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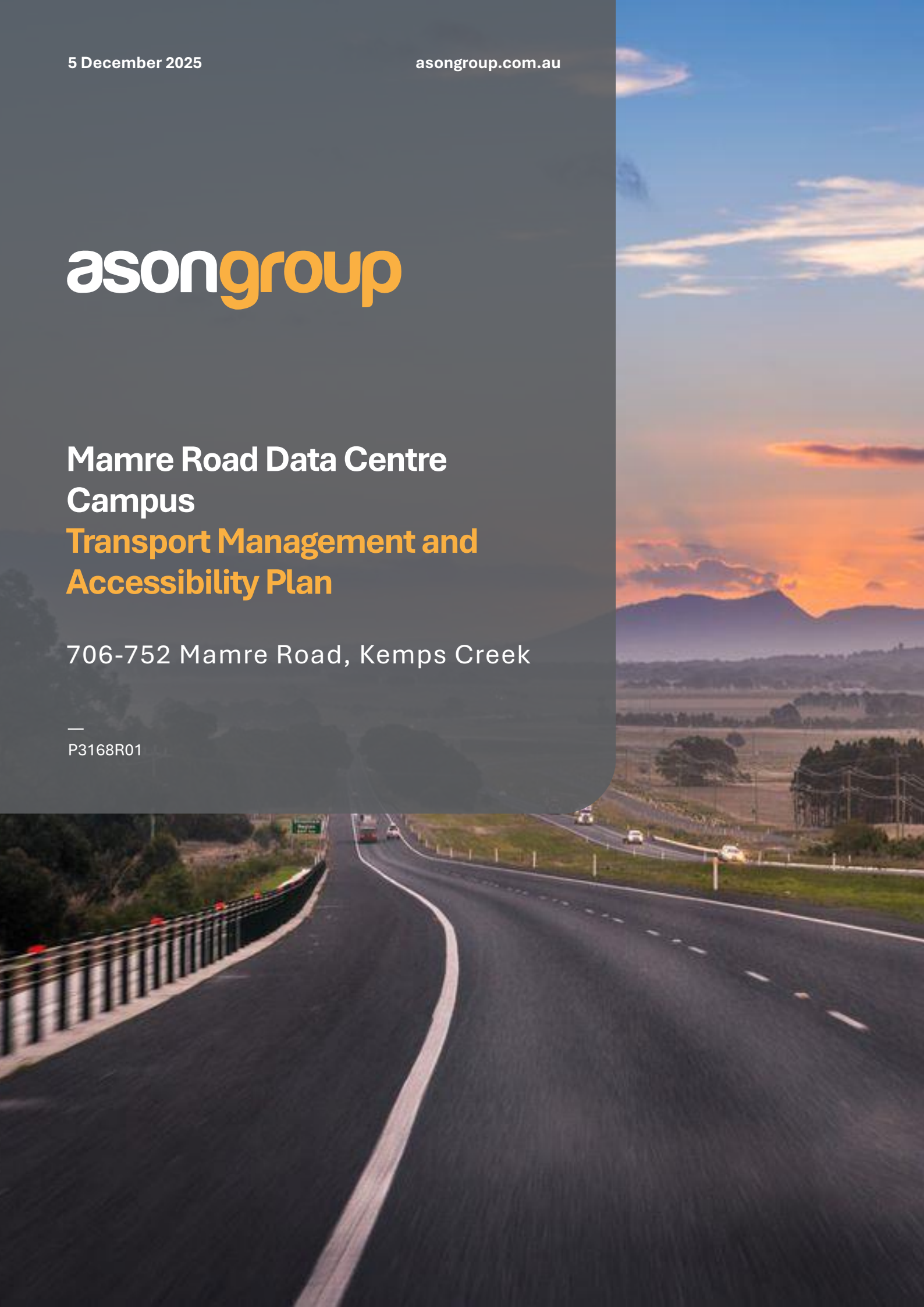
Mamre Road Data Centre Campus

Transport Management and Accessibility Plan

706-752 Mamre Road, Kemps Creek

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P3168R01



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1 Introduction

1.1 Overview

This Transport Management & Accessibility Plan (TMAP) has been prepared in support of the State Significant Development proposal (SSD-92743706) for the Mamre Road Data Centre Campus, located at 706–752 Mamre Road, Kemps Creek (the site). The proposal seeks consent for the construction of a data centre campus and associated infrastructure.

The assessment undertaken addresses the site's transport and access arrangements, parking provision, traffic generation, and integration with the wider Mamre Road Precinct (MRP) road network during both interim and ultimate stages. Active and public transport opportunities are also considered, alongside the design standards for on-site access, parking, and servicing in accordance with relevant Australian Standards and the Mamre Road Precinct Development Control Plan (MRP DCP).

This TMAP draws on Ason Group's extensive experience within the MRP, including preparation of transport assessments for other developments in the precinct and direct involvement in precinct-wide modelling and road network planning. The analysis has been tailored to reflect the specific operational requirements and anticipated transport characteristics of data centre uses while ensuring consistency with applicable planning controls and transport infrastructure strategies for the area.

1.2 Site Planning History

It is noted that a separate SSD is currently active on the site (SSD-30628110) seeking approval for a warehouse and logistics estate ('Summit at Kemps Creek' Estate). The Summit at Kemps Creek SSD is well advanced, with Responses to Submissions processes now resolved with all the relevant agencies and stakeholders.

From the outset, it should be recognised that the proposal that is the subject of this TMAP forms part of a totally separate approvals process. The nature of the proposal is entirely different to that which is currently proposed under the Summit at Kemps Creek SSD. The final built from to be delivered on the site will be the outcome of matters not related to the individual assessment undertake for each use.

Ason Group also undertook the relevant traffic and transport assessment for the Summit at Kemps Creek SSD, which considered the requirements to facilitate a traditional warehouse use on the site. This TMAP considers the merit of the data centre use in its own right. This particularly relevant as data centre uses are known to generate less vehicle trips than warehouse uses.

The previous work undertaken for the Summit at Kemps Creek SSD indicated that the trip generation of the Summit at Kemps Creek Estate would exceed the capacity of interim road network being facilitated by other developments in the MRP and would warrant a suite of upgrades on Bakers Lane for access to Mamre Road. Further detail on the Summit at Kemps Creek SSD is provided in Section 3.3.

1.3 Assessment Objectives

The key objectives of this SSD TMAP are as follows:

- To establish the traffic impact of the Proposal, over and above the currently approved and proposed development in the MRP, as well as to evaluate whether the proposed data centre campus would result in a similar outcome to the Summit at Kemps Creek SSD and necessitate a similar level of road upgrades to offset the impacts of the development.
- To establish that the development of the Site is compliant and consistent with the relevant access, traffic and parking requirements – in particular that there is an appropriate and sustainable provision of car parking.
- To demonstrate that the proposed access driveways, internal roads, car parks and service facilities can provide a design compliant with the relevant Australian Standards.

1.4 Secretary's Environmental Assessment Requirements

Secretary's Environmental Assessment Requirements (SEARs) were issued by the Department of Planning, Housing & Infrastructure (DPHI) in September 2025 for the subject SSD proposal (SSD-92743706).

The DPHI SEARs relating to traffic and transport considerations are outlined in **Table 1** below, Ason Group has provided a summary response to each SEAR, and reference to the section of this TMAP providing a more detailed analysis of each SEAR.

Table 1: SEARs Compliance (SSD-92743706)

SEARs Item	Summary Response	Reference
Traffic and Transport *– a quantitative transport impact assessment prepared in accordance with relevant Transport for NSW (TfNSW) and Austroads guidelines (including the Guide to Transport Impact Assessment (TfNSW, 2024), which includes:*		
- *details of the likely construction trip generation, construction vehicle routes, access and parking arrangements during construction works and measures to mitigate any construction traffic and parking impacts, detailed in a draft Construction Traffic Management Plan*	Construction traffic thresholds for the various constructions stages are detailed within the Draft Construction Traffic Management Plan (CTMP). 3 different access options have been developed. However, it is anticipated that access will be via the road under construction to the south of the Site (via the Yiribana Estate). The alternative 2 options will only be utilised if necessary. Vehicle routes will be way of Mamre Road and the arterial road network.	Appendix B (Draft CTMP) – Section 3.3 & 4.2
- *details of all daily and peak traffic volumes likely to be generated during all key stages of operation, including a description of key access / haul routes, vehicle types and potential queuing impacts*	The proposed Mamre Road Data Centre was assessed on a first principles basis in consideration of key operational information relating to number of persons on site as well as shift times. A daily profile was established based on this information which also identifies the peak periods during AM and PM peak hours (associated with shift changes). This assessment includes distributions on the MRP road network based on the interim network and access strategy (regional access via intersection of Mamre Road / Darrabarra Avenue).	Section 7.1 (traffic volumes and distributions) Section 8.2.2 (queueing assessment)
- *demonstration that the proposed access arrangements can adequately accommodate all vehicle movements generated during construction and operation of the development, while ensuring the development does not*	As detailed in the response below, SIDRA modelling was undertaken to evaluate the capacity of the interim MRP network (and with delivery of the TfNSW Mamre Road Upgrade - Stage 2 Project).	Section 7 (Traffic Assessment)

adversely impact upon the orderly development of land within the surrounding area	The results indicate that the newly completed signalised intersection at Mamre Road / Darrabarra Avenue will continue to perform satisfactorily in 2036 (planned year for ultimate MRP road network) with the addition of cumulative development within the MRP (including the proposed development). Furthermore, the study identifies another critical outcome with respect to the ongoing performance of the intersection of Mamre Road and Bakers Lane. In contrast to the previous Summit at Kemps Creek SSD for the site (warehouse estate) – planned upgrades to this intersection would no longer be needed under short-medium term timeframes which can be attributed to the low traffic generating nature of data centres.	
- *an assessment of the predicted impacts of development traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts on existing performance levels of nearby intersections, using a calibrated SIDRA (or similar) traffic model. This is to include the identification and consideration of approved and proposed developments and road upgrades in the Mamre Road Precinct and evidence of agreement with TfNSW in relation to the assessment approach*	SIDRA modelling was undertaken of a study network which includes two major intersections on Mamre Road (Bakers Lane and at Darrabarra Avenue). This assessment considers the cumulative impact of developments (planning approvals and submissions) as well as accounting for existing infrastructure and planned upgrades (namely, the TfNSW Mamre Road Upgrade – Stage 2 project).	Section 7 (Traffic Assessment)
- *identification and assessment of any required road upgrades, interim works, new roads or access points necessary to service the development or the broader Mamre Road Precinct, including:*		
○ *details of the timing, staging, and delivery of the works (construction and operation)*	Staging details for construction activity is addressed in the Draft CTMP. The staging of the proposed development and delivery of works associated with the MRP road network has been also considered – with modelling assessments accounting for full development by 2031.	Appendix B – Draft CTMP Section 5.3 (Staging)
○ *evidence of consultation with TfNSW and Penrith City Council regarding these works, as well as any necessary land owner's consent*	Please refer to the Environmental Impact Statement for details regarding consultation with authorities, including TfNSW and Penrith City Council.	(Environmental Impact Statement)

<table>
<tr>
<td>o evidence of consistency with Section 3.4.1 of the MRP DCP, specifically in relation to the use of Bakers Lane to access existing land uses to the north and east of the site</td>
<td>The access arrangements for the proposed development align with Section 3.4.1 of the MRP DCP by enabling interim access to Mamre Road via Darrabarra Avenue.
The (operational) proposed development is not reliant on access from Bakers Lane however has been designed to facilitate the progression of the MRP road network by dedicating a north-south road to be connected to the SLR in the future.</td>
<td>Section 5.2
(Proposed Access and Road Network)</td>
</tr>
<tr>
<td>o evidence of compliance with sections 2.34 and 2.35 of State Environmental Planning Policy (Industry and Employment) 2021, specifically regarding the site's integration with the Mamre Road Precinct's dedicated freight corridor and delivery of the Southern Link Road</td>
<td>The proposed development includes appropriate setbacks and dedications to allow for the future construction of the freight corridor (10m setback) as well as for the delivery of the Southern Link Road (delivered by others). In particular, the site includes splays at the northern boundary to facilitate the future integration of the planned north-south collector road with the SLR (including planned signalised intersection to be delivered by others).</td>
<td>-</td>
</tr>
<tr>
<td>o an update on the status of the planning agreement for the Land Owner Group – East (LOG-E) roadworks, including indicative timing for the delivery of associated road infrastructure</td>
<td>The proposed development does not rely on committed infrastructure upgrades by the LOG-E group which relies on access to Mamre Road via upgrades to Aldington Road and Abbotts Road.
Ason Group has worked with respective landowners in relation to LOG-E works and understands the following timings are anticipated for intersections (in addition to carriageway upgrades):
<table>
<tr><td>February 2026:</td><td>Signalised Intersection of Aldington Road / Abbotts Road</td></tr>
<tr><td>October 2026:</td><td>Interim Signalised Intersection of Mamre Road / Abbotts Road</td></tr>
<tr><td>June 2027:</td><td>Ultimate Signalised Intersection of Mamre Road / Abbotts Road</td></tr>
</table>
</td>
<td>-</td>
</tr>
<tr>
<td>- 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</td>
<td>The Draft CTMP addresses access arrangements relating to construction activity both in relation to intensity and potential mitigations (e.g. traffic control).
The proposed development includes dedicated loading bays for each sub-parcel and the 'COSH' facility (incorporating café). Swept path analysis</td>
<td>Appendix B – Draft CTMP

Section 8.2.3
(Service Vehicles)

Section 8.2.2
(Queueing Assessment)</td>
</tr>
</table>

	has been undertaken as well as queuing assessments at the secure gates to validate that the on-street network would not be impacted by regular operation.	
- *details and plans of any proposed internal road network, access points, loading dock provision and servicing, on-site parking provisions, and sufficient pedestrian and cyclist facilities, in accordance with the relevant Australian Standards, the Austroads/TfNSW technical guidelines and the MRP DCP (as appropriate), including demonstration that driveways and internal circulation areas are designed to avoid conflict between heavy vehicles and light vehicle, pedestrian and cycle movements*	On-Site parking provisions have been assessed against the Mamre Road Development Control Plan and with respect to projected demands based on operational details for the proposed data centre campus. Design aspects have been assessed in accordance with the AS2890 series, including for car parking, loading bays and bicycle facilities.	Section 6 (Parking Requirements) Section 8 (Access and Internal Road Networks)
- *swept path diagrams for the largest vehicles manoeuvring through site access points, internal roads, hardstand areas and nearby intersections (where necessary).*	A swept path analysis has been undertaken for all access and circulation movements for the relevant design vehicle, including occasional articulated vehicles and for rare maintenance related activity with low loader vehicles.	Appendix A (Swept Path Analysis)

2 References

As discussed, the Site lies with the MRP; as such, Ason Group has referenced the MRP DCP as it provides the overarching controls for the Site and the wider MRP:

- DPHI, Mamre Road Precinct Development Control Plan, November 2021 (MRP DCP).

Ason Group has also referenced the following additional policies and guidelines relevant to the assessment of the Proposal:

- TfNSW Guide to Traffic Generating Developments, Version 1.1, November 2024 (TfNSW Guide).
- State Environmental Planning Policy (Industry and Employment) 2021
- Australian Standard 2890.1:2004: Parking Facilities – Off Street Car Parking (AS 2890.1:2004).
- Australian Standard 2890.2:2018 Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2:2018).
- Australian Standard 2890.3:2015: Parking Facilities – Bicycle Parking (AS 2890.3:2015).
- Australian Standard 2890.6:2009 Parking Facilities – Off Street Parking for People with Disabilities (AS 2890.6:2009).

Finally, the previously prepared Summit at Kemps Creek TMAP has also been referenced:

- Ason Group, Transport Management & Accessibility Plan, Summit at Kemps Creek at Kemps Creek, 706-752 Mamre Road, Kemps Creek, Version 8, 17/10/2024 (Summit at Kemps Creek TMAP).

3 Planning Context

3.1 Mamre Road Precinct

In June 2020, the NSW Government rezoned approximately 850 hectares of land within Kemps Creek to from rural uses to IN1 General Industrial. This rezoning was formalised as the Mamre Road Precinct (MRP) and seeks to:

- Respond to the demand for industrial land in Western Sydney, as well as the future freight, logistics and industrial needs of Greater Sydney.
- Facilitate the NSW Government's vision for the Western Parkland City.
- Facilitate the delivery of a 30-minute city as detailed in the Western City District Plan.
- The MRP will provide capacity for some 17,000 jobs, and in addition to enhancing transport networks will include creation of new environmental conservation areas and public open space.

The Mamre Road Precinct Structure Plan is shown in **Figure 1.**

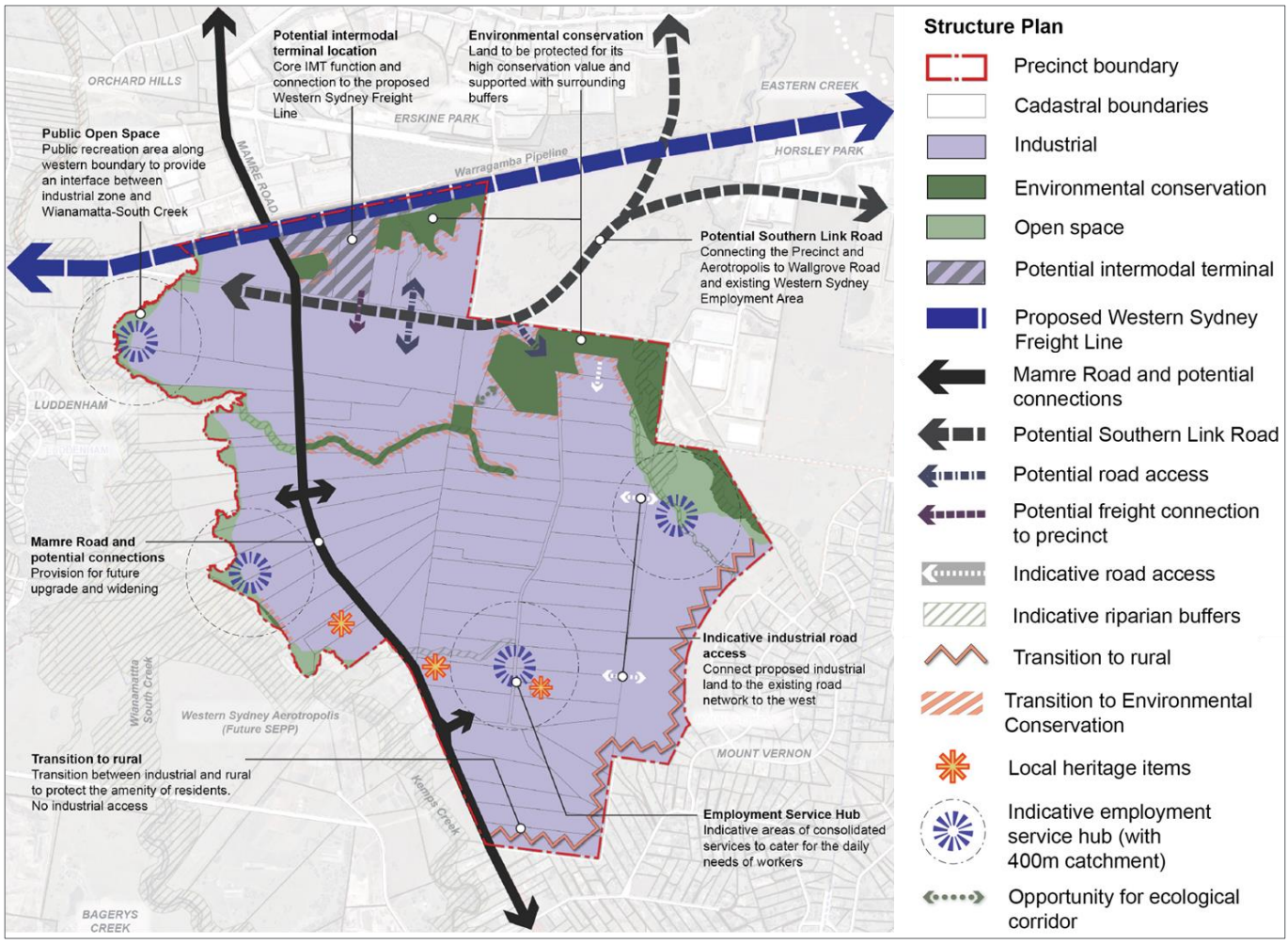


Figure 1: Mamre Road Precinct Structure Plan

Since the rezoning of the MRP, multiple developments have either been delivered and are now operational, are under construction or are working through the relevant planning approvals. As part of this progression, new road infrastructure has already been delivered, and further road upgrades are committed by other developers, which includes:

- Mamre Road / Abbots Road interim intersection upgrade, with signalisation of the current configuration of priority control; and
- Abbotts Road and Aldington Road corridor upgrades. This includes widening (for the most part) of the existing road to 2 lanes in each direction as well as delivery of signalised intersection along Aldington Road (as aper the DCP).

The figure below provides a comparison in change over time since 2022. Note that Summit at Kemps Creek SSD originally received SEARs in November 2021. As is shown by the comparison below between January 2023 and September 2025 (MetroMap Imaging), the context of the MRP has changed substantially since that time.



Figure 2: MRP Precinct – January 2023

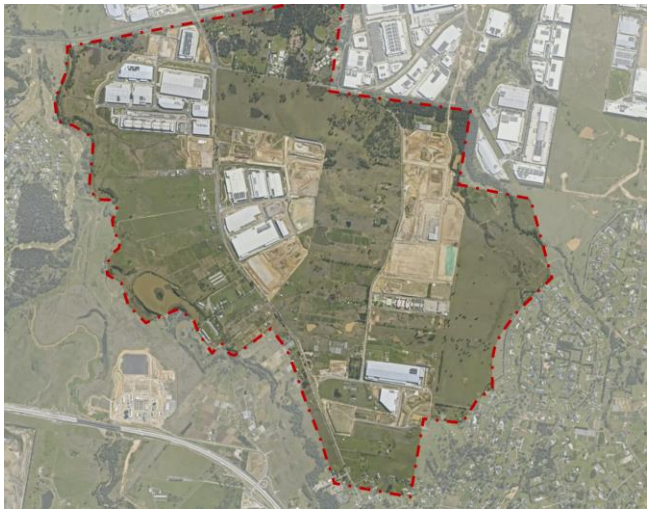


Figure 3: MRP Precinct – September 2025

3.2 Future Road Network

3.2.1 Mamre Road Upgrade Project – Stage 2

3.2.1.1 OVERVIEW

There are numerous road upgrades being undertaken by Transport for NSW (TfNSW) in Western Sydney to accommodate the growth associated with the wider Aerotropolis Precincts. Of particular relevance to the Site is the commitment to deliver Phase One of the Mamre Road Stage 2 Upgrade between Erskine Park Road and Kerrs Road, secured following provision of joint funding in mid-2025 by the Federal and State Governments.

This Project will continue the transformation of Mamre Road from a two-lane rural road to an arterial road. Improvements principally relate to increased lane capacity in anticipation of traffic volumes doubling by 2041, along with targeted improvements along the 6.1km corridor.

In October 2025 TfNSW exhibited the Review of Environmental Factors (REF) for the Mamre Road Stage 2 Upgrade and confirmed and intention to deliver the project in two phases:

- Interim Phase: Widening of the corridor (Erskine Park Road to Kerrs Road) to a four lane divided road with associated intersection upgrades, to be completed by 2029.
- Ultimate Phase: Widening of the corridor (Erskine Park Road to Kerrs Road) to a six lane divided road.

A detailed extract of the REF in relation to interim phase works is provided below, which also includes intersection improvements and enhancement of active and public transport networks.

Mamre Road – Between Erskine Park Road and Kerrs Road – Phase One

The key features of the Interim Stage of the Proposal would include:

- upgrading and widening Mamre Road to a continuous four-lane divided road with two lanes in each direction between Erskine Park Road and Darrabarra Avenue
- upgrading and widening Mamre Road to a four-lane divided road, with wide shoulders between Darrabarra Avenue and Kerrs Road to allow for six lanes in the future
- changes to intersections with Mamre Road including:
  - upgrading the signalised intersections at Darrabarra Avenue and Abbotts Road to three through lanes in each direction with bus jump start facility provided at approaches to each intersection
  - changes to the temporary left-in/left-out access arrangements to 805 Mamre Road
  - an additional right turn lane northbound from Mamre Road into Bakers Lane
  - revised pedestrian and cyclist crossing arrangement on the western leg of Distribution Drive intersection to signalised instead of the existing zebra crossing
  - revised crossing arrangement on the southern leg of James Erskine Drive intersection to allow for both pedestrian and cyclist crossings
  - new left-in/left-out intersections at 931 Mamre Road, and Access Logistics Park (884-928 Mamre Road) in line with the Mamre Road Precinct Development Control Plan (DCP) 2021
  - new left-out intersection at approximately 600 metres south of Abbotts Road
  - new shared path on the western side of Mamre Road from James Erskine Drive to Darrabarra Avenue and on the eastern side of Mamre Road from Darrabarra Avenue to about 600 metres south of Abbotts Road
  - new footpath on the western side of Mamre Road from Darrabarra Avenue to approximately 600 metres south of Abbotts Road
  - new bus stop facilities on Mamre Road at James Erskine Drive, Distribution Drive, Bakers Lane, Darrabarra Avenue, and Abbotts Road intersections

Source: Review of Environmental Factors (Transport for NSW) – September 2025



Figure 4: Mamre Road Upgrade Project Stage 2 Summary (Source: TfNSW)

3.2.1.2 GROWTH ASSUMPTIONS

The upgrades were informed by a modelling assessment detailed in the exhibited Traffic and Transport Assessment (Aerocon, July 2025). In this regard, the following assumptions are relevant with respect to comparing growth factors between the REF and the subject SSD Proposal:

- Anticipated completion of 70% of all development within the Mamre Road Precinct by 2041.
- Annual average background growth of:
  - 2023 to 2029: 6% per annum
  - 2023 to 2041: 5% per annum

These growth forecasts include regional traffic growth (along Mamre Road) as well as directly arising from development within the adjoining Mamre Road Precinct. In particular, the modelling assessment has assumed the completion of the Southern Link Road (SLR) in 2041, which would introduce regional connectivity to Mamre Road from the east originating from Wallgrove Road.

3.2.1.3 CROSS SECTIONS

Typical cross sections for the Stage 2 corridor under the phase two corridor are shown in **Figure 5** and **Figure 6** and to the north and south of Darrabarra Avenue. This shows the interim four-lane configuration with a median to allow for future expansion to six lanes under Phase 2 of the Project.

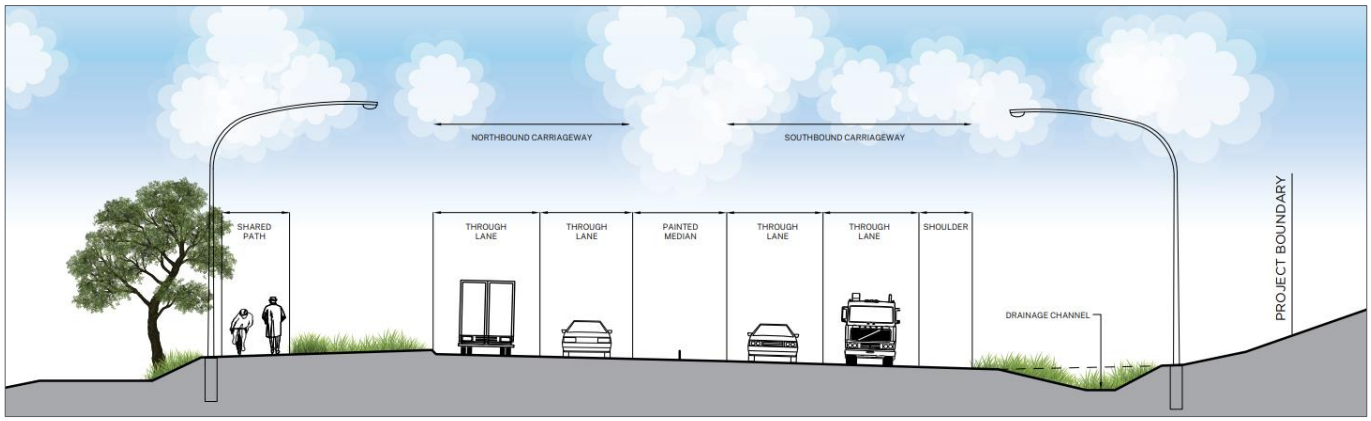


Figure 5: Mamre Road Typical Profile – Darrabarra Avenue to Erskine Park Road (TfNSW)

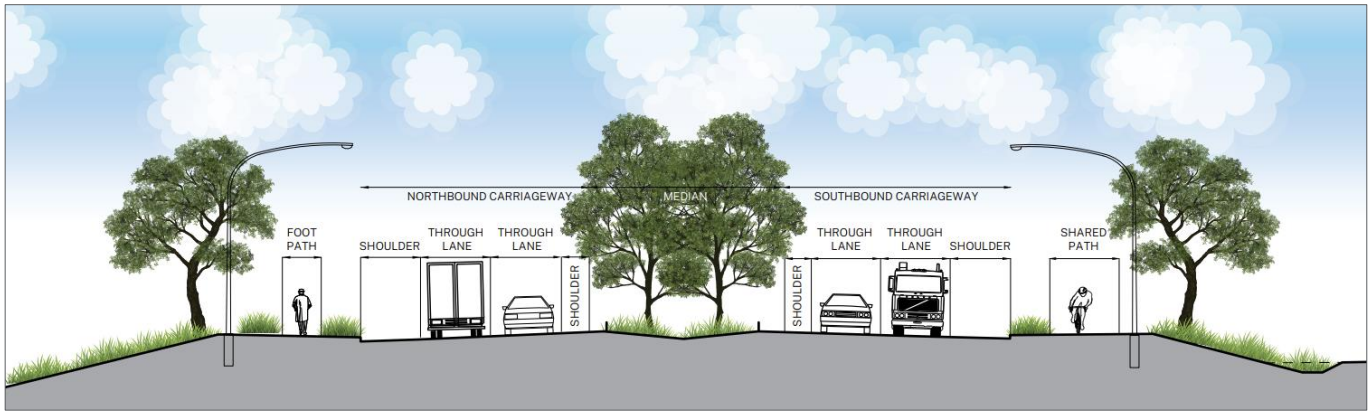


Figure 6: Mamre Road Typical Profile – Darrabarra Avenue to Kerrs Road (TfNSW)

3.2.1.4 INTERSECTION UPGRADES (BY TFNSW)

The Phase 2 works will also include improvements to the following key intersections (as identified in the preceding summary figure) along the corridor:

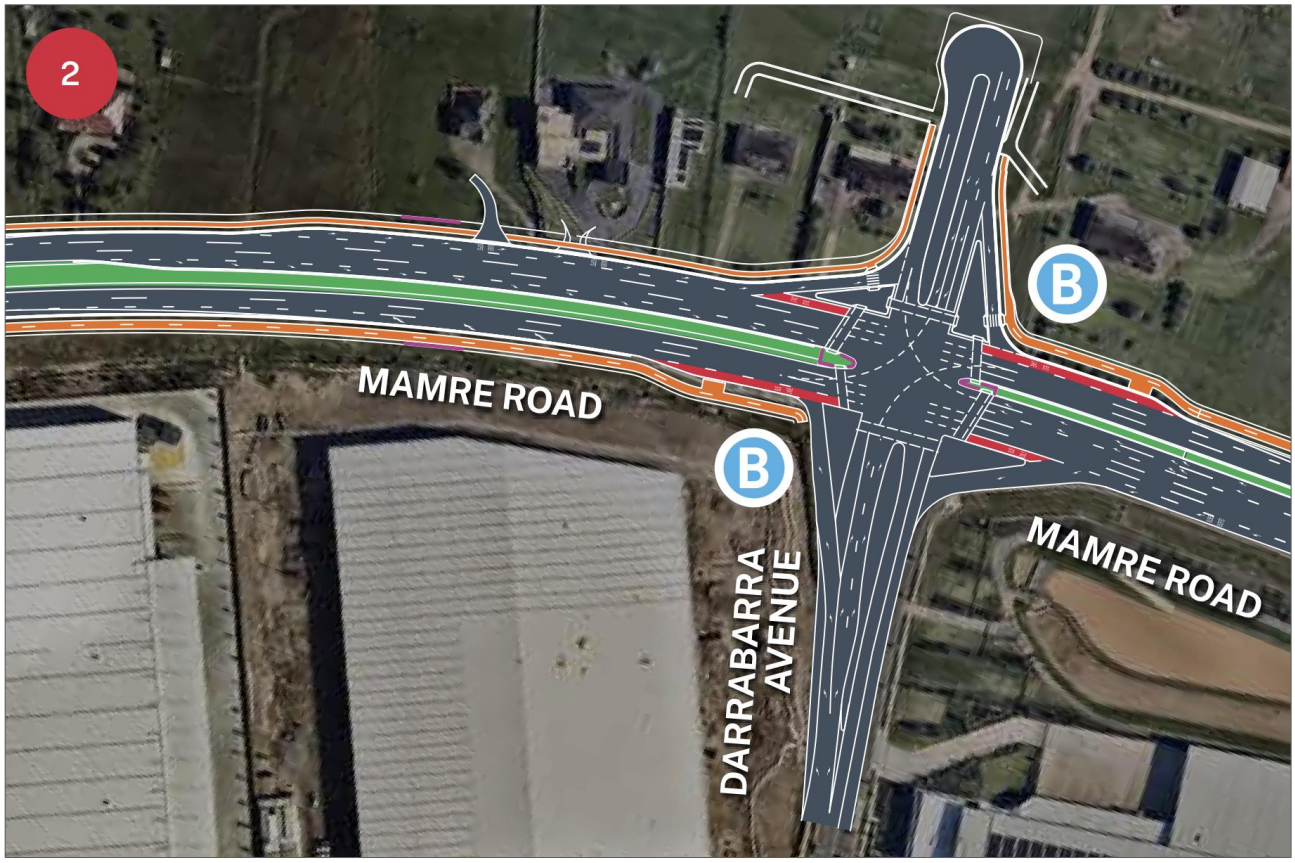


Figure 7: Intersection Upgrade – Mamre Road and Darrabarra Avenue (TfNSW)

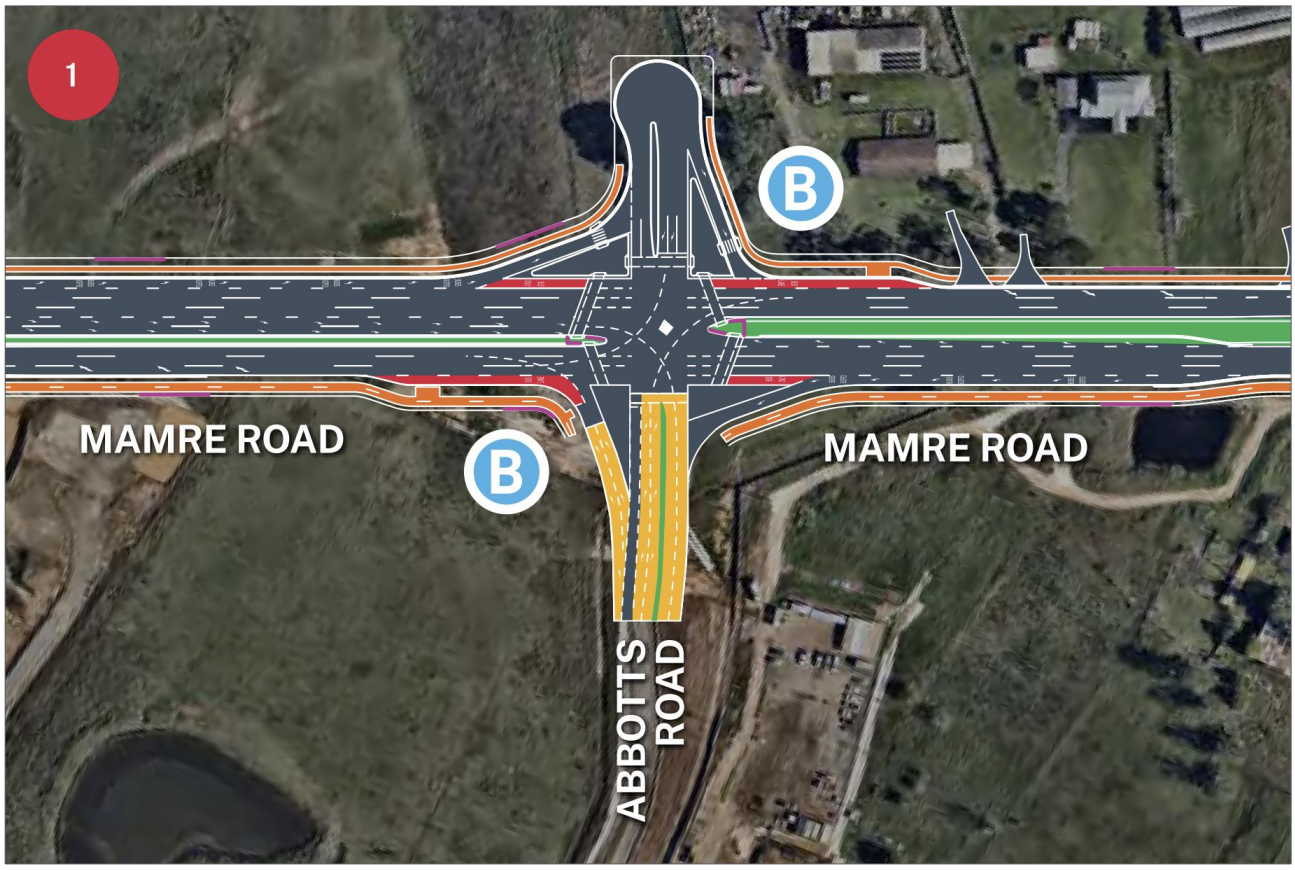


Figure 8: Intersection Upgrade – Mamre Road and Abbotts Road (TfNSW)

3.2.2 Mamre Road Precinct Road Network

Ason Group worked with DPHI and TfNSW to deliver a modelling assessment (herein referred to as the MRP modelling assessment) which accounted for MRP under full development in the years 2031 and 2036. The modelled layout was endorsed and adopted within the MRP DCP as the ultimate road network for the year 2036.

The road network outlined within the MRP DCP is shown by **Figure 9** which provides context to the configuration of MRP roads and confirms a north-south connection through the Site as a local industrial road.

The requirements for the Local and Collector Industrial Road typology, as per the Mamre Road DCP, is shown further below.

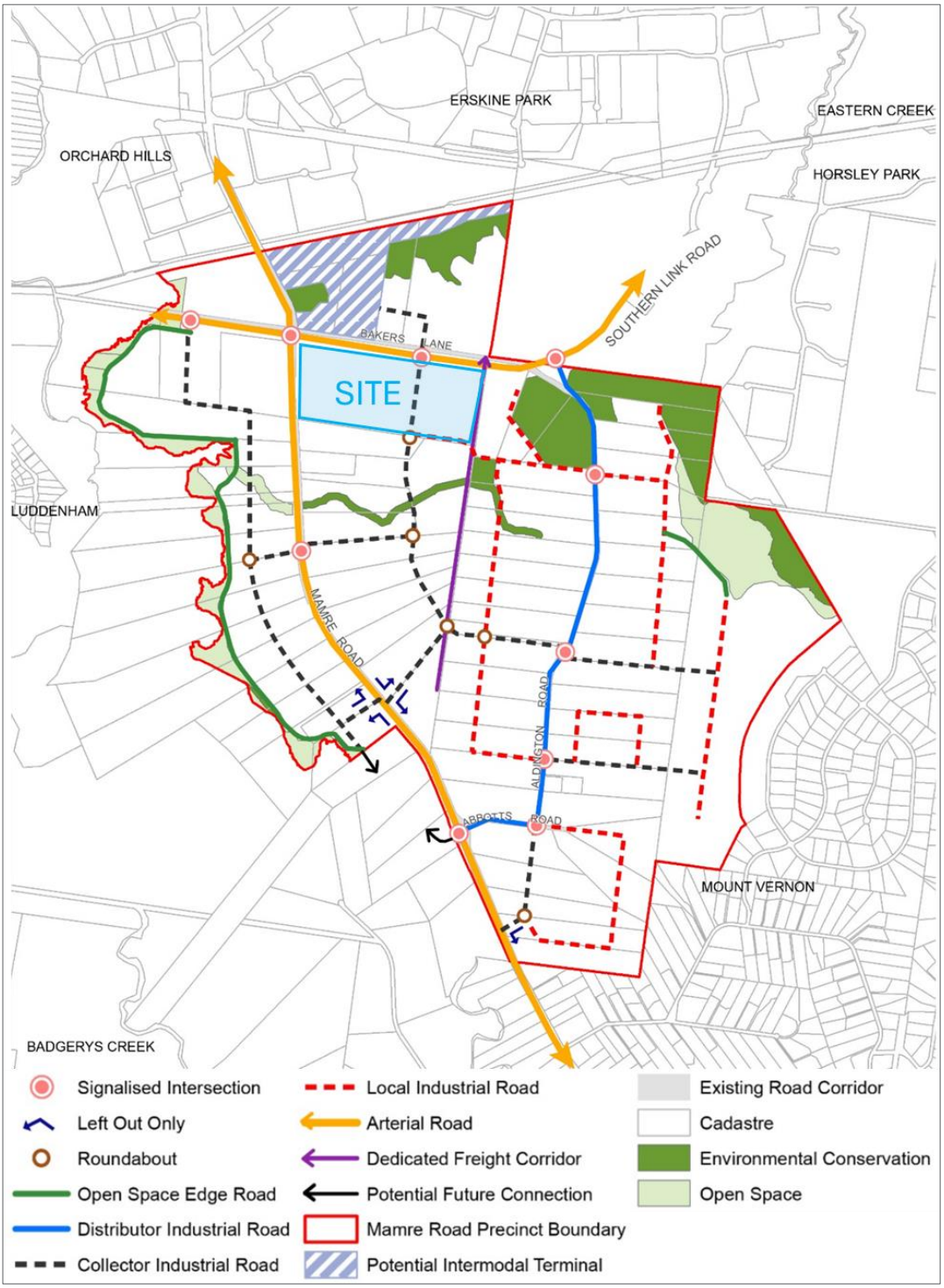


Figure 9: Mamre Road Precinct Road Hierarchy

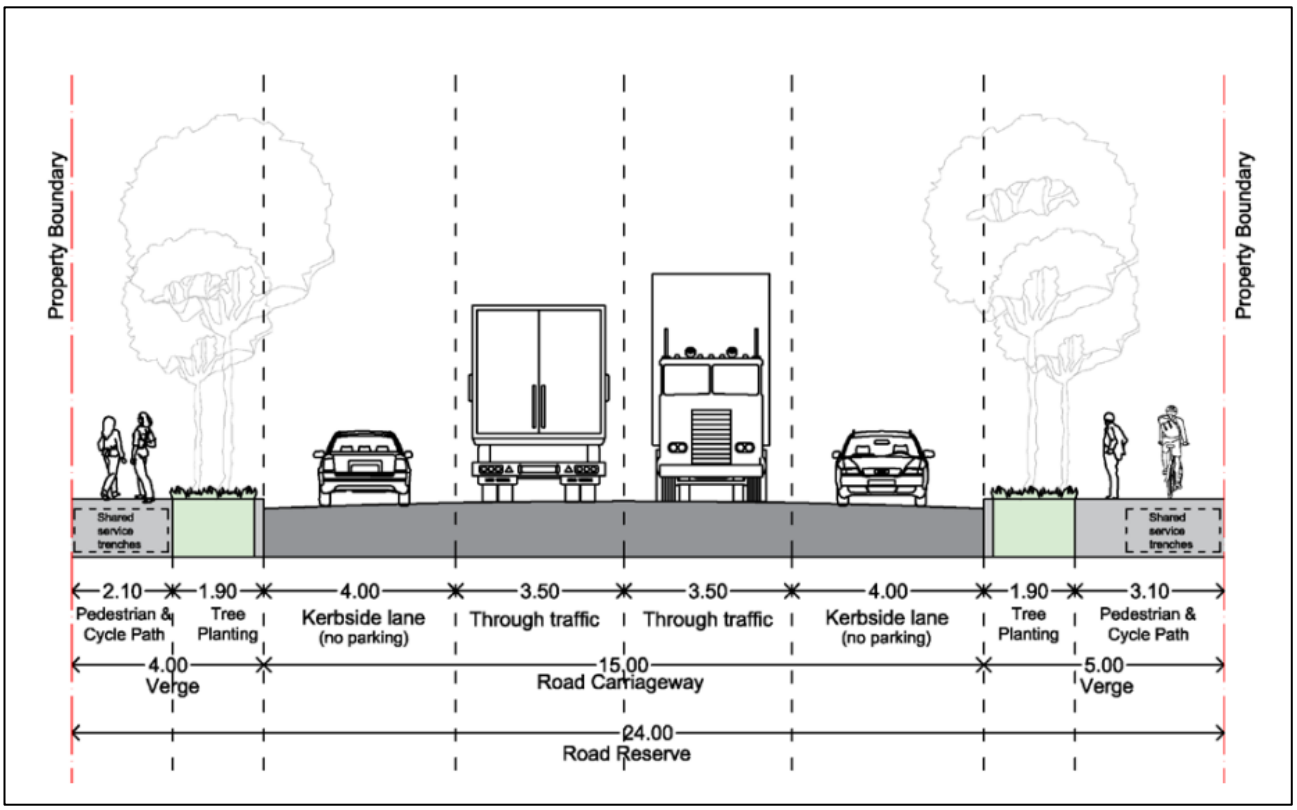


Figure 10: MRP DCP Typical Local Industrial Road

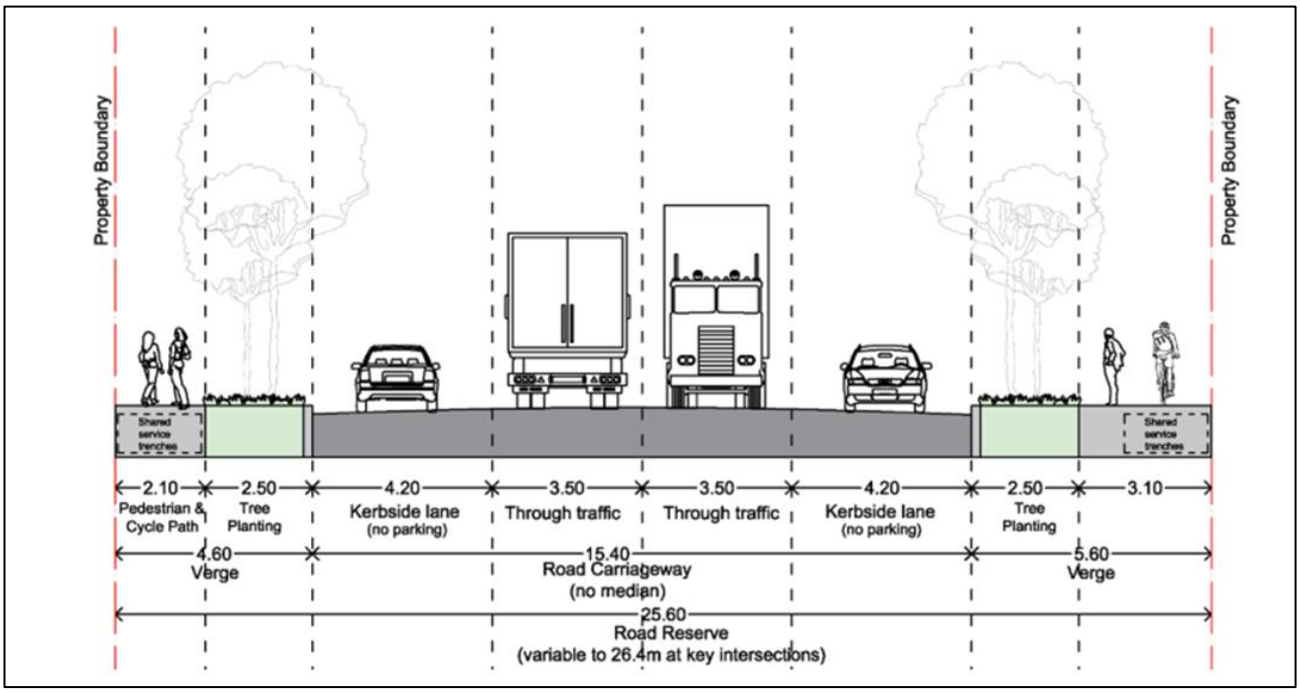


Figure 11: MRP DCP Typical Collector Industrial Road

3.2.2.1 COMMITTED DEVELOPER ROAD DELIVERY & UPGRADES

The Mamre Road Precinct DCP identifies the ultimate road network (by 2036), however no staging strategy had been identified to allow for the initial stages of development in the interim period prior to delivery of the ultimate road network.

Ason Group undertook a modelling assessment on behalf of landowners along Aldington Road (referred to as the Land Owners Group East (LOG-E) to the relevant upgrades to the Abbotts Road and Aldington Road corridor. These upgrades were confirmed to include carriageway upgrades at Aldington Road and Abbotts Road as well as the signalisation of the intersection of Mamre Road and Abbotts Road.

The detailed assessment which identified the road requirements focused on an assessment year of 2026 and provided consideration to the road network that will be delivered by the LOG-E and other landowners in the MRP. The relevant road network assumed and the development sites, are shown by **Figure 12.**

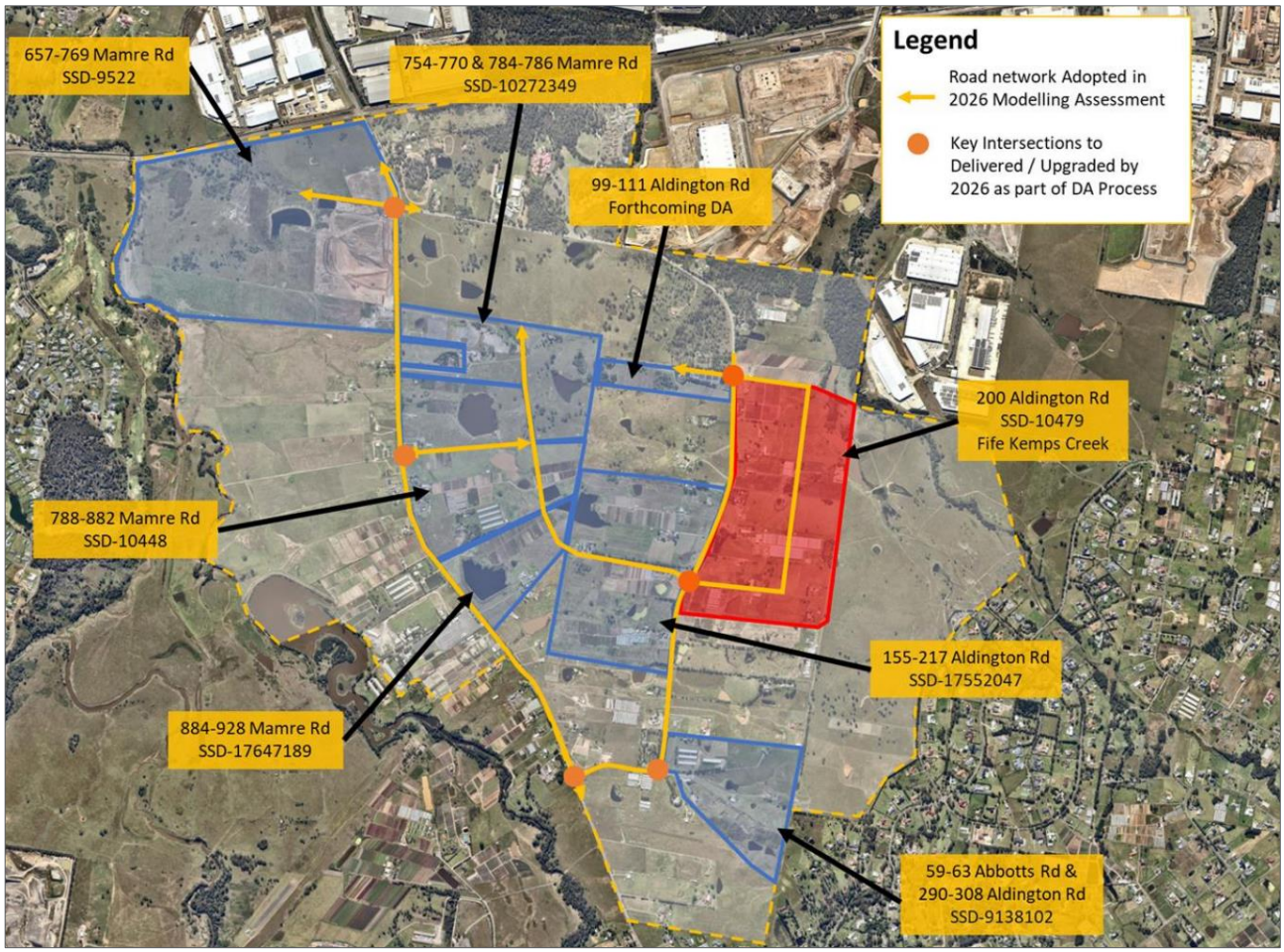


Figure 12: Interim Modelling Assessment Road Network

Critically, this assessment (inclusive of the road network adopted) was agreed with TfNSW, and has since been endorsed (facilitating the approval of the Concept Master Plan). The assessment identified that, on the basis of the network being delivered, approximately 990,000m^2 of GFA could be delivered in the MRP by 2026.

3.3 Relevant Development Application Context

3.3.1 Proposed Summit at Kemps Creek Estate (SSD-30628110)

The SSD for the Summit at Kemps Creek Estate (ISPT/Aliro) was lodged for the subject site at 706-752 Mamre Road and seeks approval for an industrial estate comprising nine buildings with a total gross floor area (GFA) of up to 244,413 square metres (m^2) and Stage 1 development of three buildings with a total GFA of 79,263 m^2.

Based on the adopted MRP trip rates, the estate would generate some 562 vehicle trips per hour during the AM peak period and 587 vehicle trips per hour during the PM peak period.

An extract of the concept masterplan for the Summit at Kemps Creek Estate is shown below.

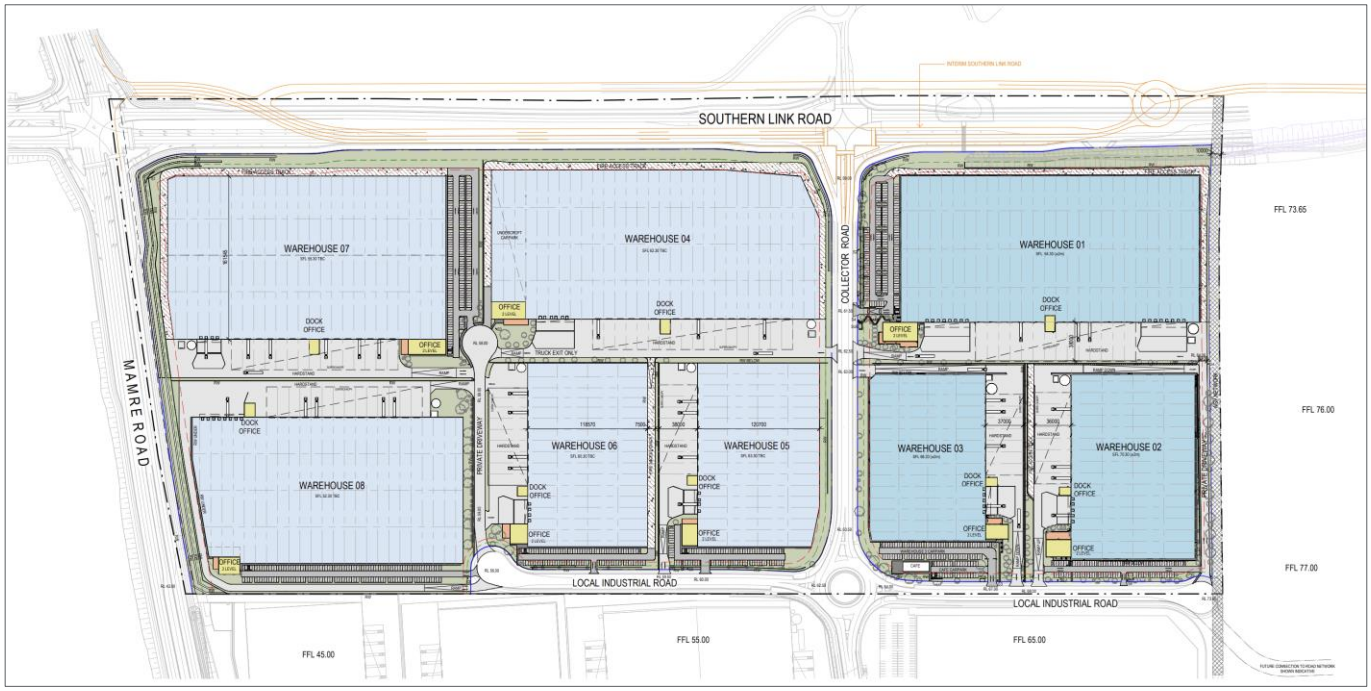


Figure 13: Summit at Kemps Creek Masterplan

Notably, the proponent was part of a landowners group known as LOG-N which proposed a suite of upgrades in order to activate access for new MRP developments via Bakers Lane. With reference to the below layouts, these works included partial delivery of the Southern Link Road (SLR) and integration of the site as follows:

- SLR to replace Bakers Lane as a complete dual carriageway (two lanes each direction) between Mamre Road and the Aldington Road Works by LOG-E. The existing Bakers Lane along the frontage of the existing Mamre Anglican school and Emmaus Catholic College will be retained as a parallel road, with a left-in/ left-out connection to the west and a new roundabout to the east.
- Mamre Road/ SLR intersection to comprise (i the interim term) a left-in and left-out arrangement with:
  - North approach kerbside lane converted from stand-up left turn lane to a left turn slip lane.
  - A left turn slip lane on the east approach.
  - A left turn slip lane on the west approach.

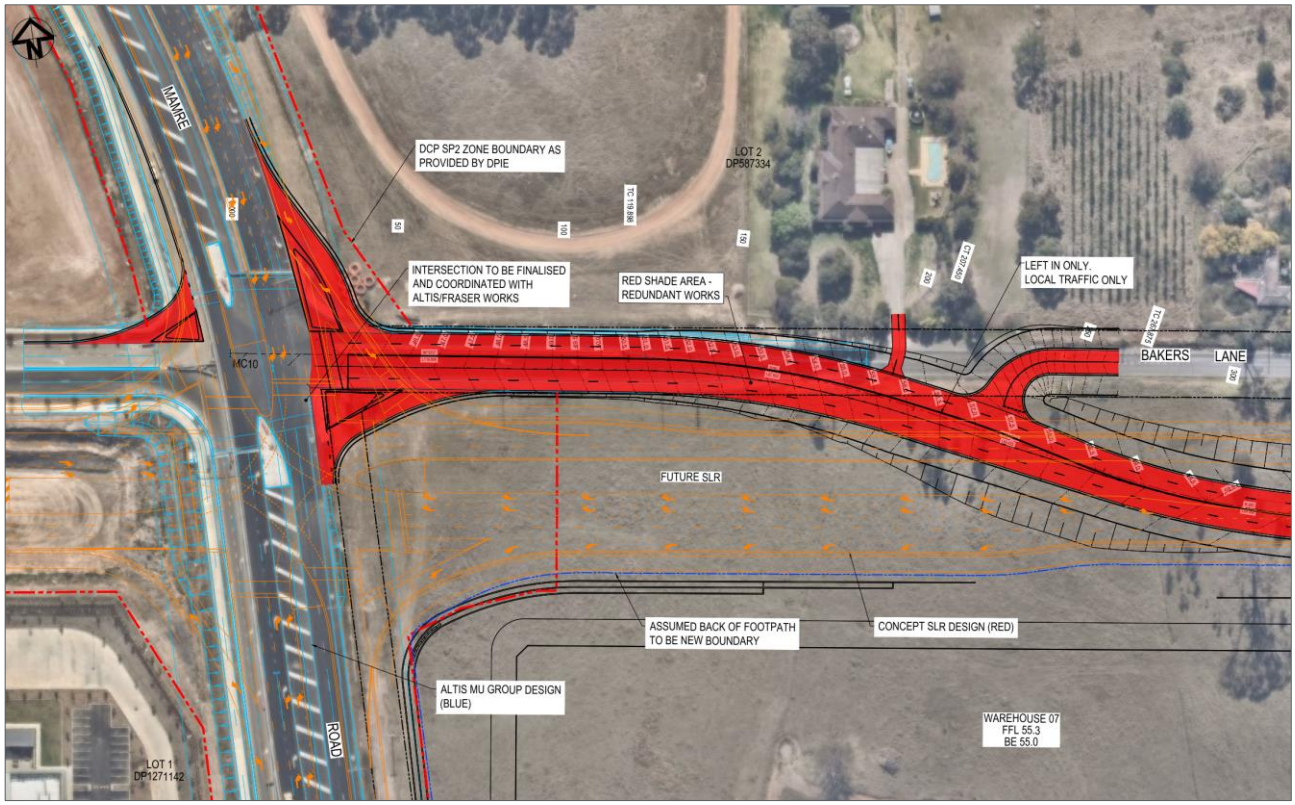


Figure 14: Intersection Upgrade at Bakers Lane (Summit at Kemps Creek SSD)

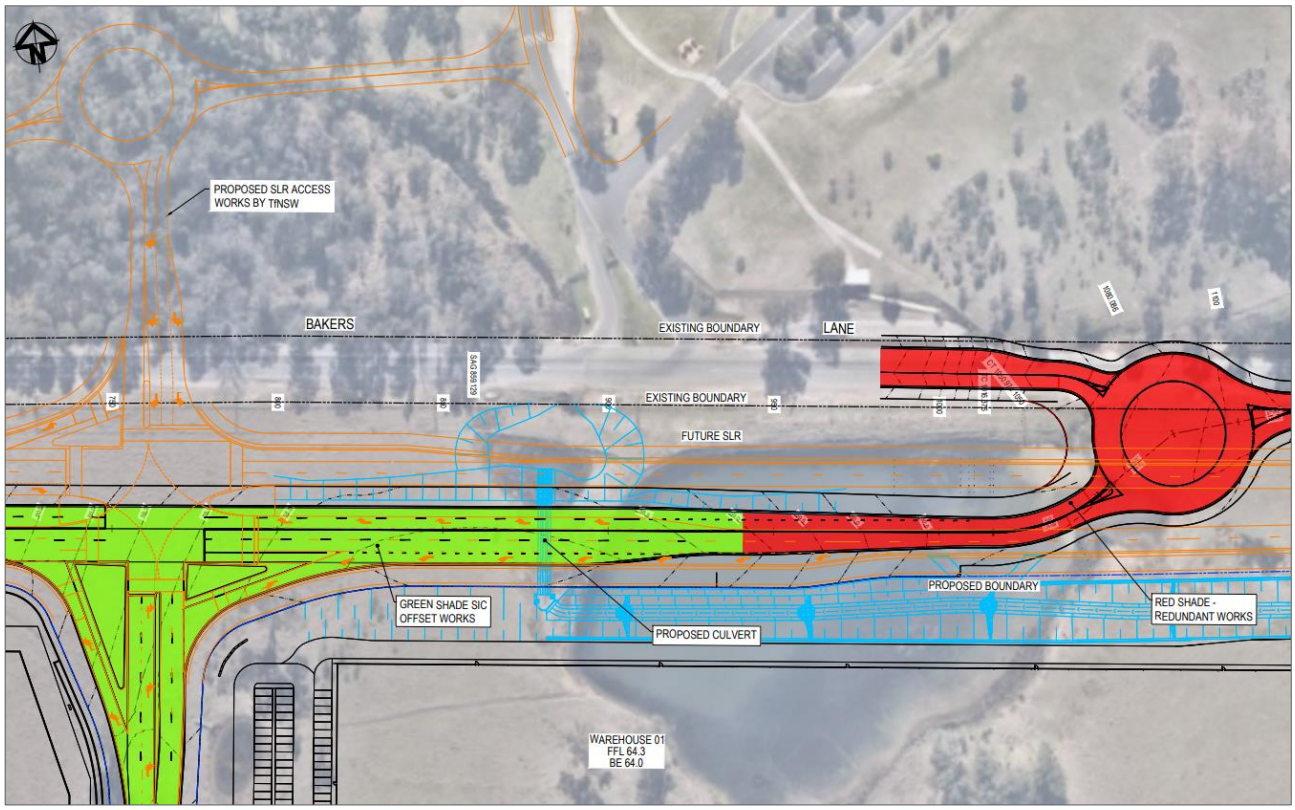


Figure 15: Left in and Left out access at SLR (Summit at Kemps Creek SSD)

3.3.2 Approved Aspect Industrial Estate (SSD-10448)

The Aspect Industrial Estate (Mirvac) at 778-822 Mamre Road was granted approval in May 2022 for a Concept Proposal for the staged development of an industrial estate comprising of 11 buildings with a total GFA of up to 247,990m^2 industrial, warehousing and distribution centres, and café uses. The estate has since progressed multiple detailed DAs with several warehouses now operational.

Based on the adopted MRP trip rates, the estate at full development potential would generate some 570 vehicle trips per hour during the AM peak period and 595 vehicle trips per hour during the PM peak period.

The site also includes dedication to allow for the development of the MRP road network, notably with construction of the signalised intersection of Mamre Road and Darrabarra Avenue, the construction of Darrabarra Avenue – extending east to Berriwerri Drive at a new roundabout alongside the partial completion of Berriwerri Drive.

An extract of the concept masterplan for the Aspect Industrial Estate is shown below.



Figure 16: Aspect Industrial Estate (Mirvac)

3.3.3 Approved Yiribana East Logistics Estate (SSD-10272349)

The Yiribana East Logistics Estate (GPT) at 772-786 Mamre Road was approved in September 2023 with respect to the Concept plan and Stage 1 DA for an industrial estate. Stage 1 is to comprise two warehouses, site-wide bulk earthworks and retaining walls, an internal road network, storm water works, car parking, signage and landscaping.

The estate has approval for 54,982m^2 GFA of large-format warehousing space, which based on the adopted MRP trip rates would account for 126 vehicle trips per hour during the AM peak period and 132 vehicle trips per hour during the PM peak period.

The site also includes dedication to allow for the development of the MRP road network, notably with the extension of Berriwerri Drive north of Darrabarra Avenue.

An extract of the concept masterplan for the Yiribana East Logistics Estate is shown below.



Figure 17: Yiribana East Logistics Estate

4 Existing Conditions

4.1 Location

The Site is located approximately 4km north-west of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 12km south-east of the Penrith CBD and 40km west of the Sydney CBD.

The landholding which will accommodate the proposed Mamre Road Data Centre Campus is approximately 522,477m^2 in area and is rectangular in shape as shown in in **Figure 18**.



Figure 18: Lot Boundary

The project area for the proposed development, 706-752 Mamre Road, Kemps Creek (Lot 10 DP 1280592), constitutes the main development site with areas across the shared boundaries to the east and south (described below) utilised to facilitate roadworks and bulk earthworks:

- Gibb Group site to the East known as 1-22 Bakers Lane, Kemps Creek (Lot 40 in DP 709347).
- GPT Group site to the South known as 754 Mamre Road, Kemps Creek (Lot 180 in DP 1290397).

Additionally, power supply lead-in from Sydney-West Substation is proposed as part of the development, which traverses through multiple landholdings.

4.2 Current Site Land Usage

The Site currently provides for a single rural residential dwelling. The existing properties along the length of Aldington Road and Bakers Lane can be categorised in this manner. It is noted that there is also a retirement village and 3 schools located to the north of Bakers Lane.

Further there are construction works ongoing in the wider area associated with delivery of the MRP.

The development proposal (SSD-30628110) pertaining to the Summit at Kemps Creek Estate envisages the delivery of 9 warehouse buildings with a total gross floor area (GFA) of up to 244,413m^2. The traffic generation potential of Summit at Kemps Creek includes 562 vehicle trips during the AM peak hour and 587 vehicle trips per hour during the PM peak hour.

4.3 Site Access

The Site currently has an access point onto Bakers Lane. Bakers Lane connects with Mamre Road to the west of the Site, and Aldington Road to the east.

4.4 Existing Road Network

4.4.1 Key Roads

The existing characteristics of key roads with the vicinity of the site are outlined in **Table 2**.

Table 2: Existing Roads

Road	Description	Typical Road Characteristics
Mamre Road	Mamre Road is a north–south arterial connecting the Great Western Highway to the M4 Motorway and Elizabeth Drive. In the vicinity of the Site (between Bakers Lane and Darrabarra Avenue), Mamre Road currently operates as a two-lane two-way road (one lane in each direction) with a posted speed limit of 80 km/h.	
Bakers Lane	A local access that runs east-west (to the east of Mamre Road) and currently provides access for a number of rural residential, educational and retirement sites. It provides 1 traffic lane in each direction and has a posted speed limit of 60km/h. Along Bakers Lane, private schools are located on the northern frontage, and a school zone applies in this area, reducing the speed limit to 40 km/h during school hours.	
Darrabarra Avenue	Darrabarra Avenue is a local access road running east–west to the east of Mamre Road. It currently provides access to the Aspect Industrial Estate and will function as a collector road for the MRP network with a completed connection to Berriwerri Drive . The road is to operate as a four lane road with No Parking on kerbside travel lanes.	

4.5 Key Intersections

The key intersections in the vicinity of the Site include:

- Mamre Road / Bakers Lane
- Mamre Road / Darrabarra Avenue; and
- Mamre Road / Abbotts Road

The signalised Mamre Road / Bakers Lane intersection was upgraded in mid-2023 and, is shown in **Figure 19**.



Figure 19: Existing Mamre Road / Bakers Lane Intersection

The signalised Mamre Road / Darrabarra Avenue intersection was constructed in late-2024, is shown in **Figure 20**.



Figure 20: Existing Mamre Road / Darrabarra Avenue Intersection

The existing configuration for the Mamre Road / Abbotts Road intersection is shown in **Figure 21**. As is evident (September 2025), road works are progressing in relation to the signalisation of the existing priority intersection (including the widening of Abbotts Road).



Figure 21: Existing Mamre Road / Abbotts Road Intersection

4.6 Public & Active Transport Opportunities

While it is apparent that the Site will be well serviced by the future road network outlined in the Mamre Road DCP; it is also important that people are provided opportunity to use public transport. In the first instance, this requires improved connectivity to the broader area, noting the current lack of connectivity to the Site.

Establishment of public transport services as early as possible in the development stages of the area is important to achieve a culture of public transport use from the outset. To make public transport a viable choice in the study area, the services should ideally:

- integrate with existing bus services in the area;
- connect to regional centres of Penrith, Mt Druitt and Blacktown; and
- in the long term connect to areas such as Leppington in the South West Growth Centre, Prairiewood and the Liverpool to Parramatta T-Way.

Further to the bus connectivity, it is noted that the closest train station to the Site is currently some 10km away. However, the Metro Western Sydney Airport will provide 23km of new railway to link residential areas with jobs hubs and the rest of Sydney's public transport network.

The alignment of the Metro is shown by **Figure 22**. While the closest station to the Site will be Luddenham Station, located approximately 4km west of the Site, it will undoubtedly improve public transport accessibility to the wider area. This provides an opportunity for bus services to combine with the Metro to improve connectivity to/from the residential areas to the north of the Site.

It is noted that the 779 bus route was extended from a route that terminated at James Erskine Drive to connect with the Amazon Fulfilment Centre on Emporium Avenue. This route provides a key connection to the St Mary's railway station and to the broader transport network. In addition, the future Metro stations proposed to west of the MRP improve connectivity with interconnecting services.

The internal MRP road network provides for heavy vehicle movements and, as such, would also be bus capable. Therefore, there are many opportunities to provide improved bus services; Mamre Road provides a significant opportunity to provide sub-regional services, as well as possible services within the MRP itself will maximise the number of sites that lie within 400m of a viable bus service. Figure 22 demonstrates the future, potential bus routes for the internal MRP and public transport options, alongside the existing routes.

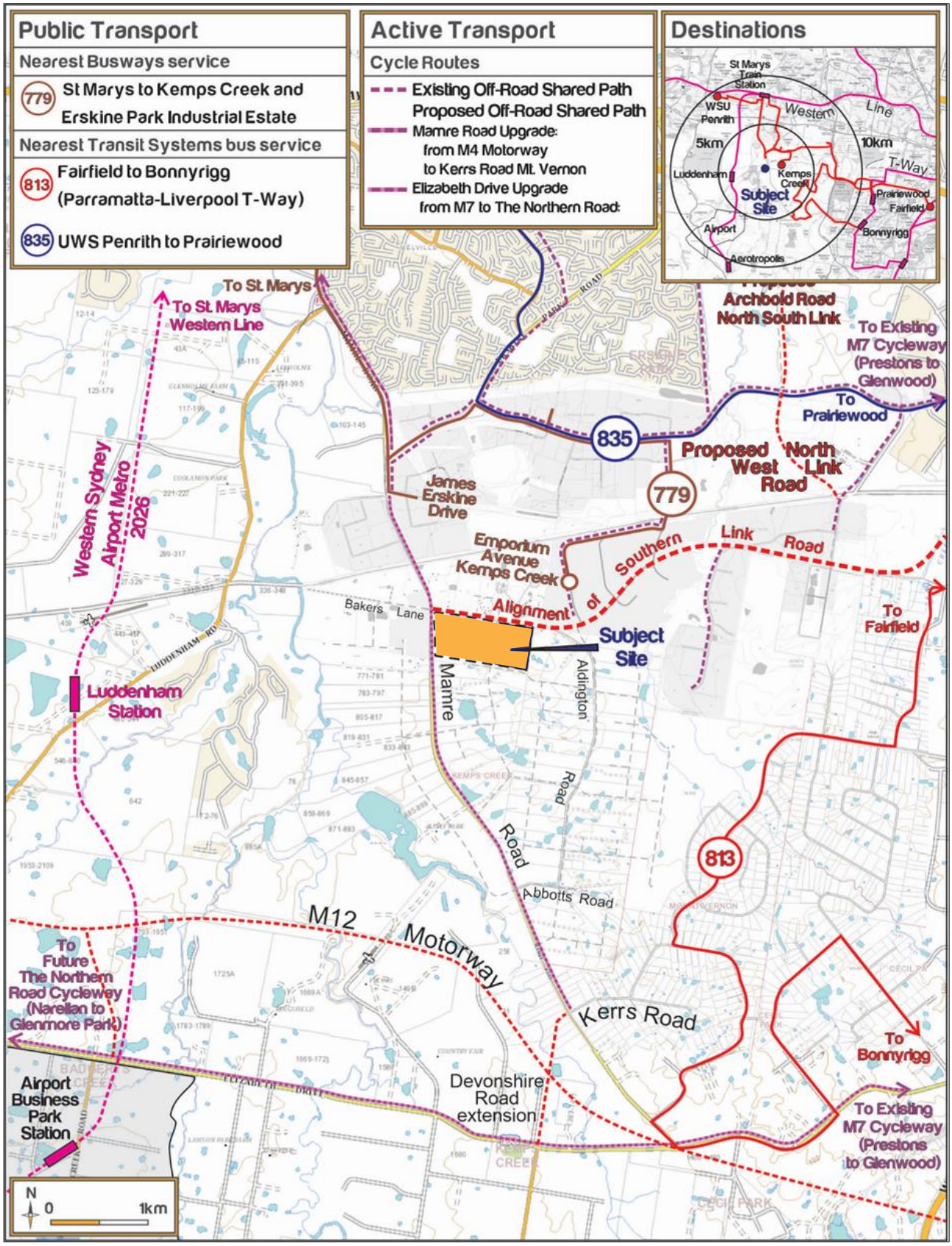


Figure 22: Existing and Future Public Transport Opportunities for MRP

4.6.1 Bicycle Network and Pedestrian Connectivity

At present, shared paths (pedestrian and cycle) are provided along Erskine Park Road and sections of Mamre Road to the north of the Site, but there is little cycling infrastructure in Mamre Road between Distribution Drive to the north and Elizabeth Drive to the south. Notwithstanding, the Phase 1 works of the Mamre Road Upgrade Project Stage 2 would provide an extension of the active transport network south of Distribution Drive by providing a shared path to Kerrs Road to the south.

Further to the existing bicycle connections, pedestrian infrastructure is currently non-existent, due to the current largely undeveloped nature of the land immediately surrounding the Site. Future key pedestrian desire lines in the vicinity of the Site would be triggered by connections to future public transport infrastructure, noting the nature of the area being largely industrial and therefore not representing key destinations and attractions for people to walk to.

In this regard, the MRP roads are all to include shared cycle and pedestrian pathways, presenting a significant opportunity to provide strong connectivity through the Precinct for both pedestrians and cyclists. Beyond the internal roads, Mamre Road will provide for sub-regional bicycle connections to the north and south of the MRP.

5 Development Proposal

5.1 Overview

The site is proposed for development under a State Significant Development Application (SSDA) as a data centre campus comprising:

- Approximately 26 shells across four-storeys data centre buildings (4x four shells and 2x five shells), including six technical office buildings, plus a campus office building incorporating a café (henceforth referred to as the 'COSH' building).
- Incoming and internal electrical substations and associated infrastructure
- Site preparation, including earthworks, stormwater, sewer, roads, and associated infrastructure.

The Proposal is reproduced at a reduced scale below.

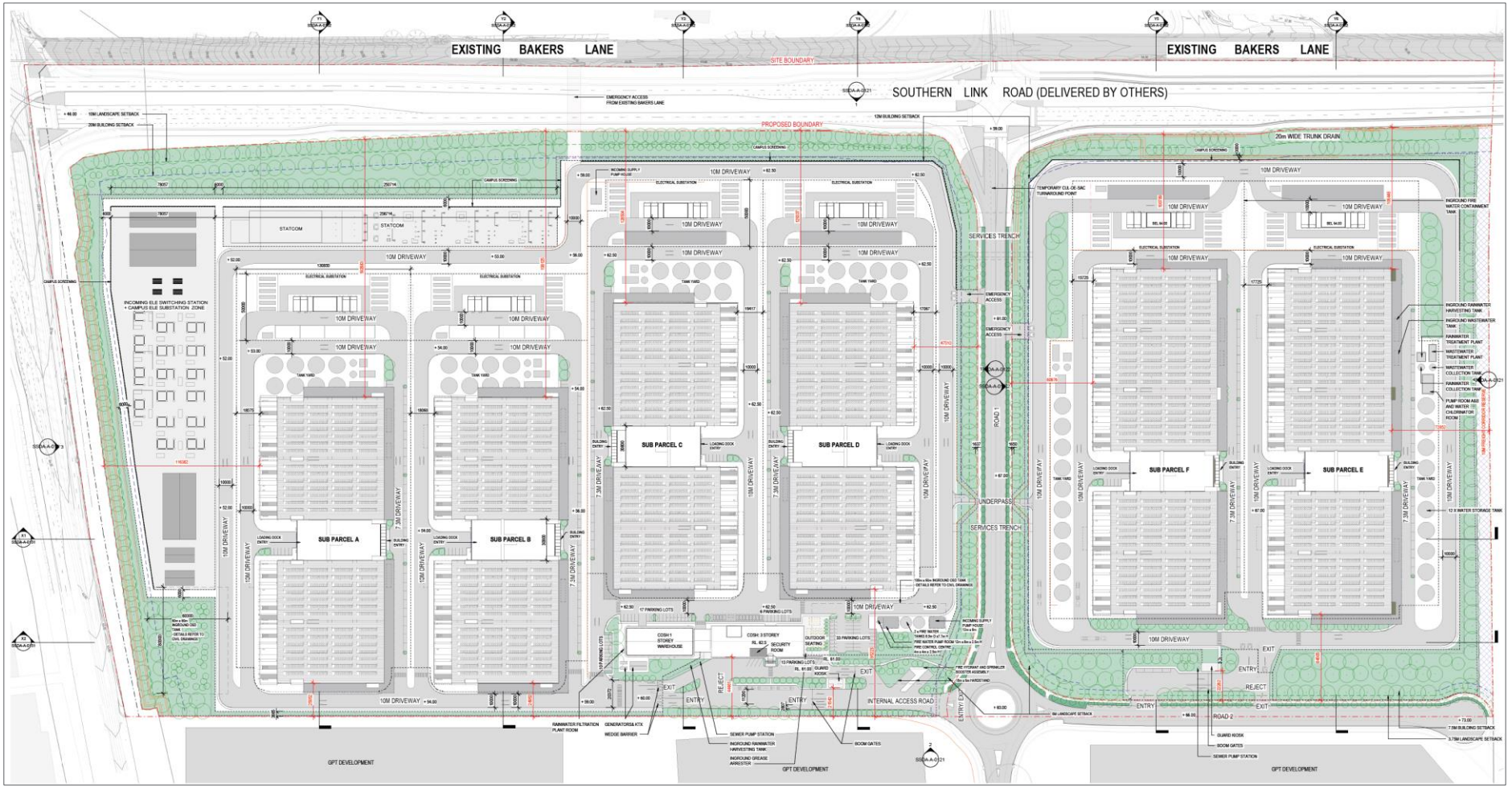


Figure 23: Campus Plan

5.2 Proposed Access and Road Network

In developing the proposed access strategy for the Proposal, the most recent context of wider MRP has been considered, alongside the nature of data centres, which typically generate lower volume of traffic than warehouses, including a much smaller proportion of heavy vehicle traffic. The Yiribana East Logistics Estate directly to the south of the Site is currently under construction. This includes delivery of the north-south Industrial Collector Road as per the MRP DCP, which connects to Darrabarra Avenue.

Stage 1 of the Yiribana Estate includes provision of a warehouse to the north-east of that site (under construction), which requires the road to be delivered in a timely manner. It is therefore proposed to gain access following dedication of that road to Council. Recognising the progression that has been made in delivery of the road, and that the Proposal envisaged under this TMAP is still in planning phases, it is expected that the road will be delivered well in advance of any operational development on the Site. A Condition of Consent would be welcomed which requires delivery of the road in advance of development becoming operational, in a similar manner to Conditions applied to other approved developments in the MRP.

As shown in **Figure 24**, the proposed development would involve delivery and dedication (at timeframes to be agreed between the proponent and Council) of the following planned MRP roads and intersections:

- Intersections:
  - Berriwerri Road / Local Road: Dual lane roundabout intersection with integrated site access for proposed site access at western leg.
- Roads:
  - Berriwerri Drive: extension of collector road north of Yiribana Logistics Estate and terminating prior to Bakers Lane in a turning head (for future integration with the Southern Link Road to be delivered by Others).
  - Local Road: construction of new-east west local road between Berriwerri Drive to the east and terminating prior to planned MRP freight corridor.

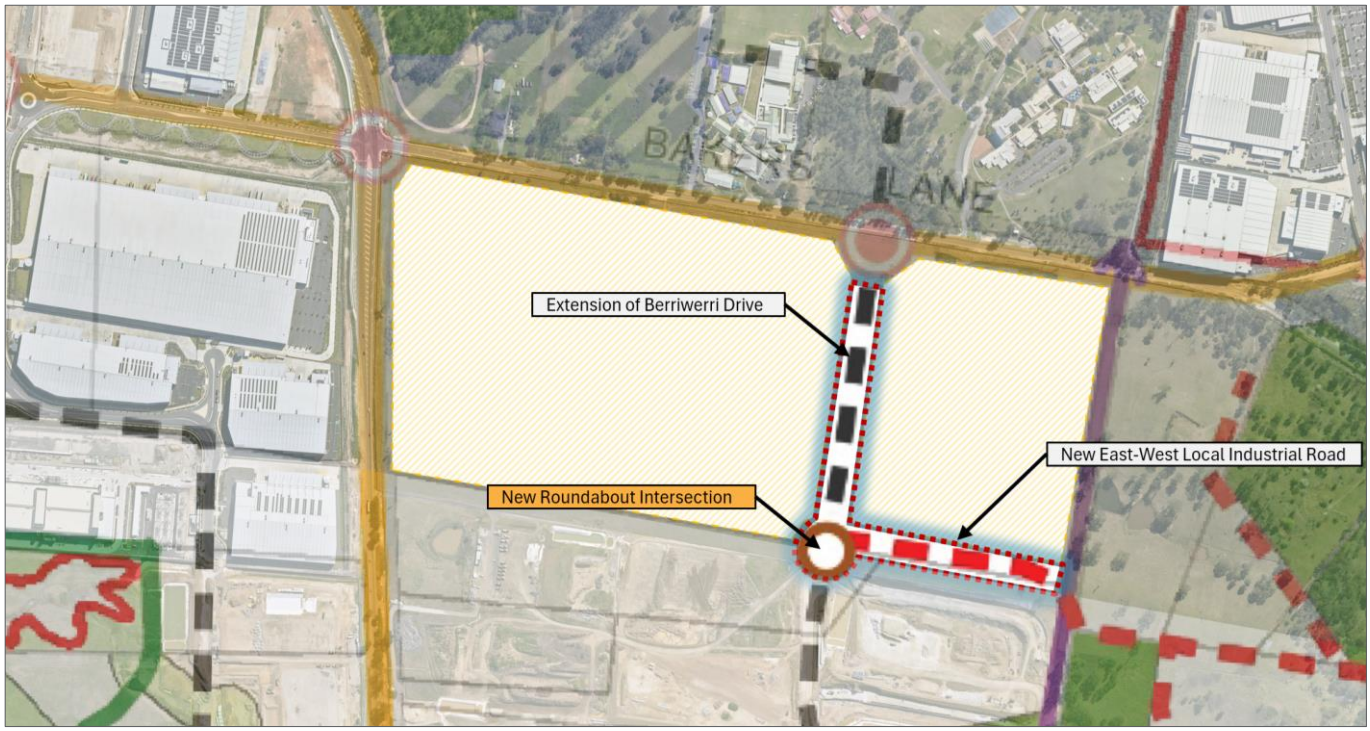


Figure 24: Proposed MRP Network Improvements

With respect to the proposed access arrangements for the proposed development, consideration has been given to the splitting of the development site (by Berriwerri Drive) into a western campus and eastern campus. The respective accesses proposed are identified in **Figure 25** and are as follows:

1. Two-way access for Western Campus forming direct western leg to Berriwerri Drive / Local Road roundabout.
2. Entry access for Eastern Campus from east-west local industrial road.
3. Exit access for Eastern Campus from east-west local industrial road.
4. Emergency access driveways for western and eastern campuses from Berriwerri Drive.

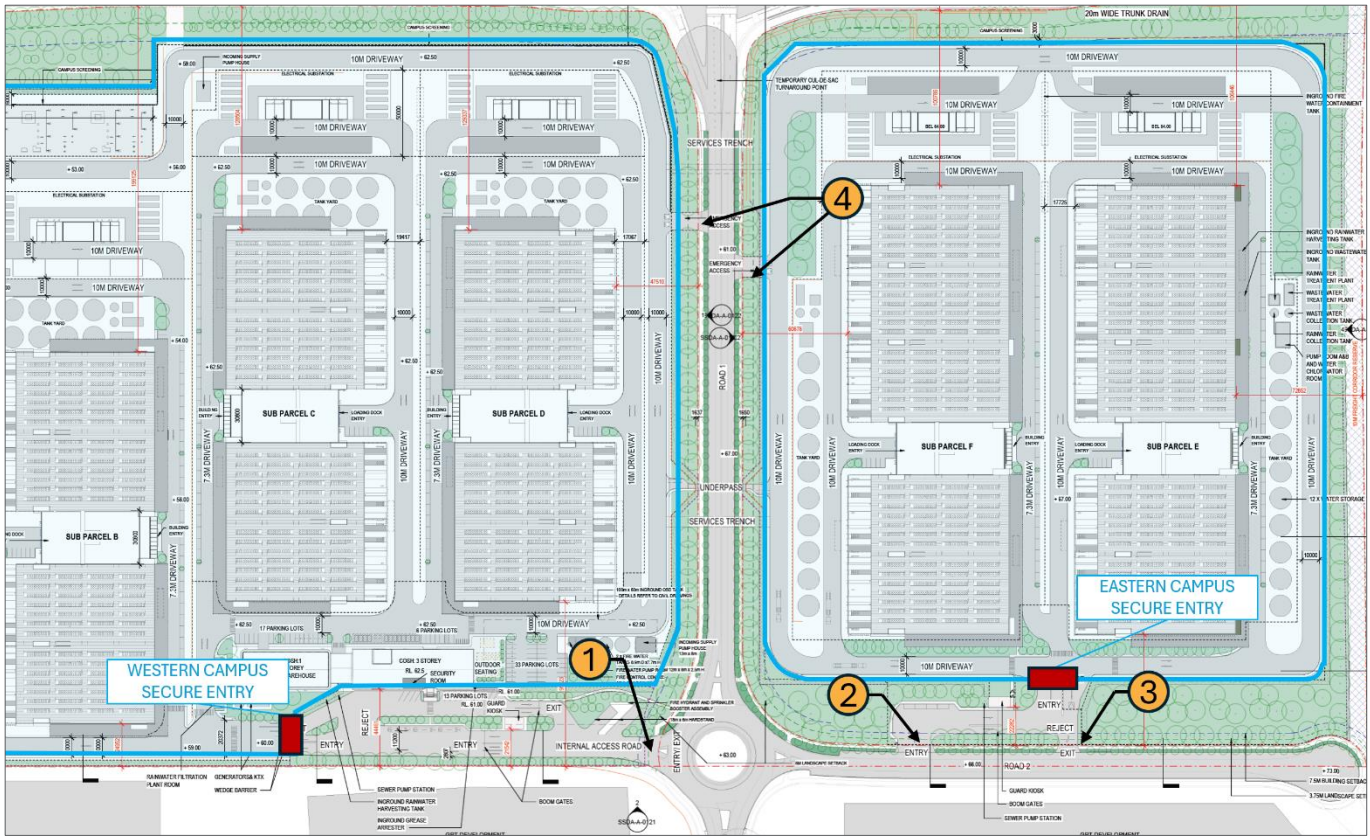


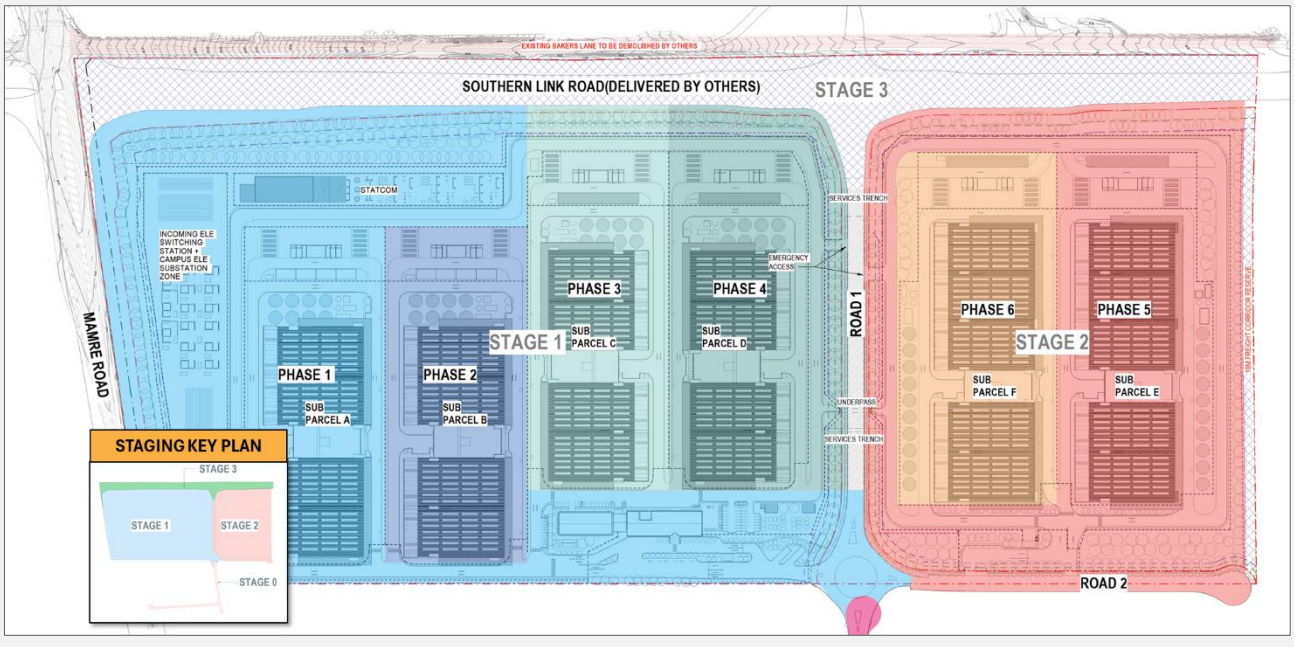
Figure 25: Proposed Access Arrangements

5.3 Staging

The anticipated staging for the Mamre Road Data Centre Campus responds to the development of the MRP road network as outlined in **Table 6**.

Table 3: Development and Works Staging

Stage	Development *(Mamre Road Data Centre Campus)*	Works *(Responsible Party)*
Stage 0	-	Berriwerri Drive extension to site boundary *GPT Group (Yiribana Logistics Estate)*
Stage 1	Phase 1 *Sub-Parcel A (34,528m²)* *COSH Building (4,126m²)* *Guard House (46m²)*	Construction of Berriwerri Drive roundabout
	Phase 2 *Sub Parcel B (34,528m²)*	-
	Phase 3 *Sub Parcel C (34,528m²)*	-
	Phase 4 *Sub Parcel D (34,528m²)*	-
Stage 2	Phase 5 *Sub Parcel E (42,628m²)* *Guard House (44m²)*	Construction of Road 1 (N-S) and Road 2 (E-W) *Proponent*
	Phase 6 *Sub Parcel F (42,628m²)*	-
Stage 3 [Note 1]	-	Construction of Southern Link Road *Delivered by Others*



Note 1: Stage 3 works not committed to as part of this SSDA.

5.4 Operational Characteristics

With respect to the Proposal, Ason Group has been provided the operational characteristics by the future operator (as outlined below) for the purpose of assessing parking demands and traffic impacts under this TMAP.

Mamre Road Data Centre Campus – Operational Assumptions

- Total campus daily visitation of 800 people comprising staff and customers/vendors.
- 3 shifts operating across a 24-hour period:
  - 00:00 to 08:00
  - 08:00 to 16:00
  - 16:00 to 00:00

The following staff and customer/contractor split (during the day and evening shifts):

  - 65% staff (on-duty)
  - 35% customers/vendors
- Mode share:
  - 90% car driver for staff (10% using public transport and/or car pooling)

Figure 26: Operational Characteristics

A 24 hour arrival and departure profile based on the shift pattens has been established in **Table 4**.

Table 4: Arrival and Departure Profile

TIME	STAFF		CUSTOMERS / VENDORS		TRUCKS	
	IN	OUT	IN	OUT	IN	OUT
0:00 - 0:30	18%	36%			0%	0%
0:30 - 1:00	5%	18%			0%	0%
1:00 - 1:30	5%	5%			0%	0%
1:30 - 2:00	2%	5%			0%	0%
2:00 - 2:30	2%	2%			0%	0%
2:30 - 3:00	2%	2%			0%	0%
3:00 - 3:30	2%	2%			0%	0%
3:30 - 4:00	1%	2%			0%	0%
4:00 - 4:30	1%	1%			0%	0%
4:30 - 5:00	1%	1%			0%	0%
5:00 - 5:30					0%	0%
5:30 - 6:00	1%	1%			0%	0%
6:00 - 6:30	1%	1%	2%		2%	2%
6:30 - 7:00	5%	1%	2%		2%	2%
7:00 - 7:30	18%	5%	2%		2%	2%
7:30 - 8:00	36%	18%	2%		2%	2%
8:00 - 8:30	18%	36%	4%	2%	5%	5%
8:30 - 9:00	5%	18%	4%	2%	5%	5%
9:00 - 9:30	5%	5%	8%	2%	5%	5%
9:30 - 10:00	2%	5%	8%	2%	5%	5%
10:00 - 10:30	2%	2%	8%	4%	5%	5%
10:30 - 11:00	2%	2%	8%	4%	5%	5%
11:00 - 11:30	2%	2%	4%	8%	5%	5%
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12:00 - 12:30	1%	1%	2%	4%	5%	5%
12:30 - 13:00	1%	1%	2%	2%	5%	5%
13:00 - 13:30			2%	2%	5%	5%
13:30 - 14:00	1%	1%	4%	2%	5%	5%
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14:30 - 15:00	5%	1%	8%	2%	5%	5%
15:00 - 15:30	18%	5%	4%	2%	5%	5%
15:30 - 16:00	36%	18%	4%	4%	5%	5%
16:00 - 16:30	18%	36%	2%	4%	2%	2%
16:30 - 17:00	5%	18%	2%	8%	2%	2%
17:00 - 17:30	5%	5%	2%	8%	2%	2%
17:30 - 18:00	2%	5%	2%	8%	2%	2%
18:00 - 18:30	2%	2%		8%	0%	0%
18:30 - 19:00	2%	2%		4%	0%	0%
19:00 - 19:30	2%	2%		2%	0%	0%
19:30 - 20:00	1%	2%		2%	0%	0%
20:00 - 20:30	1%	1%			0%	0%
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21:00 - 21:30					0%	0%
21:30 - 22:00	1%	1%			0%	0%
22:00 - 22:30	1%	1%			0%	0%
22:30 - 23:00	5%	1%			0%	0%
23:00 - 23:30	18%	5%			0%	0%
23:30 - 0:00	36%	18%			0%	0%

6 Parking assessment

6.1 Car Parking

6.1.1 Data Centres

Car parking controls are subject to the MRP DCP. The general rate for industries (to which data centres form a subset land use) has been applied to the proposed development and compared against the proposed parking provision in **Table 5**.

Table 5: Parking Rates

Land Use	No.	DCP Parking Rate	Parking Requirement	Proposed Parking Provision
Industries	227,584m^2 GFA 550 people [Note 1]	1 space per 200m^2 *OR* 1 space per 2 employees *whichever is the greater*	550 spaces - 1,138 spaces	619 spaces: – 540 data centre spaces AND – 79 COSH spaces

Note 1: Estimated peak population comprising both staff as well as customers/vendors (which in the case of data centres would have low-medium turnover of parking spaces having dedicated customer office working spaces).

It is emphasised that industry land uses encompass a large variety of operations including traditional labour intense manufacturing to modern high-technology businesses. This is reflected in the variability in the nominal parking requirements under the DCP, varying between 550 parking spaces (under the employee rate) and 1,138 parking spaces based on a floor space rate.

In the case of data centres, it is argued that the resultant number of staff required for such operations is very low, and this is reflected in the Transport and Infrastructure SEPP definition which emphasises the purpose of such facilities relating to electronic data:

> *"data centre means a building or place the principal purpose of which is to collect, distribute, process or store electronic data using information technology."*

The DCP floor space rate has thus been disregarded (relating to industry uses involving the production or storage of physical goods) to which the requirement based on the employee rate would be for 550 parking spaces. In response, provision for 619 parking spaces is provided and would nominally comply with this requirement.

A further interrogation of the provision includes the following allocations:

- 540 parking spaces for employees and customers/contractors (whom are understood to have a medium-long duration of stay).
- 79 COSH spaces, including for the café component.

Reference should be made to the demands assessment in Section 7.1.2 which evaluates a peak campus population be for 115 people across a 12 hour shift (with customers comprising both secure and unsecured spaces). These provisions would satisfy the demands based on the assumed operational characteristics for the proposed development with an estimated peak campus population of 550 people projected during a shift (staff and customers/contractors).

In summary, when discounting a floor space based rate for data centre uses, the proposed provision of 619 spaces satisfies the DCP requirement for 550 parking spaces. The proposed provision is therefore supported and provides a high level of amenity for staff and customers/contractors.

To provide further validation of the parking supply with respect to the proposed floor space, a weighted average parking rate was established by benchmarking six established data centres in Greater Sydney as summarised in **Table 6**.

Table 6: Benchmarked Sites – Parking Rates

Data Centre	GFA (m^2)	Parking Spaces	Effective Parking Rate
17 Roberts Rd, Eastern Creek	44,330	90	1 space per 493m^2
35 Huntingwood Dr, Huntingwood	28,530	50	1 space per 571m^2
47 Bourke Rd, Alexandria	18,063	60	1 space per 301m^2
4 Eden Park Drive, Macquarie Park	10,391	24	1 space per 433m^2
8 Giffnock Ave, Macquarie Park	15,726	28	1 space per 562m^2
2 Broadcast Way, Artarmon	33,799	100	1 space per 571m^2
Weighted Average	**150,839**	**352**	**1 space per 429m^2**

Application of the weighted floor space based average parking rate (1 space per 429m^2) to the proposed development would equate to demand for 531 parking spaces, which would be amply accounted for against the provision of 619 parking spaces.

It is also emphasised that a higher level of parking provision (in excess of the number of employees) is a sought-after outcome for the operation of data centres which operate on a 24 shift basis. In comparison to other land uses where additional parking (over DCP minimums) may induce demands (e.g. retail and commercial), the parking provision is not expected to influence the overall trip generating potential of the proposed development for the following reasons:

- The primary reason for providing additional parking is to facilitate shift changeover periods, where some employees may arrive sooner than those departing from a shift. In the case of data centres, this would involve specialised personnel who may also need to be relieved by a similarly skilled employee which would temporarily generate demand for two parking spaces (but with one trip per person).
- The parking provision would accommodate fluctuations in demands between varied users that include operations teams, vendors, support staff and customers (notwithstanding, an unusually busy day for a particular sub-parcel would likely be averaged out by the remaining five sub-parcels). Any additional parking demands can therefore be appropriately accommodated within the campus and without reliance on on-street parking.
- The additional parking spaces include an allocation of 79 spaces for the COSH building which incorporates a café. This largely functions as an ancillary facility that caters to campus users whom may park en-route to their longer-term parking spot at their respective sub-parcel. The café parking demands are discussed further below.

6.1.2 Café

The proposal also includes a café within the COSH building (western campus) while largely intended to service the campus, will also be open to the general public to improve commercial viability and service the wider MRP.

In ordinarily applying guideline parking rates to the café component, the Transport for NSW Guide to Transport Impact Assessments (GTIA) has been referenced in lieu of such rates being published in the Mamre Road Precinct DCP.

For *take-away food outlets* that have on-site seating but without drive-through facilities, the applicable parking rates are either:

- 12 spaces per 100m^2 GFA; OR
- The greater of:
  - 1 space per five seats (both internal and external seating); OR
  - 1 space per two seats (internal seating).

For reference, the café contains approximately 400m^2 GFA and has a nominated seating capacity for 70 customers internally and 96 customers externally. Application of the seating based rate yields a parking nominal parking requirement for 35 spaces while the floor space rate yields a requirement for 48 parking spaces.

In response, provision for 79 parking spaces has been made within the overall allocation of 626 parking spaces which can be accommodated in addition to the 540 parking spaces allocated for the sub-parcels. These spaces are located within close proximity to the COSH building (containing the café) and include 33 customer parking spaces accessed securely (within the western campus) and 13 customer parking spaces accessible by the public (before the secure entry gates). This corresponds to a ratio of 75% internal customers vs 25% external customers and is considered an appropriate ratio given the café is largely intended to service a captive market.

6.2 Other Parking

6.2.1 Accessible Parking

Accessible car spaces should be in accordance with the Access to Premises Standards, Building Code of Australia and AS2890. The respective parking requirements for a Class 8 structure are outlined below.

Table 7: Site Details

Type of Facility	Accessible Parking Rate	Accessible Parking Requirement	Accessible Parking Provision
Class 8	1 accessible space for every 100 car parking spaces or part thereof	7 spaces	34 spaces

As shown, the proposal to provide 34 accessible parking spaces is superior to the minimum requirements under the Code. This outcome is supported noting that the spaces are spread across the campus (including 2 spaces for the COSH building) and would reduce physical travel distances for accessible parking space users.

Accessible spaces will be designed in accordance with AS2890.6:2022.

6.2.2 Electric Vehicle Parking

In relation to Electric Vehicle (EV) parking, Section 4.6.1(8) of the MRP DCP notes the following:

Parking areas should incorporate dedicated parking bays for electric vehicle charging.

However, it does not provide for guidance on the specific number of bays. Notwithstanding it is understood that the following EV provisions will be based in consideration of requirements under the National Construction Code including as a minimum:

- 5% of all car parking spaces (31 spaces) provided with EV charging capability on day of opening
- 20% parking spaces (125 spaces) provided with infrastructure to readily accommodate EV charging capability (inclusive of 5% day of opening provision).

6.2.3 Motorcycle Parking

No motorcycle parking rates are stipulated in the MRP DCP. Notwithstanding, 6 motorcycle spaces are provided on campus in addition to car parking provisions which is a supported outcome.

6.2.4 Bicycle Parking

The MRP DCP stipulates the following bicycle parking rates for the following uses:

Table 8: Site Details

Type	Land Use	Requirements
Bicycle Parking	Industry	1 space per 1000m^2 of gross floor area of industrial activities (over 2000m^2 gross floor area)
	Office	1 space per 600m^2 of gross floor area of office and retail space (over 1200m^2 gross floor area)
End of Trip Facilities	Industry	For industrial activities with a gross floor area over 4000m^2, at least 1 shower cubicle with ancillary change rooms
	Office	For ancillary office and retail space with a gross floor area over 2500m^2, at least 1 shower cubicle with ancillary change rooms

Application of these rates to the data hall (industry) and support space (office/café) components results in a nominal requirement for 284 bicycle spaces for the proposed development.

In response, the Mamre Road Data Centre Campus will include a consolidated bicycle end of trip facility within the COSH building that provides capacity for 30 bicycle spaces (vertical rails) within a secure Class 2 setting – with 44 locker spaces and shower/change rooms.

While this represents a nominal shortfall relative to the DCP rates, the proposed arrangements are considered reasonable in light of the number of spaces supporting a cycling mode share of 5% - accounting for the target mode shares set in the Preliminary Green Travel Plan included in **Appendix C**. The provision reflects the realistic uptake of cycling transport (given the inherent catchment limitations of Kemps Creek) while providing a high level of amenity to encourage users to use this form of transport where possible.

7 Traffic Assessment

7.1 Trip Generation Rates

7.1.1 Benchmarking Assessment

The TfNSW Guide to Transport Impact Assessment (GTIA) does not stipulate any trip rates for data centre land uses. As such, a benchmark exercise was undertaken in accordance with the GTIA to assess the trip generating potential of six established data centres within Greater Sydney.

Based on 24 hour surveys undertaken in May 2024, the relevant site, network (the trip rate coinciding with the AM and PM peak hours for the surrounding road network) and daily trip rates for each data centre is summarised in **Table 9**, along with derived benchmarked averages.

Table 9: Benchmarked Sites (AM/PM)

Data Centre	GFA (m^2)	Network Peak (trips per $100m^2$)	Site Peak (trips per $100m^2$)	Daily Peak (trips per $100m^2$)
17 Roberts Rd, Eastern Creek	44,330	0.07 / 0.08	0.07 / 0.08	0.69
35 Huntingwood Dr, Huntingwood	28,530	0.16 / 0.12	0.16 / 0.12	0.98
47 Bourke Rd, Alexandria	18,063	0.05 / 0.03	0.12 / 0.13	0.91
4 Eden Park Drive, Macquarie Park	10,391	0.01 / 0.02	0.07 / 0.05	0.65
8 Giffnock Ave, Macquarie Park	15,726	0.03 / 0.03	0.06 / 0.05	0.40
2 Broadcast Way, Artarmon	33,799	0.08 / 0.05	0.09 / 0.06	0.59
Benchmark Average		**0.07 / 0.06**	**0.10 / 0.08**	**0.70**

Based on the above data, the benchmarked average site peak for the six data centres was:

- AM Peak: 0.07 vehicle trips per hour / $100m^2$ GFA
- PM Peak: 0.06 vehicle trips per hour / $100m^2$ GFA
- Daily: 0.70 vehicle trips per day / $100m^2$ GFA

The benchmarked site trip rates for data centres is appreciably lower than guideline rates for other industry uses, including large-format warehousing (0.14/0.14 under the GTIA), as well as trip rates used to inform infrastructure planning in the MRP (0.23/0.24 as advised by TfNSW for the underlying modelling study undertaken by Ason Group for the MRP).

Notwithstanding, shift patterns were observed to vary across the survey data centres, including the number of shifts (two versus three changeovers) and timing across the 24 hour period.

In this regard, a first principles assessment was also undertaken for the proposed development as outlined below.

7.1.2 First Principles Assessment

With reference to the assumed operational characteristics in **Figure 26**, the 24-hour profile of typical arrivals and departures in **Table 4** was based on the following inputs:

- Total visitation of 800 people per day.
- 3 shifts operating across a 24-hour period:
  - 00:00 to 08:00
  - 08:00 to 16:00
  - 16:00 to 00:00
- The following staff and customer/contractor split (during the day and evening shifts):
  - 65% staff (on-duty)
  - 35% customers/contractors
- 90% car driver mode share for staff and 100% car driver mode share for customers/contractors.

On this basis, a 24-hour profile of vehicle trips was established by scaling the arrival/departure profile to the daily trip generation rate set under the benchmarking study. That is, the total daily trip generation of the proposed development would be consistent with the benchmark daily trip rate surveyed across the six data centres in Greater Sydney, with the AM and PM site and network peak trips being uniquely associated with the Mamre Road Data Centre Campus.

The profile shown in **Figure 27** including a breakdown of vehicle trips by staff and customers (and arrivals/departures).

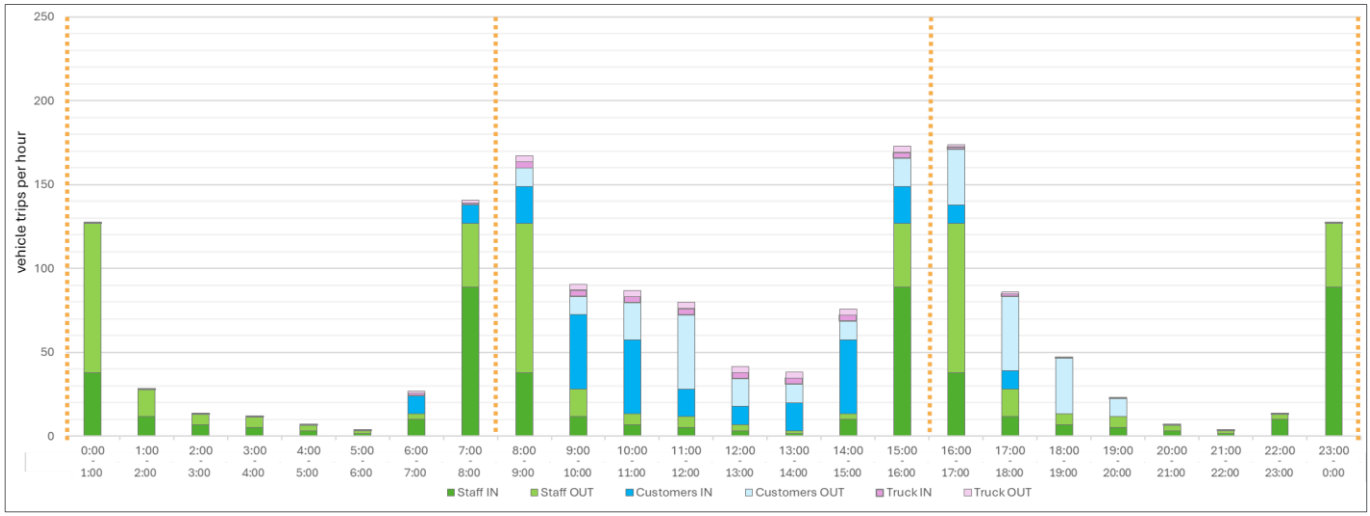


Figure 27: Vehicle Trip Profile

The resulting AM and PM trip generation and derivative trip rates for network and site peaks for the proposed development is summarised in **Table 10**.

Table 10: Proposed Trip Generation Summary

Attribute	Network Peak		Site Peak		Daily Peak
	AM Peak	PM peak	AM Peak	PM Peak	
Time	7:00am – 8:00am	4:00pm – 5:00pm	8:00am – 9:00am	4:00pm – 5:00pm	24h
Trips	141 veh/hr	174 veh/hr	167 veh/hr	174 veh/hr	1,592 veh/hr
Trip Rate	0.06	0.08	0.07	0.08	0.70

The following is noteworthy with respect to the assessed trip generation profile:

- The network peak trip generation rates (corresponding to the MRP) are 0.06 vehicle trips per 100m^2 GFA during the AM peak hour and 0.08 vehicle trips per 100m^2 GFA during the PM peak hour. This remains consistent with the benchmark trip rates (0.07/0.06).
- The site peak trip generation rate of 0.07 and 0.08 vehicle trips per 100m^2 GFA during the respective AM and PM peak hours remain at or below benchmark averages.

The network peak hour vehicle trip rates have been adopted for the modelling assessment detailed in the following sections. For comparison, the traffic volumes under each rate have been contrasted with the historical MRP trip rates (0.23/0.24) used to assess the Summit at Kemps Creek Estate in **Figure 28** in the Summit at Kemps Creek TMAP, affirming that the trip generating potential for data centres is well below warehouse and industry uses.

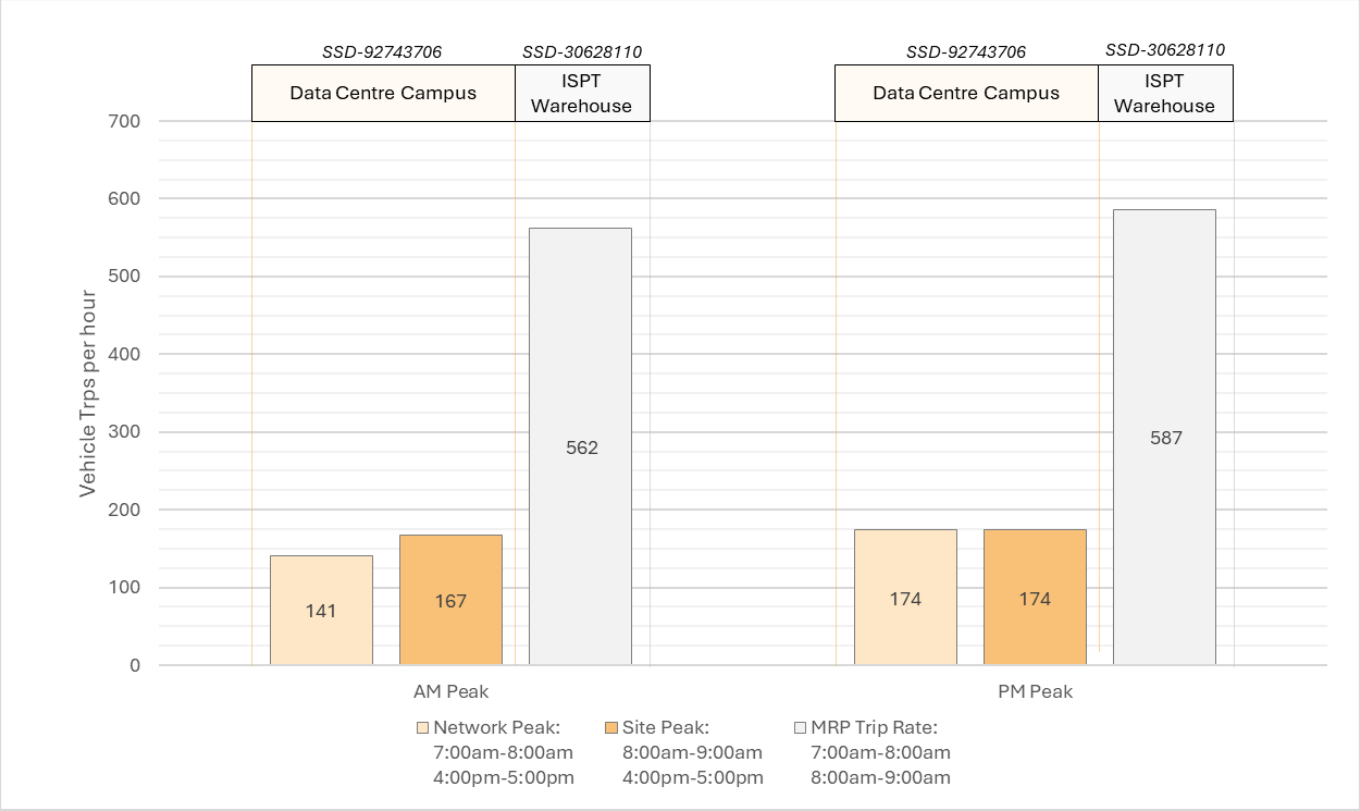


Figure 28: Trip Rate Comparison

7.1.3 Background Growth Rates

A background growth rate of 2% has been adopted with respect to modelling future years and has been applied to all existing traffic volumes originating from the 2022 volumes (before the addition of construction associated with MRP developments).

7.1.4 Cumulative Development

The background growth rate is assumed to account for regional growth only and in this regard, a summary of MRP developments expected to be online have been summarised in **Table 10**, with respect to the identified sites in **Figure 29**.

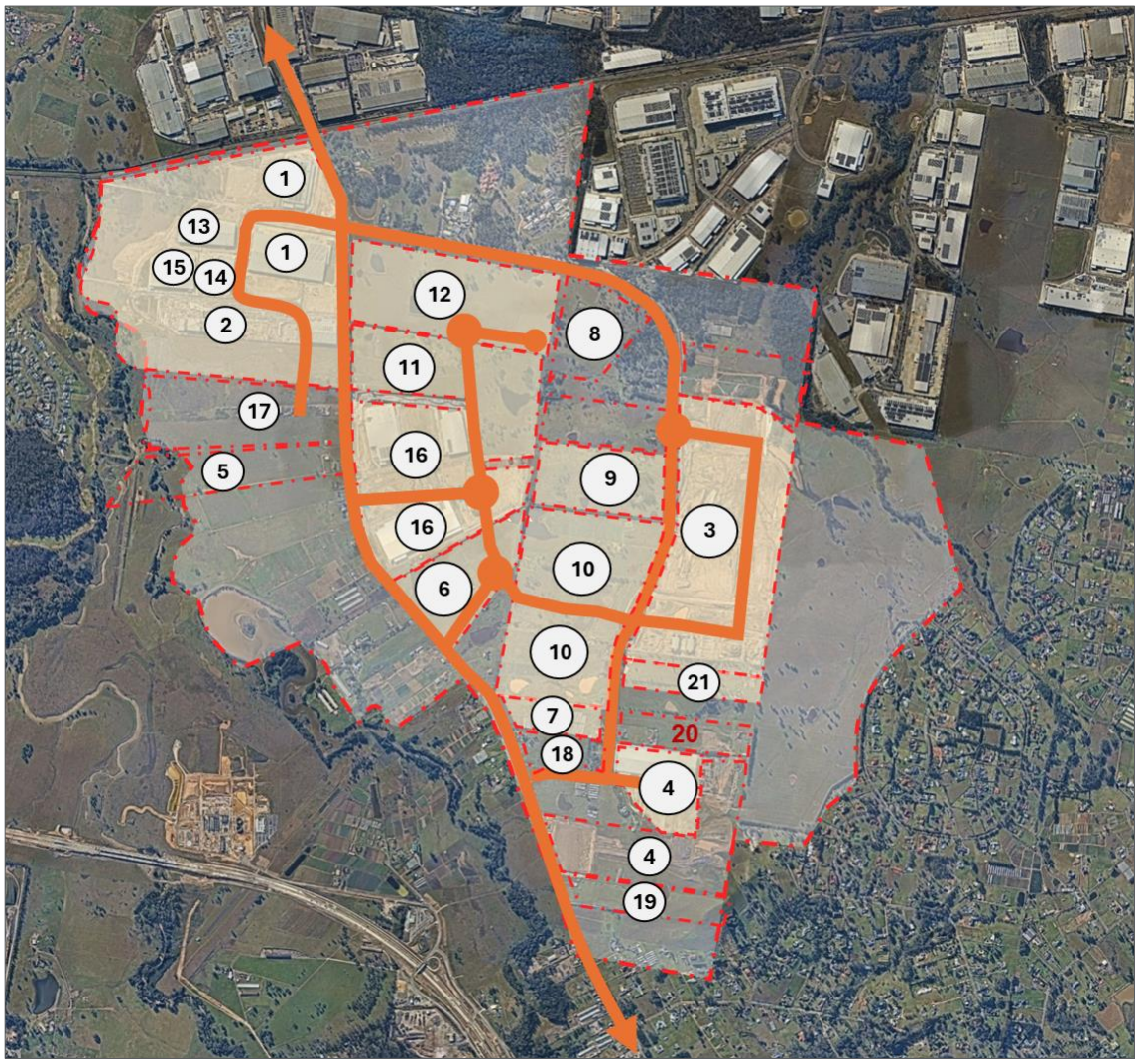


Figure 29: MRP Development Locations

This list comprises of developments that have been approved by authorities, or are known proposals expected to be lodged – being all large-format warehouses, the GTIA trip rate of 0.14 vehicle trips per 100m^2 GFA was applied for all developments (with the collective MRP well exceeding the 100,000m^2 estate threshold).

Table 11: MRP Development Summary

No	Site	Approved GFA	Proposed GFA	Total GFA
1	SSD-9522: Kemps Creek Warehouse, Logistics, and Industrial Facilities Hub	173,931m^2		**173,931m^2**
2	SSD-10101987: Kemps Creek Data Centre	60,943m^2		**60,943m^2**
3	SSD-10479: 200 Aldington Road Concept Proposal - MOD 1	50,300m^2		**134,109m^2**
3	Detailed SSDAs: SSD61212208 / SSD64589711 / SSD64583708	15,516m^2	68,293m^2	
4	Westlink Industrial Estate - SSD-9138102: Stage 1	81,371m^2		**118,861m^2**
	Westlink Industrial Estate - SSD-46983729: Stage 2	37,490m^2		
5	SSD-30871587: 805-817 Mamre Road, Kemps Creek		25,370m^2	**25,370m^2**
6	SSD-17647189: Access Logistics Estate (884-928 Mamre Road, Kemps Creek)	39,161m^2		**39,161m^2**
7	SSD-23480429: Westgate 253-267 Aldington Road	34,245m^2		**34,245m^2**
8	SSD-74784709: 1-51 Aldington Road Industrial Estate		49,895m^2	**49,895m^2**
9	SSD-32722834: Dexus Kemps Creek – 113-153 Aldington Road	68,914m^2		**68,914m^2**
10	SSD-17552047: The Edge Estate (155-217 Aldington Road Estate)	153,343m^2		**153,343m^2**
11	SSD-10272349: Yiribana East Logistics Estate	54,982m^2		**54,982m^2**
12	SSD-92743706 – Mamre Road Data Centre Campus		227,584m^2	**227,584m^2**
13	SSD-25725029: ARDEX Warehouse and Manufacturing Facility	27,470m^2		**27,470m^2**
14	DA22/1172: Probiotic Warehouse Facility	29,768m^2		**29,768m^2**
15	DA22/0671: Cargoline Warehouse	30,581m^2		**30,581m^2**
16	Aspect WH1 - SSD-10448	33,886m^2		**209,948m^2**
	Aspect WH2 - SSD-60513208	24,295m^2		
	Aspect WH3 - SSD-46516461	21,535m^2		
	Aspect WH6 & WH7 - DA24/0264	22,532m^2		
	Aspect WH8 - SSD-58257960	41,350m^2		
	Aspect WH9 - SSD-46516461	66,350m^2		
16	Aspect WH4 & 5		31,379m^2	**31,379m^2**
17	Yiribana West Logistics Estate DA23/0067	24,953m^2		**24,953m^2**
18	1 Abbotts Rd		41,465m^2	**41,465m^2**
19	1080 Mamre Road DA23/0495		40,256m^2	**40,256m^2**
21	Place of Worship	3,821m^2		**3,821m^2**
Total		**1,096,737m^2**	**484,242m^2**	**1,580,979m^2**

7.2 SIDRA Intersection Analysis

7.2.1 Scenarios

Traffic surveys were sourced from 2022 surveys on the basis of recent 2024 surveys demonstrating comparable traffic volumes and to remove complexities associated with accounting for subsequent/ongoing construction activity within the MRP.

These surveys were used to establish baseline traffic conditions at the following key intersections within the surrounding road network, with cumulative MRP development volumes and Mamre Road Stage 2 Upgrades (Phase 1) considered for the following study network:

- Mamre Road / Bakers Lane (Signalised)
- Mamre Road / Darrabarra Avenue (Signalised)
- Mamre Road / Abbotts Road (Signalised)
- Darrabarra Avenue / Berriwerri Drive
- Berriwerri Drive / Access Road

For consistency with MRP assessments, the following network peaks were also adopted:

- The morning peak hour period was between 7:00AM – 8:00AM.
- The evening peak hour period was between 4:00PM – 5:00PM.

SIDRA intersection modelling was undertaken to establish the baseline performance of the key intersections. In this regard, SIDRA modelling outputs a range of performance measures relevant to this assessment, including:

- *Degree of Saturation (DOS)* – The DOS is used to measure the performance of intersections where a value of 1.0 represents an intersection at theoretical capacity. As the performance of and intersection approaches DOS of 1.0, queue lengths and delays increase rapidly.
- *Average Vehicle Delay (AVD)* – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance and is used to determine an intersection's Level of Service (see below).
- *Level of Service (LOS)* – This is a comparative measure that provides an indication of the operating performance, based on AVD.

As per the GTIA, assessments should take into account site-specific factors including maximum queue lengths, the influence of nearby intersections and the sensitivity of the locations to delays. The table below provides the LoS as outlined in the TfNSW GTIA.

Table 12: Level of Service Criteria

Level of Service	Average Delay per Vehicle (sec/veh)
A	Less than 14
B	15 to 28
C	29 to 42
D	43 to 56
E	57 to 70
F	More than 70

Traffic modelling using SIDRA software was undertaken using base data used for the modelling to inform the development of the MRP road network (dating from 2022), along with future horizon years of 2031 (assumed year for full completion of development) and 2036 (Ultimate MRP Road Network). Modelling was conducted for both the AM and PM weekday peak periods, which were determined based on the analysis of observed traffic survey data.

Table 13: Assessment Years and Scenarios

#	Scenario	Year	Planned Infrastructure	Background Traffic	Development Traffic
1	Project Opening Year Base Case	2031	Mamre Road Upgrade Stage 2 – Phase 1	2% linear growth p.a. + MRP Cumulative Development	-
2	Project Opening Year Project Case				Subject Development
3	Future Base Case	2036			-
4	Future Project Case				Subject Development

A comparison of volumes was also undertaken between that published for the Mamre Road Upgrade Stage 1 REF and the above background growth factors. A summary of midblock volumes on Mamre Road is shown in **Table 14** which relate to common scenarios of adopting the Phase 1 upgrades (however with the REF assuming the completion of the SLR in 2041).

Table 14: Mamre Road – Midblock Volumes Comparison (REF vs SSD)

Location (North of Intersection)	AM Peak Hour						PM Peak Hour					
	REF		REF (+ SLR)		SSD		REF		REF (+ SLR)		SSD	
	2029		2041		2036		2029		2041		2036	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
Bakers Ln (SLR)	1642	2126	1484	2644	1403	2073	2096	1075	2189	1508	1899	1590
Darrabarra Ave	1455	1258	1593	1686	1432	1602	1610	1147	1864	1974	1498	1659
Abbotts Rd	1482	1144	1794	1696	1365	1120	1413	1229	1731	2051	1044	1605

It is evident that the background traffic growth assumptions for the SSD are generally comparable to that assumed in the REF, with some redistribution of traffic associated with the delivery of the SLR in 2041 (as assumed in the REF). While the delivery of the SLR would extend beyond the 2036 study window (to be delivered by others), the similarity of most midblock volumes indicates that the method of assuming 2% linear growth plus cumulative MRP development would align with the nominated (overall) growth rates of 5%-6% under the REF.

7.2.2 Opening Year - 2031

Base Case and Project Case results for the opening year in 2031 are summarised below.

Table 15: Base Case 2031 Intersection Performance

Intersection	Configuration	Scenario	Period	DOS	AVD	95% Queue	LOS
Mamre Road / Bakers Lane	Signals	Base Case	AM	0.812	18.1	205	B
			PM	0.682	19.8	150	B
		Project Case	AM	0.836	18.9	238	B
			PM	0.781	19.3	202	B
Mamre Road / Darrabarra Avenue	Signals	Base Case	AM	0.616	20.6	181	B
			PM	0.704	22.8	227	B
		Project Case	AM	0.656	22.9	191	B
			PM	0.820	31.9	289	C
Mamre Road / Abbotts Road	Signals	Base Case	AM	0.532	17.0	108	B
			PM	0.504	12.3	85	A
		Project Case	AM	0.536	16.6	107	B
			PM	0.599	16.9	130	B
Darrabarra Avenue / Berriwerri Drive	Roundabout	Base Case	AM	0.021	10.9	1	A
			PM	0.035	9.9	1	A
		Project Case	AM	0.048	10.6	2	A
			PM	0.113	9.9	4	A
Berriwerri Road / Access Road	Roundabout	Base Case	AM	-	-	-	-
			PM	-	-	-	-
		Project Case	AM	0.022	11.9	1	A
			PM	0.012	11.9	1	A

The 2031 year of opening indicate that intersections will generally continue operating at acceptable levels (LOS A–C), with minimal delays caused by the addition of development volumes. A review of the detailed SIDRA output also indicates that no approaches for the study intersections have an LoS of F that would indicate capacity on that leg has been exceeded.

Accordingly, the proposed development is anticipated to have very minor traffic impacts and would not warrant any additional network upgrades in 2031. This should be contrasted with the Summit at Kemps Creek SSD which requires interim upgrades (Bakers Lane) in the year 2026.

7.2.3 Future Year 2036

Base Case and Project Case results for the future 2036 year are summarised below.

Table 16: Project Case 2036 Intersection Performance

Intersection	Configuration	Scenario	Period	DOS	AVD	95% Queue	LOS
Mamre Road / Bakers Lane	Signals	Base Case	AM	0.836	18.9	236	B
			PM	0.779	19.5	201	B
		Project Case	AM	0.848	19.6	254	B
			PM	0.810	19.1	218	B
Mamre Road / Darrabarra Avenue	Signals	Base Case	AM	0.645	19.8	192	B
			PM	0.813	27.4	293	B
		Project Case	AM	0.656	22.9	191	B
			PM	0.851	33.0	328	C
Mamre Road / Abbotts Road	Signals	Base Case	AM	0.557	16.7	116	B
			PM	0.618	16.7	135	B
		Project Case	AM	0.536	16.6	107	B
			PM	0.630	16.7	141	B
Darrabarra Avenue / Berriwerri Drive	Roundabout	Base Case	AM	0.021	10.9	1	A
			PM	0.036	10.0	1	A
		Project Case	AM	0.048	10.6	2	A
			PM	0.113	9.9	4	A
Berriwerri Road / Access Road	Roundabout	Base Case	AM	-	-	-	-
			PM	-	-	-	-
		Project Case	AM	0.022	11.9	1	A
			PM	0.012	11.9	1	A

The 2036 future year results indicate that intersections will continue operating at acceptable levels with the LoS continuing to operate at a minimum Level of Service of C. A review of the detailed SIDRA output also indicates that no approaches for the study intersections have an LoS of F that would indicate capacity on that leg has been exceeded.

In summary, the Proposal is found to have minor traffic impacts that can be readily accommodate without the need for additional upgrades over the planned Phase 1 improvements under the Mamre Road Stage 2 upgrade.

8 Design commentary

8.1 Relevant Design Standards

The Site access, car park and loading should be designed to comply with the following relevant Australian Standards:

- Australian Standard 2890.1 (2004): *Off-street car parking* (AS2890.1:2004).
- Australian Standard 2890.2 (2018): *Off-street commercial vehicle facilities* (AS2890.2:2018).
- Australian Standard 2890.3 (2015): *Bicycle Parking* (AS2890.2:2015).
- Australian Standard 2890.6 (2022): *Off-street parking for people with disabilities* (AS2890.6:2022)

It is expected that any detailed construction drawings in relation to any modified areas of the car park or Site access would comply with these Standards. Furthermore, compliance with the above Standards would be expected to form a standard Condition of Consent prior to any development approval. Detailed Design will be undertaken based on relevant Australian Standards (AS2890 series) as part of the Construction Certificate (CC).

8.2 Design Review

8.2.1 Access Considerations

Reference should be made to the design commentary and swept paths provided in **Appendix A**, demonstrating that vehicles can enter and exit the Site in a forward direction.

The site accesses have been designed to accommodate regular movements for 20.0m Articulated Vehicles (20.0m AV) (right in and right out) and 12.5m Heavy Rigid Vehicles (12.5m HRV) (right in, left out and right out). With consideration for the Berriwerri Drive roundabout, the western campus access forms a direct (western leg) and therefore a 30m A-Double movement has been tested to confirm that errant vehicles can turn around safely within the publicly accessible area.

8.2.2 Queuing Assessment

Both western and eastern campuses include secure entries that ordinarily should have very minimal wait times for regular staff and customers/contractors. Notwithstanding, a queuing assessment has been undertaken under two methodologies to account for a worst case scenario with 180 entry movements per hour (for reference, maximum forecast entry movements is 137 veh/hr), split into 120 trips for the western parcel and 60 for the eastern parcel:

Australian Standard AS2890.1:	AS2890.1:2004 stipulates maximum lane capacities for lanes and the limit for “ticket and token acceptance unit and boom gate” is 300 vehicles / hour / lane. Both campuses will have sufficient capacity to accommodate the peak hour exit movement.
First Principles:	The first principle assessment has assumed a service time of 20 seconds which would generate a design queue of 9 vehicles based on the accumulation of vehicle arrivals. While this is considered to be a theoretical worst case for regular operation, the analysis would demonstrate there would be some 4:30 minutes to resolve any glitches before the design queue forms.

In response, the public queuing areas for both campuses provide a minimum of queuing length of 90m (across multiple lanes) which would provide capacity for approximately 13 cars (6.5m spacing) without impacting on exit movements for the campus. In addition, the provision of multiple lanes (e.g. for breakdown/hold ups) and ability to manage contra-flow (via diverting entering traffic to exit lanes) provides a robust design that minimises the chance of on-street queuing.

8.2.3 Service Vehicles

Consideration of the intended development of the Proposal – being data centre and associated office space – indicates the loading dock comprising 1 loading bay (suitable for an HRV) for each sub-parcel (6 total) is considered sufficient and appropriate. Furthermore, the COSH building incorporating a café has been provided with a dedicated loading space suitable to accommodate an HRV which will provide a high level of servicing amenity.

It is anticipated that service area design compliance with AS 2890.2:2018 would form a standard Condition of Consent further to approval.

8.2.4 Car Parking Design

All staff and customer/contractor car spaces would be designed to meet the minimum requirements of User Class 1/1A car parking (low turnover) to align with AS2890.1:2004 for staff parking and AS2890.6:2009 for accessible parking. Parking spaces for the COSH building have been designed to user Class 3 standards within the campus (suitable for medium/high turnover) with publicly accessible spaces (for the café) provided in an angled configuration that is well suited to high turnover traffic.

The internal manoeuvring area to and from the internal car park areas have been designed for light vehicles up to B99 with dimensions 1,940mm×5,200mm, as prescribed within AS2890.1: 2004.

9 Conclusion

This Transport Accessibility and Impact Assessment has been prepared to support the proposed Mamre Road Data Centre Campus at 706-752 Mamre Road, which is to comprise 227,584m^2 GFA of data centre space with a café. The site is notably subject to the previous Summit at Kemps Creek SSD, which was established to have significant traffic generating potential such as to require network mitigations to permit additional precinct access to Mamre Road at Bakers Lane.

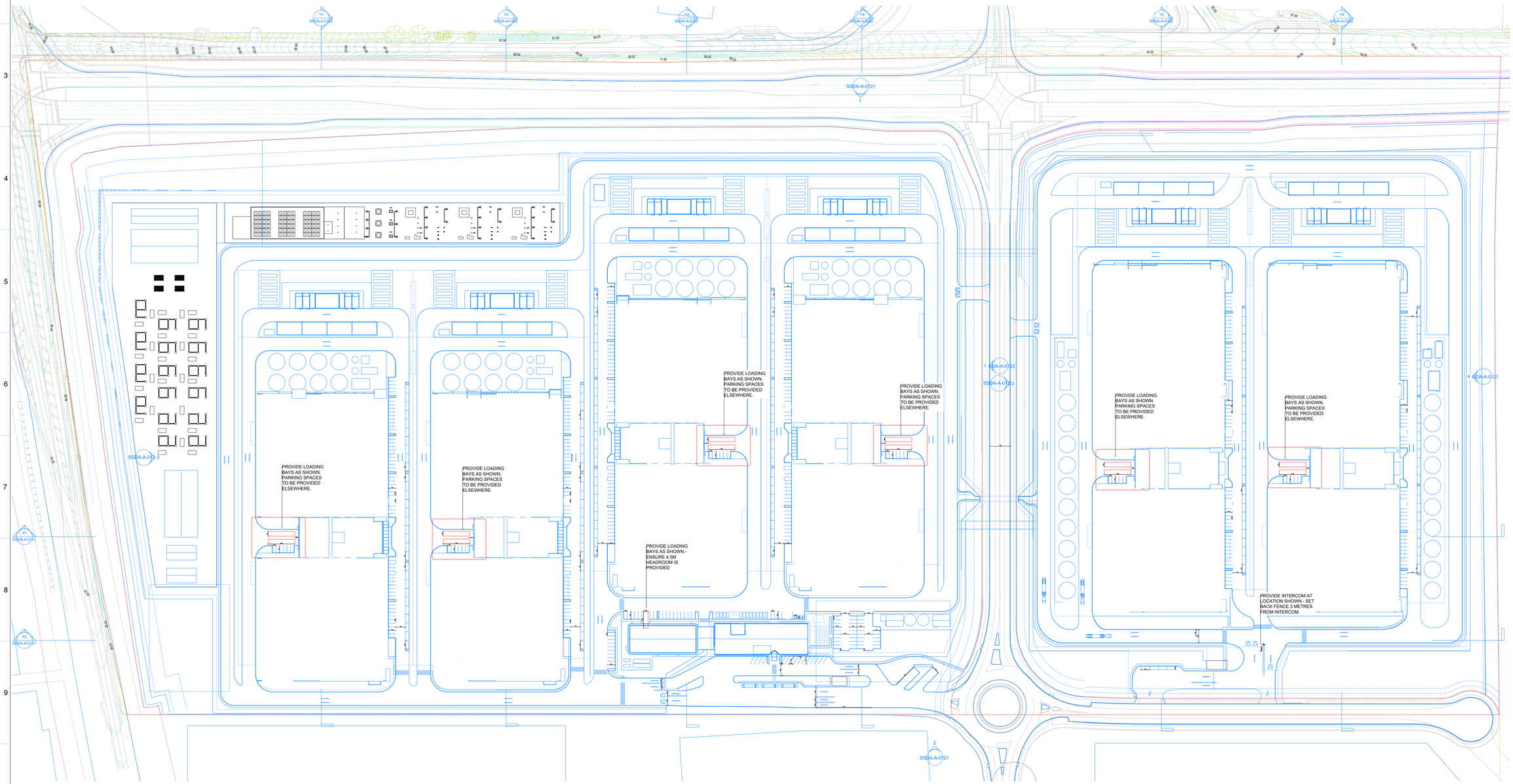
Accordingly, the subject SSD has been carefully assessed with respect to the operational characteristics of data centres which are lower impact land uses. The key findings of this assessment are as follows:

- Traffic Generation: Applying network based trip rates (0.06 trips/100 m^2 in AM Peak Period and 0.08 trips/100m^2) yields 141 AM-peak trips, 171 PM-peak trips and 1,592 daily trips. These trip rates were established based on operational information for the proposed development and are consistent with benchmarked rates for other established data centres in Greater Sydney.
- Access Strategy: All traffic will use a new four-leg roundabout on Berriwerri Drive which will be delivered and dedicated to Council as part of the MRP Road Network.
- Road Network Impact: No upgrades are warranted to the external road network by the Proposal beyond the proposed site access roundabout. This assumes planned upgrades under the Mamre Road Upgrade Stage 2 – though with modelling the existing Bakers Lane intersection. Notwithstanding, this intersection has been shown to operate within capacity in the year 2036 (without the flagged upgrades to this intersection).
- Parking Provision: The proposed development provides 619 car parking spaces against an assessed requirement of 550 spaces with consideration for the DCP parking rates. The provision also would be sufficient when compared to benchmarked sites of established data centres in Greater Sydney.
- Internal Design and Servicing: Internal access, circulation and loading have been designed to meet AS2890 standards, with swept path analysis confirming safe accommodation of 20 m Articulated vehicles, HRVs, MRVs, and fire truck access as required. Café loading is served by a dedicated 3.5 m-wide bay.

In light of the above, the proposal is considered to be supportable on traffic, access and parking grounds.

Appendix A Vehicle swept paths

A1



Drawing Status:
10% Concept Design

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by Greenbox, received 17.09.2025.

Swept path assessments completed at 10 km/h and 300mm clearance.

Issue	Date	Description

Actual size: A#_####x####_Horizontal

Do not scale

Client:

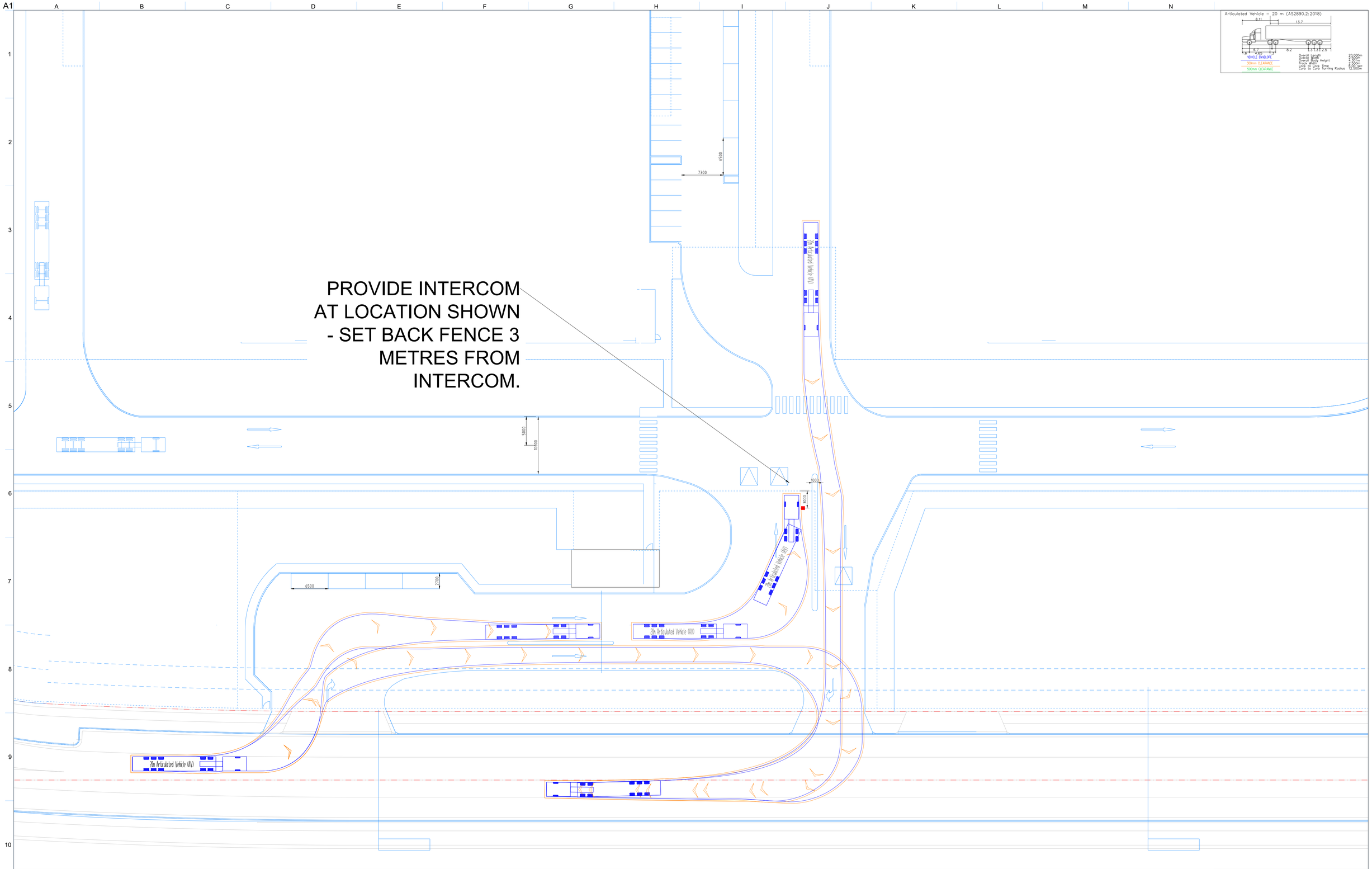
Contractor /Consultant/ Document Author:
asongroup

Key Plan:

Site: 706-752 Mamre Road, Kemps Creek	Stage: CONCEPT DESIGN	Phase:		Project name: Mamre Road, Data Centre Campus
Author Job Number: P3168	Drawn by: JDW	Designed by: Designer	Scale As indicated	Drawing title: MASTER SITE PLAN
	Checked by: JJ	Approved by: AR	Sheet A1	
File Name AG3168-05-v05.dwg				Drawing Number AG01 / Rev

A1

PROVIDE INTERCOM AT LOCATION SHOWN - SET BACK FENCE 3 METRES FROM INTERCOM.



Drawing Status:

10% Concept Design

Issue	Date	Description

Actual size: A#_####x####_Horizontal

Do not scale

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Base Plan prepared by Greenbox, received 17.09.2025.

Swept path assessments completed at 10 km/h and 300mm clearance.

Client:

Contractor /Consultant/ Document Author:

asongroup

Key Plan:

Site: 706-752 Mamre Road, Kemps Creek	Stage: CONCEPT DESIGN	Phase:	
Author Job Number: P3168	Drawn by: JDW	Designed by: Designer	Scale: As indicated
	Checked by: JJ	Approved by: AR	Sheet: A1
File Name: AG3168-05-v05.dwg			

Project name: Mamre Road, Data Centre Campus

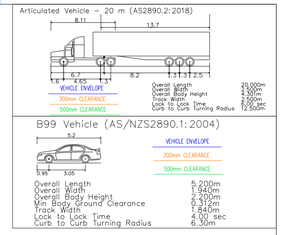
Drawing title: MASTER SITE PLAN

Drawing Number: AG02

Rev:

A1

SIGNAGE AND LINE-MARKING TO BE PROVIDED AS PART OF DETAILED DESIGN TO GUIDE MOVEMENTS HERE



Drawing Status:

10% Concept Design

Issue	Date	Description

Actual size: A#_####x####_Horizontal

Do not scale

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by Greenbox, received 17.09.2025.

Swept path assessments completed at 10 km/h and 300mm clearance.

Client:

Contractor /Consultant/ Document Author:

asongroup

Key Plan:

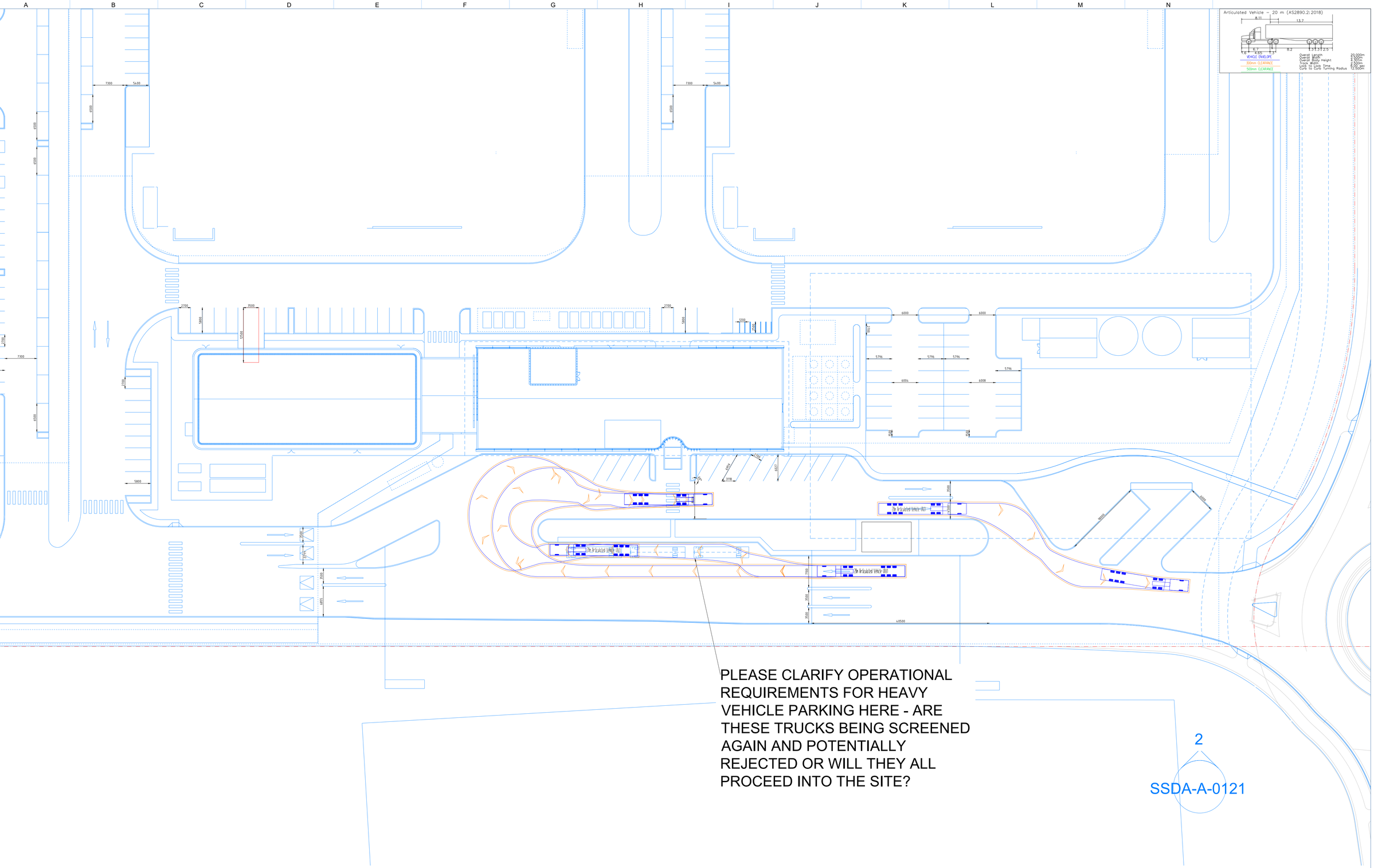
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Author Job Number: P3168	Drawn by: JDW	Designed by: Designer	Scale: As indicated
	Checked by: JJ	Approved by: AR	Sheet: A1
File Name: AG3168-05-v05.dwg			

Project name:
Mamre Road, Data Centre Campus

Drawing title:
MASTER SITE PLAN

Drawing Number: AG03

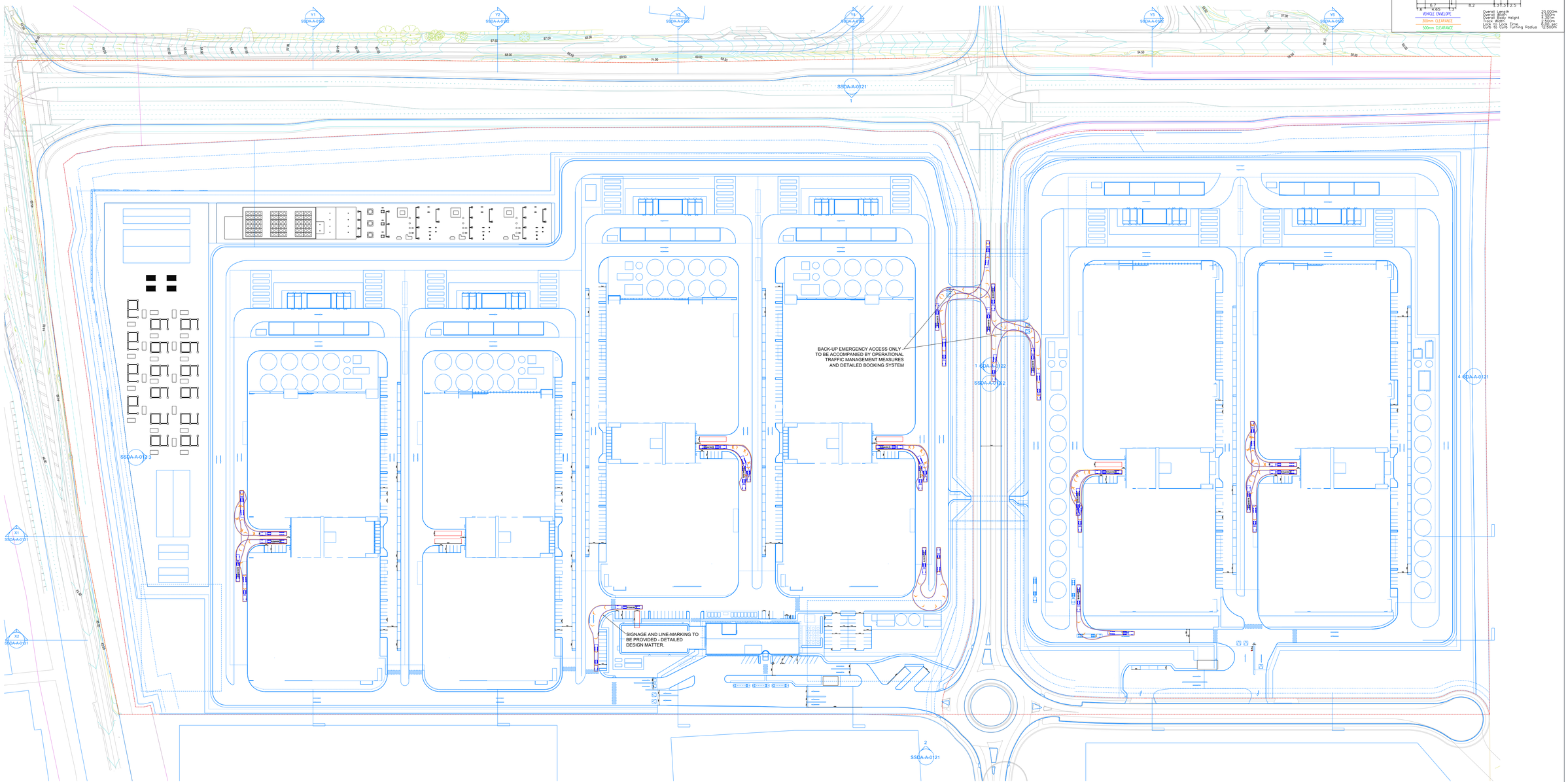
Rev


Articulated Vehicle – 20 m (AS2890.2:2018)
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13.7
6.7
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8.2
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1.1
3.1
2.5
VEHICLE ENVELOPE
300mm CLEARANCE
500mm CLEARANCE
Overall Length 20.000m
Overall Width 2.500m
Overall Body Height 4.300m
Track Width 2.500m
Lock to Lock Time 12.000s
Curb to Curb Turning Radius 12.500m
7300
5400
6500
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1 2 3 4 5 6 7 8 9 10



Drawing Status:

10% Concept Design

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Base Plan prepared by Greenbox, received 17.09.2025.

Swept path assessments completed at 10 km/h and 300mm clearance.

Issue	Date	Description

Actual size: A#_###x####_Horizontal

Do not scale

Client:

Contractor /Consultant/ Document Author:

asongroup

Key Plan:

Site: 706-752 Mamre Road, Kemps Creek

Stage: CONCEPT DESIGN

Phase:

Project name: Mamre Road, Data Centre Campus

Author Job Number: P3168

Drawn by: JDW

Designed by: Designer

Scale: As indicated

Checked by: JJ

Approved by: AR

Sheet: A1

Drawing title: MASTER SITE PLAN

File Name: AG3168-05-v05.dwg

Drawing Number: AG05

Rev

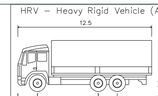
A1

PROVIDE LOADING BAYS AS SHOWN - ENSURE 4.5M HEADROOM IS PROVIDED

HRV - Heavy Rigid Vehicle

2700
3500
5800
12500
2700
5800
3500

HRV - Heavy Rigid Vehicle (AS/NZS2890.2:2002)



VEHICLE ENVELOPE
300mm CLEARANCE
500mm CLEARANCE

Overall Length	12.500m
Overall Width	2.500m
Track Width	2.500m
Lock to Lock Time	6.0 Seconds
Kerb to Kerb Turning Radius	12.500m

Drawing Status: **10% Concept Design**

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Base Plan prepared by Greenbox, received 17.09.2025.

Swept path assessments completed at 10 km/h and 300mm clearance.

Issue	Date	Description

Actual Size: A#_####x####_Horizontal

Do not scale

Client:

Contractor /Consultant/ Document Author:

asongroup

Key Plan:

Site: 706-752 Mamre Road, Kemps Creek	Stage: CONCEPT DESIGN	Phase:	
Author Job Number: P3168	Drawn by: JDW	Designed by: Designer	Scale: As indicated
	Checked by: JJ	Approved by: AR	Sheet: A1

Project name: Mamre Road, Data Centre Campus

Drawing title: MASTER SITE PLAN

File Name: AG3168-05-v05.dwg

Drawing Number: AG06

Rev

Appendix B Draft Construction Traffic Management Plan

5 December 2025

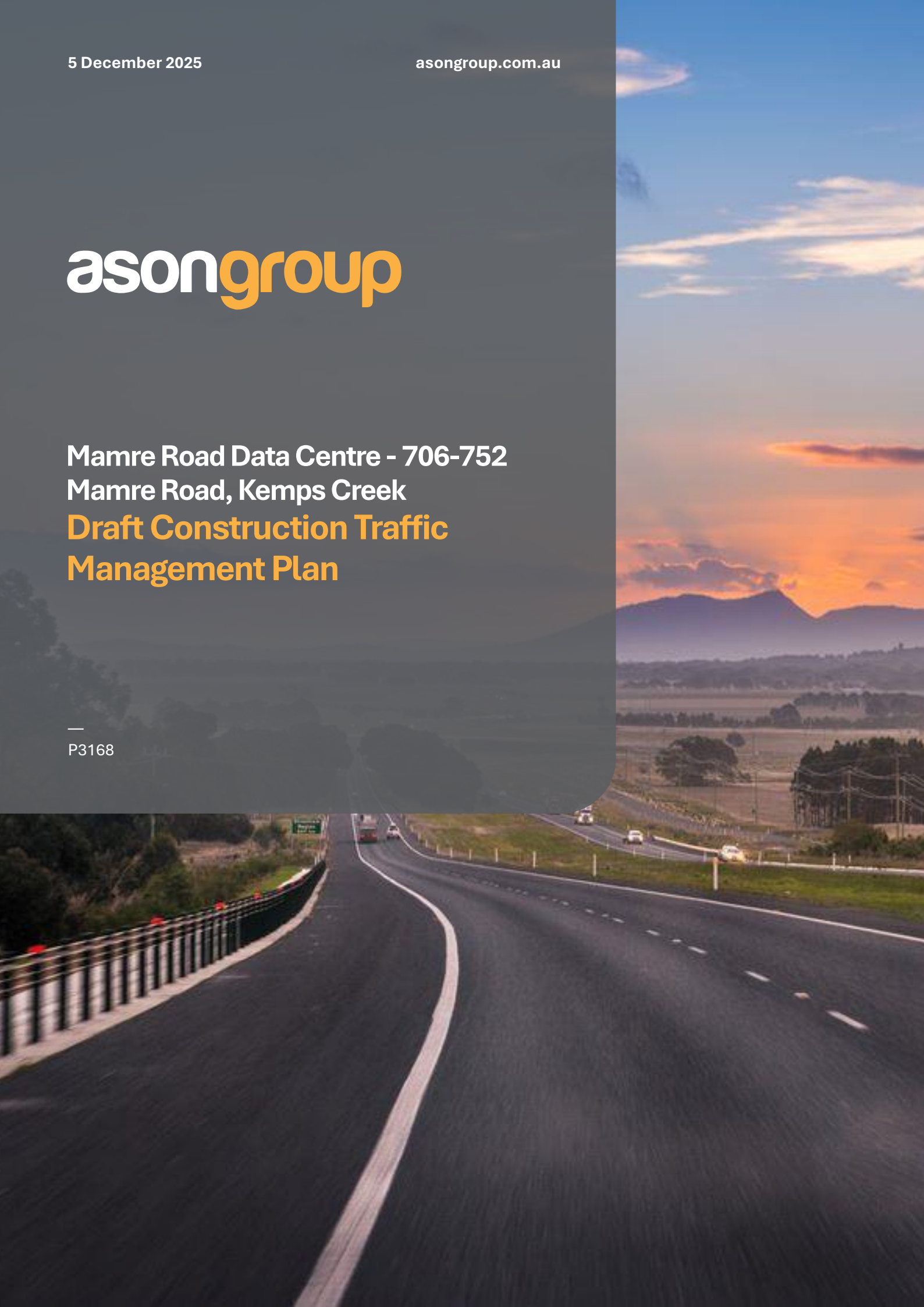
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Mamre Road Data Centre - 706-752 Mamre Road, Kemps Creek

Draft Construction Traffic Management Plan

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P3168



Document control

Project number	P3168
Issue number	V05
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Client	Plan Project Management Pty Ltd.
File reference	P3168r03v05 SSDA_Mamre Road Data Centre Campus Draft CTMP

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V05	5 December 2025	Final	Jensen Wu / R. Butler-Madden	Jae Jeon / R. Butler-Madden	R. Butler-Madden

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1 Introduction

1.1 Overview

Ason Group has been engaged to prepare this Draft Construction Traffic Management Plan (CTMP) in support of the State Significant Development Application (SSDA) (ref: SSD-92743706) for the proposed data centre development located at 706-752 Mamre Road, Kemps Creek, within the Mamre Road Precinct (MRP). The SSDA seeks consent for the hyper-scale data centre campus and associated infrastructure.

This Draft CTMP establishes a framework for proposed construction management strategies which would provide for the safe and efficient completion of the proposed works while minimising construction traffic impacts on the surrounding road network and public road network users.

It is highlighted that this Draft CTMP is preliminary until such time a detailed construction programme is established. A detailed final CTMP will be prepared upon appointment of a Contractor and post approval as part of Construction Certificate phase inputs.

From the outset it is noted that the future CTMP, once implemented, will be prepared to be updated over time as additional details in regard to the construction proposal are revised / finalised as is standard with any major construction project. All such updates would be completed in consultation with Penrith City Council (Council) in whose Local Government Area (LGA) the Site lies; and / or with the relevant authorities such as Transport for NSW (TfNSW) where special road occupancy or the like is required.

Importantly, Ason Group has been responsible for the preparation of this Draft CTMP, which has been prepared with reference to all available information in regard to the project, and all relevant CTMP preparation guidelines. The implementation of the recommendations and strategies detailed in this CTMP are the strict responsibility of the developer and / or the designated construction Project Manager once appointed.

1.2 Secretary's Environmental Assessment Requirements

The following are construction traffic related matters outlined in the Secretary's Environmental Assessment Requirements (SEARs) issued under SSD-92743706 as outlined below.

Table 1: SEARS Compliance

Section	Request Item	Summary Response	Reference
Traffic and Transport	Details of the likely construction trip generation, construction vehicle routes, access and parking arrangements during construction works and measures to mitigate any construction traffic and parking impacts, detailed in a draft Construction Traffic Management Plan	Construction traffic thresholds for the various constructions stages are detailed within 4.2. 3 different access options have been developed. However, it is anticipated that access will be via the road under construction to the south of the Site (via the Yiribana Estate). The alternative 2 options will only be utilised if necessary. Vehicle routes will be way of Mamre Road and the arterial road network.	Section 3.3 & 4.2
	Demonstration that the proposed access arrangements can adequately accommodate all vehicle movements generated during construction.	As above, access is intended to be va the future industrial collector road to the south. One of the alternative options (to be used only if necessary) will be a temporary left-in	Section 4.2

		/ left-out on Mamre Road, built to TfNSW specfiations. Finally, the existing access will be utlised for very early site establishment works and would only accodmate very minor volumes of traffic.	
	Plans demonstrating how all vehicles likely to be generated during construction…can be accommodated on the site to avoid queuing in the street network	It is noted that this is a draft Construction Traffic Management Plan and a contractor has not yet been appointed at the time of preparing this report. Therefore, the specifics in terms of site plans have not been prepared. The detailed CTMP will ensure that appropriate loading and unloading areas will be provided to ensure that the construction vehicles associated with this Site do not result in queues on the external road network. Noting the size of the Site, this will be readily achievable.	

1.3 Proposed development

The Site is proposed for development under a State Significant Development Application (SSDA) as a data centre campus comprising:

- Approximately 26 shells across four-storeys data centre buildings (4 x four shells and 2 x five shells), including six technical office buildings, plus a campus office.
- Incoming and internal electrical substations and associated infrastructure
- Site preparation, including earthworks, stormwater, sewer, roads and associated infrastructure.

The Proposal is reproduced at a reduced scale below.

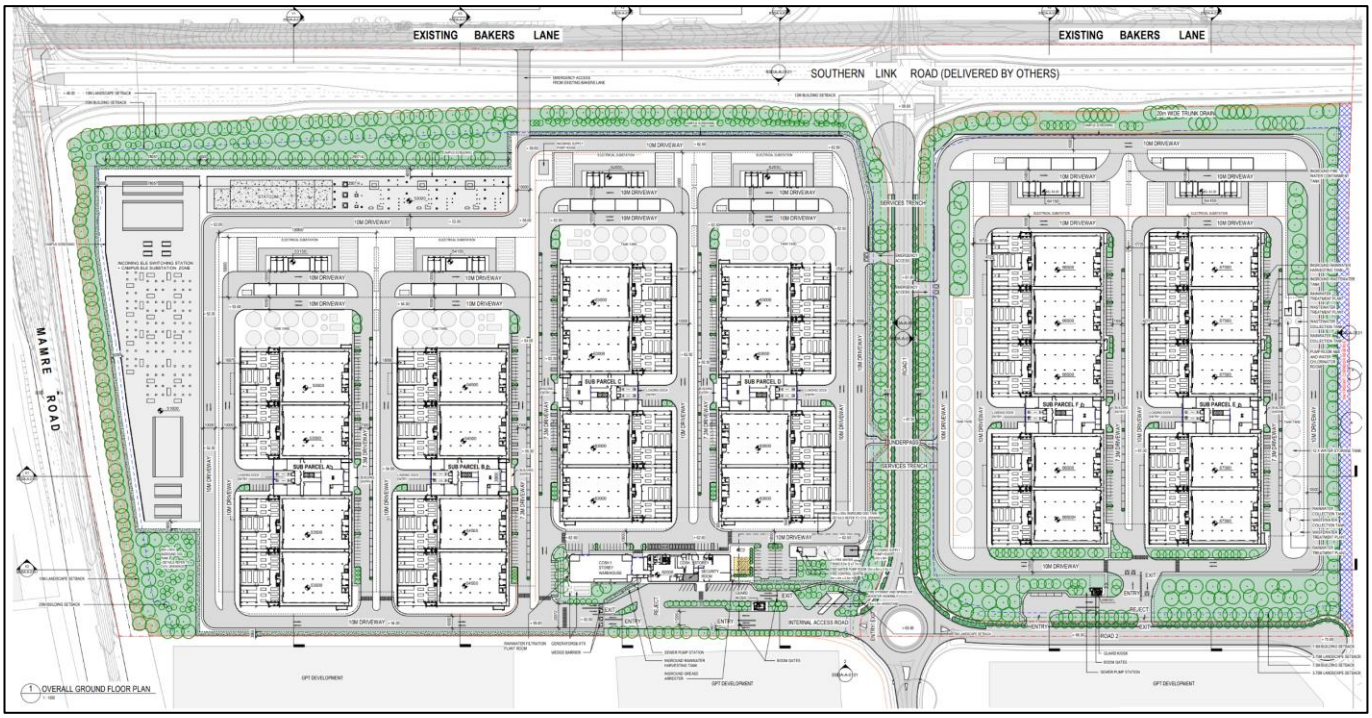


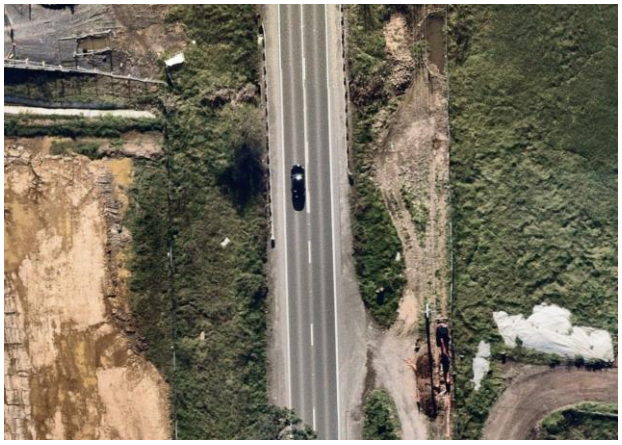
Figure 1: Site plan

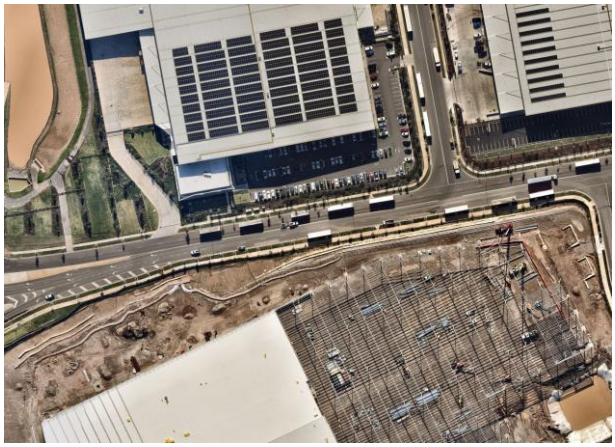
2 The Site

2.1 Road network

The existing road network providing access to the Site is summarised and shown below.

Table 2: Surrounding road network

Road	Description	Typical Road Characteristics
Mamre Road	Mamre Road is a north–south arterial connecting the Great Western Highway to the M4 Motorway and Elizabeth Drive. In the vicinity of the Site (between Bakers Lane and Darrabarra Road), Mamre Road currently operates as a two-lane two-way road (one lane in each direction) with a posted speed limit of 80 km/h. Under the planned Mamre Road Upgrade – Stage 2, this section of Mamre Road will be widened to a four-lane divided carriageway (two lanes in each direction), providing additional capacity to support future growth in the Western Sydney Employment Area.	
Aldington Road	A local access that runs north-south (to the east of Mamre Road) and currently provides access for a number of rural residential properties. It connects with Bakers Lane to the north and Abbots Road to the south. It provides 1 traffic lane in each direction and has a posted speed limit of 80km/h.	
Bakers Lane	A local access that runs east-west (to the east of Mamre Road) and currently provides access for a number of rural residential, educational and retirement sites. It provides 1 traffic lane in each direction and has a posted speed limit of 60km/h. Along Bakers Lane, private schools are located on the northern frontage, and a school zone applies in this area, reducing the speed limit to 40 km/h during school hours.	

Darrabarra Avenue	Darrabarra Road is a local access road running east–west to the east of Mamre Road. It currently provides access to the Aspect Industrial Estate. The road operates as a two-lane carriageway (one lane in each direction) with a posted speed limit of 60 km/h.	

The National Heavy Vehicle Regulator (NHVR) Restricted Access Vehicles (RAV) map for vehicles up to and including 26m B-doubles is shown below.

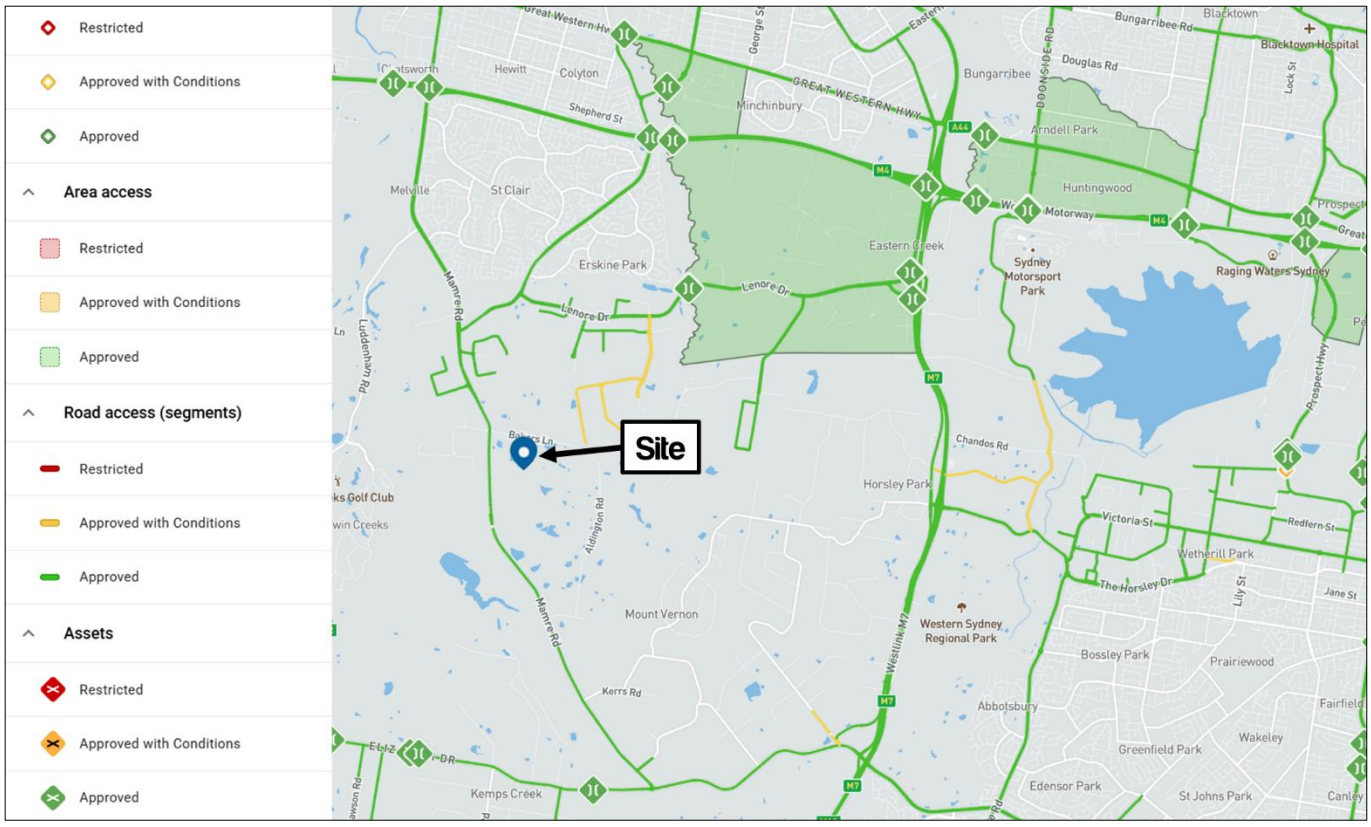


Figure 2: NHVR RAV map – 25/26 B-double routes

3 Overview of Construction works

3.1 Staging and Duration of Works

Detailed construction staging, duration and timing will be determined upon appointment of a Contractor, and as part of Construction Certificate phase inputs for the detailed CTMP. It is noted that the Site will become operational over multiple phases in line with construction completion of each sub-parcel. As shown in **Figure 3**, phase 1 will include the construction of sub-parcel A and the roundabout which provides the connection to the Yiribana Logistics Estate and ultimately the Aspect Industrial Estate to connect onto Mamre Road.

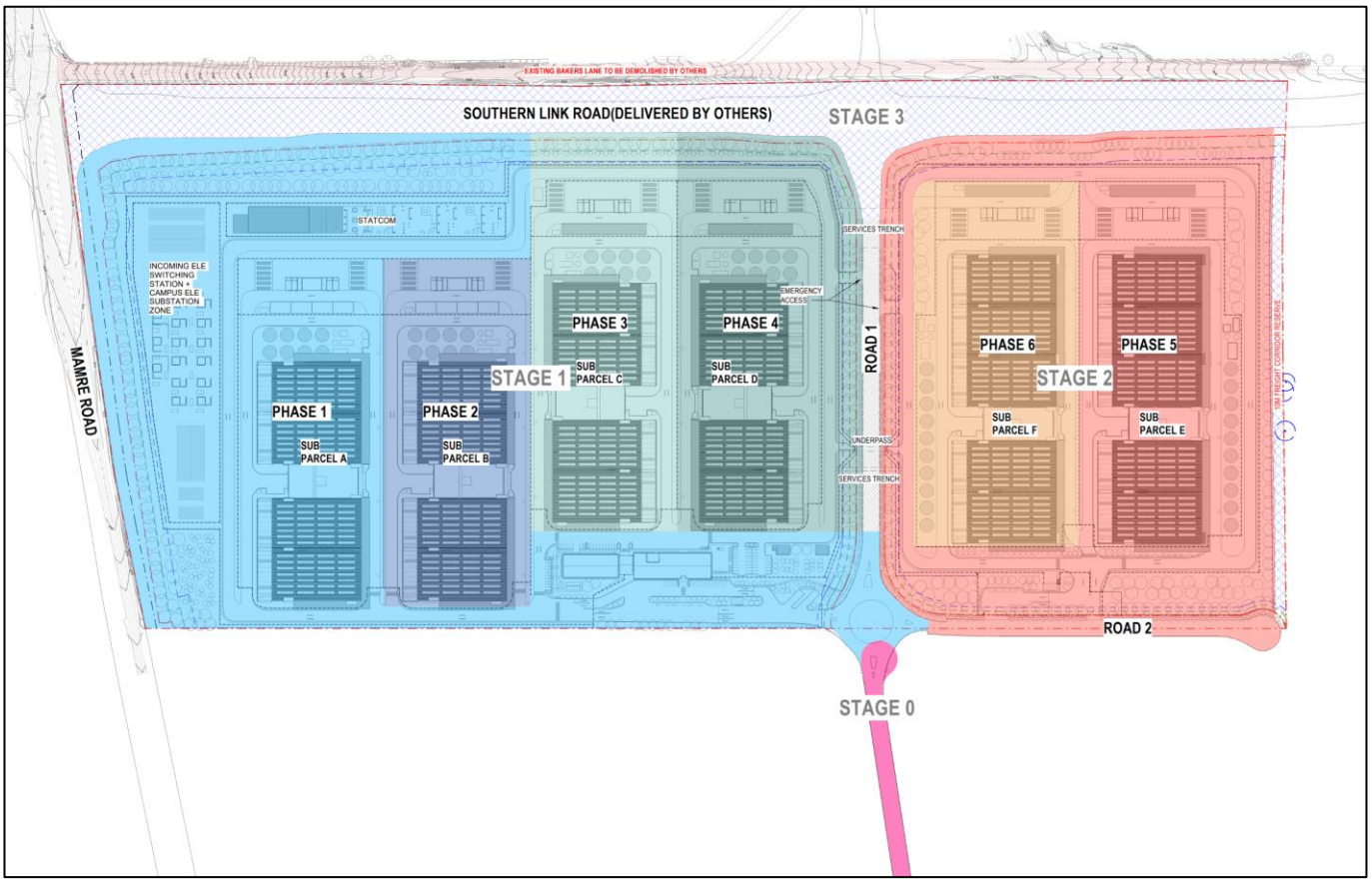


Figure 3: Staging plan (prepared by Greenbox)

3.2 Construction Hours

The type of work being undertaken will remain consistent throughout the duration of construction and associated activities. All works are expected to be undertaken within the following hours:

- Monday to Friday (other than Public Holidays): 7:00am – 6:00pm
- Saturday: 8:00am – 1:00pm
- Sunday & Public Holidays: No works to be undertaken.

Any work to be undertaken outside of the standard construction hours will be required to obtain an Out of Hours (OOH) approval; any such works would necessarily be undertaken in accordance with the appropriate OOH protocols and approval processes. The type of works that might be undertaken outside the recommended standard hours are:

- The delivery of oversized plant or structures including what authorities determine require special arrangements to transport along public roads.
- Emergency work to avoid the loss of life or damage to property, or to prevent environmental harm.
- Public infrastructure works that shorten the length of the project and are supported by the affected community.
- Works where a proponent demonstrates and justifies a need to operate outside the recommended standard hours

3.3 Site access arrangements

3.3.1 Construction vehicle access

Construction access is proposed in 3 stages:

Phase 0

Access for early works construction (when construction volumes are very low) activities is expected to be via the South through the Yiribana Estate. In the unlikely scenario that this access is not available at the time of commencement of early works, access is proposed off Bakers Lane for a short period only for the purpose of establishing the temporary left in left out access via Mamre Road. Upon completion of the temporary access via Mamre Road, the existing access on Bakers Lane will be removed.

Phase 1

The scope of the Phase 1 works includes the construction of the roundabout which provides the connection to Yiribana and Aspect Estates. The works associated with Phase 1 will access the Site via the temporary access via Mamre Road. Upon completion of Phase 1 works and with the assumption that appropriate connections will be provided by the neighbouring estates prior to the completion of Phase 1, the temporary access via Mamre Road will be removed and all subsequent construction vehicles will be required to access via the roundabout.

Phase 2-7

As mentioned above, upon completion of the roundabout, the construction vehicles will be required to access the Site via the roundabout and through the neighbouring estates.

Noting the above, the following are the proposed vehicle access arrangements for the various phases:

- Phase 0 – Access via Yiribana Estate
  - Arrival: Northbound or southbound on Mamre Road turning into AIE to the Site via internal roads
  - Departure: Towards AIE and turning left or right onto Mamre Road heading southbound or northbound
- Phase 1 – Temporary Access via Mamre Road
  - Arrival: Southbound on Mamre Road turning left into the Site
  - Departure: Turning left onto Mamre Road heading southbound
- Phase 2-7 Roundabout connecting to Aspect Industrial Estate (AIE)
  - Arrival: Northbound or southbound on Mamre Road turning into AIE to the Site via internal roads
  - Departure: Towards AIE and turning left or right onto Mamre Road heading southbound or northbound

Construction vehicle routes are illustrated in **Figure 4** further below. It is highlighted that no construction vehicles are to utilise Bakers Lane to access or depart the Site at any time.

A copy of approved routes will be distributed by the Project Manager to all drivers as part of the mandatory induction procedure.

The largest anticipated vehicle to require access to the Site are the 20m Articulated Vehicles (AVs) and 19.6 Truck & Dogs.

In the event that an oversize or over-mass vehicle is required to travel to or from the Site, a permit from TfNSW and the National Heavy Vehicle Regulator (NHVR) will be required prior to travelling to the Site. Notwithstanding, this Draft CTMP relates to general construction which does not seek the use of oversize vehicles; a separate application would be submitted if such access is required.

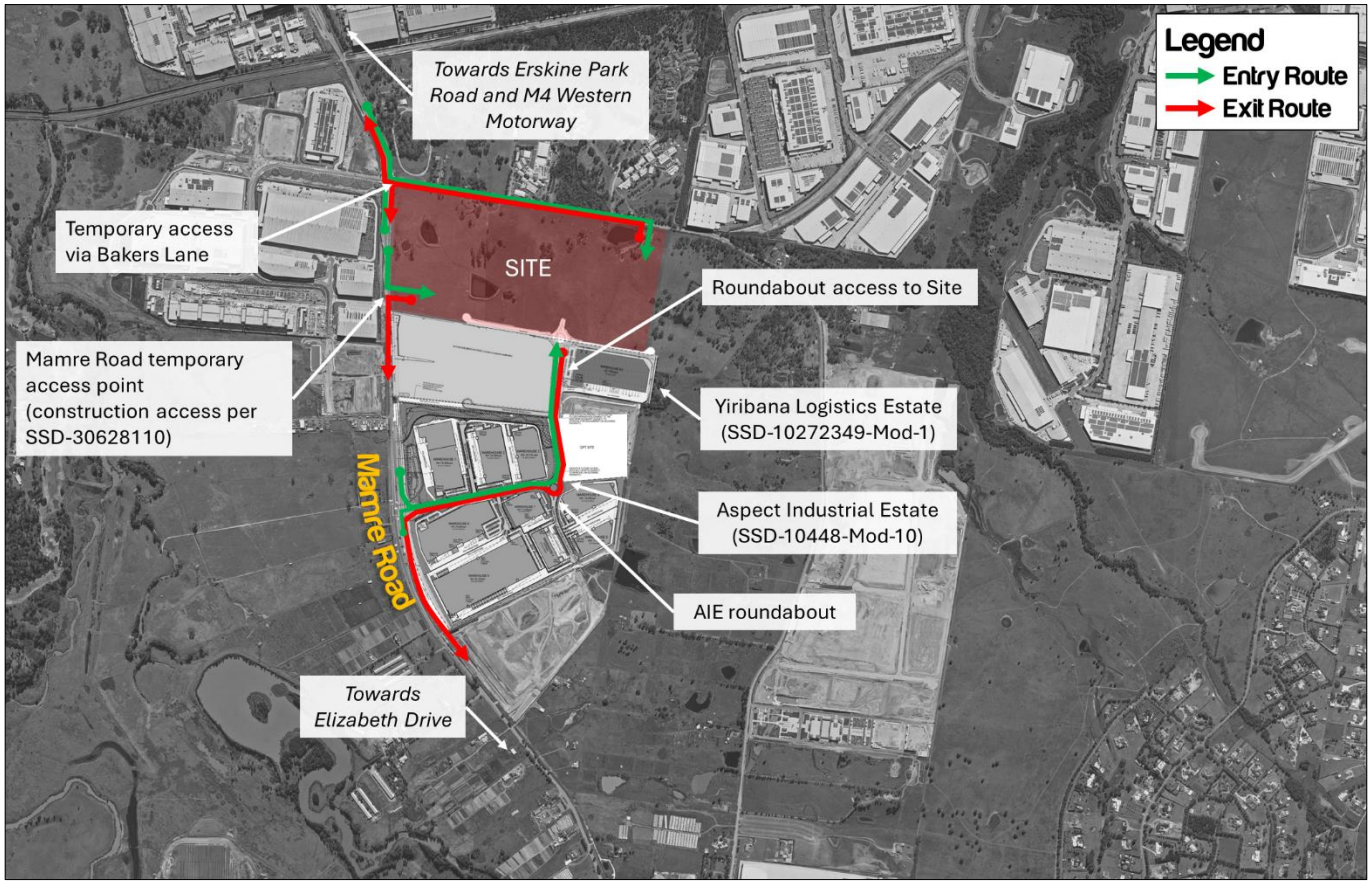


Figure 4: Construction vehicle routes

3.3.2 Emergency vehicle access

Emergency vehicle access to and from the Site will be available at all times while the Site is occupied by construction workers; emergency protocols during the works will be developed by the Project Manager for inclusion within the final CTMP.

3.3.3 Pedestrian access

There is currently limited pedestrian infrastructure in vicinity of the Site due to the current largely undeveloped nature of the land immediately surrounding the Site. A section of shared path connecting to the Yards Estate is provided along the west side of Mamre Road currently which connect to grass verges on both sides of Bakers Lane via signalised pedestrian crossings. Future key pedestrian desire lines in the vicinity of the Site would be triggered by connections to future public transport infrastructure, noting the nature of the area being largely industrial and therefore not representing key destinations and attractions for people to walk to.

3.4 Site management

3.4.1 Fencing requirements

Security fencing will be erected along the entire boundary of the Site and will be maintained for the duration of the construction works to ensure that unauthorised persons are kept out of the Site.

Site access gates would be provided at the access driveway which would remain closed at all times outside of the permitted construction hours.

3.4.2 Materials handling

All material loading will be undertaken wholly within the Site, and all construction equipment, materials and waste will similarly be strictly kept within the Site.

While not anticipated, should any materials handling (or other constructed related activity) be required from the public roadway (i.e. Mamre Road) then prior approval shall be sought and obtained from the appropriate authorities.

4 Traffic impact

4.1 Overview

As mentioned in **Section 3.1**, the Site will become operational over multiple phases in line with the construction completion of each sub-parcel. Therefore, throughout construction there will be periods where both construction traffic and operational data centre traffic will occur. The following sections have been prepared to establish traffic generation thresholds for which combined construction and operational traffic are to fall within. Construction vehicle access points for the initial and subsequent stages of construction are shown again in **Figure 5**.

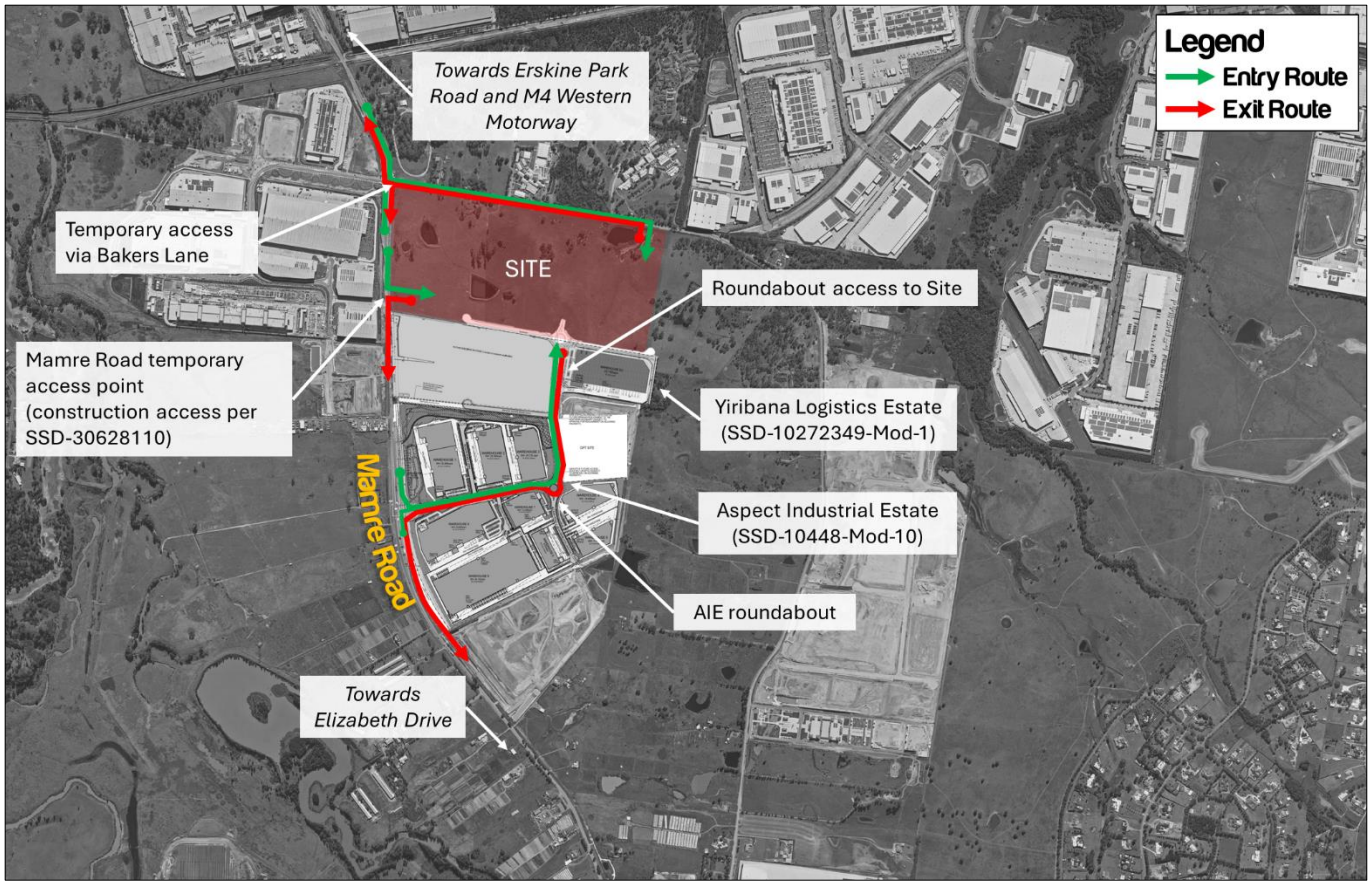


Figure 5: Construction vehicle routes

4.2 Traffic generation thresholds

4.2.1 Bakers Lane construction access – Phase 0

To establish traffic generation thresholds for the construction and staged operation of the Site, reference is made to the Summit Estate preliminary CTMP (Summit PCTMP, ref: *1163r03v10 CTMP_Summit Industrial Estate, Issue*) covering the future construction of industrial development collectively known as the "Summit at Kemps Creek" (ref: SSD-30628110) which comprises:

- 706-752 Mamre Road, Kemps Creek (which is the data centre Site)
- 754-786 Mamre Road, Kemps Creek
- 1-23 Aldington Road, Kemps Creek

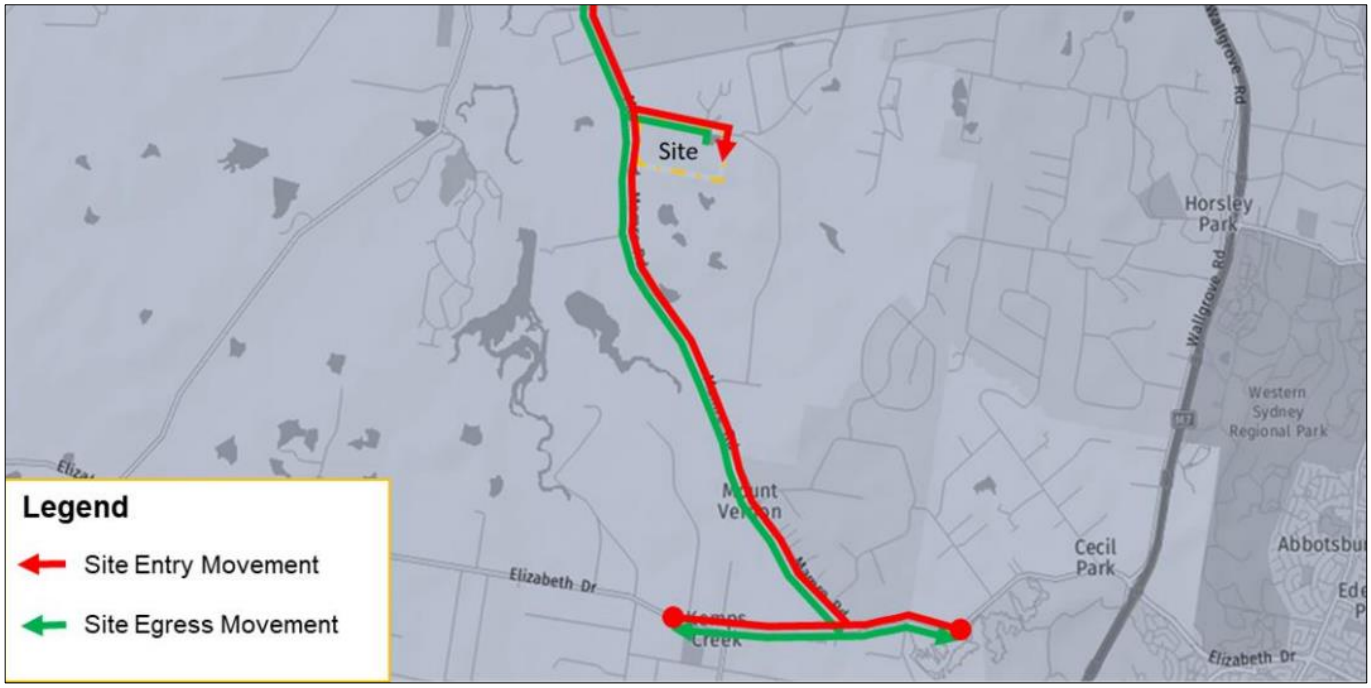


Figure 6: Bakers lane Temporary construction access (per Summit PCTMP)

Initially, access will be provided via Bakers Lane as shown in **Figure 6** whilst the construction of the Mamre Road temporary access is being constructed. The following traffic generation volumes are to be adhered to:

- Heavy vehicles movements
  - AM peak hour: 2 trips per hour (in and out combined)
  - PM peak hour: 2 trips per hour (in and out combined)

Reference is made to the Summit PCTMP which identifies the current network peak periods through a traffic survey which was undertaken in May 2024. The following are the surveyed peak periods which will be the peak hours considered for the proposed construction works:

- AM peak hour: 7:45am – 8:45am
- PM peak hour: 2:45pm – 3:45pm

4.2.2 Mamre Road construction access – Phase 1

The temporary construction access on Mamre Road is shown in **Figure 7** below.



Figure 7: Mamre Road Temporary construction access (per Summit PCTMP)

SIDRA modelling assessment has been undertaken in the Summit PCTMP for the 2024 year with base and construction vehicle movements as follows:

- Heavy vehicles movements
  - AM peak hour: 30 trips per hour (in and out combined)
  - PM peak hour: 30 trips per hour (in and out combined)

SIDRA modelling results found in the Summit PCTMP demonstrates that the vehicles would not have an impact on the operation of the Mamre Road / Bakers Lane intersection. Therefore, the above traffic generation volumes have been adopted to form the peak hour traffic thresholds for the Mamre Road construction access.

4.2.3 Roundabout construction access – Phases 2-7

Upon completion of the roundabout, the construction vehicles will be required to access the Site via the Aspect Industrial Estate and Yiribana Logistics Estate with the closure of the temporary access provided on Mamre Road. Therefore, reference is made to the Mamre Road Data Centre Campus TMAP (TMAP, *ref: P3168r01 Mamre Road Data Centre Campus TMAP*) to establish the permissible construction traffic threshold throughout these stages.

The following traffic volumes are the preliminary traffic volumes expected throughout Phases 2-7:

- AM peak: 92 trips per hour
- PM peak: 48 trips per hour
- For the purpose of this report, 1 truck is equal to 1 inbound movement plus 1 outbound movement which equals to 2 trips.

Construction traffic generation during road network peak hours are not expected to exceed the operational peak hour traffic generation of the Proposal. However, a detailed CTMP will review and address construction vehicular traffic throughout each stage of development.

5 Traffic control

5.1 Traffic Guidance Schemes

Any Traffic Guidance Scheme (TGS's), associated risk assessment, consultation schedules, TGS verification checklist, and inspection checklists shall be prepared by an accredited person, in accordance with the TfNSW Traffic Control at Worksites Manual (Issue 6.1) and AS1742.3:2019.

All TGSs involving signage or impacts to public roads shall be approved by the Traffic Management Centre (TMC), prior to the works for which they relate. These TCPs shall be updated to respond to any changes to prevailing traffic conditions throughout the life of the works.

A copy of all approved TGSs shall be kept on-site for reference at all times.

5.2 Authorised traffic controller

An authorised Traffic Controller is to be present on-site throughout the construction stage of the project. Responsibilities include:

- Supervision of all construction vehicle movements into and out of site at all times,
- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project, and
- Pedestrian management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur, while maintaining radio communication with construction vehicles at all times.

5.3 Road occupancy

The works are not expected to require extensive occupation or obstruction of traffic on Mamre Road.

At all times, two-way traffic shall be maintained along public roads. Any works within or affecting (e.g., signage within) Mamre Road shall only be undertaken in accordance with relevant TGS developed by an accredited person that has relevant Prepare Work Zone Traffic Management Plan accreditation.

All TGS shall be approved by TfNSW prior to commencement of any works. The Contractor shall adhere to any restrictions imposed by TfNSW (or Council) in the granting of those Road Occupancy Licenses (ROLs).

6 Monitoring and communication strategies

6.1 Development of Monitoring program

The development of a program to monitor the effectiveness of this CTMP shall be established by the Project Manager and should consider scheduled reviews as well as additional reviews should construction characteristics be substantially changed (from those outlined in the Final CTMP). All and any reviews of the CTMP should be documented, with key considerations expected to include:

- Tracking heavy vehicle movements against the estimated heavy vehicle flows during the works;
- The identification of any shortfalls in the CTMP, and the development of revised strategies / action plans to address such issues;
- Ensuring that all TGS are updated (if necessary) by "Prepare a Work Zone Traffic Management Plan" card holders to ensure they remain consistent with the set-up on-site; and
- Regular checks to ensure all loads are departing the Site covered as outlined within this CTMP.

6.2 Communication strategy

A Communications Strategy shall be established by the Project Manager for implementation throughout the construction works; this strategy will outline the most effective communication methods to ensure adequate information within the community and assist the Project Team to ensure the construction works have minimal disruption on the road network. The Communications Strategy will include:

- The erection of appropriate signage providing advanced notice of works and any traffic control measures to be implemented; and
- Written notices to surrounding landowners (and tenants) likely to be directly affected by the works, prior to commencement.

Ongoing communication is also required so that all stakeholders are kept up to date of works and potential impacts.

Appendix C Preliminary Green Travel Plan

24 November 2025

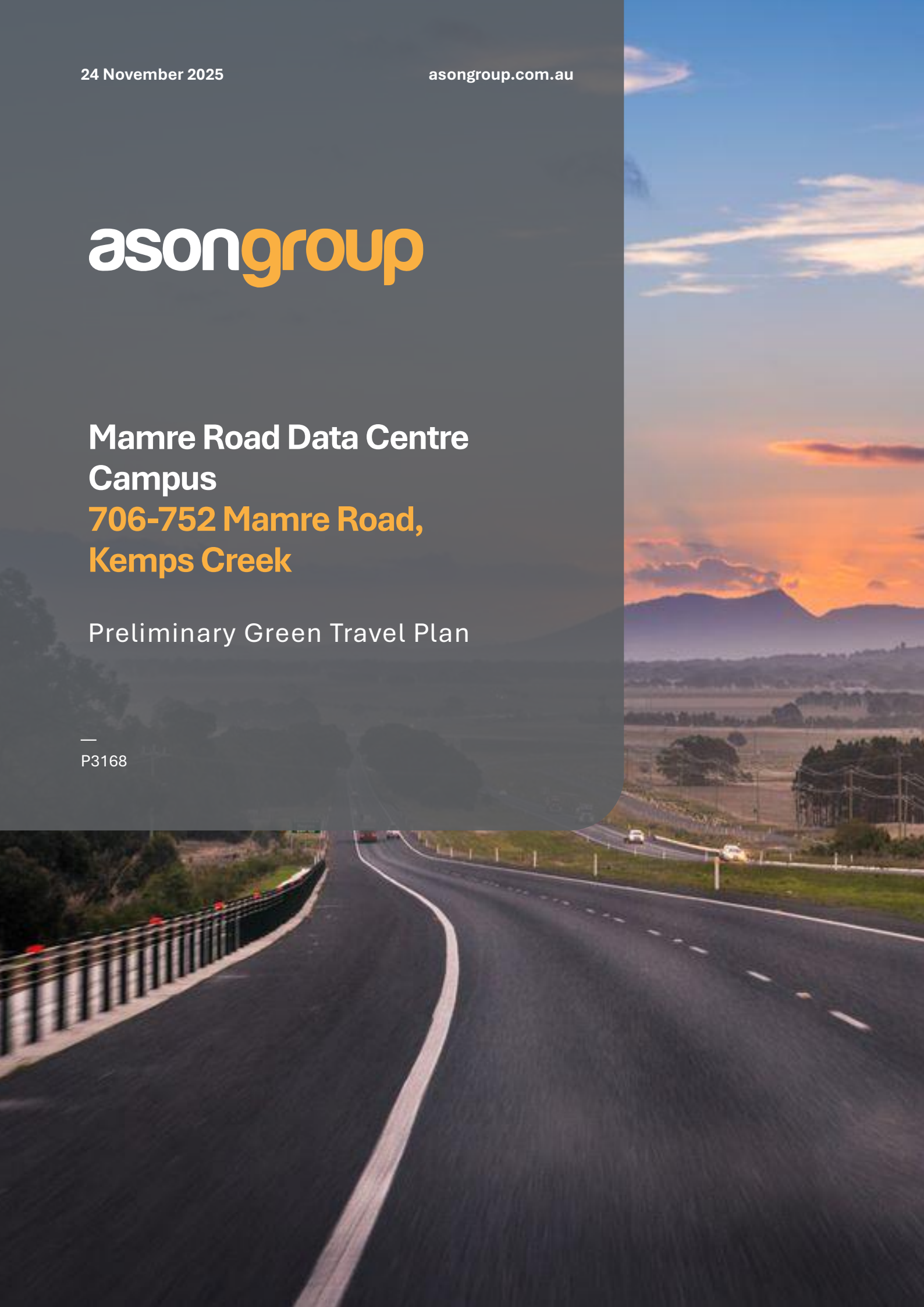
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Mamre Road Data Centre Campus
706-752 Mamre Road, Kemps Creek

Preliminary Green Travel Plan

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P3168



Document control

Project number	P3168
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File reference	P3168r02v2 SSDA_Mamre Road Data Centre Campus - GTP

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1 Introduction

1.1 Context

Ason Group has been engaged to prepare this Preliminary Green Travel Plan (GTP) in support of the State Significant Development Application (SSDA) for the proposed data centre development located at 706-752 Mamre Road, Kemps Creek, within the Mamre Road Precinct (MRP). The SSDA seeks consent for the hyper-scale data centre campus and associated infrastructure.

The Site is within the Mamre Road Precinct (MRP), which was rezoned in June 2020 for primarily industrial uses. The Department of Planning, Housing and Infrastructure (DPHI) adopted a precinct-wide Development Control Plan on the 19 November 2021 (herein referred to as the MRP DCP).

The land which forms the MRP is largely made up of rural residential properties, as well as small scale agricultural industry businesses, at present. Consequently, the Site itself is therefore not well connected by travel modes other than the private vehicle. However, the MRP DCP outlines a number of objectives to ensure that, as the MRP develops, an integrated public and active transport network also develops to service future development such as the subject site.

While not specifically required by the MRP DCP, the purpose of this Preliminary GTP is therefore to complement the intent the of the future DCP, by outlining the overarching requirements for a future Sustainable / Green Travel Plan package for the Estate. This Preliminary GTP will inform the future site-specific Plans, expected to be implemented as part of a Condition of Consent relating to any detailed development approval.

1.2 Background

MRP forms one of the initial precincts of the broader Western Sydney Aerotropolis. However, as the land has already been rezoned and incorporated into the controls of the WSEA SEPP, it is not covered by the State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 or the background policy which establishes the strategic direction for the Aerotropolis.

Nevertheless, the background studies provide some context with regards to travel demand management, specifically the following report:

- AECOM *Western Sydney Aerotropolis Transport Planning and Modelling Stage 2 Report*, October 2020 (AECOM Report).

The AECOM Report is one of the technical reports supporting the delivery of the Draft Aerotropolis Precinct Plan (November 2020), which is currently on exhibition. One of the key “enablers” detailed in the AECOM Report includes *the implementation of transport policies and strategies which foster a mode shift to sustainable transport*: and recommends the inclusion of Travel Plans for new development applications within the future Aerotropolis Development Control Plan.

As detailed in the AECOM report Travel Plans should include the following:

- Baseline travel data on the existing modal share.
- Targets.
- Action plan to achieve targets.
- Commitment to on-going review of the Travel Plan.
- Monitoring and review strategy.

Of particular relevance to this Preliminary GTP, are the mode share targets set by the AECOM Report for each of the Aerotropolis precincts, the most comparable precinct to the MRP being the Badgerys Creek and Agribusiness Precincts. Of the 5 Aerotropolis Precincts covered, Badgerys Creek and Agribusiness have the lowest sustainable mode share targets (by 2056) of 20% and 18% respectively (the Badgerys Creek Precinct is shown by Figure 1).

This reflects the planned land uses, which are anticipated to support warehousing and logistic uses, as noted by the AECOM Report. Notably, the Agribusiness precinct will not be served by rail, but a number of bus services are planned. These targets are long-term target, with an internet to be ambitious but achievable based on the policy framework, actions, initiatives, infrastructure and services defined through the precinct planning process. On this basis, the targets of the Badgerys Creek Precinct have informed the targets for this PRELIMINARY GTP.

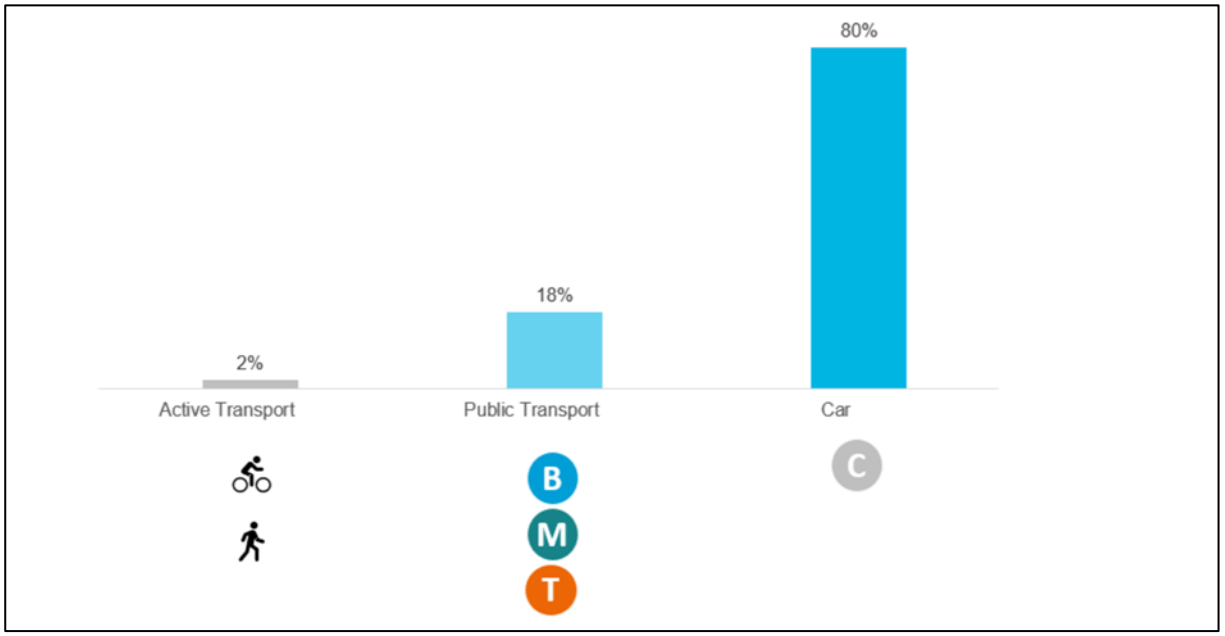


Figure 1: 2056 Badgerys Creek Mode Share Targets

Source: AECOM Report

1.3 Goals

This Preliminary GTP has specifically been prepared to achieve the following key goals:

a. Identify objectives and modes share targets (i.e., site and land use specific, measurable and achievable and timeframes for implementation) to define the direction and purpose of the future site-specific Plans;
b. Suggest specific tools and actions to help achieve the objectives and mode share targets;
c. (Suggest measures to promote and support the implementation of the plan, including financial and human resource requirements, roles and responsibilities for relevant employees involved in the implementation of the future site-specific Plans;
d. Suggest a methodology and monitoring/review program to measure the effectiveness of the objectives and mode share targets of the future GTP, including the frequency of monitoring and the requirement for travel surveys to identify travel behaviours at appropriate times.

1.4 Objectives

Underpinning this Preliminary GTP comprises a package of measures which could be adopted and designed to address the specific travel needs of the Site. In this regard, the overall intention is to encourage and facilitate the use of alternative and sustainable modes of transport and to reduce single-occupancy car travel for journeys to and from the Site.

The primary objectives of the Preliminary GTP will be to:

- Reduce the environmental footprint of the Estate.
- Set future staff travel mode share targets.
- Improve access, amenity, convenience, and safety of sustainable transport modes to/from the Site.
- Promote the use of ‘active transport’ modes such as walking and cycling, particularly for short-medium distance journeys.
- Reduce reliance on the use of private vehicles for all journeys.
- Encourage a healthier, happier and more active & public transport use culture.

2 Site Audit

2.1 Introduction

An audit of the Site is required to determine the existing facilities in the area and review existing transport choices. This section will need to be updated prior to implementation of any site-specific Plan, and at appropriate times as the MRP developed, during period of review. The audit should consider the following:

- Site conditions, once the Estate is complete;
- Public transport services in the area, including proximity to the Site, frequency of services and accessibility;
- Bicycle and pedestrian facilities, including accessibility, connectivity and safety; and
- Mode-split data for the Site and local area.

2.2 Development Site

2.2.1 Location & Description

The project area for the proposed development constitutes the main development site, 706-752 Mamre Road, Kemps Creek (The Site). In a regional context, the Site is located approximately 4km north-west of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 12km south-east of the Penrith CBD and 40km west of the Sydney CBD.

With reference to **Figure 1**, the legal description, address and site area for the site is summarised in **Table 1**.

Table 1: Site Details

Legal Description	Address	Area
Lot 1 DP 104958	706-752 Mamre Rd, Kemps Creek	522,477m^2



Figure 1: Lot Boundary

2.2.2 Proposed Development

The Proposal seeks development consent for the staged construction and operation of a data centre campus, including necessary servicing. The particulars of this Proposal are summarised below:

- Site preparation works, including tree clearing;
- Dam dewatering;
- Site remediation;
- Bulk earthworks across the site and additional site retaining structures (subject to approval of SSD-30628110, which may then be relied upon);
  - Battering to adjoining properties to the south and east
- Infrastructure comprising of additional civil works, stormwater, and utilities servicing;
  - Lead-in power infrastructure from TransGrid Sydney West; and
  - Sediment basins and interim stormwater management measures in advance of connection to regional stormwater infrastructure.
- Road construction;
  - North to south local road (through estate);
  - East to west local road;
  - Temporary access road from Mamre Road (for construction purposes); and

  - Construction of roundabout (intersects with GPT land to the south).
- Land dedication/allocation for the Mamre Road upgrade and future freight transport corridor;
  - Mamre Road widening;
  - Southern link road widening;
  - Road 2 (east-west road) (consent from GPT Group required);
  - Roundabout; and
  - Road 1 (construction of one (1) underpass and two (2) service crossings).
- Staged construction and 24/7 operation of a data centre campus containing the following:
  - Plant equipment including 728 cooling units;
  - 846 backup generators with associated 18,056 kilolitres of diesel storage and 7,940 cabinets for lithium-ion battery storage;
  - 619 at-grade car parking;
  - 26 shells across four (4) storeys (four shells per building), with each parcel having a building height of 40 m. The maximum building height, measured from natural ground level, is 53.5 m. The development achieves a maximum power consumption of 1.2 GW;
  - One (1) incoming electrical switching station and campus electrical substation;
  - One (1) static synchronous compensator (STATCOM); and
  - Six (6) sub-parcel electrical substations.
- Complementary landscaping and offset planting.

The Proposal is reproduced at a reduced scale below.

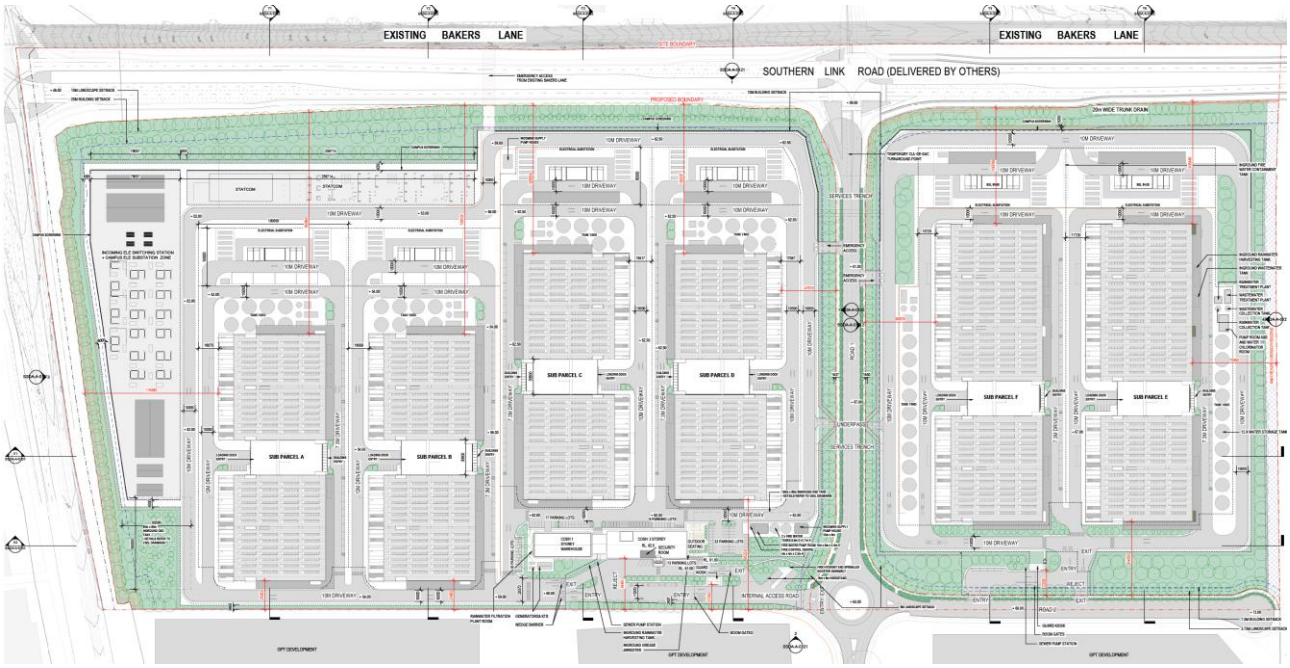


Figure 2: Campus Plan

2.3 Public & Active Transport Opportunities

2.3.1 Existing Bus Services

While it is apparent that the Site will be well serviced by the future road network outlined in the Mamre Road DCP; it is also important that people are provided opportunity to use public transport. In the first instance, this requires improved connectivity to the broader area, noting the current lack of connectivity to the Site.

Establishment of public transport services as early as possible in the development stages of the area is important to achieve a culture of public transport use from the outset. To make public transport a viable choice in the study area, the services should ideally:

- integrate with existing bus services in the area;
- connect to regional centres of Penrith, Mt Druitt and Blacktown; and
- in the long term connect to areas such as Leppington in the South West Growth Centre, Prairiewood and the Liverpool to Parramatta T-Way.

Further to the bus connectivity, it is noted that the closest train station to the Site is currently some 10km away. However, the Metro Western Sydney Airport will provide 23km of new railway to link residential areas with jobs hubs and the rest of Sydney's public transport network.

The alignment of the Metro is shown by . While the closest station to the Site will be Luddenham Station, located approximately 4km west of the Site, it will undoubtedly improve public transport accessibility to the wider area. This provides an opportunity for bus services to combine with the Metro to improve connectivity to/from the residential areas to the north of the Site.

It is noted that the 779 bus route has recently been extended from a route that terminated at James Erskine Drive to connect with the Amazon Fulfilment Centre on Emporium Avenue. This route provides a key connection to the St Mary's railway station and to the broader transport network. In addition, the future Metro stations proposed to west of the MRP improve connectivity with interconnecting services.

The internal MRP road network provides for heavy vehicle movements and, as such, would also be bus capable. Therefore, there are many opportunities to provide improved bus services; Mamre Road provides a significant opportunity to provide sub-regional services, as well as possible services within the MRP itself will maximise the number of sites that lie within 400m of a viable bus service. **Figure 3** demonstrates the future, potential bus routes for the internal MRP and public transport options, alongside the existing routes.

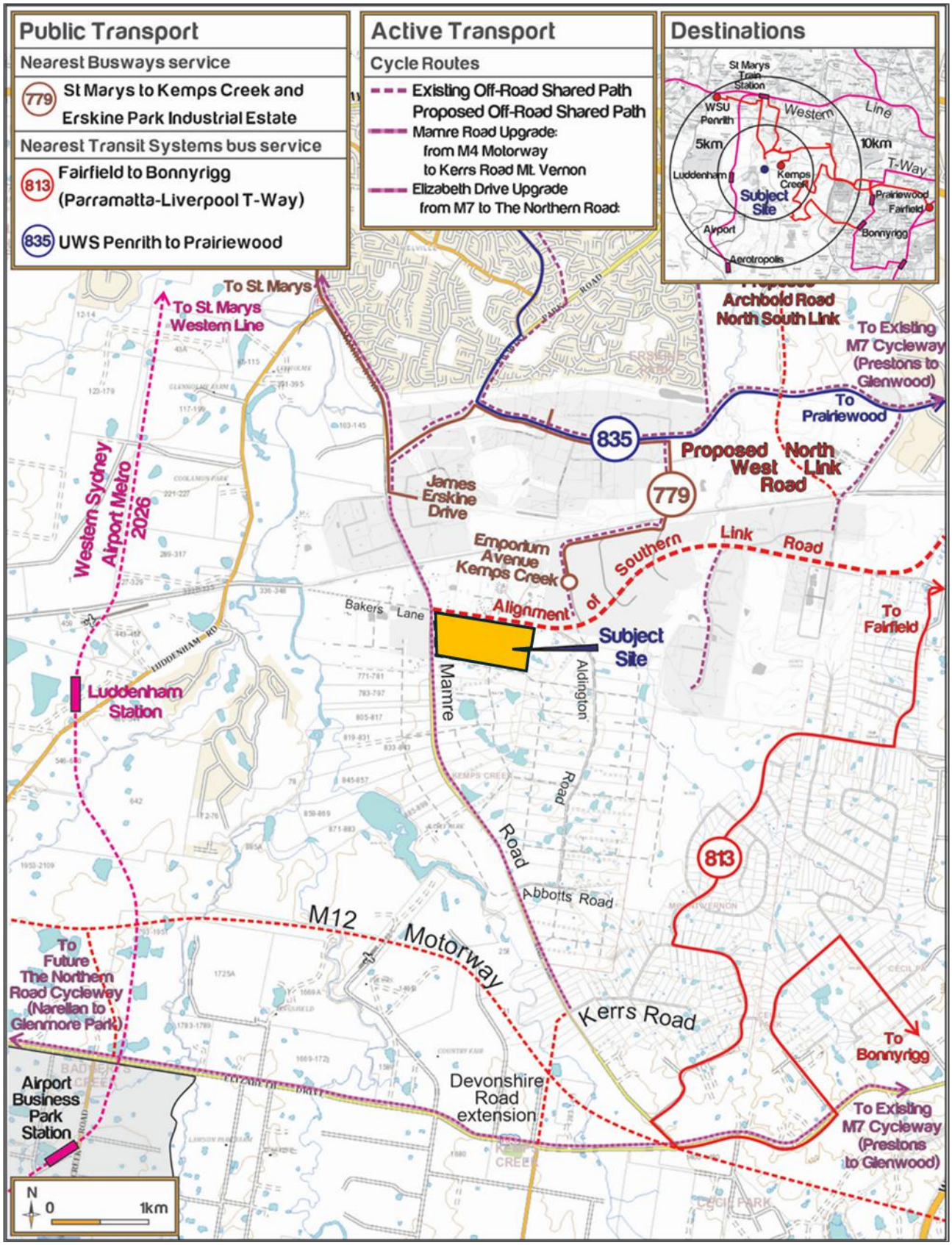


Figure 3: Existing and Future Public Transport Opportunities

2.3.2 Bus Services

The planning of bus services in Sydney is governed by the NSW Service Planning Guidelines, which aim to establish Strategic Transport Corridors and a hierarchy of bus route types that:

- Link to regional centres (such as Penrith and Mt Druitt);
- Pass through patronage generators such as district centres, TAFE colleges, hospitals and universities;
- Connect with other transport modes (trains, ferries and other buses);
- Are multifunctional (serving journeys to work, education, shopping and recreation);
- Are direct and frequent; and
- Meet the network planning principles.

It is also the case that the establishment of public transport services as early as possible in the development stages of the MR Precinct is important to achieve a culture of public transport use from the outset. To make public transport a viable choice in the study area, the services will ideally:

- Integrate with existing bus services in the area;
- Connect to regional centres of Penrith, Mt Druitt and Blacktown; and
- In the long term, connect to areas such as Leppington in the South West Growth Centre, Prairiewood and the Liverpool to Parramatta T-Way.

While the internal MRP road network is still being delivered, it is clear from the intent of the objectives contained within the MRP DCP that a connected bus network will be provided. As per the MRP DCP, as all internal roads will accommodate heavy vehicles, they would also be capable of accommodating bus services. Therefore, there are significant opportunities to provide sub-regional services along Mamre Road and Aldington Road, as well as services within the internal MRP road network to maximise the number of sites that lie within 400m of a viable bus service.

2.3.3 Train Services – Sydney Metro - Western Sydney Airport

The closest train station to the Site is currently some 10km away. However, the Sydney Metro - Western Sydney Airport Line will provide 23 kilometres of new railway to link residential areas with jobs hubs and the rest of Sydney's public transport network.

The alignment of the Metro is shown by **Figure 5**. While the closest station (Luddenham Station) to the Site will be located approximately 4km west of the Site, it will undoubtedly improve public transport accessibility to the wider area. This provides an opportunity for bus services to combine with the Metro to improve multi-modal connectivity to the MRP.



Figure 4: Sydney Metro - Western Sydney Airport Alignment

2.3.4 Active Transport

At present, shared paths (pedestrian and cycle) are provided along Erskine Park Road and sections of Mamre Road to the west and north of the Site, but there is little active transport infrastructure around the Site itself due to the current largely undeveloped nature of the land immediately surrounding the Site. Key pedestrian desire lines in the vicinity of the Site would be triggered by connections to future public transport infrastructure, noting the nature of the area is largely industrial and therefore does not have key destinations and attractions for people to walk to.

The BWSEA Structure Plan provides a detailed outline of future active transport objectives and strategies, acknowledging that the provision of such will be essential to encourage the use of active transport from the outset. In this regard, the BWSEA provides the following key objectives:

- *Provide quality pedestrian and cycling environments around transit corridors and facilities.*
- *Understand the key walking and cycling needs in the region and the need for the separation of pedestrians and cyclists from motor vehicle traffic.*
- *Recognise that all trips involve walking at either the beginning or end of the journey, resulting in the need for connections between parking and public transport areas and destinations.*
- *Recognise that walking and cycling paths can form key routes between destinations.*
- *Understand that walking and cycling trips perform a variety of functions, not only travel from an origin to a destination, but such trips are also undertaken for recreation and/or health benefits, which can be influenced by the amenity of the route.*

Key active transport routes identified in the BWSEA Structure Plan are shown in **Figure 5** noting again that the Mamre Road upgrade Project will provide shared paths along at least one side of the road for its entire length. The future Mamre Road Precinct Network as per the MRP Development Control Plan is also shown in **Figure 6**, with provisions to be made for shared paths within precinct roads as evidenced by the local and collector industrial road profiles in **Figure 7** and **Figure 8**.



Figure 5: BWSEA Cycle Routes

Source: BWSEA Structure Plan

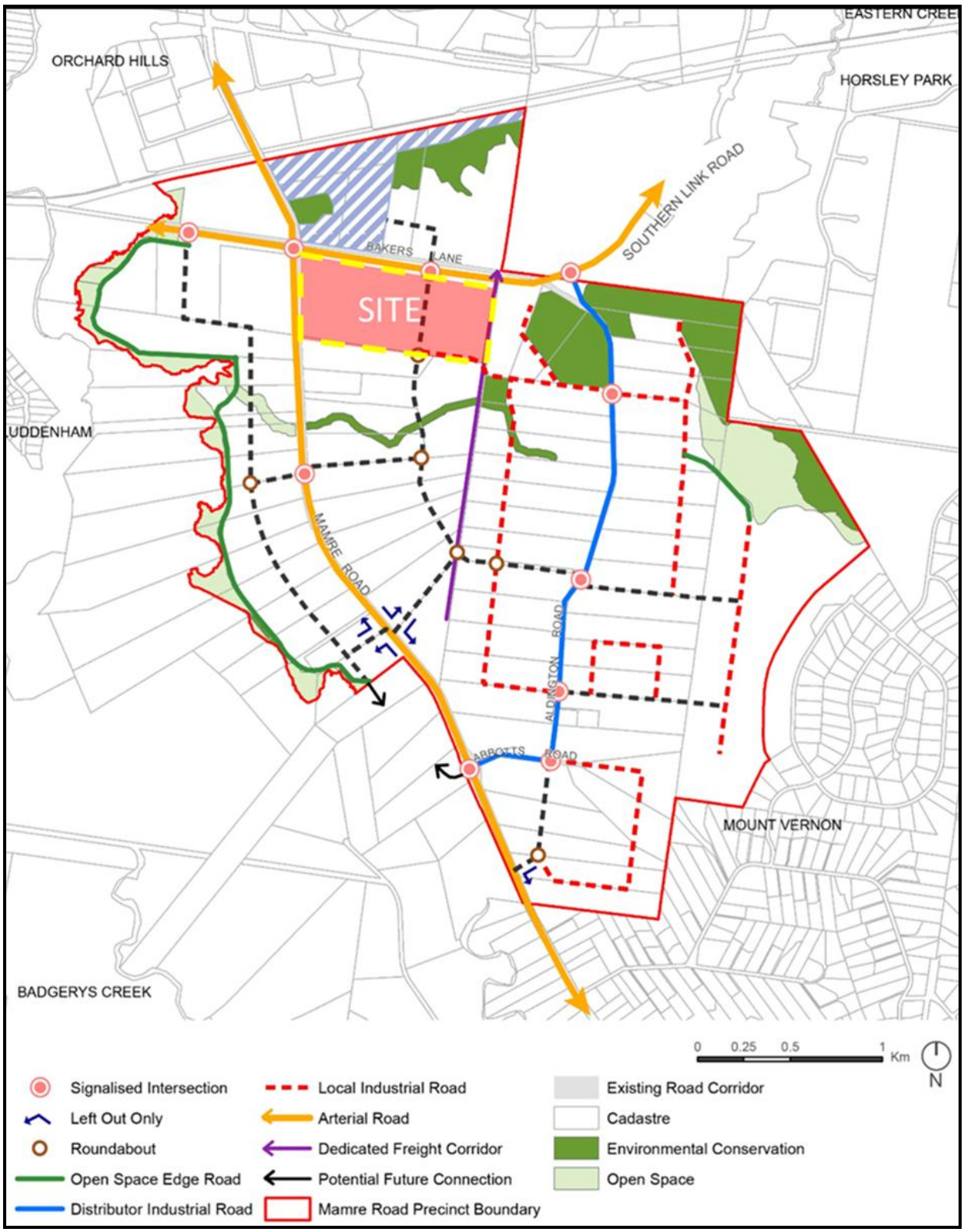


Figure 6: DCP Precinct Road Network

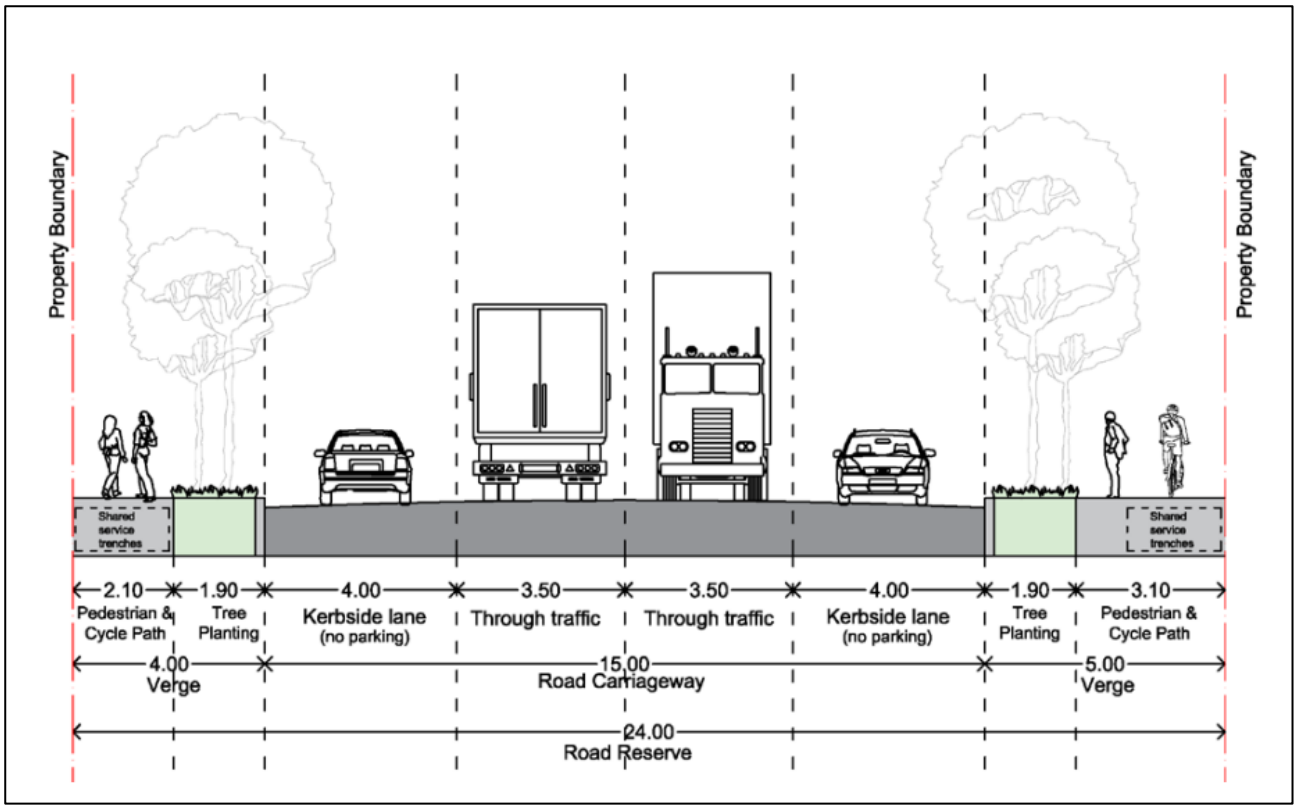


Figure 7: MRP DCP Typical Local Industrial Road

Source: Mamre Road Precinct DCP 2021

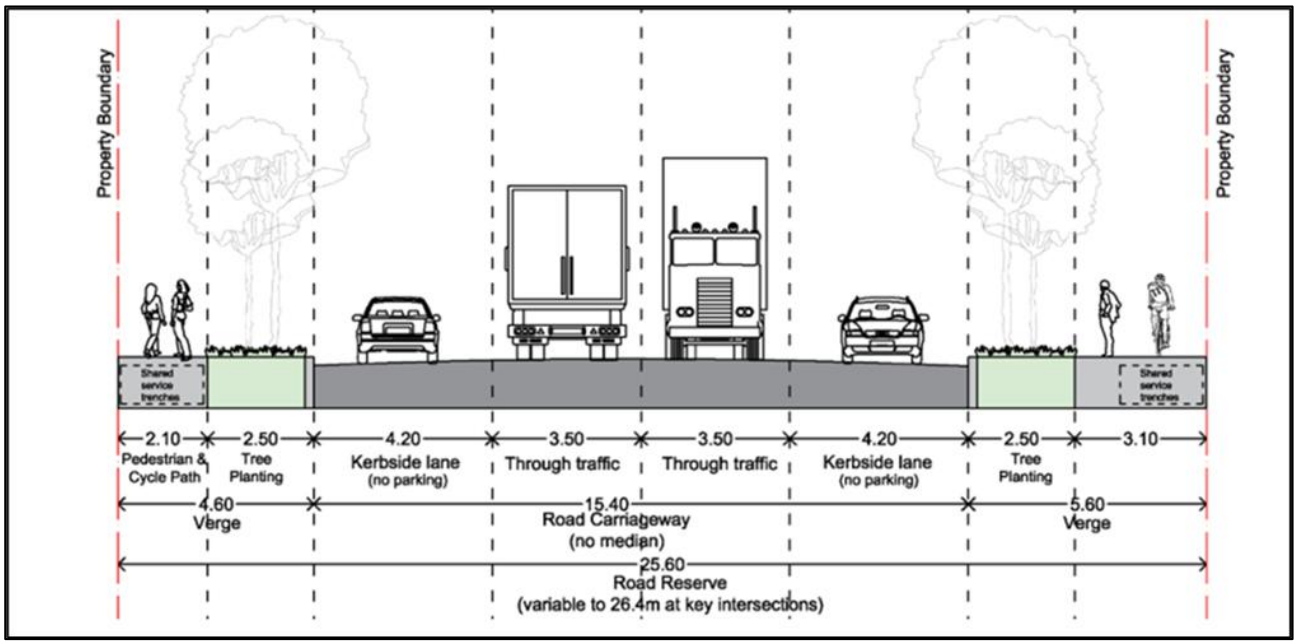


Figure 8: MRP DCP Typical Collector Industrial Road

Source: Mamre Road Precinct DCP 2021

2.4 On Demand Services

2.4.1 Car Share

Car sharing has emerged as a cost effective, flexible alternative to private vehicle ownership. Provision of car share in the area could facilitate intermittent work trips that may need to be made by car such that staff can commute by other modes.

As a future industrial area, it is not anticipated that car shares such as GoGet would be particularly successful, particularly in the early stages of development. Nonetheless, given the benefits to reducing the need for a private vehicle, it will be worth considering its appropriateness as the area develops.

Prior to the commencement of car share providers such as GoGet, it is proposed to consider schemes such as provision of car share priority parking spaces, to actively encourage car sharing amongst staff.

2.5 Existing Travel Patterns

2.5.1 Journey to Work Data Analysis

Journey-to-Work (JTW) data from the Australian Bureau of Statistics (ABS) 2016 Census (noting the 2021 census was undertaken during the Covid-19 pandemic) and specifically aggregated Destination Zones (DZ) have been referenced to understand the baseline travel characteristics of the Site.

A summary of key travel modes for those travelling to the locality for work have been reviewed with regard for the surrounding Destination Zone 115184210, within the Horsley Park – Kemps Creek statistical area.

The travel modes are presented in **Table 2.**

Table 2: Travel Mode Summary (Journey to Work)

Travel Mode	Mode Share of Employees
Car as driver	92%
Train	0%
Bus	2%
Walked only	1%
Car as passenger	3%
Motorbike/Scooter	0%
Bicycle	0%
Taxi	1%
Other Modes	1%

It is evident that the private vehicle (car) is the overwhelming preferred mode of choice for commuters travelling to work in in the area. The data indicates that 95% travel to work by car with 92% as the driver and 3% as passenger i.e. car-pooling.

3 Development, Scope & Implementation of the Plan

3.1 Introduction

This section sets out in broad terms how the Preliminary GTP will be developed into site-specific GTPs and the scope of the Preliminary GTP.

3.2 Responsibility

The responsibility for the future Travel Plans will lie with site management and should form part of organisational policies. Future GTPs should include a statement on company policy in relation to travel, and should be endorsed by senior management.

3.3 Preliminary GTP Scope

The future GTP address the following types of travel generated by the development:

- Commuter journeys by staff;
- Visitor journeys;
- Business travel; and
- Site related deliveries from contractors etc.

The future GTPs are expected to have most effect on commuter journeys by staff. While the operator will aim to encourage sustainable travel by visitors, ultimately staff travel is easier to influence.

The aim is to develop practical measures that are effective in reducing car use for all journeys to the Site.

3.4 Implementation

A Travel Plan Coordinator (TPC) should be appointed to act as the primary point of contact for enquiries relating to the progress of the future Plans. It is recommended that a consistent TPC be appointed for the Estate so as to achieve a coordinated approach across the Site. However, as the individual sites will be responsible for implementing their own GTPs, this will be at the discretion of site management. The TPC will manage all aspects of the GTP, including the co-ordination and joint working practices between those on-site.

The TPC will promote participation in and commitment to the future GTP from site tenants and will work in partnership with all stakeholders to deliver the strategies and actions.

The TPC should be appointed before the Site becomes occupied, or within 1 month of the site becoming occupied. Contact details for the TPC should be provided in the implemented Plan.

The main duties of the TPC are envisaged to be:

- Overseeing final development and implementation of the GTP.
- Internal liaison to promote awareness of the GTP amongst businesses and staff within the Estate.

- Liaison with outside bodies, such as Penrith City Council (Council) and local bus operators, as required regarding the operation of the GTP.
- Providing updated travel information to staff and visitors, as necessary.
- Monitoring, review and (if necessary) updates to the GTP.

3.5 Consultation

It is essential that any parties that may play a part in the future of GTP's and their actions are aware and have an opportunity to discuss. This would enable equitable input and feedback as well maximising their overall efficacy. For this reason, a coordinated approach to GTPs across the Estate should be implemented (subject to individual tenant participation) to assist in the consultation with the relevant parties, which could include the following:

- Council Traffic & Transport Department and Traffic Committee
- Local Bus Operators
- Transport for New South Wales

Other organisations may be added to this list during later stages of planning and delivery.

3.6 Travel Mode Targets

3.6.1 Introduction

Based on the existing travel mode splits identified in Section 2.5, the Site and the surrounding areas are considered to have a high reliance on private transport. This is reflective of the current nature of the area, which accommodates rural residential properties and agricultural businesses with limited coverage of public transport services.

However with the emergence of the MRP and other industrial precincts, it is expected that the JTW data accurately reflects the current trends for travel to places of work at industrial sites. The RMS Guide to Traffic Generating Developments – Updated Traffic Surveys itself provides details in relation to the principal mode of travel used by staff at the Erskine Park and Eastern Creek warehouses surveyed by TfNSW. These surveys indicate that 90% of all workers would travel via private vehicles with 8% travelling as passengers.

This section therefore sets out the targets for the reduction in car journeys associated with the Site, with consideration to the future land use in the area. Targets are the means of measuring the achievement of the objectives. They need to be clear, directly linked to the objectives, monitored and reviewed.

Questionnaire surveys will be conducted in the future that will form the updated travel mode baseline to further develop site-specific targets. The first surveys will be undertaken shortly after occupation. These surveys will be repeated at a suitable time to assess the effectiveness of the implemented Travel Plan; the targets are to be reviewed to align with the most up-to-date information.

The implemented GTPs are to be in place for the lifetime of the development. The initial timeframe in which targets need to be monitored and reviewed will be reviewed every 1-2 years, for a minimum of 5 years.

3.6.2 Mode Share Targets

It is essential that Mode Share targets be achievable with consideration for the public transport, walking and cycling opportunities available within proximity to the Site. Targets should also be factoring in what future transport options could reasonably be used to access the Site, and also the nature of the development itself.

As per Section 1.2, the AECOM Report provides a mode share target for public & active transport of 20% and by car of 80% by 2056 for the nearby Badgerys Creek Precinct. Sites within the MRP should reflect a similar target. While at least maintaining the existing carpooling mode share of 3% (Table 2), this represents a decrease in travel by car (as a driver) by 15% by 2056.

Further, it should be recognised that during the earlier stages in development of the MRP, it would be anticipated that change in travel behaviour will be slower than in other areas, while the public and active transport networks are still being integrated.

The targets should therefore be revisited and updated after the opening of the relevant development as part of the monitoring process. The Preliminary targets are nominated in **Table 3**, which represents a 5-year target to coincide with the minimum 5 years of monitoring and review.

Table 3: Preliminary 2026 Mode Share Targets

Travel Mode	Mode Share of Employees	Proposed Targets	Relative Change
Car as driver	92%	88%	-4%
Train	0%	0%	-
Bus	2%	4%	+2%
Walked only	1%	1%	-
Car as passenger	3%	3%	-
Motorbike/Scooter	0%	1%	+1%
Bicycle	0%	1%	+1%
Taxi	1%	1%	-
Other Modes	1%	1%	-

4 Measures and Action Strategies

4.1 Measures

The below is a range of measures which could achieve the objectives of this PRELIMINARY GTP. It is critical to note that these are suggested measures and are not necessarily likely to be applicable in the early stages of development in the MRP.

This section needs to be reviewed and confirmed prior to implementation of any future Plan.

- An introduction to the GTP for all staff, setting out its purpose and objectives.
- Provision of public transport travel information for staff, customers and visitors.
- Encouragement of car sharing, both amongst staff on site and in the wider context.
- Provision of car share spaces (future potential measure) and / or provision of a business “pool car” while public car share operators are limited in the area.
- Assisted cycle purchase schemes.
- Interest free loans to assist with cycle purchase, cycle equipment purchase etc.
- A transport section on the company website with links to local bus operator sites, to ensure that travel information is always up to date.
- The provision of transport information for visitors to the Site.

4.2 Strategies

Six main strategies are identified and the actions required for each are detailed in Table 3. The table details specific actions that could be implemented as part of a future site-specific GTP (subject to tenant requirements) and the party responsible for implementing each action.

These actions must be reviewed at regular intervals to ensure that the mode split targets are being met. By that principle, this document is classed as a living document and subject to regular review. It is important to note, that the actions should not be taken as mandatory but rather potential options that should be investigated and implemented by future inhabitants of the development.

Table 4: GTP Action Strategies

Strategy		How it works	Resources / responsibility	Timeline	Funding
1 Travel Planning and Demand Management					
1.1	Green / Sustainable Travel Plans	• Develop a GTP to provide information for Travel Access Guide (TAG) (See Appendix A) • Management of GTPs. • Promotion of GTPs.	Building Manager to be responsible for overall implementation of final GTP and providing annual reporting on GTP outcomes to Council. Tenant to develop Company specific travel plan based on Final GTP prior to the commencement of a new lease/sale of property. Company/Staff/Visitors shall be responsible for ongoing implementation of Company assigned actions and participation in annual monitoring and reporting process to Council	Upon completion of the development and ongoing annual GTP events	Tenant / Business Owner
1.2	Travel Information Points	• Establish locations such as travel information points where staff and visitors and others can access travel information via interactive platforms. • Promotion of GTPs • Provision of travel and transport information options	Tenant / Business Owner	Subject to employer preference.	Tenant / Business Owner
1.3	Flexible Working hours	Allow employees the flexibility to commute outside peak periods to reduce overall congestion and travel time.	Tenant / Business Owner	Subject to employer preference. Action to be considered by employers / Visitors as part of an Employer specific GTP to be developed and forwarded to Council prior to building occupation.	Tenant / Business Owner
1.4	Teleworking	Provide the option to work remotely (where possible) to reduce the number of vehicles travelling to the development and encourage teleconferencing rather than travelling to meetings.	Tenant / Business Owner	Subject to employer preference. Action to be considered by employers / visitors	Tenant / Business Owner
2 Promoting Public Transport					
2.1	Opal Card Loan Schemes / Subsidising schemes for public transport travel through pre-paid credit cards	Company may consider subsidising staff public transport travel. Alternatively, staff can pay for their own Opal Cards / pre-paid travel card through their salary, spreading the cost over the year to make it more affordable.	Tenant / Business Owner / TPC	Subject to employer. Can be implemented at building occupation	Tenant / Business Owner

2.2	Maximise Bus Service Frequency	• Meet or exceed Transport NSW bus planning guidelines. • Decrease headway where possible, especially during peak periods. • Report back to Transport for NSW on perception of bus service adequacy	TfNSW	Developer to hold on-going discussions with TfNSW after each annual review of GTP and report on relevant findings	TfNSW
2.3	Provide bus stops with shelter facilities	Ensuring provision of bus stops suitable for waiting areas for commuters – Developer to recommend improvements to the proposed / implemented bus stops along Mamre Road and Bakers Lane to TfNSW.	TfNSW	Subject to discretion of TfNSW. Advisable to be prior to the opening of the development	TfNSW
2.4	Public Transport for work travel	The company and the TPC can promote public transport as one of the main preferences for work travel. This should be supported by all users and visitors to development having access to Opal Cards.	TPC	Subject to employer. Can be implemented at building occupation	Tenant / Business Owner
2.5	Lobby for Precinct wide shuttle service	Shuttle service initiative that would transport staff to / from the MRP to Metro Stations.	TPC to lobby Estate Manager / Owner	Ongoing in the workplace. Updates can be made to organisation as appropriate	Estate Owner / Manager
3 Promoting Carpooling					
3.1	Open Car Sharing	Where anyone in a defined geographical area can join a ride sharing scheme. This involves no input from the employer and should be on the onus of staff to schedule.	Staff	Ongoing in the workplace	Fuel costs can be arranged and split equitably by those involved
3.2	Closed Car Sharing	The company / department sets up an in-house car-matching scheme	Company, TPC	Ongoing in the workplace. Updates can be made to organisation as appropriate	Tenant / Business Owner
3.3	Third-party Car Sharing Program	Companies such as Liftshare are an online service that facilitates journey sharing between individual users, as well as providing separate services for businesses, organisations and events.	Staff – encouraged by TPC	Ongoing in the workplace	Staff
3.4	Carpool week	Arrange for a dedicated carpool campaign week to promote the benefits of carpooling.	Tenant / Business Owner	One week per calendar year	Tenant / Business Owner
4 Promoting Cycling					
4.1	Create a Bicycle Users Group (BUG)	BUGs are local groups of like-minded bike riders who get together generally for social riding in their area. For the purposes of the workplace, this can be adapted as a way of creating as social and healthy aspect of travelling to work. As a minimum, the establishment of the BUGs should be promoted as Precinct wide initiative.	Tenant / Business Owner, TPC	Ongoing in the workplace	Tenant / Business Owner

4.2	Providing & Maintaining End of Trip Facilities	Providing facilities such as showers, change rooms, lockers. For the initial stages of development it is recommended to provide facilities compliant with the relevant controls, and as the Site develops further, they should be reviewed as part of the GTP monitoring process to meet any increase in demand.	Developer / Estate &/or warehouse Owner / Manager	To be provided at completion	Developer / Estate &/or warehouse Owner / Manager
4.3	Promote Bicycle Initiatives	Promotion of bicycle initiatives – NSW bicycle week, Ride to Work etc.	TPC	To be promoted annually	Developer / Estate &/or warehouse Owner / Manager
4.4	Advertise Bicycle Routes	Promotion of bike lanes through the TAG.	TPC	To be promoted and provided at communal areas such as key information kiosks within facility	Tenant / Business Owner
5 Promoting Walking					
5.1	Providing End of Journey Facilities	Provision of sufficient end of trip facilities such as showers, change rooms, lockers etc to maximise pedestrian activity throughout the site and the wider precinct.	Developer	To be provided at completion of development	Tenant / Business Owner
5.2	Walking routes	Incentivise travelling by foot by highlighting possible routes particularly those to nearest bus stops	Tenant / Business Owner	To be promoted and provided at communal areas such as key information kiosks within facility	Tenant / Business Owner
5.3	Promote walking initiatives	Promotion of walking initiatives: walk to game / training day, pedometers / step challenge / gamification of walking / reward programs based on steps to elevate pedestrian activity throughout site and to / from public transport points.	Tenant / Business Owner, TPC	To be implemented monthly or as appropriate throughout the calendar year.	Tenant / Business Owner
6 Influencing Travel Behaviour					
6.1	Provision of Sustainable Travel Packs to employees and visitors	Introduces employees and visitors alike to the GTP and provides information on walking and cycling routes, and travel by bus & train, timetables, and access routes. This would include a TAG.	Tenant / Business Owner, TPC	Travel Packs to be provided upon occupancy of building to employees.	Tenant / Business Owner

4.3 Communications Strategy

4.3.1 Welcome Packs

New staff shall be provided with a 'welcome pack' as part of the on-site induction process which includes a GTP Pamphlet and other information in relation to sustainable transport choices. This pack shall include copy of the GTP and a Travel Access Guide (TAG), as well as general information regarding the health and social benefits of active transport and advice on where to seek further information. It is recommended that an electric copy of the welcome pack be created and made available to staff.

A preliminary Travel Access Guide (TAG) is presented in **Appendix A**, which indicates the current public and active transport networks.

4.3.2 Accurate Transport Information

In addition to these 'welcome packs', a copy of the TAG shall be clearly displayed in communal areas of the site including (but not limited to):

- Staff lunch room
- Lift lobby area and entrances to buildings
- Any marketing material associated with the Site, such as websites and newsletters.

5 Monitoring Strategy

5.1 Plan Maintenance

This Plan shall be subject to ongoing reviews and will be updated accordingly. Regular reviews will be undertaken by the TPC. As a minimum, a review of the GTP would occur every 1-2 years.

The key considerations when reviewing or monitoring the GTP are as follows:

Update baseline conditions to reflect any changes to the transport environment in the vicinity of the Site such as changes to bus services, new cycle routes etc.

- Track progress against target travel mode targets.
- Identify any shortfalls and develop an updated action plan to address issues.
- Ensure travel modes targets are updated (if necessary) to ensure they are realistic and remain ambitious.

5.2 Monitoring

So as to record the overall success, as well as the effectiveness of the individual measures, monitoring and review of the GTP is to be conducted at regular intervals. The TPC will act as the primary point of contact for all enquiries relating to the GTP's progress.

The GTP will be monitored around every 1-2 years, with the first survey being carried out shortly after first occupation of the Development. Travel mode surveys would determine the proportion of persons travelling to/from the Site by each transport mode. This will be in the form of annual travel mode questionnaire surveys to be completed by all persons attending the site, as far as practicable. A sample of a typical travel mode questionnaire form is included in Appendix B.

If targets are not met at the end of the initial period of monitoring, the GTP will be reviewed, new measures introduced and would be reassessed at the next monitoring stage.

Appendix A. Travel Access Guide

200 Aldington Road Industrial Estate

Travel Access Guide

Kemps Creek, 2178

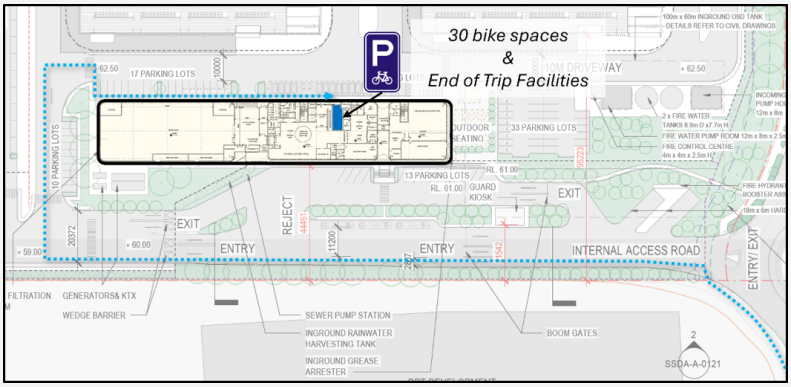
Active Transport

Existing
- Shared Paths

Proposed
- Mamre Road Upgrade
- Archbold Road Upgrade and Extension
- Southern Link Road
- Elizabeth Drive Upgrade

Cycle Network at:
https://maps.transport.nsw.gov.au/egeomaps/cycleway-finder/index.html

Upgrade to M4 Motorway
Bus Route to St Marys
Bus Route to WSU via S Marys
Archbold Road Extension
Erskine Park Road
835
Lenore Drive
James Erskine Drive
Old Wallgrove Road
Pipeline
Water
Sydney
779
Millner Avenue
Burley Road
Southern Link Road
Western Airport Metro (2026) to St Marys Train Station (T1 Western and North Shore Line)
Emporium Drive
Bakers Lane
Proposed
Connects with M7 Cycleway to Glenwood
706-752 Mamre Road
Luddenham Metro Station
Mamre Road
Aldington Road
813
Abbotts Road
M12 Motorway
Mount Vernon Road
Kerrs Road
Bus Route to Bonnyrigg
Connects with M7 Cycleway to Prestons and Elizabeth Drive Cycleway to Liverpool
Connects to Future The Northern Road Cycleway (Narellan to Glenmore Park)
Devonshire Road Extension
Elizabeth Drive
801
Duff Road
Bus Route to Liverpool
Airport Business Park Station
Badgerys Creek



Public Transport

- 779 St Marys to Kemps Creek via Erskine Park
- 801 Badgerys Creek to Liverpool
- 813 Bonnyrigg and Western Sydney Parklands to Fairfield
- 835 Prairiewood to Western Sydney University Penrith
- Bus Stops

Timetables at: https://transportnsw.info

asongroup
T: +61 2 9083 6601 | E: info@asongroup.com.au | A: Suite 17.02, Level 17, 1 Castlereagh Street, Sydney NSW 2000

Appendix B. Sample Questionnaire

1. The Survey Form (over page) should be completed by EVERY PERSON attending the site on a particular day.
2. This survey should be completed SEPARATELY for EACH TRIP undertaken

Date: **Approximate Time:**

Q1. Are you one of the following?

☐ Warehouse staff

☐ Office staff

☐ Courier / office delivery

☐ Casual contractor

☐ Company driver / sub-contractor

☐ Other (Please specify).....

Q2. How did you travel to / from the site today?

☐ Walked only

☐ Bicycle only

☐ Train

☐ Bus

☐ Taxi

☐ Car share vehicle

☐ Motorcycle / scooter

☐ Car (as passenger)

☐ Car (as driver)

☐ Other (Please specify).....

Q3. If you drove to the site, where did you park?

☐ Not applicable – did not drive

☐ On-site car park

☐ On-site within truck hardstand

☐ Other (Please specify).....

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Appendix D SIDRA Outputs

USER REPORT FOR SITE

Project: P3168m1v2_Mamre Road Data Campus 2031

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Template: Default Site User Report

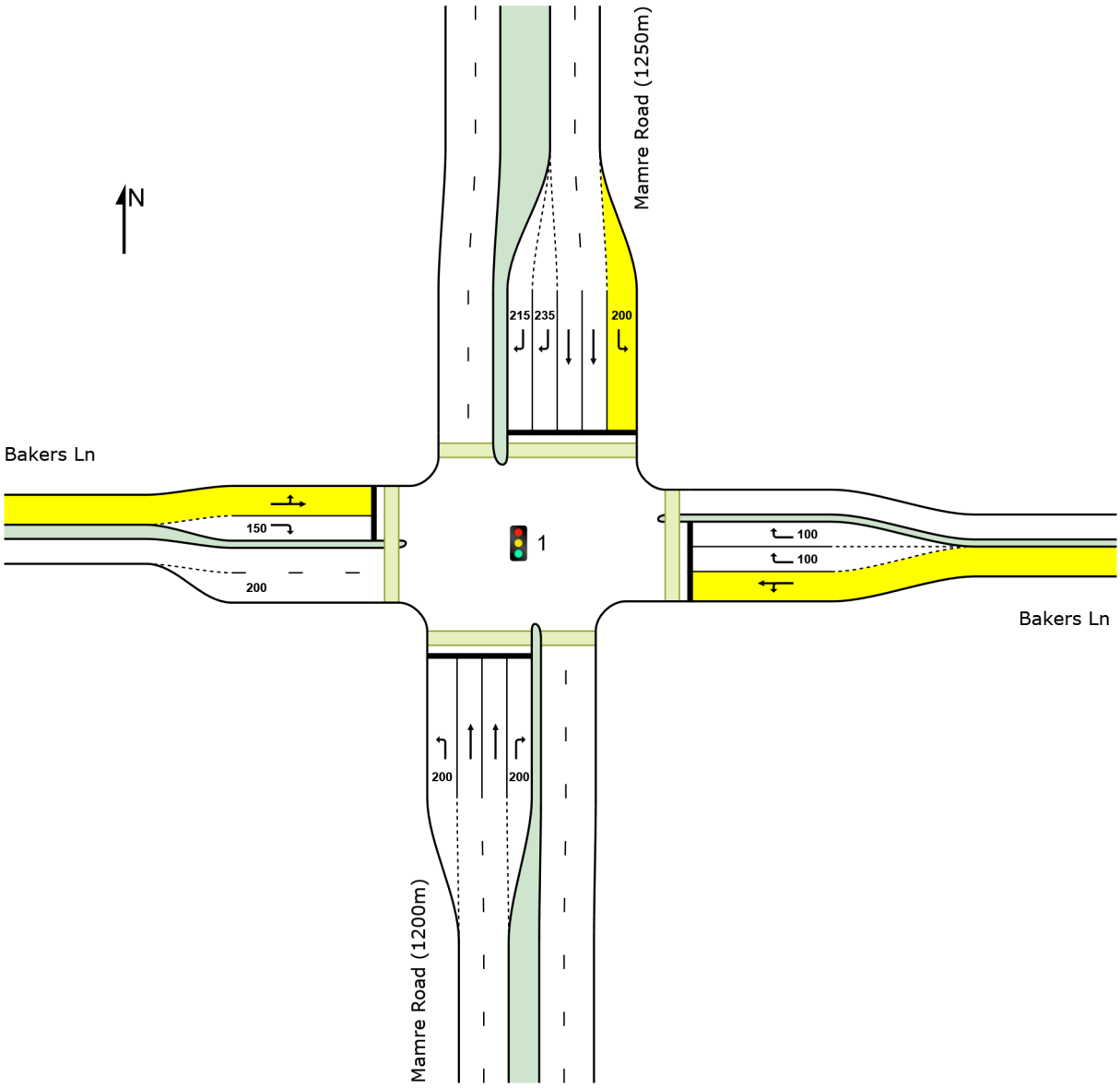
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - AM (Site Folder: 2031 Base)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, C*, D, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	121	17.4	121	17.4	0.141	15.9	LOS B	2.2	17.7	0.54	0.73	0.54	57.8
2	T1	All MCs	1153	21.9	1153	21.9	0.738	17.3	LOS B	22.8	189.3	0.73	0.66	0.73	68.4
3	R2	All MCs	76	1.4	76	1.4	* 0.703	72.5	LOS F	4.7	33.6	1.00	0.83	1.15	38.1
Approach			1349	20.4	1349	20.4	0.738	20.3	LOS B	22.8	189.3	0.73	0.68	0.74	65.3
East: Bakers Ln															
4	L2	All MCs	51	4.2	51	4.2	0.158	50.1	LOS D	2.6	18.6	0.88	0.74	0.88	43.3
5	T1	All MCs	1	0.0	1	0.0	0.158	57.3	LOS E	2.6	18.6	0.88	0.74	0.88	37.2
6	R2	All MCs	96	2.2	96	2.2	0.523	70.1	LOS E	2.9	21.0	1.00	0.75	1.02	41.0
Approach			147	2.9	147	2.9	0.523	63.2	LOS E	2.9	21.0	0.96	0.75	0.97	41.6
North: Mamre Road (1250m)															
7	L2	All MCs	226	5.6	226	5.6	0.174	13.2	LOS A	4.3	31.5	0.36	0.71	0.36	61.6
8	T1	All MCs	1646	19.1	1646	19.1	* 0.807	7.3	LOS A	25.2	204.9	0.57	0.53	0.57	74.6
9	R2	All MCs	208	17.7	208	17.7	0.467	38.4	LOS C	4.1	32.7	0.96	0.78	0.96	50.3
Approach			2081	17.5	2081	17.5	0.807	11.1	LOS A	25.2	204.9	0.59	0.58	0.59	70.2
West: Bakers Ln															
10	L2	All MCs	113	35.5	113	35.5	0.294	32.6	LOS C	4.5	41.1	0.83	0.76	0.83	50.2
11	T1	All MCs	1	0.0	1	0.0	* 0.294	62.9	LOS E	4.5	41.1	0.83	0.76	0.83	43.0
12	R2	All MCs	56	34.0	56	34.0	* 0.812	77.0	LOS F	3.7	33.6	1.00	0.91	1.37	35.5
Approach			169	34.8	169	34.8	0.812	47.4	LOS D	4.5	41.1	0.88	0.81	1.01	44.6
All Vehicles			3747	18.7	3747	18.7	0.812	18.1	LOS B	25.2	204.9	0.67	0.63	0.68	65.4

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

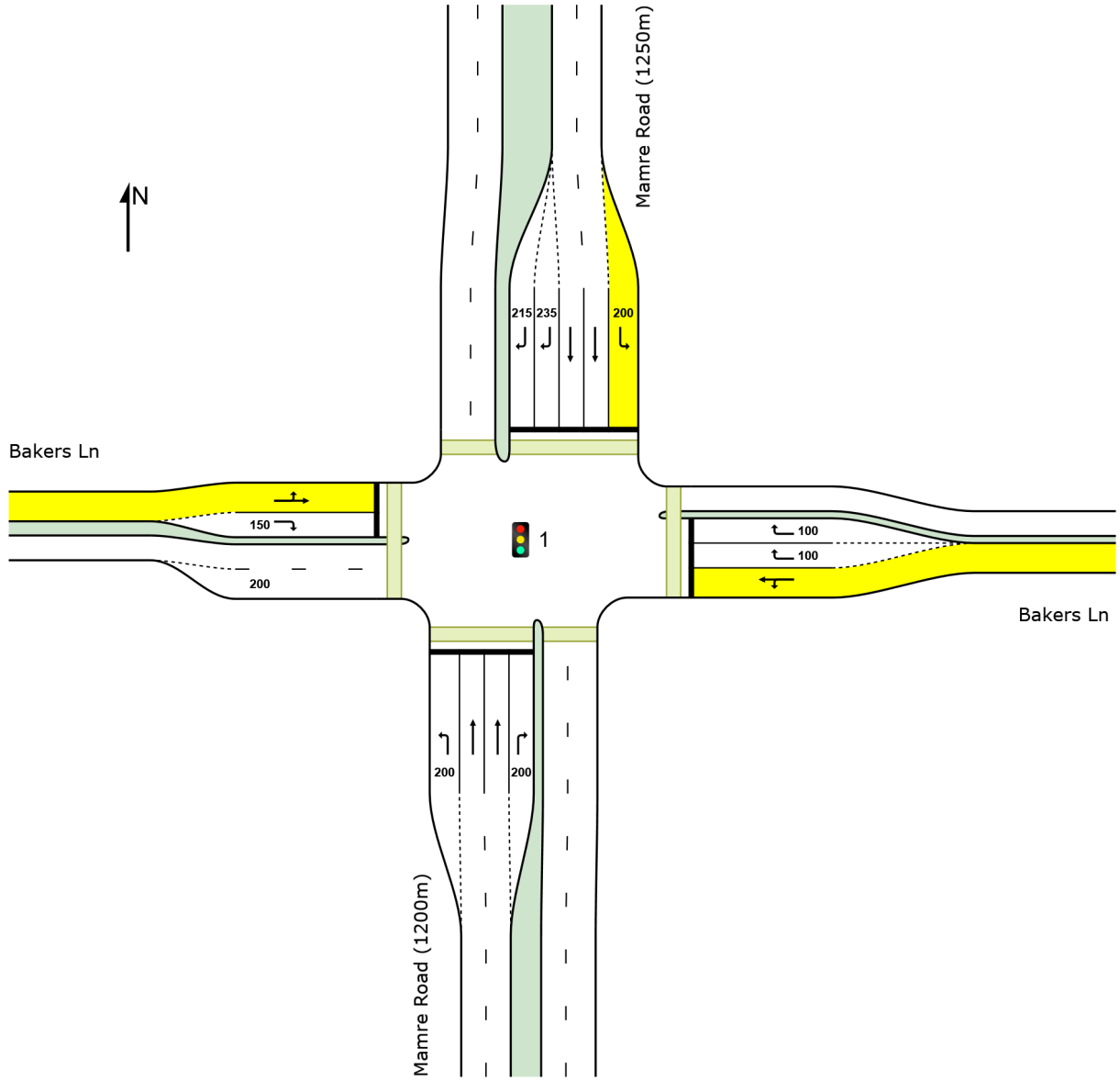
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - PM (Site Folder: 2031 Base)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, D, D1*, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	68	27.7	68	27.7	0.064	12.9	LOS A	1.2	10.0	0.31	0.68	0.31	59.3
2	T1	All MCs	1338	15.5	1338	15.5	* 0.682	9.2	LOS A	18.9	150.2	0.53	0.48	0.53	73.4
3	R2	All MCs	67	1.6	67	1.6	* 0.626	71.4	LOS F	4.2	29.5	1.00	0.80	1.08	38.3
Approach			1474	15.4	1474	15.4	0.682	12.2	LOS A	18.9	150.2	0.54	0.51	0.54	70.5
East: Bakers Ln															
4	L2	All MCs	79	5.3	79	5.3	0.256	52.1	LOS D	4.1	30.0	0.90	0.76	0.90	42.7
5	T1	All MCs	1	0.0	1	0.0	* 0.256	59.6	LOS E	4.1	30.0	0.90	0.76	0.90	36.7
6	R2	All MCs	122	1.7	122	1.7	0.568	69.1	LOS E	3.7	26.5	1.00	0.78	1.04	41.2
Approach			202	3.1	202	3.1	0.568	62.4	LOS E	4.1	30.0	0.96	0.77	0.98	41.7
North: Mamre Road (1250m)															
7	L2	All MCs	63	13.3	63	13.3	0.055	14.1	LOS A	1.2	9.5	0.36	0.69	0.36	60.9
8	T1	All MCs	1312	16.6	1312	16.6	0.675	9.1	LOS A	18.4	146.9	0.52	0.48	0.52	73.4
9	R2	All MCs	101	31.3	101	31.3	0.617	73.2	LOS F	3.2	28.2	1.00	0.80	1.10	40.0
Approach			1476	17.5	1476	17.5	0.675	13.7	LOS A	18.4	146.9	0.55	0.51	0.56	69.5
West: Bakers Ln															
10	L2	All MCs	212	16.9	212	16.9	0.596	51.9	LOS D	11.4	91.2	0.95	0.82	0.95	44.7
11	T1	All MCs	1	0.0	1	0.0	0.596	59.9	LOS E	11.4	91.2	0.95	0.82	0.95	36.8
12	R2	All MCs	100	16.8	100	16.8	* 0.630	65.0	LOS E	6.0	47.8	1.00	0.82	1.05	38.7
Approach			313	16.8	313	16.8	0.630	56.2	LOS D	11.4	91.2	0.97	0.82	0.98	42.7
All Vehicles			3464	15.7	3464	15.7	0.682	19.8	LOS B	18.9	150.2	0.61	0.55	0.61	64.6

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

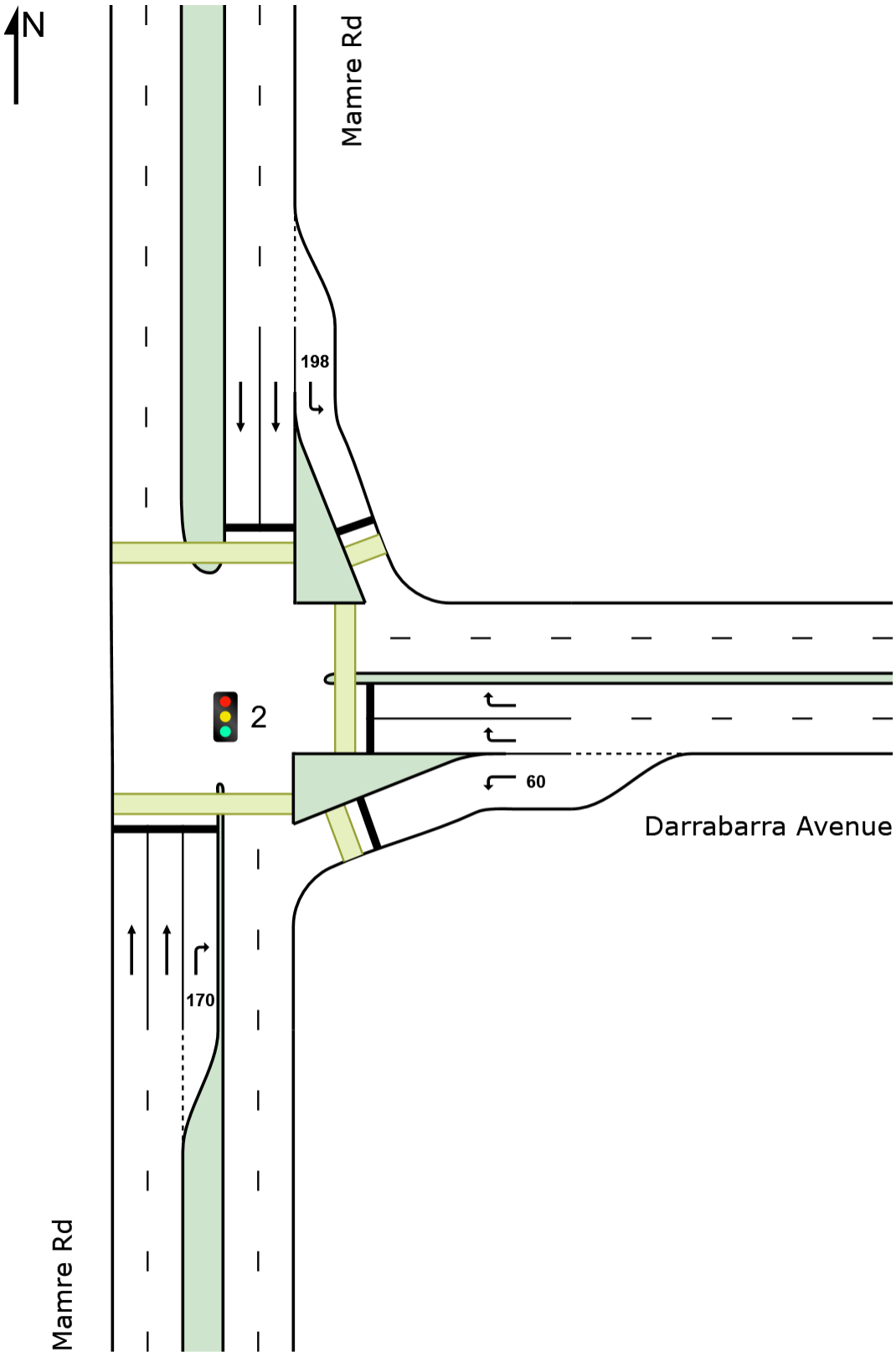
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue- AM (Site Folder: 2031 Base)]

Mamre Road x Darrabarra Avenue
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	1220	14.5	1220	14.5	0.483	7.0	LOS A	14.5	113.9	0.45	0.41	0.45	70.3

3	R2	All MCs	115	19.3	115	19.3	*0.591	63.3	LOS E	6.6	54.0	0.99	0.80	1.00	37.9
Approach			1335	14.9	1335	14.9	0.591	11.8	LOS A	14.5	113.9	0.49	0.44	0.49	64.2
East: Darrabarra Avenue															
4	L2	All MCs	36	38.2	36	38.2	0.150	52.9	LOS D	1.8	17.0	0.89	0.73	0.89	39.2
6	R2	All MCs	259	37.4	259	37.4	*0.611	58.9	LOS E	7.4	68.1	0.98	0.81	1.00	25.9
Approach			295	37.5	295	37.5	0.611	58.2	LOS E	7.4	68.1	0.97	0.80	0.98	27.8
North: Mamre Rd															
7	L2	All MCs	481	19.0	481	19.0	0.539	25.4	LOS B	17.6	143.4	0.68	0.80	0.68	39.3
8	T1	All MCs	1135	19.5	1135	19.5	*0.616	19.0	LOS B	22.1	180.8	0.73	0.66	0.73	58.2
Approach			1616	19.3	1616	19.3	0.616	20.9	LOS B	22.1	180.8	0.71	0.70	0.71	52.4
All Vehicles			3245	19.2	3245	19.2	0.616	20.6	LOS B	22.1	180.8	0.65	0.60	0.65	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.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

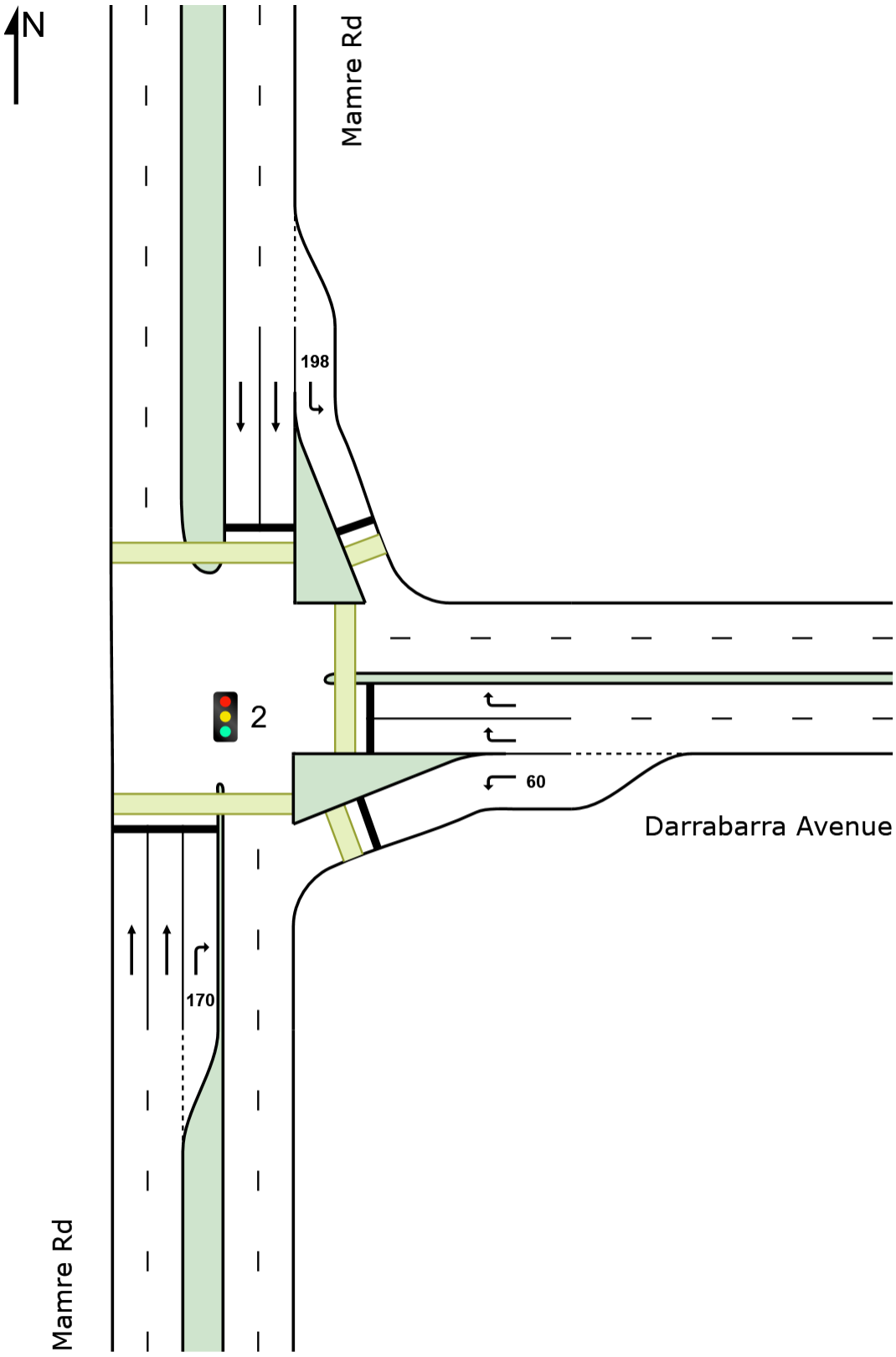
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue - PM (Site Folder: 2031 Base)]

Mamre Road x Mirvac Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	859	19.7	859	19.7	0.377	8.2	LOS A	10.3	84.3	0.45	0.40	0.45	68.9

3	R2	All MCs	47 37.8	47 37.8	* 0.609	73.5	LOS F	3.0	27.7	1.00	0.79	1.10	35.2
Approach			906 20.7	906 20.7	0.609	11.6	LOS A	10.3	84.3	0.48	0.42	0.48	64.7
East: Darrabarra Avenue													
4	L2	All MCs	67 17.2	67 17.2	0.190	48.2	LOS D	3.3	26.3	0.86	0.75	0.86	41.3
6	R2	All MCs	434 17.2	434 17.2	* 0.685	55.5	LOS D	12.2	97.8	0.98	0.85	1.01	27.2
Approach			501 17.2	501 17.2	0.685	54.5	LOS D	12.2	97.8	0.97	0.83	0.99	29.4
North: Mamre Rd													
7	L2	All MCs	197 48.1	197 48.1	0.266	21.1	LOS B	5.6	55.7	0.53	0.73	0.53	41.2
8	T1	All MCs	1375 17.7	1375 17.7	* 0.704	18.8	LOS B	28.1	226.7	0.77	0.70	0.77	58.3
Approach			1572 21.5	1572 21.5	0.704	19.1	LOS B	28.1	226.7	0.74	0.70	0.74	56.2
All Vehicles			2979 20.5	2979 20.5	0.704	22.8	LOS B	28.1	226.7	0.70	0.64	0.70	51.8

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

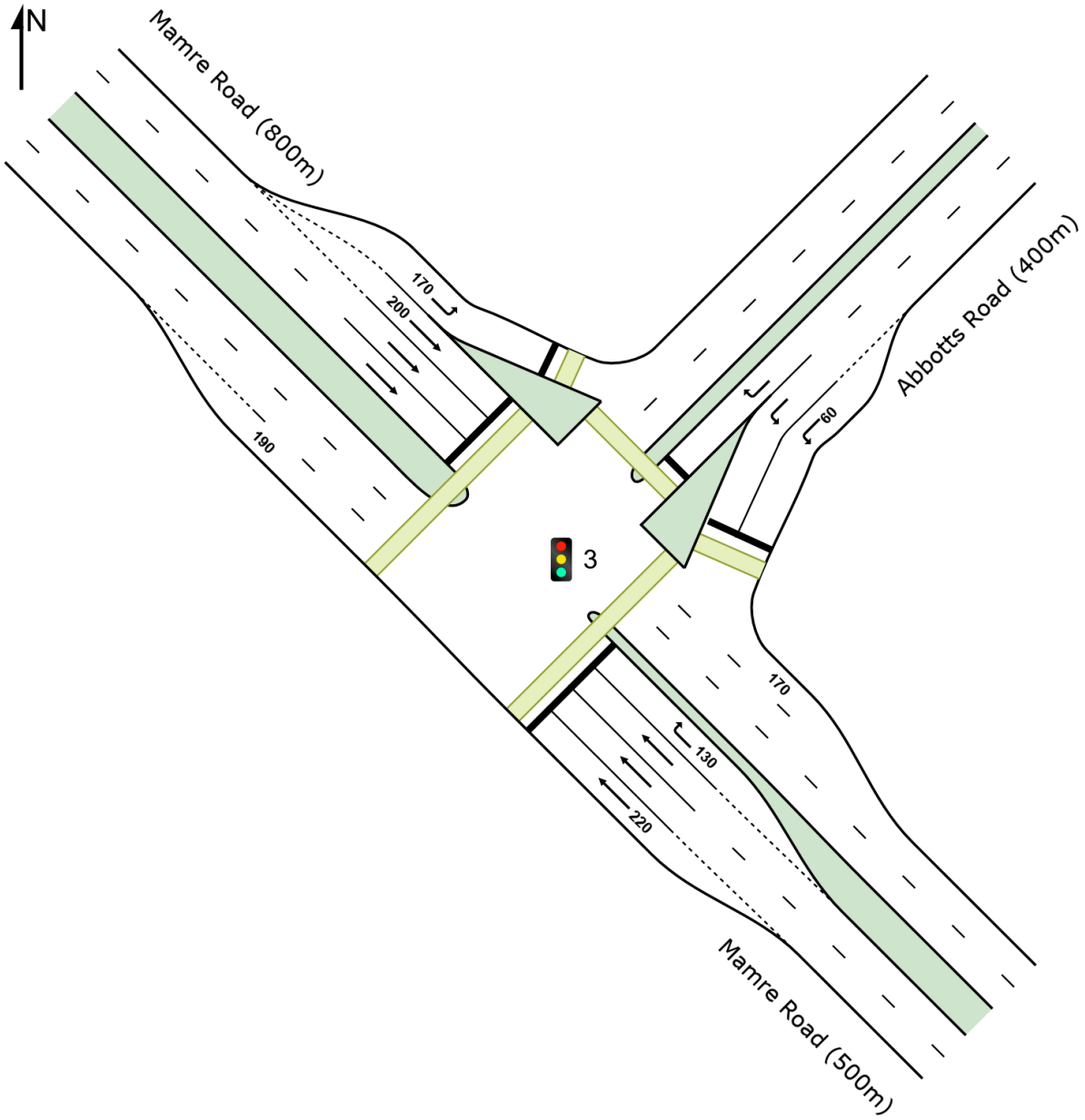
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - AM (Site Folder: 2031 Base)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	1311	14.8	1311	14.8	0.336	0.9	LOS A	0.7	5.9	0.03	0.03	0.03	79.6
3	R2	All MCs	266	18.2	266	18.2	* 0.522	43.3	LOS D	12.7	103.0	0.87	0.82	0.87	38.0
Approach			1577	15.4	1577	15.4	0.522	8.1	LOS A	12.7	103.0	0.17	0.16	0.17	68.7
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	95	36.7	95	36.7	0.067	21.5	LOS B	1.4	12.8	0.52	0.67	0.52	42.2
6	R2	All MCs	91	33.7	91	33.7	* 0.464	58.9	LOS E	5.1	45.7	0.96	0.78	0.96	36.5
Approach			185	35.2	185	35.2	0.464	39.8	LOS C	5.1	45.7	0.74	0.72	0.74	38.9
NorthWest: Mamre Road (800m)															
7	L2	All MCs	168	26.9	168	26.9	0.291	35.3	LOS C	6.8	58.8	0.74	0.78	0.74	45.7
8	T1	All MCs	998	19.6	998	19.6	* 0.532	23.8	LOS B	13.2	107.8	0.72	0.62	0.72	57.2
Approach			1166	20.7	1166	20.7	0.532	25.5	LOS B	13.2	107.8	0.72	0.64	0.72	55.1
All Vehicles			2928	18.7	2928	18.7	0.532	17.0	LOS B	13.2	107.8	0.43	0.39	0.43	59.9

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

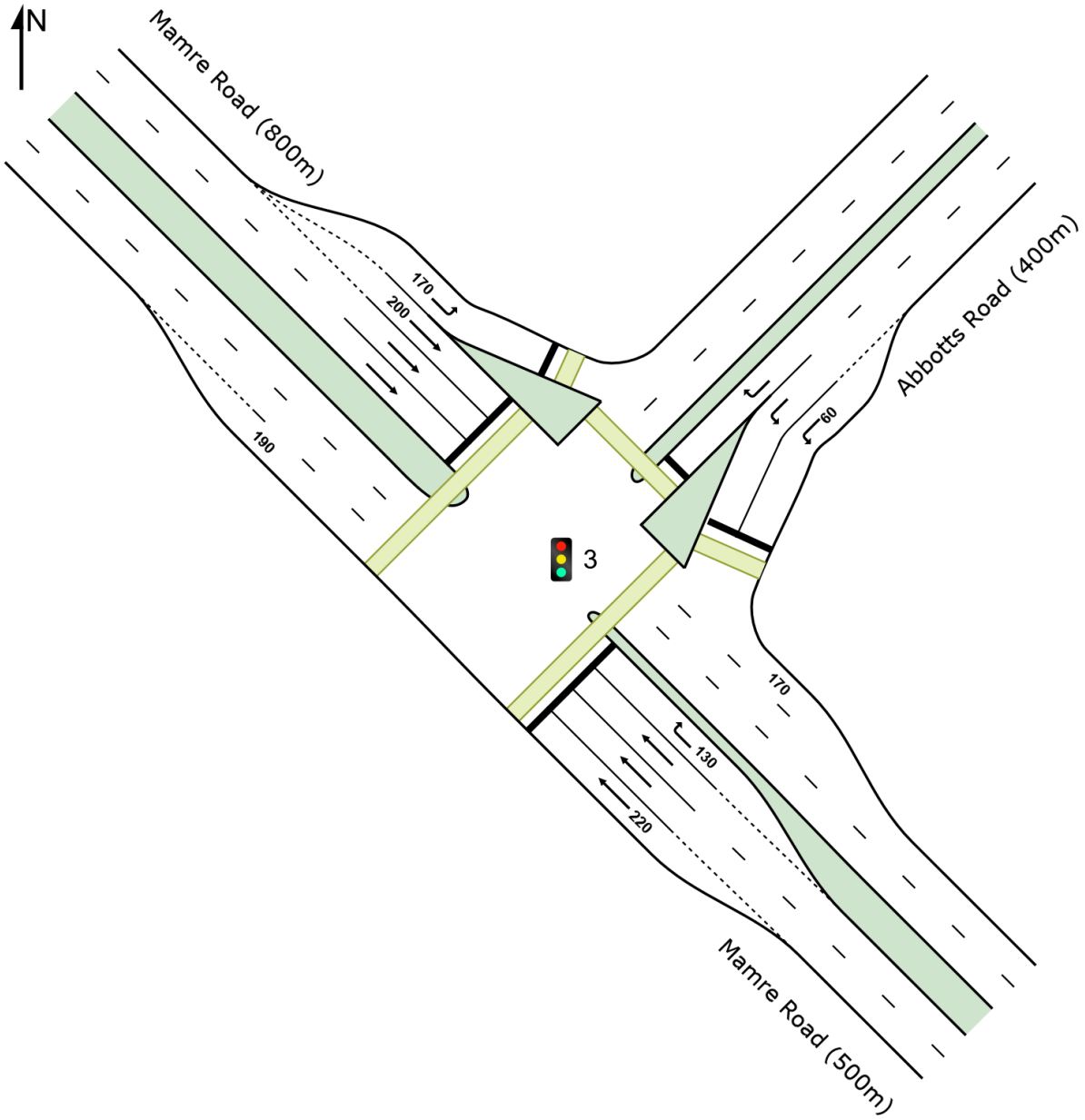
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - PM (Site Folder: 2031 Base)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	871	21.5	871	21.5	0.239	0.6	LOS A	0.4	3.6	0.03	0.02	0.03	79.6
3	R2	All MCs	84	37.5	84	37.5	* 0.504	63.3	LOS E	4.8	44.7	0.98	0.78	0.98	31.7
Approach			955	22.9	955	22.9	0.504	6.2	LOS A	4.8	44.7	0.11	0.09	0.11	71.6
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	216	16.1	216	16.1	0.204	38.0	LOS C	4.6	36.9	0.76	0.75	0.76	38.1
6	R2	All MCs	119	12.4	119	12.4	* 0.479	57.4	LOS E	6.6	50.8	0.96	0.79	0.96	37.5
Approach			335	14.8	335	14.8	0.479	44.9	LOS D	6.6	50.8	0.83	0.76	0.83	37.8
NorthWest: Mamre Road (800m)															
7	L2	All MCs	58	36.4	58	36.4	0.072	19.8	LOS B	1.5	13.5	0.47	0.69	0.47	53.0
8	T1	All MCs	1438	16.8	1438	16.8	* 0.499	8.5	LOS A	10.6	84.6	0.40	0.36	0.40	70.6
Approach			1496	17.5	1496	17.5	0.499	8.9	LOS A	10.6	84.6	0.41	0.37	0.41	69.7
All Vehicles			2785	19.0	2785	19.0	0.504	12.3	LOS A	10.6	84.6	0.36	0.32	0.36	64.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

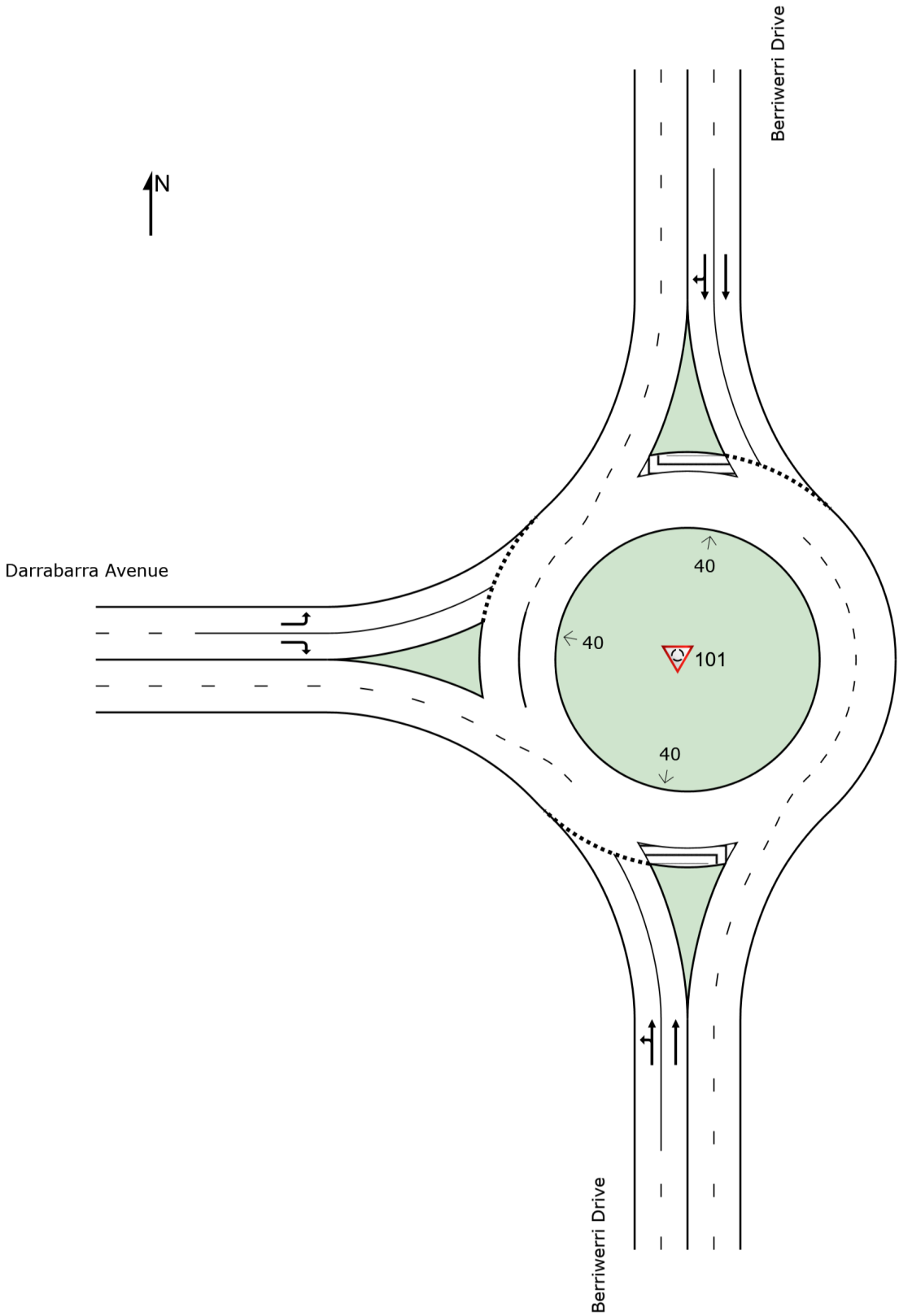
* Critical Movement (Signal Timing)

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - AM (Site Folder: 2031 Base)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	160	37.5	160	37.5	0.104	3.6	LOS A	0.6	5.3	0.13	0.38	0.13	55.0
2	T1	All MCs	1	0.0	1	0.0	0.001	2.9	LOS A	0.0	0.0	0.13	0.27	0.13	56.4
Approach			161	37.3	161	37.3	0.104	3.6	LOS A	0.6	5.3	0.13	0.38	0.13	55.0
North: Berriwerri Drive															
8	T1	All MCs	1	0.0	1	0.0	0.001	3.7	LOS A	0.0	0.0	0.41	0.33	0.41	55.3
9	R2	All MCs	26	36.0	26	36.0	0.021	10.9	LOS A	0.1	0.9	0.40	0.59	0.40	49.8
Approach			27	34.6	27	34.6	0.021	10.6	LOS A	0.1	0.9	0.40	0.58	0.40	50.0
West: Darrabarra Avenue															
10	L2	All MCs	55	19.2	55	19.2	0.045	3.3	LOS A	0.2	1.4	0.01	0.38	0.01	56.1
12	R2	All MCs	303	19.1	303	19.1	0.178	9.6	LOS A	0.8	6.4	0.01	0.62	0.01	51.1
Approach			358	19.1	358	19.1	0.178	8.6	LOS A	0.8	6.4	0.01	0.58	0.01	51.8
All Vehicles			546	25.2	546	25.2	0.178	7.2	LOS A	0.8	6.4	0.07	0.52	0.07	52.6

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.

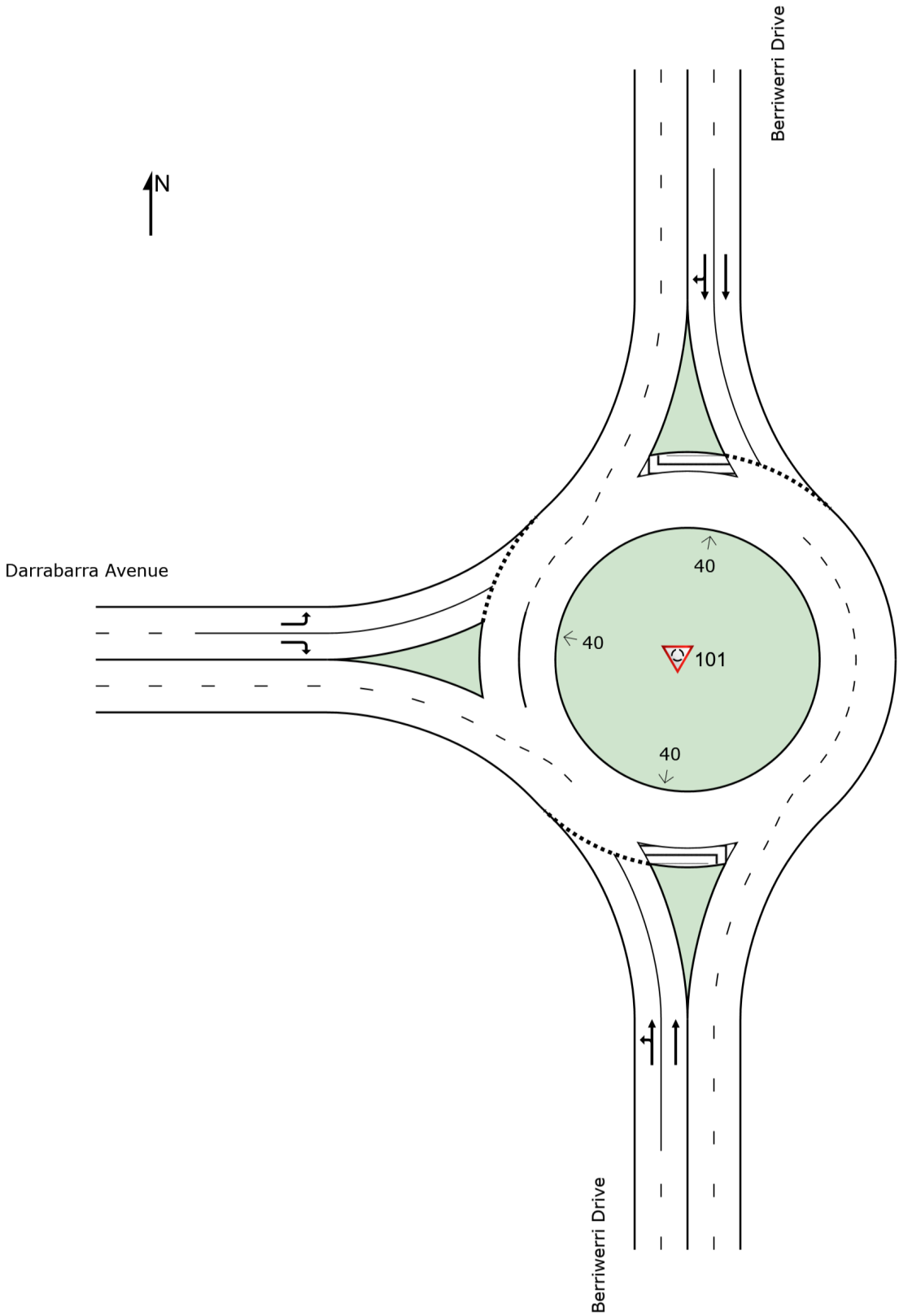
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - PM (Site Folder: 2031 Base)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	245	17.2	245	17.2	0.148	3.5	LOS A	0.8	6.5	0.18	0.39	0.18	55.3
2	T1	All MCs	1	0.0	1	0.0	0.001	3.0	LOS A	0.0	0.0	0.18	0.27	0.18	56.2
Approach			246	17.1	246	17.1	0.148	3.5	LOS A	0.8	6.5	0.18	0.39	0.18	55.3
North: Berriwerri Drive															
8	T1	All MCs	1	0.0	1	0.0	0.001	2.9	LOS A	0.0	0.0	0.24	0.27	0.24	56.2
9	R2	All MCs	56	17.0	56	17.0	0.035	9.9	LOS A	0.2	1.3	0.22	0.58	0.22	50.8
Approach			57	16.7	57	16.7	0.035	9.7	LOS A	0.2	1.3	0.22	0.57	0.22	50.9
West: Darrabarra Avenue															
10	L2	All MCs	24	39.1	24	39.1	0.022	3.5	LOS A	0.1	0.8	0.02	0.38	0.02	55.7
12	R2	All MCs	94	38.2	94	38.2	0.060	9.8	LOS A	0.2	2.3	0.01	0.60	0.01	50.7
Approach			118	38.4	118	38.4	0.060	8.5	LOS A	0.2	2.3	0.01	0.56	0.01	51.6
All Vehicles			421	23.0	421	23.0	0.148	5.7	LOS A	0.8	6.5	0.14	0.46	0.14	53.5

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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.

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USER REPORT FOR SITE

Project: P3168m1v2_Mamre Road Data Campus 2031

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Template: Default Site User Report

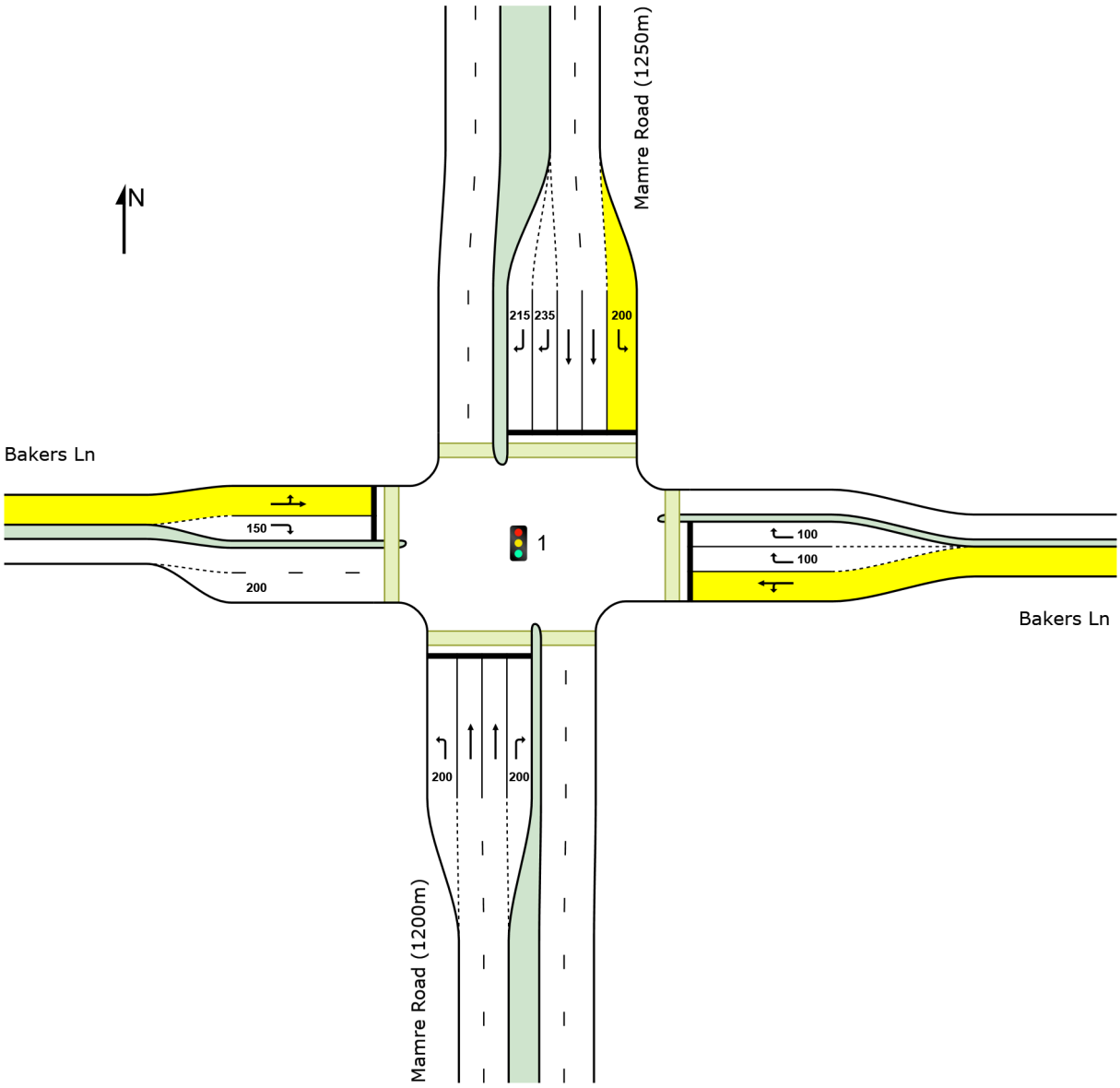
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - AM (2) (Site Folder: 2031 Project)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, C*, D, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	121	17.4	121	17.4	0.141	15.9	LOS B	2.2	17.7	0.54	0.73	0.54	57.8
2	T1	All MCs	1213	20.9	1213	20.9	0.770	17.8	LOS B	24.9	205.9	0.76	0.69	0.76	68.1
3	R2	All MCs	76	1.4	76	1.4	* 0.703	72.5	LOS F	4.7	33.6	1.00	0.83	1.15	38.1
Approach			1409	19.6	1409	19.6	0.770	20.6	LOS B	24.9	205.9	0.76	0.70	0.76	65.2
East: Bakers Ln															
4	L2	All MCs	51	4.2	51	4.2	0.158	50.1	LOS D	2.6	18.6	0.88	0.74	0.88	43.3
5	T1	All MCs	1	0.0	1	0.0	0.158	57.3	LOS E	2.6	18.6	0.88	0.74	0.88	37.2
6	R2	All MCs	96	2.2	96	2.2	0.523	70.1	LOS E	2.9	21.0	1.00	0.75	1.02	41.0
Approach			147	2.9	147	2.9	0.523	63.2	LOS E	2.9	21.0	0.96	0.75	0.97	41.6
North: Mamre Road (1250m)															
7	L2	All MCs	226	5.6	226	5.6	0.174	13.2	LOS A	4.3	31.5	0.36	0.71	0.36	61.6
8	T1	All MCs	1717	18.3	1717	18.3	* 0.836	9.2	LOS A	29.4	238.1	0.62	0.59	0.63	73.4
9	R2	All MCs	208	17.7	208	17.7	0.467	38.4	LOS C	4.1	32.7	0.96	0.78	0.96	50.3
Approach			2152	16.9	2152	16.9	0.836	12.4	LOS A	29.4	238.1	0.62	0.62	0.64	69.5
West: Bakers Ln															
10	L2	All MCs	113	35.5	113	35.5	0.294	32.6	LOS C	4.5	41.1	0.83	0.76	0.83	50.2
11	T1	All MCs	1	0.0	1	0.0	* 0.294	62.9	LOS E	4.5	41.1	0.83	0.76	0.83	43.0
12	R2	All MCs	56	34.0	56	34.0	* 0.812	77.0	LOS F	3.7	33.6	1.00	0.91	1.37	35.5
Approach			169	34.8	169	34.8	0.812	47.4	LOS D	4.5	41.1	0.88	0.81	1.01	44.6
All Vehicles			3878	18.1	3878	18.1	0.836	18.9	LOS B	29.4	238.1	0.70	0.66	0.71	65.1

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

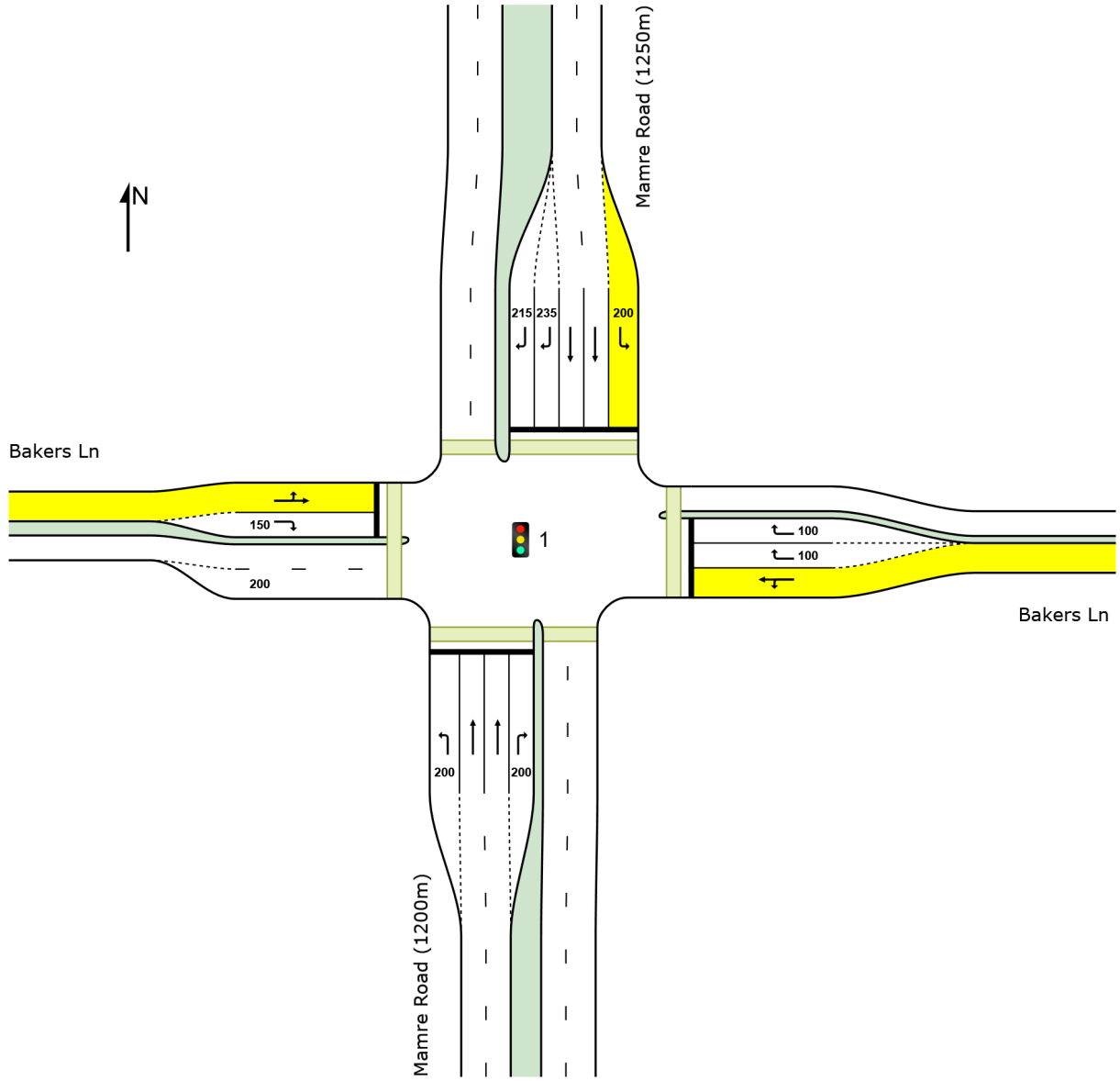
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - PM (2) (Site Folder: 2031 Project)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, D, D1*, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	79	26.7	79	26.7	0.073	12.9	LOS A	1.3	11.6	0.32	0.69	0.32	59.3
2	T1	All MCs	1563	14.9	1563	14.9	* 0.781	9.6	LOS A	25.6	202.3	0.61	0.57	0.61	73.1
3	R2	All MCs	67	1.6	67	1.6	* 0.626	71.4	LOS F	4.2	29.5	1.00	0.80	1.08	38.3
Approach			1709	14.9	1709	14.9	0.781	12.2	LOS A	25.6	202.3	0.62	0.58	0.62	70.6
East: Bakers Ln															
4	L2	All MCs	79	5.3	79	5.3	0.256	52.1	LOS D	4.1	30.0	0.90	0.76	0.90	42.7
5	T1	All MCs	1	0.0	1	0.0	* 0.256	59.6	LOS E	4.1	30.0	0.90	0.76	0.90	36.7
6	R2	All MCs	122	1.7	122	1.7	0.568	69.1	LOS E	3.7	26.5	1.00	0.78	1.04	41.2
Approach			202	3.1	202	3.1	0.568	62.4	LOS E	4.1	30.0	0.96	0.77	0.98	41.7
North: Mamre Road (1250m)															
7	L2	All MCs	63	13.3	63	13.3	0.054	13.7	LOS A	1.2	9.2	0.35	0.69	0.35	61.1
8	T1	All MCs	1437	17.0	1437	17.0	0.731	9.0	LOS A	21.4	172.0	0.56	0.51	0.56	73.5
9	R2	All MCs	99	30.9	99	30.9	0.602	73.0	LOS F	3.1	27.5	1.00	0.79	1.09	40.1
Approach			1599	17.7	1599	17.7	0.731	13.2	LOS A	21.4	172.0	0.58	0.54	0.58	69.9
West: Bakers Ln															
10	L2	All MCs	229	17.0	229	17.0	0.673	54.0	LOS D	12.7	102.1	0.98	0.84	0.99	44.1
11	T1	All MCs	1	0.0	1	0.0	0.673	62.3	LOS E	12.7	102.1	0.98	0.84	0.99	36.2
12	R2	All MCs	107	16.7	107	16.7	* 0.736	68.3	LOS E	6.7	53.2	1.00	0.88	1.16	37.9
Approach			338	16.8	338	16.8	0.736	58.6	LOS E	12.7	102.1	0.98	0.85	1.04	42.1
All Vehicles			3848	15.6	3848	15.6	0.781	19.3	LOS B	25.6	202.3	0.65	0.60	0.66	65.0

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

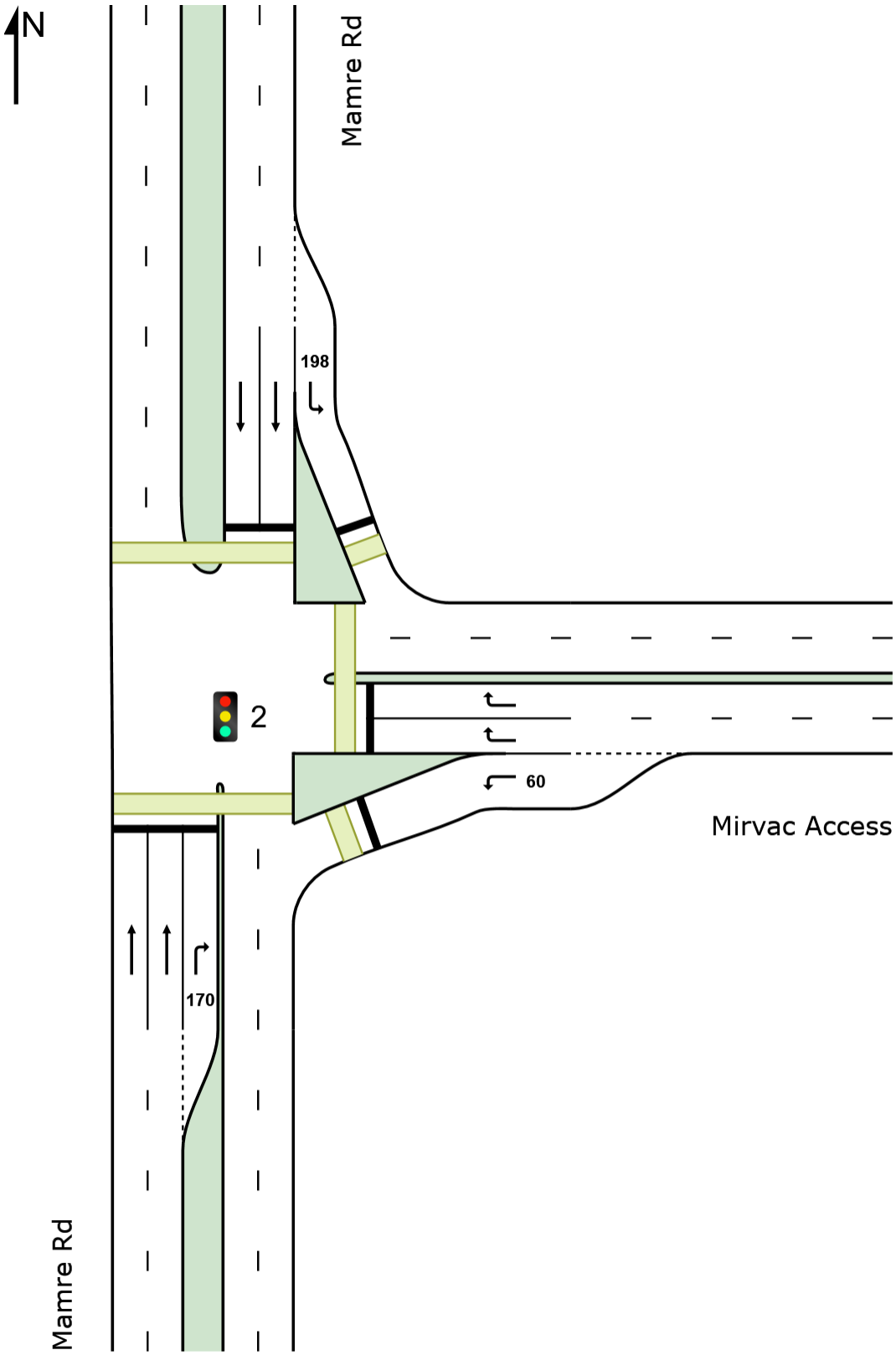
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue - AM (2) (Site Folder: 2031 Project)]

Mamre Road x Mirvac Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	1220	14.5	1220	14.5	0.489	7.4	LOS A	14.9	117.5	0.46	0.42	0.46	69.8

3	R2	All MCs	151	14.7	151	14.7	* 0.656	62.4	LOS E	8.7	68.7	1.00	0.83	1.03	38.1
Approach			1371	14.5	1371	14.5	0.656	13.5	LOS A	14.9	117.5	0.52	0.46	0.52	62.5
East: Mirvac Access															
4	L2	All MCs	48	28.3	48	28.3	0.179	52.0	LOS D	2.5	21.3	0.89	0.74	0.89	39.8
6	R2	All MCs	287	34.1	287	34.1	* 0.628	58.2	LOS E	8.2	73.8	0.98	0.82	1.00	26.1
Approach			336	33.2	336	33.2	0.628	57.3	LOS E	8.2	73.8	0.97	0.81	0.98	28.5
North: Mamre Rd															
7	L2	All MCs	552	16.8	552	16.8	0.634	28.6	LOS C	22.6	180.8	0.76	0.83	0.76	37.7
8	T1	All MCs	1135	19.5	1135	19.5	* 0.645	21.2	LOS B	23.4	191.3	0.77	0.69	0.77	56.3
Approach			1686	18.6	1686	18.6	0.645	23.7	LOS B	23.4	191.3	0.77	0.74	0.77	50.0
All Vehicles			3393	18.4	3393	18.4	0.656	22.9	LOS B	23.4	191.3	0.69	0.64	0.69	51.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

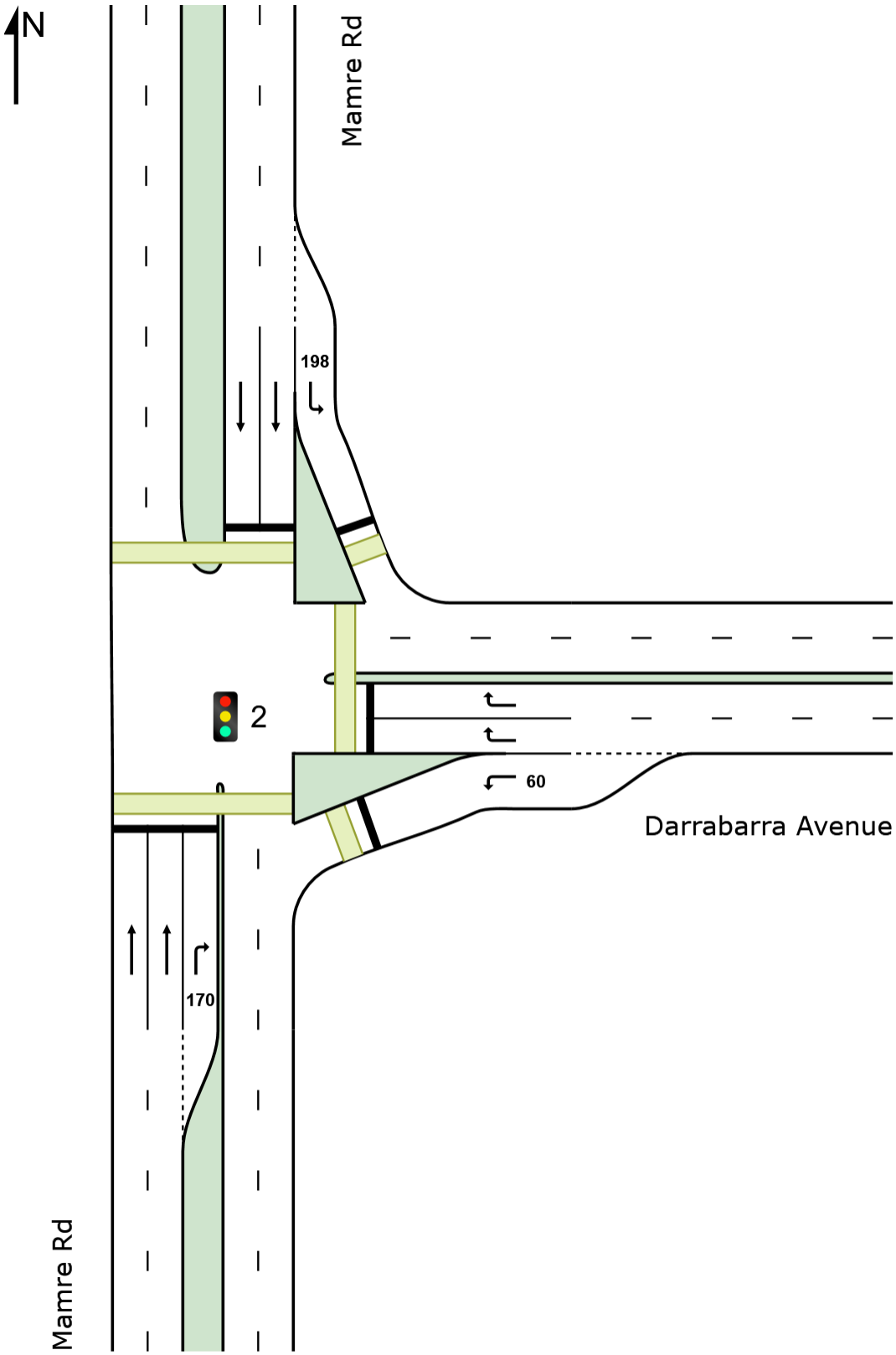
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue - PM (2) (Site Folder: 2031 Project)]

Mamre Road x Mirvac Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	873	20.0	873	20.0	0.414	11.1	LOS A	12.3	100.6	0.53	0.47	0.53	65.6

3	R2	All MCs	79	29.3	79	29.3	* 0.738	72.9	LOS F	5.0	43.8	1.00	0.86	1.20	35.4
Approach			952	20.8	952	20.8	0.738	16.2	LOS B	12.3	100.6	0.56	0.50	0.58	60.1
East: Darrabarra Avenue															
4	L2	All MCs	116	11.8	116	11.8	0.250	52.4	LOS D	5.4	41.5	0.84	0.76	0.84	43.0
6	R2	All MCs	640	15.0	640	15.0	* 0.820	61.9	LOS E	20.0	158.0	1.00	0.93	1.13	26.6
Approach			756	14.5	756	14.5	0.820	60.5	LOS E	20.0	158.0	0.97	0.90	1.09	28.2
North: Mamre Rd															
7	L2	All MCs	232	33.2	232	33.2	0.316	25.7	LOS B	7.8	69.8	0.62	0.76	0.62	38.9
8	T1	All MCs	1413	18.1	1413	18.1	* 0.819	28.2	LOS B	35.8	289.4	0.91	0.85	0.94	51.3
Approach			1644	20.2	1644	20.2	0.819	27.9	LOS B	35.8	289.4	0.87	0.84	0.89	49.7
All Vehicles			3352	19.1	3352	19.1	0.820	31.9	LOS C	35.8	289.4	0.81	0.76	0.85	45.5

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

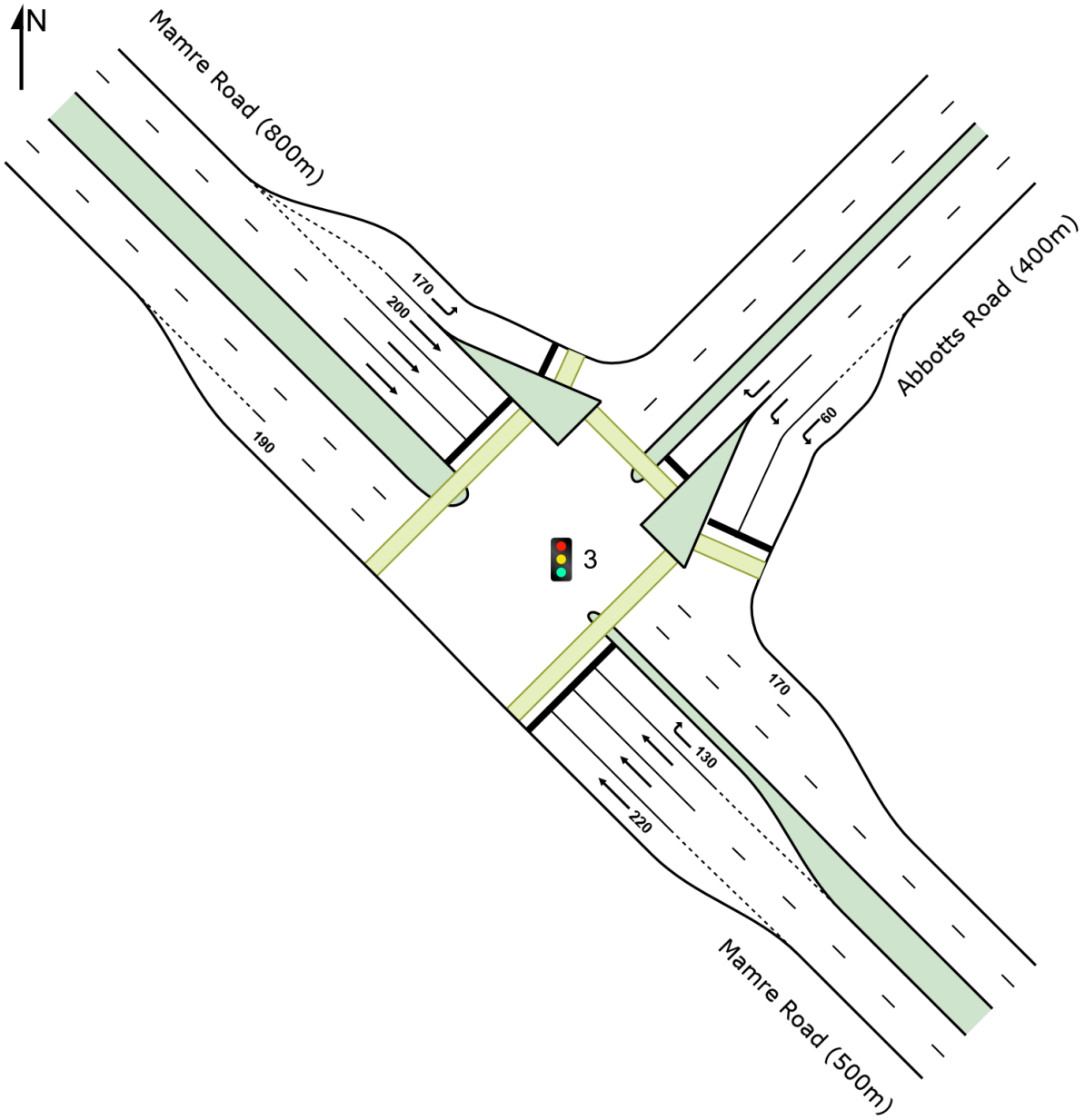
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - AM (2) (Site Folder: 2031 Project)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	1346	14.4	1346	14.4	0.344	0.9	LOS A	0.8	6.1	0.03	0.03	0.03	79.6
3	R2	All MCs	266	18.2	266	18.2	* 0.536	44.2	LOS D	12.9	104.4	0.88	0.82	0.88	37.7
Approach			1613	15.0	1613	15.0	0.536	8.1	LOS A	12.9	104.4	0.17	0.16	0.17	68.8
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	95	36.7	95	36.7	0.068	22.1	LOS B	1.4	13.0	0.53	0.67	0.53	42.0
6	R2	All MCs	91	33.7	91	33.7	* 0.464	58.9	LOS E	5.1	45.7	0.96	0.78	0.96	36.5
Approach			185	35.2	185	35.2	0.464	40.1	LOS C	5.1	45.7	0.74	0.72	0.74	38.8
NorthWest: Mamre Road (800m)															
7	L2	All MCs	168	26.9	168	26.9	0.285	34.6	LOS C	6.7	57.9	0.73	0.77	0.73	46.0
8	T1	All MCs	1011	19.4	1011	19.4	* 0.526	23.0	LOS B	13.1	106.8	0.70	0.61	0.70	57.8
Approach			1179	20.4	1179	20.4	0.526	24.6	LOS B	13.1	106.8	0.71	0.63	0.71	55.7
All Vehicles			2977	18.4	2977	18.4	0.536	16.6	LOS B	13.1	106.8	0.42	0.38	0.42	60.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

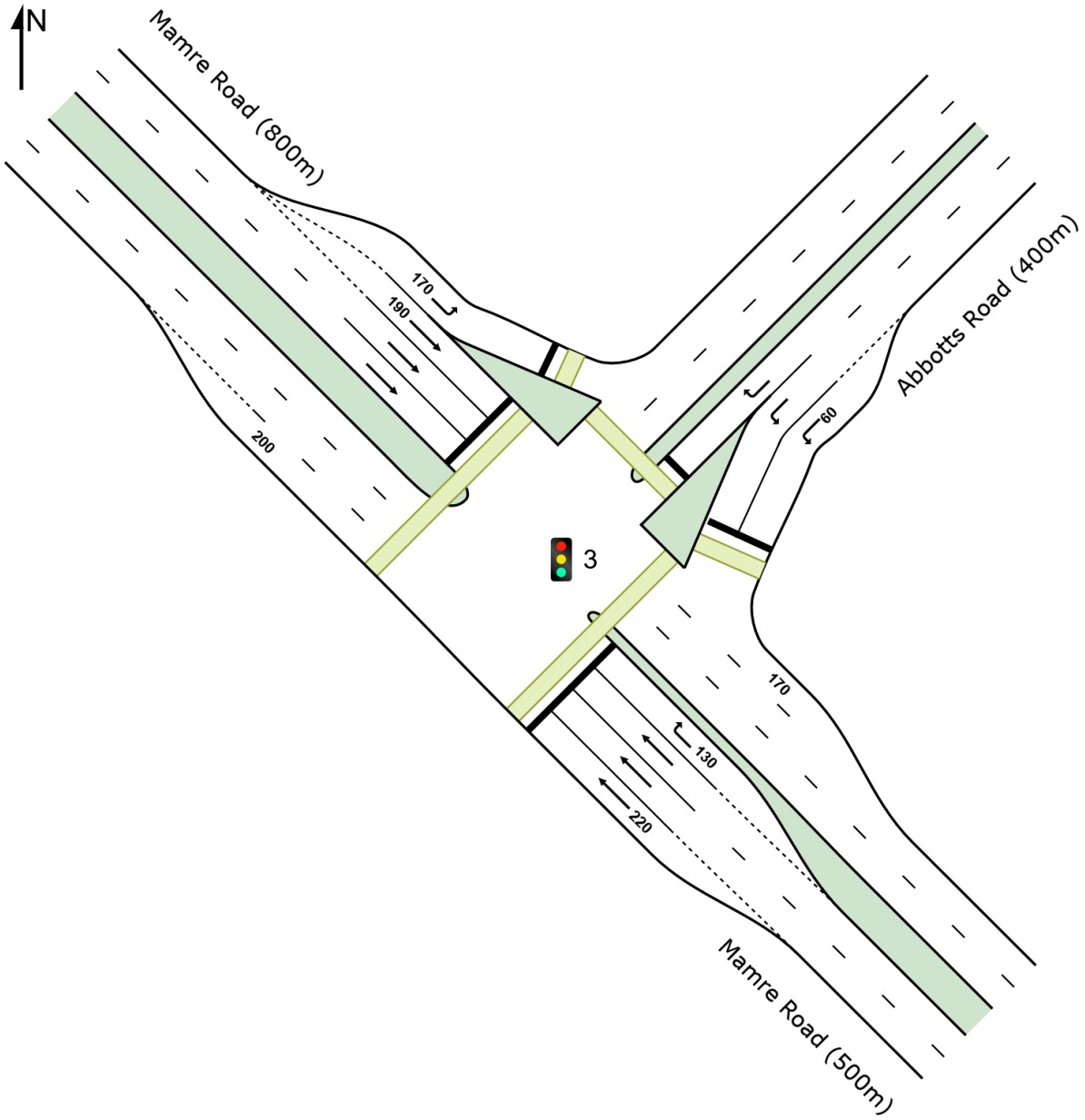
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - PM (2) (Site Folder: 2031 Project)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	909	21.4	909	21.4	0.264	1.4	LOS A	1.3	10.7	0.08	0.07	0.08	78.6
3	R2	All MCs	126	37.5	126	37.5	* 0.597	60.6	LOS E	7.2	66.2	0.98	0.81	0.98	32.4
Approach			1036	23.4	1036	23.4	0.597	8.6	LOS A	7.2	66.2	0.19	0.16	0.19	68.5
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	275	16.5	275	16.5	0.212	32.0	LOS C	5.3	42.5	0.69	0.74	0.69	40.5
6	R2	All MCs	184	14.9	184	14.9	* 0.594	54.4	LOS D	10.1	79.4	0.96	0.82	0.96	38.3
Approach			459	15.8	459	15.8	0.594	41.0	LOS C	10.1	79.4	0.80	0.77	0.80	39.4
NorthWest: Mamre Road (800m)															
7	L2	All MCs	80	36.8	80	36.8	0.115	24.8	LOS B	2.5	22.6	0.56	0.72	0.56	50.4
8	T1	All MCs	1506	16.4	1506	16.4	* 0.599	14.9	LOS B	16.3	130.3	0.59	0.53	0.59	64.6
Approach			1586	17.4	1586	17.4	0.599	15.4	LOS B	16.3	130.3	0.59	0.54	0.59	63.7
All Vehicles			3081	19.2	3081	19.2	0.599	16.9	LOS B	16.3	130.3	0.49	0.45	0.49	60.0

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

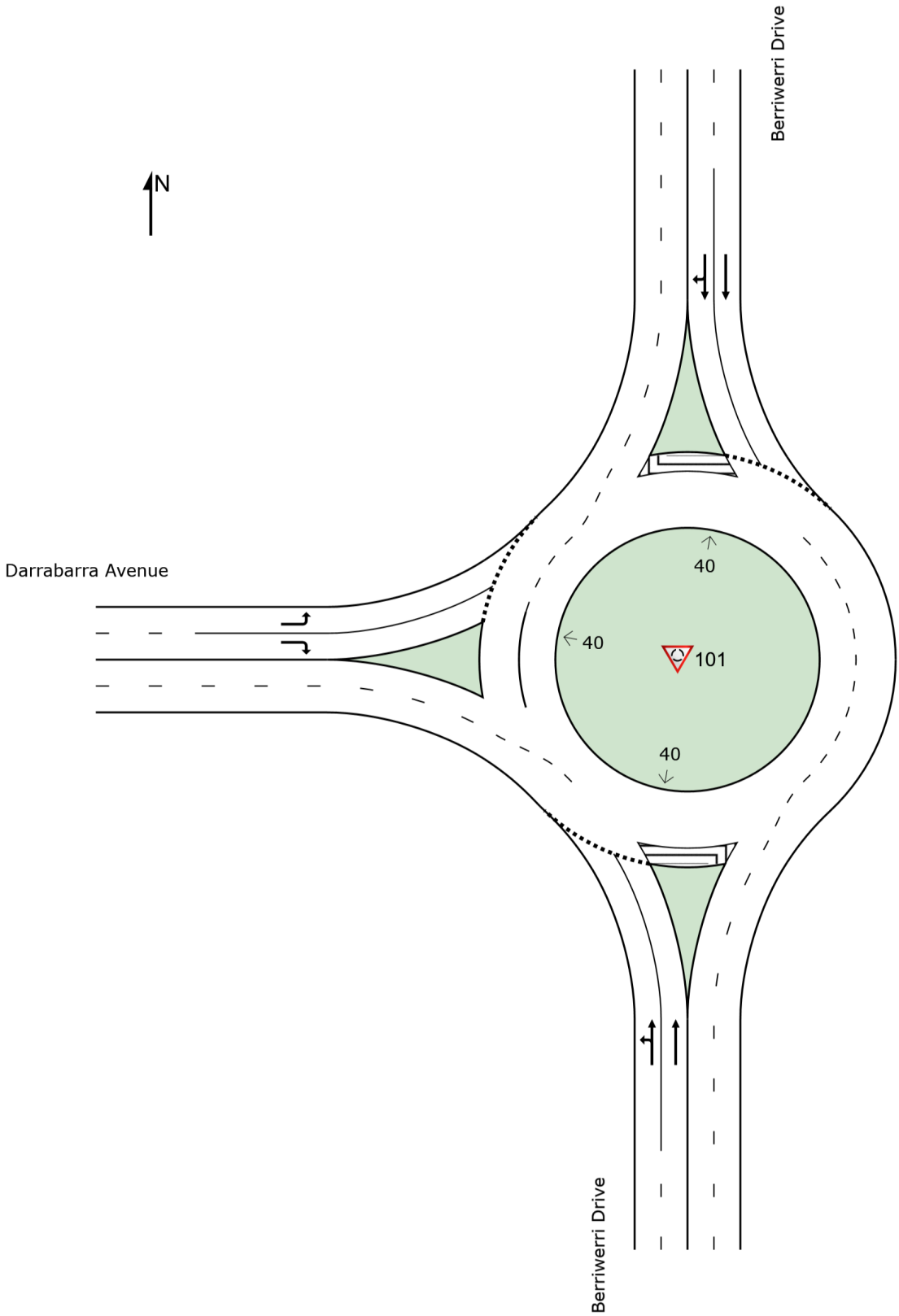
* Critical Movement (Signal Timing)

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - AM (2) (Site Folder: 2031 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive														
1	L2	All MCs	160	37.5	160	37.5	0.108	3.8	LOS A	0.6	5.5	0.22	0.39	0.22	54.7
2	T1	All MCs	1	0.0	1	0.0	0.001	3.0	LOS A	0.0	0.0	0.21	0.28	0.21	56.0
Approach			161	37.3	161	37.3	0.108	3.7	LOS A	0.6	5.5	0.22	0.39	0.22	54.7
North: Berriwerri Drive														
8	T1	All MCs	1	0.0	1	0.0	0.001	3.7	LOS A	0.0	0.0	0.41	0.33	0.41	55.3
9	R2	All MCs	68	16.9	68	16.9	0.048	10.6	LOS A	0.2	1.9	0.40	0.61	0.40	50.3
Approach			69	16.7	69	16.7	0.048	10.5	LOS A	0.2	1.9	0.40	0.60	0.40	50.4
West: Darrabarra Avenue														
10	L2	All MCs	161	7.2	161	7.2	0.110	3.2	LOS A	0.5	3.5	0.01	0.38	0.01	56.3
12	R2	All MCs	303	19.1	303	19.1	0.178	9.6	LOS A	0.8	6.7	0.01	0.62	0.01	51.1
Approach			464	15.0	464	15.0	0.178	7.4	LOS A	0.8	6.7	0.01	0.54	0.01	52.8
All Vehicles			695	20.3	695	20.3	0.178	6.9	LOS A	0.8	6.7	0.10	0.51	0.10	52.9

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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.

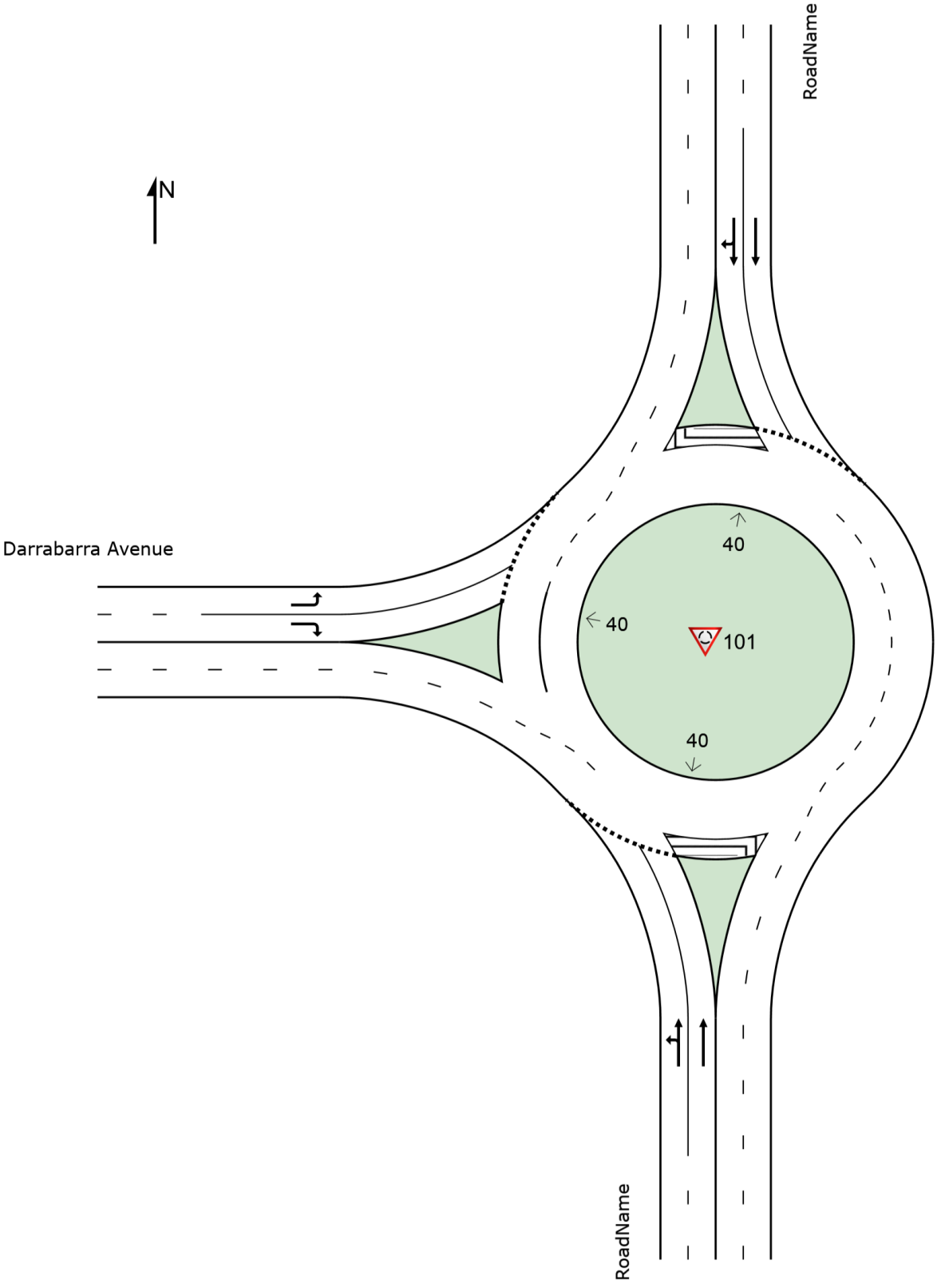
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - PM (2) (Site Folder: 2031 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: RoadName															
1	L2	All MCs	341	17.3	341	17.3	0.227	4.1	LOS A	1.4	11.0	0.37	0.44	0.37	54.6
2	T1	All MCs	1	0.0	1	0.0	0.001	3.5	LOS A	0.0	0.0	0.34	0.31	0.34	55.3
Approach			342	17.2	342	17.2	0.227	4.1	LOS A	1.4	11.0	0.37	0.44	0.37	54.6
North: RoadName															
8	T1	All MCs	1	0.0	1	0.0	0.001	3.0	LOS A	0.0	0.0	0.28	0.28	0.28	56.0
9	R2	All MCs	187	6.2	187	6.2	0.113	9.9	LOS A	0.6	4.2	0.27	0.59	0.27	51.0
Approach			188	6.1	188	6.1	0.113	9.8	LOS A	0.6	4.2	0.27	0.59	0.27	51.0
West: Darrabarra Avenue															
10	L2	All MCs	77	13.7	77	13.7	0.054	3.3	LOS A	0.2	1.8	0.01	0.38	0.01	56.2
12	R2	All MCs	126	38.3	126	38.3	0.081	9.8	LOS A	0.4	3.3	0.01	0.60	0.01	50.7
Approach			203	29.0	203	29.0	0.081	7.3	LOS A	0.4	3.3	0.01	0.52	0.01	52.6
All Vehicles			734	17.6	734	17.6	0.227	6.4	LOS A	1.4	11.0	0.25	0.50	0.25	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.

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.

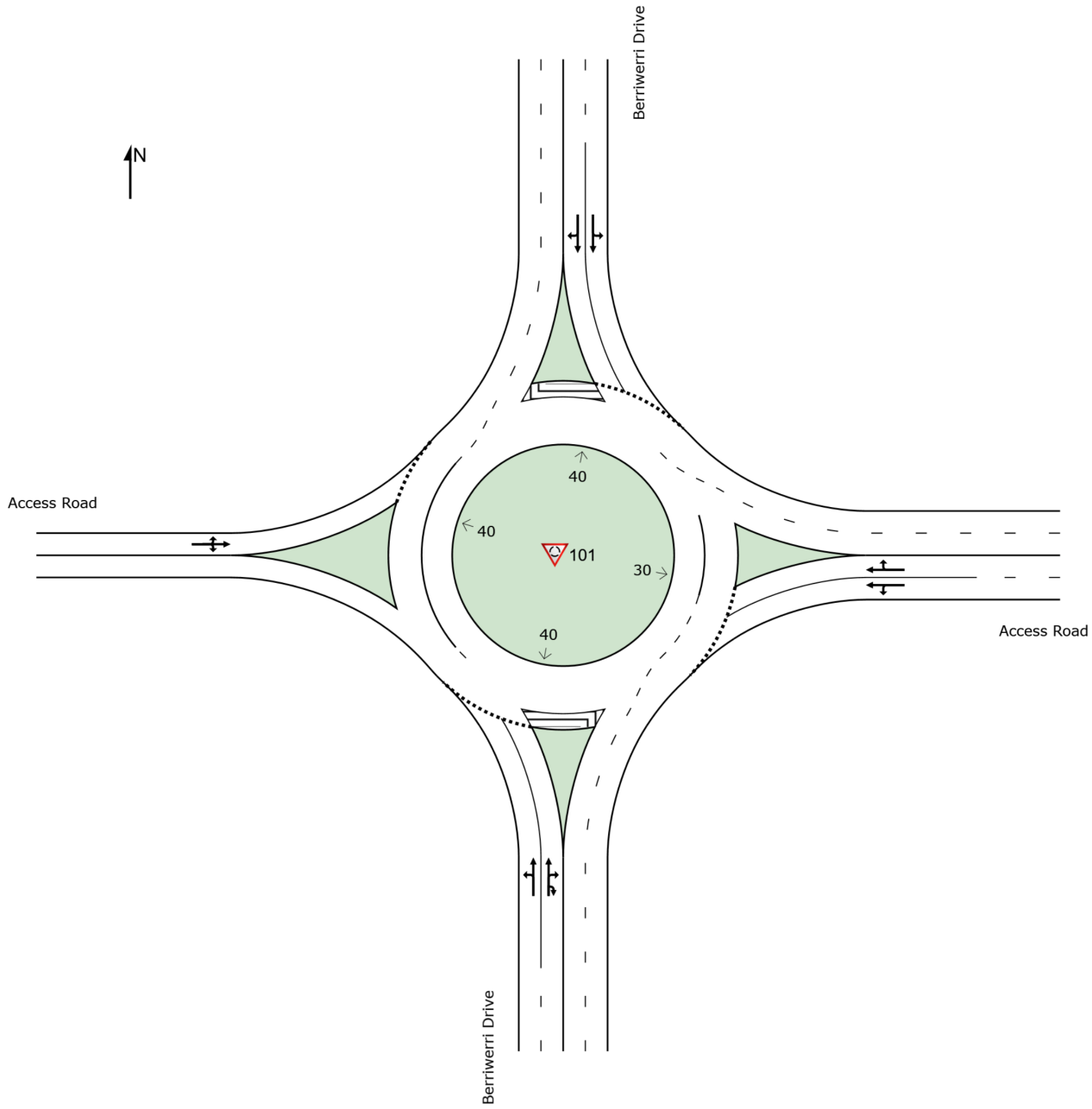
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 6] Berriwerri Drive / Access Road - AM (2) (Site Folder: 2031 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	75	1.4	75	1.4	0.039	3.2	LOS A	0.2	1.3	0.03	0.40	0.03	54.9
2	T1	All MCs	1	0.0	1	0.0	0.022	2.8	LOS A	0.1	0.7	0.03	0.63	0.03	52.0

3	R2	All MCs	32	0.0	32	0.0	0.022	9.4	LOS A	0.1	0.7	0.03	0.63	0.03	49.6
3u	U	All MCs	1	0.0	1	0.0	0.022	11.9	LOS A	0.1	0.7	0.03	0.63	0.03	51.8
Approach			108	1.0	108	1.0	0.039	5.1	LOS A	0.2	1.3	0.03	0.47	0.03	53.1
East: Access Road															
4	L2	All MCs	12	0.0	12	0.0	0.008	3.7	LOS A	0.0	0.2	0.09	0.41	0.09	54.1
5	T1	All MCs	1	0.0	1	0.0	0.002	3.3	LOS A	0.0	0.1	0.12	0.49	0.12	49.2
6	R2	All MCs	1	0.0	1	0.0	0.002	9.5	LOS A	0.0	0.1	0.12	0.49	0.12	50.4
Approach			14	0.0	14	0.0	0.008	4.1	LOS A	0.0	0.2	0.10	0.42	0.10	53.5
North: Berriwerri Drive															
7	L2	All MCs	1	0.0	1	0.0	0.001	3.3	LOS A	0.0	0.0	0.15	0.35	0.15	53.7
8	T1	All MCs	1	0.0	1	0.0	0.001	3.3	LOS A	0.0	0.0	0.16	0.42	0.16	54.5
9	R2	All MCs	1	0.0	1	0.0	0.001	9.5	LOS A	0.0	0.0	0.17	0.54	0.17	49.0
Approach			3	0.0	3	0.0	0.001	5.4	LOS A	0.0	0.0	0.16	0.43	0.16	52.5
West: Access Road															
10	L2	All MCs	1	0.0	1	0.0	0.023	3.1	LOS A	0.1	0.6	0.10	0.60	0.10	49.1
11	T1	All MCs	1	0.0	1	0.0	0.023	2.9	LOS A	0.1	0.6	0.10	0.60	0.10	46.7
12	R2	All MCs	29	3.6	29	3.6	0.023	9.5	LOS A	0.1	0.6	0.10	0.60	0.10	49.4
Approach			32	3.3	32	3.3	0.023	9.1	LOS A	0.1	0.6	0.10	0.60	0.10	49.3
All Vehicles			157	1.3	157	1.3	0.039	5.8	LOS A	0.2	1.3	0.05	0.49	0.05	52.2

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.

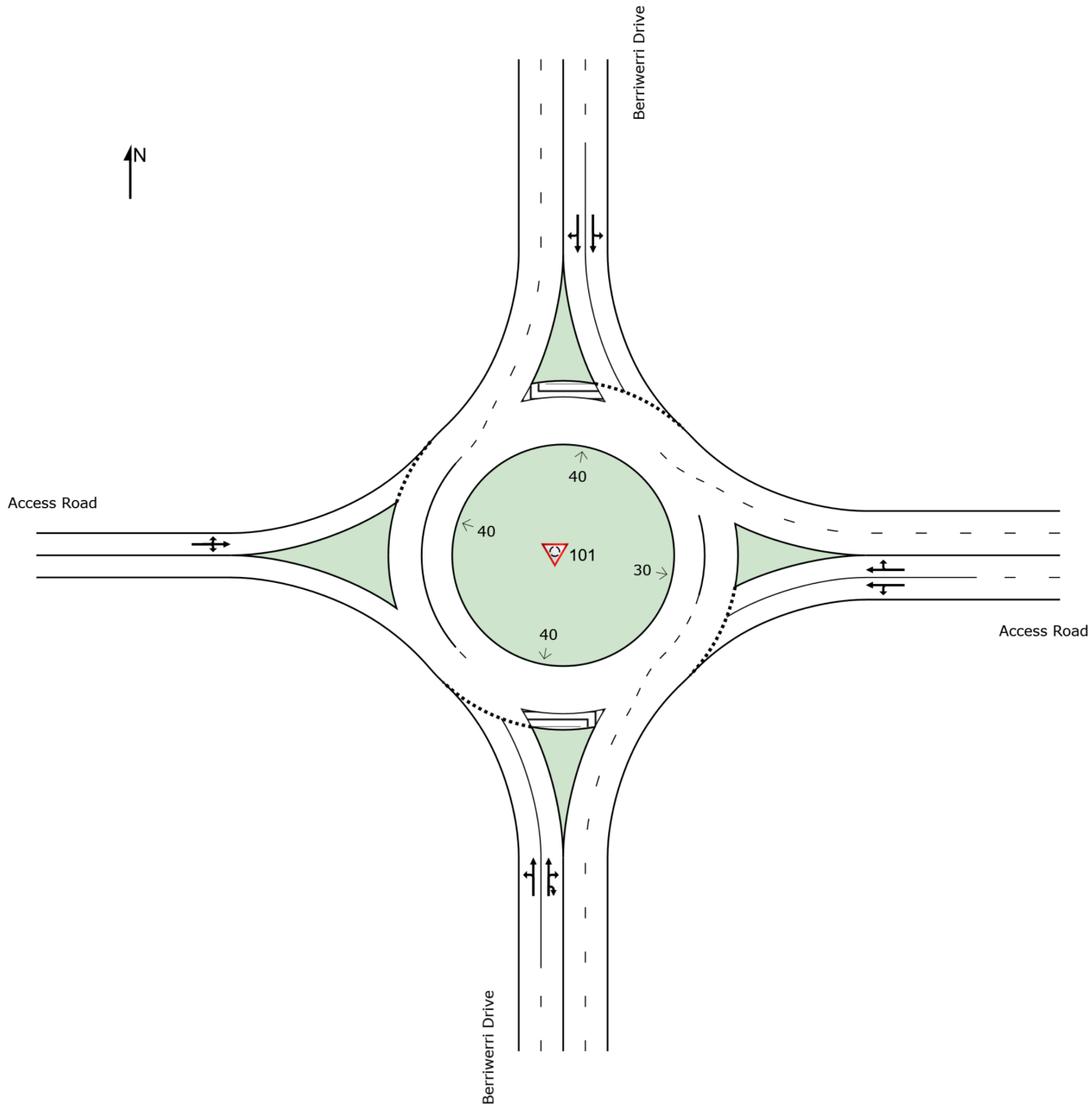
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 6] Berriwerri Drive / Access Road - PM (2) (Site Folder: 2031 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	37	2.9	37	2.9	0.020	3.2	LOS A	0.1	0.7	0.03	0.40	0.03	54.7
2	T1	All MCs	1	0.0	1	0.0	0.012	2.8	LOS A	0.1	0.4	0.03	0.62	0.03	52.1

3	R2	All MCs	16	0.0	16	0.0	0.012	9.4	LOS A	0.1	0.4	0.03	0.62	0.03	49.7
3u	U	All MCs	1	0.0	1	0.0	0.012	11.9	LOS A	0.1	0.4	0.03	0.62	0.03	51.9
Approach			55	1.9	55	1.9	0.020	5.2	LOS A	0.1	0.7	0.03	0.47	0.03	52.9
East: Access Road															
4	L2	All MCs	39	0.0	39	0.0	0.026	3.9	LOS A	0.1	0.7	0.17	0.42	0.17	53.7
5	T1	All MCs	1	0.0	1	0.0	0.002	3.5	LOS A	0.0	0.1	0.21	0.49	0.21	48.7
6	R2	All MCs	1	0.0	1	0.0	0.002	9.8	LOS A	0.0	0.1	0.21	0.49	0.21	50.0
Approach			41	0.0	41	0.0	0.026	4.0	LOS A	0.1	0.7	0.18	0.43	0.18	53.5
North: Berriwerri Drive															
7	L2	All MCs	1	0.0	1	0.0	0.001	3.4	LOS A	0.0	0.0	0.21	0.35	0.21	53.3
8	T1	All MCs	1	0.0	1	0.0	0.001	3.4	LOS A	0.0	0.0	0.21	0.41	0.21	54.3
9	R2	All MCs	1	0.0	1	0.0	0.001	9.7	LOS A	0.0	0.0	0.23	0.53	0.23	48.7
Approach			3	0.0	3	0.0	0.001	5.5	LOS A	0.0	0.0	0.22	0.43	0.22	52.2
West: Access Road															
10	L2	All MCs	1	0.0	1	0.0	0.063	3.0	LOS A	0.2	1.7	0.07	0.61	0.07	49.0
11	T1	All MCs	1	0.0	1	0.0	0.063	2.8	LOS A	0.2	1.7	0.07	0.61	0.07	46.6
12	R2	All MCs	92	1.1	92	1.1	0.063	9.4	LOS A	0.2	1.7	0.07	0.61	0.07	49.3
Approach			94	1.1	94	1.1	0.063	9.3	LOS A	0.2	1.7	0.07	0.61	0.07	49.3
All Vehicles			193	1.1	193	1.1	0.063	6.9	LOS A	0.2	1.7	0.08	0.53	0.08	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.

USER REPORT FOR SITE

Project: P3168m1v2_Mamre Road Data Campus 2036

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Template: Default Site User Report

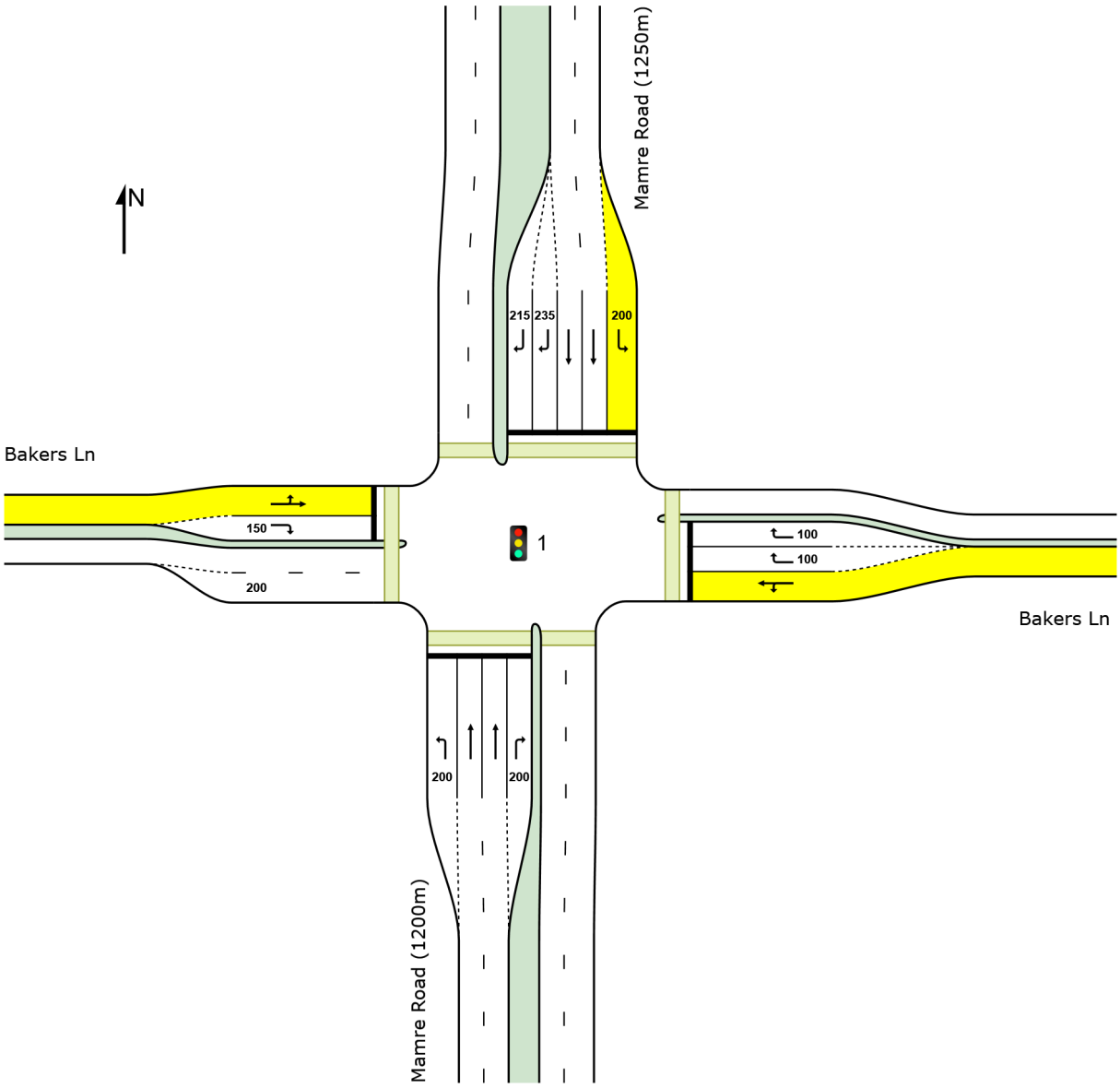
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - AM (Site Folder: 2036 Base)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, C*, D, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	121	17.4	121	17.4	0.141	15.9	LOS B	2.2	17.7	0.54	0.73	0.54	57.8
2	T1	All MCs	1213	20.9	1213	20.9	0.770	17.8	LOS B	24.9	205.9	0.76	0.69	0.76	68.1
3	R2	All MCs	76	1.4	76	1.4	* 0.703	72.5	LOS F	4.7	33.6	1.00	0.83	1.15	38.1
Approach			1409	19.6	1409	19.6	0.770	20.6	LOS B	24.9	205.9	0.76	0.70	0.76	65.2
East: Bakers Ln															
4	L2	All MCs	51	4.2	51	4.2	0.158	50.1	LOS D	2.6	18.6	0.88	0.74	0.88	43.3
5	T1	All MCs	1	0.0	1	0.0	0.158	57.3	LOS E	2.6	18.6	0.88	0.74	0.88	37.2
6	R2	All MCs	96	2.2	96	2.2	0.523	70.1	LOS E	2.9	21.0	1.00	0.75	1.02	41.0
Approach			147	2.9	147	2.9	0.523	63.2	LOS E	2.9	21.0	0.96	0.75	0.97	41.6
North: Mamre Road (1250m)															
7	L2	All MCs	226	5.6	226	5.6	0.174	13.2	LOS A	4.3	31.5	0.36	0.71	0.36	61.6
8	T1	All MCs	1717	18.3	1717	18.3	* 0.836	9.2	LOS A	29.4	238.1	0.62	0.59	0.63	73.4
9	R2	All MCs	208	17.7	208	17.7	0.467	38.4	LOS C	4.1	32.7	0.96	0.78	0.96	50.3
Approach			2152	16.9	2152	16.9	0.836	12.4	LOS A	29.4	238.1	0.62	0.62	0.64	69.5
West: Bakers Ln															
10	L2	All MCs	113	35.5	113	35.5	0.294	32.6	LOS C	4.5	41.1	0.83	0.76	0.83	50.2
11	T1	All MCs	1	0.0	1	0.0	* 0.294	62.9	LOS E	4.5	41.1	0.83	0.76	0.83	43.0
12	R2	All MCs	56	34.0	56	34.0	* 0.812	77.0	LOS F	3.7	33.6	1.00	0.91	1.37	35.5
Approach			169	34.8	169	34.8	0.812	47.4	LOS D	4.5	41.1	0.88	0.81	1.01	44.6
All Vehicles			3878	18.1	3878	18.1	0.836	18.9	LOS B	29.4	238.1	0.70	0.66	0.71	65.1

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

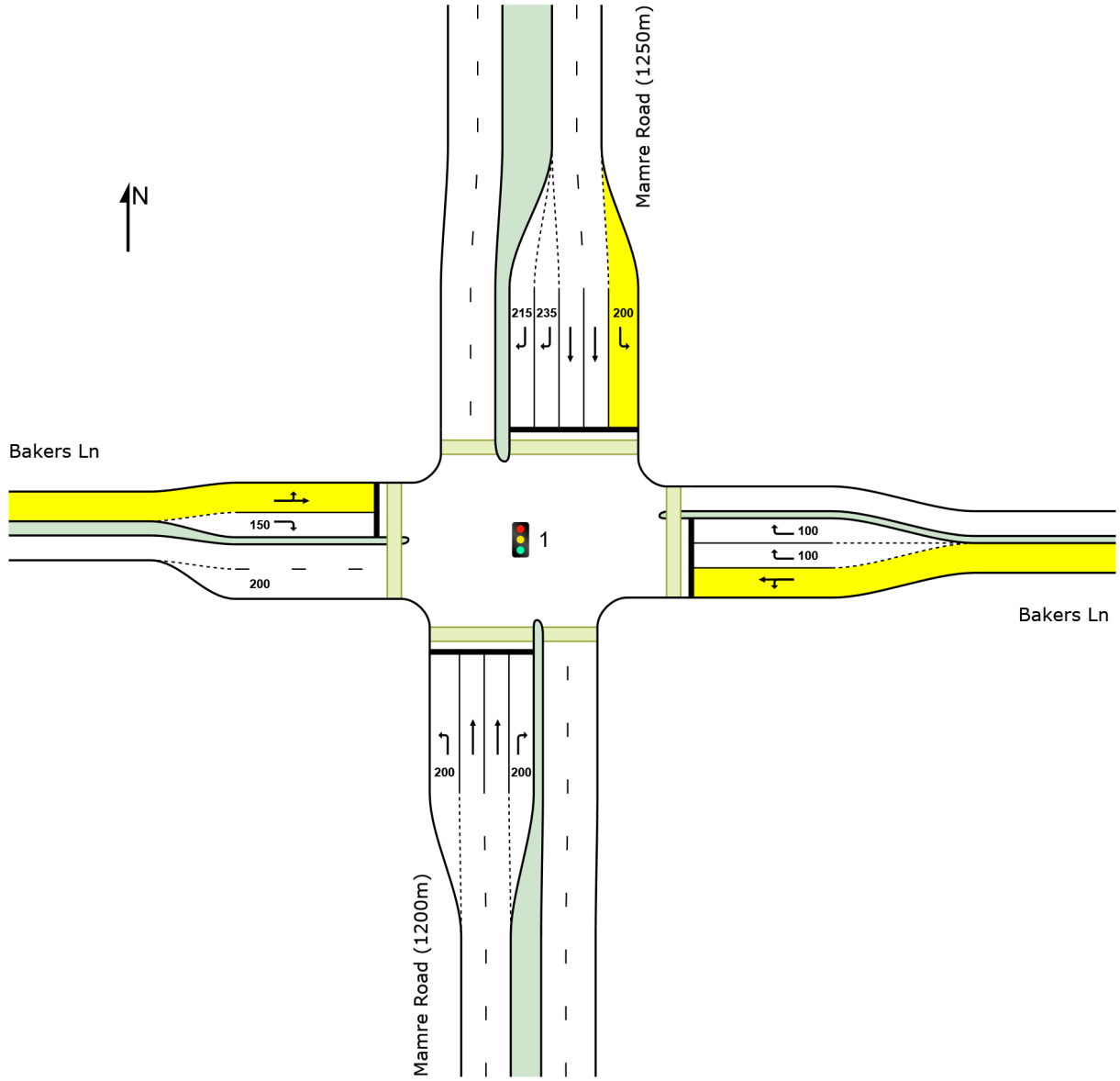
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - PM (Site Folder: 2036 Base)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, D, D1*, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	79	26.7	79	26.7	0.073	12.9	LOS A	1.3	11.6	0.32	0.69	0.32	59.3
2	T1	All MCs	1549	15.6	1549	15.6	* 0.779	9.6	LOS A	25.3	201.0	0.61	0.56	0.61	73.2
3	R2	All MCs	71	1.5	71	1.5	* 0.655	71.8	LOS F	4.4	31.0	1.00	0.81	1.10	38.3
Approach			1699	15.6	1699	15.6	0.779	12.3	LOS A	25.3	201.0	0.61	0.58	0.62	70.5
East: Bakers Ln															
4	L2	All MCs	83	5.1	83	5.1	0.269	52.2	LOS D	4.3	31.6	0.91	0.77	0.91	42.6
5	T1	All MCs	1	0.0	1	0.0	* 0.269	59.8	LOS E	4.3	31.6	0.91	0.77	0.91	36.6
6	R2	All MCs	131	2.4	131	2.4	0.612	69.6	LOS E	4.0	28.7	1.00	0.80	1.07	41.1
Approach			215	3.4	215	3.4	0.612	62.8	LOS E	4.3	31.6	0.96	0.78	1.01	41.6
North: Mamre Road (1250m)															
7	L2	All MCs	66	14.3	66	14.3	0.058	13.8	LOS A	1.2	9.8	0.35	0.69	0.35	61.1
8	T1	All MCs	1479	17.3	1479	17.3	0.755	9.3	LOS A	23.1	185.3	0.58	0.54	0.58	73.3
9	R2	All MCs	99	30.9	99	30.9	0.602	73.0	LOS F	3.1	27.5	1.00	0.79	1.09	40.1
Approach			1644	18.0	1644	18.0	0.755	13.3	LOS A	23.1	185.3	0.60	0.56	0.60	69.8
West: Bakers Ln															
10	L2	All MCs	229	17.0	229	17.0	0.673	54.0	LOS D	12.7	102.1	0.98	0.84	0.99	44.1
11	T1	All MCs	1	0.0	1	0.0	0.673	62.3	LOS E	12.7	102.1	0.98	0.84	0.99	36.2
12	R2	All MCs	107	16.7	107	16.7	* 0.736	68.3	LOS E	6.7	53.2	1.00	0.88	1.16	37.9
Approach			338	16.8	338	16.8	0.736	58.6	LOS E	12.7	102.1	0.98	0.85	1.04	42.1
All Vehicles			3896	16.0	3896	16.0	0.779	19.5	LOS B	25.3	201.0	0.66	0.61	0.67	64.9

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

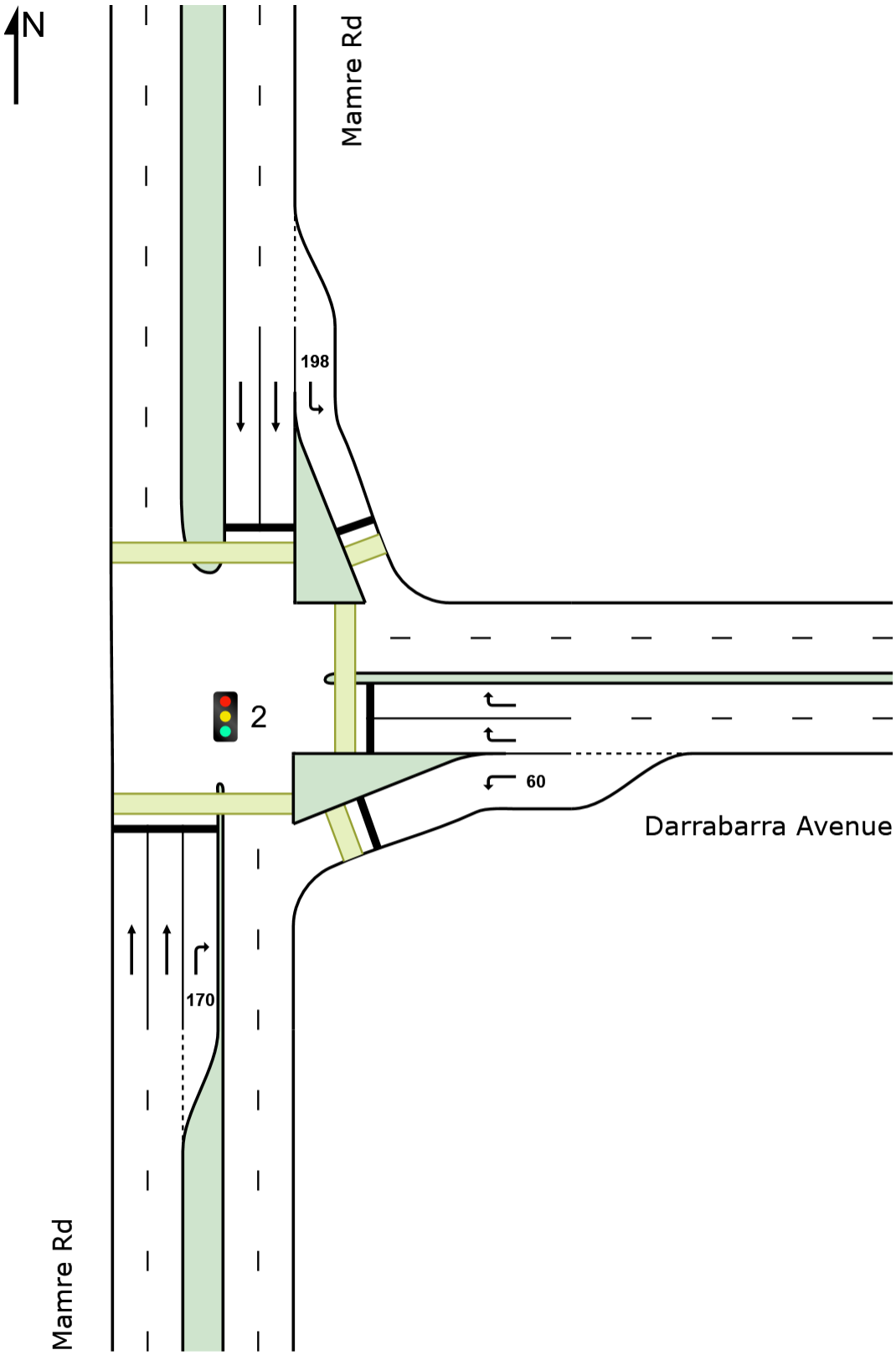
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue- AM (Site Folder: 2036 Base)]

Mamre Road x Darrabarra Avenue
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	1308	14.5	1308	14.5	0.513	6.8	LOS A	15.7	123.2	0.45	0.41	0.45	70.5

3	R2	All MCs	115	19.3	115	19.3	* 0.633	65.0	LOS E	6.8	55.1	1.00	0.81	1.04	37.4
Approach			1423	14.9	1423	14.9	0.633	11.5	LOS A	15.7	123.2	0.50	0.45	0.50	64.5
East: Darrabarra Avenue															
4	L2	All MCs	36	38.2	36	38.2	0.158	54.0	LOS D	1.8	17.2	0.90	0.73	0.90	38.9
6	R2	All MCs	259	37.4	259	37.4	* 0.645	60.5	LOS E	7.5	69.5	0.99	0.83	1.03	25.5
Approach			295	37.5	295	37.5	0.645	59.7	LOS E	7.5	69.5	0.98	0.82	1.02	27.5
North: Mamre Rd															
7	L2	All MCs	481	19.0	481	19.0	0.524	24.1	LOS B	16.9	137.9	0.66	0.80	0.66	40.1
8	T1	All MCs	1209	19.5	1209	19.5	* 0.638	18.2	LOS B	23.5	192.0	0.73	0.66	0.73	58.8
Approach			1691	19.4	1691	19.4	0.638	19.9	LOS B	23.5	192.0	0.71	0.70	0.71	53.3
All Vehicles			3408	19.1	3408	19.1	0.645	19.8	LOS B	23.5	192.0	0.64	0.60	0.65	53.9

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

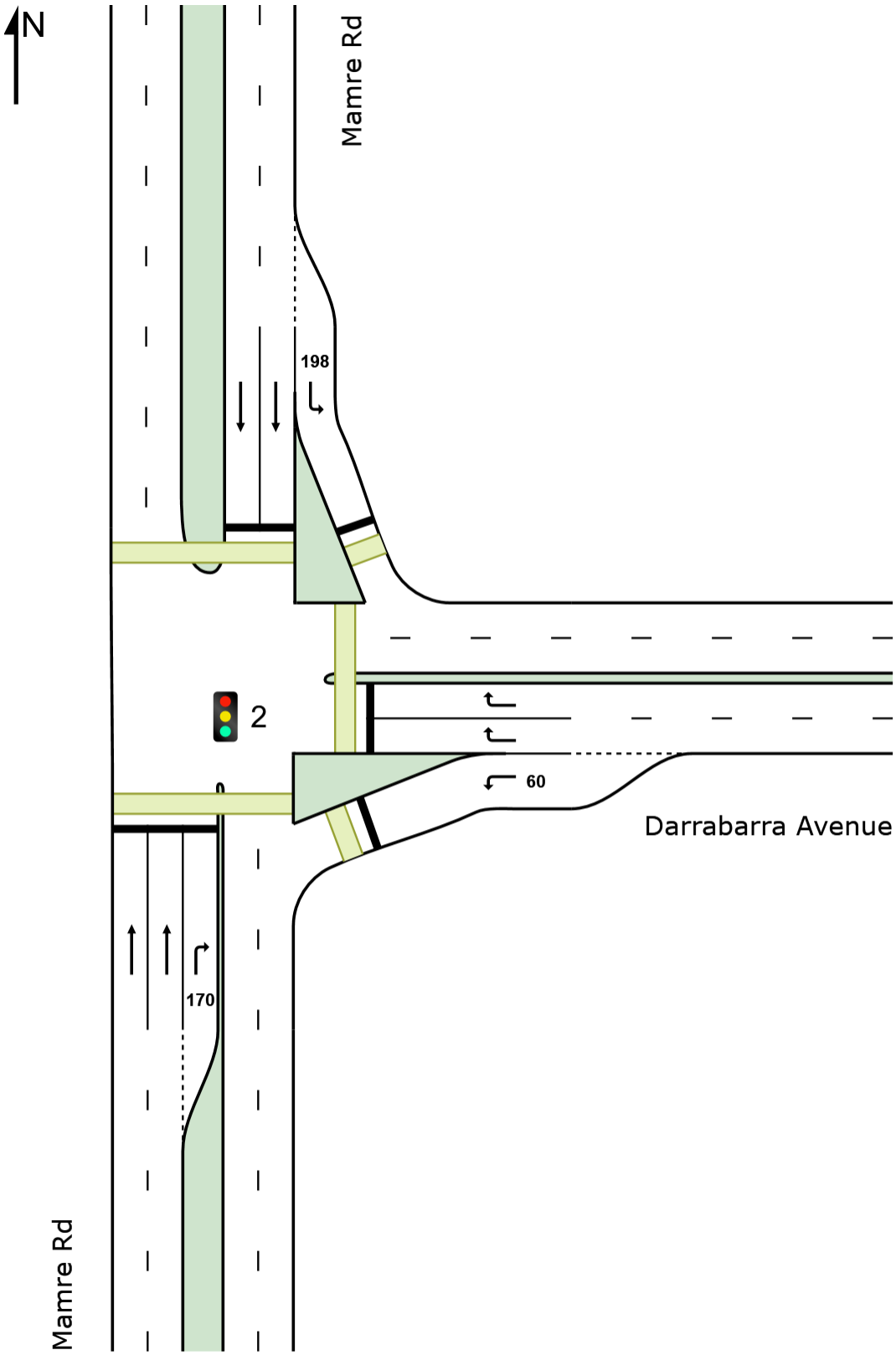
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue - PM (Site Folder: 2036 Base)]

Mamre Road x Mirvac Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	937	20.0	937	20.0	0.428	9.9	LOS A	12.6	103.1	0.50	0.45	0.50	66.9

3	R2	All MCs	58 38.2	58 38.2	* 0.746	75.9	LOS F	3.8	34.9	1.00	0.86	1.25	34.6
Approach			995 21.1	995 21.1	0.746	13.7	LOS A	12.6	103.1	0.53	0.47	0.55	62.5
East: Darrabarra Avenue													
4	L2	All MCs	75 16.9	75 16.9	0.187	50.7	LOS D	3.5	28.2	0.84	0.75	0.84	42.2
6	R2	All MCs	551 17.2	551 17.2	* 0.785	59.9	LOS E	16.5	132.7	1.00	0.90	1.11	26.6
Approach			625 17.2	625 17.2	0.785	58.8	LOS E	16.5	132.7	0.98	0.88	1.07	28.1
North: Mamre Rd													
7	L2	All MCs	202 38.0	202 38.0	0.265	22.5	LOS B	6.1	56.4	0.55	0.74	0.55	40.6
8	T1	All MCs	1515 18.1	1515 18.1	* 0.813	24.0	LOS B	36.3	293.2	0.88	0.82	0.89	54.3
Approach			1717 20.4	1717 20.4	0.813	23.8	LOS B	36.3	293.2	0.84	0.81	0.85	52.8
All Vehicles			3337 20.0	3337 20.0	0.813	27.4	LOS B	36.3	293.2	0.77	0.72	0.80	48.6

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

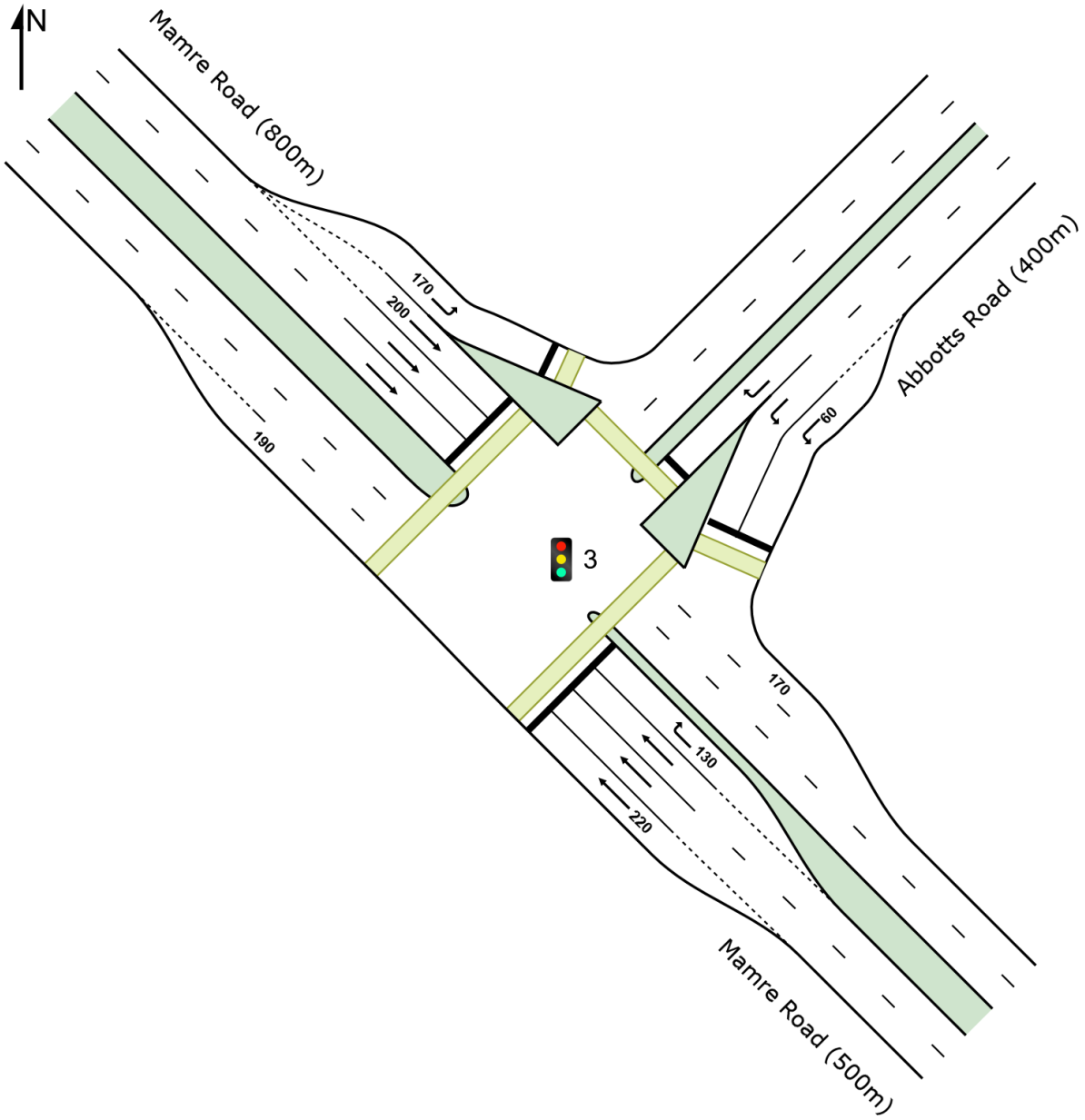
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - AM (Site Folder: 2036 Base)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	1399	14.7	1399	14.7	0.358	1.0	LOS A	0.8	6.5	0.03	0.03	0.03	79.6
3	R2	All MCs	272	18.2	272	18.2	* 0.547	44.4	LOS D	13.2	107.0	0.88	0.83	0.88	37.6
Approach			1671	15.3	1671	15.3	0.547	8.1	LOS A	13.2	107.0	0.17	0.16	0.17	68.9
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	96	36.3	96	36.3	0.069	22.1	LOS B	1.4	13.1	0.53	0.67	0.53	42.1
6	R2	All MCs	92	33.3	92	33.3	* 0.468	59.0	LOS E	5.1	46.1	0.96	0.78	0.96	36.5
Approach			187	34.8	187	34.8	0.468	40.1	LOS C	5.1	46.1	0.74	0.72	0.74	38.8
NorthWest: Mamre Road (800m)															
7	L2	All MCs	172	27.0	172	27.0	0.291	34.6	LOS C	6.9	59.2	0.73	0.78	0.73	46.0
8	T1	All MCs	1069	19.5	1069	19.5	* 0.557	23.4	LOS B	14.2	115.8	0.72	0.63	0.72	57.6
Approach			1241	20.5	1241	20.5	0.557	24.9	LOS B	14.2	115.8	0.72	0.65	0.72	55.6
All Vehicles			3099	18.6	3099	18.6	0.557	16.7	LOS B	14.2	115.8	0.43	0.39	0.43	60.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

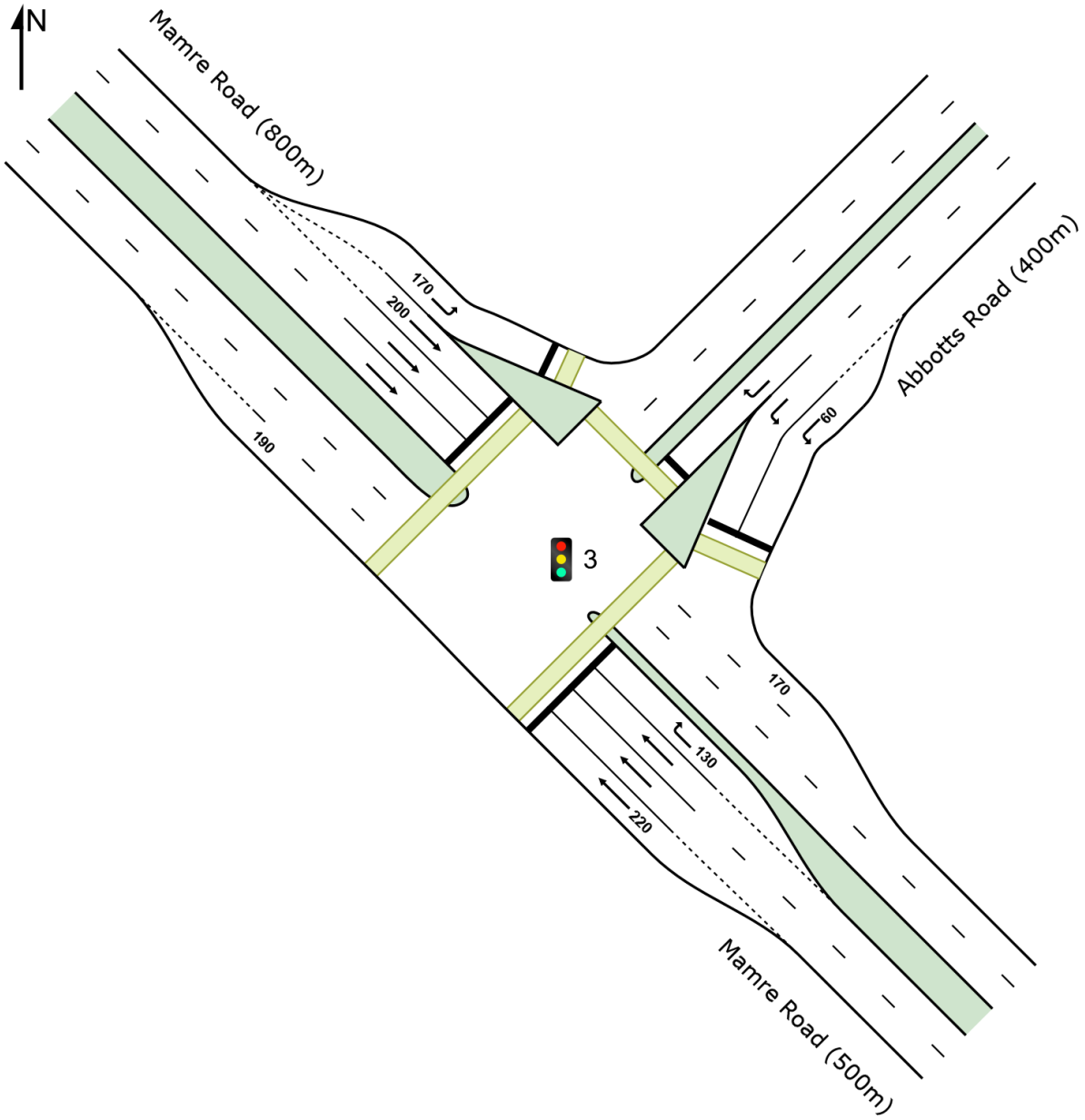
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - PM (Site Folder: 2036 Base)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	951	21.8	951	21.8	0.277	1.4	LOS A	1.4	11.4	0.08	0.07	0.08	78.6
3	R2	All MCs	124	37.3	124	37.3	* 0.618	61.9	LOS E	7.1	66.0	0.99	0.82	1.01	32.0
Approach			1075	23.6	1075	23.6	0.618	8.4	LOS A	7.1	66.0	0.19	0.16	0.19	68.8
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	284	16.3	284	16.3	0.223	33.0	LOS C	5.6	44.7	0.70	0.74	0.70	40.2
6	R2	All MCs	187	14.6	187	14.6	* 0.603	54.5	LOS D	10.2	80.7	0.97	0.82	0.97	38.3
Approach			472	15.6	472	15.6	0.603	41.6	LOS C	10.2	80.7	0.81	0.77	0.81	39.3
NorthWest: Mamre Road (800m)															
7	L2	All MCs	83	36.7	83	36.7	0.117	24.3	LOS B	2.5	23.1	0.55	0.72	0.55	50.7
8	T1	All MCs	1566	16.8	1566	16.8	* 0.615	14.5	LOS B	16.9	135.3	0.59	0.53	0.59	65.1
Approach			1649	17.8	1649	17.8	0.615	15.0	LOS B	16.9	135.3	0.59	0.54	0.59	64.1
All Vehicles			3196	19.4	3196	19.4	0.618	16.7	LOS B	16.9	135.3	0.49	0.45	0.49	60.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

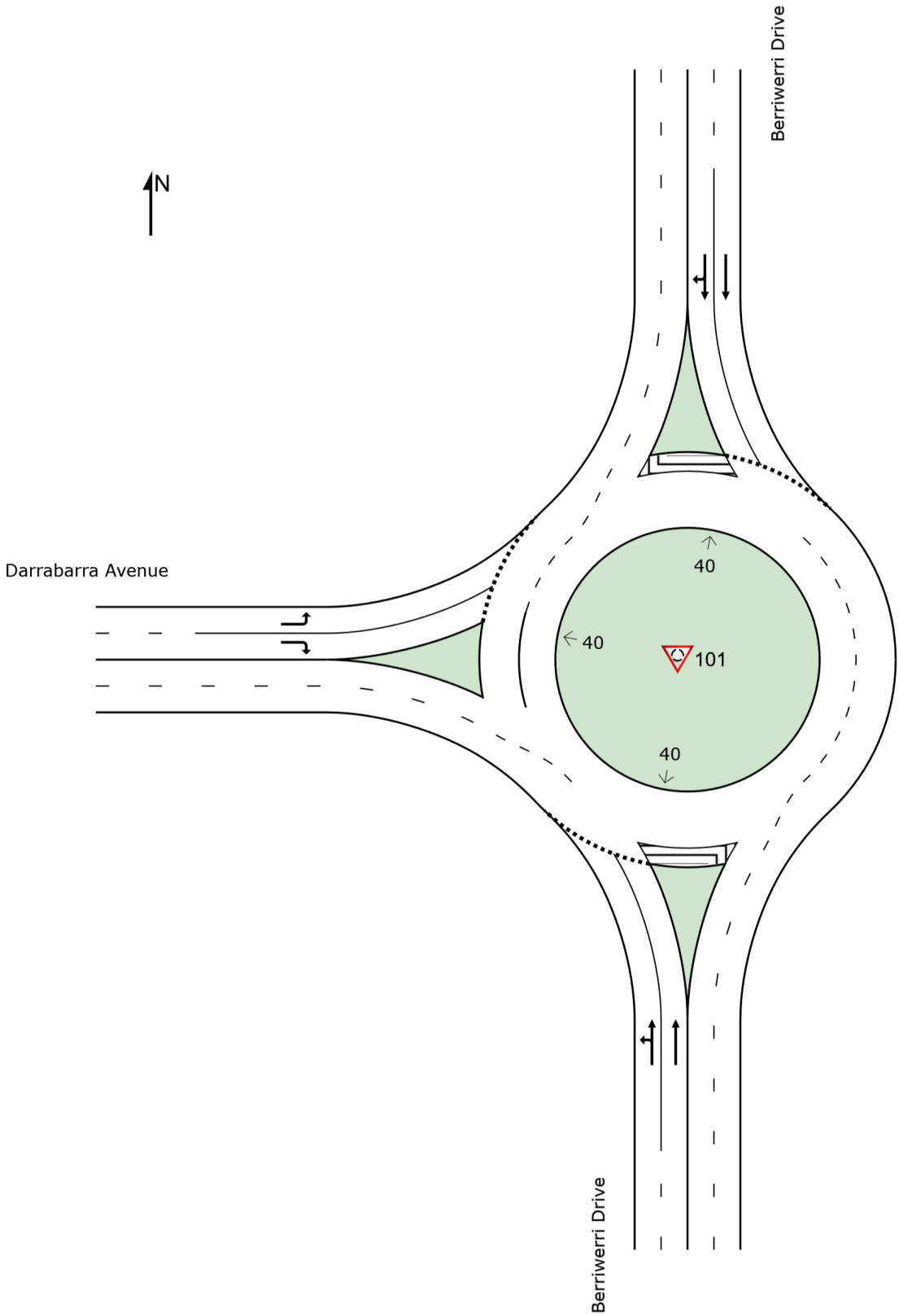
* Critical Movement (Signal Timing)

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - AM (Site Folder: 2036 Base)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	160	37.5	160	37.5	0.104	3.6	LOS A	0.6	5.3	0.13	0.38	0.13	55.0
2	T1	All MCs	1	0.0	1	0.0	0.001	2.9	LOS A	0.0	0.0	0.13	0.27	0.13	56.4
Approach			161	37.3	161	37.3	0.104	3.6	LOS A	0.6	5.3	0.13	0.38	0.13	55.0
North: Berriwerri Drive															
8	T1	All MCs	1	0.0	1	0.0	0.001	3.7	LOS A	0.0	0.0	0.41	0.33	0.41	55.3
9	R2	All MCs	26	36.0	26	36.0	0.021	10.9	LOS A	0.1	0.9	0.40	0.59	0.40	49.8
Approach			27	34.6	27	34.6	0.021	10.6	LOS A	0.1	0.9	0.40	0.58	0.40	50.0
West: Darrabarra Avenue															
10	L2	All MCs	55	19.2	55	19.2	0.045	3.3	LOS A	0.2	1.4	0.01	0.38	0.01	56.1
12	R2	All MCs	303	19.1	303	19.1	0.178	9.6	LOS A	0.8	6.4	0.01	0.62	0.01	51.1
Approach			358	19.1	358	19.1	0.178	8.6	LOS A	0.8	6.4	0.01	0.58	0.01	51.8
All Vehicles			546	25.2	546	25.2	0.178	7.2	LOS A	0.8	6.4	0.07	0.52	0.07	52.6

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.

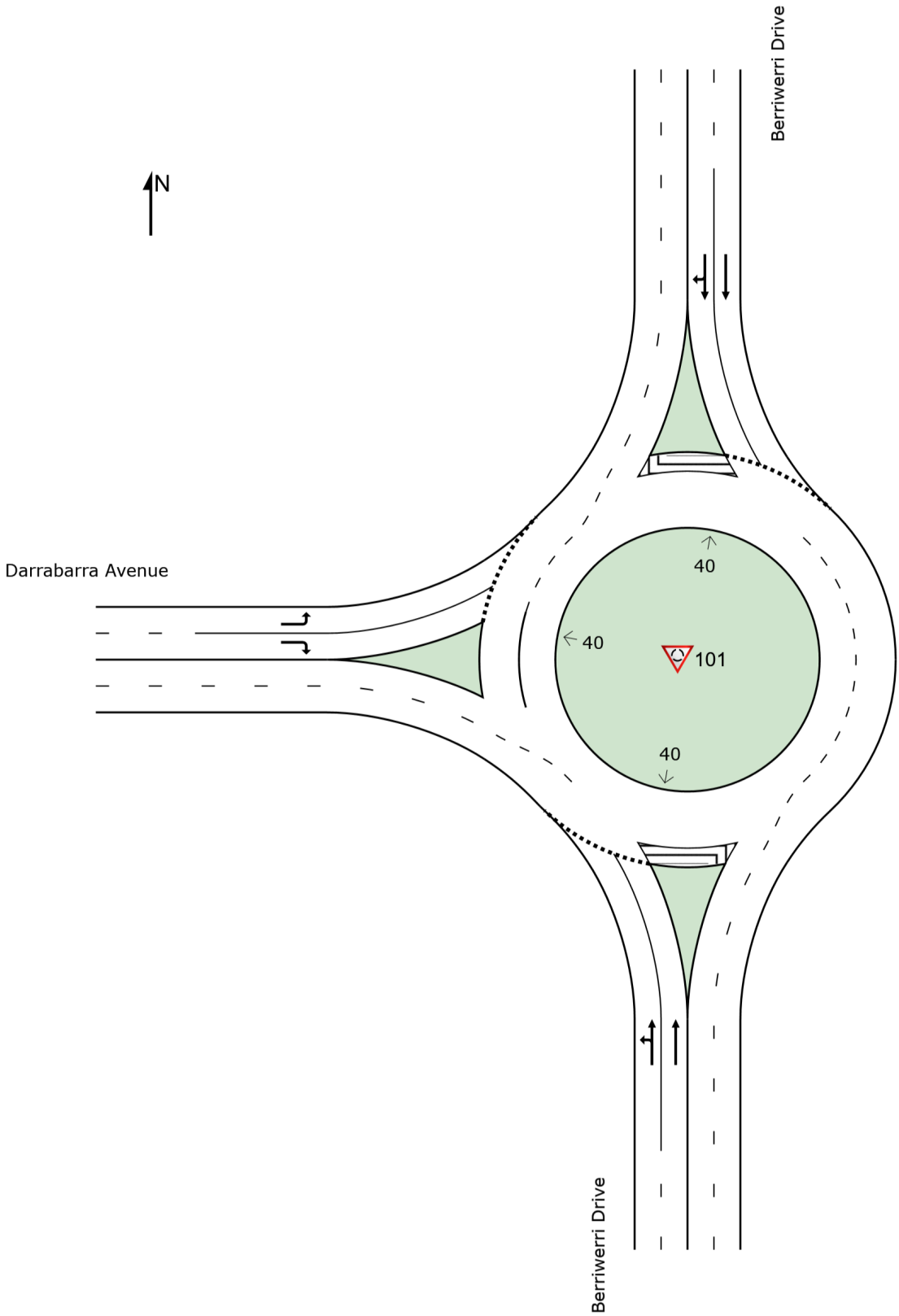
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - PM (Site Folder: 2036 Base)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	341	17.3	341	17.3	0.206	3.5	LOS A	1.2	9.7	0.20	0.39	0.20	55.2
2	T1	All MCs	1	0.0	1	0.0	0.001	3.0	LOS A	0.0	0.0	0.18	0.27	0.18	56.2
Approach			342	17.2	342	17.2	0.206	3.5	LOS A	1.2	9.7	0.20	0.39	0.20	55.2
North: Berriwerri Drive															
8	T1	All MCs	1	0.0	1	0.0	0.001	3.0	LOS A	0.0	0.0	0.28	0.29	0.28	56.0
9	R2	All MCs	56	17.0	56	17.0	0.036	10.0	LOS A	0.2	1.3	0.26	0.58	0.26	50.7
Approach			57	16.7	57	16.7	0.036	9.8	LOS A	0.2	1.3	0.26	0.57	0.26	50.8
West: Darrabarra Avenue															
10	L2	All MCs	24	39.1	24	39.1	0.022	3.5	LOS A	0.1	0.8	0.02	0.38	0.02	55.7
12	R2	All MCs	129	38.2	129	38.2	0.083	9.8	LOS A	0.3	3.2	0.01	0.60	0.01	50.7
Approach			154	38.4	154	38.4	0.083	8.8	LOS A	0.3	3.2	0.01	0.57	0.01	51.4
All Vehicles			553	23.0	553	23.0	0.206	5.6	LOS A	1.2	9.7	0.15	0.46	0.15	53.5

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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.

USER REPORT FOR SITE

Project: P3168m1v2_Mamre Road Data Campus 2036

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Template: Default Site User Report

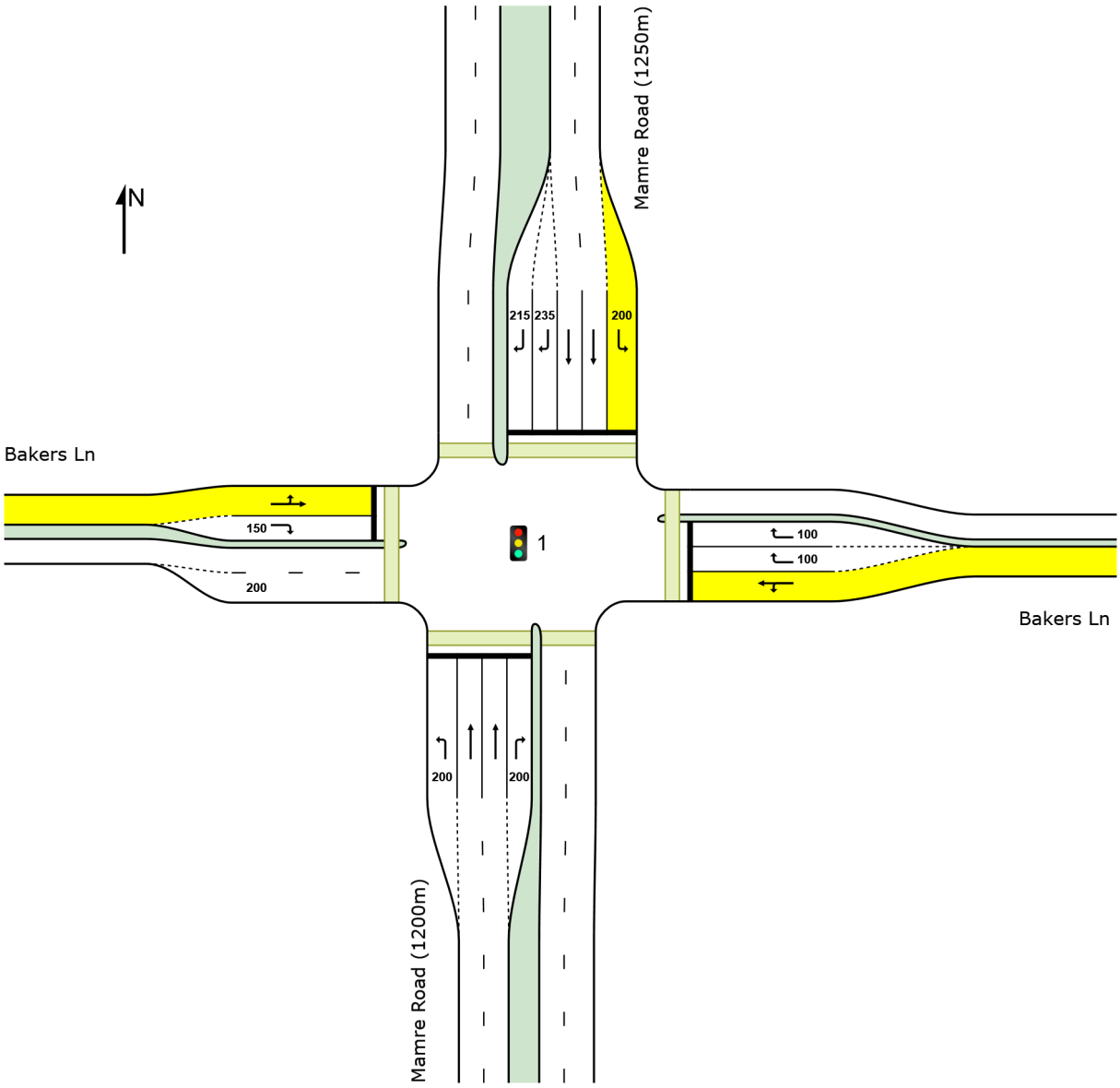
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - AM (2) (Site Folder: 2036 Project)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, C*, D, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	121	17.4	121	17.4	0.139	15.7	LOS B	2.2	17.7	0.53	0.72	0.53	58.0
2	T1	All MCs	1262	21.0	1262	21.0	0.788	18.0	LOS B	26.6	219.5	0.77	0.71	0.78	68.0
3	R2	All MCs	80	1.3	80	1.3	*0.741	73.2	LOS F	5.0	35.7	1.00	0.85	1.19	37.9
Approach			1463	19.6	1463	19.6	0.788	20.8	LOS B	26.6	219.5	0.76	0.72	0.78	65.1
East: Bakers Ln															
4	L2	All MCs	54	5.9	54	5.9	0.170	50.2	LOS D	2.7	20.0	0.88	0.74	0.88	43.2
5	T1	All MCs	1	0.0	1	0.0	0.170	57.5	LOS E	2.7	20.0	0.88	0.74	0.88	37.2
6	R2	All MCs	102	3.1	102	3.1	0.562	70.5	LOS F	3.2	22.7	1.00	0.77	1.05	40.8
Approach			157	4.0	157	4.0	0.562	63.5	LOS E	3.2	22.7	0.96	0.76	0.99	41.5
North: Mamre Road (1250m)															
7	L2	All MCs	243	5.6	243	5.6	0.187	13.2	LOS A	4.7	34.3	0.36	0.71	0.36	61.5
8	T1	All MCs	1731	19.0	1731	19.0	*0.848	10.3	LOS A	31.2	254.1	0.64	0.61	0.66	72.7
9	R2	All MCs	208	17.7	208	17.7	0.496	39.3	LOS C	4.1	33.4	0.97	0.78	0.97	50.0
Approach			2182	17.4	2182	17.4	0.848	13.4	LOS A	31.2	254.1	0.64	0.64	0.66	68.8
West: Bakers Ln															
10	L2	All MCs	113	35.5	113	35.5	0.303	33.5	LOS C	4.6	42.0	0.84	0.76	0.84	49.8
11	T1	All MCs	1	0.0	1	0.0	*0.303	63.3	LOS E	4.6	42.0	0.84	0.76	0.84	42.6
12	R2	All MCs	56	34.0	56	34.0	*0.812	77.0	LOS F	3.7	33.6	1.00	0.91	1.37	35.5
Approach			169	34.8	169	34.8	0.812	48.0	LOS D	4.6	42.0	0.89	0.81	1.01	44.4
All Vehicles			3972	18.4	3972	18.4	0.848	19.6	LOS B	31.2	254.1	0.71	0.68	0.73	64.7

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

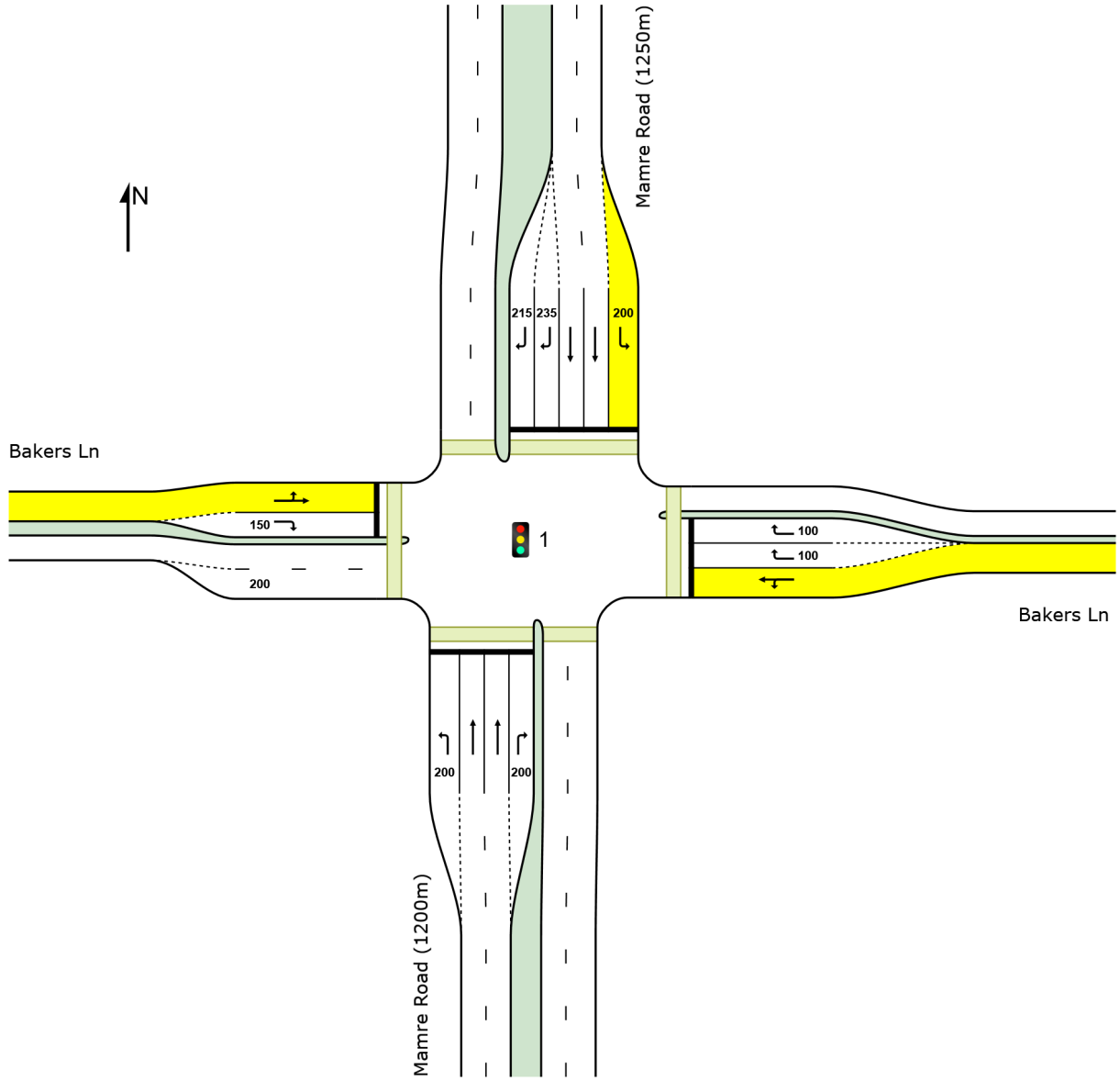
Site: 1 [[ID: 1] Bakers Lane / Mamre Road - PM (2) (Site Folder: 2036 Project)]

Bakers Lane / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Double Diamond Overlap
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, G
Output Phase Sequence: A, D, D1*, E, G
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



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: Mamre Road (1200m)															
1	L2	All MCs	79	26.7	79	26.7	0.073	12.9	LOS A	1.3	11.6	0.32	0.69	0.32	59.3
2	T1	All MCs	1639	14.8	1639	14.8	* 0.807	9.3	LOS A	27.6	217.6	0.63	0.58	0.63	73.4
3	R2	All MCs	71	1.5	71	1.5	* 0.655	71.8	LOS F	4.4	31.0	1.00	0.81	1.10	38.3
Approach			1788	14.8	1788	14.8	0.807	11.9	LOS A	27.6	217.6	0.63	0.60	0.64	70.8
East: Bakers Ln															
4	L2	All MCs	83	5.1	83	5.1	0.269	52.2	LOS D	4.3	31.6	0.91	0.77	0.91	42.6
5	T1	All MCs	1	0.0	1	0.0	* 0.269	59.8	LOS E	4.3	31.6	0.91	0.77	0.91	36.6
6	R2	All MCs	131	2.4	131	2.4	0.714	72.3	LOS F	4.1	29.6	1.00	0.84	1.18	40.4
Approach			215	3.4	215	3.4	0.714	64.5	LOS E	4.3	31.6	0.96	0.81	1.07	41.2
North: Mamre Road (1250m)															
7	L2	All MCs	66	14.3	66	14.3	0.058	13.8	LOS A	1.2	9.8	0.35	0.69	0.35	61.1
8	T1	All MCs	1508	17.0	1508	17.0	0.757	8.7	LOS A	22.9	183.4	0.57	0.52	0.57	73.7
9	R2	All MCs	99	30.9	99	30.9	0.602	73.0	LOS F	3.1	27.5	1.00	0.79	1.09	40.1
Approach			1674	17.7	1674	17.7	0.757	12.7	LOS A	22.9	183.4	0.59	0.55	0.59	70.2
West: Bakers Ln															
10	L2	All MCs	229	17.0	229	17.0	0.673	54.0	LOS D	12.7	102.1	0.98	0.84	0.99	44.1
11	T1	All MCs	1	0.0	1	0.0	0.673	62.3	LOS E	12.7	102.1	0.98	0.84	0.99	36.2
12	R2	All MCs	107	16.7	107	16.7	* 0.810	71.9	LOS F	6.9	55.1	1.00	0.93	1.26	37.0
Approach			338	16.8	338	16.8	0.810	59.7	LOS E	12.7	102.1	0.98	0.87	1.08	41.8
All Vehicles			4015	15.6	4015	15.6	0.810	19.1	LOS B	27.6	217.6	0.66	0.61	0.68	65.2

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

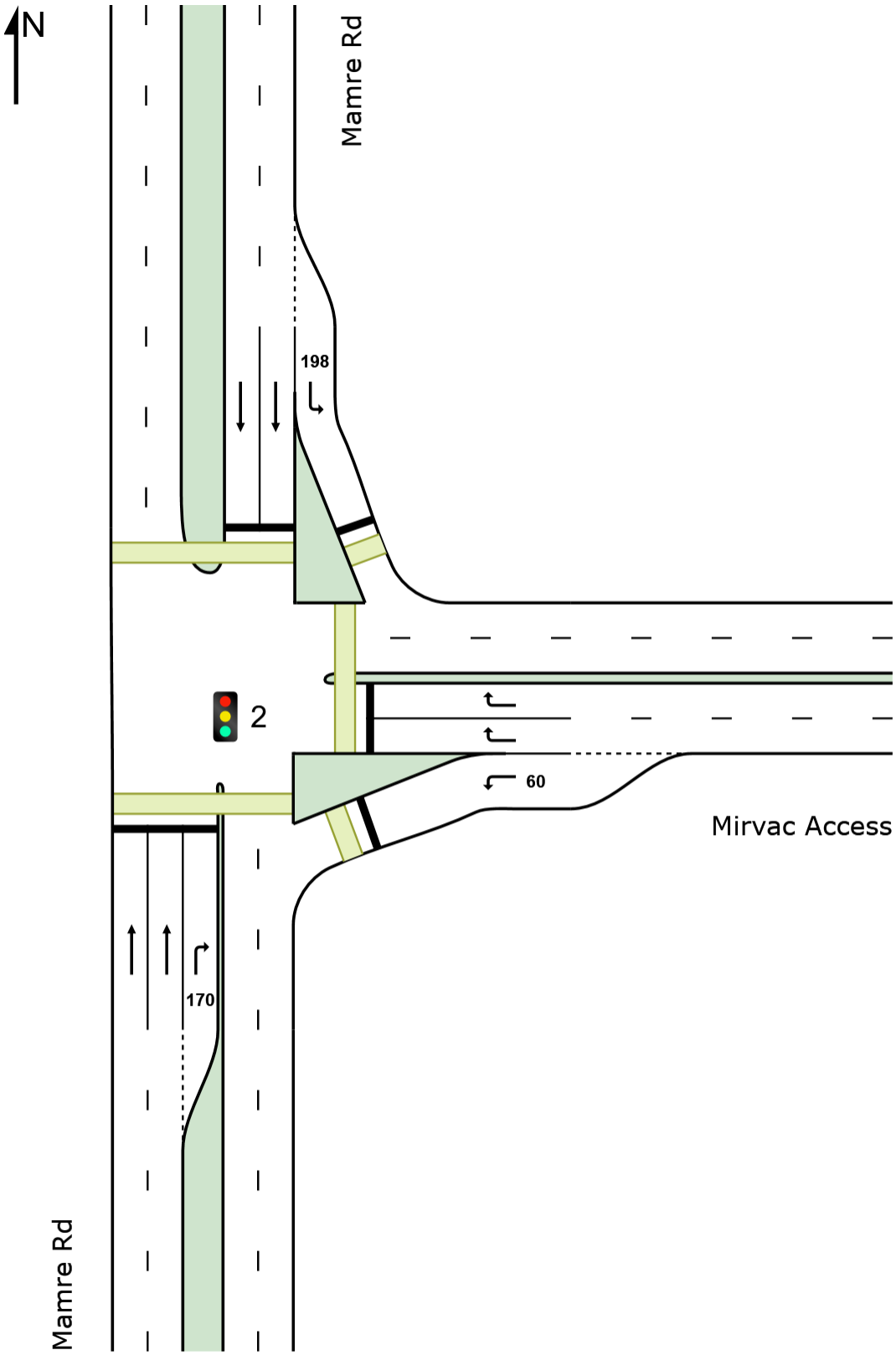
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue - AM (2) (Site Folder: 2036 Project)]

Mamre Road x Mirvac Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	1220	14.5	1220	14.5	0.489	7.4	LOS A	14.9	117.5	0.46	0.42	0.46	69.8

3	R2	All MCs	151	14.7	151	14.7	* 0.656	62.4	LOS E	8.7	68.7	1.00	0.83	1.03	38.1
Approach			1371	14.5	1371	14.5	0.656	13.5	LOS A	14.9	117.5	0.52	0.46	0.52	62.5
East: Mirvac Access															
4	L2	All MCs	48	28.3	48	28.3	0.179	52.0	LOS D	2.5	21.3	0.89	0.74	0.89	39.8
6	R2	All MCs	287	34.1	287	34.1	* 0.628	58.2	LOS E	8.2	73.8	0.98	0.82	1.00	26.1
Approach			336	33.2	336	33.2	0.628	57.3	LOS E	8.2	73.8	0.97	0.81	0.98	28.5
North: Mamre Rd															
7	L2	All MCs	552	16.8	552	16.8	0.634	28.6	LOS C	22.6	180.8	0.76	0.83	0.76	37.7
8	T1	All MCs	1135	19.5	1135	19.5	* 0.645	21.2	LOS B	23.4	191.3	0.77	0.69	0.77	56.3
Approach			1686	18.6	1686	18.6	0.645	23.7	LOS B	23.4	191.3	0.77	0.74	0.77	50.0
All Vehicles			3393	18.4	3393	18.4	0.656	22.9	LOS B	23.4	191.3	0.69	0.64	0.69	51.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

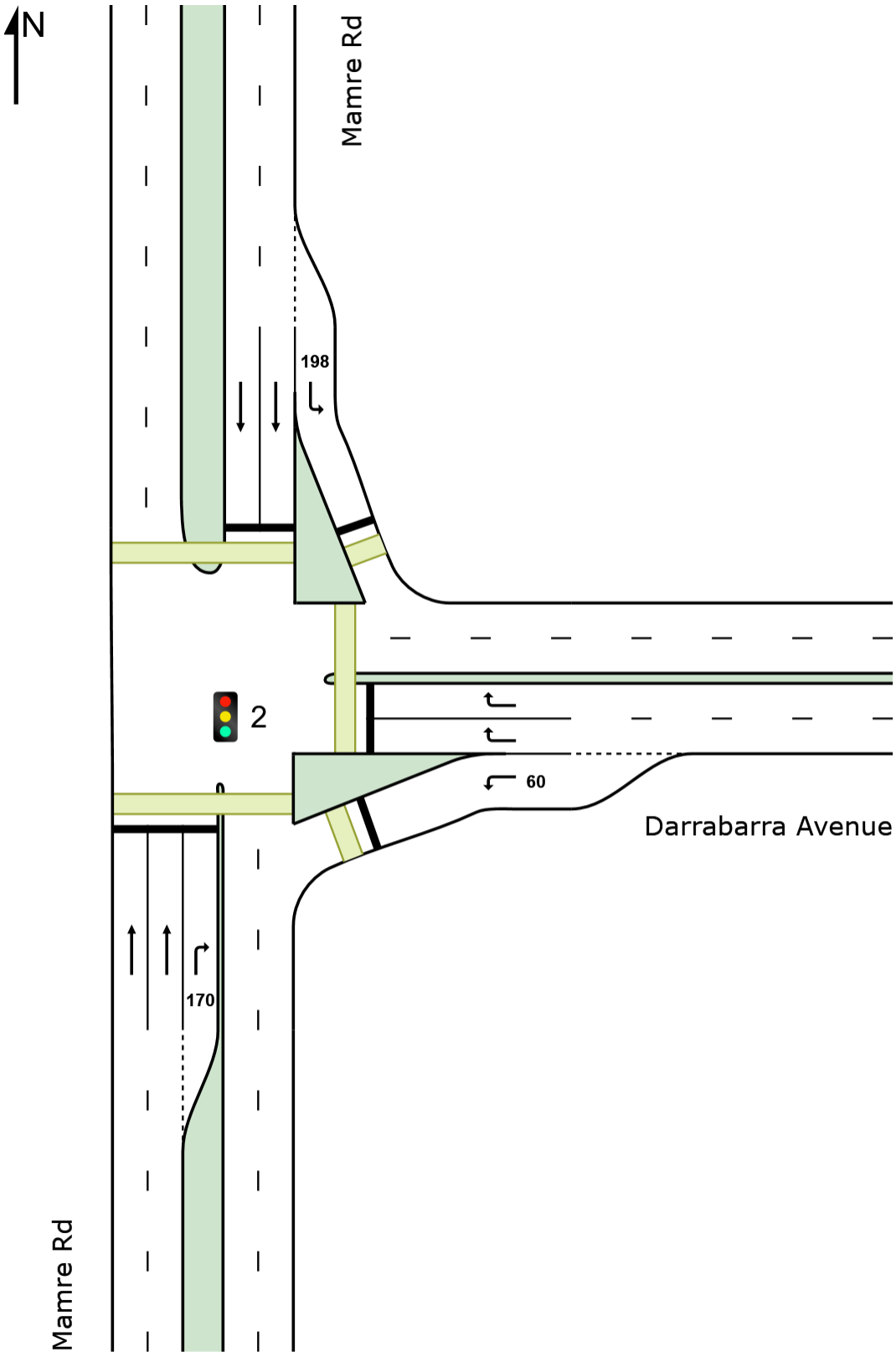
Site: 2 [[ID: 2] Mamre Road x Darrabarra Avenue - PM (2) (Site Folder: 2036 Project)]

Mamre Road x Mirvac Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - UGPT
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Site Layout

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



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: Mamre Rd															
2	T1	All MCs	937	20.0	937	20.0	0.439	10.9	LOS A	13.2	108.4	0.53	0.47	0.53	65.8

3	R2	All MCs	79	29.3	79	29.3	* 0.830	77.4	LOS F	5.2	45.7	1.00	0.91	1.35	34.4
Approach			1016	20.7	1016	20.7	0.830	16.1	LOS B	13.2	108.4	0.56	0.51	0.59	60.3
East: Darrabarra Avenue															
4	L2	All MCs	116	11.8	116	11.8	0.258	53.8	LOS D	5.4	42.0	0.84	0.77	0.84	42.7
6	R2	All MCs	640	15.0	640	15.0	* 0.850	65.7	LOS E	20.8	164.2	1.00	0.96	1.18	25.8
Approach			756	14.5	756	14.5	0.850	63.9	LOS E	20.8	164.2	0.98	0.93	1.13	27.4
North: Mamre Rd															
7	L2	All MCs	232	33.2	232	33.2	0.306	24.4	LOS B	7.5	67.4	0.60	0.76	0.60	39.6
8	T1	All MCs	1515	18.1	1515	18.1	* 0.851	30.3	LOS C	40.6	328.1	0.93	0.90	0.98	50.0
Approach			1746	20.1	1746	20.1	0.851	29.6	LOS C	40.6	328.1	0.88	0.88	0.93	48.8
All Vehicles			3518	19.1	3518	19.1	0.851	33.0	LOS C	40.6	328.1	0.81	0.78	0.88	45.1

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

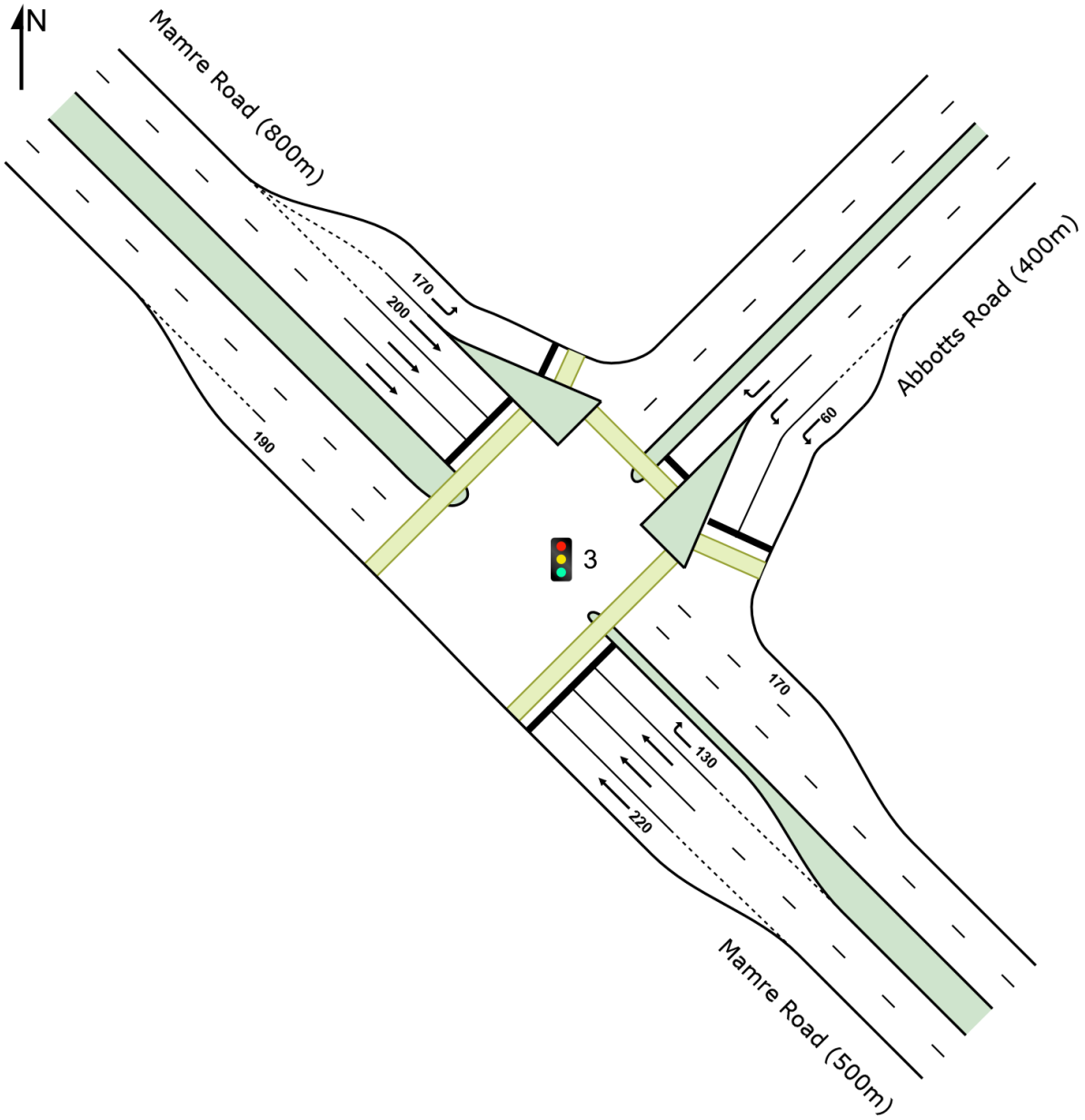
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - AM (2) (Site Folder: 2036 Project)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	1346	14.4	1346	14.4	0.344	0.9	LOS A	0.8	6.1	0.03	0.03	0.03	79.6
3	R2	All MCs	266	18.2	266	18.2	* 0.536	44.2	LOS D	12.9	104.4	0.88	0.82	0.88	37.7
Approach			1613	15.0	1613	15.0	0.536	8.1	LOS A	12.9	104.4	0.17	0.16	0.17	68.8
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	95	36.7	95	36.7	0.068	22.1	LOS B	1.4	13.0	0.53	0.67	0.53	42.0
6	R2	All MCs	91	33.7	91	33.7	* 0.464	58.9	LOS E	5.1	45.7	0.96	0.78	0.96	36.5
Approach			185	35.2	185	35.2	0.464	40.1	LOS C	5.1	45.7	0.74	0.72	0.74	38.8
NorthWest: Mamre Road (800m)															
7	L2	All MCs	168	26.9	168	26.9	0.285	34.6	LOS C	6.7	57.9	0.73	0.77	0.73	46.0
8	T1	All MCs	1011	19.4	1011	19.4	* 0.526	23.0	LOS B	13.1	106.8	0.70	0.61	0.70	57.8
Approach			1179	20.4	1179	20.4	0.526	24.6	LOS B	13.1	106.8	0.71	0.63	0.71	55.7
All Vehicles			2977	18.4	2977	18.4	0.536	16.6	LOS B	13.1	106.8	0.42	0.38	0.42	60.3

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

* Critical Movement (Signal Timing)

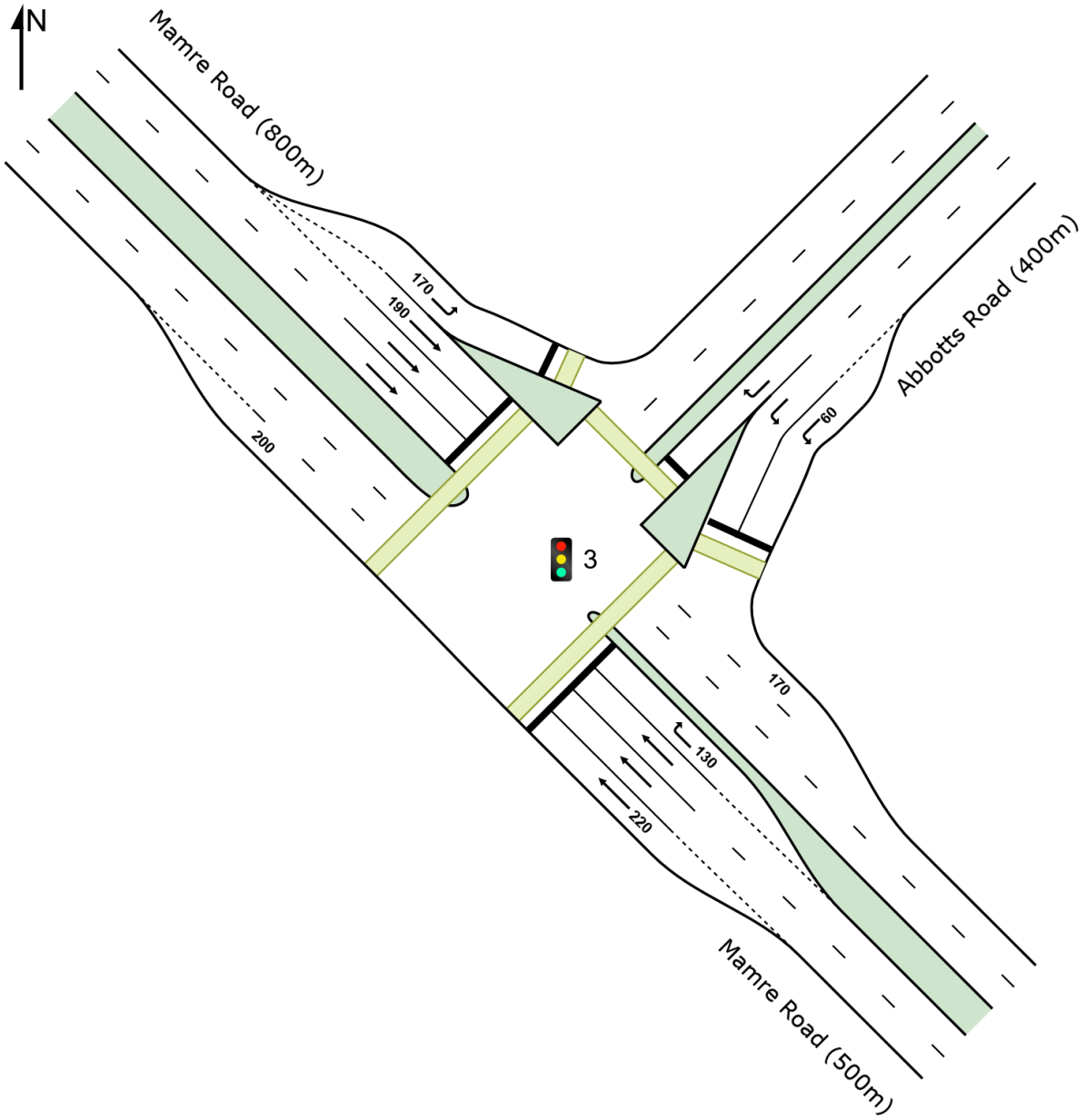
Site: 3 [[ID: 3] Abbotts Road / Mamre Road - PM (2) (Site Folder: 2036 Project)]

Abbotts Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Variable Phasing - Copy - Import (2)
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows	Arrival Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop	Aver. No. of	Aver. Speed

			[Total HV] veh/h	%	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m		Rate	Cycles	km/h
SouthEast: Mamre Road (500m)															
2	T1	All MCs	972	21.3	972	21.3	0.278	1.2	LOS A	1.1	9.4	0.07	0.06	0.07	78.9
3	R2	All MCs	127	37.2	127	37.2	* 0.600	60.6	LOS E	7.2	66.7	0.98	0.81	0.99	32.4
Approach			1099	23.2	1099	23.2	0.600	8.1	LOS A	7.2	66.7	0.17	0.14	0.17	69.2
NorthEast: Abbotts Road (400m)															
4	L2	All MCs	284	16.3	284	16.3	0.223	33.1	LOS C	5.6	44.7	0.70	0.74	0.70	40.2
6	R2	All MCs	187	14.6	187	14.6	* 0.630	55.6	LOS D	10.4	81.7	0.98	0.82	0.98	38.0
Approach			472	15.6	472	15.6	0.630	42.1	LOS C	10.4	81.7	0.81	0.77	0.81	39.1
NorthWest: Mamre Road (800m)															
7	L2	All MCs	83	36.7	83	36.7	0.117	24.3	LOS B	2.5	23.1	0.55	0.72	0.55	50.7
8	T1	All MCs	1606	16.4	1606	16.4	* 0.628	14.7	LOS B	17.6	140.6	0.60	0.54	0.60	65.0
Approach			1689	17.4	1689	17.4	0.628	15.2	LOS B	17.6	140.6	0.60	0.55	0.60	64.0
All Vehicles			3260	19.1	3260	19.1	0.630	16.7	LOS B	17.6	140.6	0.49	0.44	0.49	60.4

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

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

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

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

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

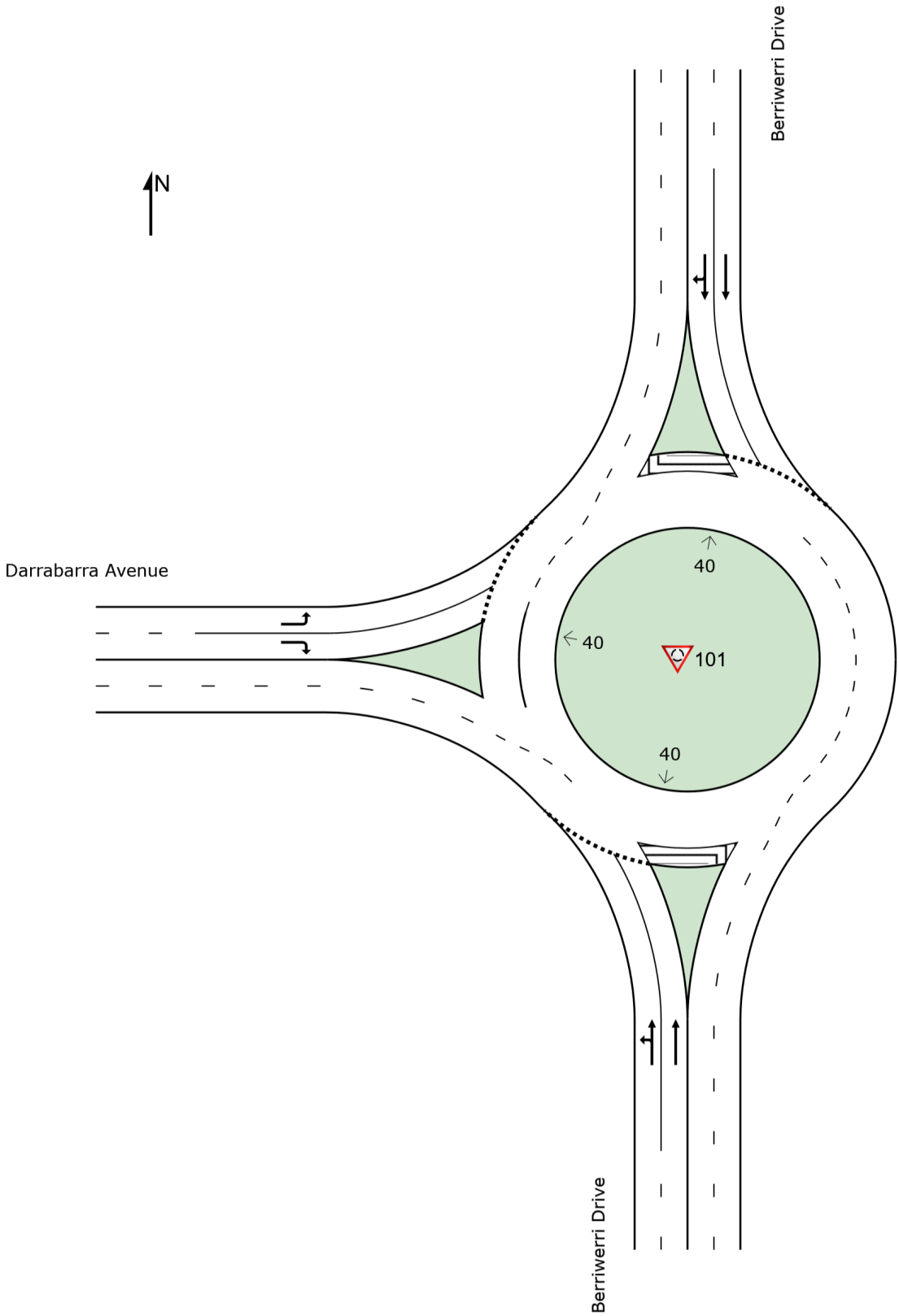
* Critical Movement (Signal Timing)

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - AM (2) (Site Folder: 2036 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive														
1	L2	All MCs	160	37.5	160	37.5	0.108	3.8	LOS A	0.6	5.5	0.22	0.39	0.22	54.7
2	T1	All MCs	1	0.0	1	0.0	0.001	3.0	LOS A	0.0	0.0	0.21	0.28	0.21	56.0
Approach			161	37.3	161	37.3	0.108	3.7	LOS A	0.6	5.5	0.22	0.39	0.22	54.7
North: Berriwerri Drive														
8	T1	All MCs	1	0.0	1	0.0	0.001	3.7	LOS A	0.0	0.0	0.41	0.33	0.41	55.3
9	R2	All MCs	68	16.9	68	16.9	0.048	10.6	LOS A	0.2	1.9	0.40	0.61	0.40	50.3
Approach			69	16.7	69	16.7	0.048	10.5	LOS A	0.2	1.9	0.40	0.60	0.40	50.4
West: Darrabarra Avenue														
10	L2	All MCs	161	7.2	161	7.2	0.110	3.2	LOS A	0.5	3.5	0.01	0.38	0.01	56.3
12	R2	All MCs	303	19.1	303	19.1	0.178	9.6	LOS A	0.8	6.7	0.01	0.62	0.01	51.1
Approach			464	15.0	464	15.0	0.178	7.4	LOS A	0.8	6.7	0.01	0.54	0.01	52.8
All Vehicles			695	20.3	695	20.3	0.178	6.9	LOS A	0.8	6.7	0.10	0.51	0.10	52.9

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

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

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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.

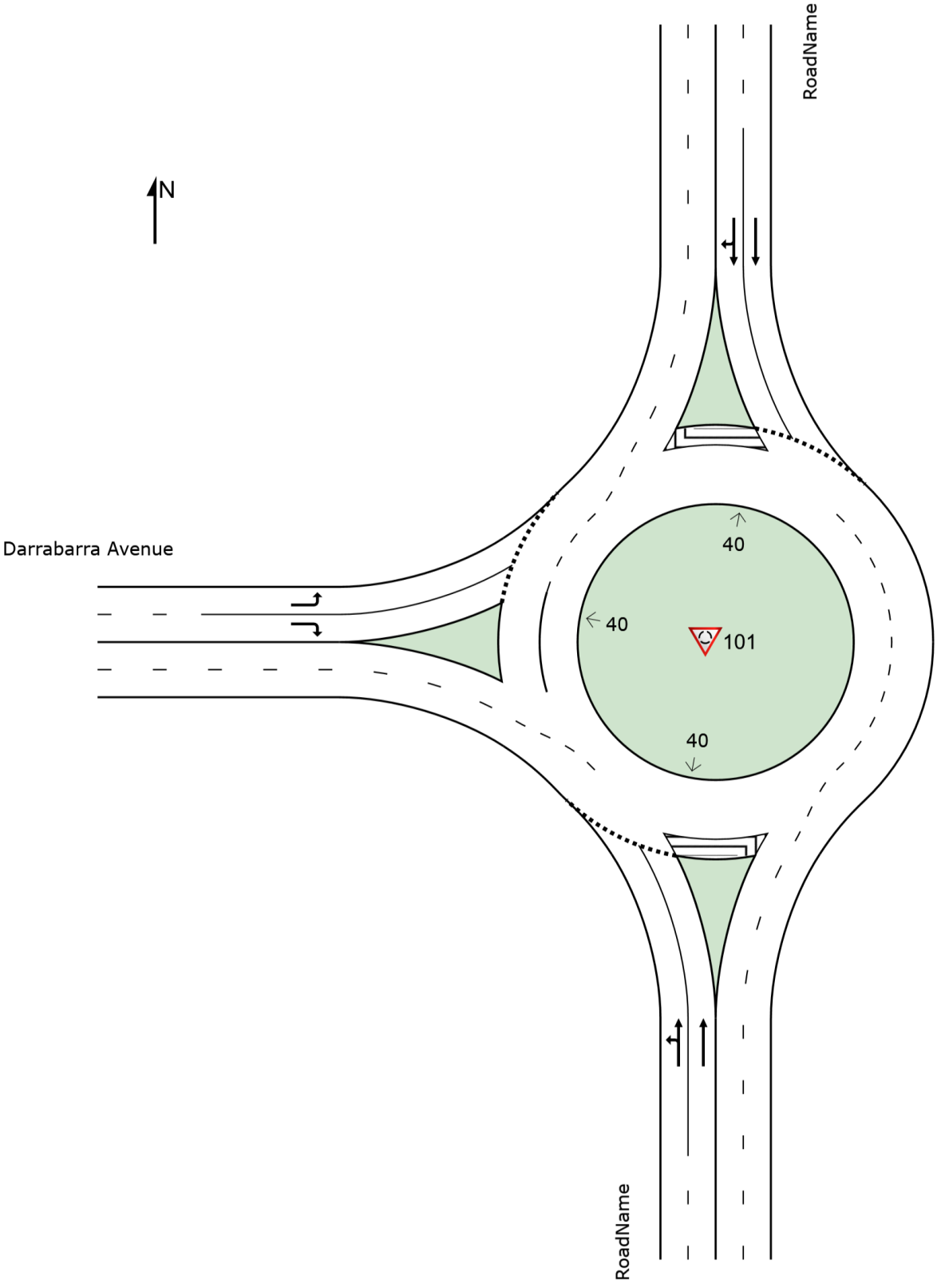
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 5] Darrabarra Avenue / Berriwerri Drive - PM (2) (Site Folder: 2036 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: RoadName															
1	L2	All MCs	341	17.3	341	17.3	0.227	4.1	LOS A	1.4	11.0	0.37	0.44	0.37	54.6
2	T1	All MCs	1	0.0	1	0.0	0.001	3.5	LOS A	0.0	0.0	0.34	0.31	0.34	55.3
Approach			342	17.2	342	17.2	0.227	4.1	LOS A	1.4	11.0	0.37	0.44	0.37	54.6
North: RoadName															
8	T1	All MCs	1	0.0	1	0.0	0.001	3.0	LOS A	0.0	0.0	0.28	0.28	0.28	56.0
9	R2	All MCs	187	6.2	187	6.2	0.113	9.9	LOS A	0.6	4.2	0.27	0.59	0.27	51.0
Approach			188	6.1	188	6.1	0.113	9.8	LOS A	0.6	4.2	0.27	0.59	0.27	51.0
West: Darrabarra Avenue															
10	L2	All MCs	77	13.7	77	13.7	0.054	3.3	LOS A	0.2	1.8	0.01	0.38	0.01	56.2
12	R2	All MCs	126	38.3	126	38.3	0.081	9.8	LOS A	0.4	3.3	0.01	0.60	0.01	50.7
Approach			203	29.0	203	29.0	0.081	7.3	LOS A	0.4	3.3	0.01	0.52	0.01	52.6
All Vehicles			734	17.6	734	17.6	0.227	6.4	LOS A	1.4	11.0	0.25	0.50	0.25	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.

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.

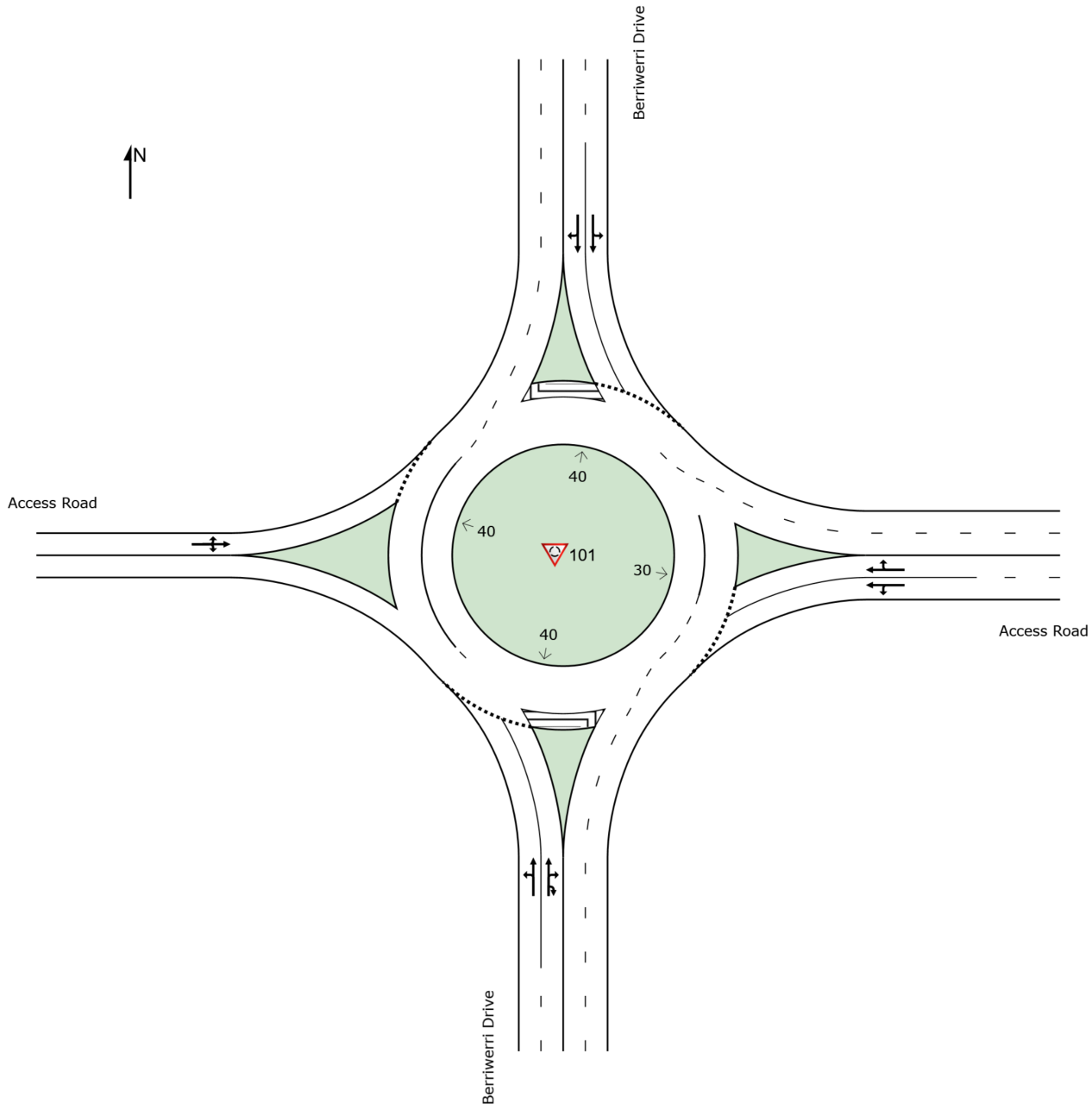
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 6] Berriwerri Drive / Access Road - AM (2) (Site Folder: 2036 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	75	1.4	75	1.4	0.039	3.2	LOS A	0.2	1.3	0.03	0.40	0.03	54.9
2	T1	All MCs	1	0.0	1	0.0	0.022	2.8	LOS A	0.1	0.7	0.03	0.63	0.03	52.0

3	R2	All MCs	32	0.0	32	0.0	0.022	9.4	LOS A	0.1	0.7	0.03	0.63	0.03	49.6
3u	U	All MCs	1	0.0	1	0.0	0.022	11.9	LOS A	0.1	0.7	0.03	0.63	0.03	51.8
Approach			108	1.0	108	1.0	0.039	5.1	LOS A	0.2	1.3	0.03	0.47	0.03	53.1
East: Access Road															
4	L2	All MCs	12	0.0	12	0.0	0.008	3.7	LOS A	0.0	0.2	0.09	0.41	0.09	54.1
5	T1	All MCs	1	0.0	1	0.0	0.002	3.3	LOS A	0.0	0.1	0.12	0.49	0.12	49.2
6	R2	All MCs	1	0.0	1	0.0	0.002	9.5	LOS A	0.0	0.1	0.12	0.49	0.12	50.4
Approach			14	0.0	14	0.0	0.008	4.1	LOS A	0.0	0.2	0.10	0.42	0.10	53.5
North: Berriwerri Drive															
7	L2	All MCs	1	0.0	1	0.0	0.001	3.3	LOS A	0.0	0.0	0.15	0.35	0.15	53.7
8	T1	All MCs	1	0.0	1	0.0	0.001	3.3	LOS A	0.0	0.0	0.16	0.42	0.16	54.5
9	R2	All MCs	1	0.0	1	0.0	0.001	9.5	LOS A	0.0	0.0	0.17	0.54	0.17	49.0
Approach			3	0.0	3	0.0	0.001	5.4	LOS A	0.0	0.0	0.16	0.43	0.16	52.5
West: Access Road															
10	L2	All MCs	1	0.0	1	0.0	0.023	3.1	LOS A	0.1	0.6	0.10	0.60	0.10	49.1
11	T1	All MCs	1	0.0	1	0.0	0.023	2.9	LOS A	0.1	0.6	0.10	0.60	0.10	46.7
12	R2	All MCs	29	3.6	29	3.6	0.023	9.5	LOS A	0.1	0.6	0.10	0.60	0.10	49.4
Approach			32	3.3	32	3.3	0.023	9.1	LOS A	0.1	0.6	0.10	0.60	0.10	49.3
All Vehicles			157	1.3	157	1.3	0.039	5.8	LOS A	0.2	1.3	0.05	0.49	0.05	52.2

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.

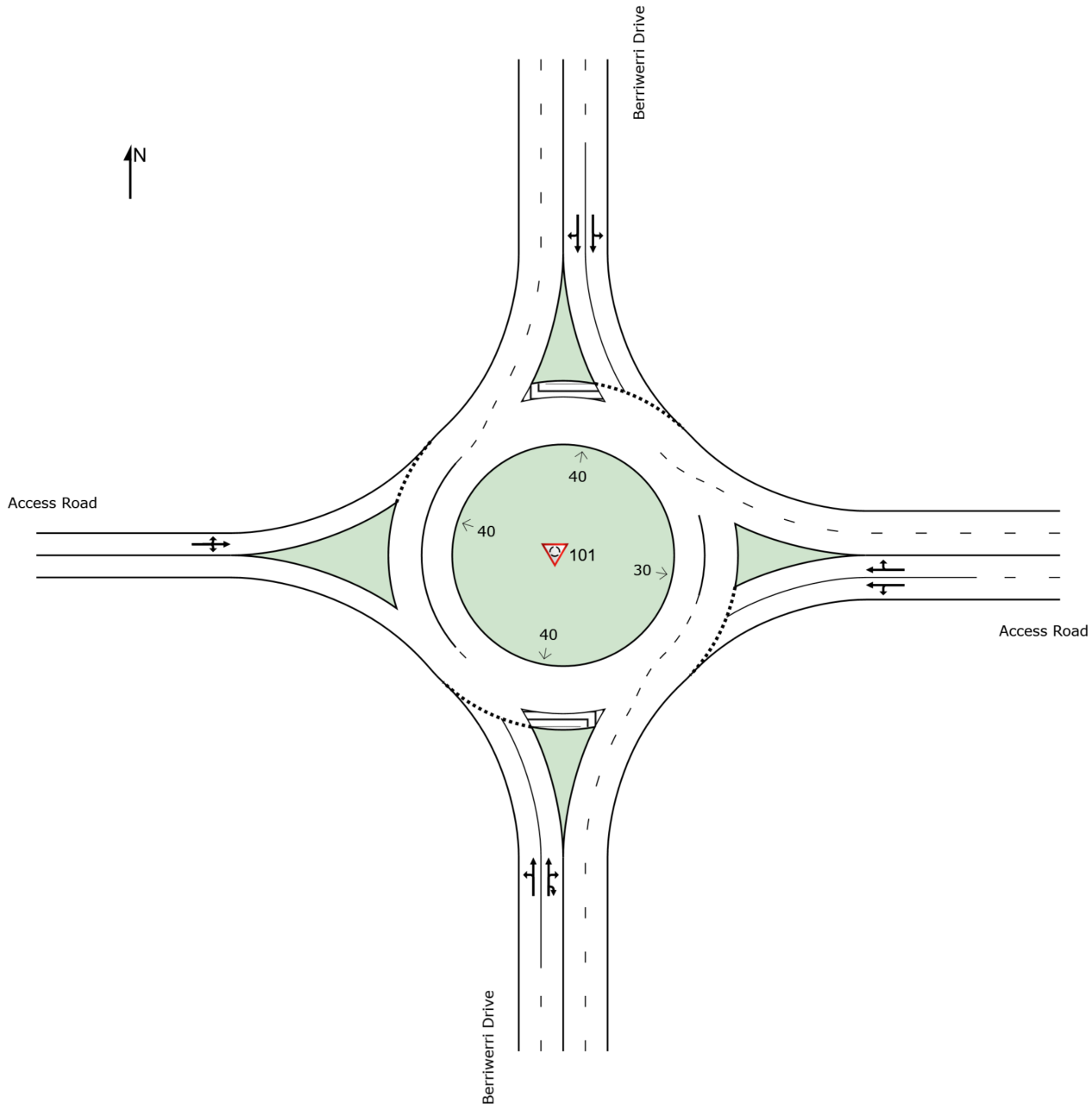
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Site: 101 [[ID: 6] Berriwerri Drive / Access Road - PM (2) (Site Folder: 2036 Project)]

New Site
Site Category: (None)
Roundabout

Site Layout

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



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: Berriwerri Drive															
1	L2	All MCs	37	2.9	37	2.9	0.020	3.2	LOS A	0.1	0.7	0.03	0.40	0.03	54.7
2	T1	All MCs	1	0.0	1	0.0	0.012	2.8	LOS A	0.1	0.4	0.03	0.62	0.03	52.1

3	R2	All MCs	16	0.0	16	0.0	0.012	9.4	LOS A	0.1	0.4	0.03	0.62	0.03	49.7
3u	U	All MCs	1	0.0	1	0.0	0.012	11.9	LOS A	0.1	0.4	0.03	0.62	0.03	51.9
Approach			55	1.9	55	1.9	0.020	5.2	LOS A	0.1	0.7	0.03	0.47	0.03	52.9
East: Access Road															
4	L2	All MCs	39	0.0	39	0.0	0.026	3.9	LOS A	0.1	0.7	0.17	0.42	0.17	53.7
5	T1	All MCs	1	0.0	1	0.0	0.002	3.5	LOS A	0.0	0.1	0.21	0.49	0.21	48.7
6	R2	All MCs	1	0.0	1	0.0	0.002	9.8	LOS A	0.0	0.1	0.21	0.49	0.21	50.0
Approach			41	0.0	41	0.0	0.026	4.0	LOS A	0.1	0.7	0.18	0.43	0.18	53.5
North: Berriwerri Drive															
7	L2	All MCs	1	0.0	1	0.0	0.001	3.4	LOS A	0.0	0.0	0.21	0.35	0.21	53.3
8	T1	All MCs	1	0.0	1	0.0	0.001	3.4	LOS A	0.0	0.0	0.21	0.41	0.21	54.3
9	R2	All MCs	1	0.0	1	0.0	0.001	9.7	LOS A	0.0	0.0	0.23	0.53	0.23	48.7
Approach			3	0.0	3	0.0	0.001	5.5	LOS A	0.0	0.0	0.22	0.43	0.22	52.2
West: Access Road															
10	L2	All MCs	1	0.0	1	0.0	0.063	3.0	LOS A	0.2	1.7	0.07	0.61	0.07	49.0
11	T1	All MCs	1	0.0	1	0.0	0.063	2.8	LOS A	0.2	1.7	0.07	0.61	0.07	46.6
12	R2	All MCs	92	1.1	92	1.1	0.063	9.4	LOS A	0.2	1.7	0.07	0.61	0.07	49.3
Approach			94	1.1	94	1.1	0.063	9.3	LOS A	0.2	1.7	0.07	0.61	0.07	49.3
All Vehicles			193	1.1	193	1.1	0.063	6.9	LOS A	0.2	1.7	0.08	0.53	0.08	51.2

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

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