Appendix I.1
Traffic impact assessment

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Kurri Kurri Integrated Resource Recovery Centre

Traffic impact assessment

Prepared for Central Waste Station Pty Ltd

August 2025

Kurri Kurri Integrated Resource Recovery Centre

Traffic impact assessment

Central Waste Station Pty Ltd

E230029 RP7

August 2025

Version	Date	Prepared by	Reviewed by	Comments
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Approved by



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Executive summary

Central Waste Station Pty Ltd (CWS) currently operates a resource recovery facility at 8 Styles Street, Kurri Kurri. The proposed site expansion will incorporate five adjacent lots located at 1, 8, and 10 Styles Street and 145 and 147 Mitchell Avenue. This expansion will support additional car parking, heavy vehicle parking and secure non-waste storage facilities.

The project will progressively increase throughput capacity from 90,000 tonnes per annum (tpa) to 450,000 tpa, resulting in an estimated 10 additional truck movements during the AM peak hour and 6 during the PM peak hour. All additional truck traffic will follow a designated route via Mitchell Avenue, Government Road, Hart Road, and the Hunter Expressway. Light vehicles from workers are expected to coincide with heavy vehicle movements during the AM peak hour but not during the PM peak hour.

This traffic impact assessment (TIA) discusses the current and projected traffic and transport impacts across the road network, with the following outcomes:

- All intersections currently operate at Level of Service (LOS) A during peak hours, with minimal delays and queuing.
- With the additional traffic from the project, intersections will continue to operate at LOS A, with only minor increases in delays that are unlikely to affect road users.
- A 40-metre deceleration lane will be constructed on Mitchell Avenue for left-turning vehicles entering 147 Mitchell Avenue, designed in accordance with Austroads guidelines.
- The parking facilities at 147 Mitchell Avenue and 10 Styles Street will provide sufficient capacity for staff, with all spaces designed to comply with Australian Standards.
- The proposal will not affect local public transport services or cycling infrastructure and will improve pedestrian accessibility in the area through the construction of a footpath adjacent to the site on Mitchell Avenue.
- A construction and operational traffic management plan will be prepared in accordance with approval conditions.

The TIA concludes that the additional traffic generated during construction and operations will not cause any significant impacts on the surrounding road network.

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1 Introduction

1.1 Overview

Central Waste Station Pty Ltd (CWS) operates a resource recovery facility (RRF) owned by the applicant, Central Waste Plant Pty Ltd (CWP), at 8 Styles Street in Kurri Kurri, NSW (see Figure 1.1). The existing RRF has a permitted throughput of 90,000 tonnes per annum (tpa) but has capacity to process waste at a significantly higher rate than is currently approved. Therefore, it is proposed to increase the approved throughput to 450,000 tpa. The RRF operational processes will remain generally the same; however, some changes to the site layout are proposed to optimise operations. The revised site will occupy five neighbouring lots, comprising 1, 8 and 10 Styles Street and 145 and 147 Mitchell Avenue and would be accessed directly from Mitchell Avenue (see Figure 1.2). The larger site and higher waste throughput are referred to as the Integrated Resource Recovery Centre (IRRC, 'the project').

To develop the IRRC, CWP proposes to make minor changes at the existing RRF and add a new auxiliary operations area and residual waste processing building on the new lots to complement and optimise existing operations. Given the significant available capacity at the existing RRF, the waste processing methods and activities will largely remain the same but will operate at a higher volume. Waste types will remain the same. A summary of the key project components is provided in Table 1.1.

Table 1.1 Project summary

Project element	Summary
Project site	1, 8 and 10 Styles Street, 145 and 147 Mitchell Avenue.
Project changes	Changes at the existing RRF on 8 Styles Street: • Remove demountable offices and weighbridge. • Close off the entry/exit onto Styles Street. • Add additional material storage bays and extend awnings. Changes at the remaining lots (1 and 10 Styles Street, 145 and 147 Mitchell Avenue): • Remove existing infrastructure including sheds and demountable offices. • Install fire and stormwater infrastructure and provide concrete hardstand. • Construct incoming and outgoing weighbridges and associated offices. • Repurpose the existing workshop for use as a metals processing area. • Construct building for further processing of residual waste. • Delineate car and truck parking. • Erect perimeter walls/fencing. • Establish a new access for heavy vehicles into 147 Mitchell Avenue. • Construct a new footpath and provide landscaping along Mitchell Avenue.
Waste types	• General Solid Waste (non-putrescible).
Waste processing	• Automated processing plant (includes shredders, separators, conveyors, magnets, trommels and optical sorting). • Manual sorting, crushing and screening using mobile equipment in the yard. • Residual waste processing building (includes shredders and optical sorting). • Metal processing building.
Waste tonnage	Up to 450,000 tpa by 2035
Waste transport	The increase in throughput will not produce a proportionate increase in truck movements due to the establishment of waste transfer stations in Cardiff and Muswellbrook. The transfer stations will reduce the number of smaller vehicles delivering waste to the IRRC, with waste instead transported to the IRRC in bulk in larger trucks.

Project element	Summary
Waste storage	Up to 40,000 tonnes and stockpiles up to 6 metres (m) high.
Fire protection	The existing fire protection system will be expanded for the project in accordance with *Fire Safety in Waste Facilities* guidelines (Fire and Rescue NSW 2020), including fire hydrants, sprinklers, fire detection and alarm, and fire water run-off containment.
Hours of operation	24 hours per day, 7 days per week. Waste processing will be conducted generally over two 8-hour shifts, five days per week.
Operation workforce	It is estimated that the project will generate an additional 9 full time equivalent positions, up to a total of approximately 74.
Sequencing	Construction will be conducted concurrently with existing operations in five general stages, with active construction taking approximately 17 months. The increase in throughput up to 450,000 tpa is projected to occur gradually over approximately ten years.

The project will play an important role in achieving the national waste policy targets by diverting up to 382,500 tpa of waste (based on a target recovery rate of 85%) from landfill to economically valuable uses. Further, recovery of resources from waste is key in moving to a circular economy, which would have long-term economic, social and environmental benefits

1.2 Purpose of this report

The proposed development is classified as a State Significant Development (SSD) under Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011.

EMM Consulting Pty Limited (EMM) have been engaged to prepare this traffic impact assessment (TIA) to accompany the Environmental Impact Statement (EIS) as part of the Planning Secretary's Environmental Assessment Requirements (SEARs) for submission to NSW Department of Planning, Housing and Infrastructure (DPHI). This TIA outlines the study methodology and results, initiatives built into the project design to avoid any associated traffic impacts, and any additional mitigation and management measures proposed.

1.3 Assessment guidelines and requirements

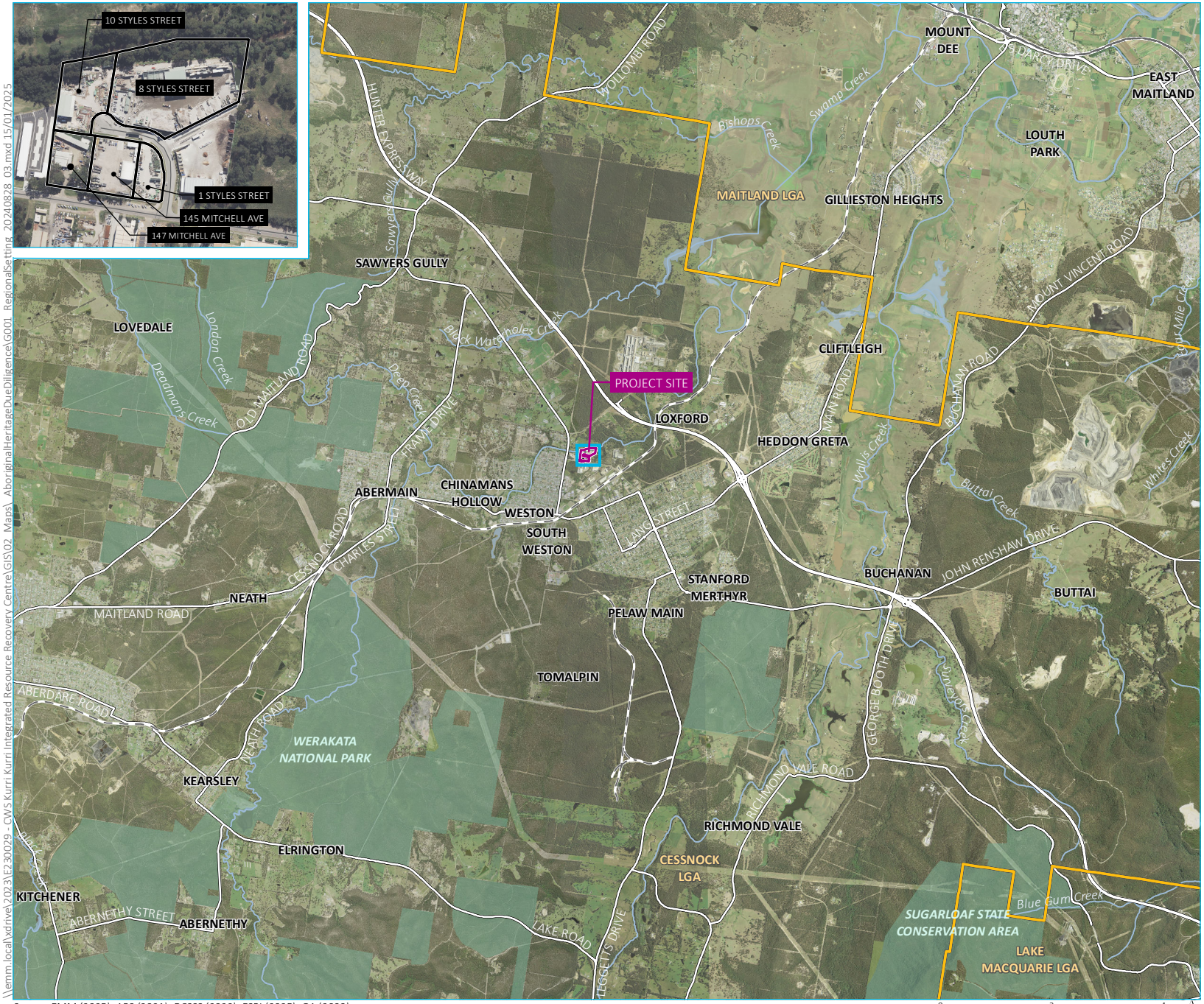
This TIA has been prepared in accordance with the relevant governmental assessment requirements, guidelines and policies, and in consultation with the relevant government agencies.

The TIA is generally prepared in accordance with Austroads Guide to Traffic Management, Part 12 and NSW Roads and Transport for NSW (TfNSW) Guide to Transport Impact Assessment (2024) and addresses the following:

- the site access and traffic arrangements
- the existing traffic flows on major roads and at intersections in the locality
- the proposed internal site traffic circulation and car parking
- the forecast traffic generation from the proposal
- effects of the proposal on the external road network and intersections
- effects of the proposal on traffic safety, public transport, pedestrian and cycling facilities.

The TIA has also considered the following Austroads guide:

- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Austroads 2023).



Source: EMM (2025); ABS (2021); DCSSS (2023); ESRI (2025); GA (2009)

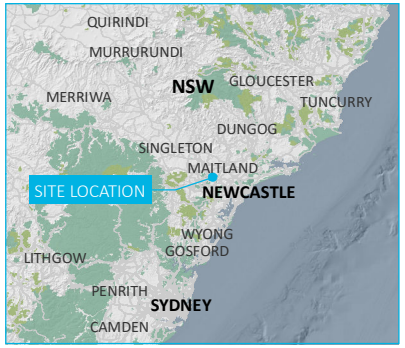
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Regional context

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Traffic Impact Assessment
Figure 1.1

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KEY

- Site boundary
- Lot area

Existing environment

- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Transmission line

INSET KEY

- Major road
- NPWS reserve
- State forest

Source: EMM (2025); ABS (2021); DCSSS (2024); GA (2009); ESRI (2025)

0 0.5 1 km

GDA2020 MGA Zone 56

N

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Local context

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Figure 1.2

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2 Authority comments

2.1 SEARs

Table 2.1 lists the 'Traffic and Transport' related Secretary's Environmental Assessment Requirements (SEARs[1]), and where the relevant information can be found in this report.

Table 2.1 Traffic related SEARs and EMM responses

No	SEARs comments	EMM responses
A quantitative traffic impact assessment prepared in accordance with relevant TfNSW and Austroads guidelines, that includes:		
1	details of all daily and peak traffic volumes likely to be generated during construction and operation (including consideration of the existing onsite operational traffic that are not part of the proposal)	• Existing traffic highlighted in Section 4.4. • Proposed construction traffic is highlighted in Section 5.6. • Proposed operational traffic and the comparison with existing traffic is highlighted in Section 5.7.
2	details of key access / haul routes, vehicle types and potential queuing impacts	• Key access points are described in Table 5.1 and Attachment B. • Haulage routes are described in Figure 5.2. • Vehicle types are described in Section 5.4.1 and Section 6.2. • Potential queuing impacts and mitigation measures are described in Section 5.4.3 and Section 6.5.
3	an assessment of the predicted traffic impacts of the proposed development on the capacity, condition, safety and efficiency of the local and State road network, including consideration of cumulative traffic impacts on existing performance levels of nearby intersections using a calibrated SIDRA (or similar) traffic model.	• Chapter 6 • There is no cumulative traffic impacts expected, as described in 5.8.1. • Calibration is not required for SIDRA modelling as there are no signalised intersection.
4	details of road upgrades, infrastructure works or new roads or access points required for the development if necessary.	• Key access points are described in Table 5.1 and Attachment B. • Deceleration lane described in Section 5.10.
5	measures to be implemented during construction and operation to mitigate any traffic related impacts of the development.	• Chapter 7
6	details of travel and haulage routes along the road network for vehicles to and from the development site.	• Haulage routes are described in Figure 5.2.
7	plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network.	• Construction traffic is described in Section 5.6. • Operational traffic is described in Section 5.7. • Potential queuing impacts and mitigation measures are described in Section 5.4.3 and Section 6.5.
8	details and plans of the proposed internal road and pedestrian networks and onsite parking in accordance with the relevant Australian Standards.	• Plans are provided in Appendix B of the EIS.
9	details of the largest vehicle anticipated to access and move within the site, including swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site and at key intersections.	• Descriptions of largest vehicle provided in Section 5.4.1. • Swept paths are provided in Attachment B.

[1] Application no: SSD-71547218 dated 28 June 2024

No	SEARs comments	EMM responses
10	a construction transport management plan and driver code of conduct.	• A detailed CTMP will be prepared in accordance with the approval condition. A draft CTMP is outlined in Chapter 7

2.2 Transport for NSW (TfNSW)

TfNSW's comments, from the letter dated 14 June 2024, and EMM's responses are provided in Table 2.2.

Table 2.2 TfNSW comments and EMM responses

No	TfNSW comments	EMM responses
TIA be prepared by suitably qualified person/s in accordance with the Austroads Guide to Traffic Management Part 12, the complementary TfNSW Supplement and RTA Guide to Traffic Generating Developments. The TIA is to identify the impacts of the development and the proposed on-site and off-site measures proposed to mitigate the impacts of the development on any road or rail related infrastructure. The TIA must explain and justify all inputs informing the proposed mitigation measures and TIA conclusions. The TIA should be tailored to the scope of the proposed development and include, but not necessarily be limited to, consideration of the following:		
1	A map of the surrounding road network identifying the site access, nearby accesses, intersections and transport related facilities.	Figure 4.1
2	A map of the proposed transport route/s identifying all public roads proposed to obtain access from the classified (State) road/s to the development site.	Figure 5.2
3	The total impact of existing and proposed development on the road network with consideration for a 10-year horizon. This should include:	
3a	Identify Annual Average Daily Traffic (AADT) volumes with percentage heavy vehicles along the transport route/s and diagrammatically demonstrate AM and PM peak hour movements at key intersections.	Section 4.4 and Section 4.5
3b	Background traffic data from published sources and/or recent survey data. The source of data and any assumptions are to be clearly explained and justified, including the growth rate applied to the future horizon. Due to the impact of COVID19 on travel patterns, traffic counts undertaken at this time may not be representative of normal volumes. Alternative approaches to understanding the impact of COVID-19 on traffic patterns should be discussed with TfNSW.	Attachment A Traffic count has been conducted outside the COVID19 period.
3c	The volume and distribution of existing and proposed trips to be generated by the construction, operational and decommission phases of the development. This should identify the maximum daily and hourly demands generated by the development, particularly where they coincide with the network peak hour.	Construction traffic is shown in Section 5.6 Operational traffic is shown in Section 5.7 Decommissioning traffic has not been assessed as it is expected to be lower than the operational traffic.
3d	The type and frequency of design vehicles accessing the development site, with any changes between the existing development and the proposed development clearly identified.	Existing design vehicles are described in Section 4.4.2. Proposed design vehicles are described in Section 5.4 and Section 6.2
4	Details of the road geometry and alignment along the identified transport route/s, including existing formations, crossings, intersection treatments and any identified hazards. This should include:	

No	TfNSW comments	EMM responses
4a	Available sight distances at intersections along the proposed transport routes and any constraint to achieving the required sight distance for the posted speed limit.	Section 6.2
4b	An assessment of turn treatment warrants in accordance with the Austroads Guide to Traffic Management Part 6 and Austroads Guide to Road Design Part 4A for intersections along the identified transport route/s, identifying the existence of the minimum basic turn treatments and addressing the need for any warranted higher order treatments.	Turn treatment warrants are not required at these intersections for the following reasons: • Mitchell Avenue/Styles Street: No additional site related vehicles are proposed to turn at this intersection. • Mitchell Avenue/New Site Access: Additional proposed vehicles will use the proposed deceleration lane before turning left from Mitchell Avenue into the site. There will only be a maximum of one existing vehicle per hour that will turn right from Mitchell Avenue into the site access. • Government Road/Mitchell Avenue/Tenth Street: There is already a deceleration lane for left turn movements from Government Road to Mitchell Avenue. There will be no project related trucks that will turn right from Government Road to Mitchell Avenue. • Hart Road/Gingers Lane/Government Road/Sawyers Gully Road: the intersection has recently been upgraded to a larger roundabout and a turn treatment warrant is not necessary here.
4c	Swept path analysis demonstrating the largest design vehicle entering and leaving the development, and moving in each direction through intersections along the proposed transport route/s.	Swept paths for the largest design vehicle leaving the development is shown in Attachment B. Swept paths are not required for intersections on the public road network, as the entire haulage route is approved for 26-m-long B-doubles and only 19-m-long semi-trailers are proposed to be used for the project.
5	Capacity analysis using SIDRA or other relevant application, to identify an acceptable Level of Service (LOS) at intersections with the classified (State) road/s, and where relevant, analysis of any other intersections along the proposed transport route/s.	Section 6.1
6	A review of crash data along the identified transport route/s for the most recent 5-year reporting period and an assessment of road safety along the proposed transport route/s considering the safe systems principles adopted under Future Transport 2056.	Section 4.6 and Section 4.7
7	Strategic (2D) design drawings of all proposed road works and the site access demonstrating scope, estimated cost and constructability of works required to mitigate the impacts of the development on road safety, traffic efficiency and the integrity of transport infrastructure. Works must be appropriately designed for the existing posted speed limit.	The strategic design drawing for the proposed deceleration lane is shown in Attachment D. The estimated cost of deceleration lane will be embedded into the cost of the project. A Section 138 application will be lodged to Cessnock City Council as part of the construction of the deceleration lane.
8	Site plan demonstrating site access, internal manoeuvring, servicing and parking areas consistent with the relevant parts of AS2890 and Council requirements.	Appendix B of the EIS.
9	Details of measures to address impacts and/or provide connections for public transport services and active transport modes, such as, public and school bus services, walking and cycling.	Section 6.4 The users of the facility, staff and visitors are most likely to drive. The adjoining local roads have a low-speed environment which is suitable for walking or cycling.

No	TfNSW comments	EMM responses
10	Details of measures to ameliorate the impacts of road traffic noise, dust, and/or glare generated along the proposed transport route/s.	Mitigation of traffic noise has been detailed in Section 7.5. The mitigation measures will be covered in a detailed version of the TMP prepared in accordance with the approval conditions.
11	Details of any Traffic Management Plan (TMP) proposed to address the construction and operation phases of the proposed development. The TMP should be prepared and implemented in accordance with Australian Standard 1742.3 and the Work Health and Safety Regulation 2017. It is recommended that any TMP include, but not necessarily limited to, the following: • A map of the primary transport route/s highlighting critical locations. • An induction process for vehicle operators and regular toolbox meetings. • Procedures for travel through residential areas, school zones and/or bus route/s. • Any proposed temporary measures such a Traffic Guidance Scheme (TGS). • A Driver Code of Conduct for heavy vehicle operators. • A complaint resolution and disciplinary procedure. • Community consultation measures proposed for peak periods.	A detailed TMP will be prepared in accordance with the approval conditions. A framework of the draft TMP is outlined in Section 7.
	Where road safety concerns are identified at a specific location along the proposed haulage routes, TfNSW suggests that the TIA be supported by a targeted Road Safety Audit undertaken by suitably qualified persons in accordance with the Austroads Guidelines.	A review of the crash data does not indicate any specific road safety issues at the vicinity of the site. The proposed development will not cause any road safety issues to the adjoining road network. Therefore, any Road Safety Audit is not required.

2.3 Cessnock City Council

Cessnock City Council's traffic related comment, letter dated 17 June 2024, EMM response is provided in Table 2.3.

Table 2.3 Cessnock City Council's traffic related comment and EMM response

No	SEARs comments	EMM responses
10	Consideration should be given to haulage routes (avoiding residential areas) and the need to upgrade road intersections affected by the associated traffic impacts, in particular the adequacy of the Mitchell Avenue – Government Road intersection locate to the west of the site.	The haulage route will avoid any residential areas as it would follow the most direct route to the Hunter Expressway. As part of this traffic assessment, Government Road/Mitchell Avenue intersection has been analysed.

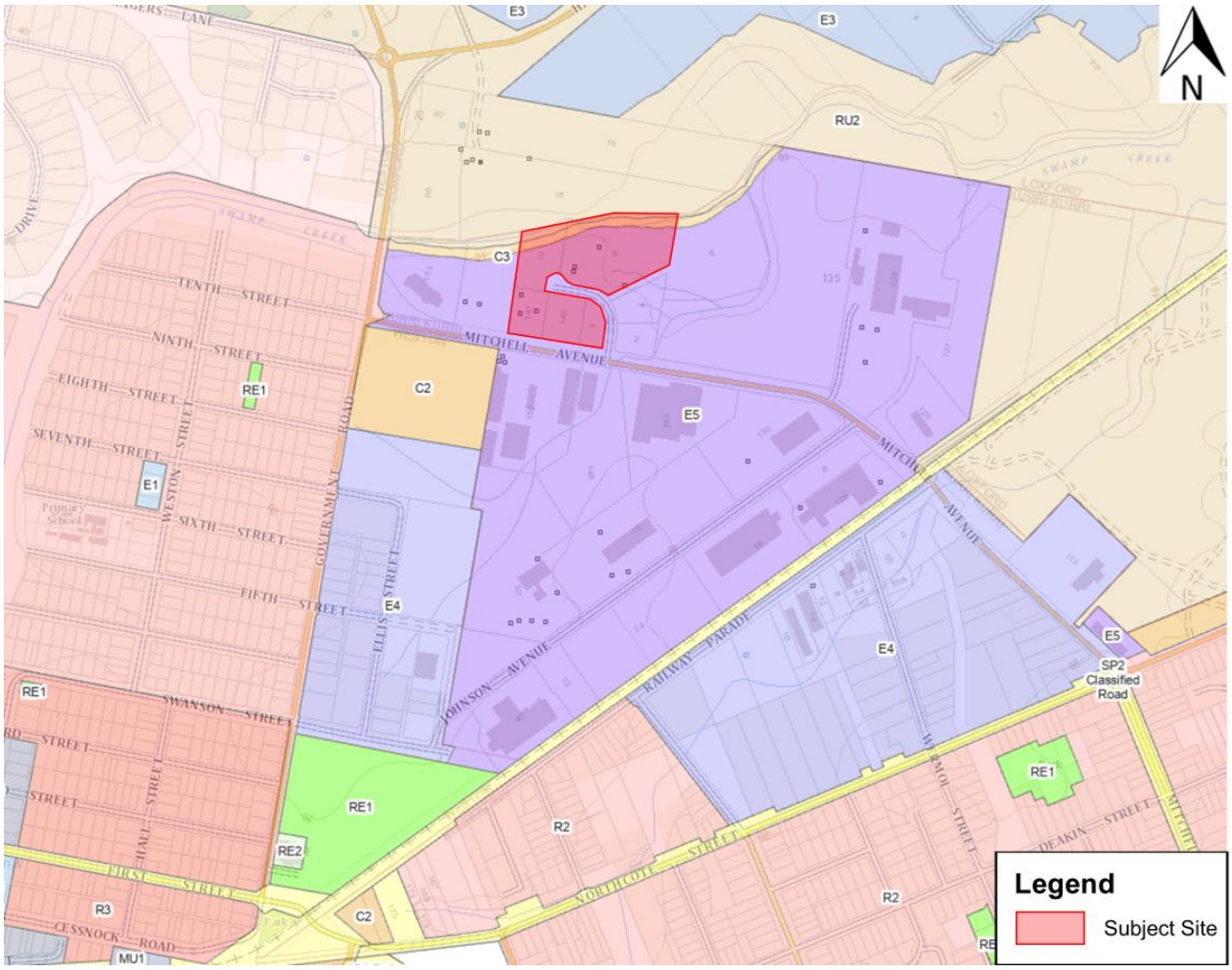
3 Site description

The development site consists of five separate land lots in the Cessnock Local Government Area (LGA):

- Lot 1 of DP1128108 (1 Styles Street)
- Lot 1 of DP1309128 (8 Styles Street)
- Lot 6 of DP1251190 (10 Styles Street)
- Lot 4 of DP586741 (145 Mitchell Avenue)
- Lot 3 of DP586741 (147 Mitchell Avenue).

An existing resource recovery facility is located at 8 Styles Street which is accessible via Styles Street and the new heavy vehicle access through 147 Mitchell Avenue.

The development site is zoned Heavy Industrial (E5) under the Cessnock Local Environmental Plan (LEP) with areas to the south and the east under the same zoning. It is understood that residential districts are predominantly located to the west and further south-east of the site. Further north and east, the vast extent of the land falls under the Rural Landscape zoning (RU2).



Source: NSW ePlanning Spatial Viewer

Figure 3.1 Land zoning

4 Existing traffic conditions

The existing resource recovery facility transports raw materials and products primarily via Mitchell Avenue, Government Road and Hart Road, to and from the Hunter Expressway, which is now the major road freight transport route for Hunter Valley truck traffic travelling either to or from or bypassing the Kurri Kurri area.

The Hunter Expressway extends through the Lower Hunter Region of NSW for over 40 kilometres (km) in an east–west direction from the Pacific Highway interchange at West Wallsend, to the New England Highway connection west of Branxton. On most of the other major road routes throughout the Lower Hunter Region, there are now significantly reduced daily truck traffic volumes following the opening of the Hunter Expressway in 2014.

4.1 Road hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- State roads – freeways and primary arterials (TfNSW managed)
- regional roads – secondary or sub arterials (council managed and part funded by the State)
- local roads – collector and local access roads (council managed).

The road hierarchy is shown in Figure 4.1.

A summary of the key roads utilised by the resource recovery facility are provided below.



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Source: EMM (2025); ABS (2021); DCSSS (2024); GA (2009); ESRI (2025); TfNSW (2025)

Road network and traffic characteristics

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Traffic Impact Assessment
Figure 4.1

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Table 4.1 Styles Street

Aspect	Description
Road classification and connectivity	Local Road
Alignment	A short cul-de-sac off Mitchell Avenue
Number of lanes	One lane each way
Carriageway type	Sealed road
Carriageway width	12 m kerb-to-kerb with on-street parking permitted on both sides
Speed limit	Default speed limit of 50 kilometres per hour (km/h)
Heavy vehicle access	General access for vehicles up to 19 m long and under 50 tonnes
Traffic function	Provides access to industrial properties



Photograph 4.1 Styles Street looking east

Table 4.2 Mitchell Avenue

Aspect	Description
Road classification and connectivity	Local road in the vicinity of the site and State road south of Northcote Street
Alignment	East-west between Lang Street (east) and Government Road (west)
Number of lanes	One lane each way (between Government Road and Northcote Street) and two lanes each way (between Northcote Street and Lang Street)
Carriageway type	Sealed road with 1 m road shoulder on the northern side in regional section and kerb & gutter in urban (State controlled) section
Carriageway width	Approximately 10 m wide at the vicinity of the site
Speed limit	50 km/h posted speed limit in the vicinity of the site
Heavy vehicle access	26 m B-double approved
Traffic function	Carries local and regional traffic and provides accesses to the industrial estates



Photograph 4.2 Mitchell Avenue looking east

Table 4.3 Government Road

Aspect	Description
Road classification and connectivity	Local Road
Alignment	North-south between First Street (south) and Hart Road (north)
Number of lanes	One lane each way
Carriageway type	Sealed road with 1.5 m road shoulder on both sides
Carriageway width	Approximately 10 m sealed
Posted speed limit	60 km/h
Heavy vehicle access	26 m B-double approved between Hart Road and Mitchell Avenue
Traffic function	Carries regional and local traffic



Photograph 4.3 Government Road looking north

Table 4.4 Hart Road

Aspect	Description
Road classification and connectivity	Regional Road between Hunters Expressway (east) and Sawyers Gully Road (west), Local Road east of Hunters Expressway
Alignment	Generally east–west
Number of lanes	One lane each way
Carriageway type	Sealed road with 1.5 m road shoulder on both sides
Carriageway width	Approximately 7.5 m
Posted speed limit	70 km/h, reducing to 60 km/h near Government Road
Heavy vehicle access	26 m B-double approved
Traffic function	Carries regional traffic



Source: Google StreetView

Photograph 4.4 Hart Road looking north-east from Government Road

Table 4.5 Hunter Expressway

Aspect	Description
Road classification and connectivity	State Road
Alignment	Generally north-west to south-east between Branxton (north-west) and Cameron Park (south-east)
Number of lanes	Two lanes each way
Carriageway type	Dual carriageway with emergency stopping lane on both sides
Carriageway width	Approximately 33 m carriageway width, including the large median at the middle dividing the carriageway
Posted speed limit	110 km/h
Heavy vehicle access	26 m B-double approved
Traffic function	Carries regional traffic and provides connectivity between townships



Source: Google StreetView

Photograph 4.5 Hunter Expressway looking south-east

4.2 Key intersections

The following five intersections will form part of the key haulage route as part of the proposal:

- Mitchell Avenue/Styles Street
- Government Road/Mitchell Avenue/Tenth Street
- Hart Road/Gingers Lane/Government Road/Sawyers Gully Road
- Hunter Expressway off-ramp/Hart Road
- Hunter Expressway on-ramp/Hart Road.

All above intersections are priority controlled, except the Sawyers Gully Road/Government Road/Hart Road/Gingers Lane intersection, where the intersection was upgraded to a larger roundabout in 2021.

The key intersections are shown in Figure 4.1.

4.3 Existing network traffic volumes

Traffic intersection surveys were undertaken on Wednesday, 14 June 2023 between 7:30 am to 11:30 am and between 3:00 pm to 7:00 pm (non-school holiday period). The traffic data are less than two years old, hence are considered still valid for this traffic analysis, given there is no significant development (either construction or operation) along the haulage route (between Styles Street and Hunters Expressway on/off-ramps) that may have influenced the traffic volumes in recent times.

Based on the analysed traffic volumes, the following peak hours have been identified corresponding to each intersection:

- Mitchell Avenue/Styles Street intersection
  - AM Peak: 8:30 am to 9:30 am
  - PM Peak: 3:00 pm to 4:00 pm
- Mitchell Avenue/Government Road intersection
  - AM Peak: 8:15 am to 9:15 am
  - PM Peak: 3:15 pm to 4:15 pm
- Sawyers Gully Road/Hart Road/Government Road/Gingers Lane roundabout
  - AM Peak: 7:30 am to 8:30 am
  - PM Peak: 3:30 pm to 4:30 pm
- Hart Road/Hunter Expressway off-ramp intersection
  - AM Peak: 7:30 am to 8:30 am
  - PM Peak: 3:30 pm to 4:30 pm

- Hart Road/Hunter Expressway on-ramp intersection
    - AM Peak: 7:30 am to 8:30 am
    - PM Peak: 4:30 pm to 5:30 pm

Figure 4.2 presents the existing traffic volumes in the AM and PM peak hours.

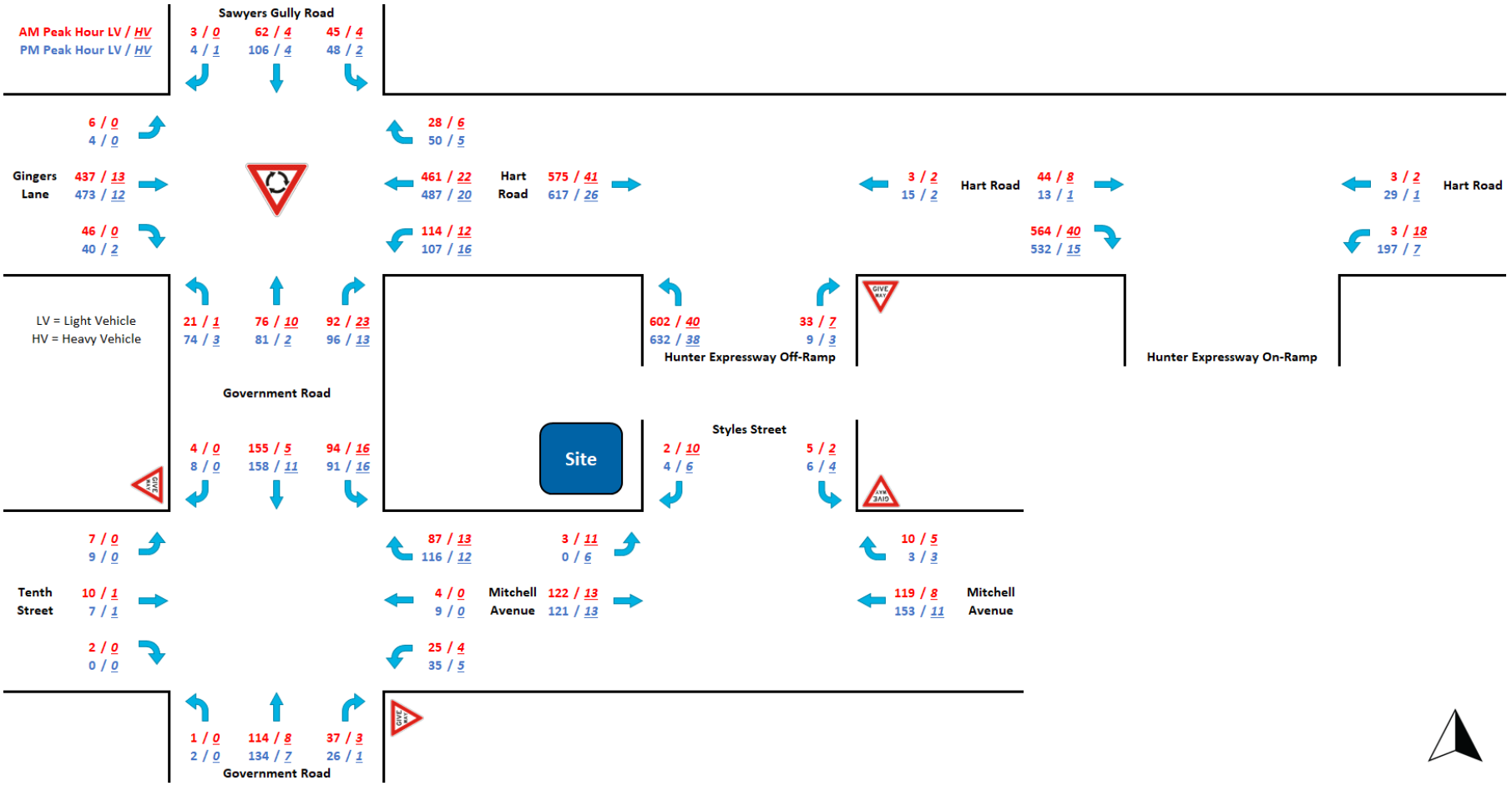


Figure 4.2 **Existing 2023 traffic volumes**

4.4 Existing site traffic volumes

4.4.1 Light vehicles

Light vehicles are currently generated through the existing operations, which consists of:

- office staff that work between 9:00 am and 5:00 pm
- day shift workers that work between 6:00 am and 2:00 pm
- night shift workers that work between 2:00 pm and 10:00 pm.

It is assumed that 70% of light vehicles for employees attending the site travel to and from the east along Mitchell Avenue and 30% to and from the west along Mitchell Avenue.

4.4.2 Heavy vehicles

The existing operations are serviced predominantly by skip trucks, where the largest size of skip truck is a 12.5-m-long heavy rigid vehicle. As these skip trucks have a lower capacity than 19-m-long semi-trailers that will be more commonly used to service the site in the future, more heavy vehicle movements would be required to transfer the same amount of material than on the smaller skip trucks.

At the current operation of 90,000 tpa, there are an average of 160 heavy vehicle movements, consisting of 80 inbound and 80 outbound movements. These heavy vehicle movements are distributed according to the time of the day, as shown in Table 4.6.

Table 4.6 Existing distribution of heavy vehicle movements

Time	Percentage of heavy vehicle movements
6:00 am to 9:00 am	22%
9:00 am to 12:00 pm	33%
12:00 pm to 3:00 pm	22%
3:00 pm to 6:00 pm	17%
6:00 pm to 10:00 pm	6%
10:00 pm to 2:00 am	0%
2:00 am to 6:00 am	0%

It is assumed that the vast majority of heavy vehicles travel to and from the west along Mitchell Avenue, with one heavy vehicle turning left to Mitchell Avenue (east) and turning right from Mitchell Avenue (east), representing trucks that serve the local area, such as smaller skip trucks or hook loader trucks.

4.4.3 Existing site traffic volumes

The recorded hourly traffic generation summary for the existing project operation on a typical weekday are shown in Table 4.7.

Table 4.7 Hourly traffic generation summary for existing project operations

Hourly interval commencing	Light vehicles		Heavy vehicles		Total traffic movements
	Inbound	Outbound	Inbound	Outbound	
12:00 am (midnight)	0	0	0	0	0
1:00 am	0	0	0	0	0
2:00 am	0	0	0	0	0
3:00 am	0	0	0	0	0
4:00 am	0	0	0	0	0
5:00 am	28	0	0	0	28
6:00 am	0	0	6	6	12
7:00 am	0	0	6	6	12
8:00 am	9	0	6	6	21
9:00 am	0	0	9	9	18
10:00 am	0	0	9	9	18
11:00 am	0	0	9	9	18
12:00 pm (midday)	0	0	6	6	12
1:00 pm	28	0	6	6	40
2:00 pm	0	28	6	6	40
3:00 pm	0	0	5	5	10
4:00 pm	0	0	4	4	8
5:00 pm	0	9	4	4	17
6:00 pm	0	0	1	1	2
7:00 pm	0	0	1	1	2
8:00 pm	0	0	1	1	2
9:00 pm	0	0	1	1	2
10:00 pm	0	28	0	0	28
11:00 pm	0	0	0	0	0
Total	**65**	**65**	**80**	**80**	**290**

Table 4.7 shows that there are two shifts for the whole site where the maximum staff movements were 5:00 am to 6:00 am arrival for 6:00 am start and 1:00 pm to 2:00 pm arrival for 2:00 pm start. The maximum heavy vehicle movement occurred generally outside the peak hours.

The following AM and PM peak hours from the existing site operations in Table 4.6 have been considered, which generally coincides with the normal peak traffic periods for the surrounding roads and intersections:

- AM: 8:00 am to 9:00 am
- PM: 3:00 pm to 4:00 pm.

The intersection traffic volumes generated by the site are shown in Figure 4.3.

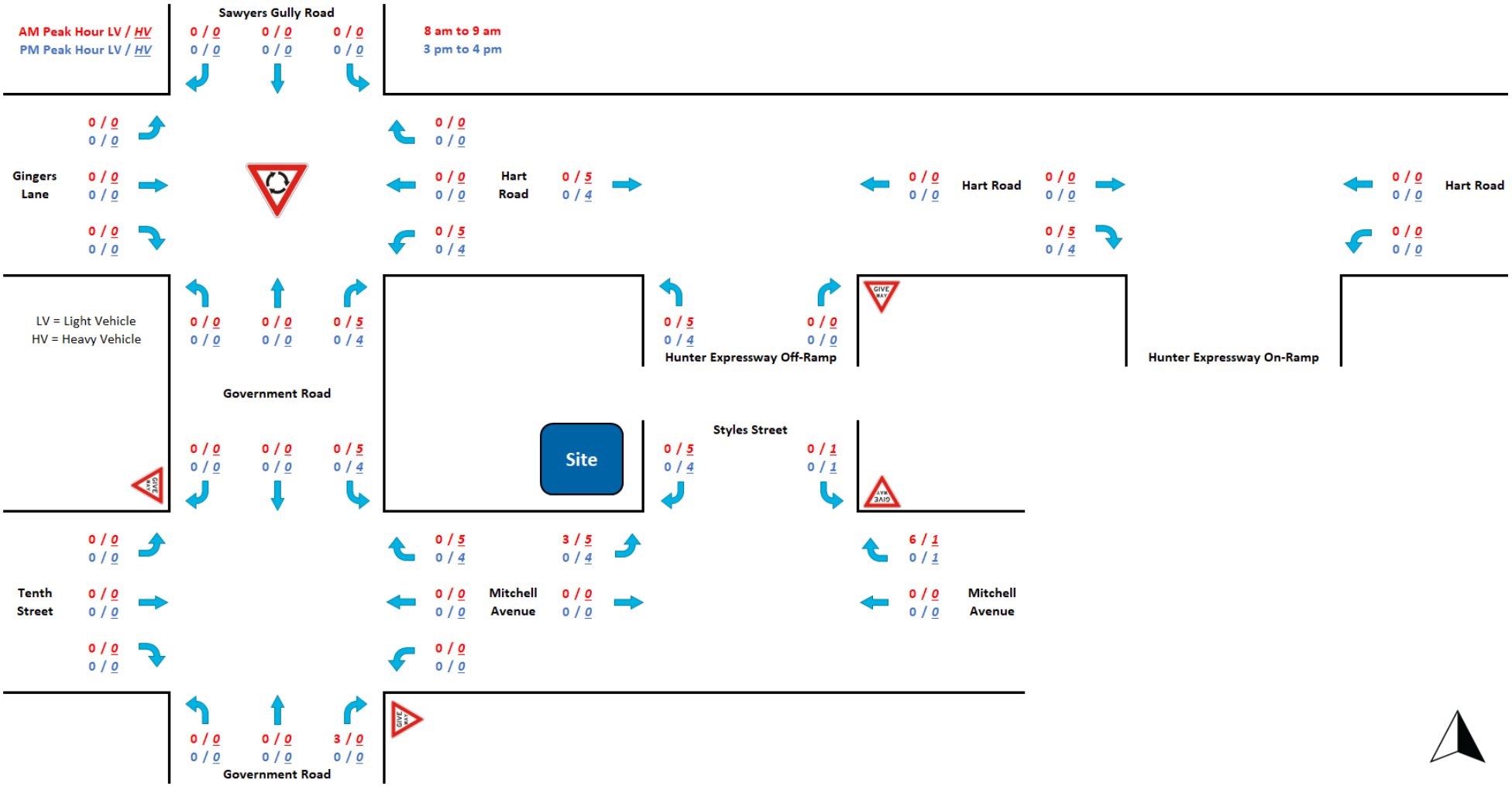


Figure 4.3 **Existing site related traffic volumes**

4.5 Historic traffic volume trends

EMM prepared a traffic impact assessment for the current development approval for the RRF at 8 Styles Street for 90,000 tpa (DA-8/2019/568/1) (EMM, 2019). An initial intersection count survey was undertaken on Wednesday 27 June 2018 for the Mitchell Avenue/Styles Street intersection. The peak hours were 8:00 am to 9:00 am and 3:00 pm to 4:00 pm.

Another intersection count was undertaken on Thursday 23 July 2020 for an SSD application in 2021 (SSD-10435) to expand operations at 8 Styles Street and incorporate ancillary facilities at 1 Styles Street (since withdrawn). The peak hours were 8:30 am to 9:30 am and 3:00 pm to 4:00 pm.

The latest intersection counts were conducted on Wednesday 14 June 2023. The peak hours did not change from the 2020 intersection counts.

A comparison of the traffic volume trend is provided for Styles Street and Mitchell Avenue near the development, as presented in Table 4.8.

Table 4.8 Traffic volume trend

Street	Peak hour	2018 survey		2020 survey		2023 survey	
		Total traffic volumes	Heavy vehicle percentage	Total traffic volumes	Heavy vehicle percentage	Total traffic volumes	Heavy vehicle percentage
Styles Street	AM	28	25%	29	65.5%	48	58.3%
	PM	37	40%	31	38.7%	32	59.4%
Mitchell Avenue	AM	258	8.5%	379	13.5%	310	15.8%
	PM	375	5.6%	307	6.5%	330	13.0%

The outcome of the comparison has shown that there is an increase in traffic volumes to Styles Street both AM and PM peak, and Mitchell Avenue PM peak. However, traffic volume along Mitchell Avenue AM peak experienced a decrease in compared to the 2020 traffic surveys.

The proportion of heavy vehicles to the total traffic generally increased on Styles Street and Mitchell Avenue. The proportion of heavy vehicles is representative of the industrial nature surrounding the site.

4.6 Crash data analysis

The most recent five years of crash data between January 2019 and December 2023 is obtained from TfNSW Centre for Road Safety website.

The crash data is provided in the following degree categories:

- fatal
- serious injury
- moderate injury
- minor/other injury
- non-casualty (towaway).

The crash data in the vicinity of the site on the main heavy vehicle haulage route from Hunter Expressway between 2019 to 2023 is shown in Figure 4.1.

A comparison of the severity of the crashes and the year the crashes occurred are summarised in Table 4.9.

Table 4.9 Severity of crashes over recorded period of time

Crash severity	Year				
	2019	2020	2021	2022	2023
Sawyers Gully Road/Hart Road/Government Road/Gingers Lane roundabout					
Serious injury	-	1*	1	-	-
Moderate injury	4*	-	-	-	1
Minor/other injury	2*	-	-	-	-
Non-casualty (towaway)	-	-	-	2	2
Government Road/Mitchell Avenue/Tenth Street intersection					
Serious injury	-	-	1	-	-
Non-casualty (towaway)	1	-	-	-	-
Hart Road between Sawyers Gully Road and Hunter Expressway on-ramp					
Serious injury	-	-	1	1	-
Non-casualty (towaway)	-	-	-	-	1
Total	**7**	**1**	**3**	**3**	**4**

Source: TfNSW – Centre for Road Safety

* Crashes occurring prior to upgrade

As shown in Table 4.9, there were a total of 18 crashes along the main haulage route to the site, consisting of five serious injury, five moderate injury, two minor/other injury and six non-casualty (towaway) crashes. There were no crashes that resulted in a fatality. The crashes resulted in a total of 15 people being injured.

Crash data analysis conducted has concluded that there are no major traffic safety issues along Styles Street or Mitchell Avenue. The analysis shows that on a broader perspective, crashes along the haulage route were predominantly minor on Government Road and Hart Road. However, 13 crashes occurred at the Sawyers Gully Road/Hart Road/Government Road/Gingers Lane roundabout between 2019 to 2023.

Prior to 2021, a smaller mountable roundabout (that light vehicles could easily mount due to the roundabout being flush with the road surface) was installed to facilitate traffic flows at the intersection, which previously encouraged higher travel speeds on approach to the roundabout and more severe collisions.

As shown in Table 4.9, the severity of the crashes has been reduced since the installation of the larger roundabout by Council in 2021. The larger roundabout included safety improvements that slow down vehicles approaching the roundabout, such as:

- increased deflection on the approaches to the roundabout
- a non-trafficable centre
- a mountable section to allow heavy vehicle turning movements while discouraging light vehicles to drive over the roundabout due to a lip around the edge of the roundabout.

An existing left turn slip lane from Hart Road to Government Road allows all vehicles to bypass the Sawyers Gully Road/Hart Road/Government Road/Gingers Lane roundabout, which further reduces conflicts at the roundabout.

The existing transport routes for the project truck traffic in the Kurri Kurri area are all considered to have a good recent safety record, with no existing traffic safety issues evident for truck traffic using these roads.

4.7 2056 Future Transport Strategy

TfNSW 2056 Future Transport Strategy provides a 40-year vision, directions and principles for mobility in NSW.

The following key vision is relevant to this TIA:

> The Safe System (otherwise known as Vision Zero, Towards Zero, or Sustainable Safety) views human life and health as paramount to all else and should be the first and foremost consideration when designing a road network.

This TIA has been prepared to identify traffic related risks associated with this project and outlined the appropriate mitigation measures to minimise those risks for the road users which are aligned with TfNSW 2056 Future Transport Strategy's visions and objectives.

4.8 Public transport access

Public bus services in the Kurri Kurri area are operated by Rover Coaches. Four bus routes, 164, 166, 171 and 172 operate through various areas of Kurri Kurri, travelling between Cessnock and Maitland. However, none of these bus routes operate via the industrial section of Mitchell Avenue, between Government Road and Northcote Street.

Additionally, due to the length of the walking distances between Styles Street and the nearest bus stops in other areas of Kurri Kurri, these bus services are not conveniently located to be used by either staff or visitors of this facility.

4.9 Active transport

There are no continuous footpaths in the vicinity of the site. There is a footpath bordering 151 Mitchell Avenue (located to the west of the site), but this footpath does not provide any meaningful connections to the surrounding industrial or residential areas. However, the verge on the side of the road can still be used by existing employees to walk to the site.

There are no existing dedicated cycling facilities within the vicinity of the subject site.

Based on this, driving will continue to be the primary mode of transport for the staff and visitors of this site, although it was noted by employees during consultation for the EIS that many currently walk to work.

5 The proposal

5.1 Description

The project will increase the maximum annual material throughput from 90,000 tpa to 450,000 tpa. A summary of the existing infrastructure and proposed project changes are shown in Table 5.1.

Further details of the project can be found in the EIS report.

Table 5.1 Project summary

Lot	Existing infrastructure	Project changes	Project infrastructure (with changes)
8 Styles Street	An RRF comprising automated processing plant enclosure, weighbridge, receival shed, open material storage bays, water management basin and mobile plant and equipment for yard processing including crushing and screening. The main entry/exit to the site is via Styles Street, with car parking and demountable offices for staff.	• Remove demountable offices and weighbridge. • Close off the entry/exit onto Styles Street. • Add additional material storage bays by adding and extending concrete walls. • Extend awnings to cover external material storage bays.	**Resource recovery facility** • Automated processing plant enclosure. • Waste receival shed. • Covered material storage bays. • Yard processing comprising mobile equipment for sorting, shearing, crushing and screening. • Water management basin.
10 Styles Street	Ancillary area for CWS operations, comprising a workshop utilised for vehicle and equipment maintenance and general laydown and storage.	• Repurpose the existing workshop by replacing internal plant and equipment with metal recovery equipment. • Install stormwater and fire safety infrastructure and provide concrete hardstand throughout operations area. • Delineate car and truck parking. • Erect perimeter walls/fencing.	**Workshop/metal processing facility** • Workshop/metal processing building. • Car and truck parking.
147 Mitchell Avenue	Two sheds and a gravel hardstand area. Currently utilised for equipment laydown and storage.	• Demolish existing sheds. • Construct weighbridges and office. • Install stormwater infrastructure and provide concrete hardstand throughout operations area. • Delineate car and truck parking. • Erect perimeter walls/fencing.	**Auxiliary operations area** • Incoming and outgoing weighbridges with office over the top. • Car and truck parking. • Pedestrian linkages.
145 Mitchell Avenue 1 Styles Street	Gravel hardstand utilised for vehicle and equipment storage, temporary offices in the form of demountable buildings and a temporary awning.	• Remove demountable offices. • Install stormwater and fire safety infrastructure and provide concrete hardstand throughout operation area. • Construct residual waste processing building. • Erect perimeter walls/fencing.	**Residual waste recovery plant** • Building for further processing of residual material.

Lot	Existing infrastructure	Project changes	Project infrastructure (with changes)
Mitchell Avenue road reserve	Gravel hardstand entry/exit into 147 Mitchell Avenue. Grassed/gravel verge between the road and the lot boundaries.	• Establish a new access for heavy vehicles into 147 Mitchell Avenue, including a deceleration lane on the northern side of Mitchell Avenue. • Construct a new footpath and provide landscaping along Mitchell Avenue between 143 Mitchell Avenue and Styles Street.	• IRRC main entry/exit with a deceleration lane on Mitchell Avenue. • Landscaped verge with footpath.

The typical types of truck which are used for waste material deliveries to the site and the product deliveries from the site are shown in Photograph 5.1 and Photograph 5.2.

The typical plant and equipment that are used for the loading and unloading of trucks at the site is also shown in Photograph 5.2. The majority of trucks visiting the site currently are either rigid trucks or truck and dog trailer with variable payload capacities in the range of 10 to 30 tonnes.



Photograph 5.1 Current truck movement within the site



Photograph 5.2 Typical plant/equipment used for vehicle loading and unloading at the site

5.2 Hours of operation

The facility will increase operations from 24 hours, 6 days per week (Monday to Saturday), to 24 hours, 7 days per week, with the majority of activities occurring between 6:00 am and 10:00 pm.

The facility will have the following hours of operation for different types of activities:

- Waste processing:
  - operational for 16 hours per day, 6 days a week (Monday to Saturday), 50 weeks per year
  - two shifts per day (6:00 am to 2:00 pm and 2:00 pm to 10:00 pm)
  - six days per week (Monday to Saturday) and 50 weeks per year
  - in specific circumstances, such as a major breakdown of the processing plant, waste processing may occur on Sundays to make up for lost processing time.
- Waste receival and material dispatch:
  - 24 hours per day, 7 days per week, 50 weeks per year
  - majority of truck movements will occur during daytime hours (6:00 am to 6:00 pm).

5.3 Workforce

The facility currently has approximately 65 full time equivalent (FTE) staff. This will be increased to 74 FTE staff, consisting of:

- 46 FTE staff during the day shifts, comprising administration and management, drivers, operators and labourers
- 28 FTE staff during the night shifts, predominantly comprising plant supervisors, labourers and yard staff.

The employees are further categorised as shown in Table 5.2.

Table 5.2 Workforce details

Function	Category (for car park requirements)	Day	Night	Total
Plant	Industry	13	13	26
Yard	Industry	4	4	8
Weighbridge	Office	1	1	2
Office (includes 2 accountants)	Office	6	0	6
Mechanics	Industry	3	0	3
Fabricators	Industry	4	0	4
Truck drivers	Office	15	10	25
Total		**46**	**28**	**74**

5.4 Vehicle movements

5.4.1 Vehicle sizes

A variety of trucks will be used to transport waste materials to the site, including 19-m-long semi-trailers. The maximum size of vehicles that will access the site will be 19 m-long semi-trailer, with an average load carrying capacity of 30 to 35 tonnes. Swept path assessments have been undertaken for both 19 m-long semi-trailers or other smaller trucks are discussed in Section 6.2.

5.4.2 External traffic movements

All incoming trucks up to 19-m-long will access the facility via 147 Mitchell Avenue, using a left turn deceleration lane. Further details of this deceleration lane are provided in Section 5.10.

All outgoing trucks up to 19-m-long that travel outside the local area will turn right onto Mitchell Avenue, then travel along Government Road, Hart Road and Hunter Expressway.

A small number of local vehicles up to 19-m-long may travel from the east along Mitchell Avenue to turn right into 147 Mitchell Avenue and exit by turning left and travel eastbound along Mitchell Avenue.

A diagram of the external traffic movements is shown in Attachment B.

5.4.3 Internal site traffic movements

There will be two weighbridges (one inbound and one outbound) that will be capable of weighing a 19-m-long truck. Furthermore, there will be 43 m length of storage between the southern site boundary on 147 Mitchell Avenue and the weighbridge for heavy vehicles to queue after they enter the site, which will be sufficient to store two inbound 19 m semi-trailers.

Once incoming vehicles pass the weighbridge, they continue internally through the site via 10 Styles Street to the tipping area in 8 Styles Street. Outbound vehicles (either empty trucks, or trucks carrying recovered materials for recycling, or trucks carrying unrecoverable material) travel from the tipping area in 8 Styles Street, continue internally through the site via 10 Styles Street to reach the outbound weighbridge on 147 Mitchell Avenue, then exit the site.

Metals that require further processing are loaded on trucks and travel internally from 8 Styles Street to 10 Styles Street. Processed metals are then loaded on trucks and travel internally from 10 Styles Street to the outbound weighbridge on 147 Mitchell Avenue, then exit the site.

Residual material that needs to be further processed will travel from 8 Styles Street to 10 Styles Street, then exit the site onto Styles Street, before re-entering the site at 145 Mitchell Avenue. Processed residual material are then loaded on trucks and travel from 145 Mitchell Avenue to 1 Styles Street, turn left onto Styles Street, re-enter the site at 10 Styles Street, travel internally from 10 Styles Street to the outbound weighbridge on 147 Mitchell Avenue, then exit the site.

Trucks queuing to enter the site via 147 Mitchell Avenue will be managed using a number of traffic control methods, as follows:

- To reduce queues, automatic recording of vehicles at inbound weighbridge using licence plate recognition (LPR) will identify account customers and will pre-fill incoming consignment fields on the weighbridge software.

- After the truck stops on the weighbridge, the driver needs to state the waste type and origin address and stop time will be minimised with the installation of a high-quality intercom system for any trucks that do not have a radio. This will avoid any need for drivers to get out to talk to the weighbridge operator.

- Part of the strategy for reducing queuing is also to expedite the outbound weighbridge process. A Driver Control Panel (DCP) will be installed that will enable the vast majority of drivers to finalise their transaction from the cab of their trucks. Two of these will be installed at different heights to allow light vehicle drivers to access this facility as well.

- The arrival of 19-m-long semi-trailers will not be ad hoc or unexpected. Arrivals of these trucks will be pre-organised to ensure that congestion is avoided.

A diagram of the site traffic movements is shown in Attachment B.

5.5 Baseline traffic

5.5.1 Growth rate

Population forecasts for Cessnock City Council from forecast.id (.id 2024) were used to determine the annual linear growth rate of traffic volumes within or passing through Kurri Kurri. The annual linear growth rate of the local area in the vicinity of the site are shown in Table 5.3.

Table 5.3 Annual linear growth rate

Region	Growth rate (%)
Central Kurri Kurri townships	1.04
Neath, Abermain, Weston and surrounds	1.06

Taking into account that the road network assessed will predominantly be serving the regions shown in Table 5.3, a linear growth rate of 1.1% per annum is used to calculate the baseline traffic for future scenarios.

5.5.2 2025 baseline traffic

The 2025 baseline traffic is calculated by:

- removing the existing site traffic volumes to obtain the 2023 background traffic volumes (vehicle movements in Figure 4.2 minus vehicle movements in Figure 4.3)

- increasing the 2023 background traffic volumes by 1.1% per annum over two years

- adding the existing site traffic volumes again.

The 2025 baseline traffic volumes, including the existing site traffic volumes, are shown in Figure 5.1.

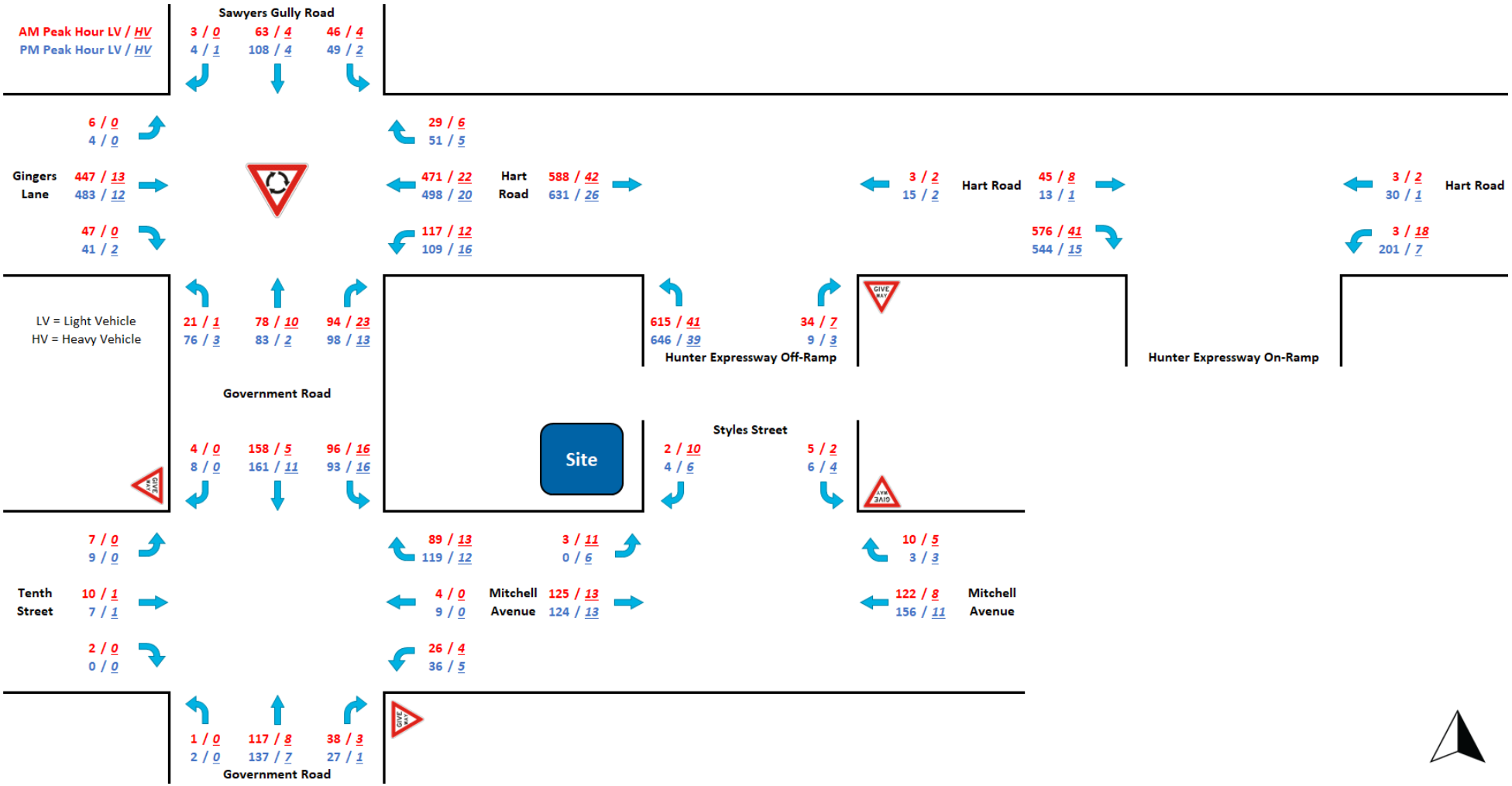


Figure 5.1 **2025 baseline traffic volumes including existing site traffic volumes**

5.6 Construction traffic

It is anticipated that during the construction period there will be a construction workforce of up to 10 workers, including construction related heavy vehicle operators. Construction staging is discussed in Section 3.5 and Appendix E of the EIS. The stages would be undertaken sequentially, rather than concurrently. Active construction works are anticipated to take approximately 17 months. Associated traffic movements are expected to be up to 10 light vehicles and up to 12 heavy vehicles per day during construction activities.

As the construction traffic generation is significantly lower than the project operational stage, the traffic assessment is undertaken for operational stage only. However, if the site is operational during the construction activities, then a site-specific traffic management and traffic control plan would need to be implemented to ensure smooth operation of the site and workers safety.

5.7 Operational traffic

5.7.1 Traffic distribution

CWS is seeking to increase its tonnage throughput from various waste-generating or waste-transferring sources, namely:

- an increase in the volume of waste generated by the population in general, which is expected to increase from 21 million tpa to approximately 34 million tpa in NSW over the next 20 years (*NSW State of the Environment*, NSW EPA 2021)
- National and State incentives to increase waste recovery rates from a recorded 65% in 2021/22 to a minimum of 80% by 2030 (DPE 2021a), which should result in additional waste quantities being directed to resource recovery facilities
- growth of the CWS skip bin business
- growth in third-party (other waste management customers) waste received.

Growth of the CWS transfer stations at Cardiff and Muswellbrook, plus the development of future proposed transfer stations in the Central Coast and Sydney, greatly increasing access to local markets. All materials brought into CWS transfer stations will be consolidated and transferred to the Kurri Kurri site in large articulated trucks with an average weight of 30 tonnes.

As an operational requirement for the CWS owned trucks and third-party deliveries, the incoming and outgoing trucks from the key destinations (e.g. waste transfer stations and Sydney) will be directed to go to and from the west using the arterial road network as shown in Figure 5.2. Only the local small skip bin trucks will potentially travel to and from the east past the residential area. These trucks will also be requested to travel to and from the west using the arterial road network, wherever possible.

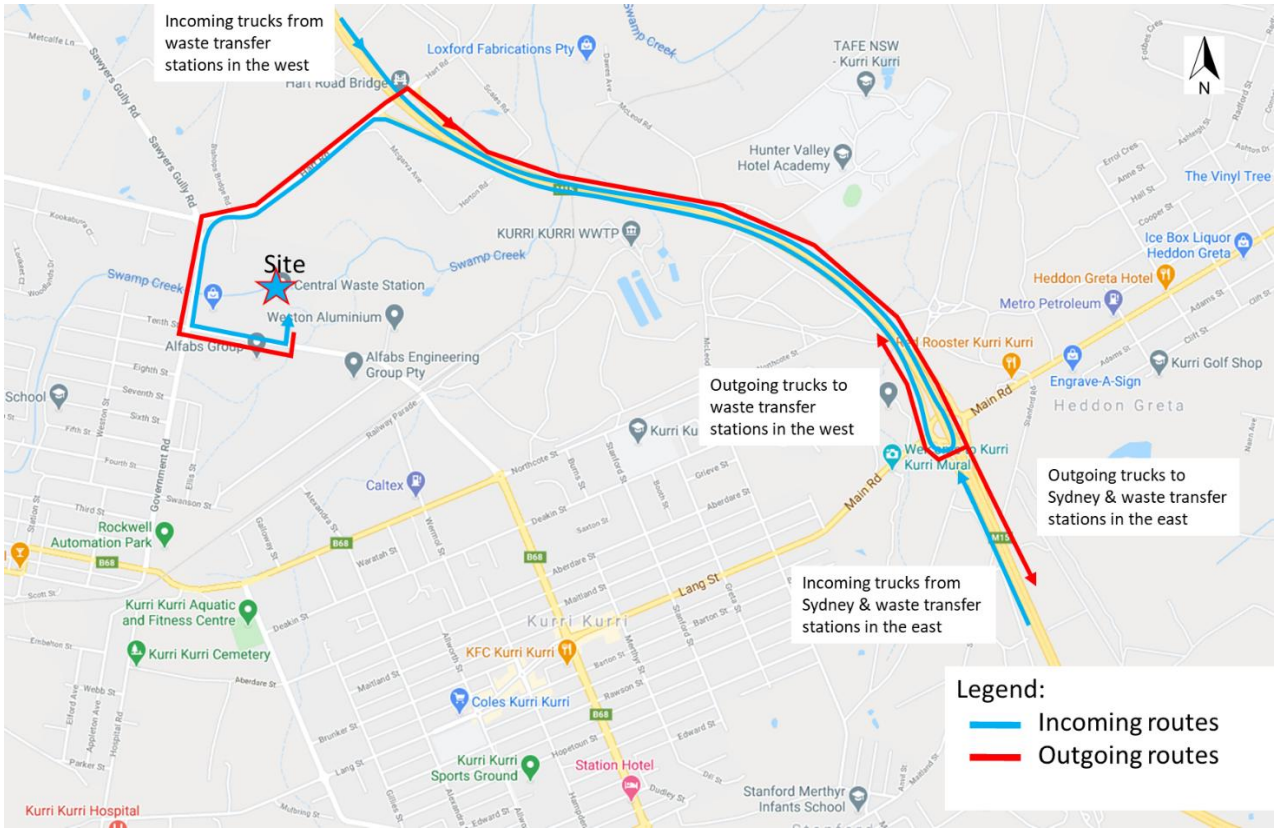


Figure 5.2 Truck haulage routes to/from the site

The above figure shows that all site related truck movements will utilise the site access and egress from the west along Mitchell Avenue and subsequently via the Government Road – Hart Road – Hunter Expressway route. The additional peak hourly traffic movements, based on the calculation in Table 5.7, are outlined in the schematic diagram Figure 5.3.

It should be noted that most of the additional incoming traffic (vehicles up to 19-m-long) will use the deceleration lane to enter into 147 Mitchell Avenue rather than turn into Styles Street. Light vehicles and some smaller trucks come from the east and turn right into 147 Mitchell Avenue. No vehicles will be entering/exiting via Styles Street. Therefore, it is conservative for the analysis of the Mitchell Avenue/Styles Street intersection to assume all traffic will use this intersection.

5.7.2 Traffic generation

The proposed operations will generate light vehicles during similar time intervals to the existing operations described in Section 4.4.1. It is proposed that there will be a 15-minute gap between staff ending the day shift and staff beginning the night shift at around 2:00 pm. This will allow day shift staff to leave before 2:00 pm while the night shift staff arrive after 2:00 pm. There will be additional light vehicles for workers that work the overnight shift (10:00 pm to 6:00 am).

The existing trucks dropping off waste at the site typically have smaller loads than trucks dispatching the recycled products off site. Therefore, there are currently more trucks dropping off waste than those picking up the products.

It is proposed when the site is converted to a distributed transfer station model, most semi-trailers and truck and dog vehicles that are dropping off waste at the site will be backloaded to export recycled products.

The existing and proposed daily light and heavy vehicle movements are summarised in Table 5.4. Future estimated hourly light and heavy vehicle movements are summarised in Table 5.5.

Table 5.4 Existing and proposed daily vehicle movements

Source	Existing (90,000 tpa)		Proposed (450,000 tpa)	
	Daily inbound HV movements	Daily outbound HV movements	Daily inbound HV movements	Daily outbound HV movements
Semi-trailers (100% full inbound, 90% full outbound)	0	0	38	38
Truck and dog (100% full inbound, 20% full outbound)	0	0	5	5
Skip, hook lift and tipper trucks (full inbound, empty outbound)	80	80	100	100
Materials dispatch trucks (empty inbound, full outbound)	0	0	17	17
Total	**80**	**80**	**160**	**160**

Table 5.5 Hourly traffic generation summary for proposed project operations

Hourly interval commencing	Light vehicles		Heavy vehicles		Total traffic movements (inbound and outbound)
	Inbound	Outbound	Inbound	Outbound	
12:00 am (midnight)	0	0	2	2	4
1:00 am	0	0	2	2	4
2:00 am	0	0	2	2	4
3:00 am	0	0	2	2	4
4:00 am	0	0	2	2	4
5:00 am	40	0	2	2	44
6:00 am	0	1	10	10	21
7:00 am	0	0	11	11	22
8:00 am	6	0	11	11	28
9:00 am	0	0	16	16	32
10:00 am	0	0	16	16	32
11:00 am	0	0	16	16	32
12:00 pm (midday)	0	0	11	11	22
1:00 pm	0	40	11	11	62
2:00 pm	27	0	10	10	47
3:00 pm	0	0	8	8	16
4:00 pm	0	0	8	8	16
5:00 pm	0	6	8	8	22
6:00 pm	0	0	2	2	4

Hourly interval commencing	Light vehicles		Heavy vehicles		Total traffic movements (inbound and outbound)
	Inbound	Outbound	Inbound	Outbound	
7:00 pm	0	0	2	2	4
8:00 pm	0	0	2	2	4
9:00 pm	1	0	2	2	5
10:00 pm	0	27	2	2	31
11:00 pm	0	0	2	2	4
Total	**74***	**74***	**160**	**160**	**468**

*This conservatively assumes each employee would drive to work, although it is confirmed that a number of employees currently walk to work.

The peak hour light vehicle and heavy vehicle movements have been extracted from Table 5.5 and compared with the existing movements in Table 4.7. Light vehicle movements are summarised in Table 5.6 while heavy vehicle movements are summarised in Table 5.7.

Table 5.6 Peak hourly light vehicle movements

Time period	Existing (90,000 tpa)		Proposed (450,000 tpa)		Net change	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Daily	65	65	74	74	+9	+9
AM peak hour (8:00 am to 9:00 am)	9	0	6	0	-3	0
PM peak hour (3:00 pm to 4:00 pm)	0	0	0	0	0	0

Table 5.7 Peak hourly heavy vehicle movements

Time period	Existing (90,000 tpa)		Proposed (450,000 tpa)		Net change	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
Daily	80	80	160	160	+80	+80
AM peak hour (8:00 am to 9:00 am)	6	6	11	11	+5	+5
PM peak hour (3:00 pm to 4:00 pm)	5	5	8	8	+3	+3

5.7.3 Proposed additional site traffic volumes

The proposed additional site traffic volumes in 2035, when the site will operate at its full capacity of 450,000 tpa, is presented in Figure 5.3. While Table 5.6 shows that there will be a drop in the peak hour light vehicle movements, it will be conservatively assumed that there is no change in the light vehicle volumes.

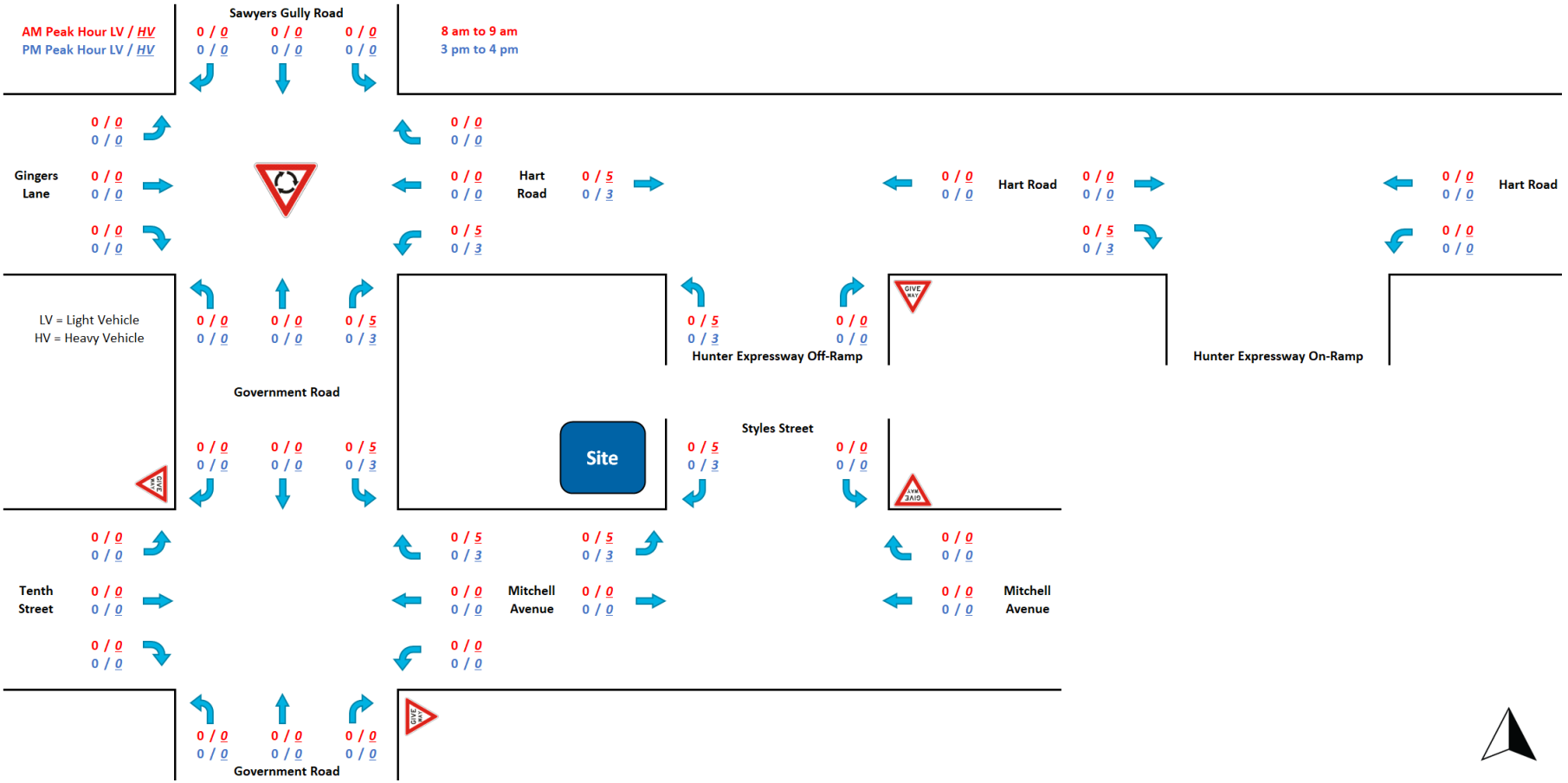


Figure 5.3 Proposed site peak hour traffic volumes (450,000 tpa throughput)

5.8 Future traffic volumes

The traffic volumes occurring in 2035 have been considered to understand the impact when the site is operating at its full capacity of 450,000 tpa.

5.8.1 Cumulative developments

In recent years other SSD industrial developments have been constructed and are now operating in Kurri Kurri (including the battery recycling facility which is located on Mitchell Avenue further to the east). The additional traffic movements from these and other nearby developments which are now already operating are present on the local road network and are therefore included in the baseline traffic surveys which have been undertaken for this project.

Based on the above, no cumulative traffic impact assessment for the year 2035 is necessary as growth of background traffic is already applied for the baseline traffic volumes.

5.8.2 2035 baseline traffic volumes including existing site traffic

The 2035 baseline traffic is calculated by increasing the 2023 background traffic volumes by 1.1% per annum over 12 years.

The 2035 baseline traffic volumes, including the existing site traffic volumes (as measured during 2020 traffic counts under 90,000 tpa operations), are shown Figure 5.4.

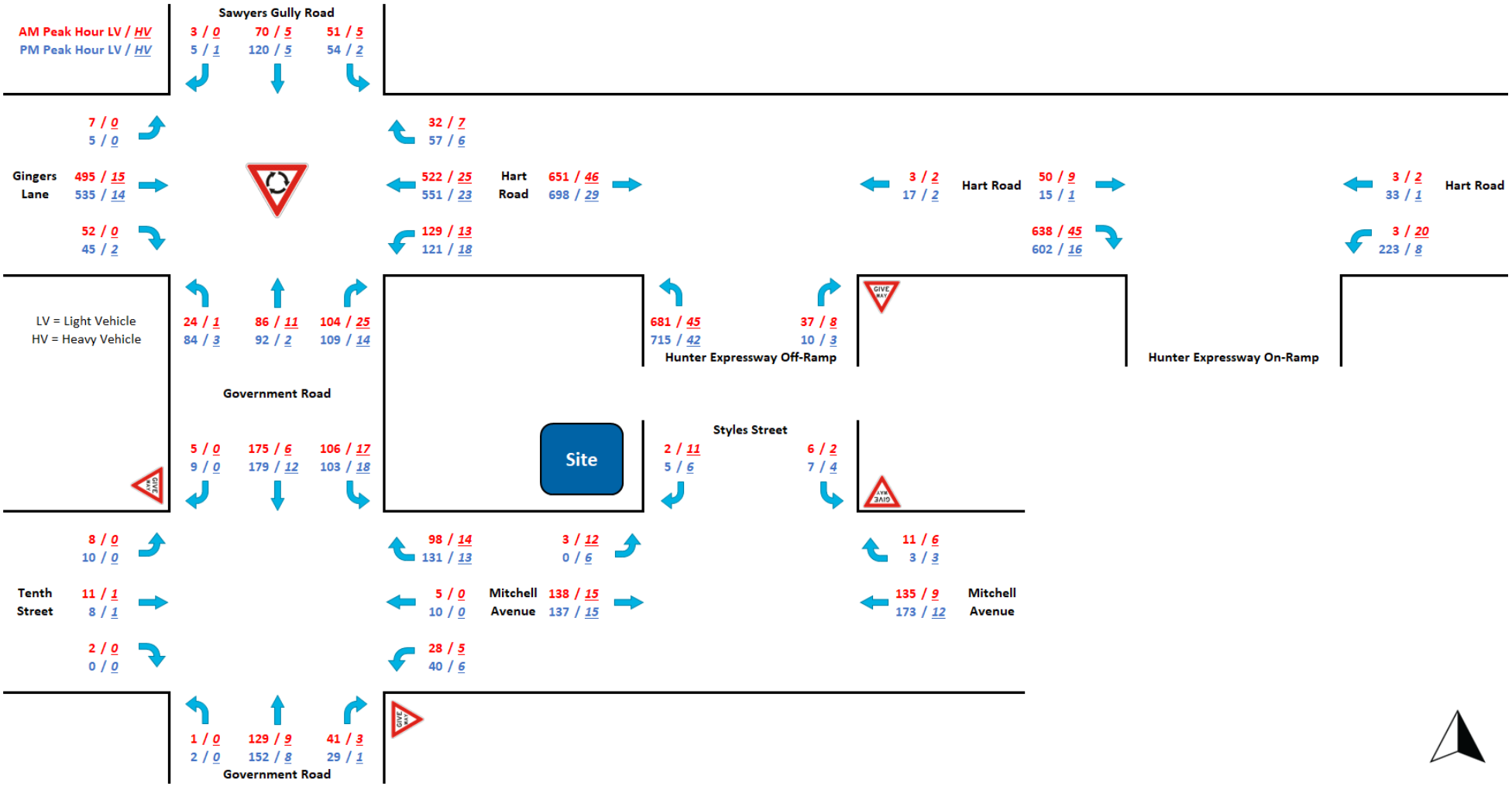


Figure 5.4 2035 baseline traffic volumes including existing site traffic volumes

5.8.3 2035 traffic volumes with proposed site traffic

The 2035 baseline traffic volumes, including the proposed site traffic volumes, have been calculated by adding Figure 5.3 to Figure 5.4, with the total volumes shown in Figure 5.5.

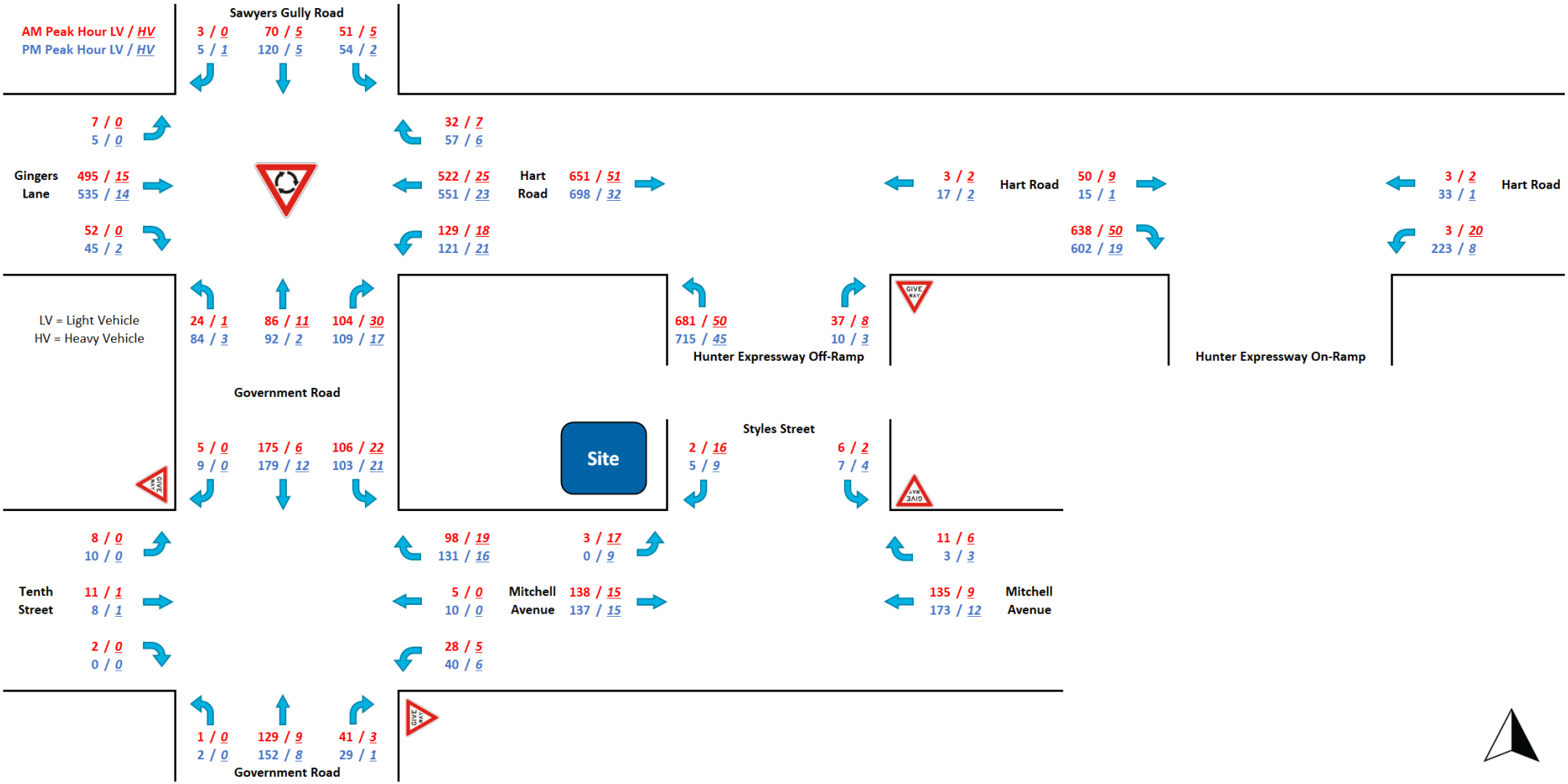


Figure 5.5 2035 traffic volumes with proposed site traffic volumes

5.9 Parking

5.9.1 Light vehicle parking

Cessnock City Council Development Control Plan (DCP) 2021 stipulates the car parking rate for office and industrial premises (Cessnock 2021). The car parking requirements are shown in Table 5.8.

Table 5.8 Car parking requirements

Land use	Gross floor area (m^2)	Number of employees	Car parking requirement	Car spaces required
Office	840.5	33	1 car space per 40 m^2	21
Industrial	7,357.2	41	Greater of: • 1 car space per 100 m^2 • 1 car space per 2 employees	74
Total	**8,197.7**	**74**		**95**

The gross floor area for the development site also includes industrial floor space that is not occupied by any employees. As a result, Table 5.8 overestimates the car spaces required.

As shown in Table 5.2, there are 46 employees working the day shift and 28 employees working the night shift. There will be a 15-minute changeover period between the day shift and night shift employees. This means that day shift employees will finish their shift 15 minutes before the night shift starts, which will minimise the parking demand during the shift changeover. The requirement for staff to leave the site after the day shift will be covered in the site induction to minimise any likelihood of on-street parking.

Therefore, the 46 car parking spaces (including one accessible car parking space) provided on site at 147 Mitchell Avenue will be sufficient for the operations on the site.

5.9.2 Heavy vehicle parking

Heavy vehicles parking is provided on 147 Mitchell Avenue and 10 Styles Street in the following configuration:

- 16 parking spaces for up to 6.7-m-long skip trucks
- two parking lanes totalling 86 m long, which can fit four 19-m-long semi-trailers
- one 43-m-long parking lane, which can fit three 12.5-m-long heavy rigid vehicles (HRV)

There will also be 13 spaces for trailer parking located on 10 Styles Street.

5.9.3 Accessible car parking

Building Code of Australia (BCA) stipulates that one accessible car parking space is to be provided for every 100 spaces or part thereof. The car park provides one disabled space and thus meets the BCA requirements. The car parking areas have been designed in accordance with relevant Australian Standards being AS2890.1, AS2890.2 and AS2890.6.

5.9.4 Motorcycle parking

Cessnock City Council DCP 2021 stipulates that one motorbike parking space shall be provided for every 20 car parking spaces. Based on the calculation, for the additional 46 car parking spaces, three motorbike parking spaces are required and have been provided.

5.9.5 Bicycle parking

Cessnock City Council DCP 2021 stipulates that bicycle parking needs to be provided in a Class 2 facility according to Table 5.9. Class 2 bicycle parking facility involves a secure communal storage shed with bicycle racks that allow the bicycle frame and wheels to be locked.

Table 5.9 Bicycle parking requirements

Land use	Gross floor area (m^2)	Bicycle parking requirement	Bicycle spaces required
Office	840.5	1 space per 200 m^2	4.2
Industrial	7,357.2	1 space per 1,000 m^2	7.4
Total	**8,197.7**		**12**

Based on the above table (which is conservative as identified in Section 5.9.1), 12 bicycle spaces are required and have been provided within a Class 2 security level enclosure. Furthermore, end of trip facilities need to be provided for 12 bicycle parking spaces, including at least two showers plus change room, at least two toilets and at least two wash basin stations (Cessnock 2021).

5.9.6 Electric vehicle parking

Cessnock City Council DCP 2021 stipulates that provision for electric vehicles need to be provided in 5% of all car parking spaces. Therefore, based on 46 car parking spaces provided, three electric vehicle spaces are required and have been provided.

5.10 Deceleration lane

All incoming trucks up to 19-m-long will access the facility via 147 Mitchell Avenue, using a left turn deceleration lane. The deceleration lane into 147 Mitchell Avenue has been designed in accordance with section 5.2.2 of Austroads *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* (Austroads 2023). Furthermore, in accordance with section 7.3 of TfNSW *Design of Roads and Streets* (TfNSW 2024), the design speed is equal to the posted speed at speed limits of 50 km/h. For a design speed limit of 50 km/h, the minimum deceleration lane length is 40 m, including taper.

The location of the deceleration lane is shown in Attachment D. The proposed new access on Mitchell Avenue is located on a reasonably straight alignment with no sight distance issues to the left or right. The deceleration lane will be completely built within the road reserve and does not block any driveways. Hence, there will be no impacts to the neighbouring property.

6 Impact assessment

An assessment of traffic impacts associated with operation of the IRRC is provided in the following sub-sections. The daily staff vehicle and truck movements for each construction phase as described in Section 5.5 will be negligible (3 to 16 vehicles per day) compared with the site generated operational traffic movements as described in Section 5.7 (up to 320 daily truck traffic movements per day). As such, a separate detailed assessment of the site construction traffic impacts is not considered as the operational impact assessment is more conservative.

6.1 Intersection performance

The key intersections have been modelled with the SIDRA Intersection 9.1 software, a micro-analytical tool for individual intersections and linked intersection-network modelling. The modelling is based on the traffic survey data detailed in Section 4.3. SIDRA provides the performance indicators noted below:

- Degree of saturation (DOS) – the total usage of the intersection expressed as a factor of 1, with 1 representing 100% use/saturation (e.g. 0.8 = 80% saturation).
- Average delay (DEL) – for signalised or roundabout intersections, this is the average delay in seconds encountered by all vehicles passing through the intersection. For priority-controlled intersections (stop or give way), this is the average delay of vehicles on the worst approach and turning movement. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- Level of service (LOS) – this is a categorisation of average delay, intended for simple reference.
- 95% queue lengths (Q95) – is defined to be the queue length in metres that has only a 5% probability of being exceeded during the analysed time period. It transforms the average delay into measurable distance units.

The LOS is a good indicator of overall performance for individual intersections, with each level summarised in Table 6.1.

Table 6.1 Intersection LOS standards

Level of service	Average delay (seconds per vehicle)	Traffic signals, roundabout	Priority intersection ('Stop' and 'Give Way')
A	<14	Good operation.	Good operation.
B	15 to 28	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
C	29 to 42	Satisfactory.	Satisfactory, but accident study required.
D	43 to 56	Operating near capacity.	Near capacity and accident study required.
E	57 to 70	At capacity. At traffic signals, incidents will cause extensive delays. Roundabouts require other control mode.	At capacity, required other control mode.
F	>71	Unsatisfactory with excessive queuing.	Unsatisfactory with excessive queuing; required other control mode.

Source: *RTA Guide to Traffic Generating Developments* (RTA, 2002)

The SIDRA results for the assessed key intersections are presented in the following tables. The detailed SIDRA results are attached in Attachment C.

Table 6.2 SIDRA intersection results for Mitchell Avenue/Styles Street

Control: Priority controlled (stop)	AM Peak					PM Peak				
Scenario	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**
1. Baseline 2025	333	11.6	A	0.088	0.9 (east)	354	10.6	A	0.096	0.4 (east)
2. Future 2035 + development	379	12.2	A	0.102	1.1 (east)	397	10.8	A	0.109	0.5 (north)

The key findings for the Mitchell Avenue/Styles Street intersection are:

- with the existing scenario, the intersection currently operates LOS A on all approaches
- with the future 2035 scenario, the intersection will continue to operate LOS A and less than 15% of the intersection's capacity.

Table 6.3 SIDRA intersection results for Government Road/Mitchell Avenue/Tenth Street

Control: Priority controlled (give way)	AM Peak					PM Peak				
Scenario	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**
1. Baseline 2025	634	7.2	A	0.149	4.0 (east)	697	7.3	A	0.195	5.2 (east)
2. Future 2035 + development	709	7.8	A	0.187	5.1 (east)	778	7.9	A	0.235	6.4 (east)

The key findings for the Government Road/Mitchell Avenue/Tenth Street intersection are:

- with the existing scenario, the intersection currently operates LOS A on all approaches
- with the future 2035 scenario, the intersection will continue to operate LOS A and less than 25% of the intersection's capacity.

Table 6.4 SIDRA intersection results for Hart Road/Gingers Lane/Government Road/Sawyers Gully Road

Control: Roundabout	AM Peak					PM Peak				
Scenario	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**
1. Baseline 2025	1,597	6.7	A	0.508	28.7 (west)	1,773	7.0	A	0.537	31.2 (west)
2. Future 2035 + development	1,781	7.2	A	0.586	38.2 (west)	1,973	7.9	A	0.618	43.4 (west)

The key findings for the Hart Road/Gingers Lane/Government Road/Sawyers Gully Road intersection are:

- with the existing scenario, the intersection currently operates LOS A on all approaches
- with the future 2035 scenario, the intersection will continue to operate LOS A and less than 65% of the intersection's capacity.

Table 6.5 SIDRA intersection results for Hunter Expressway Off-ramp/Hart Road

Control: Priority controlled (give way)	AM Peak					PM Peak				
Scenario	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**
1. Baseline 2025	1,403	10.0	A	0.388	1.0 (south-east)	1,444	10.6	A	0.404	0.3 (south-east)
2. Future 2035 + development	1,562	10.9	A	0.435	1.2 (south-east)	1,603	9.1	A	0.449	0.2 (south-east)

The key findings for the Hunter Expressway Off-ramp/Hart Road intersection are:

- with the existing scenario, the intersection currently operates LOS A on all approaches
- with the future 2035 scenario, the intersection will continue to operate LOS A and less than 45% of the intersection's capacity.

Table 6.6 SIDRA intersection results for Hunter Expressway On-ramp/Hart Road

Control: Priority controlled (give way)	AM Peak					PM Peak				
Scenario	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**	**Intersection volume**	**DEL (s)**	**LOS**	**DOS**	**Q95 (m) (approach)**
1. Baseline 2025	734	11.4	A	0.375	18.4 (south-west)	856	8.3	A	0.341	15.2 (south-west)
2. Future 2035 + development	817	12.3	A	0.419	21.9 (south-west)	951	8.6	A	0.381	17.9 (south-west)

The key findings for the Hunter Expressway On-ramp/Hart Road intersection are:

- with the existing scenario, the intersection currently operates LOS A on all approaches
- with the future 2035 scenario, the intersection will continue to operate LOS A and less than 45% of the intersection's capacity.

Overall, all the intersections currently operate at LOS A in both peak hours. With development traffic, all the assessed intersection parameters will increase marginally, however, the operations will still remain at LOS A with no noticeable impacts to other road users.

6.2 Sight distance

The proposed future access on Mitchell Avenue has good sight distance to the left and right (see Figure 6.1). The sight distance is estimated to be 500 m to the left and 290 m to the right.

The speed limit of Mitchell Avenue at the site access is 50 km/h. In accordance with Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (Austroads 2023), for a road with a design speed of 50 km/h (design speed matches the speed limit at 50 km/h and below), the safe intersection sight distance (SISD) required for a 2-second driver reaction time is 97 m. Therefore, the existing site access has adequate sight distance.



Sight distance to the left (500 m)



Sight distance to the right (290 m)





Figure 6.1 Sight distance from the site access

6.3 Car park compliance and swept paths

Swept path analyses was conducted with the following vehicles that will be travelling within the site:

- 19-m-long semi-trailer
- 6.7-m-long skip truck
- 12.5-m-long heavy rigid vehicle.

The swept path analyses show that the above vehicles are able to navigate the site and parking spaces are appropriately designed and accessible for the designated heavy vehicles according to *AS2890.2-2002: Part 2 Off-street commercial vehicle facilities*.

Light vehicle car parking spaces are also appropriately designed according to *AS2890.1-2004: Part 1 Off-street car parking* and *AS2890.6-2009: Part 6 Off-street parking for people with disabilities*.

The car park compliance review and swept paths are attached in Attachment B.

6.4 Impact on public transport services, pedestrians and cyclists

The existing public transport services, as outlined in Section 4.7, are not expected to be impacted by the project, either during construction or operation.

A footpath will be constructed adjacent to the site frontage on Mitchell Avenue, providing improved accessibility for pedestrians in the vicinity of the site.

6.5 Internal site traffic movements

With the future forecast maximum hourly truck arrival rate being 10 vehicles (Table 5.7), the internal site capacity to queue two 19-m-long trucks before the weighbridge (within a distance of 43 m) is unlikely to be exceeded. Therefore, any potential likelihood of incoming trucks to the site queueing on Mitchell Avenue will be minimal. Further, the measures proposed to reduce queuing times as discussed in Section 5.4.3 would reduce the potential for traffic impacts both within and surrounding the site.

The crossing between 1 Styles Street or 145 Mitchell Avenue and 10 Styles Street is a very low trafficked area given that Styles Street is a cul-de-sac. There is no other access via this section of Styles Street for other businesses.

The vehicular movements that are expected around the site are shown in Attachment B.

Pedestrian walkways will be marked throughout the site to demarcate the safe walking routes throughout the site. These pedestrian walkways are shown in the site plan in Appendix B of the EIS.

6.6 Safety and traffic management

The Mitchell Avenue/Styles Street intersection has good sight lines and a good safety record with no recorded crash between 2019 to 2023. With the additional proposed development traffic, the intersection will continue to operate with a very good level of service (LOS A) for all periods of the day, with minimal traffic delays, including during the morning and afternoon peak hours.

Elsewhere, on the other roads along the haulage route (between Styles Street and Hunter Expressway), the roads also have a generally good safety record. A recent upgrade to the Hart Road/Gingers Lane/Government Road/Sawyers Gully Road roundabout provides a safer traffic environment along the haulage route. The additional site related daily traffic is not expected to create any road safety issues, hence no traffic safety related road improvement is required.

Swept path analysis confirms that the new driveway on 147 Mitchell Avenue will be able to accommodate simultaneous 19 m semi-trailer movements. Swept paths are located in Attachment B.

7 Draft traffic management plan

Detailed construction and operational traffic management plans will be developed in accordance with the relevant approval conditions. This chapter outlines the framework of a draft guidelines of preparing the plans.

7.1 Driver code of conduct

The Driver Code of Conduct (the Code) outlines procedures to ensure that truck drivers adhere to the designated transport routes and implement safe driving practices, particularly when travelling on the residential section of Government Road.

It is a condition of employment at CWS that all employees and contractors are aware of the Code and that they drive responsibly and adhere to the code. All drivers are trained in the requirements of the Code and audits of the compliance with the Code are regularly conducted. All drivers reported or found to be acting in a manner contrary to the Code are subject to disciplinary action.

7.2 General requirements

All visitors must report to the weighbridge/site office upon arrival.

Heavy vehicle drivers accessing the site must:

- follow site signage displaying speed limits, mandatory stop locations and designated routes throughout the site
- hold a valid driver's licence for the class of vehicle they are driving
- operate the vehicle in a safe manner within and external to the site
- adhere to designated transport routes
- comply with the direction of authorised site personnel when within the site.

7.3 Heavy vehicle speed

The following speed restrictions apply in relation to the site:

- Local Roads – the posted speed limit is generally 50 to 60 km/h
- Arterial Roads/motorways – the posted speed limit is generally 100 to 110 km/h, excluding bends, school zones, townships and intersections
- Within the site – speed limit is restricted to 20 km/h for all vehicles.

Drivers are to observe the posted speed limits on all public roads with speed adjusted appropriately to suit the road environment and prevailing weather conditions, to comply with the Australian Road Rules. The vehicle speed must be appropriate to ensure the safe movements of the vehicle based on the vehicle configuration.

All drivers must follow the posted speed limit within and outside the site and it will be specifically enforced by the GPS installed in modern trucks.

In addition, all drivers and truck operators working for or on behalf of CWS are to be made aware of the Three Strikes Scheme (https://www.aic.gov.au/sites/default/files/2020-05/tandi446.pdf) introduced by Australian government which applies to all vehicles over 4.5 tonnes. When a heavy vehicle is detected travelling at 15 km/h or more over the posted or relevant heavy vehicle speed limit by a mobile police unit or fixed speed camera, TfNSW will record a strike against that vehicle. If three strikes are recorded within a three-year period, TfNSW will act to suspend the registration of that vehicle (up to three months).

7.4 Driver fatigue

Fatigue is one of the biggest causes of crashes for heavy vehicle drivers. The National Heavy Vehicle Accreditation Scheme (https://www.nhvr.gov.au/safety-accreditation-compliance/national-heavy-vehicle-accreditation-scheme) allows heavy vehicle operators the choice of operating under three fatigue management schemes: Standard Hours of Operation; Basic Fatigue Management; and Advanced Fatigue Management. All heavy vehicle drivers operating at the site are to be aware of their adopted fatigue management scheme and operate within its requirements.

Fatigue includes (but is not limited to) the following:

- feeling sleepy
- feeling physically or mentally tired, weary or drowsy
- feeling exhausted or lacking energy
- behaving in a way consistent with any of the above.

7.5 Heavy vehicle control

In order to minimise the impact of noise from truck transport, the following controls will apply to truck operators accessing the site:

- compression brakes not to be used in the vicinity of residential areas
- tailgates must be locked and secured to avoid noise or spillage
- always observe the posted speed on site and the local road network
- no tailgating is permitted – a 3-second gap is to be observed at all times
- equipment to be used must be fit for the purpose
- drivers to obey the operating hours outlined in Section 5.2.

7.6 Load covering

Loose material on the road surface has the potential to cause road crashes and vehicle damage. All loaded vehicles entering or leaving the site are effectively covered for the duration of the trip. The load cover may be removed upon arrival at the delivery site. All care is to be taken to ensure that all loose debris from the vehicle body and wheels is removed prior to leaving the site and again after unloading.

Drivers must ensure that the tailgate is locked before leaving the site.

7.7 Cleanliness

All loaded vehicles are to be inspected prior to leaving the site for cleanliness. Any materials that could fall on the road should be removed prior to leaving the site. A street sweeper must be used regularly (at least twice weekly) throughout the site to prevent the wheels of any vehicle from getting dirty, which will avoid the need for all outgoing vehicles to use a wheel wash.

7.8 Vehicle arrival and departure

All trucks arriving and leaving the site must go through the inbound and outbound weighbridges respectively.

7.9 Vehicle departure and arrival (avoiding convoys)

Heavy vehicles travelling in close proximity to residential areas (e.g. Government Road) can cause noise nuisance. To alleviate public concern and increase road safety, heavy vehicles leaving the facility should be separated. This will be controlled as far as practicable by the loader operator; however, it is important for all drivers to be aware of the requirement to avoid convoys leaving the facility. Furthermore, departure formalities at the weighbridge will contribute to avoiding convoys on the public road network.

It is difficult to schedule arrivals to the facility due to the different directions of approach from external jobs and the varying job completion times. Where multiple vehicles are travelling from the same location, they will stagger departures to ensure staggered arrivals at the site.

7.10 Overtaking

Truck drivers are instructed to follow the Australian Road Rules and not to overtake any vehicles, unless it is legally permitted and safe to do so.

7.11 Breakdown and incidents

In the case of a breakdown the vehicle must be towed to the nearest breakdown point as soon as possible. All breakdowns must be reported to the CWS management and the vehicle protected in accordance with the Heavy Vehicle Drivers handbook.

Emergency contact numbers have been provided in Table 7.1 for reference.

Table 7.1 Emergency contact details

Organisation	Contact details
Transport Management Centre	(02) 8396 1400
Cessnock City Council	(02) 4993 4100
Central Waste Station	1800 180 180
Emergency Services	000

7.12 Complaint management

A complaint management system to engage in active community consultation and maintain positive relations with local residents/businesses will be implemented, as per the existing development consent. The purpose of this system is to minimise complaints by addressing their concerns upfront and monitor the environmental performance of the site.

7.12.1 Registering complaints

Any enquiries or complaints made by members of the public to site personnel will be directed to the Yard Manager during the business hours.

The contact number of CWS is to be provided at the gate or fence at a visible location.

7.12.2 Complaint response

Any complaint regarding driver conduct, road condition and noise impacts from the facility will be acted on within 24-hours in the following manner:

- details of the complaint (date, time, specifics, complainants contact details) will be recorded
- activities occurring during the complaint period will be investigated
- findings of operations during the complaint period will be recorded in the complaints register
- relevant management practices will be reviewed as necessary
- with findings of the review will be communicated to the complainant.

7.12.3 Complaints register

The details of any complaint will be logged in the complaints register, with investigation findings and actions noted. The record of a complaint will be kept for at least five years after the complaint was made. The record will be produced to any authorised officer of the EPA who asks to see them.

Should the complaint be relevant to any of the conditions of the Consent, it will be handled as per the Consent conditions relevant to that environmental aspect.

7.13 Pedestrian management within the site

There will be minimal pedestrian activity within the site, except the site employees or truck drivers. Visitor parking is within close proximity to the site office and all visitors must report at the office upon arriving to the site.

8 Summary and conclusion

Central Waste Station currently operates a resource recovery facility at 8 Styles Street in Kurri Kurri. The revised site will occupy five neighboring lots, comprising 1, 8 and 10 Styles Street and 145 and 147 Mitchell Avenue for the future purposes of additional car parking and secure non-waste storage.

The proposal will increase the recycling throughout from 90,000 tpa to 450,000 tpa, which will generate approximately 10 and 6 additional truck traffic movements respectively during the AM and PM peak hours. The additional trucks will all travel via Mitchell Avenue (west of Styles Street) to Government Road and then Hart Road to the Hunter Expressway. Additional site employee traffic is expected to align with the additional site peak hourly truck traffic movements during the AM peak hour but not during the PM peak hour.

The assessment has documented the existing intersection traffic volumes and capacity, as well as the future project-generated traffic increases at five key intersections.

The key findings for the project are:

- all the analysed intersections currently operate at LOS A in both peak hours with minimal delays and queuing
- with the additional traffic due to the proposal, all the intersections will still operate at LOS A with marginal increase in delays, which is likely not noticeable to other road users
- a proposed deceleration lane of approximately 40 m length including taper on Mitchell Avenue will be provided for the incoming left turning vehicles at 147 Mitchell Avenue, with the design provided in accordance with the relevant Austroads guidelines
- the combined sites at 147 Mitchell Avenue and 10 Styles Street will provide sufficient parking for all staff for one shift and all car parking spaces have been designed in accordance with relevant Australian Standards
- the public transport services, pedestrian and cycling infrastructure in the locality will not be impacted due to the proposal
- a traffic management will be prepared for construction and operation of this site in accordance with approval conditions.

Based on the results of this TIA report, it is concluded that the additional construction and operational traffic movements generated by the development will not have any significant traffic impacts on the nearby road network.

References

.id 2024, *Cessnock City Council population forecast*, informed decisions

Austroads 2023, *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*

Cessnock 2021, *Cessnock Development Control Plan 2021 – C1: Parking and Access*, Cessnock City Council

TfNSW 2024, *Guide to Transport Impact Assessment*.

Attachment A

Traffic count data

EMM
creating opportunities

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Mitchell Ave and Styles St, Kurri Kurri

GPS	-32.806400, 151.470581
Date:	Wed 14/06/23
Weather:	Fine
Suburban:	Kurri Kurri
Customer:	N/A

North:	Styles St
East:	Mitchell Ave
South:	N/A
West:	Mitchell Ave

Survey Period	AM:	7:30 AM-11:30 AM
	PM:	3:00 PM-7:00 PM
Traffic Peak	AM:	8:30 AM-9:30 AM
	PM:	3:00 PM-4:00 PM

All Vehicles

Time		North Approach Styles St			East Approach Mitchell Av			West Approach Mitchell Av			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
7:30	7:45	0	6	0	0	2	31	0	23	5	262	
7:45	8:00	0	2	0	0	0	22	1	28	2	267	
8:00	8:15	0	3	0	0	0	23	1	29	3	293	
8:15	8:30	0	3	1	0	1	28	1	43	4	309	
8:30	8:45	0	0	1	0	4	27	2	36	2	315	Peak
8:45	9:00	0	2	0	0	2	36	0	37	4	293	
9:00	9:15	0	4	1	0	5	32	1	29	3	276	
9:15	9:30	0	6	5	0	4	32	2	33	5	254	
9:30	9:45	0	2	4	0	2	23	1	18	0	229	
9:45	10:00	0	3	2	0	2	21	2	27	7	240	
10:00	10:15	0	1	3	0	3	24	4	14	4	238	
10:15	10:30	0	4	4	0	2	23	1	25	3	259	
10:30	10:45	0	5	2	0	2	20	0	30	2	268	
10:45	11:00	0	4	1	0	3	25	1	25	3		
11:00	11:15	0	5	2	0	4	20	0	33	10		
11:15	11:30	0	4	2	0	2	25	2	32	4		
15:00	15:15	0	4	4	0	0	52	0	29	3	332	Peak
15:15	15:30	0	1	3	0	3	36	1	38	1	329	
15:30	15:45	0	2	1	0	1	45	1	37	1	329	
15:45	16:00	0	3	2	0	2	31	0	30	1	316	
16:00	16:15	0	2	0	0	3	49	1	31	3	321	
16:15	16:30	0	6	6	0	1	39	0	29	2	326	
16:30	16:45	0	2	3	0	1	35	0	31	3	325	
16:45	17:00	0	2	2	0	0	32	0	35	3	317	
17:00	17:15	0	8	5	0	2	42	0	36	1	291	
17:15	17:30	0	6	1	0	1	39	0	35	0	244	
17:30	17:45	0	5	3	0	0	35	0	23	1	196	
17:45	18:00	0	1	1	0	0	20	0	26	0	167	
18:00	18:15	0	3	3	0	0	23	0	16	2	154	
18:15	18:30	0	2	0	0	0	22	0	8	2		
18:30	18:45	0	0	0	0	0	22	0	15	1		
18:45	19:00	0	1	0	0	0	16	0	17	1		

Peak Time		North Approach Styles St			East Approach Mitchell Av			West Approach Mitchell Av			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
8:30	9:30	0	12	7	0	15	127	5	135	14	315
15:00	16:00	0	10	10	0	6	164	2	134	6	332

Pedestrians Crossing

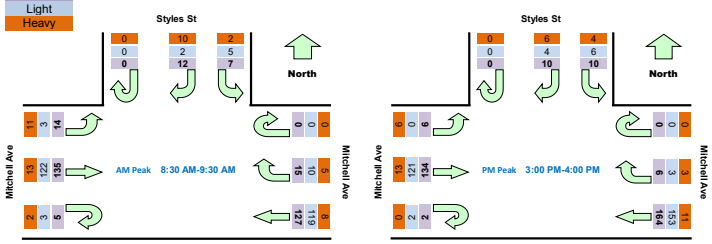
Time		th Approach Style		Approach Mitche		Approach Mitche		ourly Tot
Period Start	Period End	/estbour	astboun	outhbour	orthbour	outhbour	orthbour	
7:30	7:45	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	1
9:30	9:45	0	0	0	0	0	0	1
9:45	10:00	0	0	0	0	0	0	3
10:00	10:15	0	0	0	0	0	1	3
10:15	10:30	0	0	0	0	0	0	2
10:30	10:45	0	0	0	0	1	1	3
10:45	11:00	0	0	0	0	0	0	
11:00	11:15	0	0	0	0	0	0	
11:15	11:30	0	0	0	0	0	1	
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	1
16:30	16:45	0	0	0	0	0	0	3
16:45	17:00	0	0	0	0	0	0	3
17:00	17:15	1	0	0	0	0	0	3
17:15	17:30	0	2	0	0	0	0	2
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	
18:30	18:45	0	0	0	0	0	0	
18:45	19:00	0	0	0	0	0	0	

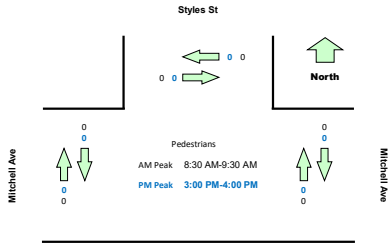
Peak Time		th Approach Style		Approach Mitche		Approach Mitche		Peak
Period Start	Period End	/estbour	astboun	outhbour	orthbour	outhbour	orthbour	total
8:30	9:30	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach Styles St			East Approach Mitchell Av			West Approach Mitchell Av		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
7:30	7:45	0	2	0	0	2	25	0	22	1
7:45	8:00	0	0	0	0	0	20	1	26	1
8:00	8:15	0	2	0	0	0	21	1	26	1
8:15	8:30	0	0	0	0	0	26	1	41	3
8:30	8:45	0	0	1	0	3	24	2	33	1
8:45	9:00	0	0	0	0	2	32	0	34	1
9:00	9:15	0	2	0	0	3	32	0	25	0
9:15	9:30	0	0	4	0	2	31	1	30	1
9:30	9:45	0	0	2	0	1	20	1	16	0
9:45	10:00	0	0	1	0	0	18	2	23	0
10:00	10:15	0	0	1	0	2	21	3	10	1
10:15	10:30	0	0	3	0	2	20	1	23	1
10:30	10:45	0	2	1	0	1	16	0	27	1

10:45	11:00	0	3	1	0	2	22	1	22	1
11:00	11:15	0	2	1	0	2	17	0	31	0
11:15	11:30	0	2	0	0	1	22	2	27	2
15:00	15:15	0	1	2	0	0	49	0	26	0
15:15	15:30	0	1	2	0	2	32	1	32	0
15:30	15:45	0	1	1	0	0	42	1	33	0
15:45	16:00	0	1	1	0	1	30	0	30	0
16:00	16:15	0	1	0	0	0	44	1	29	0
16:15	16:30	0	1	6	0	1	39	0	27	1
16:30	16:45	0	2	1	0	0	34	0	30	1
16:45	17:00	0	0	2	0	0	30	0	35	1
17:00	17:15	0	7	5	0	1	42	0	33	0
17:15	17:30	0	4	1	0	0	39	0	33	0
17:30	17:45	0	3	3	0	0	34	0	23	0
17:45	18:00	0	1	0	0	0	20	0	26	0
18:00	18:15	0	2	2	0	0	23	0	15	0
18:15	18:30	0	0	0	0	0	22	0	8	0
18:30	18:45	0	0	0	0	0	22	0	15	0
18:45	19:00	0	1	0	0	0	16	0	17	0

Peak Time		North Approach Styles St			East Approach Mitchell Av			West Approach Mitchell Av			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
8:30	9:30	0	2	5	0	10	119	3	122	3	264
15:00	16:00	0	4	6	0	3	153	2	121	0	289

Heavy Vehicles

Time		North Approach Styles St			East Approach Mitchell Av			West Approach Mitchell Av		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
7:30	7:45	0	4	0	0	0	6	0	1	4
7:45	8:00	0	2	0	0	0	2	0	2	1
8:00	8:15	0	1	0	0	0	2	0	3	2
8:15	8:30	0	3	1	0	1	2	0	2	1
8:30	8:45	0	0	0	0	1	3	0	3	1
8:45	9:00	0	2	0	0	0	4	0	3	3
9:00	9:15	0	2	1	0	2	0	1	4	3
9:15	9:30	0	6	1	0	2	1	1	3	4
9:30	9:45	0	2	2	0	1	3	0	2	0
9:45	10:00	0	3	1	0	2	3	0	4	7
10:00	10:15	0	1	2	0	1	3	1	4	3
10:15	10:30	0	4	1	0	0	3	0	2	2
10:30	10:45	0	3	1	0	1	4	0	3	1
10:45	11:00	0	1	0	0	1	3	0	3	2
11:00	11:15	0	3	1	0	2	3	0	2	10
11:15	11:30	0	2	2	0	1	3	0	5	2
15:00	15:15	0	3	2	0	0	3	0	3	3
15:15	15:30	0	0	1	0	1	4	0	6	1
15:30	15:45	0	1	0	0	1	3	0	4	1
15:45	16:00	0	2	1	0	1	1	0	0	1
16:00	16:15	0	1	0	0	3	5	0	2	3
16:15	16:30	0	5	0	0	0	0	0	2	1
16:30	16:45	0	0	2	0	1	1	0	1	2
16:45	17:00	0	2	0	0	0	2	0	0	2
17:00	17:15	0	1	0	0	1	0	0	3	1
17:15	17:30	0	2	0	0	1	0	0	2	0
17:30	17:45	0	2	0	0	0	1	0	0	1
17:45	18:00	0	0	1	0	0	0	0	0	0
18:00	18:15	0	1	1	0	0	0	0	1	2
18:15	18:30	0	2	0	0	0	0	0	0	2
18:30	18:45	0	0	0	0	0	0	0	0	1
18:45	19:00	0	0	0	0	0	0	0	0	1

Peak Time		North Approach Styles St			East Approach Mitchell Av			West Approach Mitchell Av			Peak
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	total
8:30	9:30	0	10	2	0	5	8	2	13	11	51
15:00	16:00	0	6	4	0	3	11	0	13	6	43

Cyclists

Time		North Approach Styles St			East Approach Mitchell Av			West Approach Mitchell Av		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
7:30	7:45	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0	1	0
10:30	10:45	0	0	0	0	0	0	0	0	0

10:45	11:00	0	0	0	0	0	0	0	0	0
11:00	11:15	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	2	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	1	0
16:00	16:15	0	0	0	0	0	1	0	0	0
16:15	16:30	0	1	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	1	0
17:45	18:00	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Mitchell Ave and Government Rd, Weston

GPS -32.805743, 151.466187

Date:	Wed 14/06/23
Weather:	Fine
Suburban:	Weston
Customer:	N/A

North:	Government Rd
East:	Mitchell Ave
South:	Government Rd
West:	Tenth St

Survey Period	AM:	7:30 AM-11:30 AM
	PM:	3:00 PM-7:00 PM
Traffic Peak	AM:	8:15 AM-9:15 AM
	PM:	3:15 PM-4:15 PM

All Vehicles

Time		North Approach Government Rd				East Approach Mitchell Ave				South Approach Government Rd				West Approach Tenth St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:30	7:45	0	2	25	20	0	24	1	12	0	8	40	0	0	0	0	0	535	
7:45	8:00	0	2	36	26	0	20	1	3	0	7	34	1	0	1	0	5	543	
8:00	8:15	0	1	24	27	0	15	2	7	0	7	26	2	0	2	1	4	574	
8:15	8:30	0	0	47	29	0	29	0	4	0	13	21	1	0	1	4	0	590	Peak
8:30	8:45	0	0	44	31	0	19	2	5	0	6	27	0	0	0	3	3	574	
8:45	9:00	0	2	45	30	0	28	0	12	0	9	38	0	0	0	2	1	524	
9:00	9:15	0	2	24	20	0	24	2	8	0	12	36	0	0	1	2	3	465	
9:15	9:30	0	1	28	23	1	26	2	11	0	12	20	3	0	1	2	3	433	
9:30	9:45	0	1	16	14	1	22	1	4	1	5	24	0	0	0	1	0	407	
9:45	10:00	0	0	21	30	0	17	0	6	0	4	29	0	0	0	1	0	409	
10:00	10:15	0	1	22	13	0	19	0	9	0	6	29	0	0	0	2	1	403	
10:15	10:30	0	0	26	19	0	15	2	9	0	5	28	0	0	0	3	0	412	
10:30	10:45	0	0	17	19	0	15	0	8	0	13	20	0	0	0	0	0	438	
10:45	11:00	0	0	12	19	0	23	1	6	0	9	27	2	0	1	0	2		
11:00	11:15	0	0	24	33	0	13	1	9	0	5	22	0	0	0	3	1		
11:15	11:30	0	0	35	27	0	19	3	8	0	10	28	0	0	0	2	1		
15:00	15:15	0	4	40	23	0	37	4	18	0	7	32	0	0	0	0	1	640	
15:15	15:30	0	4	41	25	0	25	0	12	0	13	44	0	0	0	2	3	648	Peak
15:30	15:45	0	2	42	29	0	44	1	6	0	7	33	0	0	0	1	3	635	
15:45	16:00	0	1	43	25	0	25	2	9	0	2	26	0	0	0	3	1	614	
16:00	16:15	0	1	43	28	0	34	6	13	0	5	38	2	0	0	2	2	632	
16:15	16:30	0	0	43	24	0	28	2	17	0	3	36	0	0	0	2	1	624	
16:30	16:45	0	2	37	25	0	27	1	7	0	5	36	2	0	1	3	1	617	
16:45	17:00	0	2	53	23	0	20	3	9	0	13	26	0	0	0	3	3	614	
17:00	17:15	0	6	46	25	1	33	3	17	0	8	23	0	0	3	1	0	572	
17:15	17:30	0	2	36	23	0	24	5	17	0	7	27	0	0	0	5	3	509	
17:30	17:45	0	4	57	19	0	27	2	10	0	3	19	2	0	0	1	0	446	
17:45	18:00	0	3	43	17	0	14	0	8	0	7	17	1	0	0	2	1	381	
18:00	18:15	0	6	24	15	0	19	3	6	0	3	27	0	0	0	0	0	340	
18:15	18:30	0	2	33	8	0	16	0	7	0	1	18	0	0	0	0	1		
18:30	18:45	0	3	20	9	0	15	1	6	0	6	14	2	0	0	1	2		
18:45	19:00	0	1	17	15	0	12	5	1	0	2	17	1	0	0	1	0		

Pedestrians Crossing

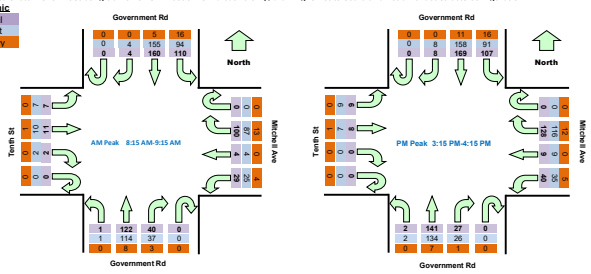
Time		Approach Governmt		Approach Mitchel		Approach Governmt		st Approach Tenth		Hourly Tot
Period Start	Period End	estbound	astbound	uthbound	orthbound	estbound	astbound	uthbound	orthbound	
7:30	7:45	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0	0	0
10:45	11:00	0	0	0	0	0	0	0	0	
11:00	11:15	0	0	0	0	0	0	0	0	
11:15	11:30	0	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	0	1
15:15	15:30	0	0	0	0	0	0	0	0	1
15:30	15:45	0	0	0	0	0	0	1	0	1
15:45	16:00	0	0	0	0	0	0	0	0	1
16:00	16:15	0	0	0	0	0	0	0	0	1
16:15	16:30	0	0	0	0	0	0	0	0	2
16:30	16:45	1	0	0	0	0	0	0	0	3
16:45	17:00	0	0	0	0	0	0	0	0	2
17:00	17:15	1	0	0	0	0	0	0	0	2
17:15	17:30	0	0	1	0	0	0	0	0	1
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	
18:30	18:45	0	0	0	0	0	0	0	0	
18:45	19:00	0	0	0	0	0	0	0	0	

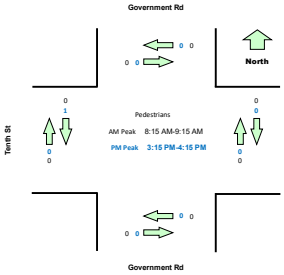
Peak Time		North Approach Government Rd				East Approach Mitchell Ave				South Approach Government Rd				West Approach Tenth St				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
8:15	9:15	0	4	160	110	0	100	4	29	0	40	122	1	0	2	11	7	590
15:15	16:15	0	8	169	107	0	128	9	40	0	27	141	2	0	0	8	9	648

Peak Time		Approach Governmt		Approach Mitchel		Approach Governmt		st Approach Tenth		Peak hour
Period Start	Period End	estbound	astbound	uthbound	orthbound	estbound	astbound	uthbound	orthbound	
8:15	9:15	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	1	0	1

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic: Total / Light / Heavy





Light Vehicles

Time		North Approach Government Rd				East Approach Mitchell Ave				South Approach Government Rd				West Approach Tenth St			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:30	7:45	0	2	24	17	0	17	1	9	0	7	34	0	0	0	0	0
7:45	8:00	0	2	34	23	0	15	1	3	0	7	31	1	0	1	0	5
8:00	8:15	0	1	24	21	0	13	2	7	0	7	24	2	0	2	1	4
8:15	8:30	0	0	47	28	0	23	0	4	0	12	19	1	0	1	3	0
8:30	8:45	0	0	41	27	0	18	2	4	0	5	26	0	0	0	3	3
8:45	9:00	0	2	44	26	0	23	0	10	0	8	36	0	0	0	2	1
9:00	9:15	0	2	23	13	0	23	2	7	0	12	33	0	0	1	2	3
9:15	9:30	0	0	27	17	1	20	2	10	0	11	20	3	0	1	2	3
9:30	9:45	0	1	16	11	1	20	0	1	0	5	22	0	0	0	1	0
9:45	10:00	0	0	18	19	0	14	0	4	0	3	27	0	0	0	1	0
10:00	10:15	0	0	22	8	0	15	0	7	0	4	26	0	0	0	1	1
10:15	10:30	0	0	25	16	0	11	2	6	0	4	27	0	0	0	3	0
10:30	10:45	0	0	16	15	0	10	0	7	0	12	19	0	0	0	0	0
10:45	11:00	0	0	12	13	0	18	1	6	0	9	25	2	0	1	0	2
11:00	11:15	0	0	22	21	0	8	1	8	0	5	21	0	0	0	3	1
11:15	11:30	0	0	33	22	0	15	3	6	0	7	26	0	0	0	2	1
15:00	15:15	0	4	36	17	0	32	4	17	0	7	31	0	0	0	0	1
15:15	15:30	0	4	40	18	0	21	0	12	0	13	42	0	0	0	2	3
15:30	15:45	0	2	41	24	0	41	1	5	0	7	30	0	0	0	1	3
15:45	16:00	0	1	39	24	0	23	2	7	0	2	26	0	0	0	3	1
16:00	16:15	0	1	38	25	0	31	6	11	0	4	36	2	0	0	1	2
16:15	16:30	0	0	42	21	0	23	2	17	0	3	34	0	0	0	2	1
16:30	16:45	0	2	34	23	0	26	1	7	0	4	32	2	0	1	3	1
16:45	17:00	0	2	53	21	0	19	3	7	0	13	26	0	0	0	3	3
17:00	17:15	0	6	45	22	0	32	3	17	0	8	20	0	0	3	1	0
17:15	17:30	0	2	36	20	0	22	5	17	0	7	25	0	0	0	5	3
17:30	17:45	0	4	55	19	0	25	2	10	0	3	19	2	0	0	1	0
17:45	18:00	0	3	41	17	0	14	0	8	0	7	17	1	0	0	2	1
18:00	18:15	0	6	24	12	0	18	3	6	0	3	26	0	0	0	0	0
18:15	18:30	0	2	32	6	0	15	0	7	0	1	17	0	0	0	0	1
18:30	18:45	0	3	19	8	0	15	1	6	0	6	13	2	0	0	1	2

18:45	19:00	0	1	17	14	0	12	5	1	0	2	17	1	0	0	1	0

Peak Time		North Approach Government Rd				East Approach Mitchell Ave				South Approach Government Rd				West Approach Tenth St				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:15	9:15	0	4	155	94	0	87	4	25	0	37	114	1	0	2	10	7	540
15:15	16:15	0	8	158	91	0	116	9	35	0	26	134	2	0	0	7	9	595

Heavy Vehicles

Time		North Approach Government Rd				East Approach Mitchell Ave				South Approach Government Rd				West Approach Tenth St			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:30	7:45	0	0	1	3	0	7	0	3	0	1	6	0	0	0	0	0
7:45	8:00	0	0	2	3	0	5	0	0	0	0	3	0	0	0	0	0
8:00	8:15	0	0	0	6	0	2	0	0	0	0	2	0	0	0	0	0
8:15	8:30	0	0	0	1	0	6	0	0	0	1	2	0	0	0	1	0
8:30	8:45	0	0	3	4	0	1	0	1	0	1	1	0	0	0	0	0
8:45	9:00	0	0	1	4	0	5	0	2	0	1	2	0	0	0	0	0
9:00	9:15	0	0	1	7	0	1	0	1	0	0	3	0	0	0	0	0
9:15	9:30	0	1	1	6	0	6	0	1	0	1	0	0	0	0	0	0
9:30	9:45	0	0	0	3	0	2	1	3	1	0	2	0	0	0	0	0
9:45	10:00	0	0	3	11	0	3	0	2	0	1	2	0	0	0	0	0
10:00	10:15	0	1	0	5	0	4	0	2	0	2	3	0	0	0	1	0
10:15	10:30	0	0	1	3	0	4	0	3	0	1	1	0	0	0	0	0
10:30	10:45	0	0	1	4	0	5	0	1	0	1	1	0	0	0	0	0
10:45	11:00	0	0	0	6	0	5	0	0	0	0	2	0	0	0	0	0
11:00	11:15	0	0	2	12	0	5	0	1	0	0	1	0	0	0	0	0
11:15	11:30	0	0	2	5	0	4	0	2	0	3	2	0	0	0	0	0
15:00	15:15	0	0	4	6	0	5	0	1	0	0	1	0	0	0	0	0
15:15	15:30	0	0	1	7	0	4	0	0	0	0	2	0	0	0	0	0
15:30	15:45	0	0	1	5	0	3	0	1	0	0	3	0	0	0	0	0
15:45	16:00	0	0	4	1	0	2	0	2	0	0	0	0	0	0	0	0
16:00	16:15	0	0	5	3	0	3	0	2	0	1	2	0	0	0	1	0
16:15	16:30	0	0	1	3	0	5	0	0	0	0	2	0	0	0	0	0
16:30	16:45	0	0	3	2	0	1	0	0	0	1	4	0	0	0	0	0
16:45	17:00	0	0	0	2	0	1	0	2	0	0	0	0	0	0	0	0
17:00	17:15	0	0	1	3	1	1	0	0	0	0	3	0	0	0	0	0
17:15	17:30	0	0	0	3	0	2	0	0	0	0	2	0	0	0	0	0
17:30	17:45	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	3	0	1	0	0	0	0	1	0	0	0	0	0
18:15	18:30	0	0	1	2	0	1	0	0	0	0	1	0	0	0	0	0
18:30	18:45	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0
18:45	19:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

Peak Time		North Approach Government Rd				East Approach Mitchell Ave				South Approach Government Rd				West Approach Tenth St				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:15	9:15	0	0	5	16	0	13	0	4	0	3	8	0	0	0	1	0	50
15:15	16:15	0	0	11	16	0	12	0	5	0	1	7	0	0	0	1	0	53

Cyclists

Time		North Approach Government Rd				East Approach Mitchell Ave				South Approach Government Rd				West Approach Tenth St			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Hart Rd and Sawyers Gully Rd, Loxford

GPS -32.801688, 151.466539

Date:	Wed 14/06/23
Weather:	Fine
Suburban:	Loxford
Customer:	N/A

North:	Sawyers Gully Rd
East:	Hart Rd
South:	Government Rd
West:	Gingers Ln

Survey Period	AM:	7:30 AM-11:30 AM
	PM:	3:00 PM-7:00 PM
Traffic Peak	AM:	7:30 AM-8:30 AM
	PM:	3:30 PM-4:30 PM

All Vehicles

Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:30	7:45	0	1	9	10	0	6	132	26	0	34	25	7	0	10	124	2	1486	Peak
7:45	8:00	0	0	20	9	0	7	122	37	0	37	19	4	0	7	123	1	1435	
8:00	8:15	0	1	19	17	0	11	116	25	0	23	18	3	0	10	104	1	1373	
8:15	8:30	0	1	18	13	0	10	113	38	0	21	24	8	0	19	99	2	1292	
8:30	8:45	0	0	22	11	2	12	93	30	0	18	23	9	0	22	91	2	1206	
8:45	9:00	1	5	29	6	0	7	72	23	0	29	19	17	0	24	90	2	1088	
9:00	9:15	0	1	12	9	0	13	62	17	0	24	18	19	0	15	77	0	975	
9:15	9:30	0	2	15	10	0	2	61	24	0	19	24	10	0	13	99	1	941	
9:30	9:45	0	1	17	10	0	9	42	8	0	14	17	12	0	6	81	0	888	
9:45	10:00	0	0	11	4	0	8	35	28	0	23	15	8	0	13	64	2	853	
10:00	10:15	0	2	12	9	0	4	62	15	0	24	15	11	0	9	69	1	832	
10:15	10:30	0	0	16	13	0	4	43	15	0	19	13	10	0	13	81	0	794	
10:30	10:45	0	1	13	6	0	3	43	10	0	14	12	8	0	13	59	0	797	
10:45	11:00	0	3	8	11	0	3	40	17	0	23	15	15	0	4	51	0		
11:00	11:15	0	1	14	2	2	9	43	27	0	15	11	9	0	18	43	1		
11:15	11:30	1	3	31	6	0	7	32	19	0	22	16	12	0	10	70	1		
15:00	15:15	0	1	26	9	0	14	109	33	0	31	23	14	0	8	69	1	1548	
15:15	15:30	0	3	24	19	1	12	102	28	0	27	26	15	0	16	116	1	1610	
15:30	15:45	0	1	25	12	0	18	118	38	0	32	27	21	0	12	114	2	1650	Peak
15:45	16:00	0	2	30	10	0	12	126	28	0	24	13	12	0	7	135	1	1613	
16:00	16:15	0	1	34	18	0	6	107	25	0	31	27	20	0	11	119	1	1633	
16:15	16:30	0	1	21	10	0	19	156	32	0	22	16	24	0	12	117	0	1600	
16:30	16:45	0	2	26	12	0	16	137	24	0	26	18	17	0	17	87	1	1564	
16:45	17:00	0	3	26	14	1	18	130	32	0	21	18	14	0	20	123	0	1525	
17:00	17:15	0	1	19	8	1	5	128	43	0	24	16	16	0	13	92	1	1391	
17:15	17:30	0	0	25	12	1	14	137	25	0	23	9	19	0	12	116	1	1295	
17:30	17:45	0	0	23	9	1	12	123	42	0	23	13	12	0	16	70	0	1121	
17:45	18:00	0	2	23	5	0	10	116	25	0	5	11	14	0	13	61	1	939	
18:00	18:15	0	0	10	6	0	7	96	27	0	17	15	15	0	8	70	0	797	
18:15	18:30	0	0	11	3	0	6	84	24	0	14	9	11	0	5	51	2		
18:30	18:45	0	0	6	3	0	5	62	20	0	8	9	12	0	7	30	0		
18:45	19:00	1	1	10	2	0	2	42	17	0	8	9	14	0	7	29	2		

Peak Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:30	8:30	0	3	66	49	0	34	483	126	0	115	86	22	0	46	450	6	1486
15:30	16:30	0	5	110	50	0	55	507	123	0	109	83	77	0	42	485	4	1650

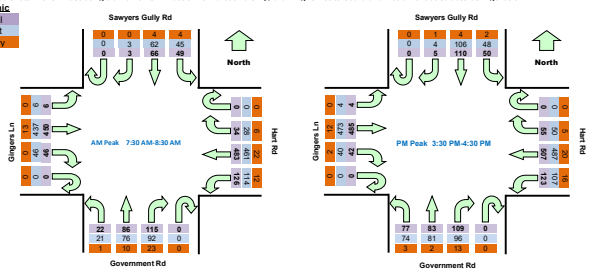
Pedestrians Crossing

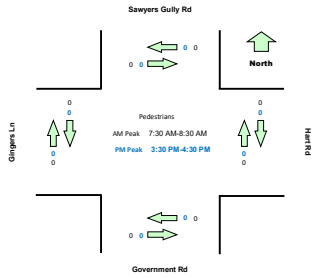
Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln				Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15	11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Peak Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln				Peak hour
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:30	8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic: Total / Light / Heavy





Light Vehicles

Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:30	7:45	0	1	8	9	0	5	124	23	0	28	20	6	0	10	119	2
7:45	8:00	0	0	19	8	0	7	119	33	0	30	17	4	0	7	118	1
8:00	8:15	0	1	18	17	0	9	107	20	0	20	17	3	0	10	102	1
8:15	8:30	0	1	17	11	0	7	111	38	0	14	22	8	0	19	98	2
8:30	8:45	0	0	21	11	2	12	87	25	0	16	23	9	0	20	88	1
8:45	9:00	0	4	27	5	0	6	70	21	0	25	18	15	0	23	85	2
9:00	9:15	0	1	10	9	0	12	58	12	0	22	17	19	0	15	74	0
9:15	9:30	0	2	13	8	0	2	57	18	0	15	22	9	0	13	92	1
9:30	9:45	0	1	15	9	0	7	40	7	0	11	16	12	0	6	76	0
9:45	10:00	0	0	11	3	0	8	31	15	0	20	14	6	0	12	61	1
10:00	10:15	0	2	10	7	0	3	59	10	0	18	14	11	0	9	65	1
10:15	10:30	0	0	15	13	0	3	40	14	0	16	12	9	0	12	78	0
10:30	10:45	0	1	11	5	0	2	42	7	0	10	10	8	0	13	55	0
10:45	11:00	0	3	7	9	0	1	37	12	0	17	14	15	0	4	45	0
11:00	11:15	0	0	13	1	1	8	39	15	0	10	10	9	0	18	41	1
11:15	11:30	1	3	31	4	0	4	32	13	0	18	14	12	0	9	70	0
15:00	15:15	0	1	23	8	0	12	109	27	0	26	22	14	0	7	64	1
15:15	15:30	0	3	22	18	1	12	99	21	0	24	23	15	0	16	114	1
15:30	15:45	0	1	24	12	0	16	115	35	0	28	26	21	0	11	110	2
15:45	16:00	0	2	30	9	0	11	121	23	0	23	12	12	0	7	129	1
16:00	16:15	0	1	32	18	0	6	100	19	0	28	27	18	0	11	117	1
16:15	16:30	0	0	20	9	0	17	151	30	0	17	16	23	0	11	117	0
16:30	16:45	0	2	24	11	0	16	134	21	0	21	18	17	0	17	86	1
16:45	17:00	0	3	26	14	1	17	126	30	0	20	18	13	0	20	121	0
17:00	17:15	0	1	19	7	1	4	126	39	0	23	13	16	0	13	91	1
17:15	17:30	0	0	24	12	1	13	137	23	0	21	9	18	0	12	115	1
17:30	17:45	0	0	23	9	1	11	123	40	0	20	13	12	0	16	69	0
17:45	18:00	0	2	22	5	0	10	114	24	0	5	11	14	0	13	60	0
18:00	18:15	0	0	9	6	0	6	95	25	0	16	14	15	0	8	68	0
18:15	18:30	0	0	10	3	0	6	84	23	0	11	9	11	0	5	50	2
18:30	18:45	0	0	6	2	0	5	60	19	0	7	9	12	0	6	28	0

18:45	19:00	1	1	9	2	0	2	40	17	0	8	9	14	0	7	29	2

Peak Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:30	8:30	0	3	62	45	0	28	461	114	0	92	76	21	0	46	437	6	1391
15:30	16:30	0	4	106	48	0	50	487	107	0	96	81	74	0	40	473	4	1570

Heavy Vehicles

Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:30	7:45	0	0	1	1	0	1	8	3	0	6	5	1	0	0	5	0
7:45	8:00	0	0	1	1	0	0	3	4	0	7	2	0	0	0	5	0
8:00	8:15	0	0	1	0	0	2	9	5	0	3	1	0	0	0	2	0
8:15	8:30	0	0	1	2	0	3	2	0	0	7	2	0	0	0	1	0
8:30	8:45	0	0	1	0	0	0	6	5	0	2	0	0	0	2	3	1
8:45	9:00	1	1	2	1	0	1	2	2	0	4	1	2	0	1	5	0
9:00	9:15	0	0	2	0	0	1	4	5	0	2	1	0	0	0	3	0
9:15	9:30	0	0	2	2	0	0	4	6	0	4	2	1	0	0	7	0
9:30	9:45	0	0	2	1	0	2	2	1	0	3	1	0	0	0	5	0
9:45	10:00	0	0	0	1	0	0	4	13	0	3	1	2	0	1	3	1
10:00	10:15	0	0	2	2	0	1	3	5	0	6	1	0	0	0	4	0
10:15	10:30	0	0	1	0	0	1	3	1	0	3	1	1	0	1	3	0
10:30	10:45	0	0	2	1	0	1	1	3	0	4	2	0	0	0	4	0
10:45	11:00	0	0	1	2	0	2	3	5	0	6	1	0	0	0	6	0
11:00	11:15	0	1	1	1	1	1	4	12	0	5	1	0	0	0	2	0
11:15	11:30	0	0	0	2	0	3	0	6	0	4	2	0	0	1	0	1
15:00	15:15	0	0	3	1	0	2	0	6	0	5	1	0	0	1	5	0
15:15	15:30	0	0	2	1	0	0	3	7	0	3	3	0	0	0	2	0
15:30	15:45	0	0	1	0	0	2	3	3	0	4	1	0	0	1	4	0
15:45	16:00	0	0	0	1	0	1	5	5	0	1	1	0	0	0	6	0
16:00	16:15	0	0	2	0	0	0	7	6	0	3	0	2	0	0	2	0
16:15	16:30	0	1	1	1	0	2	5	2	0	5	0	1	0	1	0	0
16:30	16:45	0	0	2	1	0	0	3	3	0	5	0	0	0	0	1	0
16:45	17:00	0	0	0	0	0	1	4	2	0	1	0	1	0	0	2	0
17:00	17:15	0	0	0	1	0	1	2	4	0	1	3	0	0	0	1	0
17:15	17:30	0	0	1	0	0	1	0	2	0	2	0	1	0	0	1	0
17:30	17:45	0	0	0	0	0	1	0	2	0	3	0	0	0	0	1	0
17:45	18:00	0	0	1	0	0	0	2	1	0	0	0	0	0	0	1	1
18:00	18:15	0	0	1	0	0	1	1	2	0	1	1	0	0	0	2	0
18:15	18:30	0	0	1	0	0	0	0	1	0	3	0	0	0	0	1	0
18:30	18:45	0	0	0	1	0	0	2	1	0	1	0	0	0	1	2	0
18:45	19:00	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0

Peak Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:30	8:30	0	0	4	4	0	6	22	12	0	23	10	1	0	0	13	0	95
15:30	16:30	0	1	4	2	0	5	20	16	0	13	2	3	0	2	12	0	80

Cyclists

Time		North Approach Sawyers Gully Rd				East Approach Hart Rd				South Approach Government Rd				West Approach Gingers Ln			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:30	7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Hart Rd and Hunter Expy Off-Ramp, Loxfo

GPS -32.797771, 151.474461

Date:	Wed 14/06/23
Weather:	Fine
Suburban:	Loxford
Customer:	N/A

North:	Hart Rd
East:	Hunter Expy Off-Ramp
South:	Hart Rd
West:	N/A

Survey Period	AM:	7:30 AM-11:30 AM
	PM:	3:00 PM-7:00 PM
Traffic Peak	AM:	7:30 AM-8:30 AM
	PM:	3:30 PM-4:30 PM

All Vehicles

Time		North Approach Hart Rd			Approach Hunter Expy Off-			South Approach Hart Rd			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
7:30	7:45	0	1	0	0	11	163	0	0	161	1303	Peak
7:45	8:00	0	0	0	0	15	166	0	0	177	1220	
8:00	8:15	0	4	0	0	9	154	0	0	142	1100	
8:15	8:30	0	0	0	0	5	159	0	0	136	1008	
8:30	8:45	0	3	0	0	3	128	0	0	119	928	
8:45	9:00	0	1	0	0	12	101	0	0	124	848	
9:00	9:15	0	1	0	0	6	94	0	0	116	774	
9:15	9:30	0	3	0	0	8	85	0	0	124	753	
9:30	9:45	0	2	0	0	5	58	0	0	108	707	
9:45	10:00	0	5	0	0	6	64	0	0	89	682	
10:00	10:15	0	2	0	0	9	81	0	0	104	676	
10:15	10:30	0	1	0	0	4	60	0	0	109	628	
10:30	10:45	0	0	0	0	6	59	0	0	83	619	
10:45	11:00	0	7	0	0	8	54	0	0	89		
11:00	11:15	0	0	0	0	8	77	0	0	63		
11:15	11:30	0	2	0	0	8	60	0	0	95		
15:00	15:15	0	3	0	0	6	156	0	0	109	1249	
15:15	15:30	0	3	0	0	4	141	0	0	165	1291	
15:30	15:45	0	6	0	0	4	160	0	0	156	1342	Peak
15:45	16:00	0	2	0	0	2	165	0	0	167	1318	
16:00	16:15	0	3	0	0	3	143	0	0	167	1315	
16:15	16:30	0	6	0	0	3	202	0	0	153	1306	
16:30	16:45	0	4	0	0	2	171	0	0	125	1274	
16:45	17:00	0	15	0	0	1	165	0	0	152	1247	
17:00	17:15	0	7	0	0	1	171	0	0	128	1136	
17:15	17:30	0	4	0	0	1	176	0	0	151	1048	
17:30	17:45	0	6	0	0	1	170	0	0	98	899	
17:45	18:00	0	0	0	0	0	147	0	0	75	749	
18:00	18:15	0	1	0	0	1	126	0	0	91	632	
18:15	18:30	0	0	0	0	0	114	0	0	69		
18:30	18:45	0	0	0	0	0	86	0	0	39		
18:45	19:00	0	0	0	0	0	62	0	0	43		

Peak Time		North Approach Hart Rd			Approach Hunter Expy Off-			South Approach Hart Rd			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
7:30	8:30	0	5	0	0	40	642	0	0	616	1303
15:30	16:30	0	17	0	0	12	670	0	0	643	1342

Pedestrians Crossing

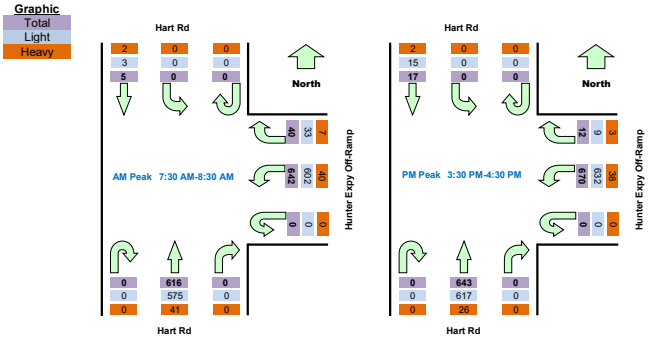
Time		th Approach Har		oach Hunter Expy		th Approach Har		Hourly Tot
Period Start	Period End	Vestbour	astboun	orthboun	outhbou	Vestbour	astboun	
7:30	7:45	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0
10:45	11:00	0	0	0	0	0	0	
11:00	11:15	0	0	0	0	0	0	
11:15	11:30	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	
18:30	18:45	0	0	0	0	0	0	
18:45	19:00	0	0	0	0	0	0	

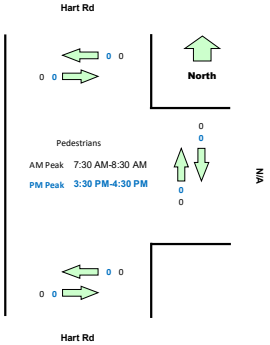
Peak Time		th Approach Har		oach Hunter Expy		th Approach Har		Peak
Period Start	Period End	Vestbour	astboun	orthboun	outhbou	Vestbour	astboun	total
7:30	8:30	0	0	0	0	0	0	0
15:30	16:30	0	0	0	0	0	0	0

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach Hart Rd			Approach Hunter Expy Off-			South Approach Hart Rd		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:30	7:45	0	1	0	0	9	151	0	0	148
7:45	8:00	0	0	0	0	12	158	0	0	165
8:00	8:15	0	2	0	0	7	140	0	0	136
8:15	8:30	0	0	0	0	5	153	0	0	126
8:30	8:45	0	1	0	0	0	119	0	0	113
8:45	9:00	0	0	0	0	7	96	0	0	114
9:00	9:15	0	1	0	0	4	84	0	0	110
9:15	9:30	0	2	0	0	4	75	0	0	111
9:30	9:45	0	1	0	0	2	53	0	0	98
9:45	10:00	0	3	0	0	1	49	0	0	83
10:00	10:15	0	1	0	0	4	72	0	0	92
10:15	10:30	0	1	0	0	0	54	0	0	102
10:30	10:45	0	0	0	0	2	53	0	0	73

10:45	11:00	0	2	0	0	5	48	0	0	75
11:00	11:15	0	0	0	0	2	60	0	0	53
11:15	11:30	0	1	0	0	4	51	0	0	90
15:00	15:15	0	2	0	0	2	149	0	0	99
15:15	15:30	0	3	0	0	2	132	0	0	158
15:30	15:45	0	5	0	0	3	153	0	0	149
15:45	16:00	0	2	0	0	2	155	0	0	159
16:00	16:15	0	3	0	0	1	129	0	0	161
16:15	16:30	0	5	0	0	3	195	0	0	148
16:30	16:45	0	4	0	0	2	165	0	0	119
16:45	17:00	0	14	0	0	1	158	0	0	148
17:00	17:15	0	7	0	0	1	165	0	0	124
17:15	17:30	0	4	0	0	1	174	0	0	149
17:30	17:45	0	6	0	0	1	167	0	0	95
17:45	18:00	0	0	0	0	0	144	0	0	74
18:00	18:15	0	1	0	0	1	122	0	0	87
18:15	18:30	0	0	0	0	0	113	0	0	66
18:30	18:45	0	0	0	0	0	83	0	0	35
18:45	19:00	0	0	0	0	0	60	0	0	42

Peak Time		North Approach Hart Rd			Approach Hunter Expy Off-			South Approach Hart Rd			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
7:30	8:30	0	3	0	0	33	602	0	0	575	1213
15:30	16:30	0	15	0	0	9	632	0	0	617	1273

Heavy Vehicles

Time		North Approach Hart Rd			Approach Hunter Expy Off-			South Approach Hart Rd		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:30	7:45	0	0	0	0	2	12	0	0	13
7:45	8:00	0	0	0	0	3	8	0	0	12
8:00	8:15	0	2	0	0	2	14	0	0	6
8:15	8:30	0	0	0	0	0	6	0	0	10
8:30	8:45	0	2	0	0	3	9	0	0	6
8:45	9:00	0	1	0	0	5	5	0	0	10
9:00	9:15	0	0	0	0	2	10	0	0	6
9:15	9:30	0	1	0	0	4	10	0	0	13
9:30	9:45	0	1	0	0	3	5	0	0	10
9:45	10:00	0	2	0	0	5	15	0	0	6
10:00	10:15	0	1	0	0	5	9	0	0	12
10:15	10:30	0	0	0	0	4	6	0	0	7
10:30	10:45	0	0	0	0	4	6	0	0	10
10:45	11:00	0	5	0	0	3	6	0	0	14
11:00	11:15	0	0	0	0	6	17	0	0	10
11:15	11:30	0	1	0	0	4	9	0	0	5
15:00	15:15	0	1	0	0	4	7	0	0	10
15:15	15:30	0	0	0	0	2	9	0	0	7
15:30	15:45	0	1	0	0	1	7	0	0	7
15:45	16:00	0	0	0	0	0	10	0	0	8
16:00	16:15	0	0	0	0	2	14	0	0	6
16:15	16:30	0	1	0	0	0	7	0	0	5
16:30	16:45	0	0	0	0	0	6	0	0	6
16:45	17:00	0	1	0	0	0	7	0	0	4
17:00	17:15	0	0	0	0	0	6	0	0	4
17:15	17:30	0	0	0	0	0	2	0	0	2
17:30	17:45	0	0	0	0	0	3	0	0	3
17:45	18:00	0	0	0	0	0	3	0	0	1
18:00	18:15	0	0	0	0	0	4	0	0	4
18:15	18:30	0	0	0	0	0	1	0	0	3
18:30	18:45	0	0	0	0	0	3	0	0	4
18:45	19:00	0	0	0	0	0	2	0	0	1

Peak Time		North Approach Hart Rd			Approach Hunter Expy Off-			South Approach Hart Rd			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
7:30	8:30	0	2	0	0	7	40	0	0	41	90
15:30	16:30	0	2	0	0	3	38	0	0	26	69

Cyclists

Time		North Approach Hart Rd			Approach Hunter Expy Off-			South Approach Hart Rd		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:30	7:45	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0	0	0

10:45	11:00	0	0	0	0	0	0	0	0	0
11:00	11:15	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	0	0	0
18:30	18:45	0	0	0	0	0	0	0	0	0
18:45	19:00	0	0	0	0	0	0	0	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Hart Rd and Hunter Expy On-Ramp, Loxfo

GPS	-32.796813, 151.476133
Date:	Wed 14/06/23
Weather:	Fine
Suburban:	Loxford
Customer:	N/A

North:	Hart Rd
East:	Hunter Expy On-Ramp
South:	Hart Rd
West:	N/A

Survey Period	AM:	7:30 AM-11:30 AM
	PM:	3:00 PM-7:00 PM
Traffic Peak	AM:	7:30 AM-8:30 AM
	PM:	4:30 PM-5:30 PM

All Vehicles

Time		North Approach Hart Rd			Approach Hunter Expy On-			South Approach Hart Rd			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
7:30	7:45	0	1	4	0	0	0	0	157	15	682	Peak
7:45	8:00	0	0	5	0	0	0	0	174	18	630	
8:00	8:15	0	4	5	0	0	0	0	139	12	575	
8:15	8:30	0	0	7	0	0	0	0	134	7	542	
8:30	8:45	0	3	0	0	0	0	0	116	6	535	
8:45	9:00	0	1	5	0	0	0	0	121	15	533	
9:00	9:15	0	1	4	0	0	0	0	113	9	499	
9:15	9:30	0	3	6	0	0	0	0	122	10	493	
9:30	9:45	0	2	8	0	0	0	0	104	9	471	
9:45	10:00	0	5	8	0	0	0	0	87	8	448	
10:00	10:15	0	2	6	0	0	0	0	100	13	450	
10:15	10:30	0	1	5	0	0	0	0	107	6	405	
10:30	10:45	0	0	11	0	0	0	0	79	10	399	
10:45	11:00	0	7	6	0	0	0	0	91	6		
11:00	11:15	0	0	5	0	0	0	0	60	11		
11:15	11:30	0	2	8	0	0	0	0	91	12		
15:00	15:15	0	3	12	0	0	0	0	109	6	683	
15:15	15:30	0	3	17	0	0	0	0	163	6	743	
15:30	15:45	0	6	12	0	0	0	0	155	5	724	
15:45	16:00	0	1	16	0	0	0	1	167	1	693	
16:00	16:15	0	3	17	0	0	0	0	165	5	772	
16:15	16:30	0	6	8	0	0	0	0	152	4	788	
16:30	16:45	0	4	16	0	0	0	0	123	4	795	Peak
16:45	17:00	0	15	97	0	0	0	0	150	3	764	
17:00	17:15	0	7	70	0	0	0	0	124	5	577	
17:15	17:30	0	4	21	0	0	0	0	150	2	465	
17:30	17:45	0	6	11	0	0	0	0	97	2	359	
17:45	18:00	0	0	3	0	0	0	0	75	0	282	
18:00	18:15	0	1	1	0	0	0	0	92	0	247	
18:15	18:30	0	0	2	0	0	0	0	68	1		
18:30	18:45	0	0	0	0	0	0	0	39	0		
18:45	19:00	0	0	0	0	0	0	0	43	0		

Peak Time		North Approach Hart Rd			Approach Hunter Expy On-			South Approach Hart Rd			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
7:30	8:30	0	5	21	0	0	0	0	604	52	682
16:30	17:30	0	30	204	0	0	0	0	547	14	795

Pedestrians Crossing

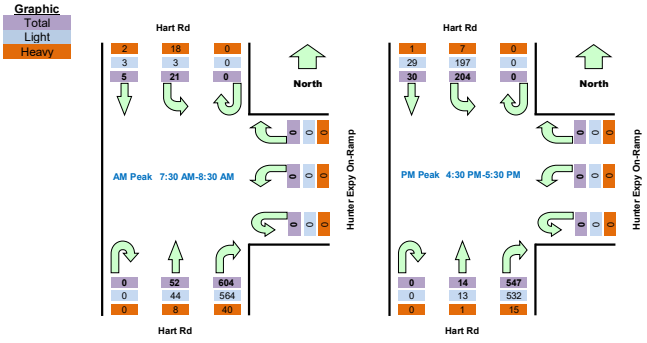
Time		th Approach Har		oach Hunter Expy		th Approach Har		Hourly Tot
Period Start	Period End	/estbour	astboun	orthboun	outhboun	/estbour	astboun	
7:30	7:45	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0
10:45	11:00	0	0	0	0	0	0	
11:00	11:15	0	0	0	0	0	0	
11:15	11:30	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0
18:00	18:15	0	0	0	0	0	0	0
18:15	18:30	0	0	0	0	0	0	
18:30	18:45	0	0	0	0	0	0	
18:45	19:00	0	0	0	0	0	0	0

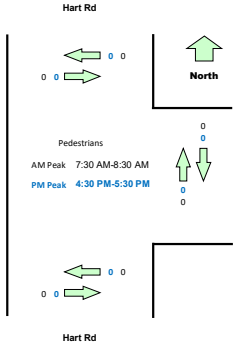
Peak Time		th Approach Har		oach Hunter Expy		th Approach Har		Peak total
Period Start	Period End	/estbour	astboun	orthboun	outhboun	/estbour	astboun	
7:30	8:30	0	0	0	0	0	0	0
16:30	17:30	0	0	0	0	0	0	0

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach Hart Rd			Approach Hunter Expy On-			South Approach Hart Rd		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:30	7:45	0	1	0	0	0	0	0	145	12
7:45	8:00	0	0	2	0	0	0	0	162	15
8:00	8:15	0	2	0	0	0	0	0	133	10
8:15	8:30	0	0	1	0	0	0	0	124	7
8:30	8:45	0	1	0	0	0	0	0	111	2
8:45	9:00	0	0	2	0	0	0	0	112	9
9:00	9:15	0	1	2	0	0	0	0	107	7
9:15	9:30	0	2	4	0	0	0	0	110	5
9:30	9:45	0	1	3	0	0	0	0	96	4
9:45	10:00	0	3	3	0	0	0	0	82	2
10:00	10:15	0	1	1	0	0	0	0	91	5
10:15	10:30	0	1	2	0	0	0	0	101	1
10:30	10:45	0	0	3	0	0	0	0	70	5

10:45	11:00	0	2	2	0	0	0	0	77	3
11:00	11:15	0	0	3	0	0	0	0	51	4
11:15	11:30	0	1	2	0	0	0	0	87	7
15:00	15:15	0	2	8	0	0	0	0	99	2
15:15	15:30	0	3	13	0	0	0	0	156	4
15:30	15:45	0	5	12	0	0	0	0	148	4
15:45	16:00	0	1	13	0	0	0	1	159	1
16:00	16:15	0	3	17	0	0	0	0	159	3
16:15	16:30	0	5	7	0	0	0	0	147	4
16:30	16:45	0	4	13	0	0	0	0	118	3
16:45	17:00	0	14	94	0	0	0	0	146	3
17:00	17:15	0	7	69	0	0	0	0	120	5
17:15	17:30	0	4	21	0	0	0	0	148	2
17:30	17:45	0	6	11	0	0	0	0	94	2
17:45	18:00	0	0	3	0	0	0	0	74	0
18:00	18:15	0	1	1	0	0	0	0	88	0
18:15	18:30	0	0	2	0	0	0	0	65	1
18:30	18:45	0	0	0	0	0	0	0	35	0
18:45	19:00	0	0	0	0	0	0	0	42	0

Peak Time		North Approach Hart Rd			Approach Hunter Expy On-			South Approach Hart Rd			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
7:30	8:30	0	3	3	0	0	0	0	564	44	614
16:30	17:30	0	29	197	0	0	0	0	532	13	771

Heavy Vehicles

Time		North Approach Hart Rd			Approach Hunter Expy On-			South Approach Hart Rd		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:30	7:45	0	0	4	0	0	0	0	12	3
7:45	8:00	0	0	3	0	0	0	0	12	3
8:00	8:15	0	2	5	0	0	0	0	6	2
8:15	8:30	0	0	6	0	0	0	0	10	0
8:30	8:45	0	2	0	0	0	0	0	5	4
8:45	9:00	0	1	3	0	0	0	0	9	6
9:00	9:15	0	0	2	0	0	0	0	6	2
9:15	9:30	0	1	2	0	0	0	0	12	5
9:30	9:45	0	1	5	0	0	0	0	8	5
9:45	10:00	0	2	5	0	0	0	0	5	6
10:00	10:15	0	1	5	0	0	0	0	9	8
10:15	10:30	0	0	3	0	0	0	0	6	5
10:30	10:45	0	0	8	0	0	0	0	9	5
10:45	11:00	0	5	4	0	0	0	0	14	3
11:00	11:15	0	0	2	0	0	0	0	9	7
11:15	11:30	0	1	6	0	0	0	0	4	5
15:00	15:15	0	1	4	0	0	0	0	10	4
15:15	15:30	0	0	4	0	0	0	0	7	2
15:30	15:45	0	1	0	0	0	0	0	7	1
15:45	16:00	0	0	3	0	0	0	0	8	0
16:00	16:15	0	0	0	0	0	0	0	6	2
16:15	16:30	0	1	1	0	0	0	0	5	0
16:30	16:45	0	0	3	0	0	0	0	5	1
16:45	17:00	0	1	3	0	0	0	0	4	0
17:00	17:15	0	0	1	0	0	0	0	4	0
17:15	17:30	0	0	0	0	0	0	0	2	0
17:30	17:45	0	0	0	0	0	0	0	3	0
17:45	18:00	0	0	0	0	0	0	0	1	0
18:00	18:15	0	0	0	0	0	0	0	4	0
18:15	18:30	0	0	0	0	0	0	0	3	0
18:30	18:45	0	0	0	0	0	0	0	4	0
18:45	19:00	0	0	0	0	0	0	0	1	0

Peak Time		North Approach Hart Rd			Approach Hunter Expy On-			South Approach Hart Rd			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
7:30	8:30	0	2	18	0	0	0	0	40	8	68
16:30	17:30	0	1	7	0	0	0	0	15	1	24

Cyclists

Time		North Approach Hart Rd			Approach Hunter Expy On-			South Approach Hart Rd		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
7:30	7:45	0	0	0	0	0	0	0	0	0
7:45	8:00	0	0	0	0	0	0	0	0	0
8:00	8:15	0	0	0	0	0	0	0	0	0
8:15	8:30	0	0	0	0	0	0	0	0	0
8:30	8:45	0	0	0	0	0	0	0	0	0
8:45	9:00	0	0	0	0	0	0	0	0	0
9:00	9:15	0	0	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	0	0	0
9:30	9:45	0	0	0	0	0	0	0	0	0
9:45	10:00	0	0	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	0	0	0
10:15	10:30	0	0	0	0	0	0	0	0	0
10:30	10:45	0	0	0	0	0	0	0	0	0

10:45	11:00	0	0	0	0	0	0	0	0	0
11:00	11:15	0	0	0	0	0	0	0	0	0
11:15	11:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
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Attachment B

Design review and swept path assessment

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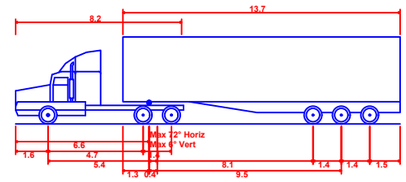
COMMENTS

A3

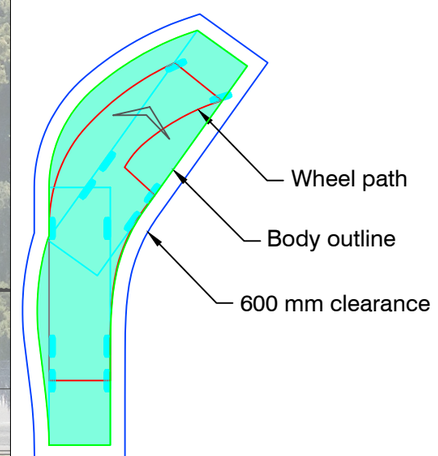
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



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1	05/11/24	FOR INFORMATION	JM	AU
8	21/01/25	FOR INFORMATION	JM	AU

PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
External deliveries to material processing shed
Incoming and outgoing

CLIENT:	Central Waste Station
DRG. #:	EMM-001
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

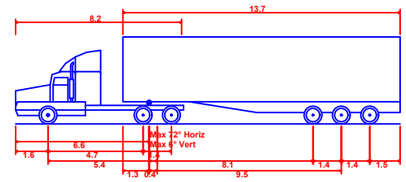
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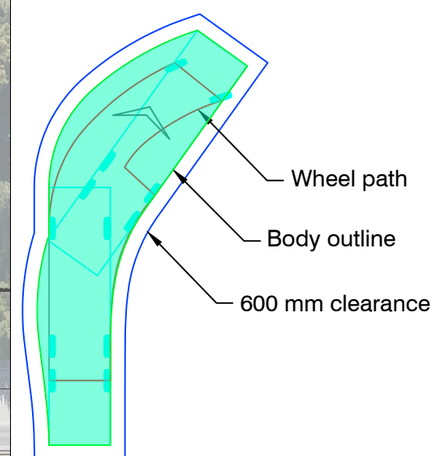
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



0 20 40 m

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PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
External movements to/from the east for local area deliveries
Incoming and outgoing

CLIENT:	Central Waste Station
DRG. #:	EMM-002
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

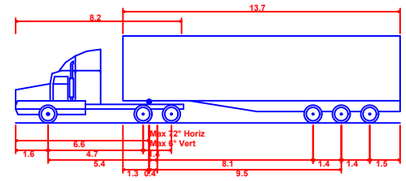
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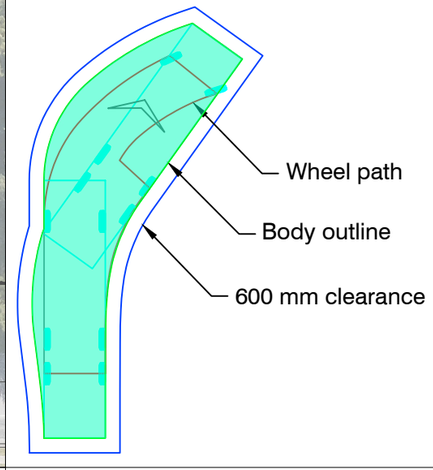
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



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1	05/11/24	FOR INFORMATION	JM	AU	8	21/01/25	FOR INFORMATION	JM	AU

PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
External vehicle collecting packaged residual materials of known weight
Inbound movement via weighbridge

CLIENT:	Central Waste Station
DRG. #:	EMM-003
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

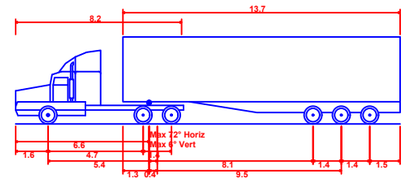
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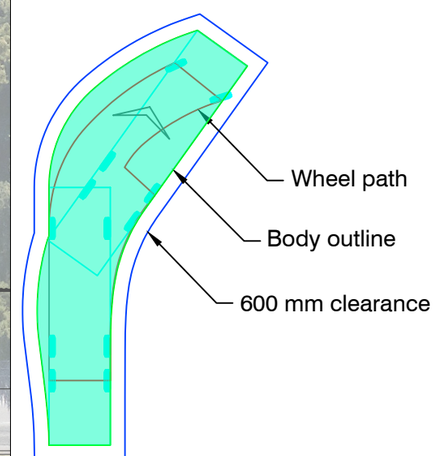
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



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PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
External vehicle collecting packaged residual materials of known weight
Outbound movement via weighbridge

CLIENT:	Central Waste Station
DRG. #:	EMM-004
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

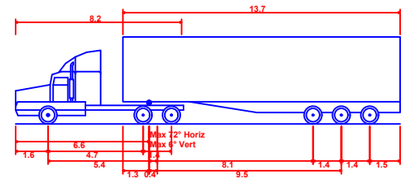
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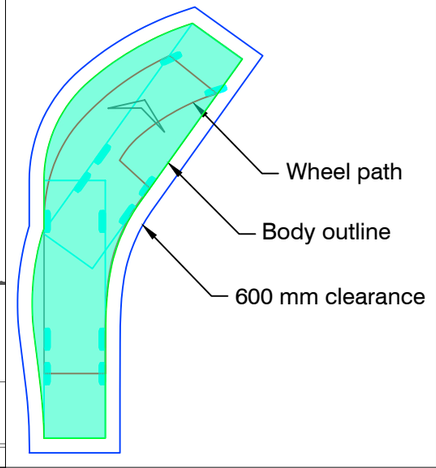
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



0 20 40 m

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1	05/11/24	FOR INFORMATION	JM	AU
8	21/01/25	FOR INFORMATION	JM	AU

PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
Metals processing shed to outbound weighbridge

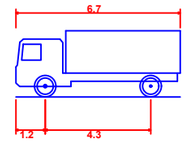
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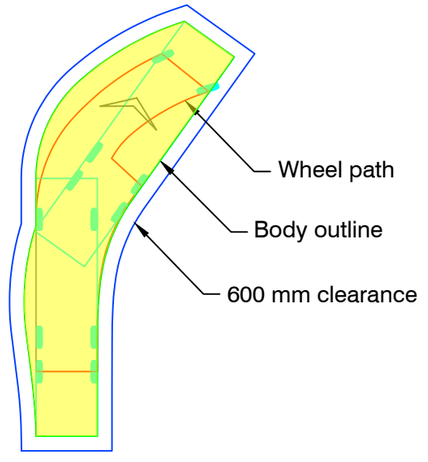
COMMENTS | A3

Swept paths
- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 10 km/h



CWS Skip Truck	
Overall Length	6.700m
Overall Width	2.400m
Overall Body Height	2.700m
Min Body Ground Clearance	0.428m
Track Width	2.400m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	9.000m



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1	05/11/24	FOR INFORMATION	JM	AU
8	21/01/25	FOR INFORMATION	JM	AU

PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
6.7 m skip truck swept path
Parking area movements

CLIENT:	Central Waste Station
DRG. #:	EMM-011
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

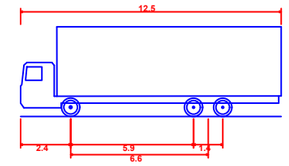
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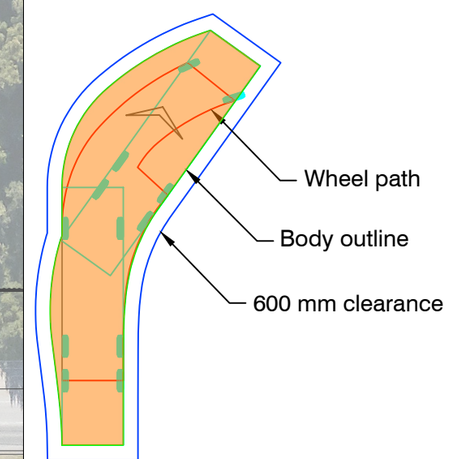
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



HRV - Heavy Rigid Vehicle	
Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



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PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
12.5 m heavy rigid vehicle swept path
Parking area movements for hook loader trucks

CLIENT:	Central Waste Station
DRG. #:	EMM-012
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

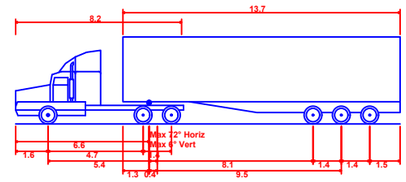
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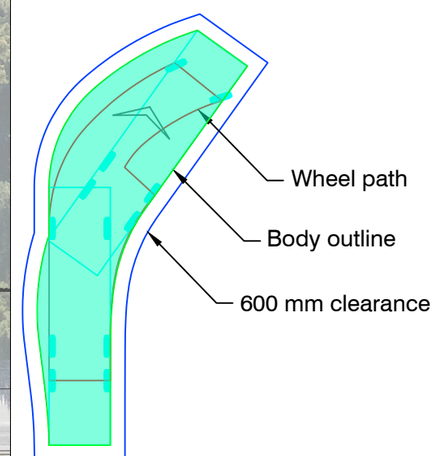
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



0 20 40 m

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PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
Parking area movements
Lane parking: Option 1

CLIENT:	Central Waste Station
DRG. #:	EMM-013
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

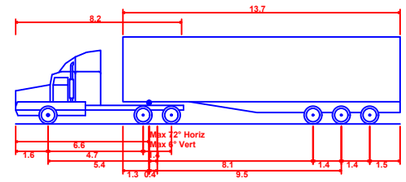
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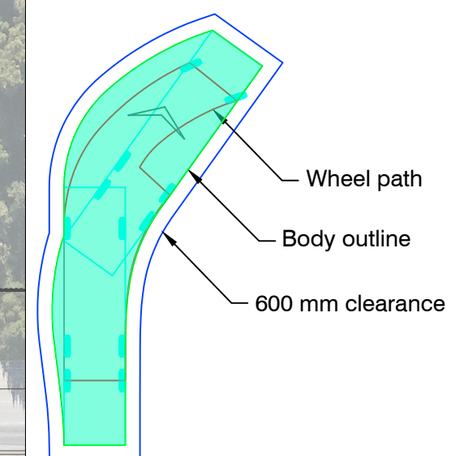
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



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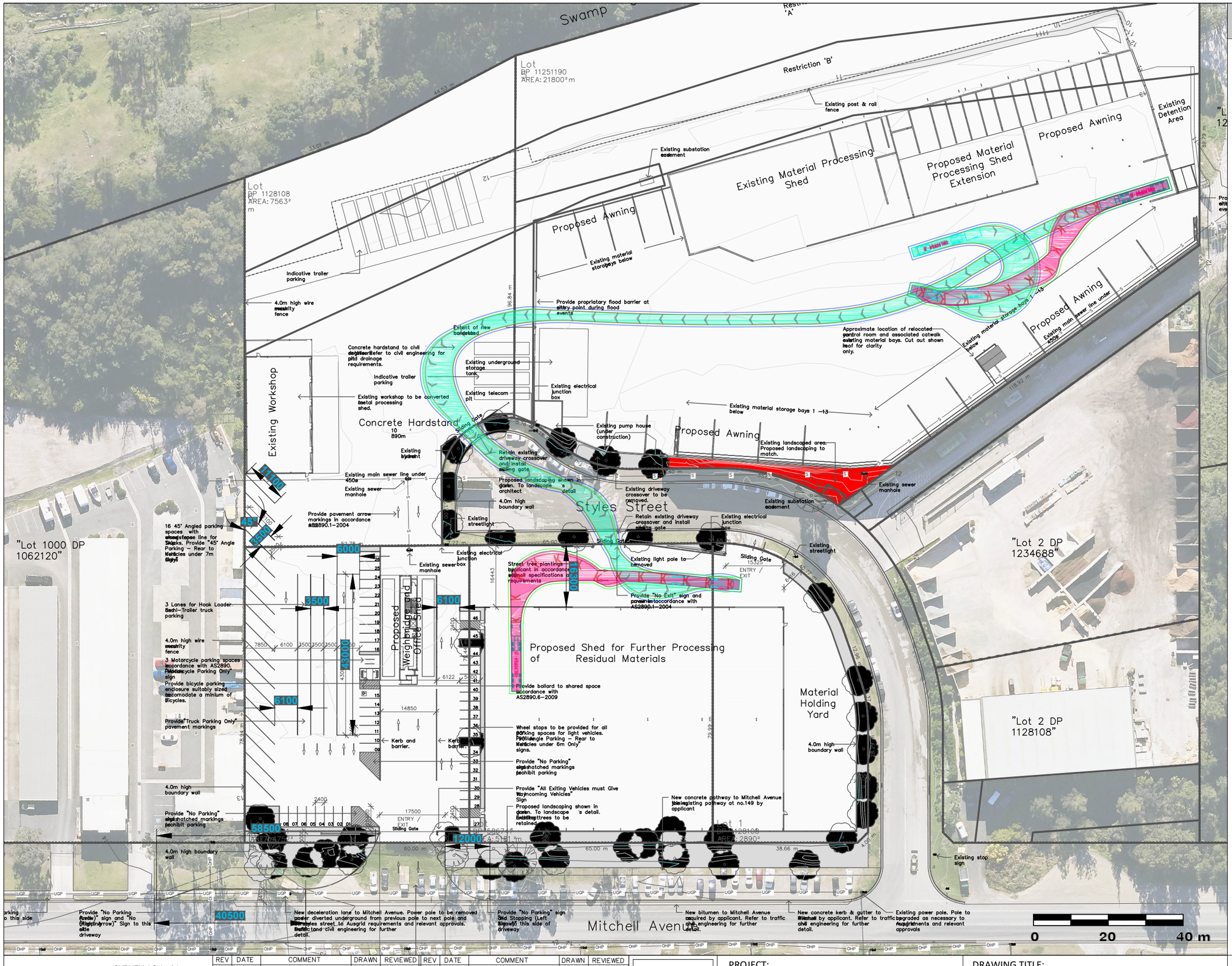
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PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
Parking area movements
Lane parking: Option 2

CLIENT:	Central Waste Station
DRG. #:	EMM-014
PROJECT #:	E230029
SCALE:	1:1000

REV: 8



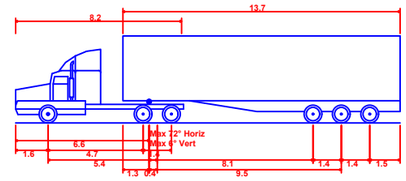
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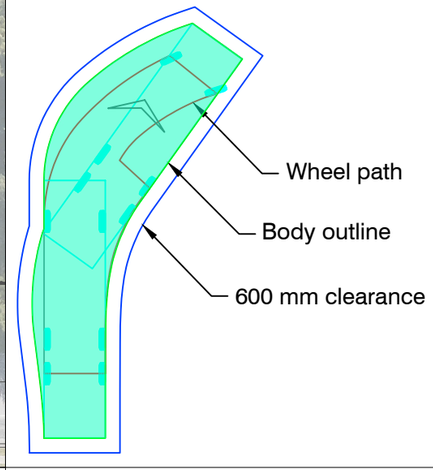
Swept paths

- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



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1	05/11/24	FOR INFORMATION	JM	AU	8	21/01/25	FOR INFORMATION	JM	AU

PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
Materials processing shed to shed for further processing of residual materials

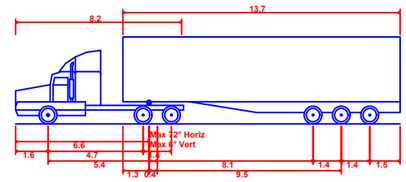
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DRG. #:	EMM-015
PROJECT #:	E230029
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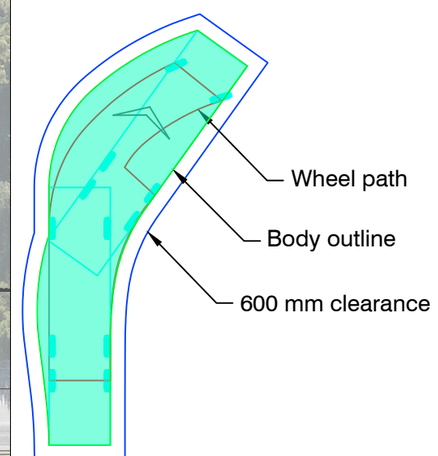
COMMENTS | A3

Swept paths
- Wheel path
- Body outline
- 600 mm clearance

Vehicle swept path speed: 15 km/h



AV - Articulated Vehicle	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



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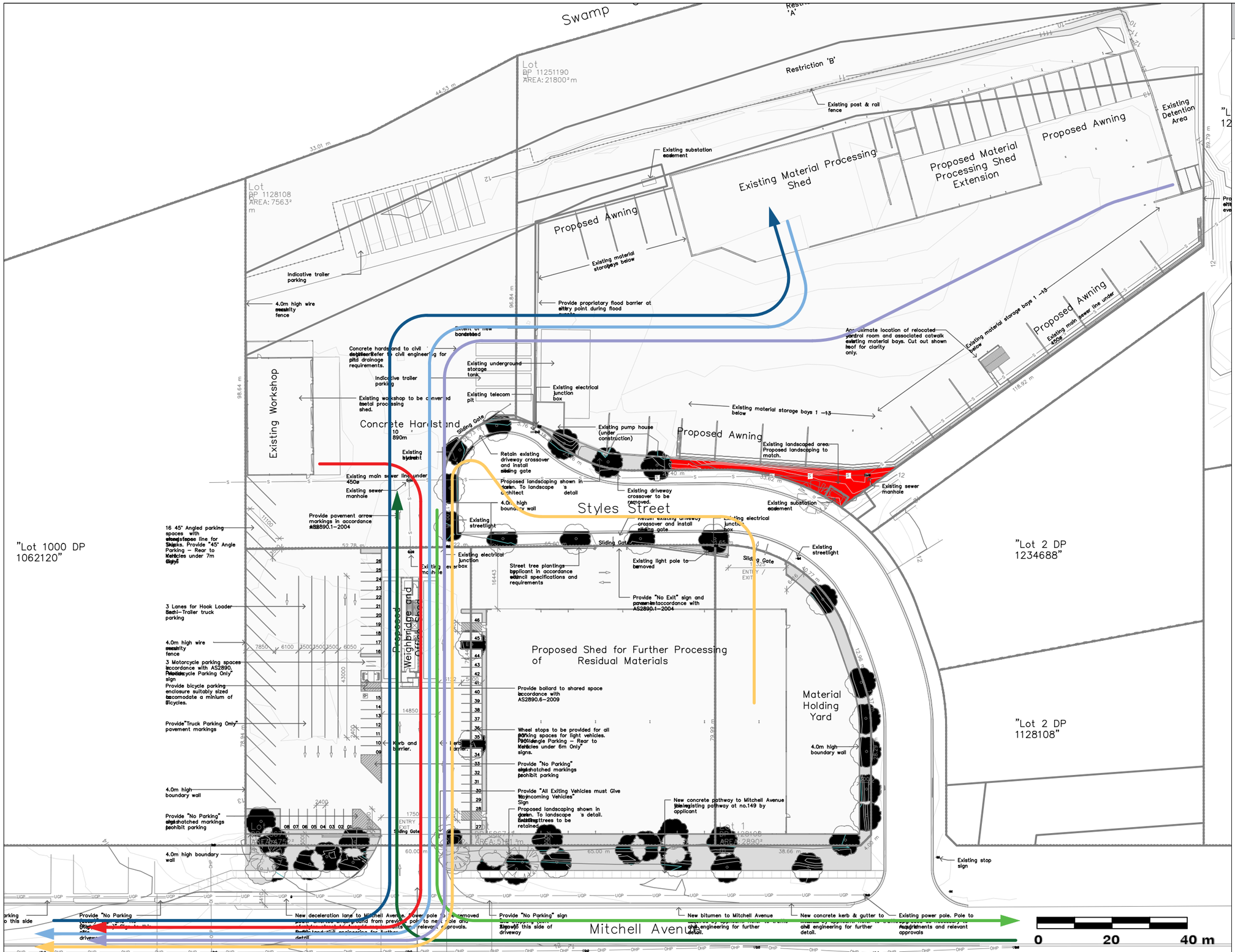
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PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
19 m semi-trailer swept path
Shed for further processing of residual materials to site parking
Trailer parking manoeuvre

CLIENT:	Central Waste Station
DRG. #:	EMM-016
PROJECT #:	E230029
SCALE:	1:1000

REV: 8



COMMENTS

A3

External inbound vehicles

- Unprocessed waste from regional distribution centres
- Unprocessed waste from the local area

External outbound vehicles

- Empty vehicle exiting west to regional areas
- Empty vehicle exiting east to local areas
- Export of pre-packaged processed materials
- Export of recycled or unrecoverable waste
- Export of processed metals

EMM creating opportunities

SYDNEY | Suite 01
Ground Floor
20 Chandos Street,
St Leonards NSW 2065

Phone # 02 9493 9500

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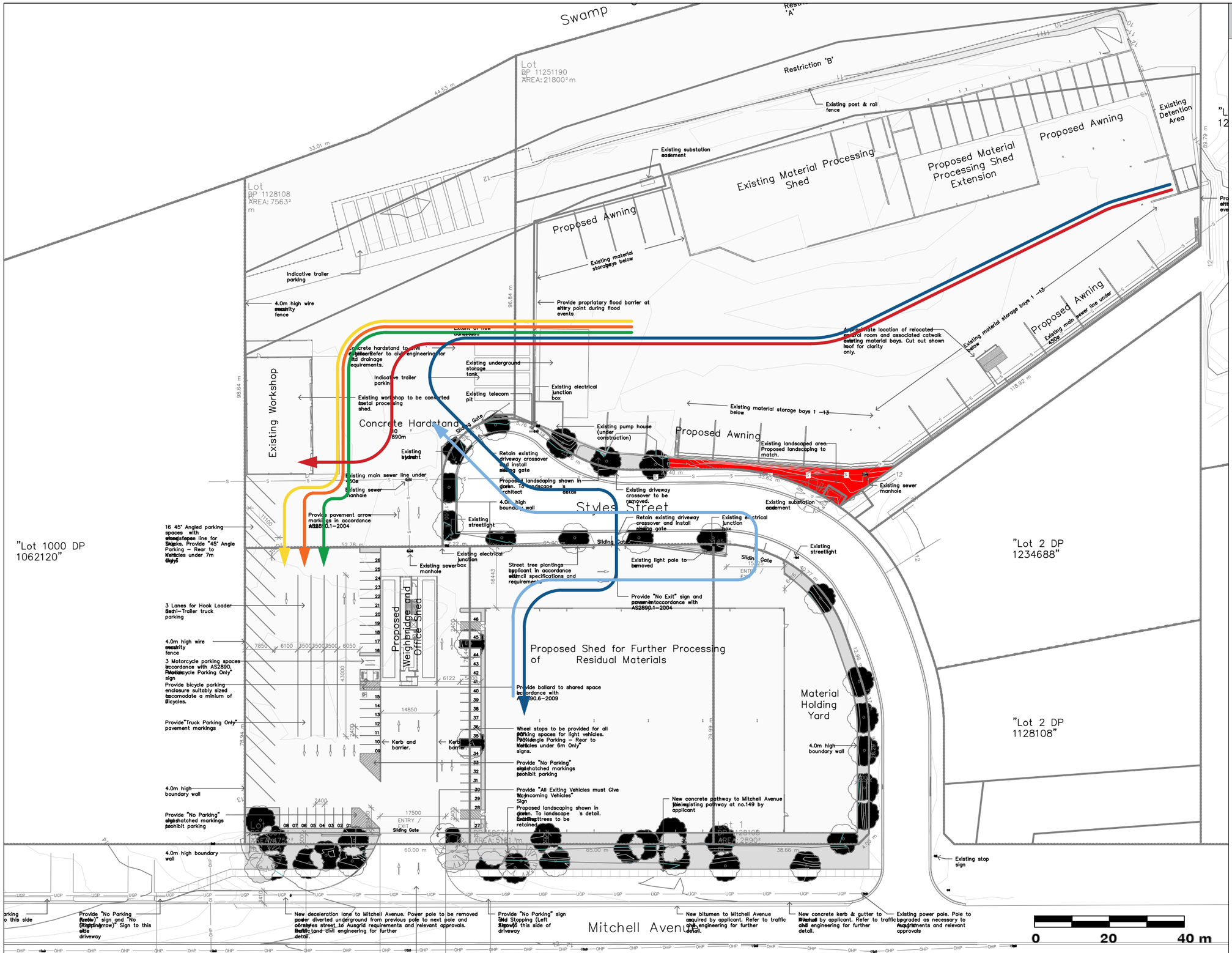
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7	06/12/24	FOR INFORMATION	JM	AU
6	27/11/24	FOR INFORMATION	JM	AU
5	20/11/24	FOR INFORMATION	JM	AU
4	12/11/24	FOR INFORMATION	JM	AU
3	08/11/24	FOR INFORMATION	JM	AU
2	07/11/24	FOR INFORMATION	JM	AU
1	05/11/24	FOR INFORMATION	JM	AU
8	21/01/25	FOR INFORMATION	JM	AU

PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
External vehicle movement diagram

CLIENT:	Central Waste Station
DRG. #:	EMM-021
PROJECT #:	E230029
SCALE:	1:1000

REV: 8



COMMENTS

A3

Site material movements

- Further processing of residual materials
- Further processing of metals

Site empty movements

- Skip truck parking
- Hook loader truck parking
- Semi-trailer parking
- Vehicle returning to parking after unloading residual materials

EMM creating opportunities

SYDNEY | Suite 01
Ground Floor
20 Chandos Street,
St Leonards NSW 2065

Phone # 02 9493 9500

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REV	DATE	COMMENT	DRAWN	REVIEWED
7	06/12/24	FOR INFORMATION	JM	AU
6	27/11/24	FOR INFORMATION	JM	AU
5	20/11/24	FOR INFORMATION	JM	AU
4	12/11/24	FOR INFORMATION	JM	AU
3	08/11/24	FOR INFORMATION	JM	AU
2	07/11/24	FOR INFORMATION	JM	AU
1	05/11/24	FOR INFORMATION	JM	AU
8	21/01/25	FOR INFORMATION	JM	AU

PROJECT:
Kurri Kurri Resource Recovery Facility Expansion

DRAWING TITLE:
Site vehicle movement diagram

CLIENT:	Central Waste Station
DRG. #:	EMM-022
PROJECT #:	E230029
SCALE:	1:1000

REV: 8

Attachment C

SIDRA modelling results

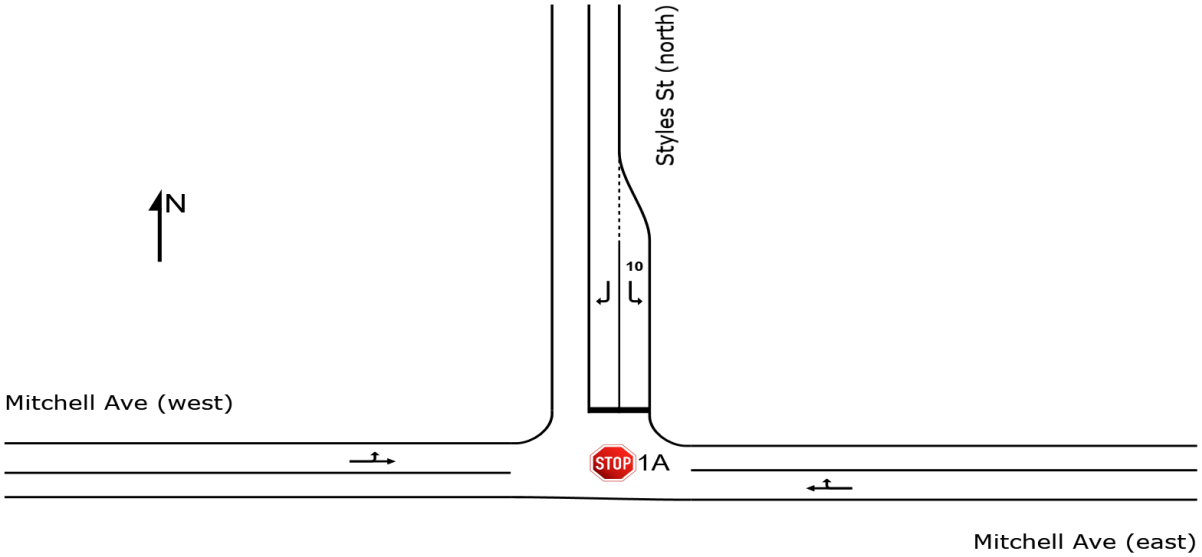
EMM
creating opportunities

SITE LAYOUT

Site: 1A [Mitchell Av/ Styles St - Base AM (Site Folder: Baseline 2025)]

NA
Site Category: (None)
Stop (Two-Way)

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



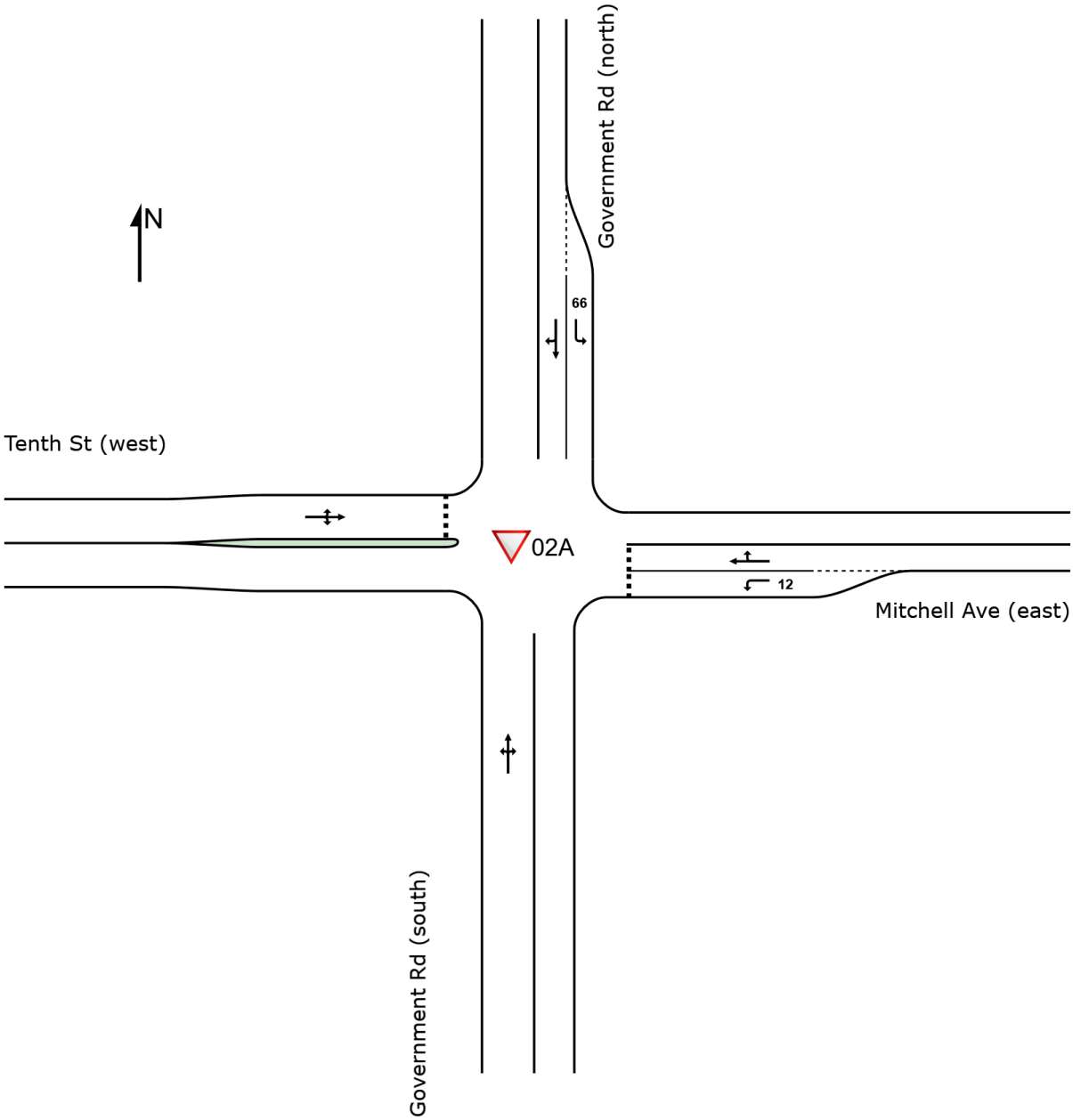
SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: EMM CONSULTING | Licence: PLUS / 1PC | Created: Friday, 24 January 2025 4:12:17 PM
Project: X:\2023\E230029 - CWS Kurri Kurri Integrated Resource Recovery Centre\Technical studies\Transport\SIDRA\E230029 CWS Kurri Kurri SIDRA v4 24 Jan 2025.sip9

SITE LAYOUT

Site: 02A [Government Rd/ Mitchell Av/ Tenth St - Base AM (Site Folder: Baseline 2025)]

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

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

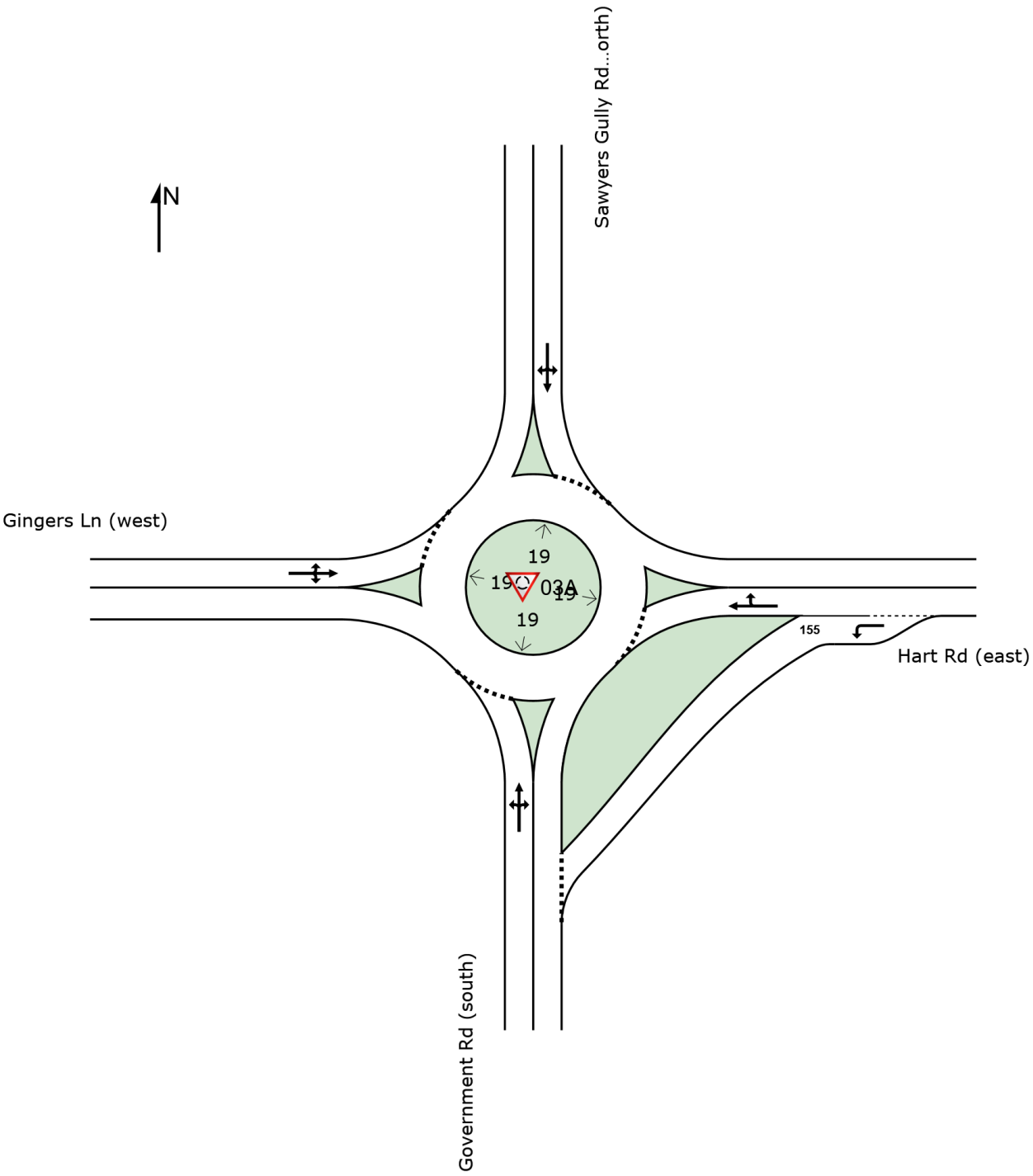


SITE LAYOUT

Site: 03A [Hart Rd/Gingers Ln/Government Rd/Sawyers Gully Rd - Base AM (Site Folder: Baseline 2025)]

NA
Site Category: (None)
Roundabout

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

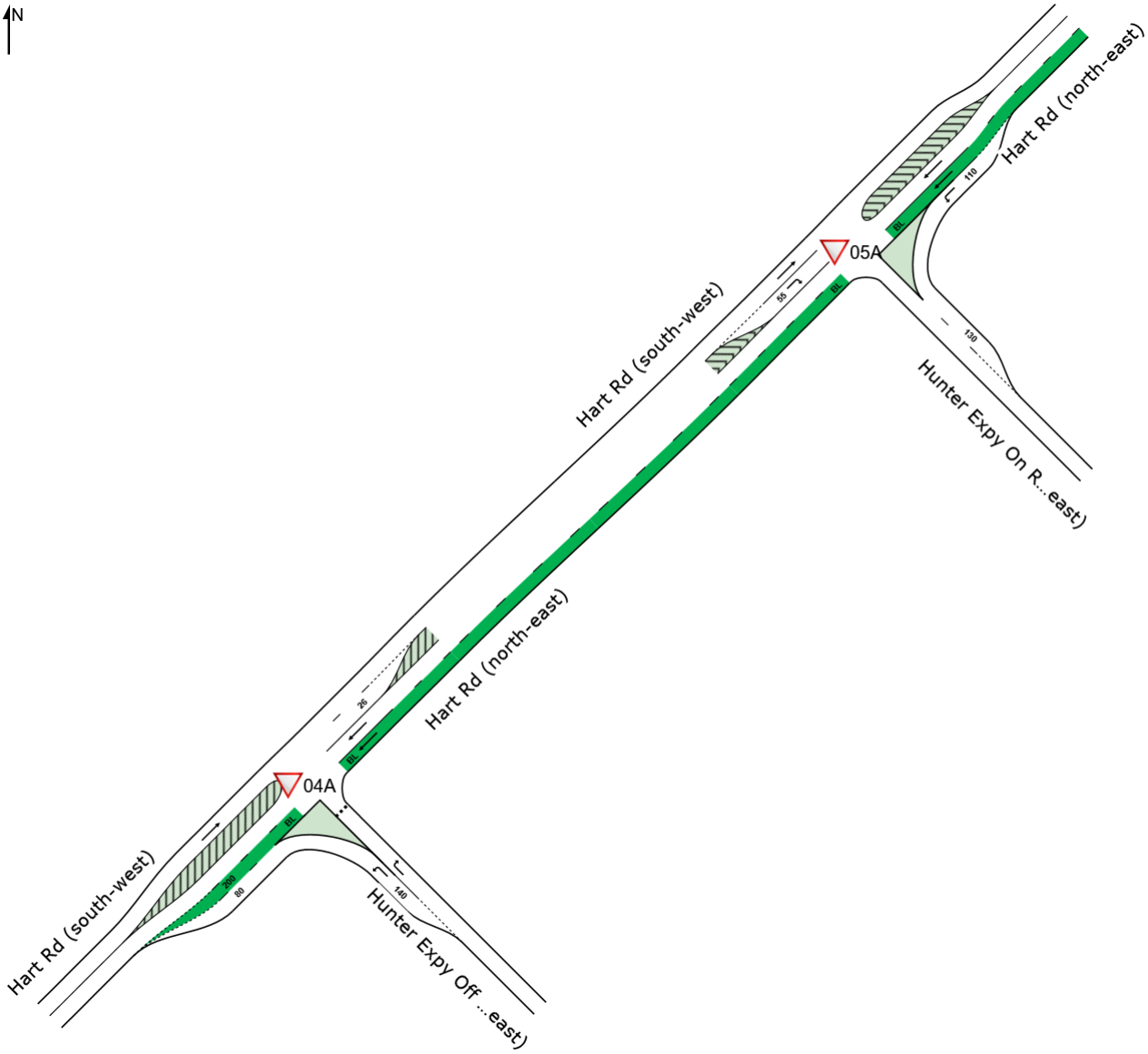


NETWORK LAYOUT

Network: N101 [Base AM (Network Folder: Baseline 2025)]

New Network
Network Category: (None)

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



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
▽04A	NA	Hunter Expy Off Ramp/ Hart Rd - Base AM
▽05A	NA	Hunter Expy On Ramp/ Hart Rd - Base AM

MOVEMENT SUMMARY

Site: 1A [Mitchell Av/ Styles St - Base AM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Mitchell Ave (east)															
5	T1	All MCs	137	6.2	137	6.2	0.081	0.1	LOS A	0.1	0.9	0.08	0.09	0.08	49.5
6	R2	All MCs	16	33.3	16	33.3	0.081	5.5	LOS A	0.1	0.9	0.08	0.09	0.08	46.8
Approach			153	9.0	153	9.0	0.081	0.6	NA	0.1	0.9	0.08	0.09	0.08	49.3
North: Styles St (north)															
7	L2	All MCs	7	28.6	7	28.6	0.005	9.1	LOS A	0.0	0.2	0.27	0.87	0.27	41.9
9	R2	All MCs	13	83.3	13	83.3	0.017	11.6	LOS A	0.0	0.5	0.30	1.00	0.30	39.1
Approach			20	63.2	20	63.2	0.017	10.7	LOS A	0.0	0.5	0.29	0.95	0.29	40.2
West: Mitchell Ave (west)															
10	L2	All MCs	15	78.6	15	78.6	0.088	5.3	LOS A	0.0	0.0	0.00	0.05	0.00	45.9
11	T1	All MCs	145	9.4	145	9.4	0.088	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	49.9
Approach			160	15.8	160	15.8	0.088	0.5	NA	0.0	0.0	0.00	0.05	0.00	49.6
All Vehicles			333	15.5	333	15.5	0.088	1.2	NA	0.1	0.9	0.05	0.12	0.05	48.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 01C [Mitchell Av/ Styles St - Base PM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Mitchell Ave (east)															
5	T1	All MCs	176	6.6	176	6.6	0.096	0.0	LOS A	0.1	0.4	0.03	0.03	0.03	49.8
6	R2	All MCs	6	50.0	6	50.0	0.096	5.4	LOS A	0.1	0.4	0.03	0.03	0.03	46.9
Approach			182	8.1	182	8.1	0.096	0.2	NA	0.1	0.4	0.03	0.03	0.03	49.8
North: Styles St (north)															
7	L2	All MCs	11	40.0	11	40.0	0.008	9.6	LOS A	0.0	0.3	0.28	0.88	0.28	41.7
9	R2	All MCs	11	60.0	11	60.0	0.013	10.6	LOS A	0.0	0.3	0.30	0.98	0.30	39.6
Approach			21	50.0	21	50.0	0.013	10.1	LOS A	0.0	0.3	0.29	0.93	0.29	40.7
West: Mitchell Ave (west)															
10	L2	All MCs	6	100.0	6	100.0	0.081	5.5	LOS A	0.0	0.0	0.00	0.02	0.00	45.3
11	T1	All MCs	144	9.5	144	9.5	0.081	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.8
Approach			151	13.3	151	13.3	0.081	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.6
All Vehicles			354	12.8	354	12.8	0.096	0.8	NA	0.1	0.4	0.03	0.08	0.03	49.2

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

MOVEMENT SUMMARY

Site: 02A [Government Rd/ Mitchell Av/ Tenth St - Base AM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
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: Government Rd (south)															
1	L2	All MCs	1	0.0	1	0.0	0.099	6.7	LOS A	0.3	2.5	0.23	0.25	0.23	51.3
2	T1	All MCs	132	6.4	132	6.4	0.099	0.5	LOS A	0.3	2.5	0.23	0.25	0.23	57.6
3	R2	All MCs	43	7.3	43	7.3	0.099	6.8	LOS A	0.3	2.5	0.23	0.25	0.23	51.4
Approach			176	6.6	176	6.6	0.099	2.0	NA	0.3	2.5	0.23	0.25	0.23	55.9
East: Mitchell Ave (east)															
4	L2	All MCs	32	13.3	32	13.3	0.018	5.1	LOS A	0.1	0.7	0.27	0.50	0.27	47.8
5	T1	All MCs	4	0.0	4	0.0	0.149	5.2	LOS A	0.5	4.0	0.45	0.67	0.45	44.4
6	R2	All MCs	107	12.7	107	12.7	0.149	7.2	LOS A	0.5	4.0	0.45	0.67	0.45	46.3
Approach			143	12.5	143	12.5	0.149	6.7	LOS A	0.5	4.0	0.41	0.64	0.41	46.6
North: Government Rd (north)															
7	L2	All MCs	118	14.3	118	14.3	0.070	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	51.1
8	T1	All MCs	172	3.1	172	3.1	0.091	0.0	LOS A	0.0	0.2	0.01	0.02	0.01	59.8
9	R2	All MCs	4	0.0	4	0.0	0.091	5.7	LOS A	0.0	0.2	0.01	0.02	0.01	52.8
Approach			294	7.5	294	7.5	0.091	2.4	NA	0.0	0.2	0.01	0.24	0.01	56.1
West: Tenth St (west)															
10	L2	All MCs	7	0.0	7	0.0	0.019	4.8	LOS A	0.1	0.5	0.34	0.50	0.34	48.0
11	T1	All MCs	12	9.1	12	9.1	0.019	5.6	LOS A	0.1	0.5	0.34	0.50	0.34	45.2
12	R2	All MCs	2	0.0	2	0.0	0.019	6.2	LOS A	0.1	0.5	0.34	0.50	0.34	48.6
Approach			21	5.0	21	5.0	0.019	5.4	LOS A	0.1	0.5	0.34	0.50	0.34	46.5
All Vehicles			634	8.3	634	8.3	0.149	3.4	NA	0.5	4.0	0.17	0.34	0.17	53.3

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: 02C [Government Rd/ Mitchell Av/ Tenth St - Base PM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
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: Government Rd (south)															
1	L2	All MCs	2	0.0	2	0.0	0.097	6.6	LOS A	0.2	1.8	0.16	0.18	0.16	51.9
2	T1	All MCs	152	4.9	152	4.9	0.097	0.3	LOS A	0.2	1.8	0.16	0.18	0.16	58.3
3	R2	All MCs	29	3.6	29	3.6	0.097	6.7	LOS A	0.2	1.8	0.16	0.18	0.16	52.0
Approach			183	4.6	183	4.6	0.097	1.4	NA	0.2	1.8	0.16	0.18	0.16	57.1
East: Mitchell Ave (east)															
4	L2	All MCs	43	12.2	43	12.2	0.025	5.2	LOS A	0.1	0.9	0.28	0.50	0.28	47.8
5	T1	All MCs	9	0.0	9	0.0	0.195	5.4	LOS A	0.7	5.2	0.47	0.69	0.47	44.3
6	R2	All MCs	138	9.2	138	9.2	0.195	7.3	LOS A	0.7	5.2	0.47	0.69	0.47	46.3
Approach			191	9.4	191	9.4	0.195	6.7	LOS A	0.7	5.2	0.43	0.64	0.43	46.6
North: Government Rd (north)															
7	L2	All MCs	115	14.7	115	14.7	0.068	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	51.0
8	T1	All MCs	181	6.4	181	6.4	0.101	0.0	LOS A	0.1	0.4	0.03	0.03	0.03	59.6
9	R2	All MCs	8	0.0	8	0.0	0.101	5.8	LOS A	0.1	0.4	0.03	0.03	0.03	52.7
Approach			304	9.3	304	9.3	0.101	2.3	NA	0.1	0.4	0.02	0.24	0.02	56.1
West: Tenth St (west)															
10	L2	All MCs	9	0.0	9	0.0	0.016	4.9	LOS A	0.1	0.4	0.33	0.49	0.33	47.9
11	T1	All MCs	8	12.5	8	12.5	0.016	5.8	LOS A	0.1	0.4	0.33	0.49	0.33	45.1
12	R2	All MCs	1	0.0	1	0.0	0.016	6.4	LOS A	0.1	0.4	0.33	0.49	0.33	48.6
Approach			19	5.6	19	5.6	0.016	5.4	LOS A	0.1	0.4	0.33	0.49	0.33	46.7
All Vehicles			697	8.0	697	8.0	0.195	3.4	NA	0.7	5.2	0.18	0.34	0.18	53.2

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: 03A [Hart Rd/Gingers Ln/Government Rd/Sawyers Gully Rd - Base AM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Government Rd (south)															
1	L2	All MCs	23	4.5	23	4.5	0.322	7.9	LOS A	2.0	15.6	0.72	0.71	0.72	49.4
2	T1	All MCs	93	11.4	93	11.4	0.322	8.3	LOS A	2.0	15.6	0.72	0.71	0.72	49.6
3	R2	All MCs	123	19.7	123	19.7	0.322	13.3	LOS A	2.0	15.6	0.72	0.71	0.72	48.4
Approach			239	15.0	239	15.0	0.322	10.8	LOS A	2.0	15.6	0.72	0.71	0.72	49.0
East: Hart Rd (east)															
4	L2	All MCs	136	9.3	136	9.3	0.100	4.4	LOS A	0.5	4.1	0.29	0.48	0.29	53.3
5	T1	All MCs	519	4.5	519	4.5	0.383	4.7	LOS A	2.8	20.4	0.37	0.45	0.37	53.3
6	R2	All MCs	37	17.1	37	17.1	0.383	9.5	LOS A	2.8	20.4	0.37	0.45	0.37	51.8
Approach			692	6.1	692	6.1	0.383	4.9	LOS A	2.8	20.4	0.36	0.46	0.36	53.2
North: Sawyers Gully Rd (north)															
7	L2	All MCs	53	8.0	53	8.0	0.181	8.5	LOS A	1.1	8.2	0.74	0.69	0.74	51.1
8	T1	All MCs	71	6.0	71	6.0	0.181	8.5	LOS A	1.1	8.2	0.74	0.69	0.74	51.1
9	R2	All MCs	3	0.0	3	0.0	0.181	12.7	LOS A	1.1	8.2	0.74	0.69	0.74	50.9
Approach			126	6.7	126	6.7	0.181	8.6	LOS A	1.1	8.2	0.74	0.69	0.74	51.1
West: Gingers Ln (west)															
10	L2	All MCs	6	0.0	6	0.0	0.508	5.9	LOS A	4.0	28.7	0.65	0.58	0.65	51.8
11	T1	All MCs	484	2.8	484	2.8	0.508	6.2	LOS A	4.0	28.7	0.65	0.58	0.65	52.1
12	R2	All MCs	49	0.0	49	0.0	0.508	10.6	LOS A	4.0	28.7	0.65	0.58	0.65	50.9
Approach			540	2.5	540	2.5	0.508	6.6	LOS A	4.0	28.7	0.65	0.58	0.65	52.0
All Vehicles			1597	6.3	1597	6.3	0.508	6.7	LOS A	4.0	28.7	0.54	0.55	0.54	52.0

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

MOVEMENT SUMMARY

Site: 03C [Hart Rd/Gingers Ln/Government Rd/Sawyers Gully Rd - Base PM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Government Rd (south)															
1	L2	All MCs	83	3.8	83	3.8	0.391	8.5	LOS A	2.6	19.3	0.78	0.73	0.78	49.5
2	T1	All MCs	89	2.4	89	2.4	0.391	8.5	LOS A	2.6	19.3	0.78	0.73	0.78	49.9
3	R2	All MCs	117	11.7	117	11.7	0.391	13.6	LOS A	2.6	19.3	0.78	0.73	0.78	48.7
Approach			289	6.5	289	6.5	0.391	10.5	LOS A	2.6	19.3	0.78	0.73	0.78	49.3
East: Hart Rd (east)															
4	L2	All MCs	132	12.8	132	12.8	0.103	4.7	LOS A	0.6	4.5	0.35	0.50	0.35	53.0
5	T1	All MCs	545	3.9	545	3.9	0.436	5.0	LOS A	3.4	24.8	0.47	0.49	0.47	52.8
6	R2	All MCs	59	8.9	59	8.9	0.436	9.7	LOS A	3.4	24.8	0.47	0.49	0.47	51.7
Approach			736	5.9	736	5.9	0.436	5.3	LOS A	3.4	24.8	0.45	0.49	0.45	52.7
North: Sawyers Gully Rd (north)															
7	L2	All MCs	54	3.9	54	3.9	0.257	8.7	LOS A	1.7	12.1	0.78	0.71	0.78	51.0
8	T1	All MCs	118	3.6	118	3.6	0.257	8.8	LOS A	1.7	12.1	0.78	0.71	0.78	50.9
9	R2	All MCs	5	20.0	5	20.0	0.257	14.2	LOS A	1.7	12.1	0.78	0.71	0.78	49.9
Approach			177	4.2	177	4.2	0.257	8.9	LOS A	1.7	12.1	0.78	0.71	0.78	50.9
West: Gingers Ln (west)															
10	L2	All MCs	4	0.0	4	0.0	0.537	6.0	LOS A	4.4	31.2	0.67	0.58	0.67	51.7
11	T1	All MCs	521	2.4	521	2.4	0.537	6.2	LOS A	4.4	31.2	0.67	0.58	0.67	52.0
12	R2	All MCs	45	4.7	45	4.7	0.537	10.8	LOS A	4.4	31.2	0.67	0.58	0.67	50.6
Approach			571	2.6	571	2.6	0.537	6.6	LOS A	4.4	31.2	0.67	0.58	0.67	51.9
All Vehicles			1773	4.8	1773	4.8	0.537	7.0	LOS A	4.4	31.2	0.61	0.58	0.61	51.7

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

MOVEMENT SUMMARY

Site: 04A [Hunter Expy Off Ramp/ Hart Rd - Base AM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Base AM (Network Folder: Baseline 2025)]

NA
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
SouthEast: Hunter Expy Off Ramp (south-east)															
1	L2	All MCs	691	6.3	691	6.3	0.388	6.9	LOS A	0.0	0.0	0.00	0.57	0.00	57.6
3	R2	All MCs	43	17.1	43	17.1	0.034	10.0	LOS A	0.1	1.0	0.49	0.69	0.49	53.8
Approach			734	6.9	734	6.9	0.388	7.0	LOS A	0.1	1.0	0.03	0.57	0.03	57.5
NorthEast: Hart Rd (north-east)															
5	T1	All MCs	6	33.3	6	33.3	0.003	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
Approach			6	33.3	6	33.3	0.003	0.0	NA	0.0	0.0	0.00	0.00	0.00	57.3
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	663	6.7	663	6.7	0.355	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			663	6.7	663	6.7	0.355	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			1403	6.9	1403	6.9	0.388	3.7	NA	0.1	1.0	0.02	0.30	0.02	60.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 04C [Hunter Expy Off Ramp/ Hart Rd - Base PM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Base PM (Network Folder: Baseline 2025)]

NA
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
SouthEast: Hunter Expy Off Ramp (south-east)															
1	L2	All MCs	721	5.7	721	5.7	0.404	6.9	LOS A	0.0	0.0	0.00	0.57	0.00	57.8
3	R2	All MCs	13	25.0	13	25.0	0.011	10.6	LOS A	0.0	0.3	0.51	0.67	0.51	53.7
Approach			734	6.0	734	6.0	0.404	7.0	LOS A	0.0	0.3	0.01	0.57	0.01	57.7
NorthEast: Hart Rd (north-east)															
5	T1	All MCs	19	11.1	19	11.1	0.010	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	65.2
Approach			19	11.1	19	11.1	0.010	0.1	NA	0.0	0.0	0.00	0.00	0.00	65.2
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	692	4.0	692	4.0	0.364	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			692	4.0	692	4.0	0.364	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			1444	5.1	1444	5.1	0.404	3.6	NA	0.0	0.3	0.00	0.29	0.00	61.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 05A [Hunter Expy On Ramp/ Hart Rd - Base AM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Base AM (Network Folder: Baseline 2025)]

NA
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
NorthEast: Hart Rd (north-east)															
4	L2	All MCs	22	85.7	22	85.7	0.019	11.4	LOS A	0.0	0.0	0.00	0.53	0.00	42.6
5	T1	All MCs	6	33.3	6	33.3	0.003	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
Approach			28	74.1	28	74.1	0.019	8.9	NA	0.0	0.0	0.00	0.41	0.00	44.0
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	56	15.1	56	15.1	0.031	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
12	R2	All MCs	649	6.6	649	6.6	0.375	6.1	LOS A	2.5	18.4	0.06	0.60	0.06	51.3
Approach			705	7.3	705	7.3	0.375	5.6	NA	2.5	18.4	0.05	0.56	0.05	52.4
All Vehicles			734	9.9	734	9.9	0.375	5.8	NA	2.5	18.4	0.05	0.55	0.05	51.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 05C [Hunter Expy On Ramp/ Hart Rd - Base PM (Site Folder: Baseline 2025)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Base PM (Network Folder: Baseline 2025)]

NA
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
NorthEast: Hart Rd (north-east)															
4	L2	All MCs	219	3.4	219	3.4	0.121	8.3	LOS A	0.0	0.0	0.00	0.57	0.00	58.5
5	T1	All MCs	34	3.1	34	3.1	0.017	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	67.2
Approach			253	3.3	253	3.3	0.121	7.2	NA	0.0	0.0	0.00	0.49	0.00	59.1
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	15	7.1	15	7.1	0.008	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
12	R2	All MCs	588	2.7	588	2.7	0.341	6.2	LOS A	2.1	15.2	0.14	0.58	0.14	52.4
Approach			603	2.8	603	2.8	0.341	6.1	NA	2.1	15.2	0.14	0.57	0.14	52.7
All Vehicles			856	3.0	856	3.0	0.341	6.4	NA	2.1	15.2	0.10	0.55	0.10	55.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 01B [Mitchell Av/ Styles St - Dev AM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Mitchell Ave (east)															
5	T1	All MCs	152	6.3	152	6.3	0.091	0.1	LOS A	0.1	1.1	0.09	0.09	0.09	49.5
6	R2	All MCs	18	35.3	18	35.3	0.091	5.6	LOS A	0.1	1.1	0.09	0.09	0.09	46.8
Approach			169	9.3	169	9.3	0.091	0.7	NA	0.1	1.1	0.09	0.09	0.09	49.2
North: Styles St (north)															
7	L2	All MCs	8	25.0	8	25.0	0.006	9.0	LOS A	0.0	0.2	0.29	0.86	0.29	41.9
9	R2	All MCs	19	88.9	19	88.9	0.028	12.2	LOS A	0.1	0.9	0.33	1.02	0.33	38.9
Approach			27	69.2	27	69.2	0.028	11.2	LOS A	0.1	0.9	0.32	0.97	0.32	39.8
West: Mitchell Ave (west)															
10	L2	All MCs	21	85.0	21	85.0	0.102	5.3	LOS A	0.0	0.0	0.00	0.06	0.00	45.8
11	T1	All MCs	161	9.8	161	9.8	0.102	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	49.9
Approach			182	18.5	182	18.5	0.102	0.6	NA	0.0	0.0	0.00	0.06	0.00	49.5
All Vehicles			379	18.1	379	18.1	0.102	1.4	NA	0.1	1.1	0.06	0.14	0.06	48.8

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: 01D [Mitchell Av/ Styles St - Dev PM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Mitchell Ave (east)															
5	T1	All MCs	195	6.5	195	6.5	0.109	0.0	LOS A	0.1	0.4	0.03	0.03	0.03	49.9
6	R2	All MCs	6	50.0	6	50.0	0.109	5.5	LOS A	0.1	0.4	0.03	0.03	0.03	47.7
Approach			201	7.9	201	7.9	0.109	0.2	NA	0.1	0.4	0.03	0.03	0.03	49.8
North: Styles St (north)															
7	L2	All MCs	12	36.4	12	36.4	0.009	9.5	LOS A	0.0	0.4	0.29	0.88	0.29	43.8
9	R2	All MCs	15	64.3	15	64.3	0.020	10.8	LOS A	0.0	0.5	0.32	0.99	0.32	42.3
Approach			26	52.0	26	52.0	0.020	10.3	LOS A	0.0	0.5	0.31	0.94	0.31	43.0
West: Mitchell Ave (west)															
10	L2	All MCs	9	100.0	9	100.0	0.096	5.5	LOS A	0.0	0.0	0.00	0.03	0.00	46.7
11	T1	All MCs	160	9.9	160	9.9	0.096	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	49.7
Approach			169	14.9	169	14.9	0.096	0.3	NA	0.0	0.0	0.00	0.03	0.00	49.5
All Vehicles			397	13.8	397	13.8	0.109	0.9	NA	0.1	0.5	0.03	0.09	0.03	49.1

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: 02B [Government Rd/ Mitchell Av/ Tenth St - Dev AM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
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: Government Rd (south)															
1	L2	All MCs	1	0.0	1	0.0	0.110	6.8	LOS A	0.4	2.9	0.25	0.27	0.25	51.3
2	T1	All MCs	145	6.5	145	6.5	0.110	0.5	LOS A	0.4	2.9	0.25	0.27	0.25	57.5
3	R2	All MCs	46	6.8	46	6.8	0.110	6.9	LOS A	0.4	2.9	0.25	0.27	0.25	51.4
Approach			193	6.6	193	6.6	0.110	2.1	NA	0.4	2.9	0.25	0.27	0.25	55.9
East: Mitchell Ave (east)															
4	L2	All MCs	35	15.2	35	15.2	0.021	5.2	LOS A	0.1	0.7	0.29	0.50	0.29	47.7
5	T1	All MCs	5	0.0	5	0.0	0.187	5.5	LOS A	0.6	5.1	0.49	0.71	0.49	44.0
6	R2	All MCs	123	16.2	123	16.2	0.187	7.8	LOS A	0.6	5.1	0.49	0.71	0.49	45.7
Approach			163	15.5	163	15.5	0.187	7.2	LOS A	0.6	5.1	0.45	0.66	0.45	46.1
North: Government Rd (north)															
7	L2	All MCs	135	17.2	135	17.2	0.081	5.8	LOS A	0.0	0.0	0.00	0.57	0.00	50.9
8	T1	All MCs	191	3.3	191	3.3	0.102	0.0	LOS A	0.0	0.2	0.02	0.02	0.02	59.8
9	R2	All MCs	5	0.0	5	0.0	0.102	5.7	LOS A	0.0	0.2	0.02	0.02	0.02	52.8
Approach			331	8.9	331	8.9	0.102	2.4	NA	0.0	0.2	0.01	0.24	0.01	55.9
West: Tenth St (west)															
10	L2	All MCs	8	0.0	8	0.0	0.022	4.9	LOS A	0.1	0.6	0.36	0.51	0.36	47.9
11	T1	All MCs	13	8.3	13	8.3	0.022	5.8	LOS A	0.1	0.6	0.36	0.51	0.36	45.1
12	R2	All MCs	2	0.0	2	0.0	0.022	6.4	LOS A	0.1	0.6	0.36	0.51	0.36	48.6
Approach			23	4.5	23	4.5	0.022	5.5	LOS A	0.1	0.6	0.36	0.51	0.36	46.4
All Vehicles			709	9.6	709	9.6	0.187	3.5	NA	0.6	5.1	0.19	0.35	0.19	53.1

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: 02D [Government Rd/ Mitchell Av/ Tenth St - Dev PM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
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: Government Rd (south)															
1	L2	All MCs	2	0.0	2	0.0	0.108	6.8	LOS A	0.3	2.0	0.17	0.19	0.17	51.8
2	T1	All MCs	168	5.0	168	5.0	0.108	0.3	LOS A	0.3	2.0	0.17	0.19	0.17	58.2
3	R2	All MCs	32	3.3	32	3.3	0.108	6.9	LOS A	0.3	2.0	0.17	0.19	0.17	52.0
Approach			202	4.7	202	4.7	0.108	1.4	NA	0.3	2.0	0.17	0.19	0.17	57.1
East: Mitchell Ave (east)															
4	L2	All MCs	48	13.0	48	13.0	0.029	5.2	LOS A	0.1	1.0	0.30	0.51	0.30	47.7
5	T1	All MCs	11	0.0	11	0.0	0.235	5.7	LOS A	0.8	6.4	0.51	0.72	0.51	44.0
6	R2	All MCs	155	10.9	155	10.9	0.235	7.9	LOS A	0.8	6.4	0.51	0.72	0.51	45.9
Approach			214	10.8	214	10.8	0.235	7.2	LOS A	0.8	6.4	0.46	0.67	0.46	46.2
North: Government Rd (north)															
7	L2	All MCs	131	16.9	131	16.9	0.079	5.8	LOS A	0.0	0.0	0.00	0.57	0.00	50.9
8	T1	All MCs	201	6.3	201	6.3	0.112	0.0	LOS A	0.1	0.4	0.03	0.03	0.03	59.6
9	R2	All MCs	9	0.0	9	0.0	0.112	5.9	LOS A	0.1	0.4	0.03	0.03	0.03	52.6
Approach			341	10.2	341	10.2	0.112	2.4	NA	0.1	0.4	0.02	0.24	0.02	56.0
West: Tenth St (west)															
10	L2	All MCs	11	0.0	11	0.0	0.018	4.9	LOS A	0.1	0.5	0.35	0.50	0.35	47.9
11	T1	All MCs	9	11.1	9	11.1	0.018	6.0	LOS A	0.1	0.5	0.35	0.50	0.35	45.0
12	R2	All MCs	1	0.0	1	0.0	0.018	6.6	LOS A	0.1	0.5	0.35	0.50	0.35	48.5
Approach			21	5.0	21	5.0	0.018	5.5	LOS A	0.1	0.5	0.35	0.50	0.35	46.6
All Vehicles			778	8.8	778	8.8	0.235	3.5	NA	0.8	6.4	0.19	0.35	0.19	53.0

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

MOVEMENT SUMMARY

Site: 03B [Hart Rd/Gingers Ln/Government Rd/Sawyers Gully Rd - Dev AM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Government Rd (south)															
1	L2	All MCs	26	4.0	26	4.0	0.394	8.7	LOS A	2.6	20.4	0.78	0.75	0.80	48.8
2	T1	All MCs	102	11.3	102	11.3	0.394	9.2	LOS A	2.6	20.4	0.78	0.75	0.80	49.0
3	R2	All MCs	141	22.4	141	22.4	0.394	14.3	LOS A	2.6	20.4	0.78	0.75	0.80	47.7
Approach			269	16.4	269	16.4	0.394	11.8	LOS A	2.6	20.4	0.78	0.75	0.80	48.3
East: Hart Rd (east)															
4	L2	All MCs	155	12.2	155	12.2	0.117	4.5	LOS A	0.7	5.1	0.32	0.49	0.32	53.2
5	T1	All MCs	576	4.6	576	4.6	0.431	4.9	LOS A	3.3	24.5	0.42	0.46	0.42	53.1
6	R2	All MCs	41	17.9	41	17.9	0.431	9.7	LOS A	3.3	24.5	0.42	0.46	0.42	51.6
Approach			772	6.8	772	6.8	0.431	5.0	LOS A	3.3	24.5	0.40	0.47	0.40	53.0
North: Sawyers Gully Rd (north)															
7	L2	All MCs	59	8.9	59	8.9	0.227	9.4	LOS A	1.5	10.9	0.80	0.73	0.80	50.4
8	T1	All MCs	79	6.7	79	6.7	0.227	9.5	LOS A	1.5	10.9	0.80	0.73	0.80	50.4
9	R2	All MCs	3	0.0	3	0.0	0.227	13.6	LOS A	1.5	10.9	0.80	0.73	0.80	50.2
Approach			141	7.5	141	7.5	0.227	9.5	LOS A	1.5	10.9	0.80	0.73	0.80	50.4
West: Gingers Ln (west)															
10	L2	All MCs	7	0.0	7	0.0	0.586	6.8	LOS A	5.3	38.2	0.74	0.63	0.77	51.4
11	T1	All MCs	537	2.9	537	2.9	0.586	7.1	LOS A	5.3	38.2	0.74	0.63	0.77	51.7
12	R2	All MCs	55	0.0	55	0.0	0.586	11.5	LOS A	5.3	38.2	0.74	0.63	0.77	50.5
Approach			599	2.6	599	2.6	0.586	7.5	LOS A	5.3	38.2	0.74	0.63	0.77	51.6
All Vehicles			1781	6.9	1781	6.9	0.586	7.2	LOS A	5.3	38.2	0.60	0.59	0.62	51.6

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

MOVEMENT SUMMARY

Site: 03D [Hart Rd/Gingers Ln/Government Rd/Sawyers Gully Rd - Dev PM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Government Rd (south)															
1	L2	All MCs	92	3.4	92	3.4	0.477	10.5	LOS A	3.7	27.8	0.86	0.81	0.97	48.1
2	T1	All MCs	99	2.1	99	2.1	0.477	10.5	LOS A	3.7	27.8	0.86	0.81	0.97	48.5
3	R2	All MCs	133	13.5	133	13.5	0.477	15.7	LOS B	3.7	27.8	0.86	0.81	0.97	47.3
Approach			323	7.2	323	7.2	0.477	12.7	LOS A	3.7	27.8	0.86	0.81	0.97	47.9
East: Hart Rd (east)															
4	L2	All MCs	149	14.8	149	14.8	0.120	4.8	LOS A	0.7	5.4	0.38	0.51	0.38	52.9
5	T1	All MCs	604	4.0	604	4.0	0.493	5.2	LOS A	4.1	30.1	0.53	0.51	0.53	52.5
6	R2	All MCs	66	9.5	66	9.5	0.493	9.9	LOS A	4.1	30.1	0.53	0.51	0.53	51.4
Approach			820	6.4	820	6.4	0.493	5.5	LOS A	4.1	30.1	0.51	0.51	0.51	52.5
North: Sawyers Gully Rd (north)															
7	L2	All MCs	59	3.6	59	3.6	0.320	9.7	LOS A	2.2	15.9	0.85	0.75	0.85	50.3
8	T1	All MCs	132	4.0	132	4.0	0.320	9.8	LOS A	2.2	15.9	0.85	0.75	0.85	50.2
9	R2	All MCs	6	16.7	6	16.7	0.320	15.1	LOS B	2.2	15.9	0.85	0.75	0.85	49.4
Approach			197	4.3	197	4.3	0.320	10.0	LOS A	2.2	15.9	0.85	0.75	0.85	50.2
West: Gingers Ln (west)															
10	L2	All MCs	5	0.0	5	0.0	0.618	7.2	LOS A	6.1	43.4	0.76	0.65	0.82	51.3
11	T1	All MCs	578	2.6	578	2.6	0.618	7.5	LOS A	6.1	43.4	0.76	0.65	0.82	51.6
12	R2	All MCs	49	4.3	49	4.3	0.618	12.1	LOS A	6.1	43.4	0.76	0.65	0.82	50.2
Approach			633	2.7	633	2.7	0.618	7.8	LOS A	6.1	43.4	0.76	0.65	0.82	51.5
All Vehicles			1973	5.1	1973	5.1	0.618	7.9	LOS A	6.1	43.4	0.68	0.63	0.72	51.2

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

MOVEMENT SUMMARY

Site: 04C [Hunter Expy Off Ramp/ Hart Rd - Dev AM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Dev AM (Network Folder: Development 2035)]

NA
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
SouthEast: Hunter Expy Off Ramp (south-east)															
1	L2	All MCs	769	6.8	769	6.8	0.435	6.9	LOS A	0.0	0.0	0.00	0.57	0.00	57.4
3	R2	All MCs	47	17.8	47	17.8	0.042	10.9	LOS A	0.2	1.2	0.52	0.73	0.52	53.4
Approach			817	7.5	817	7.5	0.435	7.1	LOS A	0.2	1.2	0.03	0.58	0.03	57.3
NorthEast: Hart Rd (north-east)															
5	T1	All MCs	6	33.3	6	33.3	0.003	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
Approach			6	33.3	6	33.3	0.003	0.3	NA	0.0	0.0	0.00	0.00	0.00	57.3
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	739	7.3	739	7.3	0.397	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			739	7.3	739	7.3	0.397	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			1562	7.5	1562	7.5	0.435	3.8	NA	0.2	1.2	0.02	0.30	0.02	60.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 04D [Hunter Expy Off Ramp/ Hart Rd - Dev PM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Dev PM (Network Folder: Development 2035)]

NA
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
SouthEast: Hunter Expy Off Ramp (south-east)															
1	L2	All MCs	800	5.9	800	5.9	0.449	6.9	LOS A	0.0	0.0	0.00	0.57	0.00	57.7
3	R2	All MCs	14	23.1	14	23.1	0.006	9.1	LOS A	0.0	0.2	0.07	0.60	0.07	56.4
Approach			814	6.2	814	6.2	0.449	7.0	LOS A	0.0	0.2	0.00	0.57	0.00	57.7
NorthEast: Hart Rd (north-east)															
5	T1	All MCs	21	10.0	21	10.0	0.011	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	65.6
Approach			21	10.0	21	10.0	0.011	0.1	NA	0.0	0.0	0.00	0.00	0.00	65.6
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	768	4.4	768	4.4	0.405	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
Approach			768	4.4	768	4.4	0.405	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.7
All Vehicles			1603	5.4	1603	5.4	0.449	3.6	NA	0.0	0.2	0.00	0.29	0.00	61.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 05C [Hunter Expy On Ramp/ Hart Rd - Dev AM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Dev AM (Network Folder: Development 2035)]

NA
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
NorthEast: Hart Rd (north-east)															
4	L2	All MCs	24	87.0	24	87.0	0.021	12.3	LOS A	0.0	0.0	0.00	0.53	0.00	42.4
5	T1	All MCs	6	33.3	6	33.3	0.003	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
Approach			31	75.9	31	75.9	0.021	9.8	NA	0.0	0.0	0.00	0.42	0.00	43.7
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	62	15.3	62	15.3	0.035	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
12	R2	All MCs	724	7.3	724	7.3	0.419	6.1	LOS A	3.0	21.9	0.06	0.60	0.06	51.1
Approach			786	7.9	786	7.9	0.419	5.7	NA	3.0	21.9	0.06	0.55	0.06	52.2
All Vehicles			817	10.4	817	10.4	0.419	5.8	NA	3.0	21.9	0.06	0.55	0.06	51.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 05D [Hunter Expy On Ramp/ Hart Rd - Dev PM (Site Folder: Development 2035)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [Dev PM (Network Folder: Development 2035)]

NA
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
NorthEast: Hart Rd (north-east)															
4	L2	All MCs	243	3.5	243	3.5	0.134	8.6	LOS A	0.0	0.0	0.00	0.57	0.00	58.5
5	T1	All MCs	37	2.9	37	2.9	0.019	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	67.4
Approach			280	3.4	280	3.4	0.134	7.4	NA	0.0	0.0	0.00	0.49	0.00	59.0
SouthWest: Hart Rd (south-west)															
11	T1	All MCs	17	6.3	17	6.3	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	70.0
12	R2	All MCs	654	3.1	654	3.1	0.381	6.3	LOS A	2.5	17.9	0.16	0.58	0.16	52.2
Approach			671	3.1	671	3.1	0.381	6.1	NA	2.5	17.9	0.15	0.57	0.15	52.5
All Vehicles			951	3.2	951	3.2	0.381	6.5	NA	2.5	17.9	0.11	0.54	0.11	54.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Attachment D

Deceleration lane in Mitchell Avenue

EMM
creating opportunities

A1



PLAN.
NTS.

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REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
-	4/11/23	DECELERATION LANE FOR ACCESS	C.J.	A.U.					

PROJECT:
KURRI KURRI
INTEGRATED RESOURCE RECOVERY
CENTRE

DRAWING TITLE:
DECELERATION LANE PLAN FOR ACCESS

CLIENT: C W S
DRG. #: EMM - C01
PROJECT #: E230029
SCALE:

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