															
10	L2	All MCs	145	16.8	145	16.8	0.593	71.4	LOS F[11]	7.7	61.4	0.98	0.91	0.98	16.5
11	T1	All MCs	8	85.7	8	85.7	0.273	113.3	LOS F[11]	0.6	7.6	1.00	0.68	1.00	11.0
12	R2	All MCs	393	8.8	393	8.8	*0.844	98.9	LOS F[11]	15.2	114.8	1.00	0.96	1.20	21.0
Approach			545	12.1	545	12.1	0.844	91.8	LOS F[11]	15.2	114.8	0.99	0.94	1.14	17.1
All Vehicles			5770	8.7	5770	8.7	0.844	34.0	LOS C	50.2	371.0	0.81	0.76	0.83	38.4

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.

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
East: Herbert Place (E)												

P2	Full	50	63	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
North: Cumberland Highway (N)												
P3	Full	50	63	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
West: Long Street (W)												
P4	Full	50	63	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
P4B	Slip/ Bypass	50	63	39.5	LOS D	0.2	0.2	0.92	0.92	206.2	200.0	0.97
All Pedestrians		200	253	58.8	LOS E[12]	0.2	0.2	0.95	0.95	225.5	200.0	0.89

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: 1PM_DV [CUM_LON_32_PM_DV (Site Folder: PM Peak_DV - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Cumberland Highway and Long Street TCS2427
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 142 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cumberland Highway (S)															
1	L2	All MCs	159	19.1	159	19.1	0.153	10.7	LOS A	1.6	13.5	0.21	0.63	0.21	52.1
2	T1	All MCs	2024	6.2	2024	6.2	0.660	23.9	LOS B	32.6	240.4	0.76	0.69	0.76	45.9
3	R2	All MCs	17	46.7	17	46.7	0.161	75.2	LOS F[11]	1.2	11.5	0.96	0.71	0.96	23.1
Approach			2200	7.5	2200	7.5	0.660	23.3	LOS B	32.6	240.4	0.72	0.69	0.72	45.5
East: Herbert Place (E)															
4	L2	All MCs	27	17.4	27	17.4	0.085	32.3	LOS C	1.2	9.3	0.67	0.68	0.67	34.2
5	T1	All MCs	12	50.0	12	50.0	*0.311	81.9	LOS F[11]	0.9	8.8	1.00	0.69	1.00	11.0
6	R2	All MCs	27	21.7	27	21.7	0.118	61.7	LOS E[11]	1.6	13.4	0.90	0.71	0.90	18.5
Approach			65	25.0	65	25.0	0.311	53.2	LOS D[11]	1.6	13.4	0.82	0.69	0.82	22.6
North: Cumberland Highway (N)															
7	L2	All MCs	17	60.0	17	60.0	0.016	22.1	LOS B	0.1	0.8	0.10	0.58	0.10	45.7
8	T1	All MCs	2821	6.5	2821	6.5	*0.827	29.3	LOS C	50.2	371.4	0.84	0.78	0.84	47.1
9	R2	All MCs	130	54.5	130	54.5	*0.746	68.2	LOS E[11]	5.6	60.4	0.99	0.89	1.11	16.4
Approach			2968	8.9	2968	8.9	0.827	31.0	LOS C	50.2	371.4	0.85	0.78	0.85	40.7
West: Long Street (W)															
10	L2	All MCs	148	18.7	148	18.7	0.628	75.1	LOS F[11]	7.9	66.3	0.99	0.92	0.99	16.2
11	T1	All MCs	8	85.7	8	85.7	0.273	115.3	LOS F[11]	0.6	7.6	1.00	0.68	1.00	11.0
12	R2	All MCs	397	10.0	397	10.0	*0.882	105.9	LOS F[11]	16.3	126.0	1.00	1.00	1.27	20.2
Approach			554	13.4	554	13.4	0.882	97.8	LOS F[11]	16.3	126.0	1.00	0.97	1.19	16.3
All Vehicles			5787	9.0	5787	9.0	0.882	34.7	LOS C	50.2	371.4	0.81	0.76	0.83	38.0

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

P2	Full	50	63	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
North: Cumberland Highway (N)												
P3	Full	50	63	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
West: Long Street (W)												
P4	Full	50	63	65.3	LOS F[12]	0.2	0.2	0.96	0.96	232.0	200.0	0.86
P4B	Slip/ Bypass	50	63	39.5	LOS D	0.2	0.2	0.92	0.92	206.2	200.0	0.97
All Pedestrians		200	253	58.8	LOS E[12]	0.2	0.2	0.95	0.95	225.5	200.0	0.89

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: 2AM_BY [LON_TAI_22_AM_BY (Site Folder: AM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Long Street and Tait Street
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site access															
1	L2	All MCs	1	100.0	1	100.0	0.016	2.4	LOS A	0.0	0.5	0.59	0.52	0.59	17.8
2	T1	All MCs	1	0.0	1	0.0	0.016	1.8	LOS A	0.0	0.5	0.59	0.52	0.59	12.5
3	R2	All MCs	4	100.0	4	100.0	0.016	7.9	LOS A	0.0	0.5	0.59	0.52	0.59	10.7
Approach			6	83.3	6	83.3	0.016	6.0	LOS A	0.0	0.5	0.59	0.52	0.59	12.4
East: Long Street (E)															
4	L2	All MCs	1	100.0	1	100.0	0.289	10.5	LOS A	1.0	8.1	0.24	0.27	0.24	11.7
5	T1	All MCs	352	21.0	352	21.0	0.289	0.4	LOS A	1.0	8.1	0.24	0.27	0.24	56.8
6	R2	All MCs	138	12.2	138	12.2	0.289	6.7	LOS A	1.0	8.1	0.24	0.27	0.24	43.6
Approach			491	18.7	491	18.7	0.289	2.2	NA	1.0	8.1	0.24	0.27	0.24	54.1
North: Tait Street (N)															
7	L2	All MCs	58	38.2	58	38.2	0.057	5.9	LOS A	0.2	2.1	0.39	0.57	0.39	5.5
8	T1	All MCs	1	100.0	1	100.0	0.057	14.0	LOS A	0.2	2.1	0.39	0.57	0.39	12.9
9	R2	All MCs	7	14.3	7	14.3	0.057	8.1	LOS A	0.2	2.1	0.39	0.57	0.39	48.9
Approach			66	36.5	66	36.5	0.057	6.3	LOS A	0.2	2.1	0.39	0.57	0.39	7.3
West: Long Street (W)															
10	L2	All MCs	8	37.5	8	37.5	0.154	6.0	LOS A	0.0	0.1	0.01	0.03	0.01	54.5
11	T1	All MCs	229	36.7	229	36.7	0.154	0.0	LOS A	0.0	0.1	0.01	0.03	0.01	59.7
12	R2	All MCs	1	0.0	1	0.0	0.154	7.7	LOS A	0.0	0.1	0.01	0.03	0.01	19.4
Approach			239	36.6	239	36.6	0.154	0.2	NA	0.0	0.1	0.01	0.03	0.01	58.6
All Vehicles			802	26.0	802	26.0	0.289	2.0	NA	1.0	8.1	0.19	0.22	0.19	41.4

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: 2AM_DV [LON_TAI_22_AM_DV (Site Folder: AM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Long Street and Tait Street
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site access															
1	L2	All MCs	1	100.0	1	100.0	0.017	2.6	LOS A	0.0	0.6	0.61	0.55	0.61	17.8
2	T1	All MCs	1	0.0	1	0.0	0.017	1.9	LOS A	0.0	0.6	0.61	0.55	0.61	12.4
3	R2	All MCs	4	100.0	4	100.0	0.017	8.6	LOS A	0.0	0.6	0.61	0.55	0.61	10.7
Approach			6	83.3	6	83.3	0.017	6.5	LOS A	0.0	0.6	0.61	0.55	0.61	12.3
East: Long Street (E)															
4	L2	All MCs	1	100.0	1	100.0	0.298	10.5	LOS A	1.0	8.4	0.24	0.27	0.24	11.7
5	T1	All MCs	360	22.8	360	22.8	0.298	0.4	LOS A	1.0	8.4	0.24	0.27	0.24	56.8
6	R2	All MCs	138	12.2	138	12.2	0.298	6.7	LOS A	1.0	8.4	0.24	0.27	0.24	43.6
Approach			499	20.0	499	20.0	0.298	2.2	NA	1.0	8.4	0.24	0.27	0.24	54.2
North: Tait Street (N)															
7	L2	All MCs	66	46.0	66	46.0	0.123	6.8	LOS A	0.4	4.6	0.48	0.63	0.48	5.5
8	T1	All MCs	1	100.0	1	100.0	0.123	14.8	LOS B	0.4	4.6	0.48	0.63	0.48	12.8
9	R2	All MCs	12	45.5	12	45.5	0.123	21.4	LOS B	0.4	4.6	0.48	0.63	0.48	46.1
Approach			79	46.7	79	46.7	0.123	9.0	LOS A	0.4	4.6	0.48	0.63	0.48	7.8
West: Long Street (W)															
10	L2	All MCs	8	37.5	8	37.5	0.154	6.0	LOS A	0.0	0.1	0.01	0.03	0.01	54.5
11	T1	All MCs	229	36.7	229	36.7	0.154	0.0	LOS A	0.0	0.1	0.01	0.03	0.01	59.7
12	R2	All MCs	1	0.0	1	0.0	0.154	7.7	LOS A	0.0	0.1	0.01	0.03	0.01	19.4
Approach			239	36.6	239	36.6	0.154	0.2	NA	0.0	0.1	0.01	0.03	0.01	58.6
All Vehicles			823	27.9	823	27.9	0.298	2.3	NA	1.0	8.4	0.19	0.23	0.19	40.1

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: 2PM_BY [LON_TAI_22_PM_BY (Site Folder: PM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Long Street and Tait Street
Site Category: Base Year
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site access															
1	L2	All MCs	3	33.3	3	33.3	0.012	0.8	LOS A	0.0	0.3	0.47	0.31	0.47	18.3
2	T1	All MCs	1	0.0	1	0.0	0.012	1.7	LOS A	0.0	0.3	0.47	0.31	0.47	12.6
3	R2	All MCs	3	66.7	3	66.7	0.012	6.7	LOS A	0.0	0.3	0.47	0.31	0.47	10.9
Approach			7	42.9	7	42.9	0.012	3.4	LOS A	0.0	0.3	0.47	0.31	0.47	14.6
East: Long Street (E)															
4	L2	All MCs	5	80.0	5	80.0	0.185	11.3	LOS A	0.5	4.2	0.22	0.29	0.22	11.7
5	T1	All MCs	212	34.8	212	34.8	0.185	0.6	LOS A	0.5	4.2	0.22	0.29	0.22	57.4
6	R2	All MCs	51	25.0	51	25.0	0.185	7.7	LOS A	0.5	4.2	0.22	0.29	0.22	43.9
Approach			267	33.9	267	33.9	0.185	2.2	NA	0.5	4.2	0.22	0.29	0.22	52.5
North: Tait Street (N)															
7	L2	All MCs	153	6.9	153	6.9	0.135	6.2	LOS A	0.6	4.2	0.49	0.66	0.49	5.5
8	T1	All MCs	1	0.0	1	0.0	0.135	9.6	LOS A	0.6	4.2	0.49	0.66	0.49	12.9
9	R2	All MCs	13	8.3	13	8.3	0.135	7.8	LOS A	0.6	4.2	0.49	0.66	0.49	48.9
Approach			166	7.0	166	7.0	0.135	6.3	LOS A	0.6	4.2	0.49	0.66	0.49	6.7
West: Long Street (W)															
10	L2	All MCs	6	0.0	6	0.0	0.237	5.5	LOS A	0.0	0.1	0.00	0.01	0.00	55.4
11	T1	All MCs	438	13.0	438	13.0	0.237	0.0	LOS A	0.0	0.1	0.00	0.01	0.00	59.8
12	R2	All MCs	1	0.0	1	0.0	0.237	7.6	LOS A	0.0	0.1	0.00	0.01	0.00	19.5
Approach			445	12.8	445	12.8	0.237	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.3
All Vehicles			886	18.3	886	18.3	0.237	1.9	NA	0.6	4.2	0.16	0.22	0.16	31.8

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: 2PM_DV [LON_TAI_22_PM_DV (Site Folder: PM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Long Street and Tait Street
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site access															
1	L2	All MCs	3	33.3	3	33.3	0.013	0.9	LOS A	0.0	0.3	0.49	0.33	0.49	18.3
2	T1	All MCs	1	0.0	1	0.0	0.013	1.7	LOS A	0.0	0.3	0.49	0.33	0.49	12.6
3	R2	All MCs	3	66.7	3	66.7	0.013	7.2	LOS A	0.0	0.3	0.49	0.33	0.49	10.9
Approach			7	42.9	7	42.9	0.013	3.7	LOS A	0.0	0.3	0.49	0.33	0.49	14.6
East: Long Street (E)															
4	L2	All MCs	5	80.0	5	80.0	0.195	11.3	LOS A	0.5	4.5	0.21	0.28	0.21	11.7
5	T1	All MCs	220	37.3	220	37.3	0.195	0.6	LOS A	0.5	4.5	0.21	0.28	0.21	57.4
6	R2	All MCs	51	25.0	51	25.0	0.195	7.7	LOS A	0.5	4.5	0.21	0.28	0.21	43.9
Approach			276	35.9	276	35.9	0.195	2.1	NA	0.5	4.5	0.21	0.28	0.21	52.7
North: Tait Street (N)															
7	L2	All MCs	161	11.8	161	11.8	0.206	7.0	LOS A	0.8	6.6	0.54	0.69	0.54	5.5
8	T1	All MCs	1	0.0	1	0.0	0.206	9.7	LOS A	0.8	6.6	0.54	0.69	0.54	12.8
9	R2	All MCs	17	31.3	17	31.3	0.206	16.3	LOS B	0.8	6.6	0.54	0.69	0.54	47.0
Approach			179	13.5	179	13.5	0.206	7.9	LOS A	0.8	6.6	0.54	0.69	0.54	6.9
West: Long Street (W)															
10	L2	All MCs	6	0.0	6	0.0	0.237	5.6	LOS A	0.0	0.1	0.00	0.01	0.00	55.4
11	T1	All MCs	438	13.0	438	13.0	0.237	0.0	LOS A	0.0	0.1	0.00	0.01	0.00	59.8
12	R2	All MCs	1	0.0	1	0.0	0.237	7.6	LOS A	0.0	0.1	0.00	0.01	0.00	19.5
Approach			445	12.8	445	12.8	0.237	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.3
All Vehicles			907	20.2	907	20.2	0.237	2.3	NA	0.8	6.6	0.17	0.23	0.17	31.3

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: 3AM_BY [GIP_LON_22_AM_BY (Site Folder: AM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Base Year
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	544	7.2	544	7.2	0.391	3.4	LOS A	7.5	55.8	0.34	0.31	0.34	56.2
3	R2	All MCs	320	28.6	320	28.6	* 0.681	34.6	LOS C	10.9	94.9	0.92	0.98	0.94	36.8
Approach			864	15.1	864	15.1	0.681	14.9	LOS B	10.9	94.9	0.56	0.56	0.56	46.1
East: Long Street															
4	L2	All MCs	213	35.1	213	35.1	0.380	25.4	LOS B	6.5	59.2	0.73	0.78	0.73	40.3
6	R2	All MCs	105	29.0	105	29.0	* 0.850	59.5	LOS E	5.4	47.0	1.00	0.99	1.44	20.4
Approach			318	33.1	318	33.1	0.850	36.7	LOS C	6.5	59.2	0.82	0.85	0.97	33.3
North: Gipps Road (N)															
7	L2	All MCs	297	12.4	297	12.4	0.307	15.1	LOS B	6.3	49.1	0.52	0.73	0.52	38.7
8	T1	All MCs	687	6.1	687	6.1	* 0.855	31.1	LOS C	30.9	227.6	0.97	0.97	1.09	37.0
Approach			984	8.0	984	8.0	0.855	26.3	LOS B	30.9	227.6	0.83	0.90	0.92	37.4
All Vehicles			2166	14.5	2166	14.5	0.855	23.3	LOS B	30.9	227.6	0.72	0.75	0.79	39.9

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

MOVEMENT SUMMARY

Site: 3AM_DV [GIP_LON_22_AM_DV (Site Folder: AM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	544	7.2	544	7.2	0.391	3.4	LOS A	7.5	55.8	0.34	0.31	0.34	56.2
3	R2	All MCs	323	29.3	323	29.3	* 0.694	35.2	LOS C	11.1	98.5	0.92	0.99	0.95	36.6
Approach			867	15.4	867	15.4	0.694	15.2	LOS B	11.1	98.5	0.56	0.56	0.57	45.9
East: Long Street															
4	L2	All MCs	216	36.0	216	36.0	0.390	25.6	LOS B	6.6	61.9	0.74	0.78	0.74	40.2
6	R2	All MCs	106	29.8	106	29.8	* 0.869	61.1	LOS E	5.5	49.4	1.00	1.02	1.50	20.1
Approach			322	34.0	322	34.0	0.869	37.3	LOS C	6.6	61.9	0.82	0.86	0.99	33.1
North: Gipps Road (N)															
7	L2	All MCs	298	12.8	298	12.8	0.310	15.1	LOS B	6.4	49.9	0.53	0.73	0.53	38.6
8	T1	All MCs	687	6.1	687	6.1	* 0.855	31.1	LOS C	30.9	227.6	0.97	0.97	1.09	37.0
Approach			985	8.1	985	8.1	0.855	26.3	LOS B	30.9	227.6	0.83	0.90	0.92	37.4
All Vehicles			2175	14.9	2175	14.9	0.869	23.5	LOS B	30.9	227.6	0.72	0.76	0.79	39.8

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 (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)

MOVEMENT SUMMARY

Site: 3PM_BY [GIP_LON_22_PM_BY (Site Folder: PM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Base Year
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 [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	782	3.5	782	3.5	0.649	9.1	LOS A	18.4	132.5	0.65	0.60	0.65	50.8
3	R2	All MCs	169	34.8	169	34.8	* 0.711	42.0	LOS C	6.4	57.8	0.99	0.95	1.12	34.2
Approach			952	9.1	952	9.1	0.711	14.9	LOS B	18.4	132.5	0.71	0.66	0.74	46.2
East: Long Street															
4	L2	All MCs	338	18.4	338	18.4	0.571	26.9	LOS B	10.6	85.5	0.84	0.82	0.84	39.9
6	R2	All MCs	326	6.1	326	6.1	* 0.951	63.5	LOS E	17.4	128.3	1.00	1.15	1.60	20.1
Approach			664	12.4	664	12.4	0.951	44.9	LOS D	17.4	128.3	0.92	0.98	1.21	29.7
North: Gipps Road (N)															
7	L2	All MCs	98	12.9	98	12.9	0.083	8.8	LOS A	1.1	8.2	0.30	0.64	0.30	44.1
8	T1	All MCs	788	5.7	788	5.7	* 0.939	43.6	LOS D	40.5	297.4	1.00	1.21	1.35	32.1
Approach			886	6.5	886	6.5	0.939	39.7	LOS C	40.5	297.4	0.92	1.15	1.24	32.8
All Vehicles			2502	9.0	2502	9.0	0.951	31.7	LOS C	40.5	297.4	0.84	0.92	1.04	36.0

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.

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 3PM_DV [GIP_LON_22_PM_DV (Site Folder: PM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
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 [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	782	3.5	782	3.5	0.649	9.1	LOS A	18.4	132.5	0.65	0.60	0.65	50.8
3	R2	All MCs	173	36.1	173	36.1	* 0.706	42.0	LOS C	6.4	60.2	0.98	0.95	1.11	34.2
Approach			955	9.4	955	9.4	0.706	15.0	LOS B	18.4	132.5	0.71	0.66	0.74	46.1
East: Long Street															
4	L2	All MCs	341	19.1	341	19.1	0.572	26.2	LOS B	10.5	87.0	0.83	0.82	0.83	40.2
6	R2	All MCs	327	6.4	327	6.4	* 0.959	65.8	LOS E	17.8	132.4	1.00	1.17	1.64	19.6
Approach			668	12.9	668	12.9	0.959	45.6	LOS D	17.8	132.4	0.91	0.99	1.23	29.5
North: Gipps Road (N)															
7	L2	All MCs	99	13.6	99	13.6	0.086	9.1	LOS A	1.1	8.8	0.31	0.65	0.31	43.7
8	T1	All MCs	788	5.7	788	5.7	* 0.965	52.9	LOS D	44.4	326.2	1.00	1.32	1.47	29.2
Approach			887	6.6	887	6.6	0.965	48.1	LOS D	44.4	326.2	0.92	1.25	1.34	29.9
All Vehicles			2511	9.4	2511	9.4	0.965	34.8	LOS C	44.4	326.2	0.84	0.96	1.08	34.7

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 (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)

MOVEMENT SUMMARY

Site: 3AM_DV [GIP_LON_27_AM_NoDV (Site Folder: AM Peak - 2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	571	7.2	571	7.2	0.410	3.5	LOS A	8.1	59.9	0.35	0.32	0.35	56.1
3	R2	All MCs	336	28.6	336	28.6	* 0.729	37.9	LOS C	11.9	103.5	0.94	1.01	1.00	35.7
Approach			907	15.1	907	15.1	0.729	16.2	LOS B	11.9	103.5	0.57	0.57	0.59	45.3
East: Long Street															
4	L2	All MCs	213	35.1	213	35.1	0.380	25.4	LOS B	6.5	59.2	0.73	0.78	0.73	40.3
6	R2	All MCs	105	29.0	105	29.0	* 0.850	59.5	LOS E[11]	5.4	47.0	1.00	0.99	1.44	20.4
Approach			318	33.1	318	33.1	0.850	36.7	LOS C	6.5	59.2	0.82	0.85	0.97	33.3
North: Gipps Road (N)															
7	L2	All MCs	312	12.4	312	12.4	0.322	15.2	LOS B	6.7	52.2	0.53	0.73	0.53	38.6
8	T1	All MCs	722	6.1	722	6.1	* 0.898	37.5	LOS C	35.9	264.8	1.00	1.07	1.21	34.3
Approach			1033	8.0	1033	8.0	0.898	30.7	LOS C	35.9	264.8	0.86	0.97	1.00	35.2
All Vehicles			2259	14.4	2259	14.4	0.898	25.7	LOS B	35.9	264.8	0.74	0.79	0.83	38.7

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 (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)

MOVEMENT SUMMARY

Site: 3AM_DV [GIP_LON_27_AM_DV (Site Folder: AM Peak - 2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	571	7.2	571	7.2	0.404	3.4	LOS A	8.4	62.7	0.33	0.30	0.33	56.2
3	R2	All MCs	339	29.3	339	29.3	* 0.720	39.9	LOS C	13.0	115.1	0.93	1.01	0.97	34.9
Approach			910	15.4	910	15.4	0.720	17.0	LOS B	13.0	115.1	0.56	0.57	0.57	44.8
East: Long Street															
4	L2	All MCs	216	36.0	216	36.0	0.383	27.1	LOS B	7.2	67.5	0.73	0.78	0.73	39.5
6	R2	All MCs	106	29.8	106	29.8	* 0.859	65.4	LOS E[11]	6.0	53.8	1.00	1.00	1.43	19.3
Approach			322	34.0	322	34.0	0.859	39.7	LOS C	7.2	67.5	0.82	0.85	0.96	32.2
North: Gipps Road (N)															
7	L2	All MCs	313	12.8	313	12.8	0.325	16.3	LOS B	7.5	58.7	0.53	0.73	0.53	37.8
8	T1	All MCs	722	6.1	722	6.1	* 0.887	37.5	LOS C	37.9	278.9	0.99	1.02	1.14	34.3
Approach			1035	8.1	1035	8.1	0.887	31.1	LOS C	37.9	278.9	0.85	0.93	0.96	35.0
All Vehicles			2267	14.7	2267	14.7	0.887	26.7	LOS B	37.9	278.9	0.73	0.77	0.80	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 (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)

MOVEMENT SUMMARY

Site: 3AM_DV [GIP_LON_32_AM_NoDV (Site Folder: AM Peak - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	599	7.2	599	7.2	0.413	3.2	LOS A	9.0	67.0	0.31	0.28	0.31	56.4
3	R2	All MCs	352	28.6	352	28.6	* 0.745	44.6	LOS D[11]	15.1	131.4	0.94	1.04	0.99	33.5
Approach			951	15.1	951	15.1	0.745	18.5	LOS B	15.1	131.4	0.55	0.56	0.56	43.9
East: Long Street															
4	L2	All MCs	213	35.1	213	35.1	0.383	29.9	LOS C	7.9	72.3	0.74	0.78	0.74	38.3
6	R2	All MCs	105	29.0	105	29.0	* 0.923	78.6	LOS F[11]	6.9	60.6	1.00	1.07	1.57	17.1
Approach			318	33.1	318	33.1	0.923	46.0	LOS D[11]	7.9	72.3	0.82	0.87	1.01	30.3
North: Gipps Road (N)															
7	L2	All MCs	327	12.4	327	12.4	0.332	16.9	LOS B	8.5	65.7	0.53	0.73	0.53	37.4
8	T1	All MCs	756	6.1	756	6.1	* 0.884	37.5	LOS C	42.0	309.6	0.98	0.99	1.10	34.3
Approach			1083	8.0	1083	8.0	0.884	31.3	LOS C	42.0	309.6	0.84	0.91	0.93	35.0
All Vehicles			2351	14.3	2351	14.3	0.923	28.1	LOS B	42.0	309.6	0.72	0.77	0.79	37.5

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)

MOVEMENT SUMMARY

Site: 3AM_DV [GIP_LON_32_AM_DV (Site Folder: AM Peak - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	599	7.2	599	7.2	0.413	3.2	LOS A	9.0	67.0	0.31	0.28	0.31	56.4
3	R2	All MCs	355	29.2	355	29.2	* 0.758	45.5	LOS D[11]	15.4	136.4	0.95	1.05	1.01	33.2
Approach			954	15.4	954	15.4	0.758	18.9	LOS B	15.4	136.4	0.55	0.57	0.57	43.6
East: Long Street															
4	L2	All MCs	216	36.0	216	36.0	0.393	30.1	LOS C	8.1	75.6	0.74	0.78	0.74	38.2
6	R2	All MCs	106	29.8	106	29.8	* 0.945	83.1	LOS F[11]	7.3	64.8	1.00	1.10	1.64	16.5
Approach			322	34.0	322	34.0	0.945	47.6	LOS D[11]	8.1	75.6	0.83	0.89	1.04	29.8
North: Gipps Road (N)															
7	L2	All MCs	328	12.7	328	12.7	0.335	16.9	LOS B	8.5	66.6	0.53	0.73	0.53	37.3
8	T1	All MCs	756	6.1	756	6.1	* 0.884	37.5	LOS C	42.0	309.6	0.98	0.99	1.10	34.3
Approach			1084	8.1	1084	8.1	0.884	31.3	LOS C	42.0	309.6	0.84	0.91	0.93	34.9
All Vehicles			2360	14.6	2360	14.6	0.945	28.5	LOS C	42.0	309.6	0.72	0.77	0.80	37.3

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.

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

MOVEMENT SUMMARY

Site: 3PM_DV [GIP_LON_27_PM_NoDV (Site Folder: PM Peak_2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	821	3.5	821	3.5	0.764	28.3	LOS B	40.0	288.2	0.79	0.73	0.79	42.5
3	R2	All MCs	178	34.8	178	34.8	* 0.939	105.7	LOS F [11]	14.1	128.0	1.00	1.19	1.43	22.4
Approach			999	9.1	999	9.1	0.939	42.1	LOS C	40.0	288.2	0.83	0.81	0.90	32.9
East: Long Street															
4	L2	All MCs	355	18.4	355	18.4	0.653	54.0	LOS D [11]	18.7	151.6	0.84	0.84	0.84	35.7
6	R2	All MCs	343	6.1	343	6.1	* 0.964	111.0	LOS F [11]	30.5	225.0	1.00	1.10	1.40	15.3
Approach			697	12.4	697	12.4	0.964	82.0	LOS F [11]	30.5	225.0	0.92	0.97	1.11	21.4
North: Gipps Road (N)															
7	L2	All MCs	103	12.9	103	12.9	0.079	8.6	LOS A	1.4	10.9	0.22	0.63	0.22	44.3
8	T1	All MCs	828	5.7	828	5.7	* 0.982	74.9	LOS F [11]	72.6	533.3	1.00	1.21	1.28	24.1
Approach			931	6.5	931	6.5	0.982	67.5	LOS E [11]	72.6	533.3	0.91	1.15	1.17	24.9
All Vehicles			2627	9.0	2627	9.0	0.982	61.7	LOS E [11]	72.6	533.3	0.88	0.97	1.05	26.4

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.

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

MOVEMENT SUMMARY

Site: 3PM_DV [GIP_LON_27_PM_DV (Site Folder: PM Peak_2027)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	821	3.5	821	3.5	0.765	28.4	LOS B	40.0	288.6	0.79	0.73	0.79	42.4
3	R2	All MCs	181	36.0	181	36.0	* 0.971	116.3	LOS F [11]	15.2	143.0	1.00	1.23	1.52	21.0
Approach			1003	9.4	1003	9.4	0.971	44.3	LOS D [11]	40.0	288.6	0.83	0.82	0.92	32.2
East: Long Street															
4	L2	All MCs	358	19.1	358	19.1	0.677	55.0	LOS D [11]	19.2	158.3	0.85	0.85	0.85	35.5
6	R2	All MCs	344	6.4	344	6.4	* 0.984	120.4	LOS F [11]	32.1	238.2	1.00	1.14	1.46	14.3
Approach			702	12.9	702	12.9	0.984	87.0	LOS F [11]	32.1	238.2	0.92	0.99	1.15	20.6
North: Gipps Road (N)															
7	L2	All MCs	104	13.5	104	13.5	0.081	8.6	LOS A	1.4	11.2	0.22	0.63	0.22	44.2
8	T1	All MCs	828	5.7	828	5.7	* 0.982	74.9	LOS F [11]	72.6	533.3	1.00	1.21	1.28	24.1
Approach			931	6.6	931	6.6	0.982	67.5	LOS E [11]	72.6	533.3	0.91	1.14	1.17	24.9
All Vehicles			2636	9.3	2636	9.3	0.984	63.9	LOS E [11]	72.6	533.3	0.88	0.98	1.07	25.9

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

MOVEMENT SUMMARY

Site: 3PM_DV [GIP_LON_32_PM_NoDV (Site Folder: PM Peak_DV - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	860	3.5	860	3.5	0.805	31.0	LOS C	44.0	317.1	0.83	0.76	0.83	41.8
3	R2	All MCs	186	34.8	186	34.8	* 0.975	118.9	LOS F [11]	15.7	142.7	1.00	1.23	1.52	20.9
Approach			1047	9.1	1047	9.1	0.975	46.6	LOS D [11]	44.0	317.1	0.86	0.85	0.95	31.4
East: Long Street															
4	L2	All MCs	372	18.4	372	18.4	0.709	57.3	LOS E [11]	20.3	164.8	0.87	0.86	0.87	35.2
6	R2	All MCs	359	6.1	359	6.1	* 1.041	154.6	LOS F [11]	37.3	275.1	1.00	1.26	1.65	11.6
Approach			731	12.4	731	12.4	1.041	105.1	LOS F [11]	37.3	275.1	0.93	1.05	1.25	18.2
North: Gipps Road (N)															
7	L2	All MCs	108	12.9	108	12.9	0.083	8.6	LOS A	1.5	11.5	0.22	0.63	0.22	44.3
8	T1	All MCs	867	5.7	867	5.7	* 1.029	101.3	LOS F [11]	84.7	621.9	1.00	1.36	1.45	19.9
Approach			975	6.5	975	6.5	1.029	91.1	LOS F [11]	84.7	621.9	0.91	1.28	1.31	20.7
All Vehicles			2752	9.0	2752	9.0	1.041	77.9	LOS F [11]	84.7	621.9	0.90	1.05	1.16	23.1

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

MOVEMENT SUMMARY

Site: 3PM_DV [GIP_LON_32_PM_DV (Site Folder: PM Peak_DV - 2032)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Gipps Road and Long Street TCS2431
Site Category: Future Conditions 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Gipps Road (S)															
2	T1	All MCs	860	3.5	860	3.5	0.806	31.0	LOS C	44.1	317.6	0.83	0.76	0.83	41.8
3	R2	All MCs	190	36.0	190	36.0	* 1.007	83.2	LOS F [11]	14.8	138.3	1.00	1.25	1.62	19.0
Approach			1050	9.4	1050	9.4	1.007	40.5	LOS C	44.1	317.6	0.86	0.85	0.97	30.4
East: Long Street															
4	L2	All MCs	375	19.1	375	19.1	0.732	58.4	LOS E [11]	20.9	172.5	0.88	0.86	0.88	35.0
6	R2	All MCs	360	6.4	360	6.4	* 1.052	162.2	LOS F [11]	38.2	283.1	1.00	1.27	1.69	11.1
Approach			735	12.9	735	12.9	1.052	109.2	LOS F [11]	38.2	283.1	0.94	1.07	1.28	17.7
North: Gipps Road (N)															
7	L2	All MCs	108	13.5	108	13.5	0.084	8.6	LOS A	1.5	11.7	0.22	0.63	0.22	44.2
8	T1	All MCs	867	5.7	867	5.7	* 1.029	101.3	LOS F [11]	84.7	621.9	1.00	1.36	1.45	19.9
Approach			976	6.6	976	6.6	1.029	91.0	LOS F [11]	84.7	621.9	0.91	1.27	1.31	20.7
All Vehicles			2761	9.3	2761	9.3	1.052	76.7	LOS F [11]	84.7	621.9	0.90	1.06	1.18	22.6

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

MOVEMENT SUMMARY

Site: 101 [TAI_BRT_22_AM_BY (Site Folder: AM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access															
3	R2	All MCs	1	0.0	1	0.0	0.001	1.5	LOS A	0.0	0.0	0.28	0.22	0.28	23.4
Approach			1	0.0	1	0.0	0.001	1.5	LOS A	0.0	0.0	0.28	0.22	0.28	23.4
East: Tait Street															
4	L2	All MCs	1	0.0	1	0.0	0.063	4.6	LOS A	0.3	2.6	0.05	0.47	0.05	23.6
5	T1	All MCs	18	17.6	18	17.6	0.063	0.0	LOS A	0.3	2.6	0.05	0.47	0.05	46.2
6	R2	All MCs	120	7.9	120	7.9	0.063	4.6	LOS A	0.3	2.6	0.05	0.47	0.05	44.3
Approach			139	9.1	139	9.1	0.063	4.1	NA	0.3	2.6	0.05	0.47	0.05	44.3
North: Britton Street															
7	L2	All MCs	46	40.9	46	40.9	0.027	4.9	LOS A	0.1	1.2	0.05	0.50	0.05	43.6
Approach			46	40.9	46	40.9	0.027	4.9	LOS A	0.1	1.2	0.05	0.50	0.05	43.6
West: Tait Street															
10	L2	All MCs	1	100.0	1	100.0	0.006	5.5	LOS A	0.0	0.1	0.02	0.13	0.02	46.0
11	T1	All MCs	6	50.0	6	50.0	0.006	0.0	LOS A	0.0	0.1	0.02	0.13	0.02	48.1
12	R2	All MCs	1	0.0	1	0.0	0.006	4.6	LOS A	0.0	0.1	0.02	0.13	0.02	28.2
Approach			8	50.0	8	50.0	0.006	1.3	NA	0.0	0.1	0.02	0.13	0.02	43.0
All Vehicles			195	18.4	195	18.4	0.063	4.1	NA	0.3	2.6	0.05	0.46	0.05	43.8

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: 101 [TAI_BRT_22_AM_DV (Site Folder: AM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access															
3	R2	All MCs	14	92.3	14	92.3	0.049	13.5	LOS A	0.2	3.8	0.46	0.70	0.46	33.6
Approach			14	92.3	14	92.3	0.049	13.5	LOS A	0.2	3.8	0.46	0.70	0.46	33.6
East: Tait Street															
4	L2	All MCs	1	0.0	1	0.0	0.063	4.6	LOS A	0.3	2.6	0.05	0.47	0.05	23.6
5	T1	All MCs	18	17.6	18	17.6	0.063	0.0	LOS A	0.3	2.6	0.05	0.47	0.05	46.2
6	R2	All MCs	120	7.9	120	7.9	0.063	4.6	LOS A	0.3	2.6	0.05	0.47	0.05	44.3
Approach			139	9.1	139	9.1	0.063	4.1	NA	0.3	2.6	0.05	0.47	0.05	44.3
North: Britton Street															
7	L2	All MCs	46	40.9	46	40.9	0.027	4.9	LOS A	0.1	1.2	0.05	0.50	0.05	43.6
Approach			46	40.9	46	40.9	0.027	4.9	LOS A	0.1	1.2	0.05	0.50	0.05	43.6
West: Tait Street															
10	L2	All MCs	1	100.0	1	100.0	0.006	5.5	LOS A	0.0	0.1	0.02	0.13	0.02	46.0
11	T1	All MCs	6	50.0	6	50.0	0.006	0.0	LOS A	0.0	0.1	0.02	0.13	0.02	48.1
12	R2	All MCs	1	0.0	1	0.0	0.006	4.6	LOS A	0.0	0.1	0.02	0.13	0.02	28.2
Approach			8	50.0	8	50.0	0.006	1.3	NA	0.0	0.1	0.02	0.13	0.02	43.0
All Vehicles			207	23.4	207	23.4	0.063	4.8	NA	0.3	3.8	0.08	0.48	0.08	43.2

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

MOVEMENT SUMMARY

Site: 101 [TAI_BRT_22_PM_BY (Site Folder: PM Peak_BY)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access															
1	L2	All MCs	1	100.0	1	100.0	0.004	5.5	LOS A	0.0	0.1	0.07	0.52	0.07	44.0
3	R2	All MCs	2	50.0	2	50.0	0.004	5.9	LOS A	0.0	0.1	0.07	0.52	0.07	42.5
Approach			3	66.7	3	66.7	0.004	5.7	LOS A	0.0	0.1	0.07	0.52	0.07	43.1
East: Tait Street															
4	L2	All MCs	1	0.0	1	0.0	0.014	4.6	LOS A	0.1	0.6	0.08	0.47	0.08	23.5
5	T1	All MCs	3	33.3	3	33.3	0.014	0.0	LOS A	0.1	0.6	0.08	0.47	0.08	46.1
6	R2	All MCs	24	26.1	24	26.1	0.014	4.9	LOS A	0.1	0.6	0.08	0.47	0.08	43.8
Approach			28	25.9	28	25.9	0.014	4.3	NA	0.1	0.6	0.08	0.47	0.08	42.7
North: Britton Street															
7	L2	All MCs	109	9.6	109	9.6	0.056	4.7	LOS A	0.3	2.0	0.07	0.50	0.07	44.2
9	R2	All MCs	1	0.0	1	0.0	0.056	4.7	LOS A	0.3	2.0	0.07	0.50	0.07	45.6
Approach			111	9.5	111	9.5	0.056	4.7	LOS A	0.3	2.0	0.07	0.50	0.07	44.2
West: Tait Street															
10	L2	All MCs	3	66.7	3	66.7	0.011	5.2	LOS A	0.0	0.0	0.00	0.09	0.00	47.5
11	T1	All MCs	16	0.0	16	0.0	0.011	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	49.7
Approach			19	11.1	19	11.1	0.011	0.9	NA	0.0	0.0	0.00	0.09	0.00	49.2
All Vehicles			161	13.7	161	13.7	0.056	4.2	NA	0.3	2.0	0.06	0.45	0.06	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: 101 [TAI_BRT_22_PM_DV (Site Folder: PM Peak_DV)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access															
1	L2	All MCs	1	100.0	1	100.0	0.046	5.8	LOS A	0.2	3.4	0.24	0.56	0.24	42.4
3	R2	All MCs	15	92.9	15	92.9	0.046	11.5	LOS A	0.2	3.4	0.24	0.56	0.24	33.9
Approach			16	93.3	16	93.3	0.046	11.2	LOS A	0.2	3.4	0.24	0.56	0.24	34.5
East: Tait Street															
4	L2	All MCs	1	0.0	1	0.0	0.014	4.6	LOS A	0.1	0.6	0.08	0.47	0.08	23.5
5	T1	All MCs	3	33.3	3	33.3	0.014	0.0	LOS A	0.1	0.6	0.08	0.47	0.08	46.1
6	R2	All MCs	24	26.1	24	26.1	0.014	4.9	LOS A	0.1	0.6	0.08	0.47	0.08	43.8
Approach			28	25.9	28	25.9	0.014	4.3	NA	0.1	0.6	0.08	0.47	0.08	42.7
North: Britton Street															
7	L2	All MCs	109	9.6	109	9.6	0.056	4.7	LOS A	0.3	2.0	0.07	0.50	0.07	44.2
9	R2	All MCs	1	0.0	1	0.0	0.056	4.7	LOS A	0.3	2.0	0.07	0.50	0.07	45.6
Approach			111	9.5	111	9.5	0.056	4.7	LOS A	0.3	2.0	0.07	0.50	0.07	44.2
West: Tait Street															
10	L2	All MCs	3	66.7	3	66.7	0.011	5.2	LOS A	0.0	0.0	0.00	0.09	0.00	47.5
11	T1	All MCs	16	0.0	16	0.0	0.011	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	49.7
Approach			19	11.1	19	11.1	0.011	0.9	NA	0.0	0.0	0.00	0.09	0.00	49.2
All Vehicles			174	20.0	174	20.0	0.056	4.8	NA	0.3	3.4	0.08	0.46	0.08	43.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

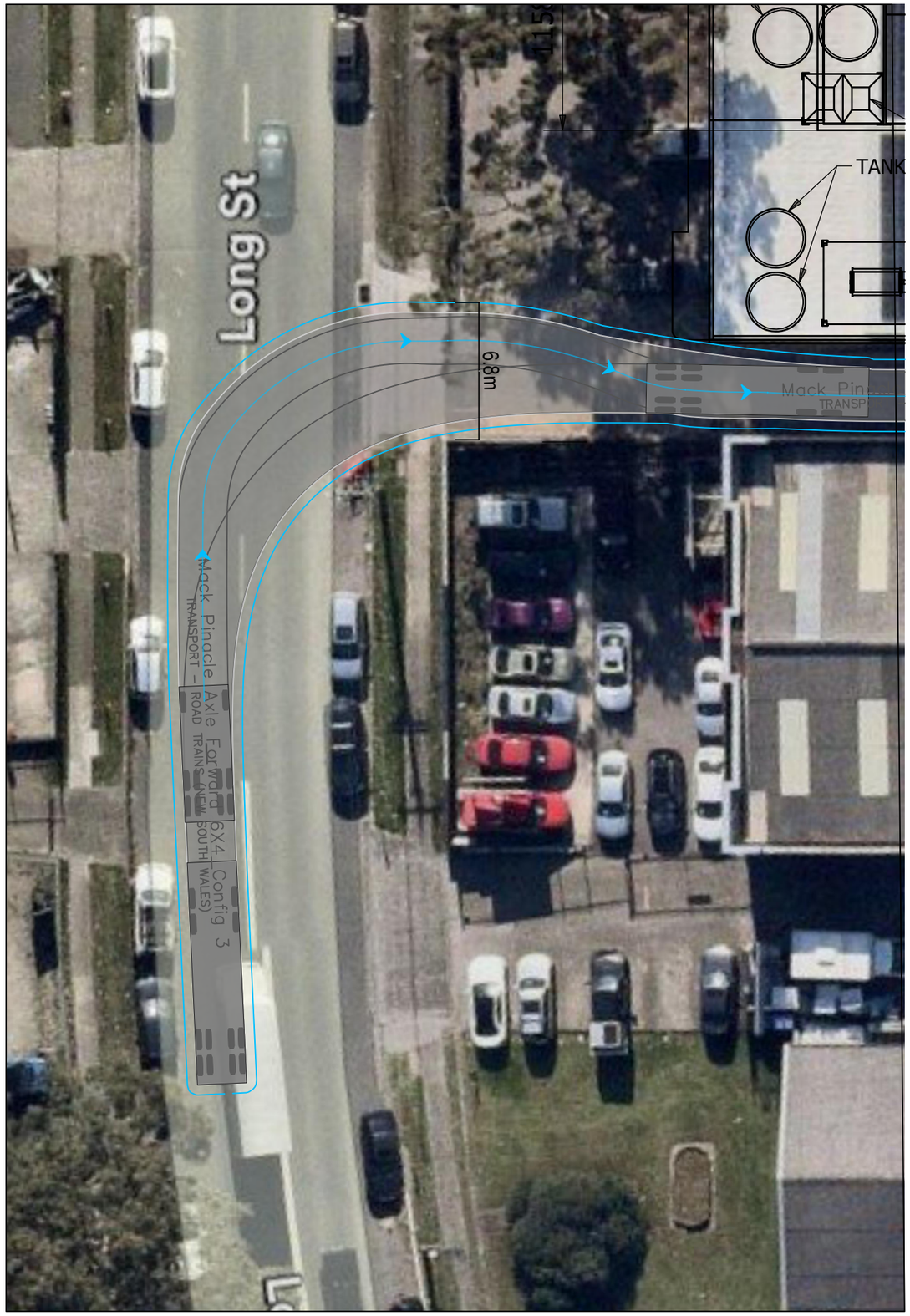
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

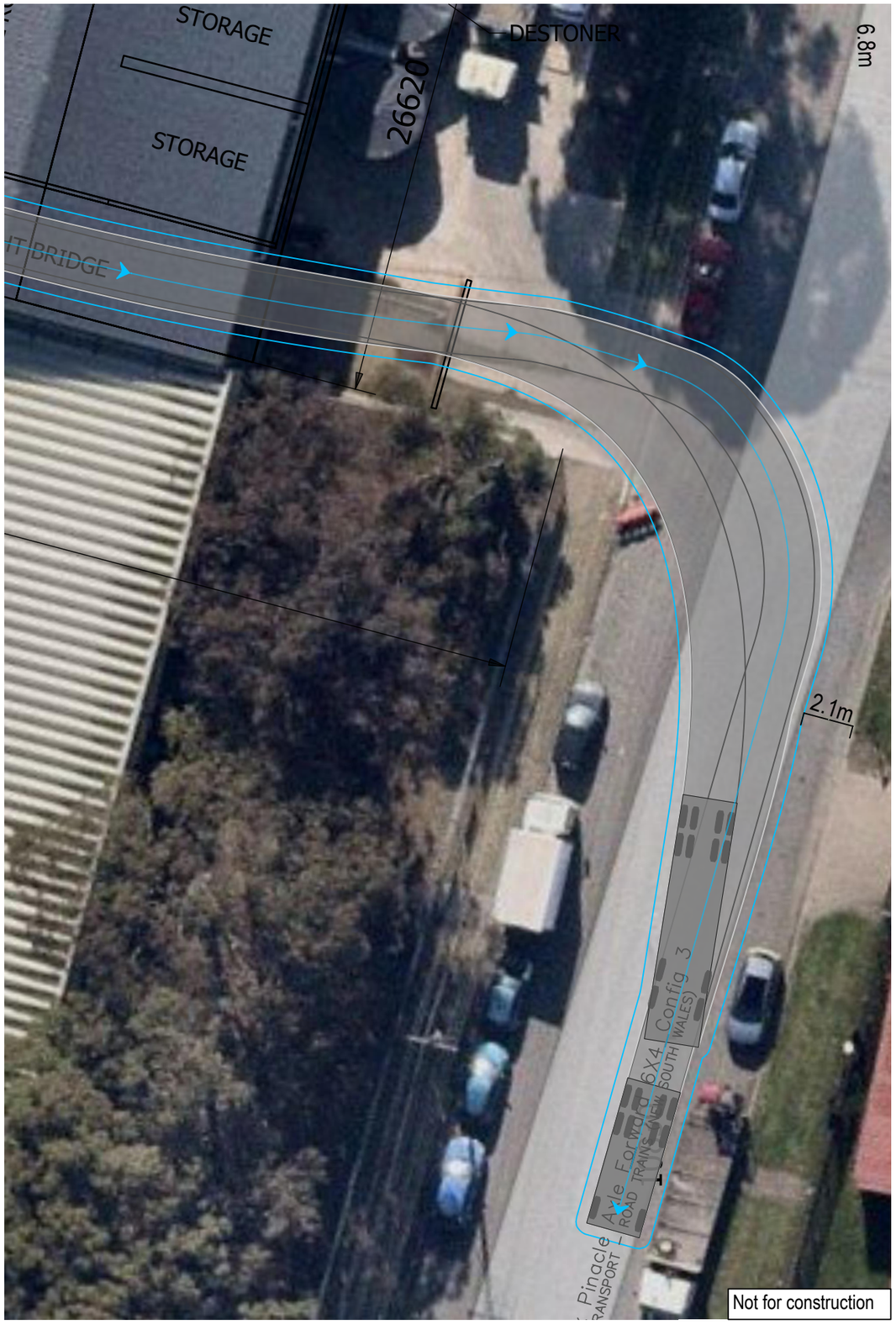
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

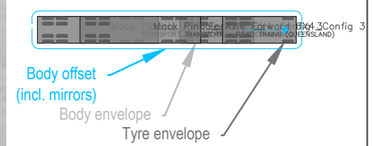
APPENDIX C

SWEPT PATHS



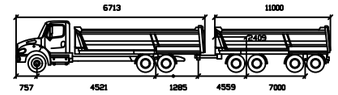


Legend



This swept path assessment is based on:

- 500mm body offset
- Vehicle speed of 5-10km/h
- Truck and dog



Mack Pinacle Axle Forward 6X4_Config 3

mm

First Unit Width	2438
Trailer Width :	2438
First Unit Track	2408
Trailer Track :	2400
Lock to Lock Time	6.0
Steering Angle :	24.2
Articulating Angle	70.0

Not for construction

V	Description	Date
1.0	PRELIMINARY DRAFT	02/12/2024

SCT Consulting

Prepared for: DEMAST

Quality information	
Date	12/24
Prepared	A.O
Reviewed	S.C
Authorised	N.B

Scale @ A3

0 2 4

Scale 1:250

Project: SCT_00292_7 Long Street Smithfiled

Title: Truck and dog entry and exit

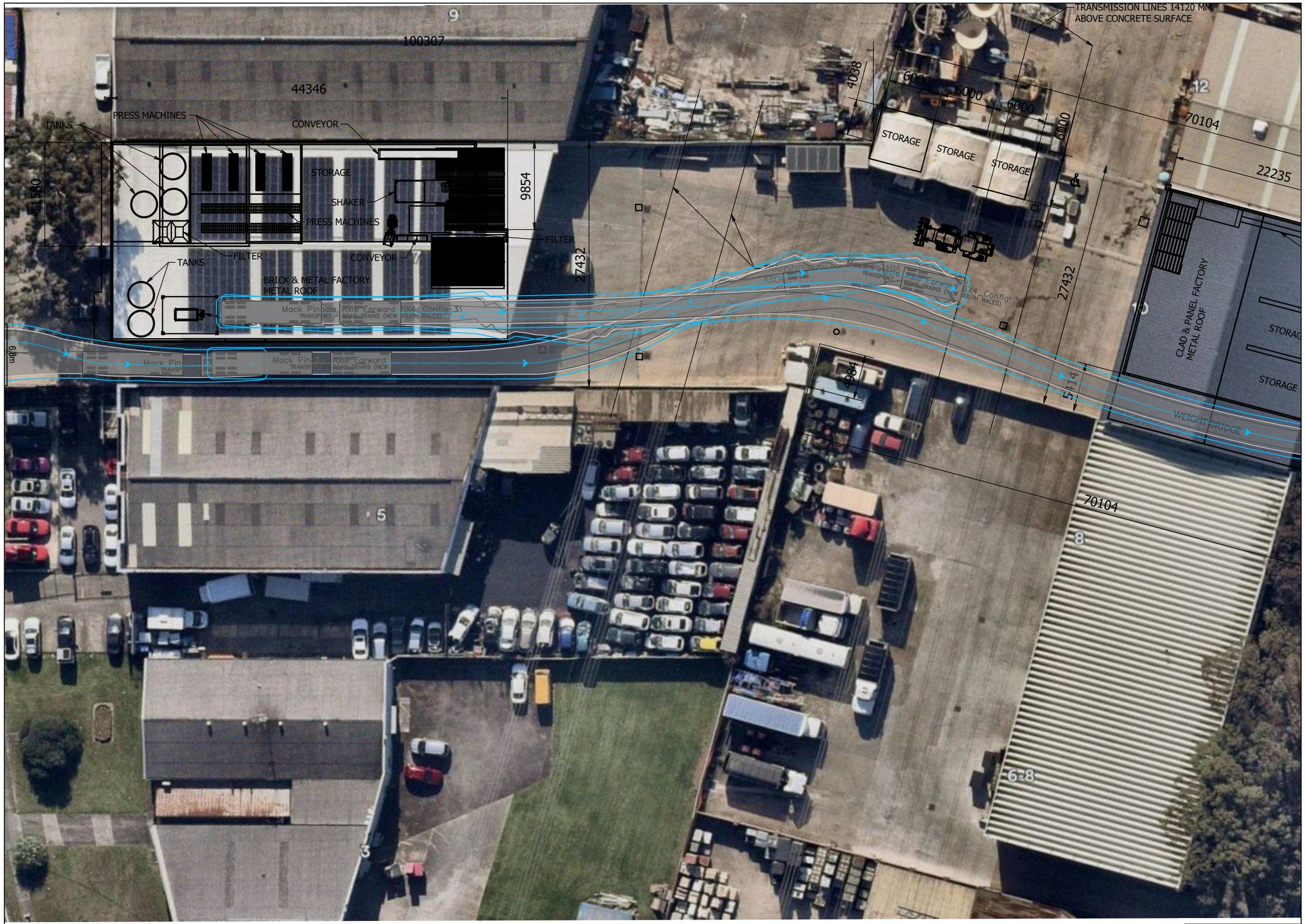
Project Number: SCT_00292_CAD_7 Long Street Smithfield

Sheet number: SHEET 1 OF 1

A3

S:\Projects\SCT_00292_7 Long St Smithfield\3. Technical Work Area\5. Engineering\SCT_00292_7 Long St Smithfield_dwg_swept path_v0.4_recover

2024-11-13 | Demast DWG Drawing for Paddy | DEMAST



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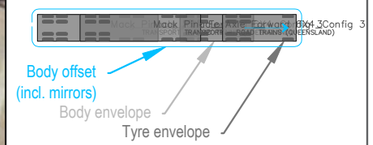
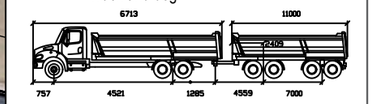


This swept path assessment is based on:

- 500mm body offset
- Vehicle speed of 5-10km/h
- Truck and dog



Mack Pinacle Axle Forward 6X4_Config 3

mm

First Unit Width : 2438	Lock to Lock Time : 6.0
Trailer Width : 2438	Steering Angle : 24.2
First Unit Track : 2408	Articulating Angle : 70.0
Trailer Track : 2400	

Not for construction

V	Description	Date
1.0	PRELIMINARY DRAFT	02/12/2024

SCT Consulting

Prepared for: DEMAST

Quality information	
Date	12/24
Prepared	A.O
Reviewed	S.C
Authorised	N.B

Scale @ A3: 0 2 4

Scale 1:400

Project: SCT_00292_7 Long Street Smithfiled

Title: Truck and dog internal manoeuvre

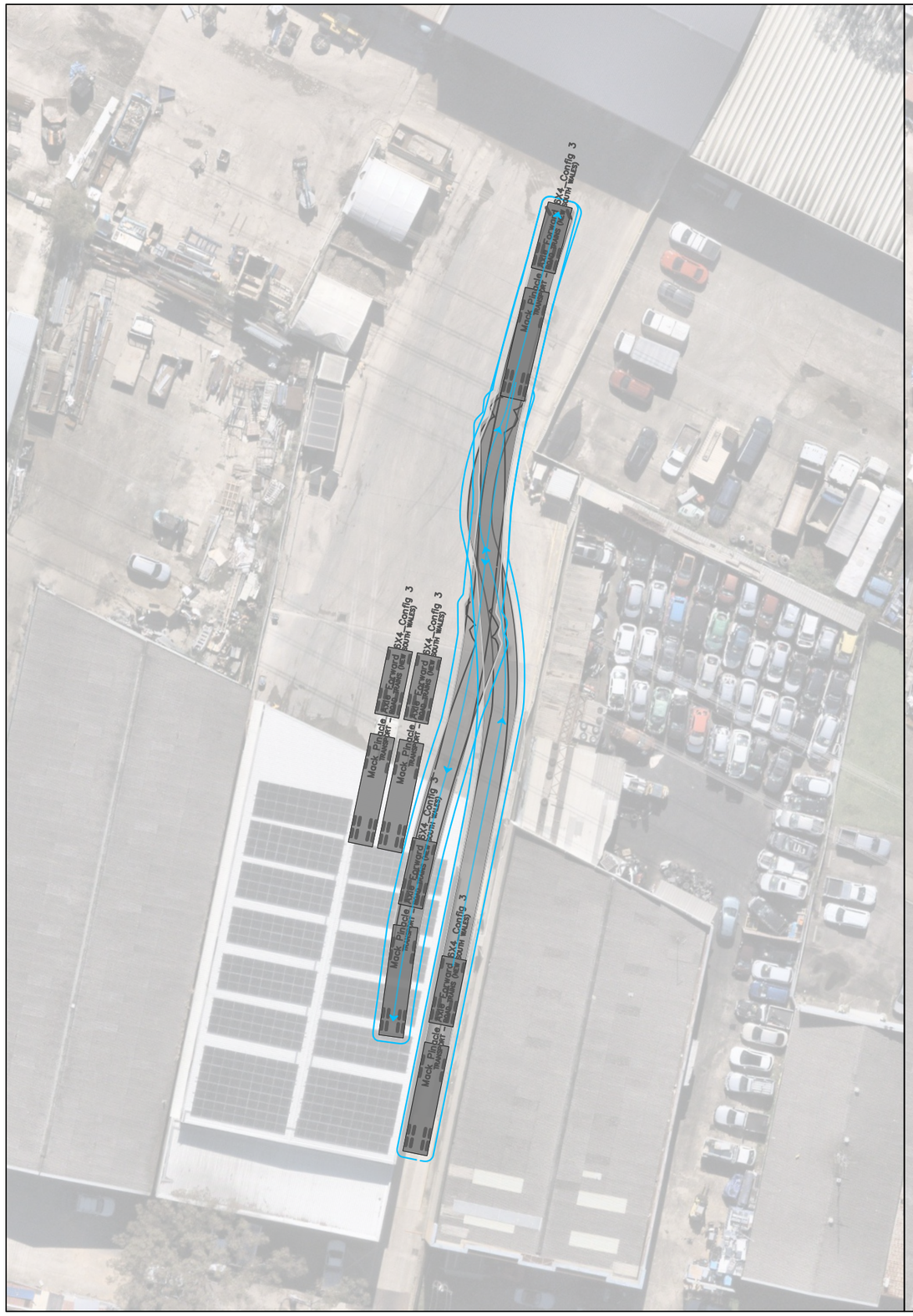
Project Number: SCT_00292_CAD_7 Long Street Smithfield

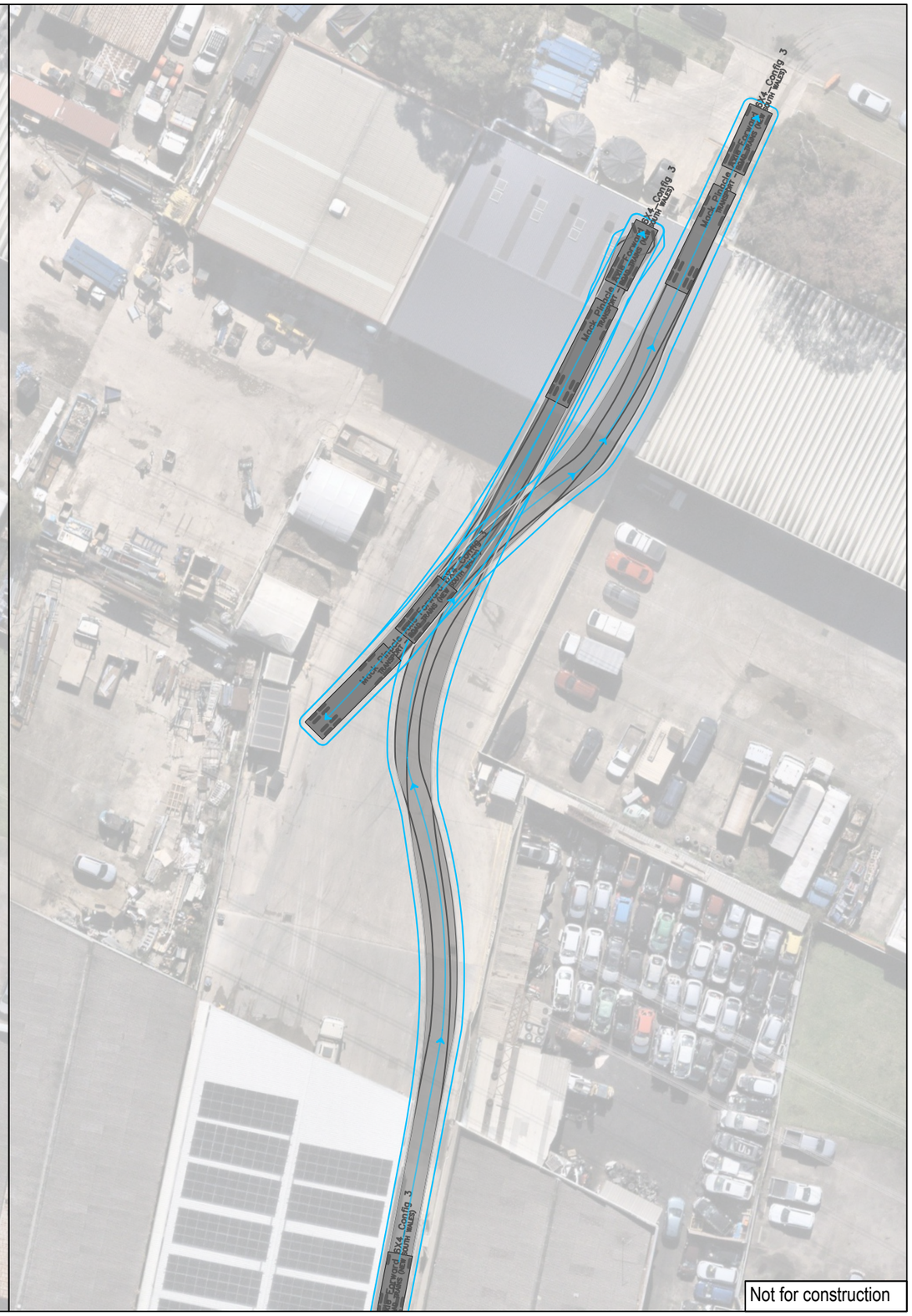
Sheet number: SHEET 1 OF 1

A3

S:\Projects\SCT_00292_7 Long St Smithfield\3. Technical Work Area\5. Engineering\SCT_00292_7 Long St Smithfield_dwg_swept path_v0.4 .recover

2024-11-13 | Demast DWG Drawing for Paddy | DEMAST





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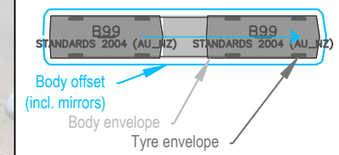
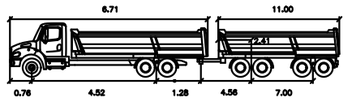


This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 5km/h
- A truck and dog



Mack Pinacle Axle Forward 6X4_Config 3

meters

First Unit Width	2.44	Lock to Lock Time	6.0
Trailer Width	2.44	Steering Angle	24.2
First Unit Track	2.41	Articulating Angle	70.0
Trailer Track	2.40		

Not for construction

V	Description	Date
1.0	PRELIMINARY DRAFT	07/10/2025

SCT Consulting

Prepared for: DEMAST

Quality information	
Date	10/25
Prepared	A.F
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

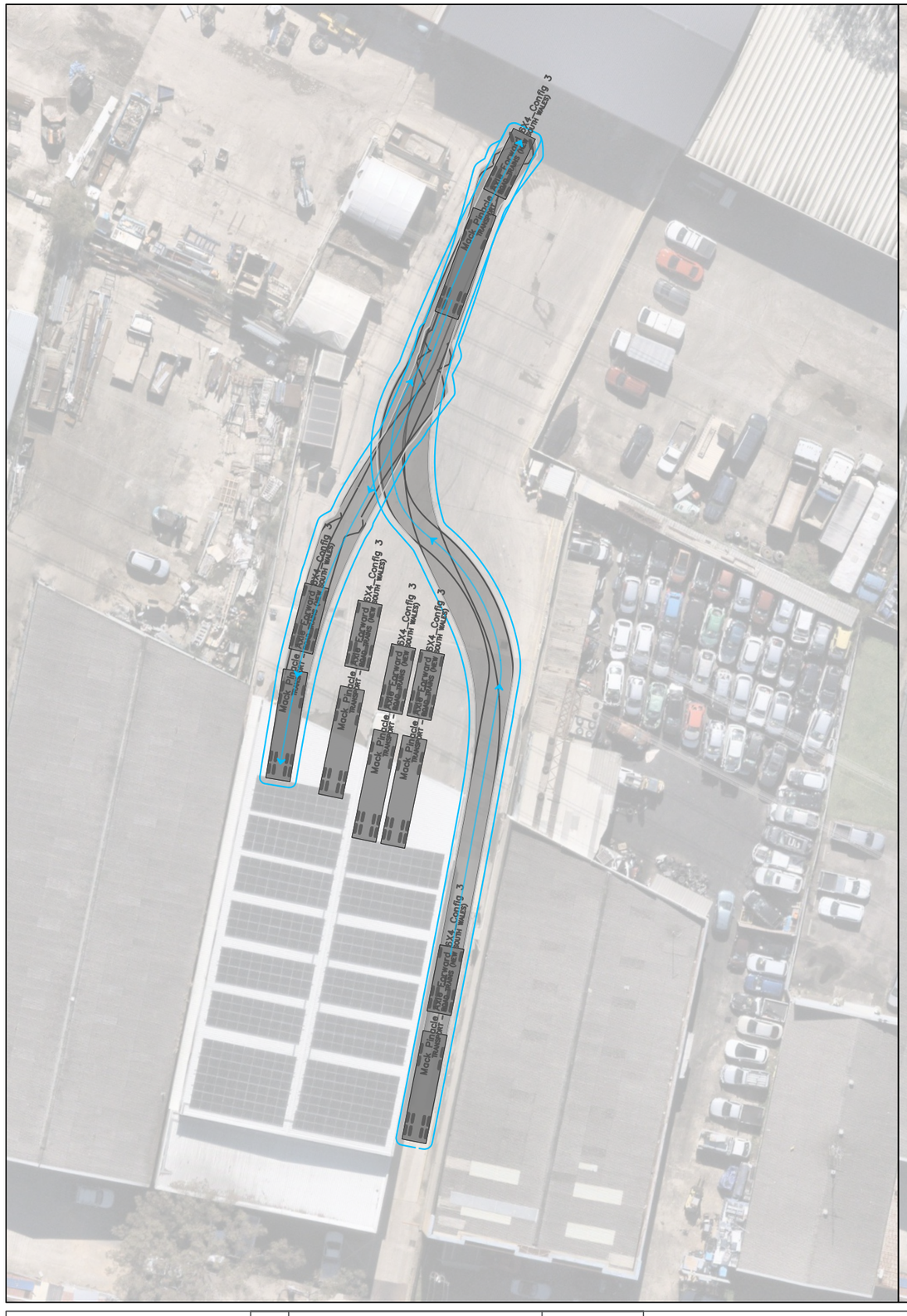
Project: 7 Long Street Smithfield
Swept paths

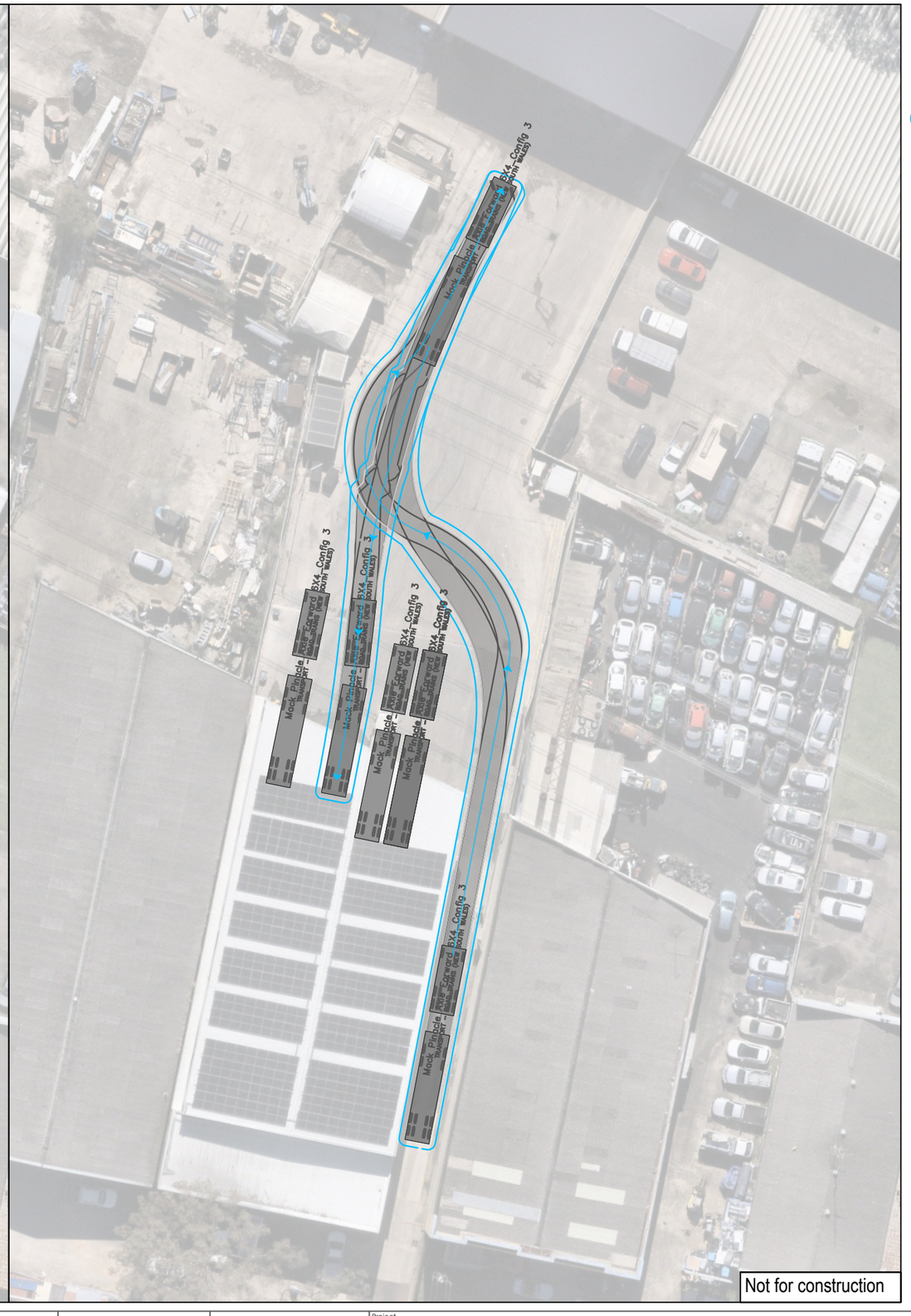
Title: Truck and dog
Loading area manoeuvres

Project Number: SCT_00292_CAD_Updated swept paths

Sheet number: 01

A3





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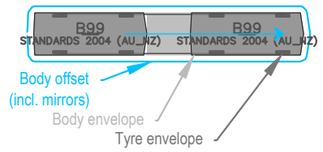
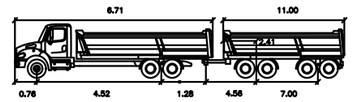


This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 5km/h
- A truck and dog



Mack Pinnacle Axle Forward 6X4_Config 3

meters

First Unit Width	2.44	Lock to Lock Time	6.0
Trailer Width	2.44	Steering Angle	24.2
First Unit Track	2.41	Articulating Angle	70.0
Trailer Track	2.40		

Not for construction

V	Description	Date
1.0	PRELIMINARY DRAFT	07/10/2025

SCT Consulting

Prepared for:

DEMAST

Quality information	
Date	10/25
Prepared	A.F
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

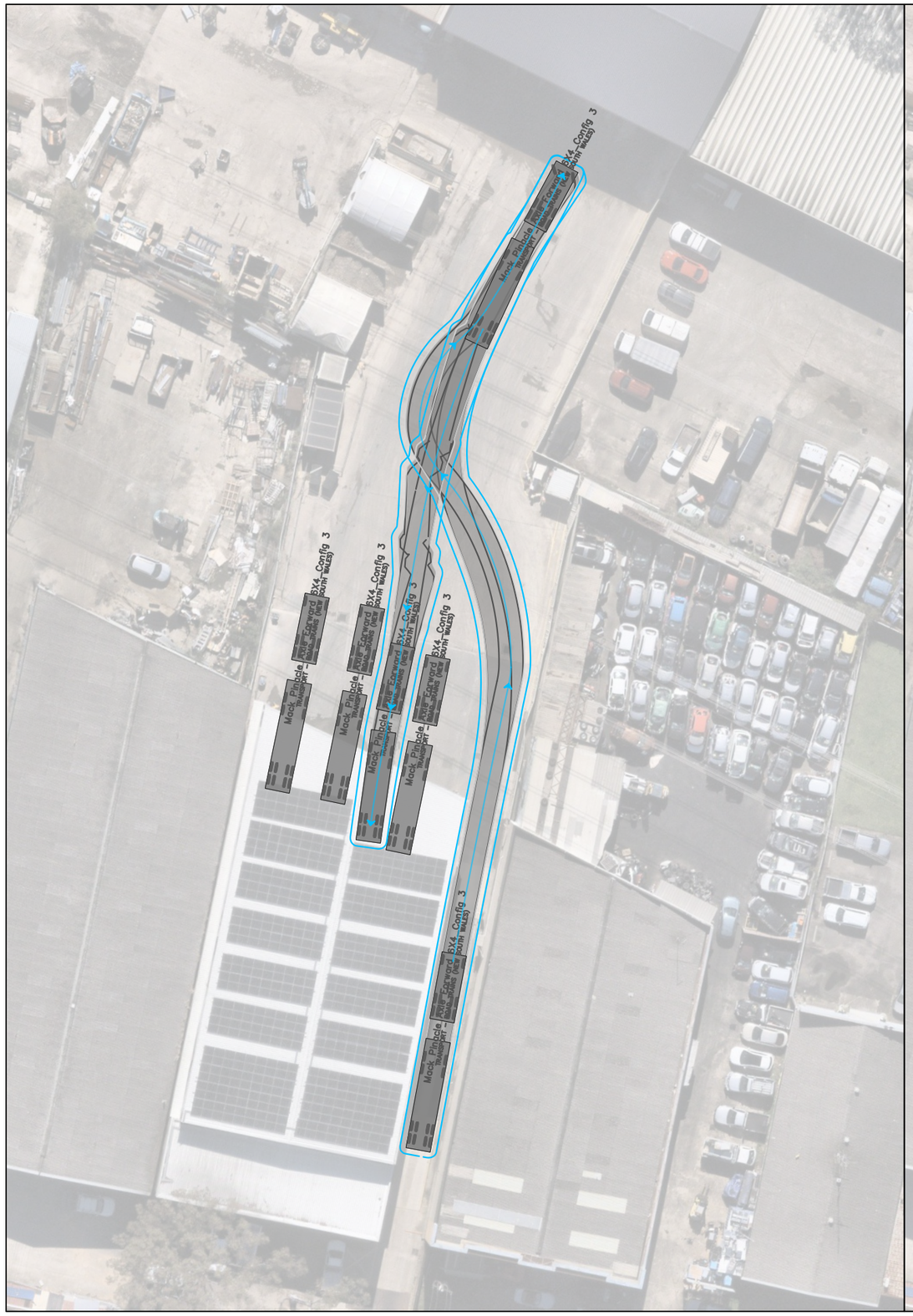
Project
7 Long Street Smithfield
Swept paths

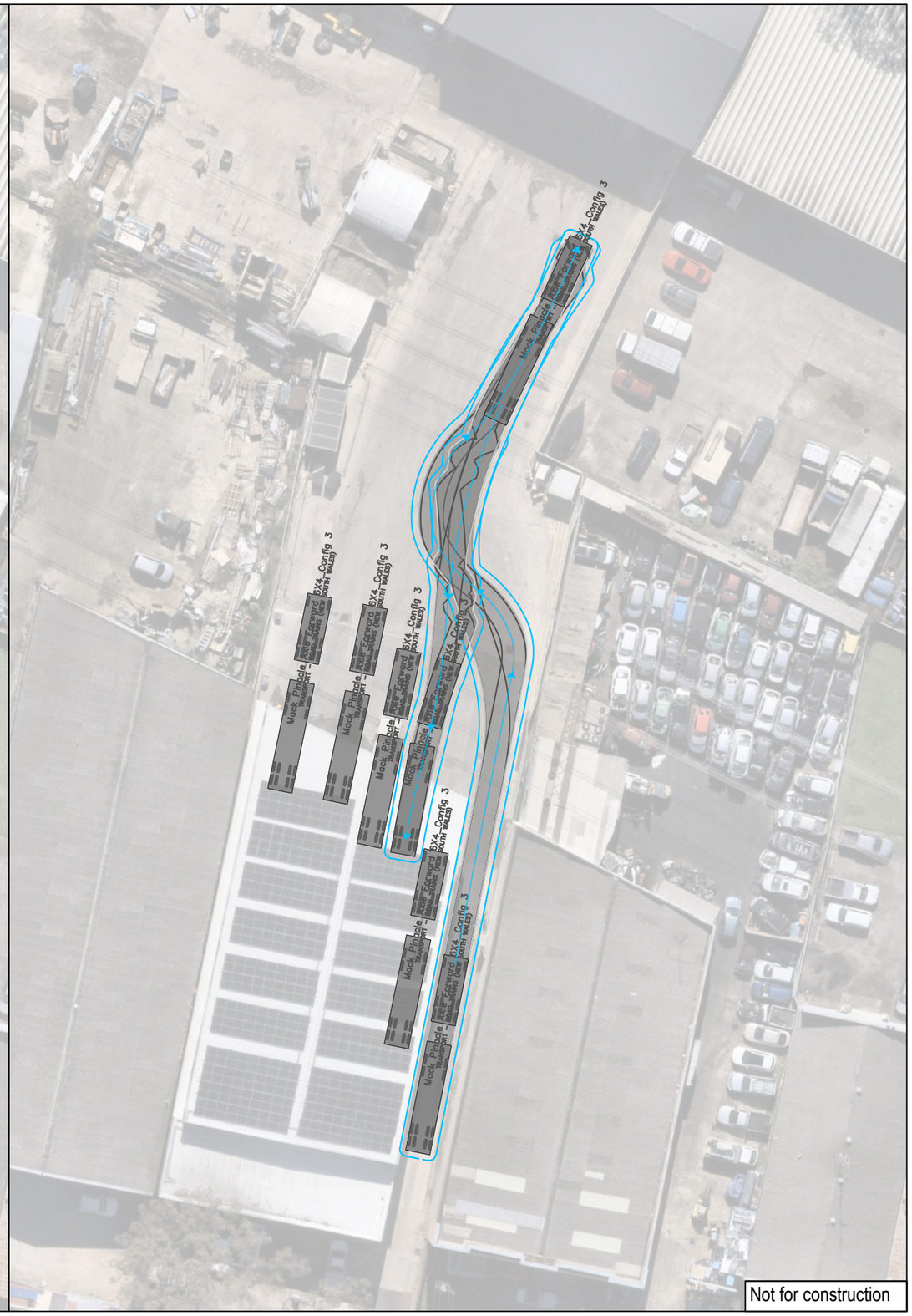
Title
Truck and dog
Unloading bay 1 and 2 parking manoeuvres

Project Number
SCT_00292_CAD_Updated swept paths

Sheet number
02

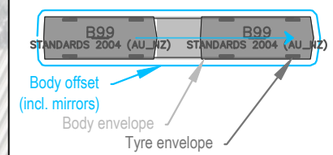
A3





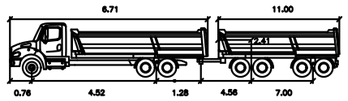
Not for construction

Legend



This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 5km/h
- A truck and dog



Mack Pinnacle Axle Forward 6X4_Config 3

meters

First Unit Width	2.44	Lock to Lock Time	6.0
Trailer Width	2.44	Steering Angle	24.2
First Unit Track	2.41	Articulating Angle	70.0
Trailer Track	2.40		

SCT Consulting

V	Description	Date
1.0	PRELIMINARY DRAFT	07/10/2025

Prepared for:

DEMAST

Quality information	
Date	10/25
Prepared	A.F
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

Project
7 Long Street Smithfield
Swept paths

Title
Truck and dog
Unloading bay 3 and 4 parking manoeuvres

Project Number
SCT_00292_CAD_Updated swept paths

Sheet number
03

A3

Thoughtful Transport Solutions

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