

29 March 2023



Altis Property Partners
Level 19, 60 Castlereagh Street
Sydney NSW 2000

info@asongroup.com.au
+61 2 9083 6601
Suite 17.02, Level 17,
1 Castlereagh Street,
Sydney, NSW 2000
ABN: 81 168 423 872

Attn: Philip Grech; Development Manager

**RE: Access Logistics Park, 884-928 Mamre Road, Kemps Creek – SSD 17647189
Consolidated Stakeholder Engagement & Response to Submissions**

Dear Philip,

We refer to the relevant submissions received in relation to the State Significant Development known as the Access Logistics Park (SSD-17647189¹). Specifically, reference is made to comments received from Transport for NSW (TfNSW) in relation to a consolidated response to a previous RFI, dated 23 December 2022, after concerns were raised regarding the cumulative impact study and SIDRA modelling.

Therefore, reference is made to the following comments received:

- Transport for NSW, SSD 10101987 - Access Logistics Park - 884-928 Mamre Road, Kemps Creek, Dated 23 December 2022;
- Transport for NSW, SYD21/00462/07, Exhibition Of EIS – Access Logistics Park - 884-928 - Mamre Road -Kemps Creek, Dated 18 November 2021;
- Transport for NSW, SYD21/00462 - Draft RTS Report Submission - SSD-17647189 - 884-928 Mamre Road, Kemps Creek, dated 23 July 2022;
- VIAE Consulting, 884-928 Mamre Rd Kemps Creek (Access Logistics Park) – Transport Assessment Review (VC035M01_Altis Logistics).

A response to each of the TfNSW comments is provided below in the attachments.

With respect to the SIDRA modelling demonstrating an acceptable impact to the broader network, it is noted that the revised LOG-E modelling takes in to consideration the cumulative impact on broader road network from the development. That LOG-E modelling has been reviewed and approved by TfNSW. Therefore, it is our view that traffic modelling of the Mamre Road access to the development has been satisfactorily addressed.

We trust this information is of assistance and please contact the undersigned, or Tim Lewis, should you have any further queries.

¹ <https://www.planningportal.nsw.gov.au/major-projects/project/41731>

Yours sincerely,

A handwritten signature in black ink, appearing to read 'J Laidler', with a stylized, cursive script.

James Laidler

Senior Traffic Engineer

E james.laidler@asongroup.com.au

M 0421209996

A response to the below was provided to TfNSW via letter on 07 February 2023

TABLE 1 RESONSE TO TFNSW COMMEMTS (DATED 23 DECEMBER 2022)	
Agency Comment	Response
Intersection Design and Further Information Request.	
1. TfNSW requires verification that the deceleration and acceleration lanes will satisfy Austroads requirements. TfNSW Road Design team have recommended that the deceleration lane be extended to reflect the expected traffic volumes, articulated vehicle movements, road gradients and speed of travel. An additional shoulder area is also to be provided. In addition, the ultimate arrangement needs to be consistent with the local road network in Mamre Road Precinct Development Control Plan. TfNSW requires the southbound lanes to remain consistent with MRUS2 strategic design, and the deceleration lane to be included within proposed verge and developer owned land.	The LILO design plan has been amended to ensure deceleration lane satisfies Austroads Requirements. As advised, design plan has been amended and an additional shoulder area has been provided (refer to the amended design plan (2021_19_SD_0001_SK0007D Issue D). The deceleration lane has been extended to 120m in accordance with Table 5.2 of Guide to Road Design Part 4A. The existing grade along Mamre Road at the proposed location of deceleration lane is 2%. Hence the adopted deceleration lane length of 120m meets Austroads requirements. The length of acceleration lane in the strategic design is 320m, which complies with Table 5.7 of Austroads Guide to Road Design Part (AGRD) 4A. This is based on the acceleration lane length for semi-trailers to a specified decrement of 20km/h below the through lane speed of 80km/h. The proposed LILO intersection and traffic generation will not change in the ultimate scenario, the articulated vehicle movements will remain unchanged in both interim and ultimate scenarios, being; - Mamre Road - left-in - 17 veh/hr (AM Peak) and 15 veh/hr (PM Peak) - Site Access - left-out - 8 veh/hr (AM Peak) and 12 veh/hr (PM Peak) Articulated vehicle volumes above indicate that the proposed 120m deceleration lane at a design speed of 90km/h and exit speed of 20km/h and 320m acceleration lane at a design speed of 90km/h, exit speed of 20km/h and merge speed of 60km/h is adequate and satisfies Austroads requirements (Table 5.2 and Table 5.5 of Austroads Road Design Guide Part 4A). The design confirms all road works associated with LILO intersection will not impact southbound lanes in the TfNSW ultimate design and is consistent with MRUS2 strategic design as shown the strategic design plan for LILO arrangement on Mamre Road (refer to the updated design plan 2021_19_SD_0001_SK0007D Issue D) As the LILO infrastructure does not impact the through lanes on Mamre road in the ultimate scenario and will be a permanent intersection as outlined in the DCP, MU Group does not see any reason for the deceleration lane to be located within developer owned land.
2. The level of increased traffic volumes within the intersection (temporary and post development) is likely to increase the potential safety risks and congestion rates for the street network. Additional detail is required to address the potential risk to pedestrians and vehicles in response to increased traffic volumes specifically in reference to the Shared Use pathway and pedestrian crossing within the intersection. TfNSW has concern regarding the potential adverse safety and traffic implication at the intersection and state road network given the proximity of the intersection to the crossing in consideration of the vehicle entry and exit speed utilising the acceleration and deceleration lane. Additional information should be provided to address the above.	Currently there are no public transport and pedestrian facilities or any desire lines for pedestrians along Mamre Road. In addition, being an industrial precinct with no accessibility to public transport in the short-term, private vehicle dependency will be high, with minimal pedestrian movements anticipated either along Mamre Road or internally. In addition, it is noted the there are no Shared Paths proposed in TfNSW ultimate design for Mamre Road fronting the subject site, which is located on the western side. MU Group have amended the design plans to remove the Shared Path and pedestrian crossing point close to the LILO intersection. To manage conflicts at the intersection, a pedestrian crossing can be provided 50m north of the intersection and within the estate road, with adequate signage to provide sufficient driver awareness and to maintain pedestrian safety. This can be detailed during detailed design and form part of the internal civil works package. All the internal roads will have a lower speed limit. Generally, 20 km/h speed for trucks for the internal estate roads is considered appropriate. The proposed LILO intersection is designed for an entry and exit speed of 20km/h in accordance with Austroads Standards. It is anticipated that the all the vehicles at entry and exit will have to slow down to 20km/h in order to complete the ingress and egress manoeuvre safely while entering and exiting the estate road. Lower speeds and adequate signage will allow sufficient time for trucks and cars to foresee pedestrians crossing in the future.

3. The informal staging of the proposal (temporary intersection design/post completion) includes a number of sacrificial works that will require additional funding and timescale to complete. TfNSW is concerned that the interim measures will be inadequate and will involve additional construction delays to achieve the completed intersection. A plan that visually presents the proposed temporary works and final arrangement should be developed and provided to TfNSW that prioritises reducing sacrificial works Additional information should be provided to address the above.	The LILO intersection is permanent infrastructure and has been included within the precinct traffic modelling and the DCP road network. MU group have demonstrated in the latest design plans (plan 2021_19_SD_0001_SK0007D Issue D) the LILO arrangement will not have any impact on the proposed upgrade of Mamre Road to two lanes by TfNSW which forms part of the ultimate Mamre road upgrade plans. With the design completed in accordance with Austroads requirements with 120m deceleration and 320m acceleration lane the design is considered to be adequate to service the proposed development and the broader precinct. With the LILO design confirmed as not impacting the through lanes on Mamre road and its ultimate operation, the horizontal geometry is deemed adequate to avoid sacrificial works. The proposed design was developed to match existing levels and to minimise any sacrificial works from level changes that form part of the ultimate Mamre road upgrade design, however these levels have not been provided. A change in levels from the proposed LILO and the ultimate Mamre road upgrade level is not looked at as sacrificial work, but rather further integration works to match the levels for this infrastructure that will proceed the ultimate design by some time and form the base for the ultimate levels. It is noted that there is no Shared Path proposed in TfNSW ultimate design for Mamre Road fronting the subject site. To minimise any sacrificial works, the proposed Shared Path has now been removed from the design and extra 2.5 - 3m shoulder has been included in the design. The amended design plan (2021_19_SD_0001_SK0007D Issue D) demonstrates that a footway can be incorporated in the future by TfNSW once the final levels are set and the ultimate Mamre road upgrade design is finalised. Please refer to the amended design plan, which visually indicates the proposed works for LILO intersection which has been overlayed on the TFNSW Ultimate design for Mamre Road.
4. TfNSW remains concerned about the southern properties that are parallel to the acceleration lane utilising the proposed lane for primary access. Please demonstrate that safe ingress and egress is available for these properties during the interim and completed intersection as proposed.	MU Group have amended the design plans to provide 3m shoulder along the site boundary and acceleration lane as requested by TfNSW. This shoulder will assist vehicles accessing the southern properties to diverge from the accelerating vehicles and use the 3m wide shoulder to access these properties. This will also help to mitigate any conflict between vehicles slowing down to access the properties and vehicles accelerating to merge with through traffic onto Mamre Road. We note that Altis will be providing access to the closest resident via the internal estate road, which means there will only be 2 residences using the shoulder for access. This is shown on the Costin Roe civil engineering drawings that form part of the broader RTS In addition, appropriate signage will be provided along the proposed route for resident vehicles to ensure additional safety and driver awareness of the property driveways along the acceleration lane. Details of sign types, size shall be discussed with TfNSW and provided during concept and detail design stages. It should be noted that the volume of vehicles anticipated to and from these southern properties are moderate. Minimum of 2 veh/h and maximum of 4 veh/hr are expected to and from these properties during AM and PM peak. It is also noted that these are single dwelling homes, and the anticipated usage of driveway is very low.
5. TfNSW remains concerned about the southern properties that are parallel to the acceleration lane utilising the proposed lane for primary access. Please demonstrate that safe ingress and egress is available for these properties during the interim and completed intersection as proposed.	MU Group have amended the design plans to provide 3m shoulder along the site boundary and acceleration lane as requested by TfNSW. This shoulder will assist vehicles accessing the southern properties to diverge from the accelerating vehicles and use the 3m wide shoulder to access these properties. This will also help to mitigate any conflict between vehicles slowing down to access the properties and vehicles accelerating to merge with through traffic onto Mamre Road. We note that Altis will be providing access to the closest resident via the internal estate road, which means there will only be 2 residences using the shoulder for access. This is shown on the Costin Roe civil engineering drawings that form part of the broader RTS. In addition, appropriate signage will be provided along the proposed route for resident vehicles to ensure additional safety and driver awareness of the property driveways along the acceleration lane. Details of sign types, size shall be discussed with TfNSW and provided during concept and detail design stages. It should be noted that the volume of vehicles anticipated to and from these southern properties are moderate. Minimum of 2 veh/h and maximum of 4 veh/hr are expected to and from these properties during AM and PM peak. It is also noted that these are single dwelling homes, and the anticipated usage of driveway is very low.
7. A work departures register is requested to be provided for the concept and completed design.	There are no known design departures from the Austroads design standards at this stage. However, clarification is required if work departure register means a design departure register. If yes, then work departures register will be provided during the concept and detail design stage.

A response to the below was provided to TfNSW via letter on 6 September 2022

TABLE 2 RESONSE TO TFNSW COMMENTTS (DATED 10 AUGUST 2022)																																				
Agency Comment	Responses																																			
1. TfNSW does not support the acceleration lane at proposed location due to site constraints. (impacts to adjoining landowners).	MU Group notes the weaving issue at the proposed acceleration lane with vehicles entering two private property driveways and with heavy vehicles exiting the development site. It is noted that the weaving manoeuvres may conflict and create safety issues resulting in a crash. The strategic design submitted to TfNSW addresses the weaving movement by including a sign that allows local traffic to use the deceleration lane and enter a gap in the splitter median to safely enter the acceleration lane prior to entering the driveway.																																			
2. The design provided is unorthodox and there is nothing that requires a resident to use that arrangement. The cut-out in the median may also be mistaken as a refuge.	The Design (Drawing No. 2021_19_SK_0007) has now been amended to remove cut-out in the median. An alternative arrangement to avoid the weaving movement is to allow the local traffic to enter the development site and use the internal roundabout (approximately 200m within the development) for a U-turn movement and exit via the acceleration lane to access their properties. This can be developed into a Local Access Plan for the private properties. It is noted that the volume of local traffic performing this manoeuvre is anticipated to be 2-4 vehicles per day.																																			
3. The length of the acceleration lane at this location is considered too short and would not be supported on this ground	The length of acceleration lane in the strategic design is 320m, which complies with Table 5.7 of Austroads Guide to Road Design Part (AGRD) 4A. This is based on the acceleration lane length for semi-trailers to a specified decrement of 20km/h below the through lane speed of 80km/h. Table 5.7: Acceleration lane lengths (m) for semi-trailers to accelerate from rest to a specified speed on a level or downgrade <table><tr><th rowspan="2">Downgrade (%)</th><th colspan="5">Truck speed (km/h)</th></tr><tr><th>100</th><th>90</th><th>80</th><th>70</th><th>60</th></tr><tr><td>0</td><td>2400</td><td>1500</td><td>910</td><td>550</td><td>320</td></tr><tr><td>1</td><td>1400</td><td>940</td><td>640</td><td>410</td><td>250</td></tr><tr><td>2</td><td>970</td><td>700</td><td>500</td><td>330</td><td>210</td></tr><tr><td>3</td><td>760</td><td>560</td><td>400</td><td>280</td><td>180</td></tr></table> <i>Note: For the purpose of calculating acceleration lane lengths at intersections, the through road speed is usually made equal to the mean free speed (which is often approximately equal to the speed limit).</i> <i>Source: Based on Austroads (2002).</i> Note: Austroads does not specify acceleration lane lengths for vehicles greater than semi-trailers i.e., B-Doubles This approach is supported by AGRD 4A (section 5.4) which states: <i>The speed of heavy vehicles needs to be considered when designing acceleration lanes. For the design of new acceleration lanes, it is preferable that the design heavy vehicle has sufficient length to accelerate to a speed no less than 20km/h below the mean free speed of the through road, particularly if the acceleration lane is on a dedicated heavy vehicle route.</i> As trucks require very long acceleration distances, often to an extent that is not possible to accommodate on practice, a speed differential between general traffic and heavy vehicles will usually have to be accepted at the point of merging. If the “mean free speed” of 80km/hr is used to calculate the acceleration lane length then the result is 910m, which conflicts with Abbots Road intersection that is approximately 837m from the proposed LILO intersection. Hence, this approach is deemed not practical.	Downgrade (%)	Truck speed (km/h)					100	90	80	70	60	0	2400	1500	910	550	320	1	1400	940	640	410	250	2	970	700	500	330	210	3	760	560	400	280	180
Downgrade (%)	Truck speed (km/h)																																			
	100	90	80	70	60																															
0	2400	1500	910	550	320																															
1	1400	940	640	410	250																															
2	970	700	500	330	210																															
3	760	560	400	280	180																															

Table 5.7: Acceleration lane lengths (m) for semi-trailers to accelerate from rest to a specified speed on a level or downgrade

Downgrade (%)	Truck speed (km/h)				
	100	90	80	70	60
0	2400	1500	910	550	320
1	1400	940	640	410	250
2	970	700	500	330	210
3	760	560	400	280	180

Note: For the purpose of calculating acceleration lane lengths at intersections, the through road speed is usually made equal to the mean free speed (which is often approximately equal to the speed limit).

Source: Based on Austroads (2002).

	In addition, Austroads (AGRD-Part 3) states: Where possible, overtaking lanes should be located so that merge tapers are not located on curves. Where this is not possible, care should be exercised with the location design of all merging tapers to ensure that there is adequate sight distance for the approaching driver to comprehend the existence of the merge and its geometry. The termination of the auxiliary lane should be at a point where there is a sufficient sight distance of the overtaking driver to decide whether to complete or abandon the overtaking manoeuvre. It is important that the termination point provides sufficient sight distance to allow a smooth and safe merge between fast and slow vehicle streams. It is desirable for the termination point to be on a straight to give drivers a better visual appreciation of the approaching merge. Based on MU Group design experience, it is a good design practice within TfNSW to consider ending the merge taper on a straight section of road to provide the best definition of the merge and should be achieved wherever possible. Ending within a horizontal curve may still meet sight distance requirements but may not provide the same definition of where the lane is terminating. The MU Group's strategic design that includes an acceleration lane has been developed in accordance with Austroads Guide to Road Design Part 3 and 4A and complies with Austroads and TfNSW standards and requirements.
4. A give-way treatment is provided with a deceleration in line with the Austroads Standards.	A revised strategic design can be developed with a Give Way treatment at the Left-Out exit without an acceleration lane if this is the agreed approach.
5. LILO is to be designed to physically restrict right turn movements at Mamre Road	The raised concrete median on the design has been extended to physically restrict or make it difficult for a vehicle to perform a right turn movement at Mamre Road. This is supported by the installation of a regulatory sign R2-6(R) No Right Turn
6. Pedestrian/cyclist are to be considered in the design.	Pedestrians and cyclists have been considered in the design with a dedicated bicycle lane on Mamre Road and connecting Shared Path to cater for both pedestrians and cyclists.
7. Swept paths of the longest vehicles simultaneous entry/exit in line with Austroads Std	36.5m PBS Level 3 Type A vehicle has been adopted as the check vehicle to assess the swept path for simultaneous entry / exit. Swept path analysis is as shown on the plan attached in Appendix B.
8. Design showing location of LILO with the ultimate Mamre Road upgrade alignment	The strategic design has been overlaid on the TfNSW Mamre Road "Ultimate" design. Refer to Drawing No. 2021_19_SK_0007. The plans show that the LILO is constructed outside the ultimate Mamre Road design footprint and includes a Shared Path that can tie up with the ultimate design following the merger.
9. Is there is a crest or ridge within the extent of the current acceleration lane, both existing and in the future Mamre Rd design.	The current topography of Mamre Road based on conducted survey appears to show that there is an average down gradient of <1%. In an area within the extent of the proposed acceleration lane there is a slight crest with a gradient of 0.836% which will not impact on the acceleration lane length and design. The final levels within TfNSW future Mamre Road Ultimate design will be considered and adopted in the subsequent design phases.
10. The current topography and the geometry are suitable relative to the design. The geometry is consistent with TfNSW design parameters and guidelines	The MU Group strategic design was developed based on the site investigations and available survey information at the time along with TfNSW Mamre Road "Ultimate" design received from Altis in May 2021. Furthermore, the design was developed in accordance with Austroads and TfNSW requirement in relation to length of deceleration and acceleration lanes and compliance with current and future topography, geometry, speed environment of Mamre Road and TfNSW design for Mamre Road upgrade. It is considered that the current topography and the geometry is suitable relative to the design and is consistent with TfNSW design parameters. The design can be further refined and optimised in the subsequent concept and detailed design phases.

11. Overall design works and is in accordance with TfNSW standards and requirements	It has been described in previous responses to comments that the MU Group Strategic Design complies with Austroads Guide to Road Design and TfNSW standards and requirements. With regards to the presence of an acceleration lane in the proposed design, it should be noted that as per Austroads (AGRD - 4A) requirements where traffic volumes on the road and the number of trucks entering are relatively high, it is preferable to provide an acceleration lane to establish the presence of entering truck on the major road, even though a higher than desirable speed differential between trucks and cars may occur near the merge area. In addition, it is noted that TfNSW publication “Guide to Traffic Generating Developments” states: The design of direct vehicular access to developments fronting major roads should include the provision of: • deceleration lanes. • acceleration lanes. • right turn lanes. These measures should be designed in accordance with TfNSW guidelines. This reaffirms that MU Group Strategic Design meet TfNSW standards and requirements.
---	--

Attachment 3 – Access Logistics Park, 884-928 Mamre Road, Kemps Creek – SSD 17647189 Response to Submissions

Ason group, in conjunction with Frasers, provided the submission response on 16 September 2022.

TABLE 3: SUBMISSION RESPONSE – VIAE CONSULTING (DATED 7 JUNE 2022)		
AG Ref	VIAE Comment	Ason Group Response
	Assessment Methodology	
1	Assessment of internal roads – Access to Mamre Road via the proposed new intersection provided by the Aspect Industrial Estate requires the use internal roads and up to three (3) internal intersections within the precinct. The performance of these intersections should be assessed to confirm that the intersection arrangements are sufficient to accommodate the proposed development	Revised modelling has been submitted to TfNSW which provides a summary of the operation of key internal intersections under the 2026 scenario. The modelling demonstrates that all intersections operate with acceptable levels of delay and with spare network capacity. The modelling report which includes the relevant assumptions is included in Attachment 1.
2	Modelling of impacts along Mamre Road – The assessment of the impacts of the development on Mamre Road is reliant on previous modelling undertaken by Ason Group for the Mamre Road Precinct as a whole. The SSDA assessment provided in the revised TMAP does not provide sufficient documentation of the assumptions and methodology undertaken to use the results of the Mamre Road Precinct in the assessment of the impacts of the proposal. As a minimum, Section 6.5.2 of the revised TMAP should provide the following: - Details of the Mamre Road Precinct modelling, outlining the development, approval and application of the model for use in the SSDA assessment. - A summary of forecast traffic volumes from the model both with and without the proposed development. - Evidence that the critical network assumptions (including traffic signal arrangements and setting, internal road network assumptions and traffic generation and distribution) are consistent between the Mamre Road Precinct modelling and localised modelling to support the SSDA proposal.	Reference is again made to the revised modelling included at Attachment 1 which includes the relevant assumptions. It is noted that the key input assumptions was agreed to by TfNSW as part of a broader scoping study prior to the modelling being completed. The relevant Sidra intersection modelling files have been provided to TfNSW for review and approval.

3	Modelling of 2036 impacts along Mamre Road – The revised TMAP currently does not provide any performance measures for the impacts of the proposed development along Mamre Road under 2036 conditions. The revised TMAP makes references to modelled performance provided in a separate transport assessment provided to Penrith Council and Transport for NSW, however this is not provided in the SSDA assessment.	Modelling for the 2036 horizon year was completed by the Land Owners Group (LOG) as part of the overall DCP assessment undertaken in partnership with DPE and TfNSW. The final modelling report prepared by Ason Group (reference P1316r05v03 Mamre Road Precinct – Road Network Assessment dated 20/08/2021) included an allowance for the proposed development at 884-928 Mamre Road (being the subject development). This modelling has been previously endorsed by TfNSW and is relied upon for this application. It is our understanding that all relevant stakeholders (DPE, TfNSW and Council) have copies of the final documentation, however this can be provided upon request.
4	DPIE SEAR No. 1: “details of all traffic types and volumes likely to be generated during construction and operation, including a description of key access and haul routes. Traffic flows are to be shown diagrammatically to a level of detail sufficient for easy interpretation”	Details of the estimated operational traffic flows are included in the TMAP Assessment (Section 6.2). Estimated construction traffic volumes are included in the updated Preliminary CTMP, Sections 3.2 and 3.3 which also responds to the additional SEARS request received from DPE.
	DPIE SEAR No. 2: “an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model. This is to include the identification and consideration of approved and proposed developments/planning proposals/road upgrades in the vicinity. The assessment needs to consider the impact on Mamre Road for the duration of the works because traffic growth in this area is expected to increase more quickly than standard growth rates”	The modelling undertaken and included in Attachment 1 details the future operation of the road network, including a cumulative assessment of the LOG developments. This modelling is based on the Aimsun model developed in consultation with TfNSW and DPE and includes the relevant growth rates provided by TfNSW from the LU19 STFM.
	TfNSW SEAR No 2g: “An assessment of the forecast impacts on traffic volume generated on road safety and capacity of road network including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model as prescribed by TfNSW (former Roads and Maritime). The traffic modelling should consider the scenarios of year 2026, 2031, 2036.”	The 2026 Scenario has been provided to TfNSW for approval. The 2036 analysis was previously reviewed and endorsed by TfNSW and includes consideration of the overall precinct under full development. Agreement was reached with TfNSW that no 2031 modelling would be required for projects within the Mamre Road precinct due to the ambiguity on infrastructure delivery timeframes for the broader WSEA. Similar dispensation was provided for the approved Aspect Industrial Estate (SSD-10448).
	Transport Management Accessibility Plan	
	Co-location of warehousing with intermodal facilities – The revised TMAP makes reference (6.1.1) to the adoption of lower daily heavy vehicle trip generation resulting from co-location of warehouses with intermodal facilities. The evidence supporting this assumption, or a reference to this evidence is not provided in the revised TMAP. Unless this evidence is provided in the revised TMAP report, this co-located daily traffic generation rate should not be adopted	As part of the 2036 Precinct Modelling prepared by Ason Group in consultation with DPE and TfNSW, lower trip rates were adopted for the co-located warehouses. These lower trip rates were adopted at the request of TfNSW to account for the reduced freight movements achieved through the delivery of the intermodal and dedicated freight network. It is noted that this reduced trip rate was established and approved by TfNSW and applies only to the 2036 scenario. That is, no dispensation or allowance of any type has been assumed for the 2026 horizon year modelling which adopts the rates prescribed by TfNSW.
	Documentation of traffic volume forecasts – No documentation of forecast traffic volumes along Mamre Road or internal access roads has been provided to satisfy DPIE SEAR No. 1. Simple diagrams showing morning and evening peak traffic volumes with and without development traffic should be provided. In scenarios where traffic volumes derived from the Mamre Road Precinct Model have been used as the basis for traffic volume forecasts on the broader network, plots of the forecast traffic volumes from this model should also be provided.	Traffic volumes generated by the development are outlined at Section 6.2 of the TMAP. Cumulative link flow plots for the 2026 and 2036 Aimsun models are provided as an attachment to this document. Ed to provide.
	Distribution of traffic under interim access scenario – Section 6.3.2 of the revised TMAP identifies the geographic distribution of traffic to and from the site to be 100% to and from Mamre Road south; this should not be possible for a left-in, left-out intersection, as this would require traffic entering the site to turn right. Under a left-in, left-out arrangement, this would require all incoming traffic to arrive from the north and all outgoing traffic to depart to the south.	Section 5.3.2 of the TMAP has been updated to include the directional split for both AM and PM peak periods, as well as the inclusion of a diagram to outline traffic flows. For reference, updated TMAP includes the following text: <i>In response to TfNSW’s request to assess the LILO as the sole point of access to the Site, the following trip distributions have been adopted for this scenario.</i> - Vehicle Split: - Light Vehicle: 76% of total traffic - Heavy Vehicle: 24% of total traffic - Directional Split: - Ingress movements: 100% north, 0% south (Both Light and Heavy Vehicles) - Egress movements: 0% north, 100% south (Both Light and Heavy Vehicles)

		• <i>Access and Egress Split:</i> – <i>Light Vehicles: 73% in / 27% out during AM Peak, 25% in / 75% out during PM Peak</i> – <i>Heavy Vehicles: 51% in / 49% out during AM Peak, 48% in / 52% out during PM Peak</i>
	Construction traffic management plan alternative construction routes – The alternative construction routes indicate that construction traffic could use the roundabouts at Elizabeth Drive and James Erskine Drive as turning facilities for trucks that would otherwise turn right into or out of the site. The CTMP must show that these roundabouts can accommodate proposed construction vehicles and that these intersections would not be adversely impacted by this additional traffic, or remove these from the CTMP as proposed routes. The response from the landowner group notes that these locations have been adopted based on their use for previous approved CTMPs. This should be noted in the CTMP.	Noted. Alternative routes towards Elizabeth Dr roundabout were previously approved within the Aspect CTMP and will be included within the updated CTMP. Notwithstanding, additional swept paths will be undertaken to ensure construction vehicles can be accommodated within the Elizabeth Dr roundabout.
	Reporting on intersection performance – Movement summary reports have been provided from SIDRA models that only show delay and queuing at the movement level. These should be supplemented by lane summary reports to demonstrate that the lengths of short lanes are sufficient to accommodate the 95th percentile queue length during peak periods.	The relevant SIDRA modelling files for the 2026 horizon year have been provided to TfNSW for approval.
	Mamre Road modelling traffic volumes – The modelling of intersections along Mamre Road has been presented as separate from the modelling informing the intersection of Mamre Road and Aspect Industrial Estate Access, however these intersections would be expected to operate together and should be assessed on the basis of common traffic volume forecasts. As no detail has been provided to show the assumed traffic volumes, it is not possible to confirm that common assumptions have been adopted.	The updated 2026 modelling is based on a consolidated network with volumes extracted from a 2026 Aimsun model and run using Sidra (see relevant modelling results included at Attachment 1). This approach is deemed to satisfy the issue highlighted by VIAE Consulting.
5	Provision of an acceleration lane on third-party property – Figure 4 of the revised TMAP shows that the left-in, left-out access will require an acceleration lane that extends into the adjacent property owner. The response from the proponent states that detailed design will be undertaken to ensure that the provision of an acceleration lane will not impact adjacent properties or require land acquisition. This should be noted within the revised TMAP report.	The provision of the acceleration lane is consistent with the DCP. The limitation of impact to the adjacent property owner can be made a Condition of Consent.
	Modelling of Mamre Road intersections under 2036 traffic volumes – No documentation has been provided in the assessment to show the modelled performance of intersections along Mamre Road under the 2036 scenario. Chapter 6.5.3 of the assessment notes the assumptions for the most recent network arrangements and plots of proposed intersection layouts but provides no information demonstrating the performance of these intersection. This does not satisfy Transport for NSW SEAR No. 2g.	As noted above, the application relies on the 2036 Precinct Wide modelling undertaken by Ason Group previously reviewed and endorsed by TfNSW. A copy of this report can be reissued to TfNSW and DPE to satisfy this requirement.
	Framework Travel Plan	
	Timeframe for sustainable travel planning – The FSTM is focused around targets and actions that derive from the planning for the Western Sydney Aerotropolis, which is dependent on transport infrastructure that will not be delivered in full before 2036 or later. Consequently, travel behaviours for the site will already be well-established prior to 2036 based on existing car-centric access and mobility. Some short-term measures should be identified to encourage early-uptake of sustainable travel behaviours such as shuttle buses to nearby rail stations or car-sharing schemes to reduce car dependency.	Public transport infrastructure is expected to be provided by TfNSW to the precinct, consistent with the aims and objectives of the DCP. Notwithstanding, the FSTM will investigate commercially viable options to encourage alternate travel modes including the implementation of Car Share schemes and best in class end of trip facilities.
	Funding of the FTSP – The FTSP does not provide clarity as to who will fund the implementation of the plan and how long the plan will be funded before the site is fully occupied. Funding of the strategy should be established prior to the occupation of the site and it should be managed by a dedicated resource by the owner or body corporate rather than be left to the discretion of the site management.	The management implementation of the FTSP will be the responsibility of the owners of the site. A condition of consent to this affect is encouraged.

Attachment 4 – Response to Submission Letter

A response was provided to Alits Property on 29 September 2022

TABLE 4: TfNSW SUBMISSION RESPONSE –DATED 18 NOVEMBER 2021		
AG Ref	Agency Comment	Ason Group Response
	Attachment A	
3.1	<u>General Comments</u> It appears that the proposed roundabout south-east corner of the site would allow for a connection to a future dedicated freight network. How this would function in relation to the proposed estate road providing connection to adjacent land to be developed to the east will need to be investigated in further detail.	The design of the proposed roundabout in the south-eastern corner of the site has been coordinated with the developer to the east (Frasers) with both the vertical and horizontal geometry matching to facilitate the future connection. Altis will be building the Site's entire internal road infrastructure as part of Stage 1 works, rather than in sections, to facilitate the timely delivery of road infrastructure within the Precinct.
	Transport & Accessibility Management Plan (TMAP)	
3.2	<u>Comment</u> In November 2020 the Department of Planning Industry and Environment (DPIE) released the Mamre Road Precinct Draft Development Control Plan. Objective 3.4.3(7), applications for lots with an identified access point (refer to Figure 16) shall demonstrate how access to and from the dedicated freight corridor will be achieved within the development site. <u>Recommendation</u> It is noted the proposed development is adjacent to the proposed dedicated freight network (DFN) and access is identified at Lot 16. It is requested that before the development applicant is approved, the applicant demonstrate to the satisfaction of TfNSW, how the proposed development would provide access across the development site.	The masterplan allows for a 10m wide easement to protect the proposed Dedicated Freight Road (DFR), which is our understanding that will be delivered by others in the future. Access into the Estate can be facilitated from this easement once the DFR is designed and built. Altis has not been provided with any design to date, including levels, geometry, etc.
3.3	<u>Comment</u> The report provides modelling which includes the anticipated connecting link with the adjacent site (Aspect Industrial Estate (AIE) development). However there is no current timeline provided as to when this link with be constructed. This results in all traffic accessing Access Logistics Park (ALP) from the proposed Left in/Left out (LILO) intersection. With no clear timeframes the following concerns are raised and additional information is required: - How will right turn movements be facilitated for (prior to the connection being constructed)? - Modelling does not cater for the scenario where only LILO access is provided to Mamre Road (as the connection to Mirvac site does not appear to have any definitive construction date); - It is noted that Section 6.5.2 assumes that the Southern Link Road (SLR) will be built by 2026. As there is no funding in place for construction the SLR should not be included in modelling prior to 2036; - It is noted that Section 6.5.3 assumes that Mamre Road will be upgraded to 3 lanes by 2036. The current strategic design allows for 2 travel lanes in both directions with land available for future lanes. Clarification is sought as to why 2036 includes the ultimate 3 lanes; <u>Recommendation</u> TfNSW requests that as there is no definitive timeframe of the link to the AIE site, further modelling is undertaken for 2026, 2031, 2036 with the access only from the LILO at Mamre Road. A detailed description is to be provided indicating how the vehicle movements will be dispersed without right turn movements. The additional abovementioned information is also to be addressed/provided for further assessment prior to the determination of the application. TfNSW will further review and provide response upon receipt of the additional information.	Coordination and management of staged infrastructure more broadly is a matter for DPIE, TfNSW and Council. However, in response to the specific queries: - Access routes will vary depending on what infrastructure is available at the time. However, broadly speaking, most users (staff and commercial vehicle drivers/contractors) will be familiar or made aware of the access limitation in advance and, as such, choose an appropriate route the access the site from the north only. This requirement can form a specific measure to be outlined in a future Drivers Code of Conduct and/or Operational Traffic Management Plan, subject to a suitable condition of consent. - It should be acknowledged that Mirvac have already lodged their SSD for the Aspect Estate which includes construction of the relevant roads. Whilst timeframes cannot be guaranteed, there is a clear commitment from Mirvac to progress construction of that Estate (subject to DPIE approval). Notwithstanding, further SIDRA modelling of a scenario which contemplates access only via the LILO has been undertaken and demonstrates a worst case LoS B for the left-turn egress onto Mamre Road; being the critical movement - This is shown within Section 6.5.1 of the TMAP In addition, major state infrastructure projects and/or the upgrade of existing infrastructure/road networks (including SLR and Mamre Road) are a matter for TfNSW. The Mamre Road Precinct traffic modelling completed on behalf of TfNSW has included these assumptions, and as such has been adopted in the SSDA modelling for consistency.

3.4	<u>Comment</u> Appendix A – SIDRA Results c. LOS F for right turn movement on Mamre Road is not considered acceptable d. SIDRA model shows in Stage-1, the right lanes from Mamre Road South approach and has “LoS F” in both AM and PM. In addition, right lanes from New Road East approach and has “LoS E” in PM. Each travel lane needs to be “LoS C” or better. e. SIDRA model shows in Master Plan, right lanes from New Road East approach and has “LoS F” in both AM and PM. Each travel lane needs to be “LoS C” or better. <u>Recommendation</u> As mentioned in comment 3 there are some assumption for 2026 and 2036 considered too optimistic. This will need to be adjusted and will likely result in a worse outcome. TfNSW will not support intersections that are failing or at capacity on day of opening. This would result in an unsafe intersection. Further refinement of the intersection with Mamre Road and the AIE site is to be undertaken to ensure that the intersection can accommodated the expected growth in the area. TfNSW requests the abovementioned information to be addressed/provided for further assessment prior to the determination of the application. TfNSW will further review and provide response upon receipt of the additional information.	Ason Group is currently in discussions with TfNSW regarding <u>changes</u> to the previously agreed performance metrics for the broader MRP. Notwithstanding, the modelling referred actually relates to the intersection being delivered at Aspect Industrial Estate and is therefore outside the control of this Applicant. Any updated modelling and design of that intersection is considered a separate matter to the subject Proposal; particularly in light of the additional scenario modelled in section 6.5.2 of the TMAP, confirming an acceptable LoS A for the proposed LILO intersection.
3.5	<u>Comments</u> Appendix B. Design Advice & Swept Paths f. Swept Paths analysis is missing the test vehicle of 36m long B triple (PBS Level 3 Type A) as per the Mamre Rd Precinct Draft DCP. g. Figure 5 shows swept path diagrams for the proposed roundabout south-east corner of the site. No swept path appears to be provided for a vehicle travelling from west to east through the roundabout which would appear to be the tightest manoeuvre for a longer vehicle. <u>Recommendation</u> It is requested swept path diagrams be provided demonstrating the design vehicle is able to adequately manoeuvre through these intersections.	MU Group and Costin Roe have completed a swept path analysis of the proposed estate roads including the LILO, which are provided below; <u>MU Group comments:</u> h. Swept path analysis of a 26.0m B-Double and 35.4m B-Triple (PBS3A) at the LILO at Mamre Road is attached, see Attachment 3, and confirms a safe and efficient path of travel. Refer to the MU Group response within the RTS Swept path analysis of a 35.4m B-Triple (PBS3A) at the other intersections within the development is attached, see Attachment 3, and confirms a safe and efficient path of travel. Refer to the MU Group response within the RTS i. Additional swept path analysis for the roundabout has been provided by Costin Roe and contained within the Civil Report.
	Temporary Left-in / Left-out (LILO) Access at Mamre Road	
3.6	<u>Comment</u> TfNSW provides the following design comments to be addressed prior to any consent being provided: Acceleration Lane – Whilst TfNSW do allow for acceleration lanes in some instances, the current location raises issues with weaving between vehicles accelerating in the acceleration lane and having to pick a gap to merge in to the through traffic stream and local residents diverging in to the acceleration lane to then diverge in to the shoulder to access their properties. In addition the acceleration lane extends over the adjoining properties. Should the ultimate arrangement be constructed this would require land acquisition from the adjoin properties. Has Altis consulted with the properties regarding this outcome? j. Mamre Road upgrade - The future upgrade of Mamre Road would be designed for Flood Immunity. It is expected the future surface level would be above the current Mamre Road surface level. The increase in surface level will be determined after investigation during Concept Design Phase. The future design does not take into account. There appears to be insufficient land to dedicate to the TfNSW for the future upgrade of Mamre Road. The ultimate Mamre Road strategic plan has been design for: ▪ Ultimate 6 through lanes, ▪ Raise in surface level for Flood Immunity ▪ Shared Path/Footway ▪ Verge ▪ Embankment	Comments have been assessed by MU Group and Costin Roe, and responses/comments have been provided below: <u>MU Group comments:</u> The Revised Plan labelled 2021_19_SD_0001_SK_0005, which was issued to TfNSW attached in the letter dated 15/11/2021, has amended the line marking and signposting at the intersection that provides a Give Way control to local residents wishing to access the driveways south of the intersection. It is noted that local access vehicle volumes are anticipated to be low, hence the storage length is deemed sufficient. It is anticipated that the local driveways on Mamre Road will be removed in the future when Mamre Road is ultimately upgraded, then the local thru access at the intersection can simply be removed by infilling as a concrete median island. The Revised Design was overlaid onto the Ultimate TfNSW Mamre Road design aligning the LILO to the ultimate arrangement. This Revised Design shows that the future road boundary, as shown in the Ultimate TfNSW Mamre Road, is not impacted. It is acknowledged that the Revised Design is very close to the existing cadastral boundary. This will be further refined in the detailed design phase to avoid any impact to adjacent properties. k. The Revised Design has been overlaid onto the Ultimate TfNSW Mamre Road design, which appears to show sufficient land within the future road reserve for the ultimate Mamre Road upgrade. Note that the Revised Design is in 2D only and does not contain levels or survey information. The 3D design model will be developed in the detailed in the MU Group response, and consultation with TfNSW on the appropriate

	FSTP be developed noting all the tasks for completion, how they will be completed and completion date, including an implementation checklist to achieve the proposed initiatives. TfNSW notes there is a separate communications strategy to guide this, and TfNSW recommends that the implementation strategy be updated with the communication tasks to promote initiatives. – Future travel plans: For the purpose of this review - TfNSW will need to see any future travel plans that are proposed for this site, and review them in accordance with the planning requirements, it will not be at the discretion of the applicant to develop and implement these plans without TfNSW reviewing them first. – Proposed STP Action Strategy: TfNSW advises you that often the Travel Plan Coordinator will need a team or committee to ensure all of the actions of the STP are done. The STP cannot be at the discretion of site management to get the responsibilities of the STP implemented. The applicant will need to determine a strategy for the tenant(s) to take over the ongoing responsibilities for the GTP, making it clear to the tenants that there are requirements to try and achieve sustainable transport mode shares for the site, as a condition of the development, for its lifecycle. – Travel Access Guide: TfNSW recommends that the Travel Access Guide or TAG includes the short term initiatives discussed earlier (shuttle and carpooling), and removes the network map (as bus and train travel in the site area is not recommended). The longer term TAG can be updated once public and active transport infrastructure are upgraded. For further helpful information – please check this link How to Create a Travel Access Guide doc here. – Parking management strategy – TfNSW asks that a parking management strategy be implemented short and long term. TfNSW also asks that this STP implements a car parking management strategy in the STP that prioritises use by staff and patrons on a needs basis, and actively encourages staff and patrons using sustainable transport options that are available to and from the site. This will include how car parking onsite will be limited and managed at the site. – Funding the STP: The STP will need to be appropriately funded and otherwise resourced, by the proponent, for a period of at least 5 years, or via an appropriate appointed entity, such as a body corporate. This will include ongoing travel demand initiatives that will require resourcing. This is in recognition that any travel demand management interventions will need to be significant in scale to be effective. This should be covered in the updated STP Strategy and Action Plan. – Data – The STP must be updated to include available data that identifies the travel behaviours of site users to measure and monitor the effectiveness of the objectives and mode share targets of the STP. ▪ Data short term includes: ○ Weekly rates of car pooling ○ Weekly car park usage rates ○ Shuttle trips to and from the site ▪ Data longer term includes: ○ An additional weekly report of patronage be included in the STP using Opal data to and from the site. ▪ Traffic volumes can also be assessed on the road network within the site area, before and after work. These could be monitored to assess whether: ○ Staff and patrons are re-moding private vehicles to public transport; ○ Parking and pedestrian counts. – Proposed STP Action Strategy: TfNSW recommends that you re-name your Proposed STP Action Strategy to an Implementation Strategy, which has an implementation plan of tasks and actions, including all of your initiatives and incentives, timing and completion dates, your communications tasks, and who will do the tasks; this will ensure the overall effectiveness of the STP. The Implementation Strategy should: ▪ Identify the party or parties responsible for delivery and implementation of each element of the updated STP throughout various stages of the development lifecycle, including for its ongoing implementation, monitoring and review, for a period of at least 5 years post-OC; ▪ Be updated both on an annual basis, and when future transport services and pathways eventuate. Your stakeholder engagement strategy will be included in this (including all of your stakeholders, key messages and the channels you will use to engage your stakeholders) – please find our link for Potential engagement techniques that may be useful to you.
--	---

	– Strategies and initiatives: The updated STP will need to identify and implement planned strategies and initiatives that reduce the proportion of single occupant car travel to/from the site (including public and active transport) and increasing the use of public and active transport travel to the site. Some additional incentives (both long and short term) are provided here: ▪ Pre-loaded opal cards when staff and patrons first occupy the site. ○ Staff that are committed to active travel receive subsidised panniers or backpacks. ○ Wayfinding at the site for End of Trip facilities. ○ Incorporating a role for a GTP sustainable travel champion that focuses on modelling the desired behaviours and positive communication around active and public transport. ○ Implementing a car-pooling scheme with guaranteed ride home. Online car sharing systems for staff, operating across an entire precinct to maximise access to possible rides and build community spirit. This could include discounted membership of car share clubs. – Travel Survey – TfNSW notes there is no attachment of a travel survey tailored to this site in this document and would ask for this to be provided. TfNSW recommends that the Travel Survey to staff promotes these options of the shuttle and the carpooling scheme short term, and that the survey is updated longer term to reflect changes to public and active transport. Once updated the TAG will also need to be reviewed by TfNSW. Staff travel surveys are conducted to obtain workforce data analysis (including staff and patron residential postcodes) to identify the actual staff/residents travel origin and destination patterns, to inform strategies that help to reduce car parking demand for staff and students to get to and from the site; please find our online travel survey here. TfNSW recommends that the applicant submit a copy of the updated FSTP for TfNSW endorsement, prior to the issue of the Construction Certificate.	
--	--	--

Attachment 5 – Response to Submission Letter

A response was provided to Alits Property on 16 September 2022

TABLE 5 RESONSE TO TFNSW COMMENTTS (DATED JULY 2022)	
Agency Comment	Ason Group Response
Response to Submission	
3.3(a) - response is not an acceptable justification. This road is expected to be built and handed over to Council as public road for management and it not be control able with only Drivers Code of Conduct and/or Operational Traffic Management Plan for longer period of time.	Altis response: <i>Aspect is now approved and conditioned to provide a connection to the subject site, which we understand to be delivered by Q1 2024. Mirvac are conditioned to provide this connection prior to an Occupation Certificate for their second building.</i> Condition D8 of the Aspect approval² states: <i>“Prior to issue of an Occupation Certificate for any other buildings or warehouses in the Development, the Applicant must ensure the Stage 1 Phase 2 road works are constructed and operational.”</i>
3.3 - the RTS from Asongroup states: <i>In addition, major state infrastructure projects and/or the upgrade of existing infrastructure/road networks (including SLR and Mamre Road) are a matter for TfNSW. The Mamre Road Precinct traffic modelling completed on behalf of TfNSW has included these assumptions, and as such has been adopted in the SSDA modelling for consistency.</i> TfNSW remains of the view that this justification is no accepted. The model should only include existing arrangement and funded works to ensure that a realistic understanding of the actual impacts are addressed. TfNSW notes that the LOG- East are further developing the model to address this issue. TfNSW is currently reviewing the model and will inform DPE of the outcomes of this review. It is suggested that the applicant consult with the adjoining landowners (LOG-East).	We note that the Mirvac Aspect (SSD10448) development only assessed traffic from its own and approved developments within the Mamre Road Precinct. Assessment of traffic generation should be treated the same way for this application, which was completed and assessed in the TMAP prepared by Ason and dated 4/4/2022. The traffic modelling and SIDRA results confirmed an acceptable level service of B for the 2026 horizon year and included traffic generation from the Mirvac Aspect development as well as the Access Logistics specific generation. Additional modelling of the Mamre Road precinct network, including the LOG E model has been provided in this assessment as requested by TfNSW and is provided for information purposes. Altis has consulted with LOG-E and gained access to the further modelling referred by TfNSW. That modelling has been further revised to assess the impacts on the network having consideration for LOG-E demands and the assumed connection of the subject site to Aldington Road, via the adjoining (LOG-E owned) land. A summary of the modelling results is provided in Error! Reference source not found., with detailed SIDRA outputs provided in Error! Reference source not found. It is evident from the LOG-E modelling that the proposed development can be supported, with overall LoS D or better during both peaks. Some individual legs will experience higher delays, but this is considered acceptable noting that section 14.3.2 of the TfNSW <i>Traffic Modelling Guidelines</i> (version 1.0) state: <i>“... For traffic signals, the average movement delay and level of service over all movements should be taken. For roundabouts and priority control signals intersection (with Stop and Give Way signs or operating under the T-junction rule) the critical movement for level of service assessment should be that with the worst movement delay.”</i>
3.4 – Whilst the adjoining land owner is constructing the signalised intersection, should the modelling undertaken for this development indicate that the impacts from this development deteriorate the intersection, it is the responsibility of this applicant to mitigate these impacts	It is noted that Mirvac did not need to consider the traffic associated with other developers using the signalised intersection. As such, the current request by TfNSW / DPE to consider LOG-E demands is inconsistent with the approach adopted previously. We note that the Mirvac Aspect (SSD10448) development only assessed traffic from its own and approved developments within the Mamre Road Precinct. Assessment of traffic generation should be treated the same way for this application, which was completed and assessed in the TMAP prepared by Ason and dated 4/4/2022. The traffic modelling and SIDRA results confirmed an acceptable level service of B for the 2026 horizon year and included traffic generation from the Mirvac Aspect development as well as the Access Logistics specific generation. Additional modelling of the Mamre Road precinct network, including the LOG E model has been provided in this assessment as requested by TfNSW and is provided for information purposes. A summary of the modelling results is provided in Error! Reference source not found., with detailed SIDRA outputs provided in Error! Reference source not found. The modelling indicates that the development will have impacts over and above that previously modelled for the Mirvac submission. However, the modelling demonstrates that the intersection still performs at acceptable levels.
TMAP	

² <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-10448-MOD-1%2120220825T063334.694%20GMT>

6.1.1 – Makes reference to co-located warehouses which was developed as a result of the future Western Sydney Intermodal Terminal and Integrated Freight network. TfNSW notes that there is no funding currently for these works therefore any modelling undertaken to determine the impacts of this development should be modelled without ‘co-locating.’	This is noted and has been considered for all pre-2036 scenarios. Refer extract from Section 6.2 of the TMAP which states: <i>“... the IMEX terminal in not expected to be fully operation until 2036. Therefore, it is important to note the general warehousing trip generation rates prior to the implementation of co-located warehousing. “</i> In this regard, all pre-2036 modelling has adopted “general warehousing” trip rates which we also note are higher than surveyed average trip rates. As such, the modelling is a conservative analysis of the impacts from future development.
Modelling:	Updated SIDRA modelling has been prepared and a summary of the results is provided in Error! Reference source not found., with detailed SIDRA outputs provided in Error! Reference source not found.. This updated modelling supersedes many of the comments below.
- SIDRA for Site 101 (Access Logistics LILO) – for all the modelling year 2026, 2031 and 2036 it seems the input vehicle are same. This assumes that over years there won’t be any growth with vehicles flowing through the site. TfNSW requests an explanation to understand why there is no predicted growth applied to the model.	The modelling included in the previous Ason RtS Report (dated 04/04/2022) assessed only Access Logistics and Aspect Industrial estates. It did not contemplate further connectivity through to adjoining sites and, as such, there was not ‘growth’ in volumes, except those along Mamre Road itself.
- SIDRA for Site 101 (Access Logistics LILO) – Turn speeds do not appear to be realistic.	Default turn speeds have been adopted. Selection of turning speeds will have limited (if any) impact to the overall modelling results and conclusions.
- SIDRA for Site (All Access via Aspect Logistics) – modelling only found for the year 2026 and it is showing that in the AM, Right Turn from Mamre Rd south approach has LoS E and right turn from AIE east approach has LoS D. Similarly, in the PM peak for these both approaches LoS E and D is showing in the modelling. As previously mentioned it is would be a safety issue if the intersection lanes are running at capacity within a short time frame after completion of the site.	It acknowledged that some individual legs would experience higher delays, but this is considered acceptable noting that section 14.3.1 of the TfNSW Traffic Modelling Guidelines (version 1.0) state: <i>“... For traffic signals, the average movement delay and level of service over all movements should be taken. For roundabouts and priority control signals intersection (with Stop and Give Way signs or operating under the T-junction rule) the critical movement for level of service assessment should be that with the worst movement delay.”</i> Whilst funding for longer term upgrades beyond 2026 may not yet be committed, it is expected that Government will come to the table to support development of the land it has rezoned. In this regard, it should not be the responsibility of developers like Altis to resolve longer term performance issues. The works proposed are sufficient – based on TfNSW Guidelines – to accommodate the development and provides reasonable ‘design life’ prior to delivery of longer term planned works.
- It is recommended that any modelling undertaken for the Mirvac signals includes the adjoining land owners with restricted access to Mamre Road (GPT – Yiribana Logistics).	The updated modelling included herein includes LOG-E demands, including Yiribana Logistics, Aspect and other adjoining LOG partners, as it relies upon the LOG-E model for base demand flows.
- All intersections along Mamre Road should be modelled as Network. The interim model only appears to include the LILO and Aspect Logistics site signals. In order to understand the impact of this development the intersections along Mamre Road should be modelled as a network model and should be consistent with the broader model	Updated SIDRA ‘<i>network</i>’ modelling has been prepared for all intersection along Mamre Road, between Bakers Lane and Abbotts Road. A summary of the results is provided in Error! Reference source not found., with detailed SIDRA outputs provided in Error! Reference source not found..
Temporary Left In/Left Out (LILO)	
TfNSW does not support the acceleration lane at this location due to site constraints (impacts to adjoining landowners). The design provided is unorthodox and there is nothing that requires a resident to use that arrangement. The cut-out in the median may also be mistaken as a refuge. In addition the length of the acceleration lane at this location is considered too short and would not be supported on this ground. It is suggested that a give-way treatment is provided with a deceleration in line with the Austroads Standards. In addition LILO is to be designed: - to physically restrict right turn movements at Mamre Road. - Pedestrian/cyclist are to be considered in the design. Any modelling would need to be updated to reflect the above design changes (this includes all models ie base, 2026, 2031, 2036 etc).	Refer to the civil engineering response submitted separately by MU Group to TfNSW in relation to the design comments. Further modelling has been undertaken for 2026, with a summary of the modelling results is provided in Error! Reference source not found., with detailed SIDRA outputs provided in Error! Reference source not found.. It is evident that: ▪ With the acceleration lane, the network can operate with acceptable performance ▪ Removal of the acceleration lane will increase delays at both the Access Logistics (Altis) and Aspect Industrial (Mircvac) intersections. It is also noted that a 2031 LOG-E model has not been prepared and, as such, cumulative assessment for 2031 had not been undertaken at this time. Whilst funding for longer term upgrades beyond 2026 may not yet be committed, it is expected that Government will come to the table to support development of the land it has rezoned. In this regard, it should not be the responsibility of developers like Altis to resolve longer term performance issues. The works proposed are sufficient – based on TfNSW Guidelines – to accommodate the development and provides reasonable design life prior to delivery of longer term planned works.
TfNSW request that any design provided includes separate plans for the following: - Swept paths of the longest vehicles simultaneous entry/exit in line with Austroads Std. - Design showing location of LILO with the ultimate Mamre Road upgrade alignment TfNSW requests the Raw SIDRA files to be provided for review once updated to take into account TfNSW comments.	Refer to the civil engineering response submitted separately by MU Group to TfNSW in relation to the design comments. SIDRA files can be provided to TfNSW.

Additional Modelling

As outlined above, TfNSW has raised concerns regarding the previous modelling being undertaken in isolation of other development in the area and also with the design of the left-out acceleration lane from Access Logistics Park. The concept of an acceleration lane at this location is established by the DCP and deemed supportable from a design perspective (refer separate MU Group response).

Notwithstanding, additional traffic modelling has been prepared for the following scenarios to inform assessment of this particular development and to seek TfNSW direction with regard to the design of the Mamre Road / Access Logistics intersection:

2. Existing (2022) + Full Development (without acceleration lane)
 - a. Baseline volumes have been obtained from recent surveys undertaken at Mamre Road / Bakers Lane on Thursday, 18 August 2022.
 - b. 100% of Access Logistics
3. 2026 LOG-E (with acceleration lane)
 - a. This is provided primarily for comparison purposes as a base case for the latest cumulative assessment for the broader precinct.
 - b. It is noted that this modelling has assumed development of up to 57.5% of LOG land, based on the endorsed MRP trips rates.
 - c. Additional GFA can be supported if relying upon surveyed trip rates for industrial warehousing facilities.
4. 2026 LOG-E (without acceleration lane)
 - a. Baseline volumes adopted from the LOG-E modelling, which assumes approximately 57.5% of LOG land is developed by that time, with 100% development of Access Logistics Park (Altis, this site), Aspect (Mirvac) and Yiribana (GPT)
 - b. Excludes Southern Link Road connections

They adopted layout of the Access Logistics / Mamre Road intersection without an acceleration lane – adopted by Scenarios 2 & 3 - is presented below.

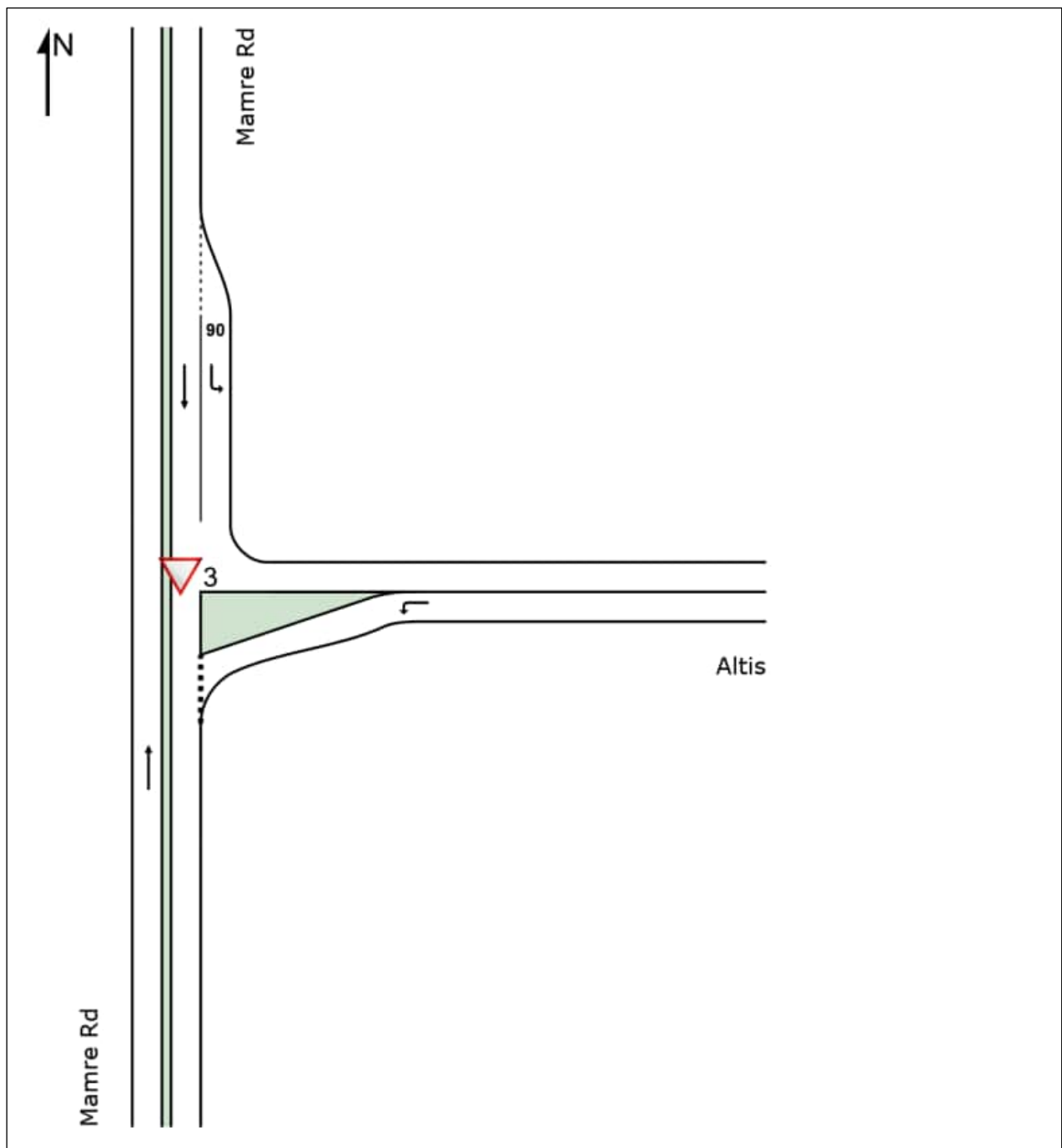


Figure 1: Mamre Rd / Access Logistics LILO (without acceleration lane)

For Scenario 01 (2022+Development), we have adopted the following traffic volumes. Figures closest to the arrows represent “light vehicles” (i.e. cars) and the other relates to “heavy vehicles” (i.e. trucks).

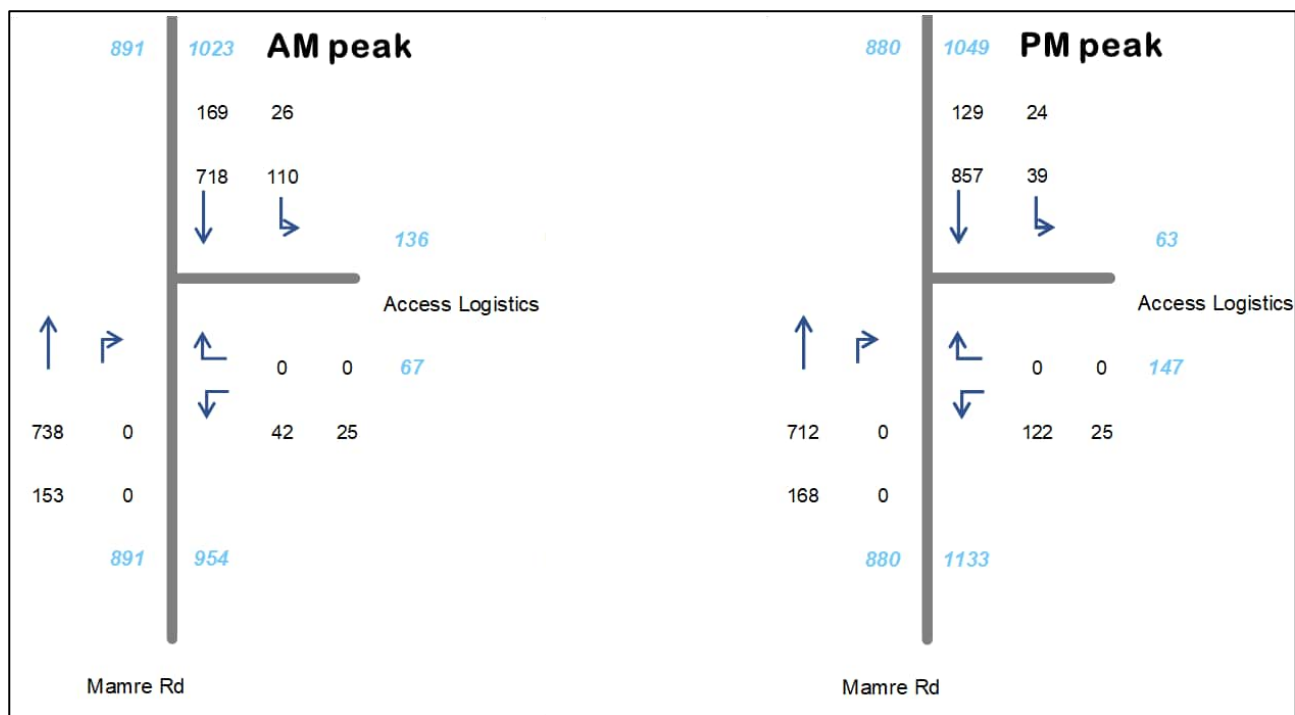


Figure 2: Existing (2022) + Development (Access Logistics Only)

A summary of the network performance under each of these scenarios is provided in **Error! Reference source not found..**

It is evident from the above that:

5. The development can be supported in isolation via the left-in, left-out (without acceleration) prior to further background growth on the network as a result of regional traffic and other developments.
6. In the medium-term (2026), development can be supported via The LILO intersection (with acceleration lane), as originally intended
7. Removal of the acceleration lane in the median will result in additional delays at both the Access Logistics LILO and Aspect Industrial Estate signals
8. Longer term (2031 & 2036), further investment by Government is required to deliver the necessary infrastructure to support the broader Mamre Road Precinct.

It is requested that TfNSW provide guidance on which option it would prefer (with or without acceleration lane) so that relevant documentation to support the SSD can be finalised.

Appendix A. SIDRA Results Summary

Intersection		Control Type	Time Period	Performance	Scenarios																
#	Location				1 (2022 Base + Development, withOUT acceleration lane)					2 (2026 LOG-E Baseline 57.5% LOG with acceleration lane)					3 (2026 57.5% LOG, 100% Altis, Mirvac, GPT, withOUT acceleration lane)						
					Critical LoS ¹	N-Leg	E-Leg	S-Leg	W-Leg	Critical LoS ¹	N-Leg	E-Leg	S-Leg	W-Leg	Critical LoS ¹	N-Leg	E-Leg	S-Leg	W-Leg		
1	Bakers Ln / Mamre Rd	Signal	AM	Delay (sec)		not assessed in this scenario	49.1	68.1	63.3	14.0	60.9	75.5	112.0	77.6	12.8	57.5					
				Queue (m)			198.7	198.7	32.7	174.7	64.0	207.4	207.4	28.9	173.4	43.6					
				DoS			0.814	0.814	0.411	0.727	0.566	0.823	0.823	0.618	0.724	0.418					
				LoS			D	E	E	A	E	F	F	F	A	E					
			PM	Delay (sec)		not assessed in this scenario	43.0	54.0	74.5	17.9	61.3	37.8	46.8	76.0	16.2	66.1					
				Queue (m)			314.5	314.5	109.9	257.3	76.9	167.9	154.9	51.8	167.9	54.9					
2	Aspect Access / Mamre Rd	Signal	AM	DoS		not assessed in this scenario	0.868	0.868	0.865	0.826	0.698	0.857	0.827	0.857	0.847	0.772					
				LoS			D	D	F	B	E	C	D	F	B	E					
				PM			Delay (sec)		not assessed in this scenario	37.6	43.9	56.0	23.1	n/a	67.8	21.7	144.5	91.3	n/a		
							Queue (m)			390.1	390.1	115.2	115.2	n/a	175.4	175.4	94.3	85.6	n/a		
			DoS	0.901	0.901	0.703	0.869	n/a	0.892	0.892	0.883	0.888	n/a								
				LoS	C	D	D	B	n/a	E	B	F	F	n/a							
3	Access Logistics / Mamre Rd	Priority	AM	Delay (sec)	18.8	1.2	18.8	0.3	n/a	7.0	0.9	7.0	0.6	n/a	42.0	1.0	42.0	0.6	n/a		
				Queue (m)	7.8	0.0	7.8	0.0	n/a	0.0	0.0	0.0	0.0	n/a	28.2	0.0	28.2	0.0	n/a		
				DoS	0.234	0.570	0.234	0.564	n/a	0.097	0.622	0.097	0.700	n/a	0.641	0.618	0.641	0.691	n/a		
				LoS	B	A	B	A	n/a	A	A	A	A	n/a	C	A	C	A	n/a		
			PM	Delay (sec)	22.4	0.7	22.4	0.3	n/a	11.4	2.4	11.4	0.8	n/a	6,419.7	1.5	6,419.7	2.2	n/a		
				Queue (m)	17.4	0.0	17.4	0.0	n/a	0.0	0.0	0.0	0.0	n/a	822.3	0.0	822.3	0.0	n/a		
4	Abbotts Rd / Mamre Rd	Signal	AM	DoS		not assessed in this scenario	0.496	0.602	0.496	0.566	n/a	0.194	0.925	0.194	0.758	n/a	8.099	0.896	8.099	0.901	n/a
				LoS			B	A	B	A	n/a	A	A	A	A	n/a	F	A	F	A	n/a
				PM			Delay (sec)		not assessed in this scenario	7.2	6.7	55.1	5.2	n/a	7.2	5.5	51.6	6.0	n/a		
							Queue (m)			37.1	37.1	14.0	22.2	n/a	32.9	32.9	14.6	19.6	n/a		
			DoS	0.387	0.338	0.178	0.387	n/a	0.413	0.323	0.144	0.413	n/a								
				LoS	A	A	D	A	n/a	A	A	D	A	n/a							
5	Abbotts Rd / Mamre Rd	Signal	AM	Delay (sec)		not assessed in this scenario	12.6	8.1	54.1	13.9	n/a	17.9	10.0	53.8	16.6	n/a					
				Queue (m)			94.0	94.0	20.7	70.0	n/a	53.9	53.9	34.1	49.9	n/a					
				DoS			0.626	0.595	0.280	0.626	n/a	0.706	0.520	0.564	0.706	n/a					
				LoS			A	A	D	A	n/a	B	A	D	B	n/a					
			PM	Delay (sec)		not assessed in this scenario	7.2	6.7	55.1	5.2	n/a	7.2	5.5	51.6	6.0	n/a					
				Queue (m)			37.1	37.1	14.0	22.2	n/a	32.9	32.9	14.6	19.6	n/a					
6	Access Logistics / Mamre Rd	Priority	AM	DoS		not assessed in this scenario	0.387	0.338	0.178	0.387	n/a	0.413	0.323	0.144	0.413	n/a					
				LoS			A	A	D	A	n/a	A	A	D	A	n/a					
				PM			Delay (sec)		not assessed in this scenario	12.6	8.1	54.1	13.9	n/a	17.9	10.0	53.8	16.6	n/a		
							Queue (m)			94.0	94.0	20.7	70.0	n/a	53.9	53.9	34.1	49.9	n/a		
			DoS	0.626	0.595	0.280	0.626	n/a	0.706	0.520	0.564	0.706	n/a								
				LoS	A	A	D	A	n/a	B	A	D	B	n/a							

Notes:

- 1 For signals, this is average intersection performance. For all other intersections, the 'worst movement' result
- 2 "Queue" relates to 95th %ile queue - Please note the SIDRA network results report on average queue length by default.
- 3 Scenario 1 & 2 results based on 'isolated' SIDRA, whereas other scenarios are 'network' results

Appendix B. SIDRA Outputs

Existing (2022) + Access Logistics Only

SITE LAYOUT

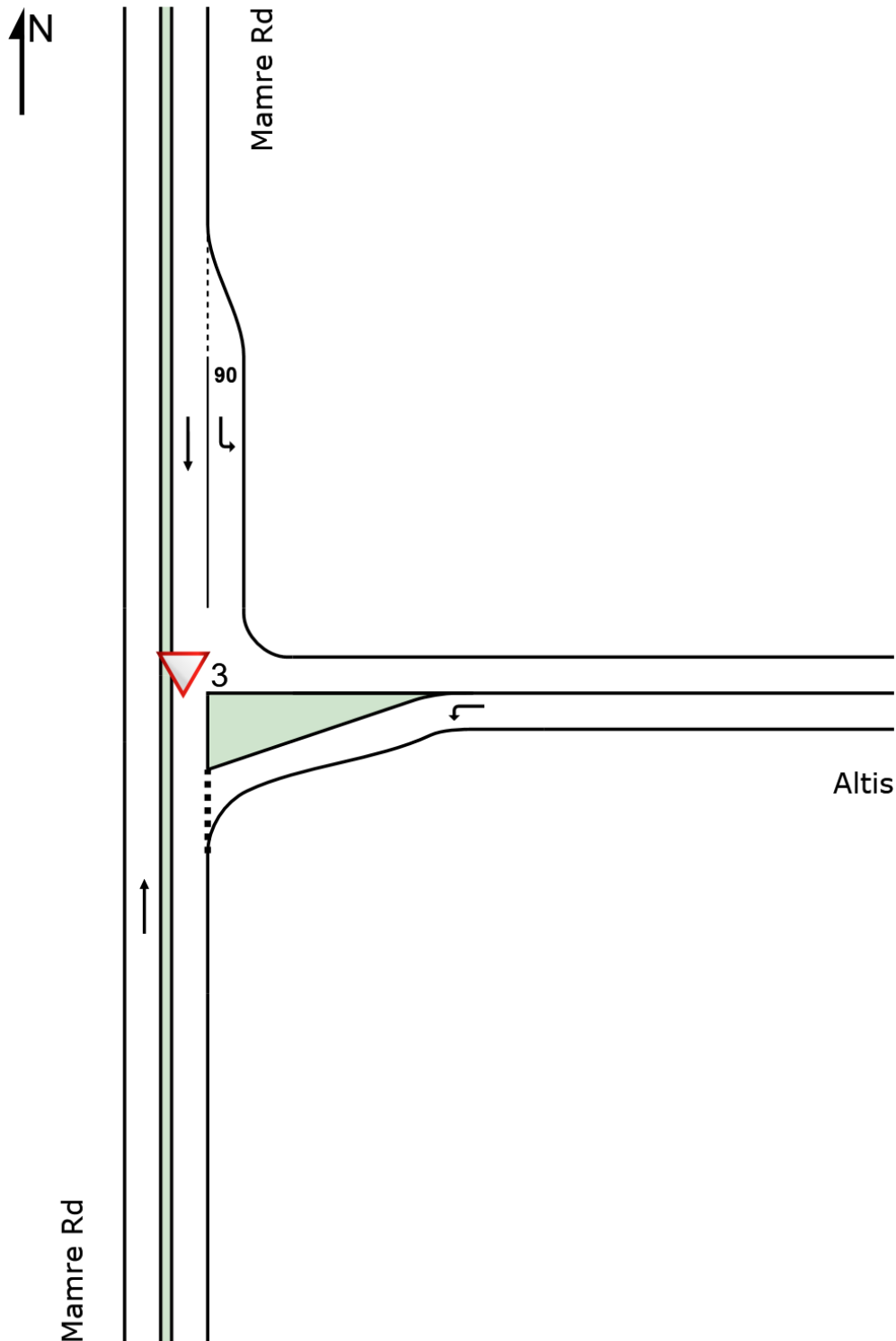
▼ Site: 3 [ID [3]. Mamre Road / Altis Access - AM (Site Folder: 2022 Full Development (Existing + Altis MP only))]

Mamre Road x Altis Access

Site Category: (None)

Give-Way (Two-Way)

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



MOVEMENT SUMMARY

▼ Site: 3 [ID [3]. Mamre Road / Altis Access - AM (Site Folder: 2022 Full Development (Existing + Altis MP only))]

Mamre Road x Altis Access
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	891	153	938	17.2	0.564	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.3
Approach		891	153	938	17.2	0.564	0.3	NA	0.0	0.0	0.00	0.00	0.00	79.3
East: Altis														
4	L2	67	25	71	37.3	0.234	18.8	LOS B	0.8	7.8	0.82	0.94	0.90	51.1
Approach		67	25	71	37.3	0.234	18.8	LOS B	0.8	7.8	0.82	0.94	0.90	51.1
North: Mamre Rd														
7	L2	136	26	143	19.1	0.093	7.3	LOS A	0.0	0.0	0.00	0.63	0.00	59.4
8	T1	887	169	934	19.1	0.570	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.2
Approach		1023	195	1077	19.1	0.570	1.2	NA	0.0	0.0	0.00	0.08	0.00	76.5
All Vehicles		1981	373	2085	18.8	0.570	1.4	NA	0.8	7.8	0.03	0.08	0.03	76.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▼ Site: 3 [ID [3]. Mamre Road / Altis Access - PM (Site Folder: 2022 Full Development (Existing + Altis MP only))]

Mamre Road x Altis Access

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	880	168	926	19.1	0.566	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.3
Approach		880	168	926	19.1	0.566	0.3	NA	0.0	0.0	0.00	0.00	0.00	79.3
East: Altis														
4	L2	147	25	155	17.0	0.496	22.4	LOS B	2.2	17.4	0.88	1.05	1.27	50.4
Approach		147	25	155	17.0	0.496	22.4	LOS B	2.2	17.4	0.88	1.05	1.27	50.4
North: Mamre Rd														
7	L2	63	24	66	38.1	0.050	7.6	LOS A	0.0	0.0	0.00	0.63	0.00	54.4
8	T1	986	129	1038	13.1	0.602	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.2
Approach		1049	153	1104	14.6	0.602	0.7	NA	0.0	0.0	0.00	0.04	0.00	77.5
All Vehicles		2076	346	2185	16.7	0.602	2.1	NA	2.2	17.4	0.06	0.09	0.09	75.3

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

Queue Model: SIDRA Standard.

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Friday, 26 August 2022 4:33:28 PM

Project: C:\Users\Tim Lewis\Desktop\P1509_Interim Access_No Altis Acceleration Ln & No LOG-E.sip9

SITE LAYOUT

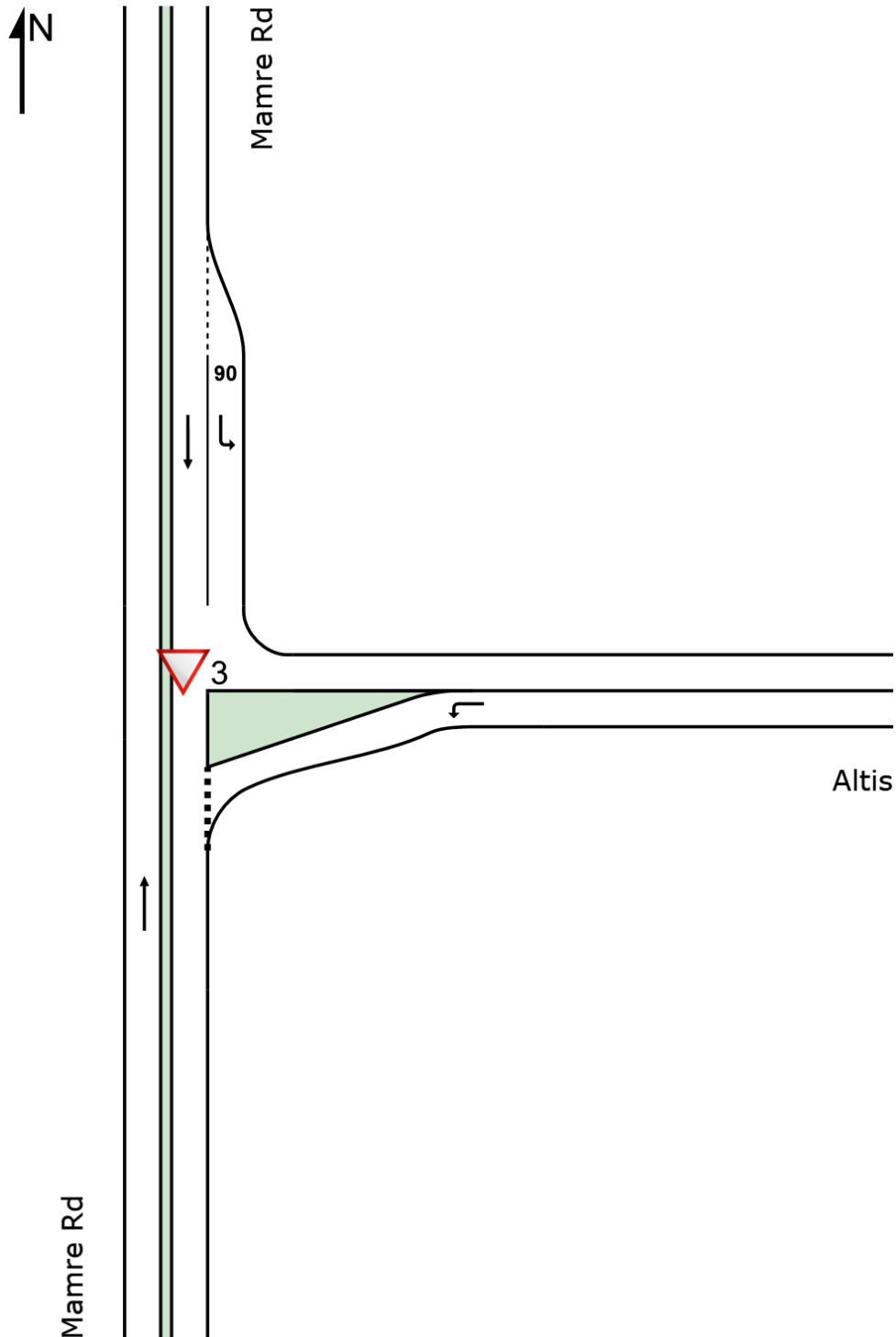
▽ Site: 3 [ID [3]. Mamre Road / Altis Access - AM (Site Folder: 2026 Full Development (No LOG E | Access via LILO & Mirvac Signals))]

Mamre Road x Altis Access

Site Category: (None)

Give-Way (Two-Way)

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



MOVEMENT SUMMARY

▼ Site: 3 [ID [3]. Mamre Road / Altis Access - AM (Site Folder: 2026 Full Development (No LOG E | Access via LILO & Mirvac Signals))]

Mamre Road x Altis Access
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1287	211	1355	16.4	0.809	1.1	LOS A	0.0	0.0	0.00	0.00	0.00	77.7
Approach		1287	211	1355	16.4	0.809	1.1	NA	0.0	0.0	0.00	0.00	0.00	77.7
East: Altis														
4	L2	21	8	22	38.1	0.123	25.8	LOS B	0.4	3.5	0.88	0.95	0.88	47.5
Approach		21	8	22	38.1	0.123	25.8	LOS B	0.4	3.5	0.88	0.95	0.88	47.5
North: Mamre Rd														
7	L2	90	17	95	18.9	0.061	7.3	LOS A	0.0	0.0	0.00	0.63	0.00	59.5
8	T1	1107	73	1165	6.6	0.637	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.1
Approach		1197	90	1260	7.5	0.637	0.8	NA	0.0	0.0	0.00	0.05	0.00	77.6
All Vehicles		2505	309	2637	12.3	0.809	1.1	NA	0.4	3.5	0.01	0.03	0.01	77.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▼ Site: 3 [ID [3]. Mamre Road / Altis Access - PM (Site Folder: 2026 Full Development (No LOG E | Access via LILO & Mirvac Signals))]

Mamre Road x Altis Access
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1172	238	1234	20.3	0.761	0.8	LOS A	0.0	0.0	0.00	0.00	0.00	78.2
Approach		1172	238	1234	20.3	0.761	0.8	NA	0.0	0.0	0.00	0.00	0.00	78.2
East: Altis														
4	L2	66	11	69	16.7	3.376	2277.3	LOS F	39.1	312.8	1.00	1.98	5.38	1.9
Approach		66	11	69	16.7	3.376	2277.3	LOS F	39.1	312.8	1.00	1.98	5.38	1.9
North: Mamre Rd														
7	L2	39	15	41	38.5	0.031	7.7	LOS A	0.0	0.0	0.00	0.63	0.00	54.4
8	T1	1557	211	1639	13.6	0.954	2.9	LOS A	0.0	0.0	0.00	0.00	0.00	71.1
Approach		1596	226	1680	14.2	0.954	3.0	NA	0.0	0.0	0.00	0.02	0.00	70.6
All Vehicles		2834	475	2983	16.8	3.376	55.1	NA	39.1	312.8	0.02	0.05	0.13	39.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

2026 LOG-E Baseline (with acceleration lane)

SITE LAYOUT

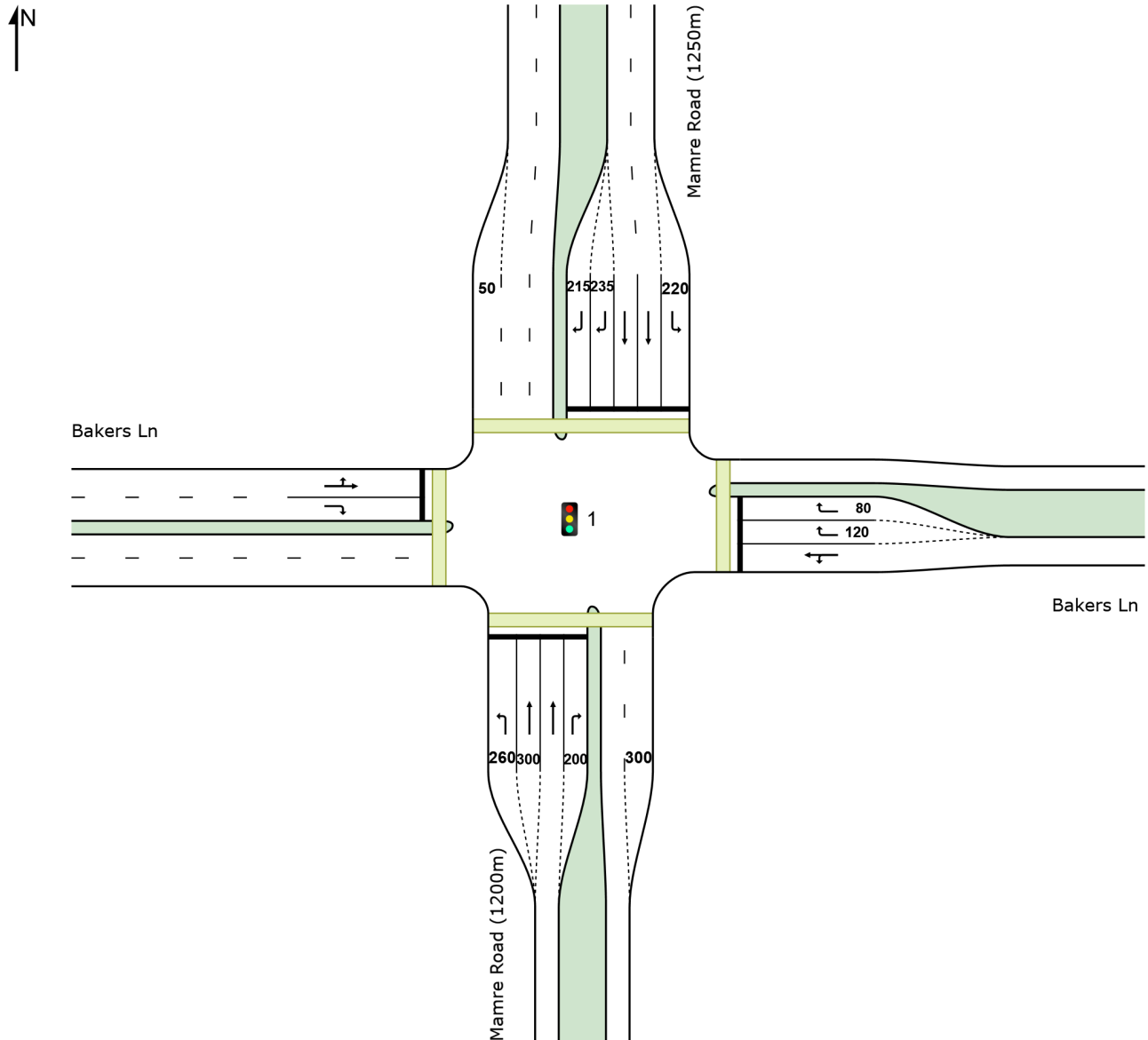
 Site: 1 [[ID: 1] (AM) Bakers Lane / Mamre Road - AM (Site Folder: 2026 - AM 60% GFA)]

Bakers Lane / Mamre Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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



SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 11 August 2022 9:42:20 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60% GFA.sip9

Site: 1 [[ID: 1] (AM) Bakers Lane / Mamre Road - AM (Site Folder: 2026 - AM 60% GFA)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Road (1200m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	242.8	226.4	0.93
East: Bakers Ln												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.4	218.7	0.93
North: Mamre Road (1250m)												

P3 Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.3	234.1	0.94
West: Bakers Ln											
P4 Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.0	219.4	0.93
All Pedestrians	40	42	54.2	LOS E	0.0	0.0	0.95	0.95	241.4	224.7	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:18 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60% GFA.sip9

Site: 1 [[ID: 1] Bakers Lane / Mamre Road - PM (Site Folder: 2026 - PM 60% GFA)]

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m					
South: Mamre Road (1200m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	242.8	226.4	0.93
East: Bakers Ln												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.4	218.7	0.93
North: Mamre Road (1250m)												

P3 Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.3	234.1	0.94
West: Bakers Ln											
P4 Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.0	219.4	0.93
All Pedestrians	40	42	54.2	LOS E	0.0	0.0	0.95	0.95	241.4	224.7	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:26 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60% GFA.sip9

SITE LAYOUT

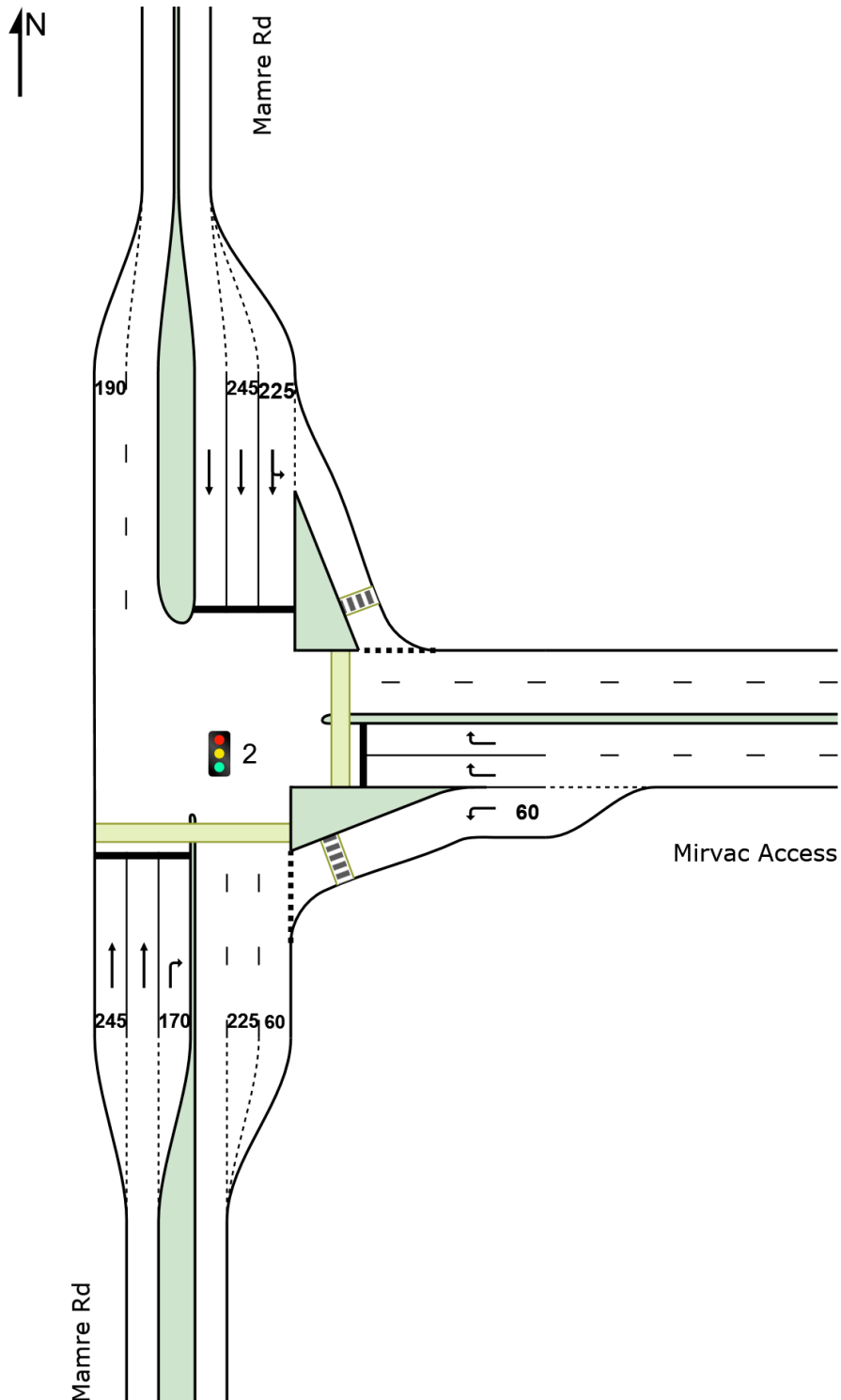
 Site: 2 [[ID: 2] (AM) Mamre x Mirvac Access - AM (Site Folder: 2026 - AM 60% GFA)]

Mamre Road x Mirvac Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

 **Site: 2 [[ID: 2] (AM) Mamre x Mirvac Access - AM (Site Folder: 2026 - AM 60% GFA)]**

Mamre Road x Mirvac Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Mamre Rd														
2	T1	1062	128	1118	12.1	0.498	13.8	LOS A	16.4	132.1	0.55	0.50	0.55	62.0
3	R2	37	16	39	43.2	* 0.303	62.3	LOS E	2.2	26.2	0.95	0.75	0.95	29.3
Approach		1099	144	1157	13.1	0.498	15.5	LOS B	16.4	132.1	0.56	0.51	0.56	60.6
East: Mirvac Access														
4	L2	22	6	23	27.3	0.037	16.1	LOS B	0.4	4.6	0.40	0.60	0.40	46.9
6	R2	264	135	278	51.1	* 0.591	54.5	LOS D	7.5	93.8	0.95	0.81	0.95	39.3
Approach		286	141	301	49.3	0.591	51.5	LOS D	7.5	93.8	0.90	0.80	0.90	39.6
North: Mamre Rd														
7	L2	590	137	621	23.2	0.524	8.1	LOS A	6.1	56.9	0.27	0.66	0.27	57.7
8	T1	1098	129	1156	11.7	* 0.702	27.3	LOS B	26.2	212.9	0.84	0.76	0.84	54.0
Approach		1688	266	1777	15.8	0.702	20.6	LOS B	26.2	212.9	0.64	0.73	0.64	55.2
All Vehicles		3073	551	3235	17.9	0.702	21.6	LOS B	26.2	212.9	0.64	0.65	0.64	55.0

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

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Rd												
P1	Full	10	11	50.4	LOS E	0.0	0.0	0.92	0.92	236.7	223.5	0.94
East: Mirvac Access												
P2	Full	10	11	22.8	LOS C	0.0	0.0	0.62	0.62	203.7	217.0	1.07
All Pedestrians		20	21	36.6	LOS D	0.0	0.0	0.77	0.77	220.2	220.3	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

 **Site: 2** [[ID: 2] Mamre x Mirvac Access - PM (Site Folder: 2026 - PM 60% GFA)]

Mamre Road x Mirvac Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
						v/c	sec							km/h
South: Mamre Rd														
2	T1	1102	114	1160	10.3	0.508	16.8	LOS B	17.1	136.2	0.55	0.51	0.55	62.0
3	R2	132	24	139	18.2	* 0.869	75.6	LOS F	9.3	81.8	1.00	0.97	1.39	26.6
Approach		1234	138	1299	11.2	0.869	23.1	LOS B	17.1	136.2	0.60	0.55	0.64	56.9
East: Mirvac Access														
4	L2	45	5	47	11.1	0.068	28.6	LOS C	1.3	10.5	0.56	0.65	0.56	42.2
6	R2	404	112	425	27.7	* 0.703	59.1	LOS E	12.1	115.2	0.98	0.86	1.03	39.4
Approach		449	117	473	26.1	0.703	56.0	LOS D	12.1	115.2	0.93	0.84	0.98	39.5
North: Mamre Rd														
7	L2	145	90	153	62.1	0.178	9.3	LOS A	1.6	21.1	0.25	0.62	0.25	56.6
8	T1	1408	190	1482	13.5	* 0.901	47.4	LOS D	47.3	390.1	0.99	1.03	1.15	46.7
Approach		1553	280	1635	18.0	0.901	43.9	LOS D	47.3	390.1	0.92	0.99	1.06	47.5
All Vehicles		3236	535	3406	16.5	0.901	37.6	LOS C	47.3	390.1	0.80	0.80	0.89	49.2

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

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Rd												
P1	Full	10	11	50.4	LOS E	0.0	0.0	0.92	0.92	236.7	223.5	0.94
East: Mirvac Access												
P2	Full	10	11	22.2	LOS C	0.0	0.0	0.61	0.61	203.0	217.0	1.07
All Pedestrians		20	21	36.3	LOS D	0.0	0.0	0.76	0.76	219.9	220.3	1.00

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

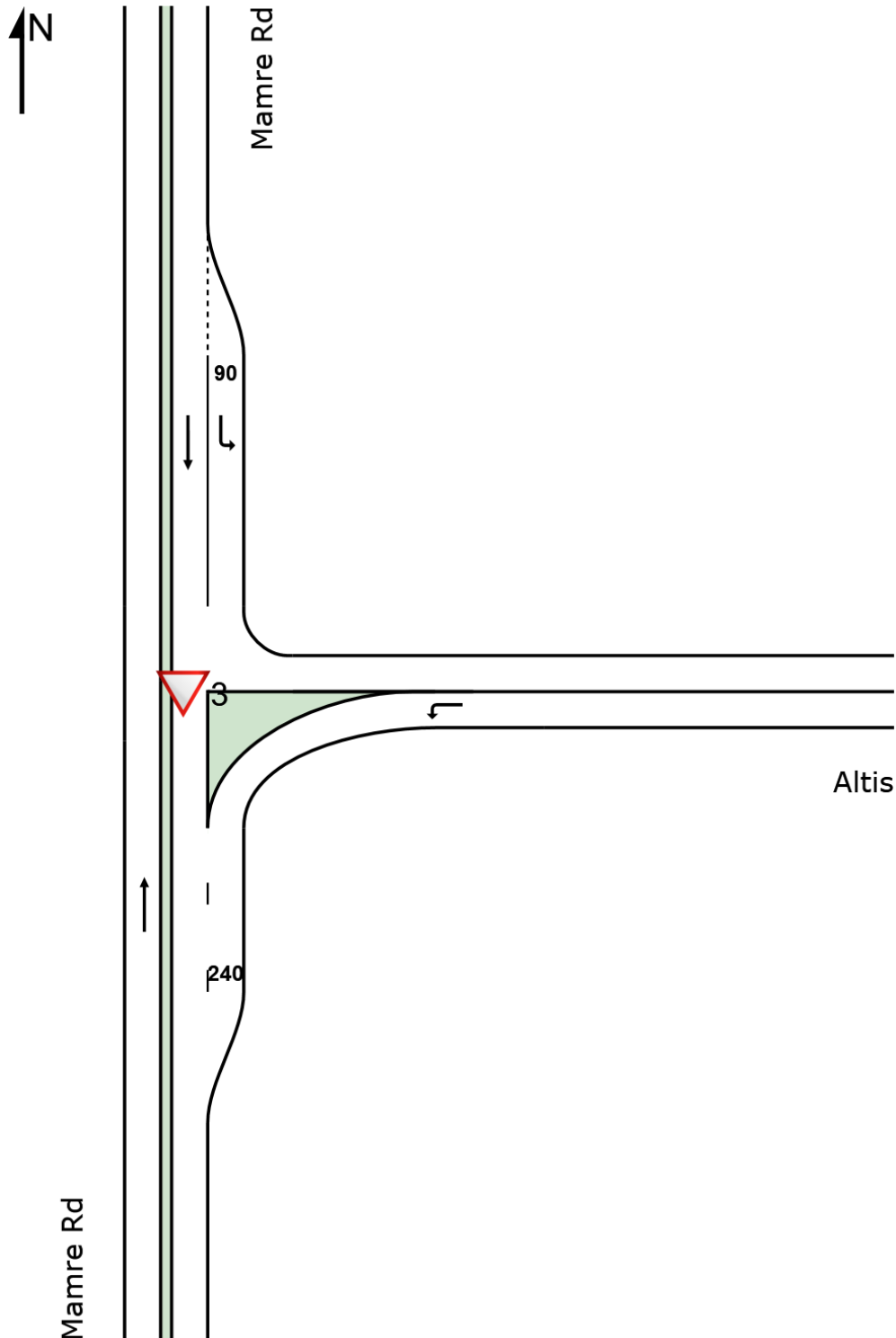
▼ Site: 3 [[ID: 3] (AM) Mamre Rd x Altis Access - AM (Site
Folder: 2026 - AM 60% GFA)]

Mamre Road x Altis Access

Site Category: (None)

Give-Way (Two-Way)

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



MOVEMENT SUMMARY

▼ Site: 3 [[ID: 3] (AM) Mamre Rd x Altis Access - AM (Site Folder: 2026 - AM 60% GFA)]

Mamre Road x Altis Access
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1098	149	1156	13.6	0.700	0.6	LOS A	0.0	0.0	0.00	0.00	0.00	78.7
Approach		1098	149	1156	13.6	0.700	0.6	NA	0.0	0.0	0.00	0.00	0.00	78.7
East: Altis														
4	L2	106	44	112	41.5	0.097	7.0	LOS A	0.0	0.0	0.00	0.51	0.00	54.6
Approach		106	44	112	41.5	0.097	7.0	NA	0.0	0.0	0.00	0.51	0.00	54.6
North: Mamre Rd														
7	L2	110	15	116	13.6	0.075	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	52.9
8	T1	988	119	1040	12.0	0.622	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.1
Approach		1098	134	1156	12.2	0.622	0.9	NA	0.0	0.0	0.00	0.06	0.00	76.1
All Vehicles		2302	327	2423	14.2	0.700	1.0	NA	0.0	0.0	0.00	0.05	0.00	75.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

▼ Site: 101 [[ID: 3] Mamre Rd x Altis Access - PM (Site Folder: 2026 - PM 60% GFA)]

Mamre Road x Altis Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1225	134	1289	10.9	0.758	0.8	LOS A	0.0	0.0	0.00	0.00	0.00	78.3
Approach		1225	134	1289	10.9	0.758	0.8	NA	0.0	0.0	0.00	0.00	0.00	78.3
East: Altis														
4	L2	279	45	294	16.0	0.194	11.4	LOS A	0.0	0.0	0.00	0.52	0.00	55.4
Approach		279	45	294	16.0	0.194	11.4	NA	0.0	0.0	0.00	0.52	0.00	55.4
North: Mamre Rd														
7	L2	26	13	27	50.0	0.024	7.9	LOS A	0.0	0.0	0.00	0.63	0.00	51.4
8	T1	1457	191	1534	13.1	0.925	2.3	LOS A	0.0	0.0	0.00	0.00	0.00	73.9
Approach		1483	204	1561	13.8	0.925	2.4	NA	0.0	0.0	0.00	0.01	0.00	73.5
All Vehicles		2987	383	3144	12.8	0.925	2.6	NA	0.0	0.0	0.00	0.05	0.00	73.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

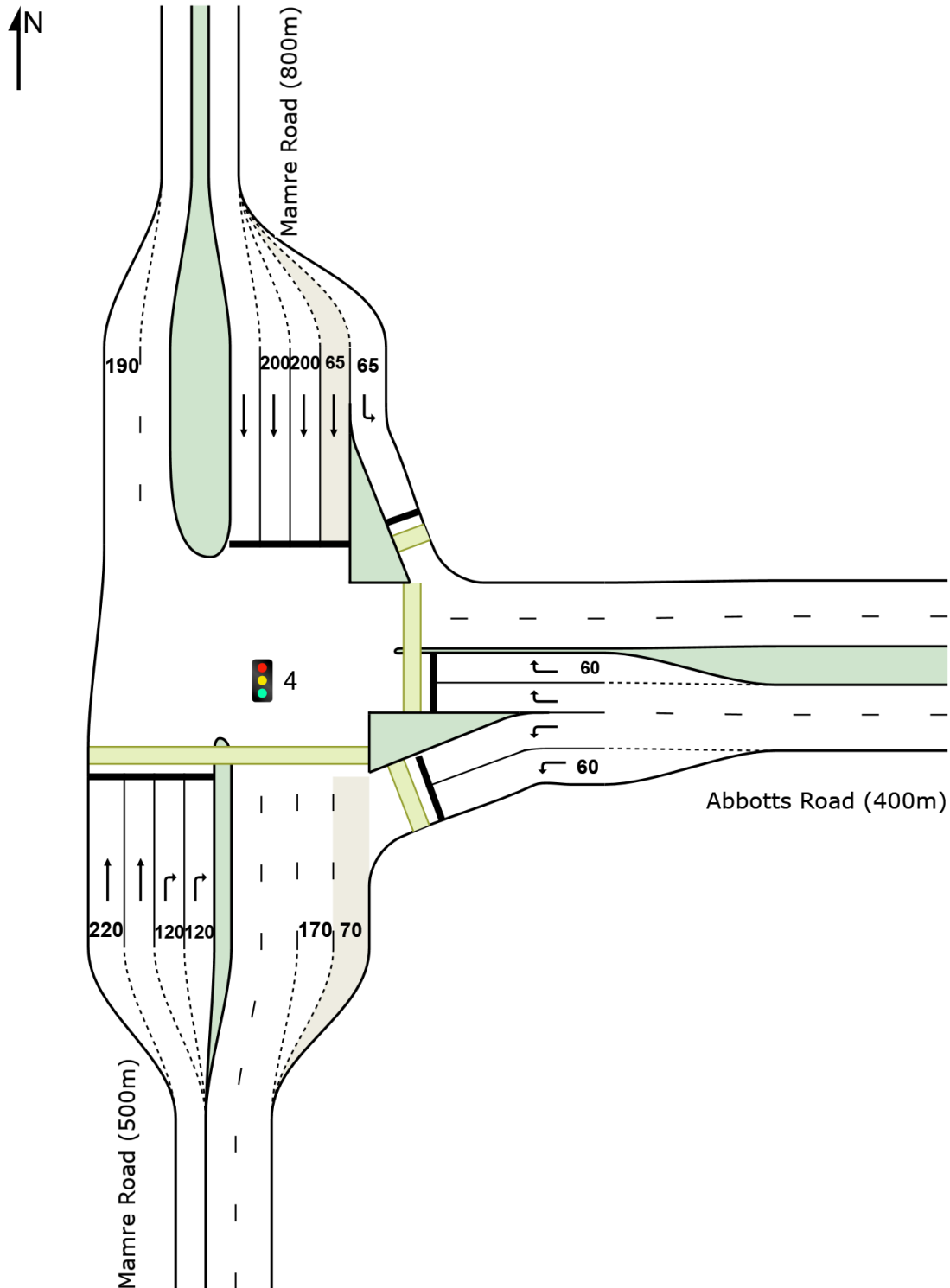
 Site: 4 [[ID: 4] Abbotts Road / Mamre Road - AM (Site Folder: 2026 - AM 60% GFA)]

Abbotts Road / Mamre Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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



Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 11 August 2022 9:43:30 AM
Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60%
GFA.sip9

MOVEMENT SUMMARY

 Site: 4 [[ID: 4] Abbotts Road / Mamre Road - AM (Site Folder: 2026 - AM 60% GFA)]

Abbotts Road / Mamre Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
						v/c	sec							km/h
South: Mamre Road (500m)														
2	T1	1067	131	1123	12.3	0.387	1.8	LOS A	1.1	8.6	0.03	0.03	0.03	79.5
3	R2	88	35	93	39.8	* 0.348	47.1	LOS D	2.1	22.2	0.96	0.75	0.96	34.8
Approach		1155	166	1216	14.4	0.387	5.2	LOS A	2.1	22.2	0.11	0.09	0.11	74.3
East: Abbotts Road (400m)														
4	L2	20	5	21	25.0	0.035	39.5	LOS C	0.6	5.8	0.74	0.67	0.74	34.6
6	R2	41	19	43	46.3	* 0.178	62.7	LOS E	1.2	14.0	0.94	0.72	0.94	30.5
Approach		61	24	64	39.3	0.178	55.1	LOS D	1.2	14.0	0.88	0.70	0.88	31.5
North: Mamre Road (800m)														
7	L2	105	17	111	16.2	0.112	16.8	LOS B	2.5	21.6	0.42	0.70	0.42	55.5
8	T1	997	146	1049	14.6	* 0.338	5.6	LOS A	4.4	37.1	0.23	0.21	0.23	73.5
Approach		1102	163	1160	14.8	0.338	6.7	LOS A	4.4	37.1	0.25	0.25	0.25	71.4
All Vehicles		2318	353	2440	15.2	0.387	7.2	LOS A	4.4	37.1	0.19	0.18	0.19	70.7

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

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Road (500m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.8	234.8	0.94
East: Abbotts Road (400m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	235.2	217.2	0.92
P2B	Slip/ Bypass	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	228.7	209.4	0.92
North: Mamre Road (800m)												
P3B	Slip/ Bypass	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	225.2	205.2	0.91
All Pedestrians		40	42	54.2	LOS E	0.0	0.0	0.95	0.95	234.7	216.7	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:21 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60%
GFA.sip9

MOVEMENT SUMMARY

 Site: 4 [[ID: 4] Abbotts Road / Mamre Road - PM (Site Folder: 2026 - PM 60% GFA)]

Abbotts Road / Mamre Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Road (500m)														
2	T1	1137	122	1197	10.7	0.409	2.2	LOS A	1.2	9.3	0.04	0.03	0.04	79.5
3	R2	281	35	296	12.5	* 0.626	61.2	LOS E	8.4	70.0	0.99	0.82	1.00	30.6
Approach		1418	157	1493	11.1	0.626	13.9	LOS A	8.4	70.0	0.22	0.19	0.23	64.3
East: Abbotts Road (400m)														
4	L2	69	14	73	20.3	0.110	42.8	LOS D	2.1	18.7	0.75	0.71	0.75	35.1
6	R2	82	12	86	14.6	* 0.280	63.7	LOS E	2.4	20.7	0.96	0.74	0.96	33.4
Approach		151	26	159	17.2	0.280	54.1	LOS D	2.4	20.7	0.87	0.73	0.87	34.1
North: Mamre Road (800m)														
7	L2	22	17	23	77.3	0.041	17.5	LOS B	0.5	7.5	0.39	0.66	0.39	53.3
8	T1	1799	234	1894	13.0	* 0.595	8.0	LOS A	11.5	94.0	0.34	0.31	0.34	71.9
Approach		1821	251	1917	13.8	0.595	8.1	LOS A	11.5	94.0	0.34	0.31	0.34	71.7
All Vehicles		3390	434	3568	12.8	0.626	12.6	LOS A	11.5	94.0	0.31	0.28	0.32	65.8

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

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m					
South: Mamre Road (500m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.8	234.8	0.94
East: Abbotts Road (400m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	235.2	217.2	0.92
P2B	Slip/ Bypass	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	228.7	209.4	0.92
North: Mamre Road (800m)												
P3B	Slip/ Bypass	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	225.2	205.2	0.91
All Pedestrians		40	42	54.2	LOS E	0.0	0.0	0.95	0.95	234.7	216.7	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:28 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60%
GFA.sip9

SITE LAYOUT

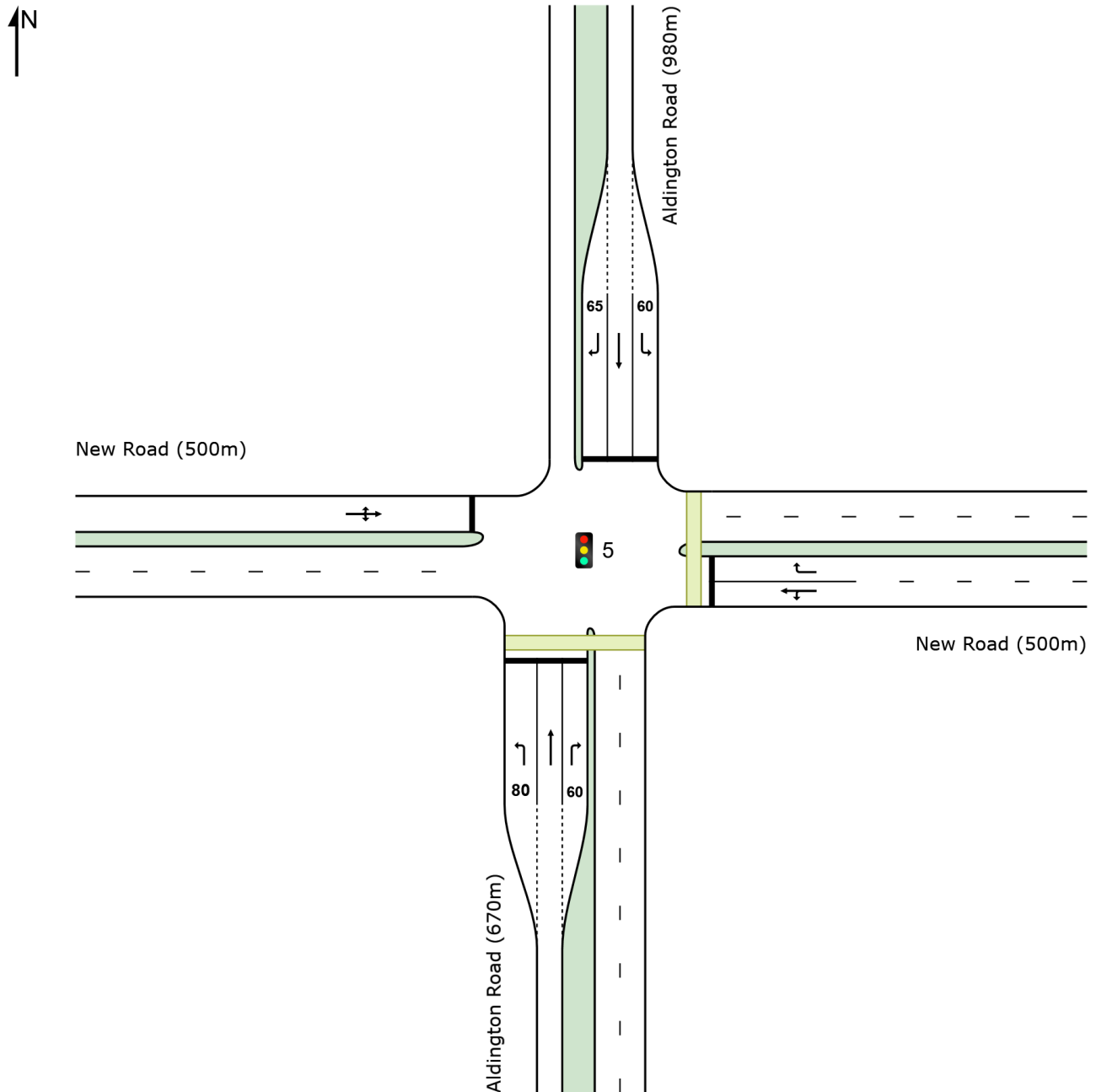
 Site: 5 [[ID: 5] Aldington Road /Bakers Lane / Fife Kemps Creek (North) - AM (Site Folder: 2026 - AM 60% GFA)]

Aldington Road /Bakers Lane / Fife Kemps Creek (North)

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 11 August 2022 9:43:55 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60% GFA.sip9

MOVEMENT SUMMARY

 **Site: 5** [[ID: 5] Aldington Road /Bakers Lane / Fife Kemps Creek (North) - AM (Site Folder: 2026 - AM 60% GFA)]

Aldington Road /Bakers Lane / Fife Kemps Creek (North)
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Aldington Road (670m)														
1	L2	7	6	7	85.7	0.022	23.3	LOS B	0.2	3.8	0.57	0.65	0.57	41.4
2	T1	33	0	35	0.0	0.061	27.4	LOS B	1.2	8.5	0.75	0.56	0.75	47.1
3	R2	2	1	2	50.0	0.025	55.4	LOS D	0.1	1.0	0.95	0.62	0.95	31.9
Approach		42	7	44	16.7	0.061	28.0	LOS B	1.2	8.5	0.73	0.58	0.73	45.5
East: New Road (500m)														
4	L2	1	0	1	0.0	0.004	30.3	LOS C	0.1	0.5	0.72	0.53	0.72	39.9
5	T1	1	0	1	0.0	0.004	25.8	LOS B	0.1	0.5	0.72	0.53	0.72	36.2
6	R2	64	0	67	0.0	0.120	31.8	LOS C	2.4	16.6	0.76	0.71	0.76	41.8
Approach		66	0	69	0.0	0.120	31.7	LOS C	2.4	16.6	0.76	0.71	0.76	41.7
North: Aldington Road (980m)														
7	L2	259	0	273	0.0	* 0.251	11.2	LOS A	3.4	24.1	0.52	0.72	0.52	50.0
8	T1	1	0	1	0.0	0.002	26.4	LOS B	0.0	0.2	0.72	0.44	0.72	47.5
9	R2	31	0	33	0.0	* 0.248	55.6	LOS D	1.6	11.2	0.98	0.72	0.98	35.3
Approach		291	0	306	0.0	0.251	15.9	LOS B	3.4	24.1	0.57	0.72	0.57	47.9
West: New Road (500m)														
10	L2	12	3	13	25.0	0.250	53.3	LOS D	1.2	17.9	0.96	0.73	0.96	35.4
11	T1	1	0	1	0.0	* 0.250	48.4	LOS D	1.2	17.9	0.96	0.73	0.96	29.1
12	R2	11	9	12	81.8	0.250	53.8	LOS D	1.2	17.9	0.96	0.73	0.96	31.2
Approach		24	12	25	50.0	0.250	53.3	LOS D	1.2	17.9	0.96	0.73	0.96	33.4
All Vehicles		423	19	445	4.5	0.251	21.7	LOS B	3.4	24.1	0.64	0.70	0.64	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Aldington Road (670m)												
P1	Full	10	11	44.2	LOS E	0.0	0.0	0.94	0.94	228.8	221.5	0.97
East: New Road (500m)												
P2	Full	10	11	44.2	LOS E	0.0	0.0	0.94	0.94	225.9	218.0	0.97
All		0	21	44.2	LOS E	0.0	0.0	0.94	0.94	227.3	219.8	0.97

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:21 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60%
GFA.sip9

MOVEMENT SUMMARY

 **Site: 5** [[ID: 5] Aldington Road /Bakers Lane / Fife Kemps Creek (North) - PM (Site Folder: 2026 - PM 60% GFA)]

Aldington Road /Bakers Lane / Fife Kemps Creek (North)

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Aldington Road (670m)														
1	L2	23	6	24	26.1	0.060	40.2	LOS C	1.0	9.5	0.77	0.70	0.77	36.0
2	T1	32	0	34	0.0	0.114	47.8	LOS D	1.7	12.0	0.90	0.66	0.90	40.6
3	R2	3	0	3	0.0	0.009	47.2	LOS D	0.1	1.0	0.83	0.63	0.83	34.2
Approach		58	6	61	10.3	0.114	44.8	LOS D	1.7	12.0	0.84	0.68	0.84	38.7
East: New Road (500m)														
4	L2	4	3	4	75.0	0.014	29.8	LOS C	0.2	2.5	0.64	0.59	0.64	38.6
5	T1	1	0	1	0.0	0.014	24.5	LOS B	0.2	2.5	0.64	0.59	0.64	36.6
6	R2	110	0	116	0.0	* 0.161	30.4	LOS C	4.4	30.8	0.69	0.72	0.69	42.2
Approach		115	3	121	2.6	0.161	30.3	LOS C	4.4	30.8	0.69	0.71	0.69	42.1
North: Aldington Road (980m)														
7	L2	34	0	36	0.0	0.036	13.5	LOS A	0.6	4.5	0.50	0.66	0.50	49.0
8	T1	43	2	45	4.7	* 0.160	48.4	LOS D	2.3	17.0	0.91	0.68	0.91	40.4
9	R2	4	0	4	0.0	0.012	47.2	LOS D	0.2	1.4	0.83	0.65	0.83	37.3
Approach		81	2	85	2.5	0.160	33.7	LOS C	2.3	17.0	0.73	0.67	0.73	43.2
West: New Road (500m)														
10	L2	12	0	13	0.0	* 0.123	34.0	LOS C	0.8	5.4	0.94	0.70	0.94	41.0
11	T1	1	0	1	0.0	* 0.123	29.4	LOS C	0.8	5.4	0.94	0.70	0.94	34.2
12	R2	9	0	9	0.0	0.123	34.0	LOS C	0.8	5.4	0.94	0.70	0.94	38.0
Approach		22	0	23	0.0	0.123	33.8	LOS C	0.8	5.4	0.94	0.70	0.94	39.6
All Vehicles		276	11	291	4.0	0.161	34.6	LOS C	4.4	30.8	0.76	0.69	0.76	41.5

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

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Aldington Road (670m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	238.8	221.5	0.93
East: New Road (500m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	235.8	218.0	0.92
All		0	21	54.2	LOS E	0.0	0.0	0.95	0.95	237.3	219.8	0.93

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:29 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60%
GFA.sip9

SITE LAYOUT

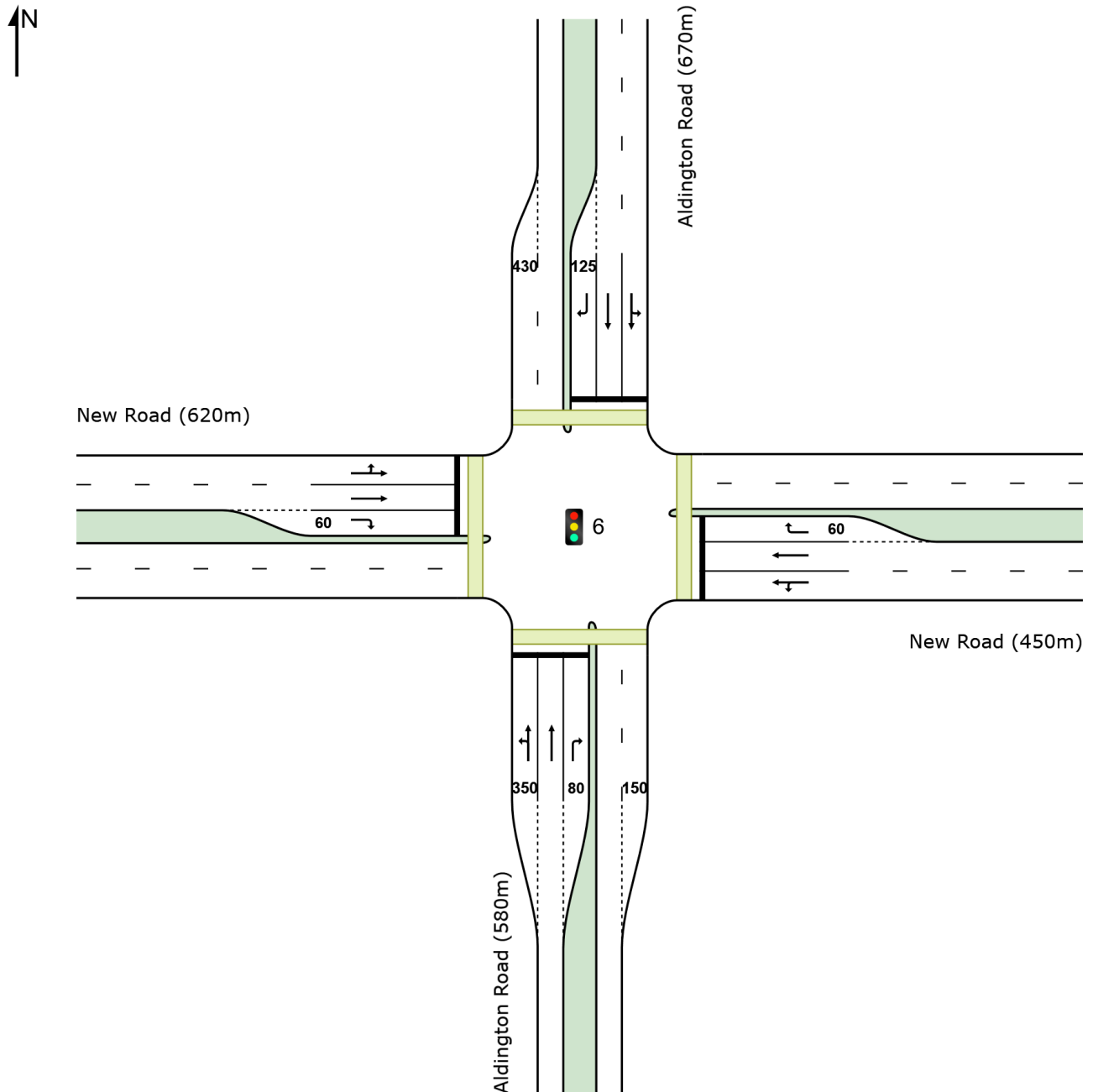
 **Site: 6** [[ID: 6] Aldington Road /Bakers Lane / Fife Kemps Creek (South) - AM (Site Folder: 2026 - AM 60% GFA)]

Aldington Road /Bakers Lane / Fife Kemps Creek (South)

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



Site: 6 [[ID: 6] Aldington Road /Bakers Lane / Fife Kemps Creek (South) - AM (Site Folder: 2026 - AM 60% GFA)]

Site Category: (None)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Aldington Road (580m)														
1	L2	35	17	37	48.6	0.096	30.6	LOS C	1.2	14.0	0.71	0.71	0.71	38.9
2	T1	5	3	5	60.0	* 0.093	52.8	LOS D	0.3	4.1	0.97	0.65	0.97	35.5
3	R2	32	11	34	34.4	* 0.154	46.2	LOS D	1.5	13.3	0.90	0.73	0.90	32.9
Approach		72	31	76	43.1	0.154	39.1	LOS C	1.5	14.0	0.81	0.71	0.81	35.9
East: New Road (450m)														
4	L2	7	0	7	0.0	* 0.155	32.1	LOS C	1.8	25.0	0.76	0.61	0.76	38.0
5	T1	85	61	89	71.8	0.155	27.5	LOS B	1.8	25.0	0.76	0.60	0.76	36.7
6	R2	33	0	35	0.0	0.060	30.4	LOS C	1.2	8.3	0.73	0.68	0.73	38.8
Approach		125	61	132	48.8	0.155	28.5	LOS C	1.8	25.3	0.75	0.63	0.75	37.4
North: Aldington Road (670m)														
7	L2	1	0	1	0.0	0.038	32.7	LOS C	0.1	1.3	0.94	0.61	0.94	38.9
8	T1	4	3	4	75.0	0.045	40.9	LOS C	0.1	2.0	0.95	0.61	0.95	38.5
9	R2	7	6	7	85.7	0.065	47.5	LOS D	0.3	6.2	0.88	0.68	0.88	34.9
Approach		12	9	13	75.0	0.065	44.1	LOS D	0.3	6.2	0.91	0.65	0.91	36.3
West: New Road (620m)														
10	L2	7	6	7	85.7	0.156	40.1	LOS C	1.2	20.4	0.83	0.66	0.83	35.9
11	T1	51	50	54	98.0	* 0.156	34.5	LOS C	1.3	20.1	0.83	0.64	0.83	34.3
12	R2	2	1	2	50.0	0.008	36.9	LOS C	0.1	0.8	0.79	0.61	0.79	36.2
Approach		60	57	63	95.0	0.156	35.3	LOS C	1.3	20.4	0.83	0.64	0.83	34.6
All Vehicles		269	158	283	58.7	0.156	33.6	LOS C	1.8	25.3	0.79	0.65	0.79	36.3

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

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Aldington Road (580m)												
P1	Full	10	11	44.2	LOS E	0.0	0.0	0.94	0.94	227.9	220.5	0.97
East: New Road (450m)												
P2	Full	10	11	44.2	LOS E	0.0	0.0	0.94	0.94	229.2	222.0	0.97
North: Aldington Road (670m)												

P3 Full	10	11	44.2	LOS E	0.0	0.0	0.94	0.94	227.9	220.5	0.97
West: New Road (620m)											
P4 Full	10	11	44.2	LOS E	0.0	0.0	0.94	0.94	228.8	221.5	0.97
All Pedestrians	0	42	44.2	LOS E	0.0	0.0	0.94	0.94	228.5	221.1	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:22 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60% GFA.sip9

Site: 6 [[ID: 6] Aldington Road /Bakers Lane / Fife Kemps Creek (South) - PM (Site Folder: 2026 - PM 60% GFA)]

Site Category: (None)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Aldington Road (580m)														
1	L2	116	16	122	13.8	0.281	41.9	LOS C	5.6	47.8	0.82	0.77	0.82	35.5
2	T1	22	2	23	9.1	* 0.096	49.8	LOS D	1.2	9.1	0.91	0.66	0.91	36.3
3	R2	113	12	119	10.6	* 0.282	44.2	LOS D	5.6	44.6	0.84	0.77	0.84	33.5
Approach		251	30	264	12.0	0.282	43.7	LOS D	5.6	47.8	0.84	0.76	0.84	34.7
East: New Road (450m)														
4	L2	12	5	13	41.7	* 0.283	39.8	LOS C	5.3	54.1	0.81	0.67	0.81	34.9
5	T1	216	65	227	30.1	0.283	34.8	LOS C	5.5	54.1	0.81	0.67	0.81	34.6
6	R2	28	0	29	0.0	0.052	36.2	LOS C	1.2	8.5	0.74	0.68	0.74	36.8
Approach		256	70	269	27.3	0.283	35.2	LOS C	5.5	54.1	0.80	0.67	0.80	34.8
North: Aldington Road (670m)														
7	L2	3	2	3	66.7	0.026	34.7	LOS C	0.2	2.0	0.85	0.62	0.85	38.5
8	T1	8	1	8	12.5	0.030	43.9	LOS D	0.3	3.0	0.88	0.61	0.88	37.9
9	R2	41	1	43	2.4	0.091	41.8	LOS C	1.9	13.6	0.79	0.72	0.79	36.9
Approach		52	4	55	7.7	0.091	41.7	LOS C	1.9	13.6	0.81	0.70	0.81	37.1
West: New Road (620m)														
10	L2	9	5	9	55.6	0.172	60.5	LOS E	1.1	13.2	0.94	0.70	0.94	31.2
11	T1	27	26	28	96.3	* 0.172	55.4	LOS D	1.1	13.2	0.94	0.69	0.94	29.0
12	R2	1	0	1	0.0	0.005	55.7	LOS D	0.1	0.4	0.91	0.59	0.91	31.9
Approach		37	31	39	83.8	0.172	56.7	LOS E	1.1	13.4	0.94	0.69	0.94	29.7
All Vehicles		596	135	627	22.7	0.283	40.7	LOS C	5.6	54.1	0.83	0.71	0.83	34.6

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

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Aldington Road (580m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.9	220.5	0.93
East: New Road (450m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	239.2	222.0	0.93
North: Aldington Road (670m)												

P3 Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.9	220.5	0.93
West: New Road (620m)											
P4 Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	238.8	221.5	0.93
All Pedestrians	0	42	54.2	LOS E	0.0	0.0	0.95	0.95	238.4	221.1	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 10 August 2022 3:46:30 PM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60% GFA.sip9

SITE LAYOUT

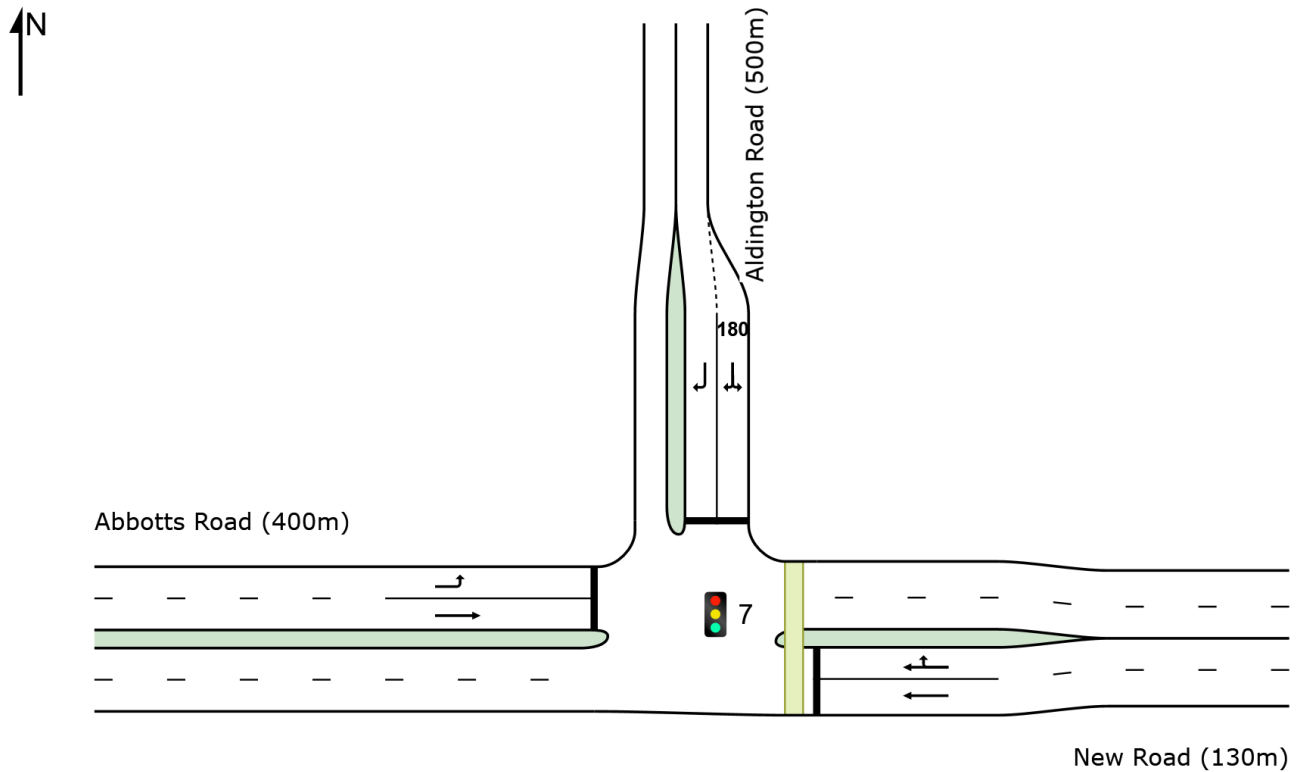
 Site: 7 [[ID: 7] Aldington Road / Abbotts Road - AM (Site
Folder: 2026 - AM 60% GFA)]

Aldington Road / Abbotts Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Created: Thursday, 11 August 2022 9:44:29 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1815 - 2026 MRP revised modelling\Reporting\ROC\SIDRA\P1815_LOGE_2026_60%
GFA.sip9

MOVEMENT SUMMARY

 **Site: 7** [[ID: 7] Aldington Road / Abbotts Road - AM (Site Folder: 2026 - AM 60% GFA)]

Aldington Road / Abbotts Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
East: New Road (130m)														
5	T1	51	21	54	41.2	0.039	11.8	LOS A	0.7	7.2	0.42	0.32	0.42	42.6
6	R2	1	0	1	0.0	* 0.039	30.6	LOS C	0.7	7.2	0.67	0.50	0.67	35.6
Approach		52	21	55	40.4	0.039	12.2	LOS A	0.7	7.2	0.43	0.33	0.43	42.4
North: Aldington Road (500m)														
7	L2	1	0	1	0.0	0.029	48.3	LOS D	0.3	3.4	0.84	0.67	0.84	27.7
9	R2	11	4	12	36.4	* 0.029	49.4	LOS D	0.3	3.4	0.84	0.67	0.84	31.7
Approach		12	4	13	33.3	0.029	49.3	LOS D	0.3	3.4	0.84	0.67	0.84	31.4
West: Abbotts Road (400m)														
10	L2	71	30	75	42.3	0.101	16.0	LOS B	1.8	18.6	0.43	0.67	0.43	45.0
11	T1	122	22	128	18.0	* 0.132	11.3	LOS A	3.1	27.0	0.44	0.48	0.44	43.1
Approach		193	52	203	26.9	0.132	13.0	LOS A	3.1	27.0	0.44	0.55	0.44	44.1
All Vehicles		257	77	271	30.0	0.132	14.6	LOS B	3.1	27.0	0.45	0.51	0.45	42.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: New Road (130m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.7	219.0	0.93
All Pedestrians		0	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.7	219.0	0.93

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

MOVEMENT SUMMARY

 Site: 7 [[ID: 7] Aldington Road / Abbotts Road - PM (Site Folder: 2026 - PM 60% GFA)]

Aldington Road / Abbotts Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
East: New Road (130m)														
5	T1	131	20	138	15.3	0.066	9.0	LOS A	1.6	13.2	0.39	0.32	0.39	45.7
6	R2	1	0	1	0.0	* 0.066	18.8	LOS B	1.6	13.2	0.51	0.40	0.51	42.7
Approach		132	20	139	15.2	0.066	9.1	LOS A	1.6	13.2	0.40	0.32	0.40	45.6
North: Aldington Road (500m)														
7	L2	1	0	1	0.0	0.053	48.8	LOS D	0.6	6.4	0.84	0.69	0.84	27.6
9	R2	21	6	22	28.6	* 0.053	49.7	LOS D	0.6	6.4	0.85	0.69	0.85	31.7
Approach		22	6	23	27.3	0.053	49.7	LOS D	0.6	6.4	0.85	0.69	0.85	31.5
West: Abbotts Road (400m)														
10	L2	248	29	261	11.7	* 0.265	16.9	LOS B	6.9	56.4	0.49	0.72	0.49	45.4
11	T1	65	23	68	35.4	0.086	11.1	LOS A	1.6	17.2	0.43	0.45	0.43	43.4
Approach		313	52	329	16.6	0.265	15.7	LOS B	6.9	56.4	0.48	0.66	0.48	45.2
All Vehicles		467	78	492	16.7	0.265	15.4	LOS B	6.9	56.4	0.47	0.57	0.47	44.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
East: New Road (130m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.7	219.0	0.93
All Pedestrians		0	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.7	219.0	0.93

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

SITE LAYOUT

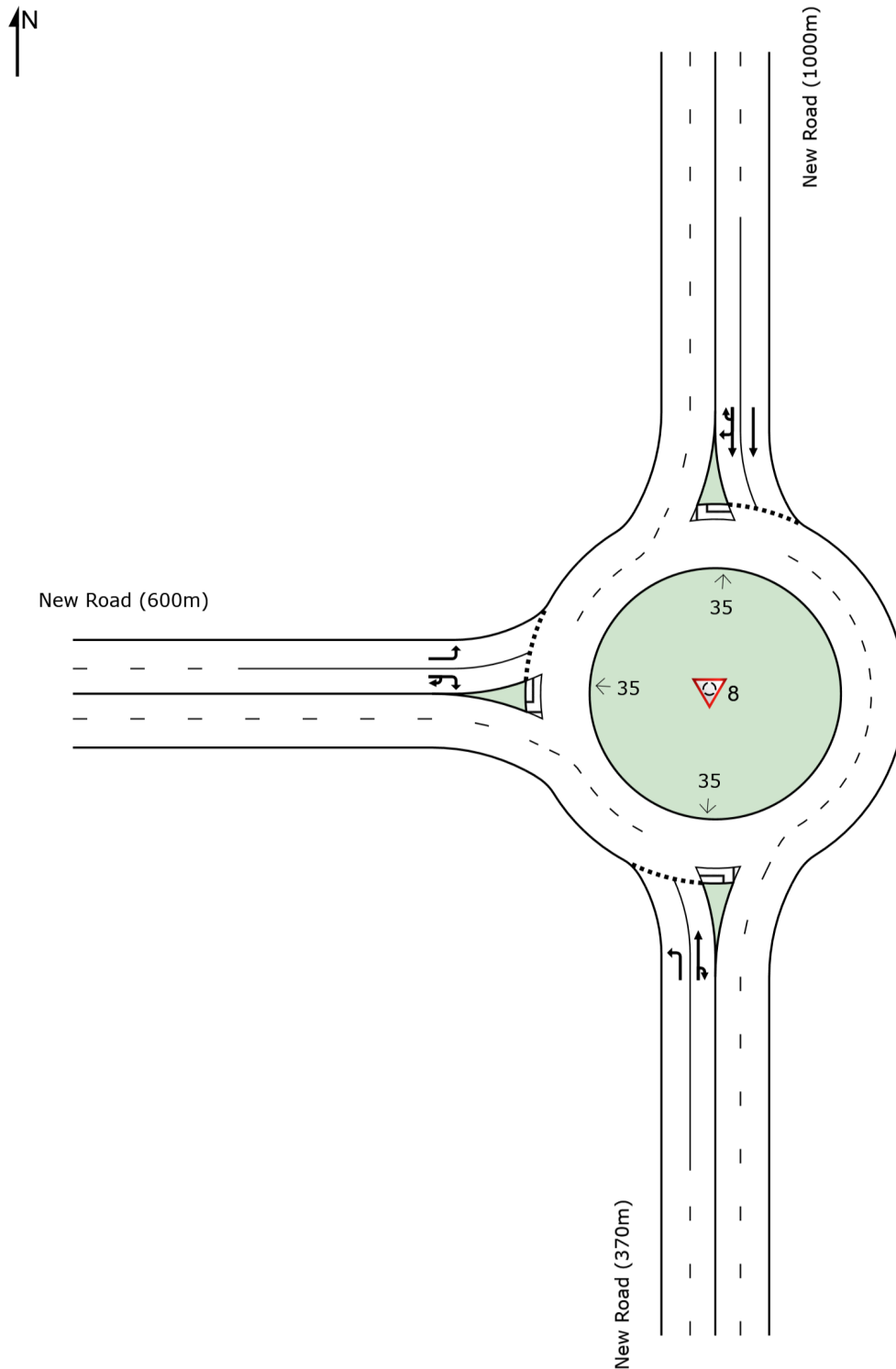
 **Site: 8** [[ID: 8] Internal Road Roundabout (Mirvac) - AM (Site Folder: 2026 - AM 60% GFA)]

Internal Road Roundabout (Mirvac)

Site Category: (None)

Roundabout

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



MOVEMENT SUMMARY

 **Site: 8 [[ID: 8] Internal Road Roundabout (Mirvac) - AM (Site Folder: 2026 - AM 60% GFA)]**

Internal Road Roundabout (Mirvac)
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (370m)														
1	L2	81	36	85	44.4	0.078	2.7	LOS A	0.4	4.4	0.18	0.31	0.18	48.3
2	T1	124	85	131	68.5	0.122	2.1	LOS A	0.7	9.8	0.19	0.22	0.19	50.1
3u	U	1	0	1	0.0	0.122	9.7	LOS A	0.7	9.8	0.19	0.22	0.19	54.1
Approach		206	121	217	58.7	0.122	2.4	LOS A	0.7	9.8	0.18	0.26	0.18	49.6
North: New Road (1000m)														
8	T1	238	77	251	32.4	0.110	2.0	LOS A	0.6	6.3	0.20	0.25	0.20	50.1
9	R2	26	13	27	50.0	0.110	8.3	LOS A	0.6	6.4	0.21	0.31	0.21	50.0
9u	U	1	0	1	0.0	0.110	9.7	LOS A	0.6	6.4	0.21	0.31	0.21	51.2
Approach		265	90	279	34.0	0.110	2.6	LOS A	0.6	6.4	0.20	0.26	0.20	50.1
West: New Road (600m)														
10	L2	24	10	25	41.7	0.029	3.9	LOS A	0.1	1.5	0.41	0.41	0.41	48.5
12	R2	41	6	43	14.6	0.032	8.4	LOS A	0.2	1.5	0.36	0.55	0.36	47.1
12u	U	1	0	1	0.0	0.032	10.1	LOS A	0.2	1.5	0.36	0.55	0.36	49.0
Approach		66	16	69	24.2	0.032	6.8	LOS A	0.2	1.5	0.38	0.50	0.38	47.8
All Vehicles		537	227	565	42.3	0.122	3.1	LOS A	0.7	9.8	0.21	0.29	0.21	49.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 **Site: 8 [[ID: 8] Internal Road Roundabout Mirvac - PM (Site Folder: 2026 - PM 60% GFA)]**

Internal Road Roundabout (Mircvac)
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (370m)														
1	L2	284	44	299	15.5	0.190	2.5	LOS A	1.1	9.2	0.20	0.33	0.20	48.4
2	T1	253	74	266	29.2	0.221	2.1	LOS A	1.3	12.2	0.24	0.24	0.24	50.1
3u	U	1	0	1	0.0	0.221	9.8	LOS A	1.3	12.2	0.24	0.24	0.24	53.8
Approach		538	118	566	21.9	0.221	2.4	LOS A	1.3	12.2	0.22	0.29	0.22	49.3
North: New Road (1000m)														
8	T1	82	58	86	70.7	0.057	1.9	LOS A	0.3	3.2	0.06	0.27	0.06	49.9
9	R2	54	8	57	14.8	0.057	7.6	LOS A	0.3	3.2	0.05	0.47	0.05	49.1
9u	U	1	0	1	0.0	0.057	9.5	LOS A	0.3	3.2	0.05	0.47	0.05	50.2
Approach		137	66	144	48.2	0.057	4.2	LOS A	0.3	4.0	0.06	0.35	0.06	49.5
West: New Road (600m)														
10	L2	67	11	71	16.4	0.058	3.6	LOS A	0.3	2.9	0.46	0.45	0.46	48.5
12	R2	3	2	3	66.7	0.005	10.4	LOS A	0.0	0.3	0.49	0.55	0.49	45.8
12u	U	1	0	1	0.0	0.005	11.0	LOS A	0.0	0.3	0.49	0.55	0.49	48.1
Approach		71	13	75	18.3	0.058	4.0	LOS A	0.3	2.9	0.46	0.45	0.46	48.4
All Vehicles		746	197	785	26.4	0.221	2.9	LOS A	1.3	12.2	0.21	0.31	0.21	49.3

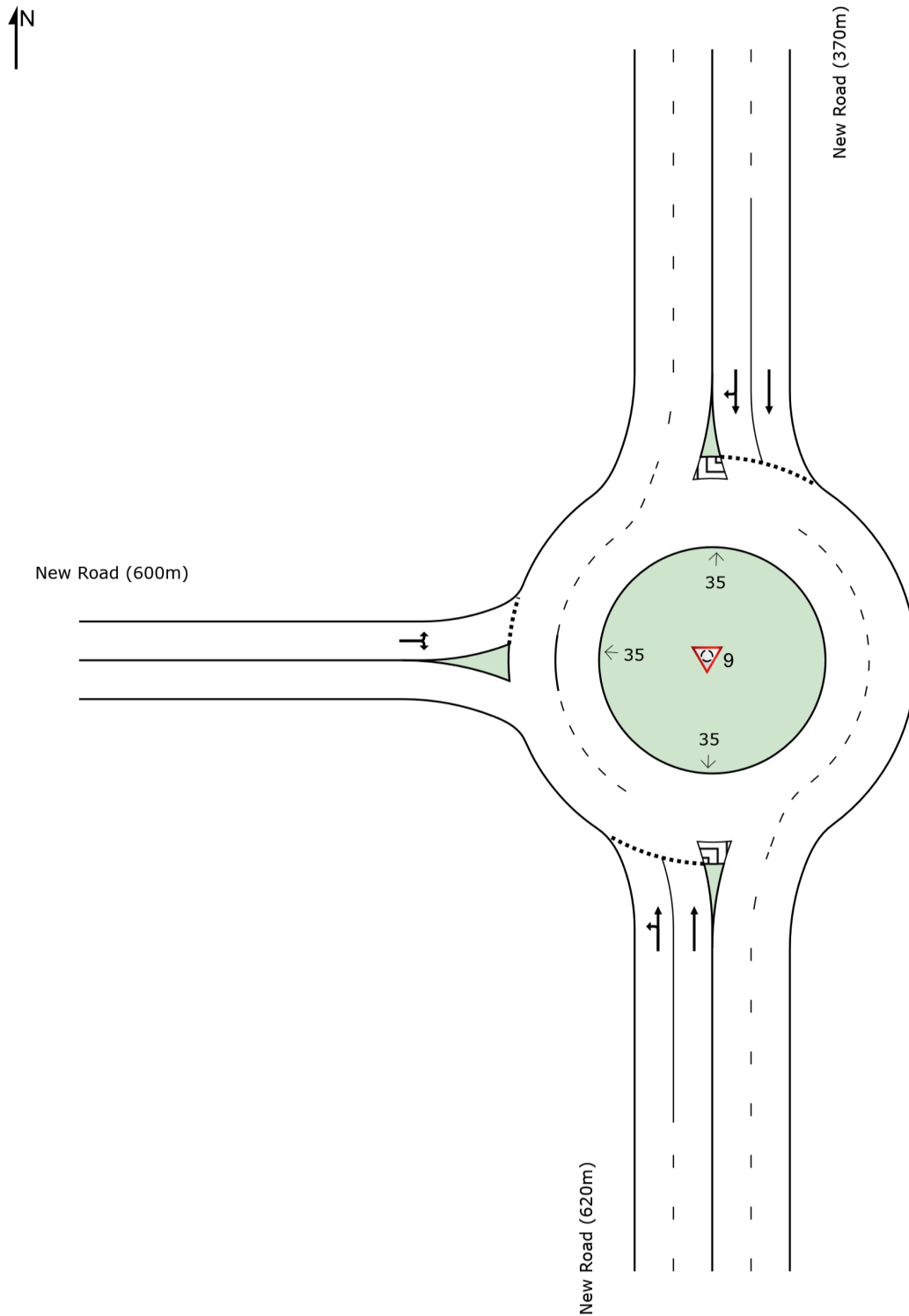
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

 **Site: 9** [[ID: 9] Internal Road Roundabout (Altis)- AM (Site Folder: 2026 - AM 60% GFA)]

Internal Road Roundabout (Altis)
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

 **Site: 9** [[ID: 9] Internal Road Roundabout (Altis)- AM (Site Folder: 2026 - AM 60% GFA)]

Internal Road Roundabout (Altis)
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (620m)														
1	L2	150	94	158	62.7	0.142	3.1	LOS A	0.4	6.2	0.16	0.35	0.16	48.3
2	T1	1	0	1	0.0	0.001	1.8	LOS A	0.0	0.0	0.13	0.20	0.13	50.7
Approach		151	94	159	62.3	0.142	3.1	LOS A	0.4	6.2	0.16	0.35	0.16	48.3
North: New Road (370m)														
8	T1	26	12	27	46.2	0.030	2.8	LOS A	0.1	1.0	0.29	0.31	0.29	49.9
9	R2	58	23	61	39.7	0.051	8.5	LOS A	0.2	1.7	0.27	0.57	0.27	47.1
Approach		84	35	88	41.7	0.051	6.7	LOS A	0.2	1.7	0.27	0.49	0.27	47.9
West: New Road (600m)														
10	L2	1	0	1	0.0	0.188	2.1	LOS A	0.4	4.5	0.01	0.55	0.01	46.1
12	R2	242	78	255	32.2	0.188	7.7	LOS A	0.4	4.5	0.01	0.55	0.01	48.4
Approach		243	78	256	32.1	0.188	7.7	LOS A	0.4	4.5	0.01	0.55	0.01	48.3
All Vehicles		478	207	503	43.3	0.188	6.1	LOS A	0.4	6.2	0.10	0.48	0.10	48.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 **Site: 9** [[ID: 9] Internal Road Roundabout Altis - PM (Site Folder: 2026 - PM 60% GFA)]

Internal Road Roundabout Altis
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (620m)														
1	L2	325	89	342	27.4	0.221	2.6	LOS A	0.7	7.2	0.07	0.33	0.07	48.8
2	T1	1	0	1	0.0	0.001	1.7	LOS A	0.0	0.0	0.06	0.19	0.06	51.1
Approach		326	89	343	27.3	0.221	2.6	LOS A	0.7	7.2	0.07	0.33	0.07	48.8
North: New Road (320m)														
8	T1	52	5	55	9.6	0.032	1.8	LOS A	0.1	0.6	0.14	0.22	0.14	50.3
9	R2	8	8	8	100.0	0.015	9.3	LOS A	0.0	0.9	0.22	0.48	0.22	45.5
Approach		60	13	63	21.7	0.032	2.8	LOS A	0.1	0.9	0.15	0.25	0.15	49.6
West: New Road (600m)														
10	L2	1	0	1	0.0	0.083	2.1	LOS A	0.2	2.3	0.01	0.52	0.01	46.0
12	R2	86	62	91	72.1	0.083	8.0	LOS A	0.2	2.3	0.01	0.52	0.01	48.1
Approach		87	62	92	71.3	0.083	7.9	LOS A	0.2	2.3	0.01	0.52	0.01	48.0
All Vehicles		473	164	498	34.7	0.221	3.6	LOS A	0.7	7.2	0.07	0.35	0.07	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

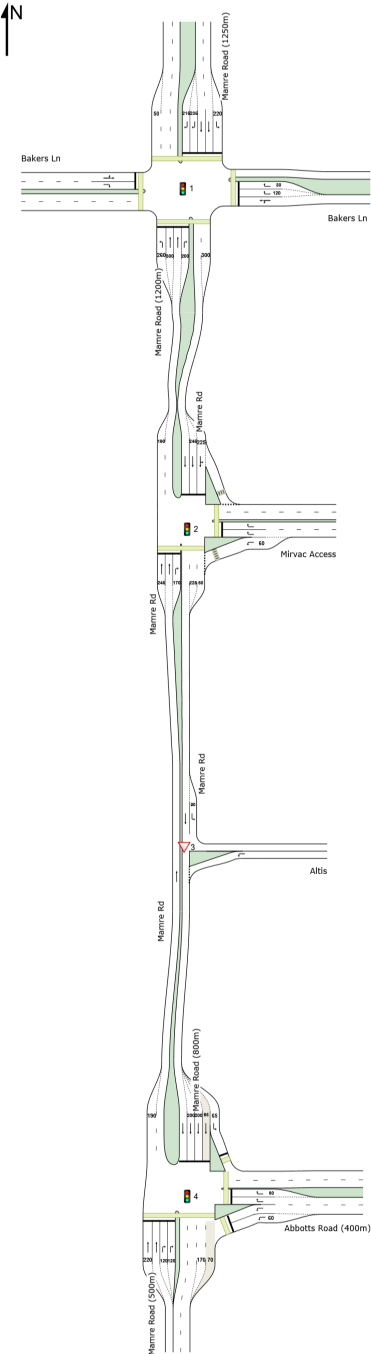
2026 LOG-E + 100% Aspect, GPT & Access Logistics
(without acceleration lane)

NETWORK LAYOUT

Network: N101 [AM Peak (Network Folder: 2026)]

New Network
Network Category: (None)

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



SITES IN NETWORK		
Site ID	CCG ID	Site Name
1	NA	[ID: 1] (AM) Bakers Lane / Mamre Road - AM
2	NA	[ID: 2] (AM) Mamre x Mirvac Access - AM
3	NA	[ID: 3] (AM) Mamre Rd x Altis Access - AM
4	NA	[ID: 4] Abbotts Road / Mamre Road - AM

MOVEMENT SUMMARY

Site: 1 [[ID: 1] (AM) Bakers Lane / Mamre Road - AM (Site Folder: 2026 - AM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln)]

■ ■ Network: N101 [AM Peak
(Network Folder: 2026)]

Bakers Lane / Mamre Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Road (1200m)														
1	L2	25	16.7	25	16.7	0.027	11.2	LOS A	0.2	2.4	0.32	0.67	0.32	62.5
2	T1	1342	16.5	1342	16.5	0.724	11.8	LOS A	19.8	173.4	0.55	0.51	0.55	72.3
3	R2	22	19.0	22	19.0	* 0.284	73.4	LOS F	1.4	11.2	1.00	0.71	1.00	40.2
Approach		1389	16.6	1389	16.6	0.724	12.8	LOS A	19.8	173.4	0.55	0.51	0.55	71.4
East: Bakers Ln														
4	L2	4	100.0	4	100.0	0.041	317.7	LOS F	0.3	3.3	0.90	0.65	0.90	26.1
5	T1	1	0.0	1	0.0	0.041	50.5	LOS D	0.3	3.3	0.90	0.65	0.90	35.7
6	R2	127	5.8	127	5.8	* 0.618	69.9	LOS E	3.9	28.9	1.00	0.79	1.08	41.2
Approach		133	8.7	133	8.7	0.618	77.6	LOS F	3.9	28.9	1.00	0.78	1.08	40.8
North: Mamre Road (1250m)														
7	L2	375	0.8	375	0.8	0.263	12.2	LOS A	6.9	48.6	0.34	0.72	0.34	62.7
8	T1	1831	8.7	1831	8.7	* 0.823	138.3	LOS F	25.8	207.4	0.53	0.50	0.53	70.1
9	R2	231	6.4	231	6.4	0.641	65.6	LOS E	6.8	54.5	1.00	0.81	1.05	42.4
Approach		2436	7.3	2436	7.3	0.823	112.0	LOS F	25.8	207.4	0.55	0.56	0.55	63.3
West: Bakers Ln														
10	L2	80	21.1	80	21.1	0.314	52.5	LOS D	4.1	43.6	0.89	0.77	0.89	45.0
11	T1	1	0.0	1	0.0	* 0.314	44.4	LOS D	4.1	43.6	0.89	0.77	0.89	37.3
12	R2	34	18.8	34	18.8	0.418	69.6	LOS E	2.1	19.9	1.00	0.73	1.00	22.1
Approach		115	20.2	115	20.2	0.418	57.5	LOS E	4.1	43.6	0.92	0.76	0.92	39.7
All Vehicles		4073	10.9	4073	10.9	0.823	75.5	LOS F	25.8	207.4	0.58	0.56	0.58	64.5

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

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

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

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Road (1200m)											
P1	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	242.8	226.4	0.93
East: Bakers Ln											
P2	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.4	218.7	0.93
North: Mamre Road (1250m)											

P3 Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.3	234.1	0.94
West: Bakers Ln										
P4 Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.0	219.4	0.93
All Pedestrians	42	54.2	LOS E	0.0	0.0	0.95	0.95	241.4	224.7	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 7 September 2022 9:20:41 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1509 - Altis Logistics\Model\Scenario 1\Sidra\P1509_LOGE_2026_60% GFA WO
Acceleration Lane.sip9

MOVEMENT SUMMARY

Site: 2 [[ID: 2] (AM) Mamre x Mirvac Access - AM (Site Folder: 2026 - AM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln)]

Network: N101 [AM Peak (Network Folder: 2026)]

Mamre Road x Mirvac Access
Site Category: Proposed Interim
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1116	11.4	1116	11.4	0.495	13.2	LOS A	13.8	111.4	0.47	0.42	0.47	50.6
3	R2	47	15.6	47	15.6	* 0.295	61.2	LOS E	2.6	25.4	0.93	0.75	0.93	29.6
Approach		1163	11.6	1163	11.6	0.495	15.1	LOS B	13.8	111.4	0.48	0.44	0.48	48.0
East: Mirvac Access														
4	L2	24	34.8	24	34.8	0.039	13.2	LOS A	0.3	3.7	0.31	0.58	0.31	41.6
6	R2	307	33.6	307	33.6	* 0.579	54.0	LOS D	8.3	92.9	0.94	0.81	0.94	21.6
Approach		332	33.7	332	33.7	0.579	51.0	LOS D	8.3	92.9	0.90	0.80	0.90	22.3
North: Mamre Rd														
7	L2	713	6.9	713	6.9	0.549	7.9	LOS A	7.1	57.6	0.27	0.67	0.27	57.9
8	T1	1176	10.3	1176	10.3	* 0.705	14.1	LOS A	18.1	145.5	0.57	0.52	0.57	58.1
Approach		1888	9.0	1888	9.0	0.705	11.7	LOS A	18.1	145.5	0.46	0.58	0.46	58.0
All Vehicles		3383	12.3	3383	12.3	0.705	16.8	LOS B	18.1	145.5	0.51	0.55	0.51	51.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Rd											
P1	Full	11	50.4	LOS E	0.0	0.0	0.92	0.92	236.7	223.5	0.94
East: Mirvac Access											
P2	Full	11	22.8	LOS C	0.0	0.0	0.62	0.62	203.7	217.0	1.07
All Pedestrians		21	36.6	LOS D	0.0	0.0	0.77	0.77	220.2	220.3	1.00

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

MOVEMENT SUMMARY

Site: 3 [[ID: 3] (AM) Mamre Rd x Altis Access - AM (Site Folder: 2026 - AM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln)]

Network: N101 [AM Peak (Network Folder: 2026)]

Mamre Road x Altis Access
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist m				km/h
South: Mamre Rd														
2	T1	1164	11.5	1164	11.5	0.691	0.6	LOS A	0.0	0.0	0.00	0.00	0.00	78.8
Approach		1164	11.5	1164	11.5	0.691	0.6	NA	0.0	0.0	0.00	0.00	0.00	78.8
East: Altis														
4	L2	112	25.5	112	25.5	0.641	42.0	LOS C	2.8	28.2	0.95	1.14	1.52	25.8
Approach		112	25.5	112	25.5	0.641	42.0	LOS C	2.8	28.2	0.95	1.14	1.52	25.8
North: Mamre Rd														
7	L2	162	5.2	162	5.2	0.097	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	53.3
8	T1	1039	11.8	1039	11.8	0.618	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.1
Approach		1201	10.9	1201	10.9	0.618	1.0	NA	0.0	0.0	0.00	0.08	0.00	71.0
All Vehicles		2477	11.8	2477	11.8	0.691	2.6	NA	2.8	28.2	0.04	0.09	0.07	70.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [ID: 4] Abbots Road / Mamre Road - AM (Site Folder: 2026 - AM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln)

Network: N101 [AM Peak (Network Folder: 2026)]

Abbots Road / Mamre Road
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] m				
South: Mamre Road (500m)														
2	T1	1122	10.5	1122	10.5	* 0.413	1.9	LOS A	1.1	8.8	0.04	0.03	0.04	78.4
3	R2	75	11.3	75	11.3	0.301	66.6	LOS E	2.2	19.6	0.98	0.74	0.98	29.2
Approach		1197	10.6	1197	10.6	0.413	6.0	LOS A	2.2	19.6	0.10	0.08	0.10	66.6
East: Abbots Road (400m)														
4	L2	24	34.8	24	34.8	0.045	40.5	LOS C	0.7	7.1	0.75	0.67	0.75	33.3
6	R2	53	36.0	53	36.0	* 0.144	56.6	LOS E	1.4	14.6	0.90	0.72	0.90	19.1
Approach		77	35.6	77	35.6	0.144	51.6	LOS D	1.4	14.6	0.85	0.70	0.85	24.3
North: Mamre Road (800m)														
7	L2	123	9.4	123	9.4	0.118	9.3	LOS A	0.5	4.2	0.07	0.63	0.07	61.5
8	T1	1029	13.5	1029	13.5	0.323	5.1	LOS A	4.0	32.9	0.21	0.19	0.21	74.1
Approach		1153	13.1	1153	13.1	0.323	5.5	LOS A	4.0	32.9	0.20	0.23	0.20	72.6
All Vehicles		2426	12.5	2426	12.5	0.413	7.2	LOS A	4.0	32.9	0.17	0.17	0.17	68.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m					
South: Mamre Road (500m)											
P1	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.8	234.8	0.94
East: Abbots Road (400m)											
P2	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	235.2	217.2	0.92
P2B	Slip/ Bypass	11	54.2	LOS E	0.0	0.0	0.95	0.95	228.7	209.4	0.92
North: Mamre Road (800m)											
P3B	Slip/ Bypass	11	54.2	LOS E	0.0	0.0	0.95	0.95	225.2	205.2	0.91
All Pedestrians		42	54.2	LOS E	0.0	0.0	0.95	0.95	234.7	216.7	0.92

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 7 September 2022 9:20:41 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1509 - Altis Logistics\Model\Scenario 1\Sidra\P1509_LOGE_2026_60% GFA WO
Acceleration Lane.sip9

Site: 1 [ID: 1] Bakers Lane / Mamre Road - PM (Site Folder: 2026 - PM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln) Network: N101 [PM Peak (Network Folder: 2026)]

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Road (1200m)											
P1	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	242.8	226.4	0.93
East: Bakers Ln											
P2	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.4	218.7	0.93
North: Mamre Road (1250m)											
P3	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.3	234.1	0.94
West: Bakers Ln											

P4 Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.0	219.4	0.93
All Pedestrians	42	54.2	LOS E	0.0	0.0	0.95	0.95	241.4	224.7	0.93

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 7 September 2022 9:54:53 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1509 - Altis Logistics\Model\Scenario 1\Sidra\P1509_LOGE_2026_60% GFA WO
Acceleration Lane.sip9

MOVEMENT SUMMARY

Site: 2 [[ID: 2] Mamre x Mirvac Access - PM (Site Folder: 2026 - PM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln)] Network: N101 [PM Peak (Network Folder: 2026)]

Mamre Road x Mirvac Access

Site Category: Proposed Interim

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1299	9.2	1299	9.2	0.529	94.4	LOS F	10.9	85.6	0.52	0.47	0.52	52.2
3	R2	225	17.3	225	17.3	* 0.888	73.2	LOS F	9.3	79.2	1.00	0.98	1.35	27.1
Approach		1524	10.4	1524	10.4	0.888	91.3	LOS F	10.9	85.6	0.59	0.55	0.64	42.3
East: Mirvac Access														
4	L2	37	34.3	37	34.3	0.060	23.0	LOS B	0.5	5.5	0.45	0.62	0.45	37.2
6	R2	505	21.0	505	21.0	* 0.883	153.3	LOS F	10.6	94.3	1.00	1.01	1.32	17.7
Approach		542	21.9	542	21.9	0.883	144.5	LOS F	10.6	94.3	0.96	0.98	1.26	18.3
North: Mamre Rd														
7	L2	205	59.0	205	59.0	0.244	10.3	LOS A	1.5	19.2	0.26	0.63	0.26	56.1
8	T1	1469	11.4	1469	11.4	* 0.892	23.2	LOS B	21.6	175.4	0.80	0.79	0.87	53.0
Approach		1675	17.2	1675	17.2	0.892	21.7	LOS B	21.6	175.4	0.73	0.77	0.80	53.5
All Vehicles		3741	15.1	3741	15.1	0.892	67.8	LOS E	21.6	175.4	0.71	0.71	0.80	43.3

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

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Rd											
P1	Full	11	53.2	LOS E	0.0	0.0	0.94	0.94	239.5	223.5	0.93
East: Mirvac Access											
P2	Full	11	22.8	LOS C	0.0	0.0	0.62	0.62	203.7	217.0	1.07
All Pedestrians		21	38.0	LOS D	0.0	0.0	0.78	0.78	221.6	220.3	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [[ID: 3] Mamre Rd x Altis Access - PM (Site Folder: 2026 - PM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln)]

Network: N101 [PM Peak (Network Folder: 2026)]

Mamre Road x Altis Road
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total HV] veh/h	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Mamre Rd														
2	T1	1539	10.7	1539	10.7	0.901	2.2	LOS A	0.0	0.0	0.00	0.00	0.00	75.4
Approach		1539	10.7	1539	10.7	0.901	2.2	NA	0.0	0.0	0.00	0.00	0.00	75.4
East: Altis														
4	L2	439	9.4	439	9.4	8.099	6419.7	LOS F	105.5	822.3	1.00	3.93	13.59	0.3
Approach		439	9.4	439	9.4	8.099	6419.7	LOS F	105.5	822.3	1.00	3.93	13.59	0.3
North: Mamre Rd														
7	L2	28	59.3	28	59.3	0.029	8.2	LOS A	0.0	0.0	0.00	0.63	0.00	49.0
8	T1	1515	11.0	1515	11.0	0.896	1.3	LOS A	0.0	0.0	0.00	0.00	0.00	75.6
Approach		1543	11.9	1543	11.9	0.896	1.5	NA	0.0	0.0	0.00	0.01	0.00	74.2
All Vehicles		3521	11.1	3521	11.1	8.099	801.9	NA	105.5	822.3	0.12	0.49	1.69	2.8

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

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

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 7 September 2022 9:54:53 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1509 - Altis Logistics\Model\Scenario 1\Sidra\P1509_LOGE_2026_60% GFA WO

Acceleration Lane.sip9

MOVEMENT SUMMARY

Site: 4 [ID: 4] Abbots Road / Mamre Road - PM (Site Folder: 2026 - PM 57.5%LOG_100% MIRVAC ALTIS GPT_WO Accel Ln)]

Network: N101 [PM Peak (Network Folder: 2026)]

Abbots Road / Mamre Road

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS		ARRIVAL FLOWS		Deg. Satn	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Mamre Road (500m)														
2	T1	1314	10.3	1314	10.3	0.469	4.4	LOS A	0.9	6.9	0.04	0.04	0.04	78.4
3	R2	343	10.1	343	10.1	* 0.706	63.1	LOS E	6.2	49.9	1.00	0.85	1.08	30.1
Approach		1657	10.2	1657	10.2	0.706	16.6	LOS B	6.2	49.9	0.24	0.21	0.25	52.0
East: Abbots Road (400m)														
4	L2	169	14.3	169	14.3	0.215	39.4	LOS C	3.0	24.7	0.75	0.74	0.75	36.6
6	R2	239	12.8	239	12.8	* 0.564	64.0	LOS E	4.2	34.1	0.98	0.80	0.98	18.0
Approach		408	13.4	408	13.4	0.564	53.8	LOS D	4.2	34.1	0.89	0.77	0.89	26.0
North: Mamre Road (800m)														
7	L2	20	57.9	16	58.6	0.026	9.8	LOS A	0.0	0.4	0.06	0.61	0.06	59.5
8	T1	1958	10.3	1577	10.6	* 0.520	10.0	LOS A	6.7	53.9	0.38	0.35	0.38	69.4
Approach		1978	10.8	1593 ^N ₁	11.1	0.520	10.0	LOS A	6.7	53.9	0.38	0.35	0.38	69.3
All Vehicles		4043	10.8	3658 ^N ₁	11.9	0.706	17.9	LOS B	6.7	53.9	0.37	0.33	0.38	56.5

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

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

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

* Critical Movement (Signal Timing)

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Mamre Road (500m)											
P1	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	249.8	234.8	0.94
East: Abbots Road (400m)											
P2	Full	11	54.2	LOS E	0.0	0.0	0.95	0.95	235.2	217.2	0.92
P2B	Slip/ Bypass	11	54.2	LOS E	0.0	0.0	0.95	0.95	228.7	209.4	0.92
North: Mamre Road (800m)											
P3B	Slip/ Bypass	11	54.2	LOS E	0.0	0.0	0.95	0.95	225.2	205.2	0.91
All Pedestrians		42	54.2	LOS E	0.0	0.0	0.95	0.95	234.7	216.7	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ASON GROUP PTY LTD | Licence: NETWORK / 1PC | Processed: Wednesday, 7 September 2022 9:54:53 AM

Project: C:\Users\Arun Mohan\Desktop\Ason Group\P1509 - Altis Logistics\Model\Scenario 1\Sidra\P1509_LOGE_2026_60% GFA WO
Acceleration Lane.sip9

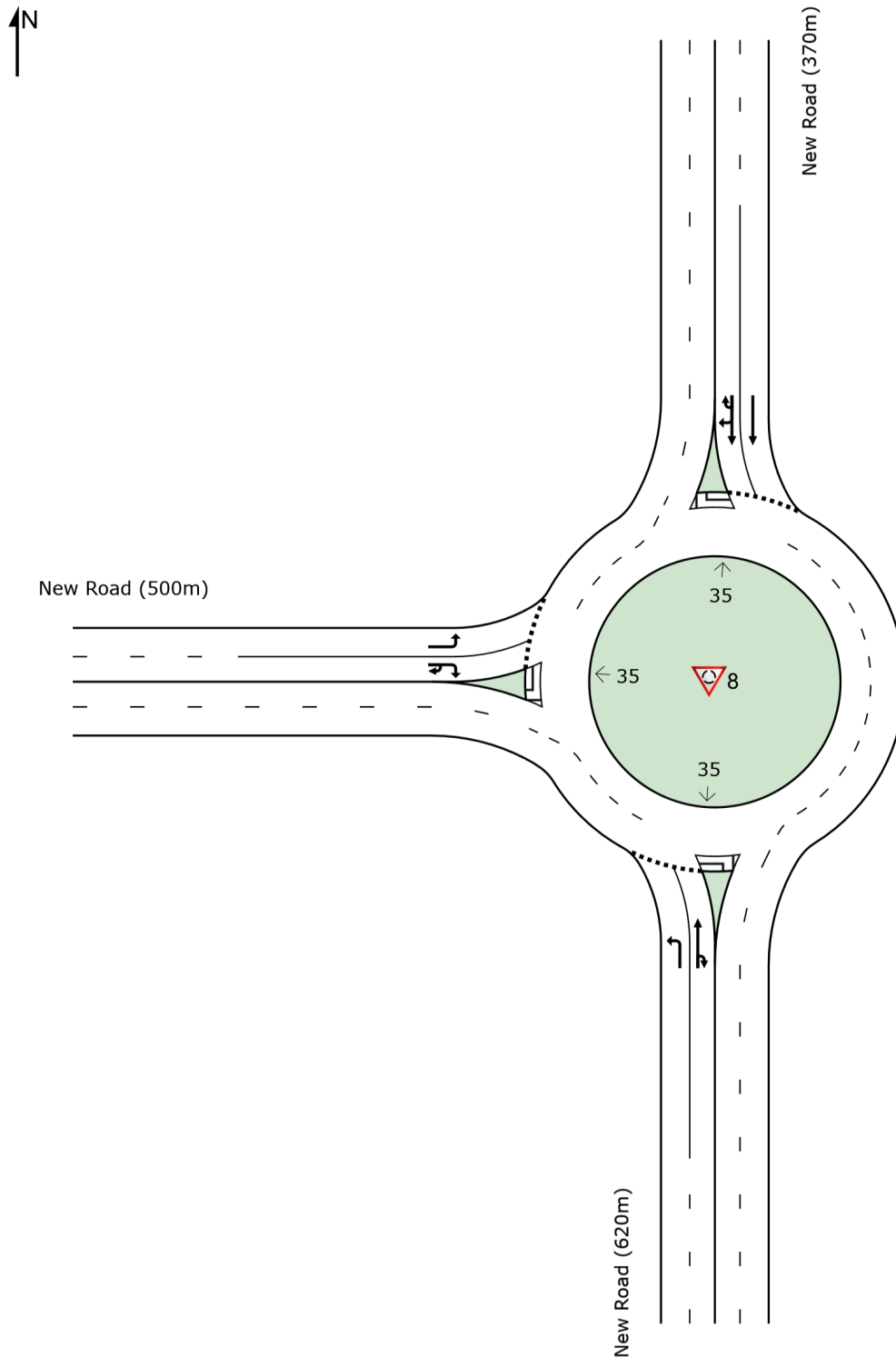
2026 LOG-E Internal Roundabout Performance

SITE LAYOUT

 **Site: 8** [[ID: 8] Internal Road Roundabout (Mirvac) - AM (Site Folder: 2026 - AM 60% GFA)]

Internal Road Roundabout (Mirvac)
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

 **Site: 8 [[ID: 8] Internal Road Roundabout (Mirvac) - AM (Site Folder: 2026 - AM 60% GFA)]**

Internal Road Roundabout (Mirvac)
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (620m)														
1	L2	81	36	85	44.4	0.078	2.7	LOS A	0.4	4.4	0.18	0.31	0.18	48.5
2	T1	124	85	131	68.5	0.122	2.1	LOS A	0.7	9.8	0.19	0.22	0.19	50.2
3u	U	1	0	1	0.0	0.122	9.7	LOS A	0.7	9.8	0.19	0.22	0.19	52.4
Approach		206	121	217	58.7	0.122	2.4	LOS A	0.7	9.8	0.18	0.26	0.18	49.5
North: New Road (370m)														
8	T1	238	77	251	32.4	0.110	2.0	LOS A	0.6	6.3	0.20	0.25	0.20	50.1
9	R2	26	13	27	50.0	0.110	8.3	LOS A	0.6	6.4	0.21	0.31	0.21	49.9
9u	U	1	0	1	0.0	0.110	9.7	LOS A	0.6	6.4	0.21	0.31	0.21	53.1
Approach		265	90	279	34.0	0.110	2.6	LOS A	0.6	6.4	0.20	0.26	0.20	50.1
West: New Road (500m)														
10	L2	24	10	25	41.7	0.029	3.9	LOS A	0.1	1.5	0.41	0.41	0.41	47.3
12	R2	41	6	43	14.6	0.032	8.4	LOS A	0.2	1.5	0.36	0.55	0.36	47.4
12u	U	1	0	1	0.0	0.032	10.1	LOS A	0.2	1.5	0.36	0.55	0.36	48.8
Approach		66	16	69	24.2	0.032	6.8	LOS A	0.2	1.5	0.38	0.50	0.38	47.4
All Vehicles		537	227	565	42.3	0.122	3.1	LOS A	0.7	9.8	0.21	0.29	0.21	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 **Site: 8 [[ID: 8] Internal Road Roundabout Mirvac - PM (Site Folder: 2026 - PM 60% GFA)]**

Internal Road Roundabout (Mircvac)
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (620m)														
1	L2	284	44	299	15.5	0.190	2.5	LOS A	1.1	9.2	0.20	0.33	0.20	48.6
2	T1	253	74	266	29.2	0.221	2.1	LOS A	1.3	12.2	0.24	0.24	0.24	50.1
3u	U	1	0	1	0.0	0.221	9.8	LOS A	1.3	12.2	0.24	0.24	0.24	52.3
Approach		538	118	566	21.9	0.221	2.4	LOS A	1.3	12.2	0.22	0.29	0.22	49.3
North: New Road (370m)														
8	T1	82	58	86	70.7	0.057	1.9	LOS A	0.3	3.2	0.06	0.27	0.06	49.8
9	R2	54	8	57	14.8	0.057	7.6	LOS A	0.3	3.2	0.05	0.47	0.05	48.4
9u	U	1	0	1	0.0	0.057	9.5	LOS A	0.3	3.2	0.05	0.47	0.05	50.4
Approach		137	66	144	48.2	0.057	4.2	LOS A	0.3	4.0	0.06	0.35	0.06	49.3
West: New Road (500m)														
10	L2	67	11	71	16.4	0.058	3.6	LOS A	0.3	2.9	0.46	0.45	0.46	47.3
12	R2	3	2	3	66.7	0.005	10.4	LOS A	0.0	0.3	0.49	0.55	0.49	46.2
12u	U	1	0	1	0.0	0.005	11.0	LOS A	0.0	0.3	0.49	0.55	0.49	47.8
Approach		71	13	75	18.3	0.058	4.0	LOS A	0.3	2.9	0.46	0.45	0.46	47.3
All Vehicles		746	197	785	26.4	0.221	2.9	LOS A	1.3	12.2	0.21	0.31	0.21	49.1

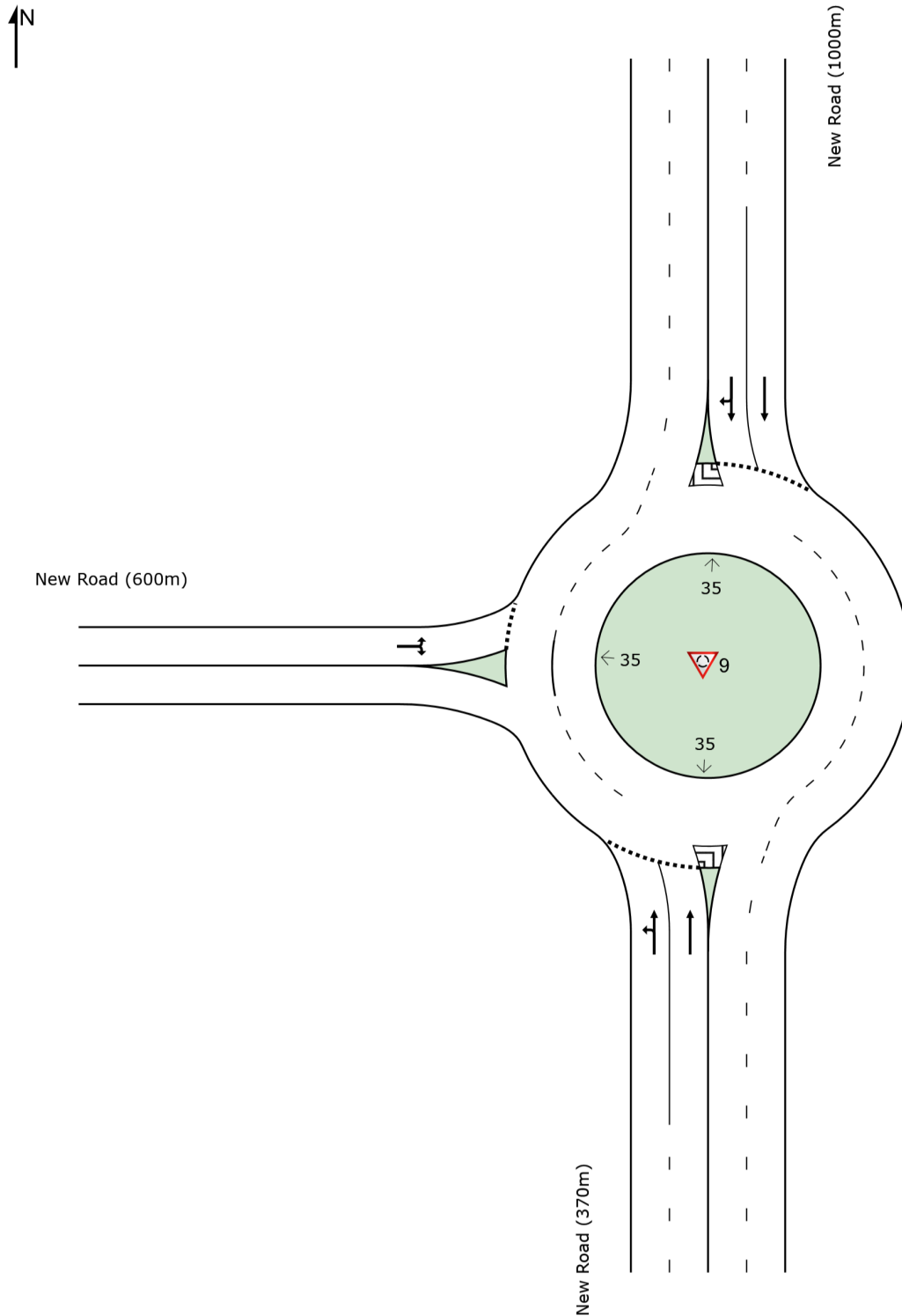
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SITE LAYOUT

 **Site: 9 [[ID: 9] Internal Road Roundabout (Altis)- AM (Site Folder: 2026 - AM 60% GFA)]**

Internal Road Roundabout (Altis)
Site Category: (None)
Roundabout

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



MOVEMENT SUMMARY

 **Site: 9** [[ID: 9] Internal Road Roundabout (Altis)- AM (Site Folder: 2026 - AM 60% GFA)]

Internal Road Roundabout (Altis)
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (370m)														
1	L2	150	94	158	62.7	0.142	3.1	LOS A	0.4	6.2	0.16	0.35	0.16	47.9
2	T1	1	0	1	0.0	0.001	1.8	LOS A	0.0	0.0	0.13	0.20	0.13	50.5
Approach		151	94	159	62.3	0.142	3.1	LOS A	0.4	6.2	0.16	0.35	0.16	48.0
North: New Road (1000m)														
8	T1	26	12	27	46.2	0.030	2.8	LOS A	0.1	1.0	0.29	0.31	0.29	49.9
9	R2	58	23	61	39.7	0.051	8.5	LOS A	0.2	1.7	0.27	0.57	0.27	48.1
Approach		84	35	88	41.7	0.051	6.7	LOS A	0.2	1.7	0.27	0.49	0.27	48.6
West: New Road (600m)														
10	L2	1	0	1	0.0	0.188	2.1	LOS A	0.4	4.5	0.01	0.55	0.01	47.5
12	R2	242	78	255	32.2	0.188	7.7	LOS A	0.4	4.5	0.01	0.55	0.01	48.0
Approach		243	78	256	32.1	0.188	7.7	LOS A	0.4	4.5	0.01	0.55	0.01	48.0
All Vehicles		478	207	503	43.3	0.188	6.1	LOS A	0.4	6.2	0.10	0.48	0.10	48.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

 **Site: 9** [[ID: 9] Internal Road Roundabout Altis - PM (Site Folder: 2026 - PM 60% GFA)]

Internal Road Roundabout Altis
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: New Road (370m)														
1	L2	325	89	342	27.4	0.221	2.6	LOS A	0.7	7.2	0.07	0.33	0.07	48.5
2	T1	1	0	1	0.0	0.001	1.7	LOS A	0.0	0.0	0.06	0.19	0.06	50.8
Approach		326	89	343	27.3	0.221	2.6	LOS A	0.7	7.2	0.07	0.33	0.07	48.5
North: New Road (1000m)														
8	T1	52	5	55	9.6	0.032	1.8	LOS A	0.1	0.6	0.14	0.22	0.14	50.2
9	R2	8	8	8	100.0	0.015	9.3	LOS A	0.0	0.9	0.22	0.48	0.22	47.2
Approach		60	13	63	21.7	0.032	2.8	LOS A	0.1	0.9	0.15	0.25	0.15	49.7
West: New Road (600m)														
10	L2	1	0	1	0.0	0.083	2.1	LOS A	0.2	2.3	0.01	0.52	0.01	47.5
12	R2	86	62	91	72.1	0.083	8.0	LOS A	0.2	2.3	0.01	0.52	0.01	47.6
Approach		87	62	92	71.3	0.083	7.9	LOS A	0.2	2.3	0.01	0.52	0.01	47.6
All Vehicles		473	164	498	34.7	0.221	3.6	LOS A	0.7	7.2	0.07	0.35	0.07	48.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Appendix C. MRP Trip Rates Instruction

Rebecca Butler-Madden

From: Steven Konstas <skonstas@pentelic.com.au>
Sent: Wednesday, 2 September 2020 12:41 PM
To: Andrew Johnson; Matthew Allen
Cc: Melissa Rassack; ben.reid@transport.nsw.gov.au; James Hall; Vince Taranto; Greg Aouad; Russell Hogan; walter.sinnadurai@penrith.city
Subject: Mamre Rd Precinct: Trip Generation Characteristics - General Warehousing

Hi Andrew,

As advised by TfNSW, please find attached below the trip generation characteristics to be adopted for General Warehousing for Mamre Road Precinct.

Please ensure that these trip generation rates are used as part of the modelling work to test the initial road network option(s) proposed by LOG and the Agency.

Rate	TfNSW Adopted Rates
Daily Trips	2.91
Local Road AM Peak (7am – 8am)	0.23
Local Road PM Peak (4pm – 5pm)	0.24
Site Maximum Generation Rate (All Vehicles)	0.26
Site Maximum Generation Rate (Heavy Vehicles)	0.07

Kind regards,

steven konstas
DIRECTOR

m +61 409 101 325 e skonstas@pentelic.com.au
in [linkedin.com/in/steven-konstas/15457823](https://www.linkedin.com/in/steven-konstas/15457823)

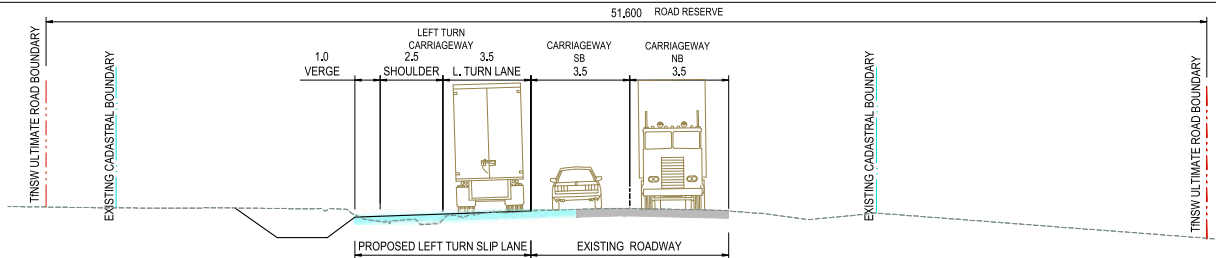


[Transport Planning](#) | [Policy & Strategy](#) | [Project Management & Delivery](#)

The information contained in this e-mail is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If you are not the intended recipient of this email, the use of this information or any disclosure in any form, copied, transmitted or stored is strictly prohibited. If you have received this message in error, please notify the sender immediately and deleting it from your computer.

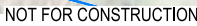
From: Andrew Johnson <andrew.johnson@asongroup.com.au>
Sent: Thursday, 27 August 2020 9:33 AM
To: Matthew Allen <Matthew.D.ALLEN@transport.nsw.gov.au>; Steven Konstas <skonstas@pentelic.com.au>
Cc: Greg Aouad <greg.aouad@transport.nsw.gov.au>; Russell Hogan <russell.hogan@mirvac.com>; Tim Lewis

Attachment 5 – Updated LILO Plans

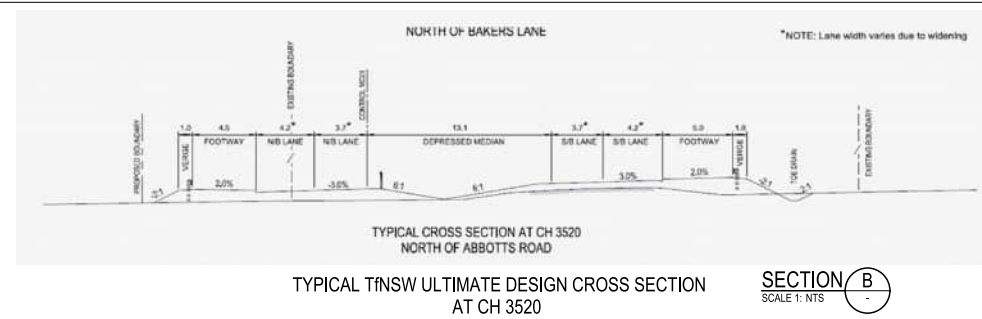
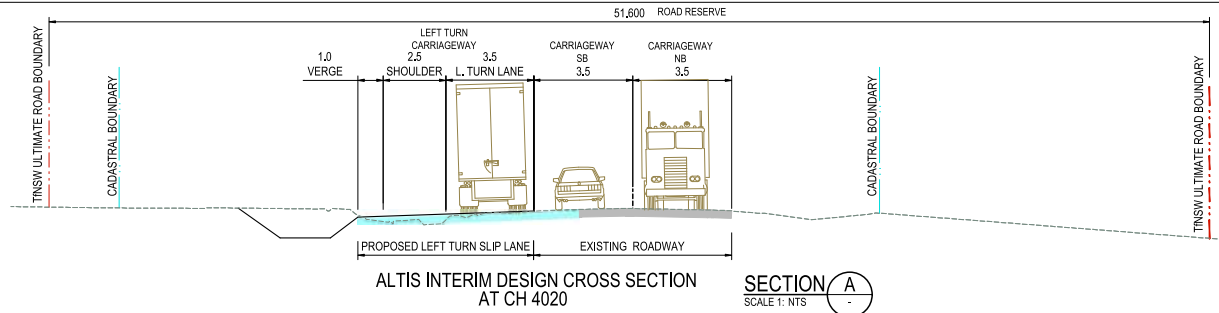


SECTION A
SCALE 1: NTS

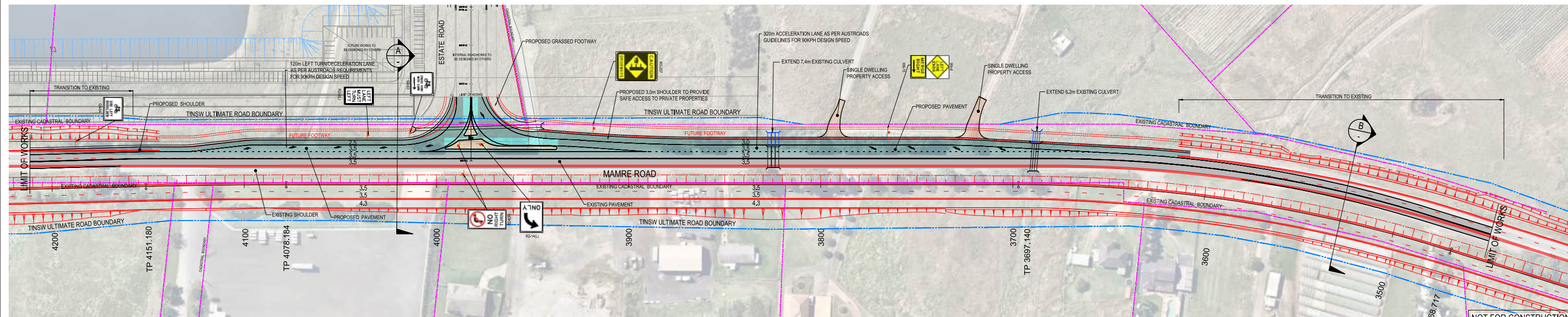
- ALTIS**
PROPERTY PARTNERS



DRAWING FILE LOCATION NAME S:\P\15				PROPOSED ECONOMY N.S.				CLIENT		PENRITH CITY COUNCIL AREA 884-628 HAMRE ROAD KEMPS CREEK, NSW 2759																						
REV	AMENDMENT / REVISION DESCRIPTION	THRU	DATE	SCALES ON A1 SIZE DRAWING		DRAWINGS / DESIGN PREPARED BY		PLOT DATE / TIME (DATE)		PLOT DATE / TIME (DATE)																						
A	PRELIMINARY DRAWING FOR DISCUSSION	RS	10/10/2012					<table border="1"> <thead> <tr> <th>TITLE</th> <th>NAME</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>DRAWN</td> <td></td> <td></td> </tr> <tr> <td>CAD CHECK</td> <td></td> <td></td> </tr> <tr> <td>DESIGN</td> <td></td> <td></td> </tr> <tr> <td>DESIGN CHECK</td> <td></td> <td></td> </tr> <tr> <td>DESIGN UNDER</td> <td></td> <td></td> </tr> <tr> <td>PROJECT MGR</td> <td></td> <td></td> </tr> </tbody> </table>		TITLE	NAME	DATE	DRAWN			CAD CHECK			DESIGN			DESIGN CHECK			DESIGN UNDER			PROJECT MGR				
TITLE	NAME	DATE																														
DRAWN																																
CAD CHECK																																
DESIGN																																
DESIGN CHECK																																
DESIGN UNDER																																
PROJECT MGR																																
				COORDINATE SYSTEM MGA ZONE 56		HEIKT DATUM AHN		Level 1 - 23-63 Mary Street, Surry Hills NSW 2010 T 02 8096 8416 www.mugroup.com.au		MU GROUP REGISTRATION No. 2012-18-SD-0001-SS-0008A KEMPS CREEK STRATEGIC																						
										SHEET 01 OF 10																						



- ## LEGEND
- | | |
|---|-----------------------------|
|  | PROPOSED LLO DESIGN |
|  | EXISTING CADASTRAL BOUNDARY |
|  | TNSW ULTIMATE ROAD BOUNDARY |
|  | TNSW ULTIMATE DESIGN |
|  | EXISTING PAVEMENT |
|  | NEW PAVEMENT |
|  | RAISED MEDIAN / ISLAND |
|  | PROPERTY ACCESS |



PRELIMINARY DRAWING - FOR DISCUSSION PURPOSES ONLY

DRAWING FILE LOCATION: NAME P:\P1\LS				PLOT DATE: TIME 04/05/2021 10:05				PROPOSED ROUTING M.S.				CLIENT PENRITH CITY COUNCIL AREA 884-828 MAMRE ROAD KEMPS CREEK NSW 2759				
REV. AMENDMENT / REVISION DESCRIPTION				STATUS	DATE	SCALES ON A1 SIZE DRAWING				DRAWINGS / DESIGN PREPARED BY				TITLE	NAME	DATE
(1) PRELIMINARY DRAWING FOR DISCUSSION				OK	05/05/2021									DRAWN	DAVID CHICK	
(2) AMENDED DRAWING FOR DISCUSSION				OK	05/05/2021									DESIGN	DAVID CHICK	
												DESIGN CHECK	DAVID CHICK			
												DESIGN MANAGER	DAVID CHICK			
								COORDINATE SYSTEM MGA ZONE 56				PROJECT MANAGER	DAVID CHICK			
								HEIGHT DATUM AHD				Level 4, 23-25 Mary Street, Surry Hills NSW 2010 Tel: 02 8955 6416 www.mugroup.com.au				
																
												MUGROUP REGISTRATION No. 2021 / 19 SD /2001 / SK 00070 ROAD DESIGN STRATEGIC				
												SHEET 01				
												ISSUE D				