

4 September 2022



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RE: Yiribana Logistics Estate – Mamre Road Precinct – SSD 10272349 Response to Submissions

Dear Tom,

We refer to the relevant submissions received in relation to the aforementioned State Significant Development (SSD-10272349¹). Specifically, reference is made to the submission received from VIAE Consulting in relation to the SSD application and the Draft Response received via email from TfNSW.

We note that since the submission of the most recent Transport Management and Accessibility Plan (TMAP) supporting the subject application, additional modelling has been undertaken on behalf of the Land Owners Group (LOG) in response to TfNSW queries relating to the Mamre Road Precinct, for the assessment year of 2026.

As DPE is aware, this modelling was completed in consultation with TfNSW which provided direct input into the assumptions and scenarios for consideration. Specifically the modelling includes:

- Relevant approved or proposed road network upgrades to Mamre
- The exclusion of the Southern Link Road
- The delivery of Aldington Road consistent with the current Voluntary Planning Agreement (VPA) offers
- The delivery of the internal road network by 2026 consistent with Concept Plan and SSD applications currently under consideration by DPE
- Varying development scenarios of circa 990,000m² of GFA and 1,300,000m² of GFA within the LOG precincts.

This modelling is now relied on for all LOG applications and is relied on in response to many of the items raised by VIAE Consulting. It is expected that endorsement of this modelling will be received imminently by TfNSW at the time of writing this response.

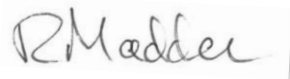
Further, it is reiterated that the modelling assessment which informed the Mamre Road Precinct Development Control Plan (MRP DCP) assessed both years of 2031 and 2036. This modelling was documented in the Ason Group report P1316r05v03 Mamre Road Precinct – Road Network Assessment, dated 20/08/2021. Hence the focus of assessment for the Site is the year of 2026.

¹ <https://www.planningportal.nsw.gov.au/major-projects/projects/yiribana-logistics-estate>

The table included in **Attachment 1** provides a response to each matter raised. An updated version of the TMAP is provided as **Attachment 3**.

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

Yours sincerely,

A handwritten signature in black ink, appearing to read 'R Madden', followed by a vertical line.

Rebecca Butler-Madden

Senior Transport Planner

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Attachment 1 – Response to Agency Submissions

TABLE 1: SUBMISSION RESPONSE

AG Ref	VIAE Comment	Ason Group Response
	Assessment Methodology	
1	<p>Access to and from Mamre Road – Assessment of the impacts of the proposal are all contingent on the construction of a full-access intersection with Mamre Road at the Aspect Industrial Estate and a secondary access to Southern Link Road to the north of the site. This intersection, along with the associated internal road connections, are required to allow for vehicles to turn right out of the site to the north and right into the site from the south. There is currently no commitment to build this intersection. The assessment does account for both cases where the development is complete and open both before and after the construction of this intersection and assesses the impact of proposal under both scenarios for the 2026 interim year, but does not provide the same level of analysis for subsequent years up to 2036. As the access to the site is contingent on works that are not currently committed or funded, these alternative access scenarios should be modelled to identify whether conditions need to be placed on full development of the proposed masterplan.</p>	<p>Aspect Industrial Estate was approved on 22 May 2022² and the Works Authorisation Deed (WAD) process is being progressed, with construction works on the site having started recently (mid-August 2022). It is understood that the signalised intersection with Mamre Road will be completed in mid-2023 (subject to the relevant agreements with TfNSW). Therefore, there is a commitment to build this intersection.</p> <p>Further, Condition D7 of the Consent requires within 6 months of the May 2022 approval that:</p> <p><i>Within six months of the approval of this consent or as otherwise agreed by the Planning Secretary, the Applicant must prepare and submit the following plans to facilitate the construction and delivery of Access Road 3 – North, in consultation with Council and landowner of 784-786 Mamre Road, Kemps Creek (Lot 59 DP259135), and to the satisfaction of the Planning Secretary:</i></p> <ul style="list-style-type: none"> • a Staging Plan for the riparian corridor realignment works and Access Road 3 – North construction... <p>Further, Condition D9 states that <i>The Applicant must ensure that the portion of Access Road 3 – North to be located on the site is constructed and operational in accordance with the design plans required under Condition D7.</i> Therefore, it is evident that the connection between the 2 sites will be delivered prior to the subsequent years being referred to (2031 and 2026); and it is currently anticipated that the connection would be delivered 2024.</p>
2	<p>Assessment of internal roads – Access to Mamre Road via the proposed new intersection provided by the Aspect Industrial Estate and the proposed left-in, left-out intersection further south at Access Logistics Estate requires the use internal roads and up to four (4) 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.</p>	<p>It is critical to recognise that, in regard to the movements into and out of the eastern leg of the AIE intersection, the ultimate capacity is being provided for as identified by the modelling undertaken for the MRP DCP. That is, the only additional capacity that will be required relates to through movements on Mamre Road (relating to background traffic growth requiring additional through lanes on Mamre Road), and the delivery of the western leg, when the relevant site is developed.</p> <p>As above, this intersection is anticipated to be delivered by mid-2023. The TMAP has already included the assessment of this intersection and therefore no additional modelling is required.</p> <p>Similarly it should be noted that the intersections referred to at the Access Logistics Estate are also being delivered in consistency with the modelling assessment that underpinned the DCP. Regardless, the Access Logistics Estate is not approved. The assessment undertaken is consistent with that undertaken for the AIE, which only considered approved developments, as agreed with TfNSW.</p> <p>With regards to the Site internal intersection between the local road and collector road, under the current Proposal the only traffic that is anticipated to utilise it would be the flows relating to the Stage 1 development. All future stages would be subject to separate assessment processes. Again, it should be noted that the modelling assessment undertaken for the approved AIE did not include the minor, internal intersections which purpose is to provide access to development Lots.</p> <p>Finally, as discussed above, revised modelling has been submitted to TfNSW which provides a summary of the operation of key internal MRP intersections under a 2026 scenario.</p>

² <https://www.planningportal.nsw.gov.au/major-projects/projects/aspect-industrial-estate>

3	<p>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:</p> <ul style="list-style-type: none"> • 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. 	<p>It is our understanding that all relevant stakeholders (DPE, TfNSW and Council) have copies of the final documentation for the modelling assessment in 2031 and 2036, however this can be provided upon request.</p> <p>Reference is again made to the revised 2026 modelling which includes the relevant assumptions. It is noted that the key input assumptions were 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.</p> <p>Forecast traffic volumes are provided in Appendix B of the submitted TMAP.</p>
4	<p>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 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. This does not meet the requirements of the SEARs, which require assessment of the following intersections up to and including 2036 horizon years:</p> <ul style="list-style-type: none"> • Mamre Road and Bakers Lane (Aldington Road) • Mamre Road/Temporary access road • Mamre Road/Abbotts Road • Mamre Road/Kerrs Road • Mamre Road/Mt Vernon Road • Mamre Road/Elizabeth Drive 	<p>Modelling for the 2036 and 2031 horizon years was completed by the 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 assumptions for development on the subject site. 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.</p> <p>Again, it is reiterated that the modelling assessment documented in the TMAP was based on that undertaken for the recently approved AIE, which did not require assessment of these intersections.</p>
5	<p>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”</p>	<p>Details of the estimated traffic flows are included in the TMAP Assessment (Appendix B).</p>
6	<p>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”</p>	<p>The aforementioned revised 2026 modelling undertaken 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.</p> <p>Further, it is noted that the modelling assessment detailed in the TMAP is entirely consistent with the methodology requested by TfNSW for the approved AIE.</p> <p>As above, the future assessment years conducted for the MRP DCP provides for this assessment. The Proposal is entirely consistent with the assumptions made for the Site in this assessment.</p>
7	<p>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.”</p>	<p>The modelling assessment in the TMAP was agreed with TfNSW and is consistent with the undertaken of the approved AIE.</p> <p>Further, as above, the revised 2026 Scenario which includes an assessment of the wider MRP has been provided to TfNSW for approval. Again, the future assessment years analysis was previously submitted and reviewed by TfNSW and includes consideration of the overall precinct under full development.</p>

Transport Management Accessibility Plan		
Low Risk		
8	Midblock level of service – The measures of midblock level of service used in Section 4.2 have been incorrectly applied. The performance measures provided in the Guide to Traffic Generating Developments (NSW Roads and Traffic Authority, 2002) are suitable for urban roads only. Mamre Road is a Class I two-lane highway and should be assessed on the basis of the methodology set out in Section 4.2 of <i>Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis</i> .	Noted – the measures were adopted as it was considered appropriate to do so noting the future function of Mamre Road through the MRP. Nevertheless, based on the methodology set out in Section 4.2 of <i>Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis</i> , the level of service remains as a LOS D, as reported by the TMAP.
9	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.	Flow diagrams were provided within Attachment B of the most recent TMAP. These flows have been updated.
10	Parking provision – The stated parking provisions and DCP requirements provided in Section 9.1.2 are not consistent with the parking provision shown in Table 16.	Noted – this comment appears to apply to the previous version of the TMAP. The Stage 1 development requires at total of 236 space and 244 spaces are proposed.
Medium Risk		
11	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.
12	Mamre Road modelling traffic volumes – Section 7.5.2 provides assumptions for background growth assumptions and the inclusion of developments in the study area that have been included in traffic volume forecasts, however these developments (and their traffic generation) have not been documented and the background growth assumptions do not appear to align with other assessments prepared for the Mamre Road Precinct. Further documentation is required to demonstrate that the adopted traffic volumes are indeed consistent with other assessments undertaken in the precinct.	This appears to reference the previous version of the TMAP. Regardless, as detailed in the TMAP, this modelling assessment was agreed with TfNSW for the now approved AIE, and was undertaken at the specific request of TfNSW. See email correspondence attached. Nevertheless, we note that the updated 2026 modelling is based on a consolidated network with volumes extracted from a 2026 Aimsun model and run using SIDRA.
13	Certainty of access arrangements – The assessment assumes that all right-turning traffic into and out of the site will be accommodated by the proposed Aspect industrial Estate access, however the impacts of the proposal on the performance of this intersection have not been demonstrated in the assessment. Approval of the proposal must be supported by an access plan that does not rely on the delivery of infrastructure by third-parties and should demonstrate that the site can still be adequately served by the single left-in, left-out intersection without adversely impacting surrounding roads both for the interim scenario and the ultimate masterplan.	The most recent version of the TMAP included an assessment of both a LILO intersection as well as the AIE intersection (which appears to be recognised by VIAE Consulting in Point 1). The LILO access arrangement will provide for access to the Site in the short-term (and will do so only if required), with the AIE intersection expected to be delivered by mid-2023, and the connection between the 2 sites expected to be delivered by 2024.
14	Accommodation of heavy vehicles – Swept turning paths have been provided for B-Doubles only and do not consider the use of High Productivity Vehicles (i.e., B-Triple arrangements).	The last 2 versions of the TMAP have included an assessment of 30m PBS Level 2 Type B vehicle, the largest design vehicle required to access the Site by the MRP DCP.
15	Provision of an deceleration lane on third-party property – Provision of an deceleration lane on third-party property – Section 2.2 of the TMAP shows that the left-in, left-out access will require a deceleration lane that extends into the adjacent property owner. The assessment does not confirm that the land required to construct this acceleration lane has already been acquired and hence whether the proposed can be built without third-party approval, as required by the SEARs.	The neighbouring site is owned by the GPT Group in its entirety. More evidence can be provided upon request, if necessary.
High Risk		
16	Trip distribution – The TMAP does not provide any documentation of the geographical distribution of trips travelling to and from the site. This is critical to the volumes of traffic that will be turning right at the proposed	Appendix B of the submitted TMAP provides the traffic flows at the intersection.

	signalised intersection at the Aspect Industrial Estate access and to understanding potential impacts of development traffic at Elizabeth Drive, Lenore Drive and Mamre Road.	
17	<p>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. Section 7.3 of the assessment notes that the proposal aligns with the Mamre Road Precinct modelling assessment which has already established the road layout and intersection arrangements for 2031 and 2036, however this evidence is not provided in the assessment. This does not satisfy Transport for NSW SEAR No. 2g. Excerpts of the Mamre Road Precinct modelling referenced in Section 7.3 along with evidence of their alignment and consistency with traffic generation, distribution and background growth assumptions adopted for SIDRA modelling must be provided to satisfy the SEARs.</p>	<p>As noted above, the application relies on the 2031 and 2036 Precinct Wide modelling undertaken by Ason Group previously reviewed and endorsed by TfNSW. It is understood that DPE, TfNSW and Council all have access to this document, however, a copy of this report can be reissued to satisfy this requirement.</p> <p>This road network layout documented in the MRP DCP was identified by this modelling assessment.</p>
	Framework Travel Plan	
18	<p>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.</p>	<p>The targets are based on the Badgerys Creek Precinct, which will be similar in nature to the MRP. The targets within the strategic documentation do reflect that Badgerys Creek will less well service by public transport. Therefore, adoption of the targets and measures are deemed appropriate.</p> <p>The FSTM recognises that short-term measures would be required noting that the Site, and the MRP is not currently well-serviced by public and active transport either. For example, Table 3 of the FSTMP includes encouragement of car sharing as a measure.</p> <p>Public and active transport infrastructure is expected to be improved for the MRP, consistent with the aims and objectives of the DCP. Notwithstanding, the final STM 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.</p> <p>Finally, it is noted that for shuttle buses to be effective, it will require a larger scale approach than just the Site can deliver by itself. Therefore, Table 3 of the FSTP also includes the proposed measure for the Travel Plan Coordinator to lobby / encourage / coordinate a precinct wide shuttle.</p>
19	<p>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.</p>	<p>The management implementation of the FTSP will be the responsibility of the owners of the Site; and is expected to be implemented in response to a suitable Condition of Consent to this affect.</p> <p>Each of the measure identified will require input and possibilities on different parties – hence Table 3 of the FSTP identifying the relevant parties responsible.</p>

TABLE 2: SUBMISSION RESPONSE

AG Ref	TfNSW Comment	Ason Group Response
	Transport Management Accessibility Plan 28/05/2021	
	7.5.2 – The report makes reference to approved developments, it is noted that at the time of the report that Aspect Industrial was not approved. This should be updated to include latest approvals.	Noted
	7.5.2 – the report states that the focus on the assessment is the future year of 2026. TfNSW requires for modelling year 2026, 2031 and 2036 for both scenarios.	As above, the 2031 and 2036 assessment has already been completed and agreed. The 2026 modelling assessment is being updated.
	7.5.2 – the report states The LILO intersection is only a temporary measure and will be removed at the time that the AIE signalised intersection is delivered. It is noted that the north-south road within the Site will be delivered as part of Stage 1. Further, it is noted that The GPT Group and Mirvac are coordinating the delivery of the whole road, to ensure that it is delivered at the same time. As such, the LILO is likely to be removed by 2031. Whilst TfNSW would support the removal of the LILO, is there written support from the adjoining land owner to corroborate the assumption of removal by 2031.	The GPT Group owns the whole of the Site that will utilise the LILO intersection.
	7.5.4 – it is unclear what percentage of GFA was used to develop the 2026 model. It is noted that the Appendix B1 & B2 outputs state full Mater Plan.	There is no 7.5.4 in the current TMAP – Section 7.7.3 identifies the yields assessed.
	7.5.4 –A sensitivity test was undertaken for 2031 however there is no detail provided on this test.	Full details are now provided in updated TMAP. However, it is reiterated that, these results are not considered meaningful at this stage noting that it doesn't consider traffic associated with other developments (and any other relevant upgrades). Further, it is reiterated that the 2031 and 2036 modelling assessments undertaken to inform the MRP DCP has already been provided to TfNSW and DPE.
	The response from the applicant regarding TfNSW previous comment <i>The TMAP provided does not address the comments (i. to l.) provided by TfNSW in the SEARs. It is strongly recommended that the report provides the required analysis in order to understand the impacts of the development to the surrounding network</i> does not adequately respond to this comment. The traffic report does not adequately address TfNSW SEARs input requirements (I have attached letter to this email). TfNSW recommends that the report addresses all the SEARs requirements. This is required to ensure that the staged development and masterplan traffic impacts are adequately identified and mitigated if required	Table 2 of the TMAP provides a response to each SEAR – it is requested that further detail is provided to which response requires further clarification for TfNSW.
	Modelling – 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 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.	As above, under Point 2, it is noted that the full capacity planned of this intersection for right-turn movements into and out AIE Access Road 01 is being delivered as part of the Stage 1 works of the approved AIE. Therefore, no further capacity is required for these movements. The reason for the LoS relates to the green time the phase receives in comparison to the major movement. Optimisation of the phasing would improve the performance of these individual movements, if necessary, which would be at the discretion of the TfNSW Network Operations Team. Finally, it is reiterated that that the overall performance of the intersection, which is the key criteria for assessment of signalised intersections as per the RTA Guide, is a minimum of LoS C in the scenarios assessed, demonstrating the intersection would operating within its ultimate capacity.
	Intersections along Mamre Road should be modelled as Network. The model provided is not a network model. 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.	As above, the updated 2026 modelling assessment has been submitted to TfNSW. Note that the LILO will only provide access to the Site until such a time that the connection via AIE is delivered. It is expected that this will be delivered by 2024 at the latest.

	<p>The development falls within the Mamre Road Precinct which is subject to a detailed traffic modelling review undertaken by the Land Owners Group. It is recommend that the model inputs are aligned to the broader model (once supported by TfNSW and DPE) to ensure consistency.</p> <p>TfNSW requests the Raw SIDRA files to be provided for review once updated to take into account TfNSW comments.</p>	<p>The Site forms part of the assumptions made within the 2026 modelling assessment submitted to TfNSW.</p> <p>While the 2026 broader model has been updated, it is noted that the modelling assessment documented in the TMAP is entirely consistent with the assessment requested by TfNSW for the now approved AIE.</p>
	Temporary Left in/Left Out (LILO)	
	<p>TfNSW does not support the acceleration lane at this location due to site constraints (impacts to adjoining landowners). In addition the length of the acceleration lane design is not consistent with the model.</p> <p>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:</p> <ul style="list-style-type: none">to physically restrict right turn movements at Mamre Road.Pedestrian/cyclist are to be considered in the design.	<p>The operation of the LILO has been reviewed with the acceleration lane removed.</p>
	<p>The deceleration lane will extend over the adjoining property, land owners consent will need to be provided. In addition as the deceleration lane will likely extend over the full frontage of the property all access to this property would need to be re-positioned from the temporary road. If land owners consent cannot be provided for to enable this, the applicant should look at relocating the temporary access to the northern side of the estate where there is more frontage to Mamre Road.</p>	<p>The GPT Group own this land.</p>

Rebecca Butler-Madden

From: Rebecca Butler-Madden
Sent: Friday, 2 September 2022 4:41 PM
To: Rebecca Butler-Madden
Subject: FW: AIE - SSD10448 - Supplementary RFI - TfNSW

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Subject: FW: AIE - SSD10448 - Supplementary RFI - TfNSW

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Hi Russell

Thank you for your patience, TfNSW has review the plans and modelling and provides the following comments for review:

Model

TfNSW requests updated modelling which adopts the following assumptions:

- i. Revised SIDRA intersection modelling for the Mamre Road / Aspect Access Road intersection for the 2026, 2031 and 2036 horizon year assuming:
 - a. Stage 1 DA (Lots 1 & 3)
 - b. Full masterplan for Aspect Industrial Estate
- ii. Only approved developments are to be included in the model.

Referring to the current model provided TfNSW has the following comments:

1. The PM model is incorrect. Please refer to the print screen 1 below for detail.

The plans & model are to be modified addressing the abovementioned points and submitted to TfNSW for review. Upon receipt of the information TfNSW will undertake an assessment and provide a response accordingly.

Kind regards,

Laura van Putten

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Transport Management and Accessibility Plan

Yiribana Logistics Estate

Lots 59-60, DP259135 Mamre Road, Kemps Creek

4/09/2022

1427r01

Document Control

Project No	1427
Project	Yiribana Logistics Estate, Mamre Road, Kemps Creek
Client	The GPT Group
File Reference	1427r01v4 TMAP Yiribana Logistics Estate, Mamre Road, Issue

Revision History

Revision No.	Date	Details	Author	Approved by
	11/05/2021	Draft	A. Tan R. Butler-Madden	T. Lewis
I	21/05/2021	Draft	A. Tan	R. Butler-Madden
II	28/05/2021	Issue	A. Tan	R. Butler-Madden
III	08/04/2022	Issue	R. Butler-Madden	R. Butler-Madden
IV	13/07/2022	Issue	M. Abdullah	R. Butler-Madden
V	04/08/2022	Issue	M. Abdullah	R. Butler-Madden

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APPENDICES

Appendix A. Hourly Traffic Generation

Appendix B. Traffic Flow Diagrams

Appendix C. SIDRA Output Summaries

Appendix D. Framework Sustainable Travel Plan

Appendix E. Swept Path Analysis

Appendix F. Preliminary Construction Traffic Management Plan

Glossary

Acronym	Description
AGRD	Austroads Guide to Road Design
AGTM	Austroads Guide to Traffic Management
CC	Construction Certificate
Council	Penrith City Council
DA	Development Application
DCP	Development Control Plan
DoS	Degree of Saturation
DPIE	Department of Planning, Industry and Environment
FSR	Floor space ratio
GFA	Gross Floor Area
HRV	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
LEP	Local Environmental Plan
LGA	Local Government Area
LoS	Level of Service
MOD	Section 4.55 Modification (also referred as a S4.55)
MRV	Medium Rigid Vehicle (as defined by AS2890.2:2018)
NHVR	National Heavy Vehicle Regulator
OC	Occupation Certificate
RMS Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
SRV	Small Rigid Vehicle (as defined by AS2890.2:2018)
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
TIA	Transport Impact Assessment
TIS	Transport Impact Statement
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Introduction

1.1 Overview

Ason Group has been engaged by The GPT Group to prepare a Transport Management and Accessibility Plan (TMAP) in relation to State Significant Development (SSD) 10272349 for the proposed Yiribana Industrial Estate (the Proposal) located on Mamre Road, Kemps Creek (the Site).

The Site is located to the east of Mamre Road and lies within the Mamre Road Precinct (the MRP). The NSW Department of Planning and Environment (DPE) rezoned the MRP in June 2020 and, as such, the Site is primarily zoned IN1 General Industrial.

The MRP Structure Plan was finalised in June 2020, followed by the adoption of the MRP Development Control Plan (DCP) on the 19 November 2021 (MRP DCP).

It is noted that the original submission of the SSD-10272349 application was prior to the finalisation of the MRP DCP; as such, the design of the Proposal has been modified to reflect the finalised controls of the DCP. Further, following exhibition of the Proposal, a suite of Further Requests for Information (RFI) have been received from DPE and the relevant stakeholders. As such, this TMAP has been updated to reflect the updated Proposal and the RFIs received.

1.2 Mamre Road Precinct Road Network Requirements

1.2.1 Strategic Road Network Requirements

The background traffic modelling to identify the required road network layout to facilitate the development of the MRP, whilst accommodating the wider background traffic growth associated with the development of Western Sydney, was finalised in late 2021. The results of this modelling assessment have underpinned the road network layout detailed within the MRP DCP.

Ason Group worked with DPE and Transport for New South Wales (TfNSW) collectively, to deliver this assessment (herein referred to as the MRP modelling assessment).

Therefore, a key purpose of this report is to ensure that the Proposal remains consistent with the assumptions that have informed the MRP modelling assessment, which was undertaken for the future assessment years of 2031 and 2036.

As such, the key forecast year for assessment of the Proposal is 2026.

1.2.2 2026 Interim Intersection Requirements

The GPT Group and other land owners in the area who have significant land holdings (representing approximately 40-50% of the developable land within the Precinct), have formed the Mamre Road Precinct Land Owners Group (LOG).

A collective approach was taken by the LOG to identify the interim intersection requirements for 2026 required to accommodate the forecast development within the LOG sites. The key aim of this process has

been to facilitate the initial stages of development for the relevant Sites. The results of this assessment was submitted to DPE as part of the previous version of the TMAP (reference: 1427r01v2).

However, recognising that this TMAP provides for an update in response to RFIs and the revised design, the modelling assessment for 2026 has been updated accordingly.

Section 7 provides further detail on the updated modelling assessment.

1.3 TMAP Objectives

The key objectives of this TMAP are as follows:

- To establish that the development of the Site further to the Proposal is compliant and consistent with the relevant access, traffic and parking requirements.
- To establish that the trip generation of the Estate is consistent with the assumptions within the MRP modelling assessment so that it can be appropriately accommodated by the future road network.
- To demonstrate that there is an appropriate and sustainable provision of car parking across the Site.
- To demonstrate that the proposed access driveways, internal roads, car parks and service facilities can provide a design compliant with the relevant Australian Standards.

1.4 Secretary's Environmental Assessment Requirements

Secretary's Environmental Assessment Requirements (SEARs) were issued by the NSW Department of Planning, Industry & Environmental (DPIE) in November 2020 regarding the Proposal, and include both general DPIE SEARs and more specific TfNSW SEARs.

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

TABLE 1: DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT SEARS

SEARs	TMAP Summary Response	Section
details of all traffic types and volumes likely to be generated during construction and operation, including a description of key access / haul routes. Traffic flows are to be shown diagrammatically to a level of detail sufficient for easy interpretation	Operational traffic flows have been determined at the key intersections in clear figures. A preliminary CTMP is provide as Appendix F.	7 Appendix F
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 rapidly than standard growth rates	Refer to Section 7	7

detailing how the proposed development connects to adjoining sites as outlined in the Draft Mamre Road Precinct DCP	The Proposal specifically provides for future connectivity of the internal road network through to the north and south.	7
details of interim and permanent access points to Mamre Road for the development, including details of agreements with surrounding landowners to achieve access	<p>The short term access will ultimately be dependent on the development of the neighbouring sites.</p> <p>In the long-term, access to the Site can be gained through connections to the north and south, with the key access being via a signalised intersection to the south of the Site, accessed via the neighbour site to the southeast of the Site.</p> <p>Should development of the Site commence prior to a connection to the neighbouring lots being provided (which is subject to the control of others), a temporary access onto Mamre Road is to be utilised. This would facilitate all movements, until such a time that Mamre Road is upgraded.</p>	N/A
plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network	Please refer to plan set provide by SBA Architects.	N/A
detailed plans of the site access and proposed layout of the internal road and pedestrian network and parking on site in accordance with the relevant Australian Standards and DCP	<p>The plans have been assessed with reference to the appropriate Australian Standards to ensure that the design of internal roads, parking and servicing areas are generally compliant.</p> <p>It is anticipated that a future Condition of Consent will necessarily ensure such compliance with the Australian Standards. As such, it is anticipated that the necessary further review and refinement of the detailed design can occur in the future. Notwithstanding, the plans as designed are generally considered capable of compliance.</p>	10
swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site	<p>Swept path plans have been prepared to illustrate heavy vehicle movements along the internal roads, as well as to and from the access driveways and on-site service areas.</p> <p>It is anticipated that a future Condition of Consent will necessarily ensure such compliance with the Australian Standards, and that such compliance would extend to all future road and access infrastructure within the Site.</p>	10
details of road upgrades, infrastructure works or new roads or access points required for the development	As above, the long-term key access into the Site will be way of the neighbouring Lot. The 2026 interim modelling assessment for this intersection is summarised section 7 .	7
details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site	<p>The provision of public and access transport services and infrastructure has been specifically developed to provide integration with the public and active transport provisions detailed for the Mamre Road Upgrade. This includes the provision of bus capable roads, with the potential for internal routing further to the development of the broader MRP road network; and shared and pedestrian paths across the Site and connecting to Mamre Road and the future sub-regional active transport network.</p> <p>Further, a Framework Sustainable Travel Plan has been prepared for the Estate.</p>	8 Appendix D
details of the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development	<p>Further to the above, there are no adequate public or active transport services or infrastructure in the vicinity of the Site at this time. However, the Proposal provides for full integration with the future public and active provisions detailed for the Mamre Road Upgrade.</p> <p>These include the operation of local and sub-regional bus services providing connectivity to railway stations and other public transport interchanges; and shared paths along Mamre Road connecting to the future sub-regional shared (cycle) path network.</p>	6

measures to integrate the development with the existing/future public transport network	As discussed above, the Proposal provides for full integration with the future public and active provisions detailed for the Mamre Road Upgrade.	6
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TABLE 2: TRANSPORT FOR NSW SEARS

SEARs	TMAP Summary Response
Details of all traffic types and volumes likely to be generated by the proposed development during construction and operation, including a description of haul route origins and destinations, including:	As above.
Daily inbound and outbound vehicle traffic profile by time of day and day of week (if travel patterns differ across the week);	Refer to Section 7
Site and traffic management plan on how to manage number of vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the surrounding road network;	See Architectural package for detailed plans. It is anticipated that individual lots within the wider Site will be subject to Operational Traffic Management Plans, to be implemented via a suitable Condition of consent as part of Occupation Certificate Works.
Detail the provision of all queuing and staging of vehicles on site. (if applicable)	See Architectural package for detailed plans. It is not anticipated that any end users would require any specific staging requirements. However, each Warehouse will be subject to Operational Traffic Management Plans, to be implemented via a suitable Condition of consent as part of Occupation Certificate Works. Therefore, any requirements such as this will be assessed at the appropriate stage, noting that the sites are not to impact the operation of external road network.
Detailed plan of proposed layout of internal road network to demonstrate that the site will be able to accommodate the most productive vehicle types and parking on site in accordance with the relevant Australian Standard and Council's Development Control Plan;	Please refer to Architectural and Civil packages for detailed plans. The plans have been assessed with reference to the appropriate Australian Standards to ensure that the design of internal roads, parking and servicing areas are compliant. It is anticipated that a future Condition of Consent will necessarily ensure such compliance with the Australian Standards.
Under new requirements external road and internal road should be designed to accommodate at least a PBS 3A vehicle (36.5m B-Triple) as the design vehicle for intersection design and lane/shoulder widths, however for storage and stacking considerations it is ideally preferred to accommodate at least a 42 meter PBS Level 3B vehicle.	Please refer to Civil package for detailed information.
Identification of any dangerous goods likely to be transported on arterial and local roads to/ from the site and, if necessary, the preparation of an incident management strategy (If required).	This is currently not anticipated for the Site.
Demonstrate compliance with the Western Sydney Employment Area State Environmental Planning Policy, Part 6; clause 33C; Development within the Mamre Road Precinct; specifically: i. integration with the Mamre Road Precinct dedicated freight corridor (DFC), including provision for access from the DFC to the entire estate. The applicant should continue to liaise with TfNSW to incorporate the DFC;	The Site layout has been designed with consideration to the future freight network so as not to impede any future dedicated network.

Swept path diagrams to demonstrate vehicles entering, exiting and manoeuvring throughout the site;	Appendix E
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 and the year until the facility cease operation. These should include, but not be limited to: i. Mamre Road/Bakers Lane (Aldington Road); ii. Mamre Road/Temporary access road; iii. Mamre Road/Abbotts Road; iv. Mamre Road/Kerrs Road; v. Mamre Road/Mt Vernon Road; vi. Mamre Road/Elizabeth Drive	See section 7 for modelling assessment.
An assessment of potential impact on load road pavement lifespan on Mamre Road;	The load pavement lifespan of the key roads is being considered as part of the broader background work being undertaken for the MRP.
To ensure that the above requirements are fully addressed, the traffic impact assessment must properly ascertain the cumulative study area traffic impacts associated with the development (and any other approved planning proposals and developments in the precinct and surrounds), including the impact on nearby intersections and the need/associated funding for upgrading or road improvement works (if required);	See section 7 for modelling assessment.
In addition to the above point, any other proposed Mamre Road upgrades relating to the Landowner working group for Mamre Road Precinct, south of the Water NSW pipeline should be considered in the future year modelling;	See section 7 for modelling assessment.
Details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace travel plan) and the provision of facilities to increase the non-car mode share for travel to and from the site;	A Framework Travel Plan has been prepared (see Appendix D)
An assessment of the accessibility and provision of public transport and active Transport;	As above (Table 1)
The preparation of a preliminary Construction Pedestrian and Traffic Management Plan (CPTMP) to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: i. assessment of cumulative impacts associated with other construction activities (if any); ii. an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; iii. details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; iv. details of anticipated peak hour and daily construction vehicle movements to and from the site; v. details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; and vi. details of temporary cycling and pedestrian access during construction.	A Draft Construction Traffic Management Plan has been provided as Appendix E .

1.5 Response to Submissions

Following a review of the EIS package a number of Request for Further Information have been received from DPE, TfNSW and Council. The comments received from this review relating to transport issues are outlined in below, with the Ason Group summary response to each also provided.

TABLE 3: TRAFFIC & TRANSPORT RTS TABLE

Comment	Summary Response
DPE	
The Department notes the TMAP provides an assessment of the impacts of only 75% of the total proposed gross floor area (GFA) of the Concept DA on the performance of the intersection proposed under SSD-10448 (Aspect Industrial Estate). Furthermore, the assessment of cumulative impacts is based on 75% of the GFA associated with the Land Owners Group (LOG) sites. Further justification for this approach is required, given the assessment must consider a worst case scenario (i.e. the full Concept DA). Also, provide further justification for why the traffic generated by other development within the MRP was not considered.	75% of the LOG land was adopted as, at the time of assessment, these sites provide certainty in regard to the level of GFA being proposed. Further, these sites presented a significant proportion of the MRP. Nevertheless, the modelling assessment has been updated to be consistent with more recent assessments undertaken.
Table 4 appears to be a duplicate of Table 5. Please revise Table 4 to accurately reflect the predicted Stage 1 DA traffic generation.	Table 7 (previously Table 4) has been updated.
The predicted traffic generated from the development does not specify vehicle type/provide a breakdown by vehicle type.	Appendix A previously provided a breakdown between light and heavy vehicles. This has been updated to provide for a breakdown of the anticipated heavy vehicle type as well.
The TMAP states the development is a small percentage of the MRP and therefore doesn't warrant the provision of any further network upgrades. However, this statement has been repeated for multiple development applications in the MRP. Provide a description of the contingencies that would be put in place should other developments in the precinct also rely on others to provide network upgrades.	These conclusions are on the basis that are also other developments proposing intersection upgrades in lieu of Special Infrastructure Contributions and Section 7.11 Contributions (i.e. the most applicable intersection to the Site is the proposed intersection at the approved Aspect Industrial Estate (AIE), which is being delivered by the neighbouring Developer in lieu of other contributions). It is understood that panning for this intersection is now significantly progressed. In this instance, the eastern leg of the intersection is being delivered to 100% of its planned capacity; that is, the ultimate intersection will provide for 2 right-turn bays and 1 left-turn bay, as per the interim intersection. Any additional capacity provided over and above the proposed interim intersection will relate to through movements on Mamre Road, as well as the provision of a western leg (i.e. a through lane is to be provided at such a time the western side is developed). As such, the intersection can accommodate the flows associated with the Proposal accordingly. This includes consideration to traffic flows generated the other neighbouring developments that would also utilise the connection to Mamre Road, while the other connections are delivered (i.e., the Proposal will also connect through to the north of the Site, which would better distribute the flows associated with the Proposal).

	<p>In the instance of this Proposal:</p> <ul style="list-style-type: none"> it has been demonstrated that a temporary access can be provided into the Site via a LILLO intersection onto Mamre Road. The Mamre Road / Abbotts Road intersection is currently subject to peak hour right turn bans, and as such, the through movements would be unlikely to impact the performance of the intersection under its current arrangement (which is subject to very low volumes exiting Abbotts Road). Its upgrade is required to accommodate development along Aldington Road being delivered. The Mamre Road / Bakers Lane intersection is being upgraded as part of an application that is currently under construction. As such, it is unlikely that this upgrade would not be delivered. <p>Any additional capacity relating to the increase in through volumes on Mamre Road should not be the responsibility of individual developments.</p> <p>Further, major state infrastructure projects and/or the upgrade of existing infrastructure/road networks (including SLR and Mamre Road) are ultimately a matter for TfNSW. The purpose of the funding received through the contributions associated the Proposal is to assist in the delivery of the upgrades.</p>
<p>The MRP DCP establishes high order road connections. The DCP enables additional road connections to be provided within development sites and assessed on their merits. Traffic modelling now completed for the precinct identifies a proposed roundabout to the north of the north-south road traversing the site. The concept plan must indicate that the road will continue further north, and any cul-de-sac is temporary only. Confirmation is required that the setbacks, landscaping and manoeuvring of Warehouse 4 are not compromised by the future roundabout. If the roundabout affects Warehouse 4 and supporting setbacks, those setbacks must be amended to ensure that the full requirement of those setbacks are met.</p>	<p>The architectural plans have been updated to demonstrate the future roundabout.</p>
<p>Clarification is required on the access arrangements for Warehouse 1. The site layout plans depict a half road along the frontage of proposed Warehouse 1. Will this half road be designed to accommodate two-way operational traffic from Warehouse 1 until the full road is delivered? It is unclear how access to Warehouse 1 for both construction and operational traffic will be achieved prior to the delivery of the full North-South Road.</p>	<p>It is anticipated that the full road width will be delivered at the time that Warehouse 1 will be constructed. It is noted that a portion of this road is within the land holding of the development to the south (subject to SSD-10448).</p> <p>The GPT Group have been liaising with Mirvac (being the neighbouring developer) to ensure the coordinated delivery of the relevant section of the north-south road.</p> <p>The Conditions of Consent¹ relating to SSD-10448 requires the coordination and delivery of the north-south road as part of the relevant Stage 1 Conditions.</p> <p>As such, it is evident that the road would be delivered in a timely manner.</p> <p>Nevertheless, as discussed in Section 2.2, a temporary access solution is proposed for Warehouse E1, should the north-south road not be completed in full at the time Warehouse E1 is operational.</p>
<p>Further details are required regarding the delivery (approval pathway, timing and responsibility for delivery) of the full width North-South Road, including evidence of consultation with the adjoining landowner.</p>	<p>As above.</p>

¹ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-10448%2120220531T074512.635%20GMT>

<p>The proposed temporary site access arrangement involves a left in/left out intersection with Mamre Road. TfNSW has advised the deceleration lane extends across the frontage of the adjacent property (772–778 Mamre Road, Kemps Creek). The Mamre Road Upgrade may require further land acquisition from this affected property, therefore requiring the deceleration lane to encroach into the property boundaries. Further information is required on the contingencies in place should the Mamre Road Upgrade be delivered prior to the delivery of the final signalised intersection via SSD-10448. Furthermore, evidence of consultation with the effected landowner is required.</p>	<p>The updated architectural plans demonstrate the deceleration lane under both scenarios. The deceleration lane can be accommodated outside the future road reserve for the Mamre Road upgrades.</p> <p>As discussed in Section, 2.2 it is anticipated that the LILO would be removed prior to any upgrade of Mamre Road by TfNSW. However, it is recommended that a suitable Condition of Consent be implemented to ensure that, if it requires modifications at such a time that Mamre Road is widened, that this be done at no cost to TfNSW.</p>
<p>A key consideration in the Mamre Road Precinct is the capacity of the regional and local road network (namely Mamre Road, Aldington Road and Abbotts Road) to safely accommodate the number of concurrent developments in the precinct and to ensure the functionality of the roads and associated intersections are maintained at an acceptable standard and level of performance, including during the construction stages of these developments. Your project needs to adequately assess and demonstrate construction traffic can be accommodated to ensure safety, functionality and performance is maintained to acceptable standards. This includes daily construction traffic generation and movement times.</p>	<p>Daily construction traffic flows have been provided within the updated Preliminary CTMP (See Section 4 of Appendix F).</p> <p>Based on the information provided, it is anticipated that during the peak construction periods, there would be a total of 1,010 vehicle movements per day, which is less than the traffic forecasted for the operational Stage 1 development (1,604 vehicle trips per day).</p>
<p>Your Environmental Impact Statement does not include an assessment of cumulative construction traffic impacts on the regional and local road network.</p>	<p>The updated Preliminary CTMP provides a cumulative assessment of construction traffic impacts, the methodology of which was discussed with DPE. The total cumulative traffic generation of the 3 sites (being the Site, and the AIE and Access Logistics Park, which are both to the south of the Site) has been found to be as follows:</p> <ul style="list-style-type: none"> • 151 vehicle movements per hour in the AM peak; • 256 vehicle movements per hour in the PM peak; and • 1,879 daily vehicle movements. <p>Again this volume of traffic is significantly less than the combined traffic generation associated with each of the Stage 1 developments for each site. Therefore, outside of the scope of delivering the intersection works associated with the operational developments, no further mitigation measures are necessary to accommodate development traffic. It is noted that the intersection works for each site assessed are to be delivered early in the construction programme.</p> <p>As new CTMP are developed for subsequent stages / development, cumulative construction traffic assessments are to be conducted accordingly.</p> <p>The operational traffic flows associated with the Stage 1 development are as follows:</p> <ul style="list-style-type: none"> • 355 vehicle movements per hour in the AM peak; • 370 vehicle movements per hour in the PM peak; and • 1,182 daily vehicle movements.
<p>You are requested to provide detailed information on proposed the staging and delivery of the construction of your development for consideration prior to determination of your application. This should include the timing of necessary external road upgrades as well as construction works on your site. Clarification is sought on what temporary road upgrades may be required to accommodate construction traffic.</p>	<p>Staging information is provided within the Preliminary CTMP (see Section 3 of Appendix F).</p> <p>Construction of the temporary Left-in / Left-out intersection is anticipated to commence in September 2022 and take 2 months to complete.</p> <p>No temporary road upgrades are required to accommodate the construction traffic associated with the Site.</p>
<p>Details on how construction traffic may impact on the delivery of road infrastructure in the precinct is required, particularly if these road infrastructure works are being undertaken at the same time your project will be generating construction traffic.</p>	<p>The only works that would be delivered with any certainty in the short-term is the upgrade Mamre Road / Bakers Lane intersection. These upgrades are required to be delivered by</p>

	<p>2025, per the Conditions of Consent associated with SSD-9522² relating to the approved development at 657-769 Mamre Road, north west of the Site).</p> <p>However, it is understood that the relevant Works Authorisation Deed process is still ongoing; therefore the timeframe for delivery of the intersection is not clear. At the time that the relevant CTMP is prepared for the intersection works, it is envisaged that the construction traffic associated with the Site would have to be considered accordingly, along with the other ongoing construction projects.</p> <p>Any other upgrades would need to be subject to individual CTMPs, at the appropriate time. However, it is anticipated that construction traffic can be managed, as required, through the use of suitable traffic control.</p>
<p>You are strongly encouraged to consult and coordinate with other landowners in the Mamre Road Precinct on the management of cumulative construction traffic from development sites within the Precinct and coordination with road upgrade works. Details of precinct-wide, coordinated traffic control measures (short and longer term), timeframes for commencing and completing construction works, traffic generation, consideration of other proposed developments and the potential overlap of works is required.</p>	<p>The GPT Group have been working collectively with other landowners in the Precinct since the rezoning of the land. It is anticipated that this coordination will continue through construction.</p> <p>It is noted that the Conditions of Consent Conditions of Consent associated with the recently approved SSD-10448³ (located adjacent to the south of the Site) requires the landowners within the MRP to coordinate construction activities to ensure suitable management of construction traffic. In this regard, Condition C34 states:</p> <p><i>Within three months of the commencement of construction of the Stage 1 Development and until all components of the Stage 1 development are constructed and operational, the Applicant must establish and participate in a working group with relevant consent holders in the MRP, to the satisfaction of the Planning Secretary. The purpose of the working group is to consult and coordinate construction works within the MRP to assist with managing and mitigating potential cumulative environmental impacts.</i></p> <p>It is anticipated that the Conditions of Consent associated with Site would provide for a similar requirement. This will ensure that construction activities are coordinated.</p>
TfNSW	
<p>Transport Management and Accessibility Plan (TMAP)</p> <p>The TMAP provided does not address the comments (i. to l.) provided by TfNSW in the SEARs. It is strongly recommended that the report provides the required analysis in order to understand the impacts of the development to the surrounding network.</p>	See Table 2
<p>The TMAP provides some analysis of the future connection to the adjacent site and the proposed signalised intersection. However it should be noted that the adjacent development SSD 10448 has not been given consent and the proposal for this development application does not include the connecting road to be constructed under the Stage 1 development.</p> <p>It is recommended that the traffic report provides the following options for the future year(s) analysis:</p> <p>Internal road connection through to the adjacent site and access only to Mamre Road from the proposed signalised intersection</p> <p>Temporary Left in/left out access from Mamre Road</p>	Section 7 has been updated accordingly.

² <https://www.planningportal.nsw.gov.au/major-projects/projects/kemps-creek-warehouse-logistics-and-industrial-facilities-hub>

³ <https://www.planningportal.nsw.gov.au/major-projects/projects/aspect-industrial-estate>

<p>The TMAP Appendix D– indicates that the right turning movements perform at a LOS F and E. It is notes that the notes for the asterisks have also not been included, it is unclear what they stand for. Despite overall intersection LOS being A, individual movements for a new intersection should not be performing at LOS F – this may have safety implications with drivers more likely to take high risk behaviour due to long delays.</p> <p>The intersection should be should be constructed to perform at a “LoS C” or better and mitigation measures are to be provided should individual movements be failing.</p>	<p>See Section 7 for updated assessment.</p>
<p>Freight and Heavy Vehicle Considerations</p> <p>TfNSW advice in relation to SEAR’s was that external and internal roads should be designed to accommodate at least a PBS 3A vehicle. The design vehicle that has been adopted is a PBS 2B vehicle which would limit the future productivity benefits that could be realised by tenants upon completion of Mamre Road upgrade.</p>	<p>The internal design of the access driveways and hardstands are required to be designed up to a 30m PBS 2B vehicle.</p> <p>See the relevant civil package, prepared by Costin Roe for the analysis of the proposed roads.</p>
<p>Temporary Left in/Left out (LILO) intersection with Mamre Road</p> <p>The proposed intersection extends across the frontage of the adjacent properties. Should Mamre Road be upgraded prior to the local road connection this access will likely require further land acquisition from the affected properties. How will the applicant ensure that the relocation and reconstruction of the deceleration/acceleration lane can be achieved within the adjoining property boundaries in the event that Mamre Road is upgraded prior to the removal of this access? Has consultation been undertaken with the affected land owners? The land required for this relocation should be at no cost to TfNSW.</p> <p>The applicant is to dedicate 3.5 m wide land (from the edge of the road reserve) for the full length of the deceleration.</p> <p>What is proposed to prevent right turning movements at this access? The intersection is to be designed to be physically restricted to LILO.</p> <p>What is the proposed alternate route for vehicles seeking to turn right in or right out?</p> <p>Deceleration lane does not appear to meet Austroads requirements for 80km/h design speed (and design speed of 5km/h for curve/turn). The intersection is to be designed in line with Austroads Standards.</p> <p>Acceleration lane does not appear to meet Austroads requirements for 80km/h design speed (and design speed of 5km/h for curve/turn). The intersection is to be designed in line with Austroads Standards.</p> <p>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.</p>	<p>As discussed in Section 2.2 it is anticipated that the LILO would be removed prior to any upgrade of Mamre Road by TfNSW. However, it is recommended that a suitable Condition of Consent be implemented to ensure that, if it requires modifications at such a time that Mamre Road is widened, that this be done at no cost to TfNSW.</p> <p>As with any other access which is restricted, traffic will redirect to a suitable route. In the instance of the Site, traffic will likely utilise the M7 or the Northern Road (by way of Elizabeth Drive), until the signalised access at the AIE is delivered. Noting the SSD relating to the AIE is well advanced, it is anticipated that this would be delivered prior to 2026.</p> <p>Refer to the Civil Engineering package for more information in regard to the proposed design of the intersection, the proposal of which has been prepared by Costin Roe.</p>

<p>Construction Traffic Management Plan</p> <p>Section 4.1.4 states ‘There are a number of planned developments in the area therefore, prior to implementation of the final CTMP, a cumulative traffic generation assessment should be undertaken. It is anticipated that this could be included as a Condition of Consent.’</p> <p>TfNSW recommends that TfNSW comments provided in the SEARs be included in any condition to consent. The comments are reiterated below: The preparation of a preliminary Construction Pedestrian and Traffic Management Plan (CPTMP) to demonstrate the proposed management of the impact in relation to construction traffic addressing the following:</p> <ul style="list-style-type: none"> assessment of cumulative impacts associated with other construction activities (if any); an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; details of anticipated peak hour and daily construction vehicle movements to and from the site; details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; details of temporary cycling and pedestrian access during construction. 	<p>Noted and accepted</p>
<p>There are no details provided regarding the proposed construction access to Mamre Road. It is noted that the access will be via a ‘temporary access road’ however there is no indication if this will be the same access as the proposed temporary left in/left out operational development access.</p> <p>TfNSW recommends that the temporary stage 1 operational development access should be constructed prior to a construction certificate being issued. The temporary access should be designed to cater for both construction and operational traffic and removed once the internal road connection is provided.</p>	<p>The requirements for the temporary access are subject to future input from a Contractor, at the appropriate stage. This is noted given that there are also existing access points which could be readily utilised for construction.</p> <p>It is expected that during construction of stage one, the future building areas, to the north of the Site, would be utilised, including for a potential access point. This will allow for concurrent delivery of Stage 1 and the driveway, reducing the construction timeframes. As such, it is still proposed that temporary construction access be confirmed as part of the finalised CTMP</p> <p>The temporary access would be removed once the internal road connection is complete.</p>
<p>Active Transport Considerations</p> <p>Future Transport 2056 emphasises the importance of walking and cycling for short trips and reinforces the importance of walking and cycling to increase the catchment of public transport as part of the whole customer journey.</p> <p>Building Momentum - State Infrastructure Strategy 2018-2038 includes recommendations related to walking and cycling, including integrating transport with land use; managing travel demand; unlocking capacity in existing assets; and improving population health outcomes through more active transport.</p> <p>The Transport Assessment (TA), states The Mamre West DCP does not provide Bicycle Parking provision, so the TA referenced the Mamre Road Draft DCP, Table 12, which directs the use of the DPIE Planning Guidelines for Walking and Cycling 2004. Note: The NSW Planning Guidelines for Walking and Cycling has been superseded by Cycling Aspects of Austroads Guides, 2017, which recommends that bicycle parking for all-day use on a regular basis should be</p>	<p>It is noted that the MRP DCP now provides for bicycle parking requirements. Bicycle parking is to be delivered in compliance with the MRP DCP. It is expected this would form a Condition of Consent (See Section 9).</p>

<p>expected to be combined with end-of-trip facilities such as showers, lockers etc.</p> <p>Use of the Cycling Aspects of Austroads Guides, 2017, Appendix I – Bicycle Parking Provisions results in the need for 23 secure bicycle parking spaces for Warehouse 1 and 45 secure parking spaces for Warehouse 3 totalling 68 secure bicycle parking spaces with adequate end-of-trip facilities provided.</p> <p>It is requested that prior to the issue of the Construction Certificate, the applicant be conditioned to provide bicycle parking and end of trip facilities for staff and visitors in accordance with Australian Standard AS1742.9:2018 Manual of Uniform Traffic Control Devices - Bicycle Facilities, and Cycling Aspects of Austroads Guides, 2017 including:</p> <p>Locate bicycle parking and storage facilities in secure, convenient, accessible areas close to the main entries incorporating adequate lighting and passive surveillance and in accordance with Austroads guidelines.</p>	
<p>Framework Sustainable Travel Plan</p> <p>TfNSW has reviewed the EIS Appendix V – Transport and Accessibility Plan document which includes the Framework Sustainable Travel Plan and provides the below advice for the EIS SSD-10272349 Yiribana Logistics Estate development application.</p> <p>TfNSW recommends that the Framework Sustainable Travel Plan (FSTP) adopt both short and long term measures in the FSTP given the lack of public transport and active transport infrastructure facilities in this area.</p> <p>In Section 5.2 Strategies and Actions TfNSW recommends that short term goals be implemented in the FSTP; one of these is the internal shuttle service (Table 3 Section 2.5) and the second would be implementing car-pooling (Table 3, Section 3) schemes. The other longer term goals in Section 5.2 Strategies and Actions would all be implemented in the FSTP just prior to and during public and active transport infrastructure being made available. Due to this advice TfNSW recommends that a detailed implementation strategy for the 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.</p> <p>TfNSW recommends that the Travel Access Guide or TAG includes the short term initiatives discussed earlier (shuttle and carpooling), and removes the bus travel map (as bus 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.</p> <p>TfNSW also 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.</p>	<p>It is anticipated that any TfNSW for the future Travel Plans could be ensured via suitable Condition of Consent prior to construction.</p>
<p style="text-align: center;">Council</p>	
<p>Dedicated Freight Network</p> <p>The design of the development is to accommodate the construction of the required Freight Network including clearances, access, engineering and servicing requirements, which are not to preclude the transition to an automated guided vehicle (AGV), and which are to be endorsed as being</p>	<p>Currently, there is no clear direction from TfNSW on how the future DFN is anticipated to be developed and implemented. However, it is noted that the design of the proposed subdivision from a civil engineering perspective has sought to not preclude any future connection to the DFN in the future.</p>

satisfactory by TfNSW. Freight networks are to be provided in compliance with section 3.4.3 of the DCP. Current plans do not demonstrate the network is sufficiently provided for.	
<p>Estate</p> <p>The Draft DCP indicates a 'T' intersection is to be provided on the north south road (Road 1) immediately north of the development site. A draft layout of the future intersection shall be provided to ensure that any works as proposed by this development will not impede the future delivery of the intersection.</p>	The plans have been updated as per the requirements of the MRP DCP, please see wider EIS package for updated design.
The Draft DCP shows Road 1 may be categorised as a Collector Road with a raised central median. Should a central median be required along Road 1, then access arrangements to all lots from Road 1 shall be provided.	Both roads are now proposed in accordance with the requirements of the finalised MRP DCP.
Further detail is required of the internal north-south road (Road No 1) and the interface with the adjoining developments. The southern connection has overlaid the estate roads proposed by the adjoining Mirvac development however, the horizontal road alignments do not appear to match. The architectural plans show that Road 1 (south of the intersection with Road 2) straddles the common boundary with the adjoining property to the west, with half road construction proposed. Half road construction is not supported by Penrith City Council.	<p>It is noted that The GPT Group have been liaising with Mirvac to ensure the coordinated delivery of the relevant section of the north-south road. At such at time that the SSD receives approval, this will facilitate the coordination of the plans on the basis of the approved roads.</p> <p>At this time, it is understood that Mirvac have agreed to submit the relevant application to relation to the proposed road, within 3 months of approval received for the SSD.</p>
The northern perimeter road for Warehouse 5 relies upon vehicular access to Mamre Road – concurrence is to be sought from TfNSW for the access.	Noted
<p>Council's traffic engineering review comments on the referred SSD documents are as follows:</p> <p>The SSD shall be reviewed by DPIE to ensure a suitable fit with the road network, cross sections and intersections in the final Mamre Road DCP which is yet to be adopted</p>	Noted
The SSD shall be reviewed by DPIE and Council regarding the Mamre Road Precinct collector and arterial road network and intersections, trunk drainage systems and civil infrastructure ultimate design delivery plan and works / contributions that may be required from this SSD.	Noted
<p>A full ultimate Mamre Road Precinct collector and arterial road network and intersections including Aldington Road / Abbots Road), drainage and civil infrastructure design and construction, and possibly any staged delivery and staged precinct development GFA thresholds, is required for the Mamre Road Precinct prior to any development.</p> <p>Full ultimate collector and arterial road network and intersections (including Aldington Road/ Aldington Road extension to Southern Link Road and the extension south of Abbots Road to Mamre Road / Abbots Road / Southern Link Road / Bakers Lane), trunk drainage systems and civil infrastructure design and construction design and works delivery plan and fit of this SSD is required prior to development.</p> <p>This should include works delivery plans by State Government, DPIE, TfNSW and developers and include key road network links including Southern Link Road, Bakers Lane, Aldington Road (and links northern to Southern Link Road and south past Abbots Road to Mamre Road), Abbots Road and Mamre Road.</p> <p>Council's roles and responsibilities on this Mamre Road Precinct rezoning, road, drainage and civil infrastructure delivery and development are yet to be resolved and so further direction should be sort from Strategic Planning/ Council/ DPIE/ State Government prior to any development.</p>	<p>It is understood, that following finalisation of the MRP DCP and implementation of the relevant Section 7.11 Contributions plan, that Council's roles and responsibilities are now resolved.</p> <p>In regard to the delivery of the road infrastructure, ultimately the regional solutions are a matter for TfNSW and should not necessarily be a barrier to development of land which was rezoned for a purpose. This is particularly notable, now that the MRP DCP, which governs the requirements for development, has been finalised. Without development proceeding, the future road network required is unlikely to be delivered.</p>

1.6 Reference Documents

As discussed, the Site lies within the MRP; as such, Ason Group has referenced the Draft MRP DCP as it will ultimately provide the overarching controls for the Site and the wider Precinct:

- DPE, Western Sydney Employment Area, Mamre Road Precinct, Development Control Plan, November 2021 (MRP DCP).

Further to the above, the Site lies within the Penrith City Council Local Government Area (LGA); as such, Ason Group has referenced the following key Council controls in preparing this TMAP:

- Penrith City Council Local Environmental Plan 2010 (Penrith LEP).
- Penrith City Council Development Control Plan 2014 (Penrith DCP).

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

- Roads and Maritime Services (Roads and Maritime) Guide to Traffic Generating Developments 2002 (RMS Guide).
- Roads and Maritime Guide to Traffic Generating Developments Updated Traffic Surveys, August 2013 (RMS Guide Update).
- Department of Planning & Environment Western Sydney Aerotropolis Land Use and Infrastructure Implementation Plan Stage 1: Initial Precincts (WSA Stage 1 Plan).
- State Environmental Planning Policy (West Sydney Employment Area) 2009 (SEPP WSEA).
- DPE Mamre West Land Investigation Area Development Control Plan 2016 (Mamre West DCP).
- Australian Standard 2890.1:2004: Parking Facilities – Off Street Car Parking (AS 2890.1:2004).
- Australian Standard 2890.2:2018 Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2:2018).
- Australian Standard 2890.3:2015: Parking Facilities – Bicycle Parking (AS 2890.3:2015).
- Australian Standard 2890.6:2009 Parking Facilities – Off Street Parking for People with Disabilities (AS 2890.6:2009).

Finally, Ason Group has specifically referenced the most recent assessments available in regard to the recent rezoning of the MRP, including:

- NSW Government Mamre Road Precinct Rezoning Exhibition Discussion Paper, November 2019 (MRP Rezoning Paper).
- NSW Government Mamre Road Precinct Rezoning Finalisation Report, June 2020 (MRP Finalisation Report).
- Roads & Maritime Mamre Road Upgrades Kerrs Road to M4 Motorway, November 2017 (MR Upgrade Report).
- Roads & Maritime Mamre Road Upgrade Community Consultation Report May 2019 (MR Upgrade CC Report).

- AECOM Western Sydney Aerotropolis Transport Planning and Modelling Stage 2 Report, October 2020 (AECOM Report).
- Numerous reports prepared by Ason Group and others for similar industrial development within the Mamre West, Kemps Creek and Erskine Park industrial precincts.

2 The Proposal

2.1 Overview

A detailed description of the SSD Proposal is included in the Environmental Impact Statement (EIS) which this TMAP accompanies. In summary, the application relates to the construction of the Stage 1 development of the future Yiribana Logistics Estate. The following summarises key aspects of the Proposal:

- Construction and use of Warehouse 1 and 3 for the purposes of other manufacturing industries and/or warehouse and distribution centres which will operate 24 hours/day, seven days/week, consisting of:
 - A total of 52,720m² of warehouse GFA and 2,285m² of ancillary office GFA; and
 - Provision for 244 car parking spaces.
- Subdivision of Site;
- Site preparation works including estate-wide clearing of all vegetation and dam-dewatering;
- Estate-wide bulk earthworks;
- Construction of retaining walls;
- Provision of site servicing infrastructure to allow the operation of the industrial unit for warehouse and distribution and/or other manufacturing industries;
- Internal road network (including North-South Collector Road and Temporary Access Road to Mamre Road until the ultimate connection is provided by the adjoining landowner).

The proposed Stage 1 (prepared by SBA Architects) is shown in **Figure 1**.

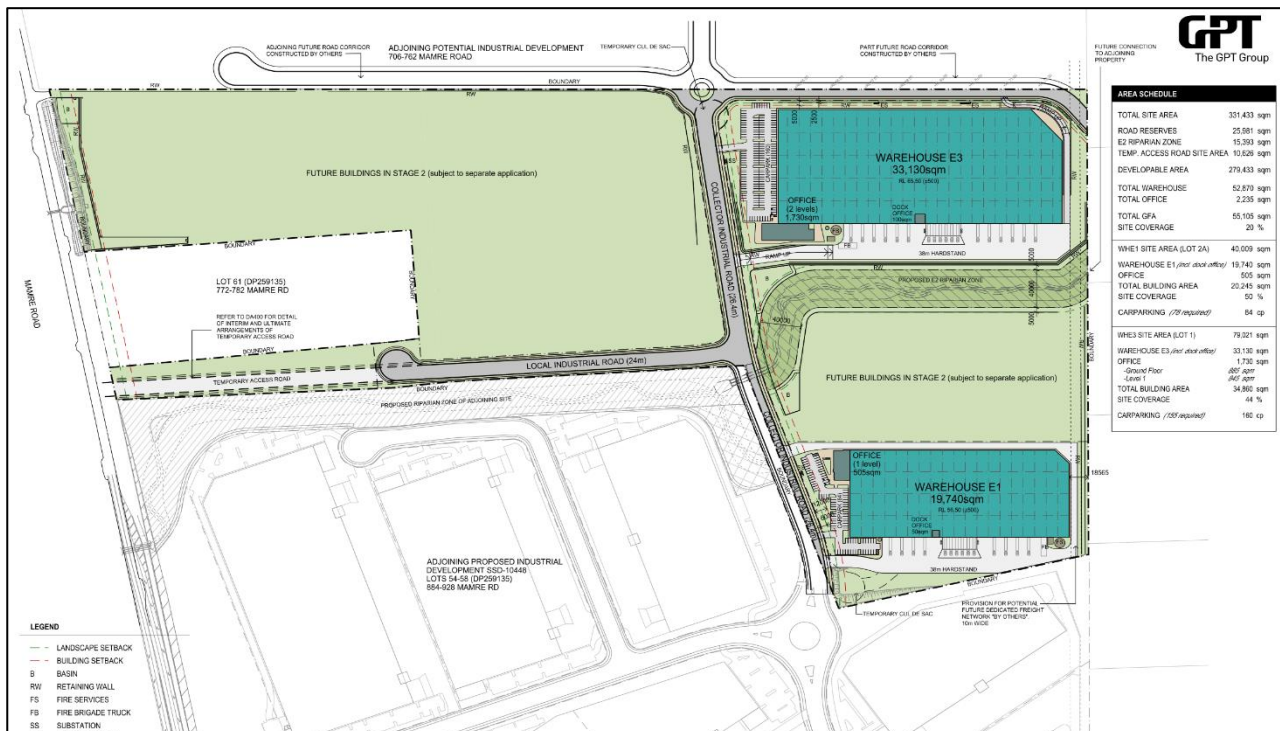


Figure 1: Proposed Stage 1

It is noted that while approval is only sought for the Stage 1 development, a Concept Masterplan has been developed for the Site which indicates that a total GFA of 153,700m² could be achieved on the Site. This indicative GFA has been considered in the traffic impact assessment detailed in Section 7.

2.2 Proposed Vehicular access

A two-stage access strategy is required due to the proposed road network to service the MRP (as discussed in Section 5.6), with the long-term access for the Site being via the internal road network, rather than directly from Mamre Road. With the permanent access solution entirely dependent on adjoining sites, which are being developed by others, a temporary access is required. GPT has worked with the neighbouring developer of 772-782 Mamre Road to collectively identify a temporary access solution.

Access will be as follows:

- In the interim period it is proposed to access Mamre Road via a proposed temporary local road as shown in **Figure 2**. The proposed temporary road will be constructed to Council's standards and is planned to provide a consolidated temporary access for the Site and the adjoining land at 772-782 Mamre Road, prior to realisation of the ultimate MRP road network.

It is anticipated that a deceleration / acceleration lane will be provided from Mamre Road, along the site frontage of 772-782 Mamre Road.

The deceleration lane will be delivered is currently proposed within the Mamre Road reserve required for the future Mamre Road upgrade (see Section 5.4). This is considered an acceptable solution given that the timing of the Mamre Road upgrade works are not yet determined. Therefore it is anticipated that the local road network connection required will be completed prior to the widening of Mamre Road. However, should the widening be completed prior to the internal connections, the deceleration lane could be relocated. This would be at no cost to TfNSW.

The southern connection forms part of the site to the south, which is currently known as the Aspect Industrial Estate (AIE). This site is subject to the recently approved SSD-10448⁴. As such, it is evident the internal road connection being delivered as part of development of both the Site and the AIE would be delivered prior to the Mamre Road upgrade.

It is noted that Condition D9 associated with SSD-10448 states that:

The Applicant must ensure that the portion of Access Road 3 – North to be located on the site is constructed and operational in accordance with the design plans required under Condition D7.

Therefore, the road connection between the Site and the AIE will be delivered.

Should Warehouse E1 be completed prior to the connection of the north-south road, a temporary access solution will be delivered, inclusive of a turning head (see Figure 2).

- The long-term strategy will see access to Mamre Road via the proposed industrial development to the south / south-west of the Site (which is currently being considered by DPIE under SSD-10448); and access to the future SLR will be provided via internal MRP roads traversing to the north.

The long-term access strategy is ultimately subject to the development of the neighbouring lots, and therefore the interim access arrangement is ultimately required should the Proposal be developed prior to completion of these connections.

⁴ <https://www.planningportal.nsw.gov.au/major-projects/projects/aspect-industrial-estate>

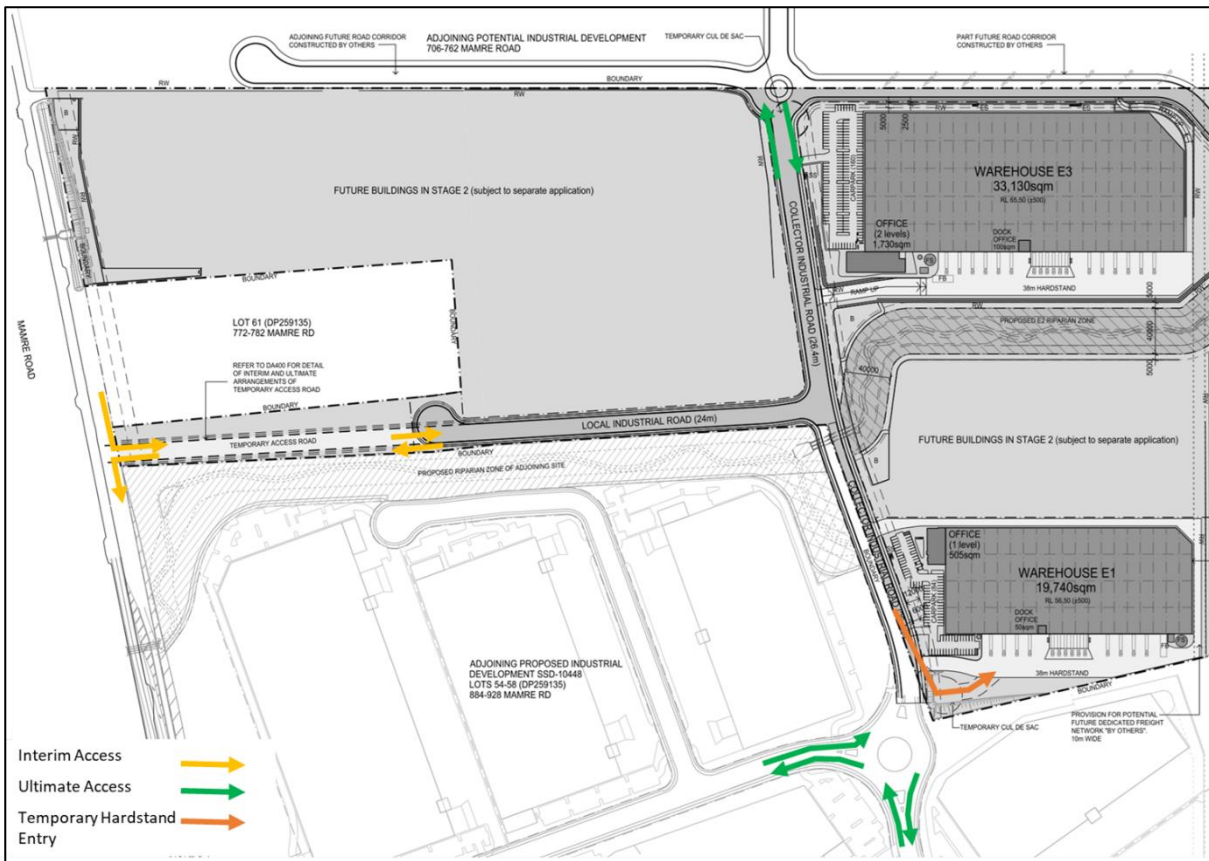


Figure 2: Proposed Access Locations

3 The Existing Site

Location

The Site is comprised of 2 separate allotments and is legally described as Lots 59 and 60 in DP259135. The Site is located approximately 8km north-west of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 12km south-east of the Penrith CBD and 40km west of the Sydney CBD. The land is 331,432m² in area and is irregular in shape.

The Site is shown in its sub-regional context in **Figure 3**.

3.1 Current Site Land Usage

The Site currently provides for several rural residential properties and greenfield land.

3.2 Site Access

The Site currently has access points onto Mamre Road through various access driveways into private properties.

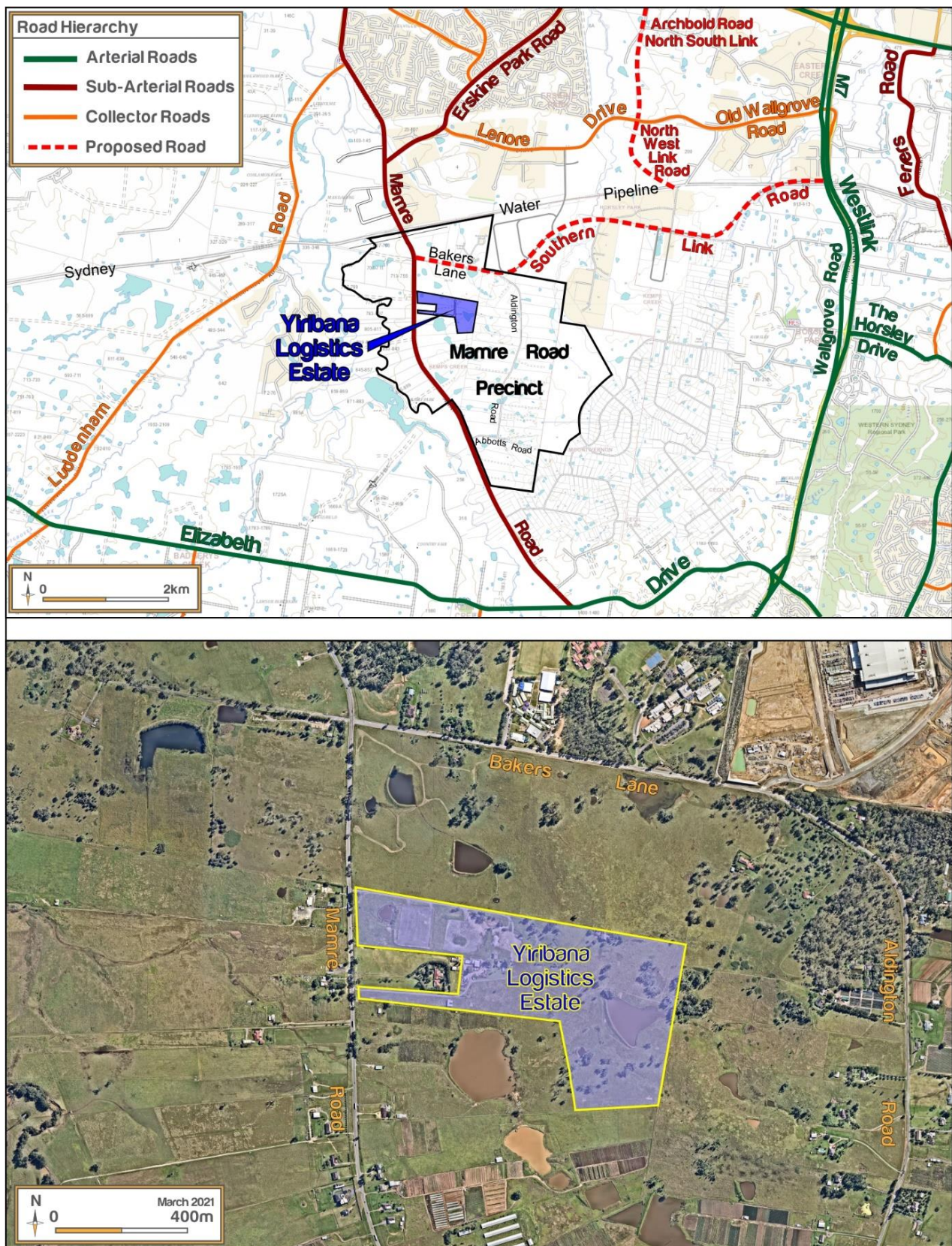


Figure 3: Site Location & Road Hierarchy

4 The Existing Road Network

4.1 Key Roads

The existing road network providing access to the Site is shown in **Figure 3** and detailed further below.

4.1.1 Mamre Road

Mamre Road is an arterial road which runs north-south between the Great Western Highway and M4, and Elizabeth Drive respectively. In the vicinity of the Site, Mamre Road provides 1 traffic lane in each direction, and has a posted speed limit of 80km/h.

4.1.2 Erskine Park Road

Erskine Park Road is a sub-arterial road which generally runs north-south between the Great Western Highway and M4, and Mamre Road respectively; it also links east to the M7 via Lenore Drive. Erskine Park Road provides 2 traffic lanes in each direction, and has a posted speed limit of 70km/h.

4.1.3 Bakers Lane

Bakers Lane is a local access that runs east-west (to the east of Mamre Road) and currently provides access for a number of rural residential, educational and retirement sites. Bakers Lane provides 1 traffic lane in each direction and has a posted speed limit of 60km/h, with School Zone restrictions (40km/h during school peaks) adjacent to the Trinity Primary School and Emmaus College.

4.1.4 Elizabeth Drive

Elizabeth Drive is a sub-arterial road that runs east-west between Hume Highway and M7, and Mamre Road and The Northern Road respectively. In the vicinity of Mamre Road, Elizabeth Drive provides 1 -2 traffic lanes in each direction, and has a posted speed limit of 80km/h.

4.2 Existing Traffic Flows

Ason Group conducted AM and PM peak period traffic surveys in Mamre Road south of Bakers Lane in 2018; based on the minimum number of traffic generating developments in the vicinity of the Site, these flows provide a good representation of current traffic flows in Mamre Road adjacent to the Site.

The results of the surveys, and the corresponding Level of Service (LoS) for the directional flows (based on RMS Level of Service criteria (as detailed in the RMS Guide) are shown in **Table 4**.

TABLE 4: 2018 MAMRE ROAD TRAFFIC FLOWS

Peak Period	Total Volumes	Directional Volumes	Level of Service
AM	1,391	NB: 782 vph	D
		SB: 609 vph	D
PM	1,541	NB: 678 vph	D
		SB: 863 vph	D

With reference to Table 4, Mamre Road is currently operating satisfactorily but with little spare capacity, an issue known to TfNSW and as such one of the key drivers of the proposed Mamre Road Upgrade (see also **Section 5.3**).

5 Mamre Road Precinct Rezoning

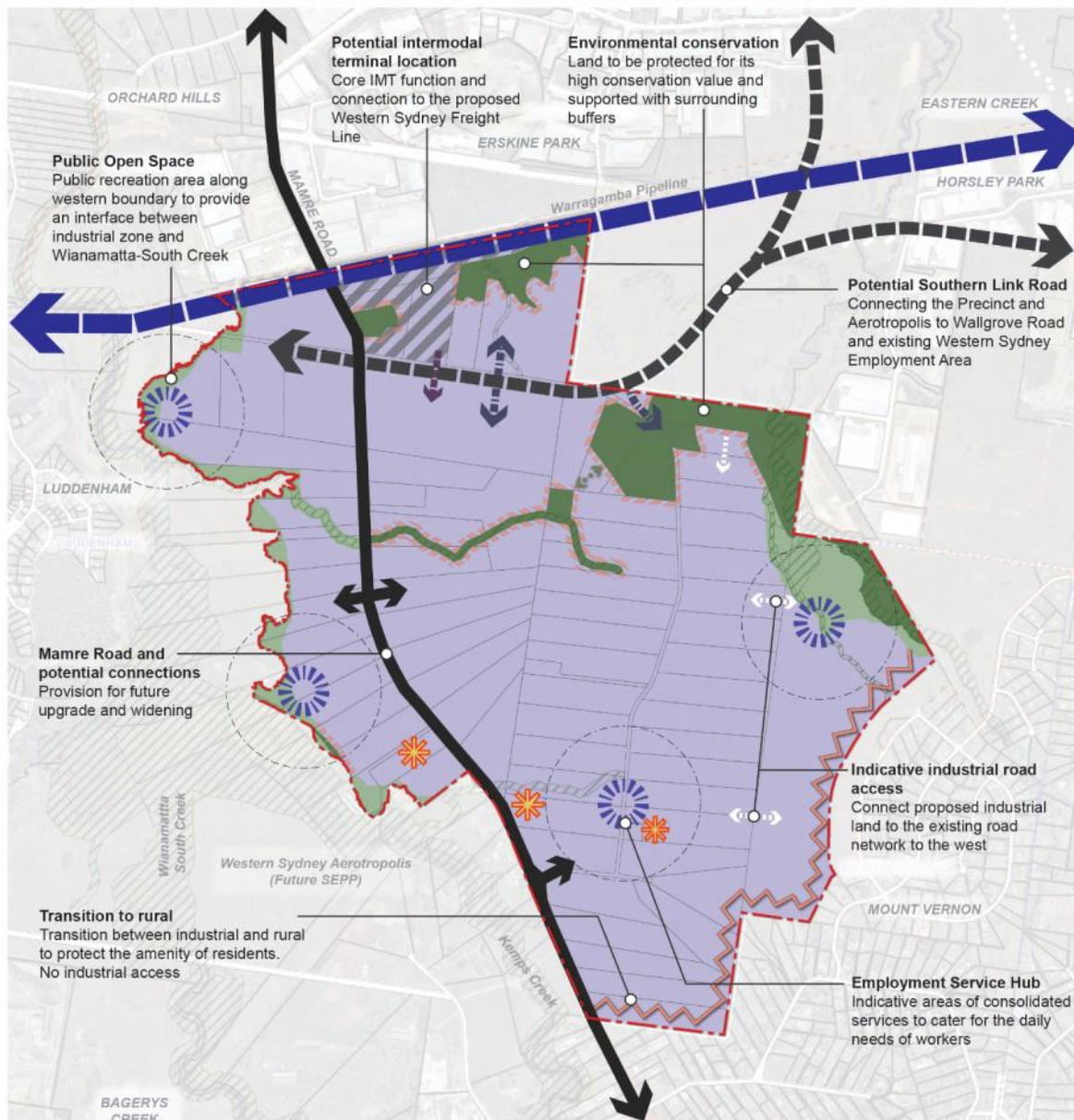
Overview

In June 2020, the NSW Government rezoned MRP from rural uses to IN1 General Industrial. In summary, the rezoning sought to:

- Respond to the demand for industrial land in Western Sydney, as well as the future freight, logistics and industrial needs of Greater Sydney.
- Facilitate the NSW Government's vision for the Western Parkland City.
- Facilitate the opportunities provided for a 30-minute city as detailed in the Western City District Plan.

The rezoning is anticipated to provide approximately 850 hectares of industrial land with an approximate capacity of 17,000 jobs, and the creation of new environmental conservation areas and public open space.

The Mamre Road Precinct Structure Plan (the MRP Structure Plan) is shown in **Figure 5**.



Structure Plan

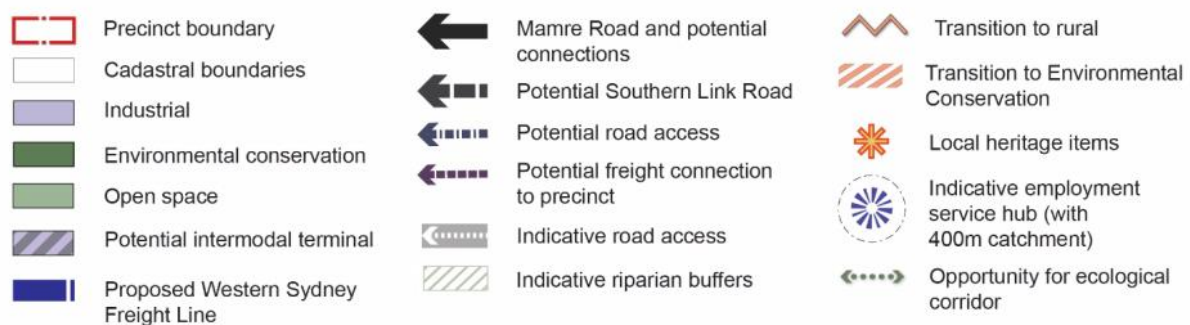


Figure 4: Mamre Road Precinct Structure Plan

5.1 Strategic Context

5.1.1 Strategic Policies

The rezoning of the MRP fits within the strategic development of the WSEA and Broader Western Sydney Employment Area (BWSEA); in the context of the MR Proposal, key planning policies and strategies relevant to the MRP rezoning include:

- **A Plan for Growing Sydney** sets out the State Government's strategies for accommodating Sydney's future population growth over the next 20 years; it provides goals, directions and actions that provide a framework for strengthening the global competitiveness of Sydney and delivering strong investment and jobs growth, particularly in Western Sydney.
- The **NSW Long Term Transport Master Plan** provides a framework for delivering an integrated, modern transport system by identifying transport actions and investment priorities across NSW for the next 20 years. Section 5.6 of the Long-Term Transport Master Plan specifically identifies Mamre Road (from St Marys to Kemps Creek) as a corridor for future investigation.
- The **NSW Freight and Ports Plan** targets specific challenges associated with the forecast doubling of the NSW freight task by 2031. Providing a road network that minimises congestion will support economic growth and productivity and encourage regional development; in this context, the F&P Strategy identifies the need to develop and maintain capacity for freight on the road network, and of course the provision of additional Intermodal capacity, noting that a new Intermodal is identified in the MRP Rezoning Paper.
- The **NSW Road Safety Strategy 2012 - 2021** establishes the direction of road safety in NSW for 10 years from 2012, and specifically supports a targeted reduction in the annual number of fatalities and serious injuries by at least 30% by the end of 2021. The Safety Strategy places particular importance on the design of safe roads and roadsides and recognises that the ongoing development and upgrade of the NSW road network is essential to improving road safety; these goals will be integral to the development of the MRP road network.

5.1.2 Strategic Constraints & Opportunities

The MRP Rezoning Paper – drawing from the policies outlined above and the broader demands on an ever-growing Western Sydney – identifies the following key constraints within the region, and the opportunities provided by the Rezoning to respond to these constraints.

- **Industrial Land Shortfall:** There is a growing demand for industrial land in Western Sydney, the provision of such which is essential, so supply is maintained despite increasing take-up rates. The most critical shortage at this time is an increasing warehouse and logistic demands to meet the existing and future e-commerce demand.
- **Freight and Logistics:** The WSEA is strategically located with proximity to key freight and logistic corridors including the M4 and M7 Motorways, and provides land and economies of scale that give Western Sydney's industrial land a comparative advantage over other parts of Sydney.
- **Intermodal Terminal:** The NSW Freight and Ports Plan identifies moving an increasing percentage of goods by rail to international gateways, and TfNSW has identified an urgent need to plan for and protect intermodal capacity within the Aerotropolis. The Aerotropolis LUIIP specifically identifies the MRP as a potential Intermodal location from a freight and logistics perspective.
- **Western Sydney Airport:** Further to the above, the need for land focused on freight and logistics will be further increased once the Western Sydney Airport becomes operational. The Aerotropolis LUIIP again

identifies the MRP as providing warehousing and logistics uses to support the development of the Western Sydney Airport (and broader Aerotropolis).

- **Western Parkland City:** The Western City District Plan has as a key objective the delivery of a 30-minute city, where people can reach their nearest metropolitan and strategic centres within 30 minutes, seven days a week by public transport, which includes expansive industrial and urban services land. The development of land within the MRP will provide for Greater Sydney's long-term freight and logistics and industrial needs and is an opportunity to deliver jobs closer to people's homes quickly and contribute to the NSW economy.

5.2 Mamre Road Precinct Transport and Movement Outcomes

5.2.1 Overview

Achieving the vision and objectives for the MRP will be dependent on the development of a coherent MRP wide transport structure, which will necessarily be underpinned by a road network with appropriate capacity and augmented by strong public and active transport networks.

Regarding identifying the relevant transport connections (including the MRP DCP road network), TfNSW have established the MRP Transport and Movement Outcomes.

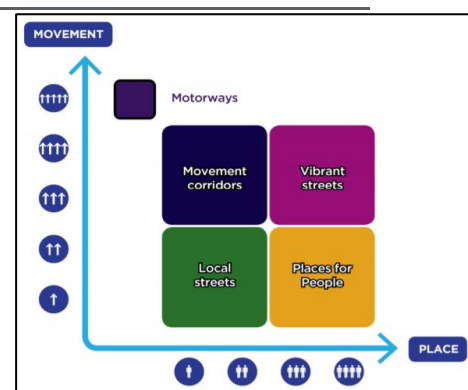
5.2.2 Objective

Noting that the development of the MRP will result in significant traffic demands, it is anticipated that the road network will be grounded in the core principles of integrated

land use (for example, the opportunities to internalise vehicle movements generated by the future Intermodal) and the Movement and Place framework.

Adherence to these principles is anticipated to provide for the development of a MRP road network that provides:

- An interconnected, legible, urban-scale grid road pattern;
- Capacity to support demand;
- An understanding on the function of different roads, and indeed different parts of the same road, according to movement and place functions;
- Maximum safety and efficiency through design;
- Well defined public transport links;
- A permeable network for pedestrian and cyclists; and
- Ultimately, the integration of all modes of travel across the road network.



5.2.3 Key Infrastructure

- **Mamre Road:** Mamre Road will provide the central north-west access corridor to/through the MRP and is currently planned to be upgraded (see also Section 5.4 below).
- **Southern Link Road:** The Southern Link Road is a proposed east-west link from Wallgrove Road to Mamre Road, connecting the MRP to the existing WSEA lands (Oakdale, Eastern Creek etc).
TfNSW is currently finalising a concept design for the Southern Link Road.
- **Future Internal Roads:** the internal network for the MRP is detailed within the MRP DCP.
The design of Stage 1 and the broader Estate provides for full integration with the future internal MRP road network.
- **Active & Public Transport:** As discussed further in **Section 0** below, there is very little active transport infrastructure within the MRP at this time. The MRP Rezoning Paper cites ongoing discussions with local Councils and TfNSW to deliver a cycle network connecting the Precinct to existing urban areas, the future Aerotropolis and WSEA. In this regard, the primary active transport corridor is expected to be designed around Mamre Road itself, with the MR Upgrade proposing a shared path along its full length, and cycle paths branching along creek lines and into the central portions of the MR Precinct.

5.3 Mamre Road Upgrade

5.3.1 Overview

The MR Upgrade Report details the proposed MR Upgrade (the MR Upgrade) between the M4 Motorway and Kerrs Road (south of the Site, and north of Elizabeth Drive). The NSW Government has committed \$220 million to Stage 1 of the upgrades, between the M4 Motorway and Erskine Park Road (north of the MRP). Stage 2 of the upgrades from Erskine Park Road to Kerrs Road is subject to funding

The objectives of the MR Upgrade are stated as:

- Meeting the future transport demand associated with the Western Sydney Priority Growth Area and the Western Sydney Airport at Badgerys Creek;
- Reducing future road transport costs by improving corridor performance;
- Improving liveability and sustainability and support economic growth and productivity by providing road capacity for projected freight and general traffic volumes;
- Improving road safety in line with the NSW Road Safety Strategy;
- Improving quality of service, sustainability and liveability by providing facilities for walking and cycling and future public transport needs;
- Delivering good urban design outcomes; and
- Minimising environmental and community impacts.

5.3.2 Mamre Road Upgrade Design Components

The MR Upgrade provides the following key infrastructure proposals:

A typical cross section that includes:

- 2 traffic lanes in each direction with a wide central median between the M4 Motorway and Kerrs Road;
- Provisions for the central median to provide third traffic lane in each direction to meet growing demand; and
- Shared bicycle and pedestrian paths to promote active transport.
- New or upgraded intersections.

The broader MR Upgrade proposal (per the MR Upgrade Report) is shown in **Figure 5**. It is noted that TfNSW are currently progressing the Concept Design for the MRP upgrade, through the MRP.

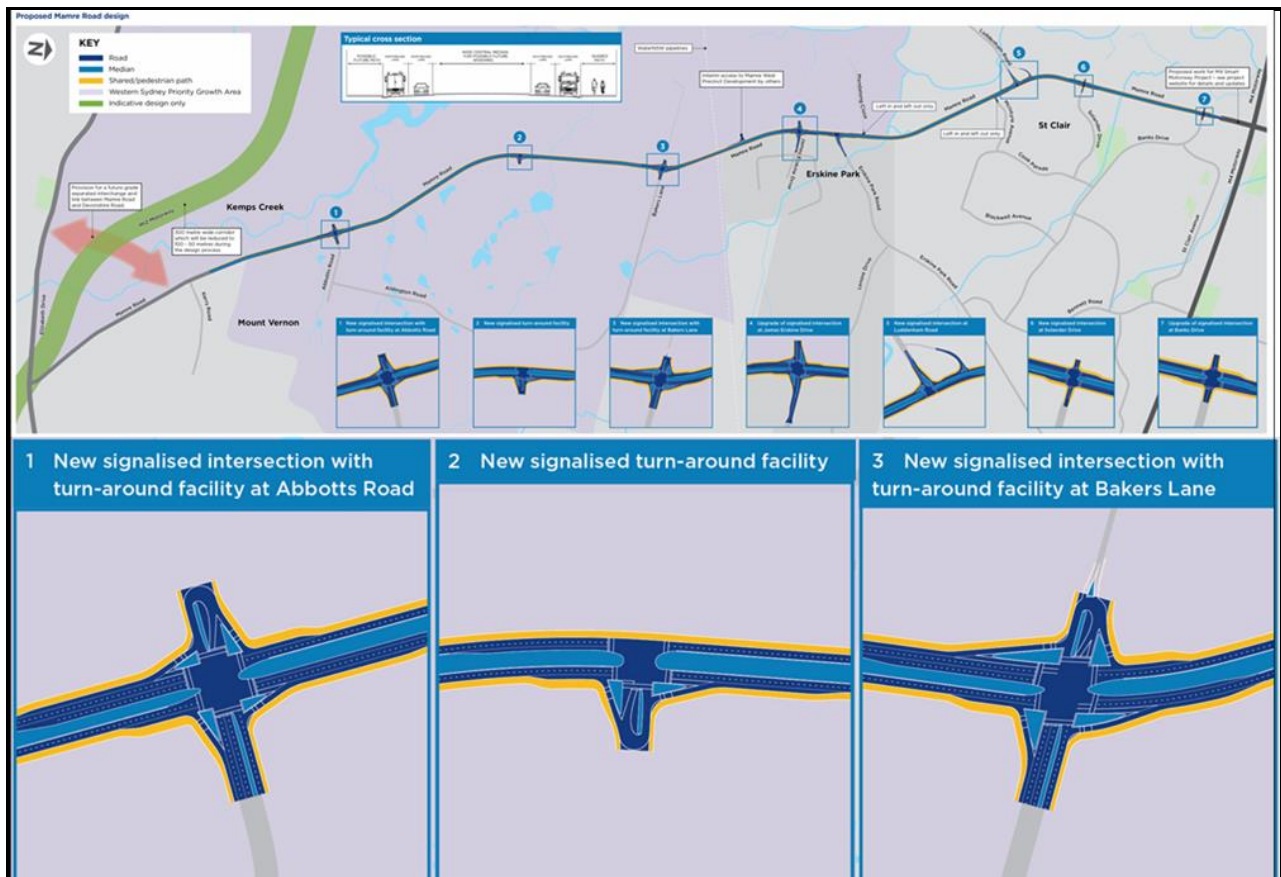


Figure 5: Mamre Road Upgrade

5.3.3 Mamre Road Intersection

The MR Upgrade Report indicates a future signalised intersection at the development site adjacent to the southern boundary of the Estate. This site is being considered under SSD-10448 and is currently known as the AIE. The intersection forms a key connection with Mamre Road for the sites along its eastern boundary and will be a key long-term connection from Mamre Road to the internal MRP road network, which requires access via the AIE. A temporary access to Mamre Road is required, should the connection to the signalised intersection not be provided in the same timeframe as development of Stage 1.

Further to the layout shown by **Figure 5**, it is noted that there is a current proposed design for the intersection (under SSD-10448). The current design for this intersection, as per SSD-10448 is reproduced in **Figure 6**.

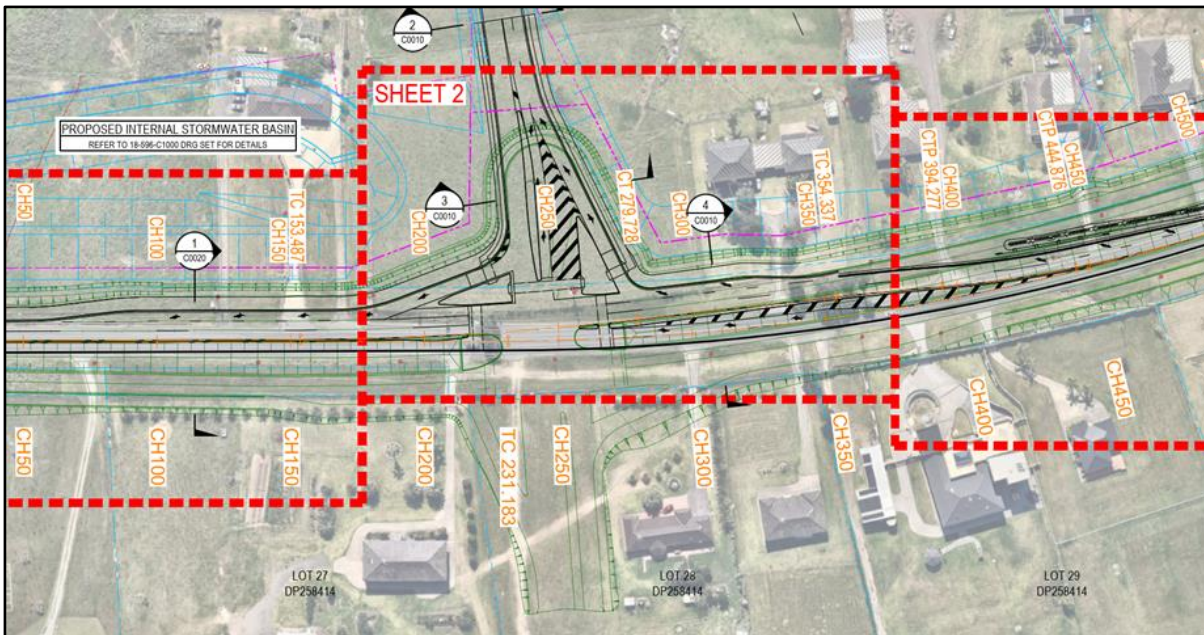


Figure 6: Mamre Road / Aspect Industrial Estate Road 1 Proposed Intersection

5.4 Mamre Road Precinct Rezoning Status

As discussed, the MRP has been recently rezoned, with the Draft DCP responding to the rezoning and providing governance for the future growth across the MRP. Concurrently, the detailed traffic modelling of the MRP being undertaken by TfNSW will specifically determine:

- Sub-regional connections to the regional road network, with a specific focus on Mamre Road and Southern Link Road.
- The road network within the MRP to ensure efficient and equality of access to these sub-regional connectors;
- Road and intersection upgrade requirements and the timing of such in line with the staged development of the MR Precinct; and
- An appropriate apportionment of infrastructure costs.

5.5 Mamre Road Development Control Plan

The finalised MRP DCP provides for the planning controls for future development in the MRP including building design controls, the road network and parking requirements. The road network outlined within the MRP DCP is shown by **Figure 9**

The north-south roads would form a Collector Industrial Road under the DCP. The cross-sections within the DCP are shown by the below figures, which includes the Type 2 Collector Road, of which the north-south road complies with.

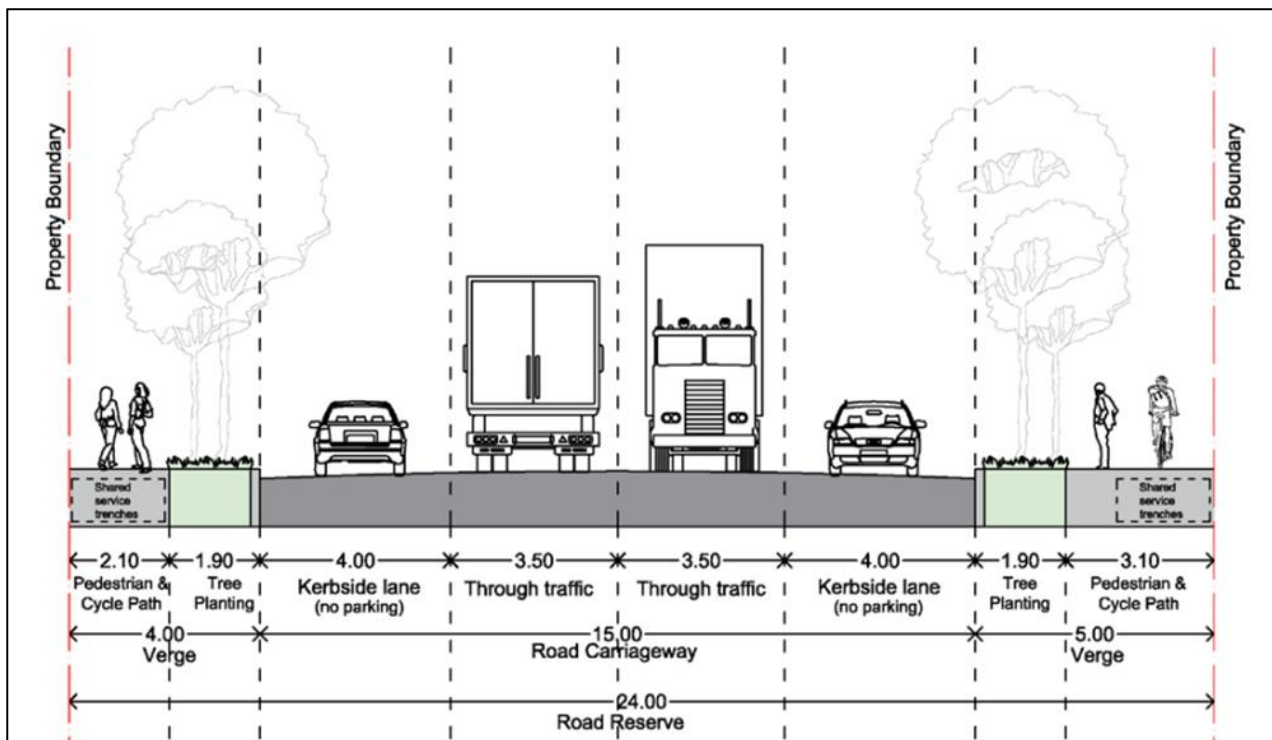


Figure 7: DCP Typical Local Industrial Road

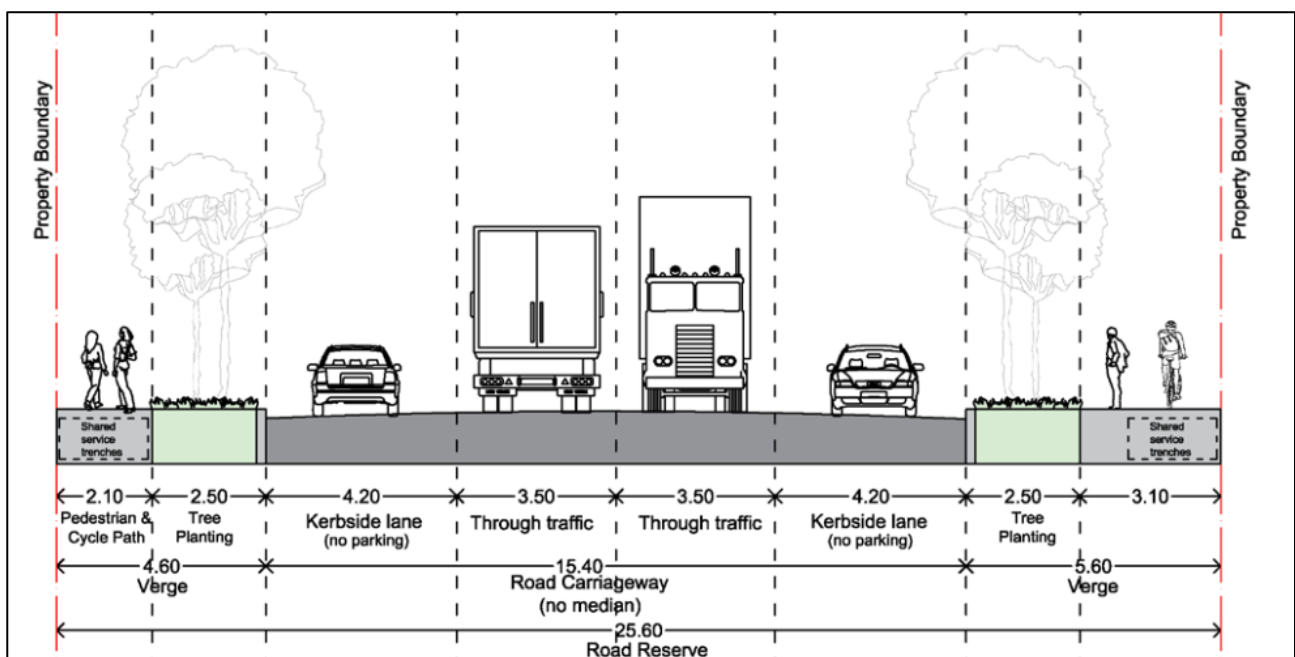


Figure 8: DCP Typical Collector Road (Type 2)

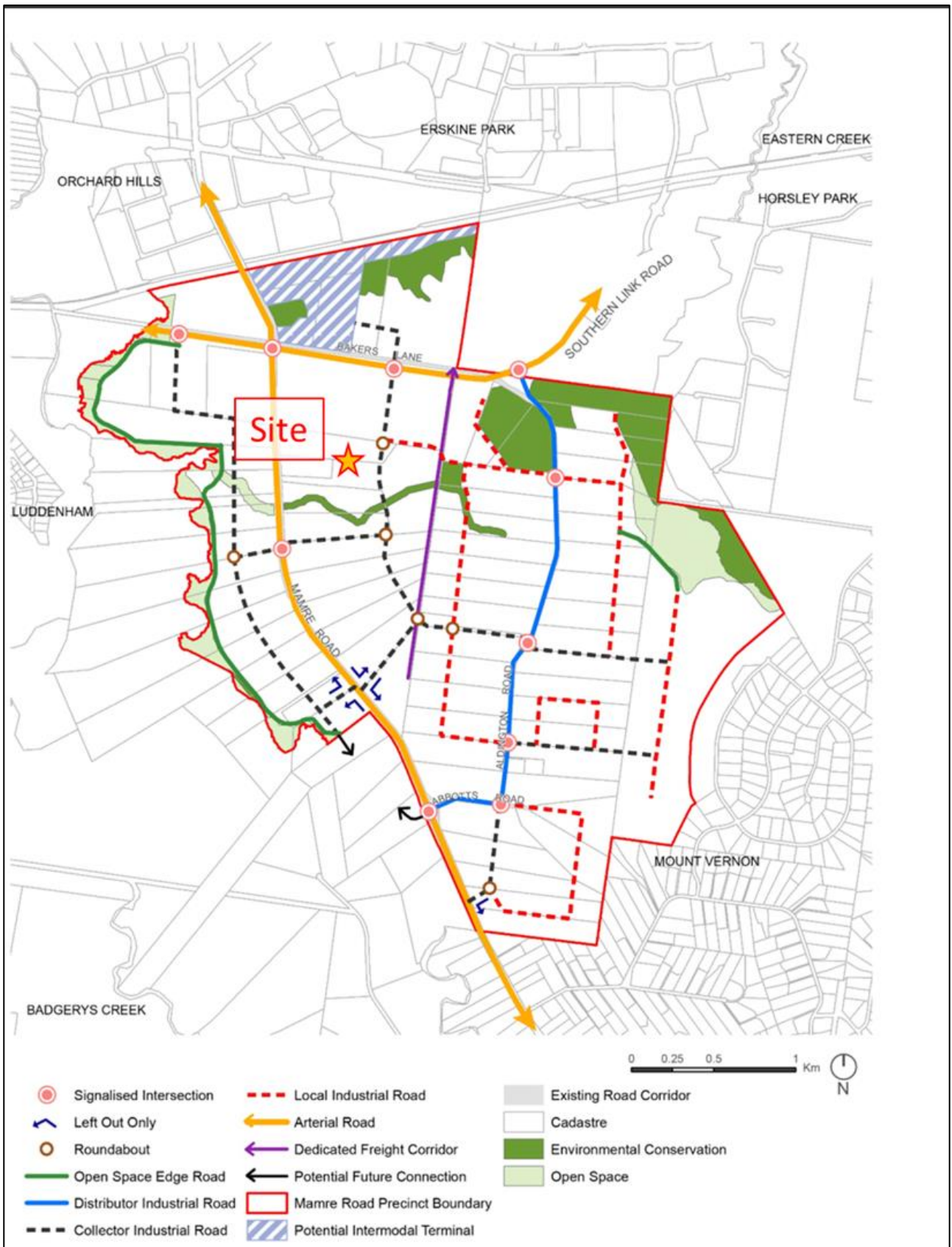


Figure 9: Draft DCP Proposed Precinct Roads

6 Public & Active Transport Opportunities

6.1 Public Transport

It is evident that the Site is not directly serviced by public transport at this time (**Figure 11**) notwithstanding, opportunities for future connections have been identified, noting again that the MR Upgrade specifically provides for new bus stops along its entire route.

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

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

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

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

It is anticipated that internal roads – which would already provide greater width to accommodate heavy vehicle movements – would also be bus capable. There are significant opportunities therefore to provide sub-regional services along Mamre Road, as well as services within the MRP itself to maximise the number of sites that lie within 400m of a viable bus service.

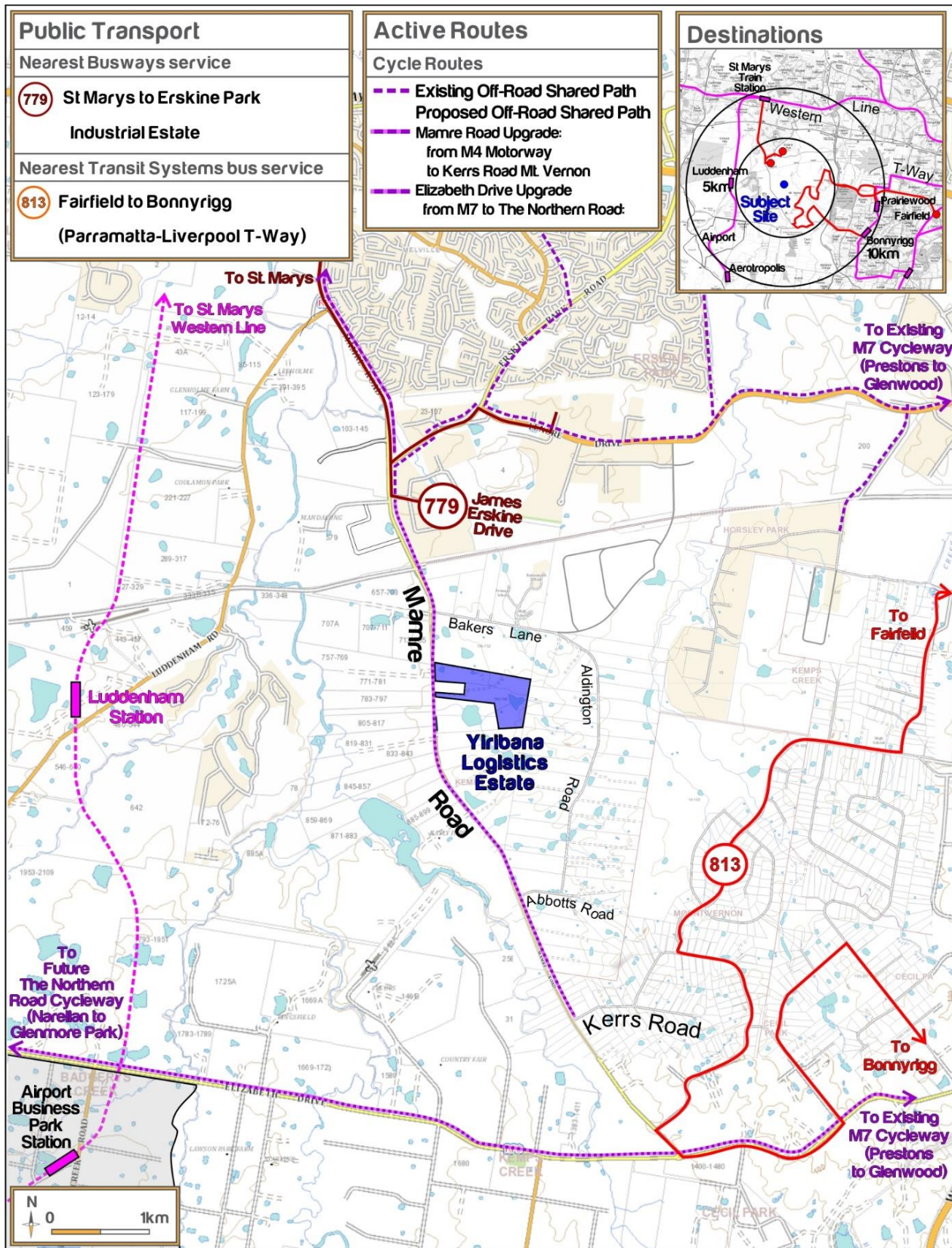


Figure 10: Public Transport Network

Key bus routes identified in the BWSEA Structure Plan are shown in **Figure 11**

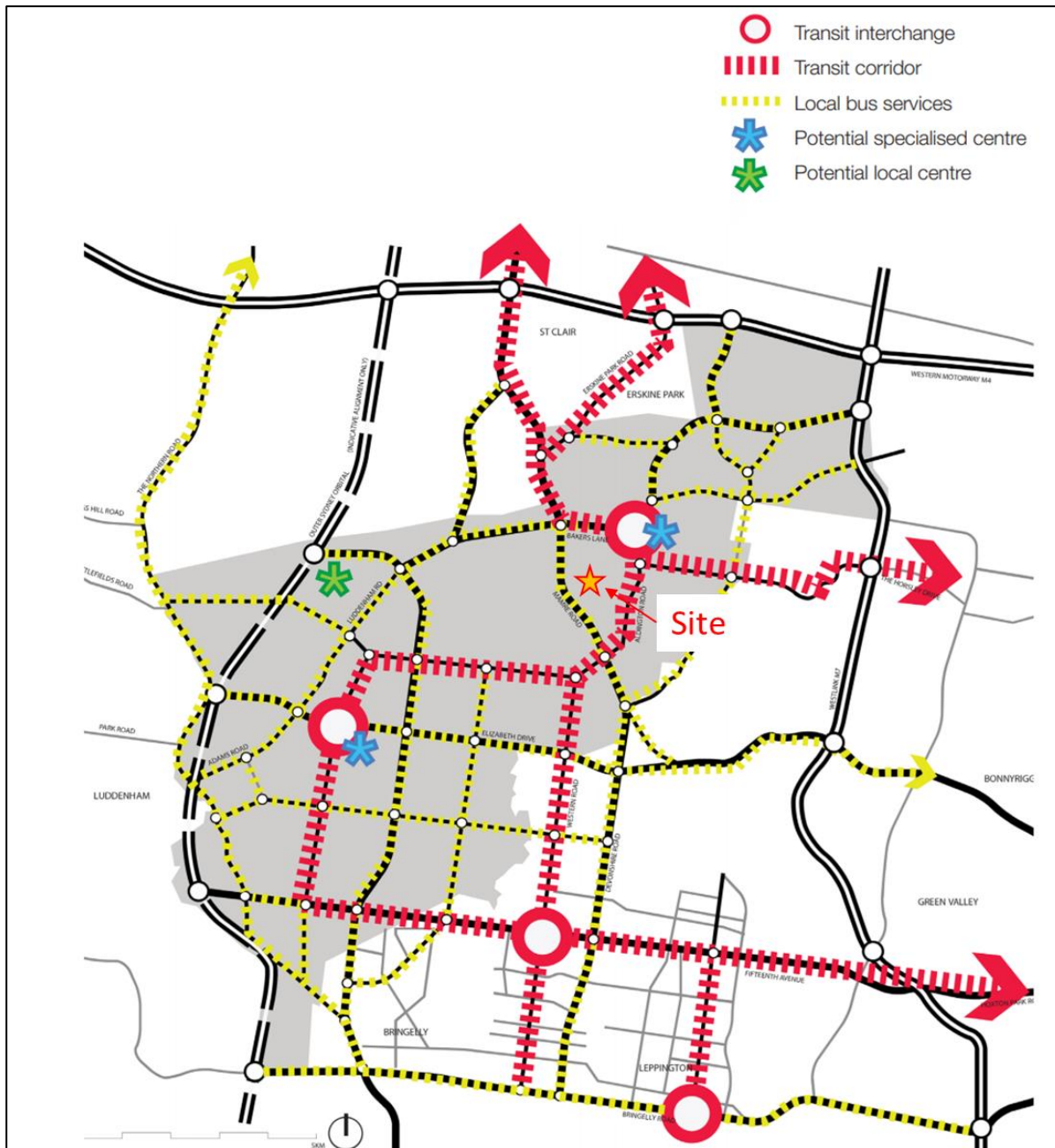


Figure 11: BWSEA Bus Routes

6.2 Train Services – Metro Western Sydney Airport

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

The alignment of the Metro is shown by **Figure 13**. While the closest station to the Site will likely be Luddenham Station, located some 4km (as the crow flies) to the west of the Site, it will undoubtedly improve

public transport accessibility to the wider area. This provides an opportunity for bus services to combine with the Metro to improve connectivity to/from the residential areas to the north of the Site.

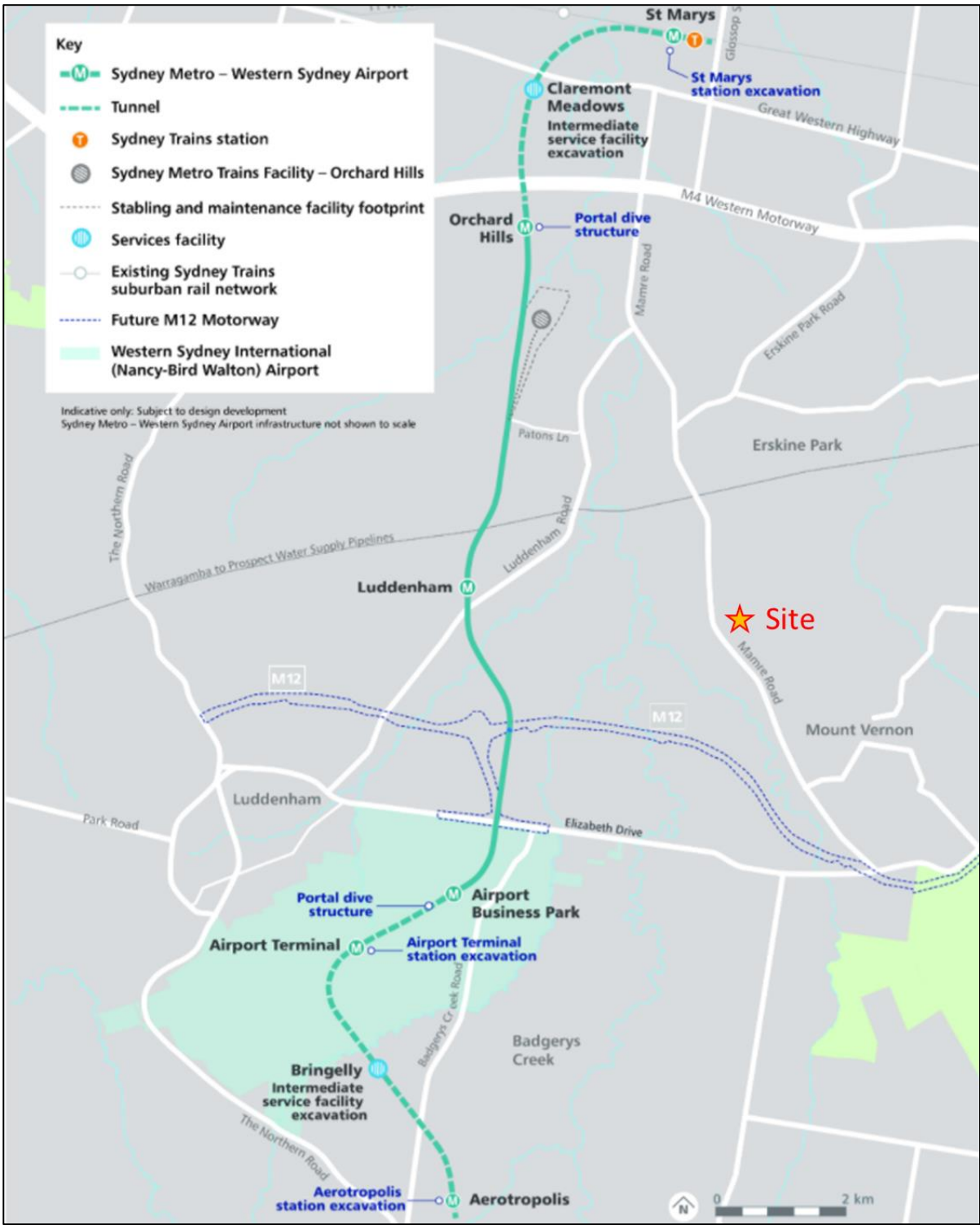


Figure 12: BWSEA Transit Corridors Metro Western Sydney Airport Alignment

Cycling

At present, shared paths (pedestrian and cycle) are provided along Erskine Park Road and sections of Mamre Road to the north of the Site. There are also some on-street bicycle lanes provided on Mamre Road to the north of the Site.

Notwithstanding the above, there is generally little cycling (or pedestrian) infrastructure in Mamre Road between Distribution Drive to the north and Elizabeth Drive to the south.

- The BWSEA Structure Plan provides a detailed outline of future active transport objectives and strategies, acknowledging that the provision of such will be essential to encourage the use of active transport from the outset. In this regard, the BWSEA provides the following key objectives:
- Provide quality pedestrian and cycling environments around transit corridors and facilities.
- Understand the key walking and cycling needs in the region and the need for the separation of pedestrians and cyclists from motor vehicle traffic.
- Recognise that all trips involve walking at either the beginning or end of the journey, resulting in the need for connections between parking and public transport areas and destinations.
- Recognise that walking and cycling paths can form key routes between destinations.
- Understand that walking and cycling trips perform a variety of functions, not only travel from an origin to a destination, but such trips are also undertaken for recreation and/or health benefits, which can be influenced by the amenity of the route.

Key active transport routes identified in the BWSEA Structure Plan are shown in **Figure 13**, noting again that the MR Upgrade will provide shared paths along at least one side of the road for its entire length.

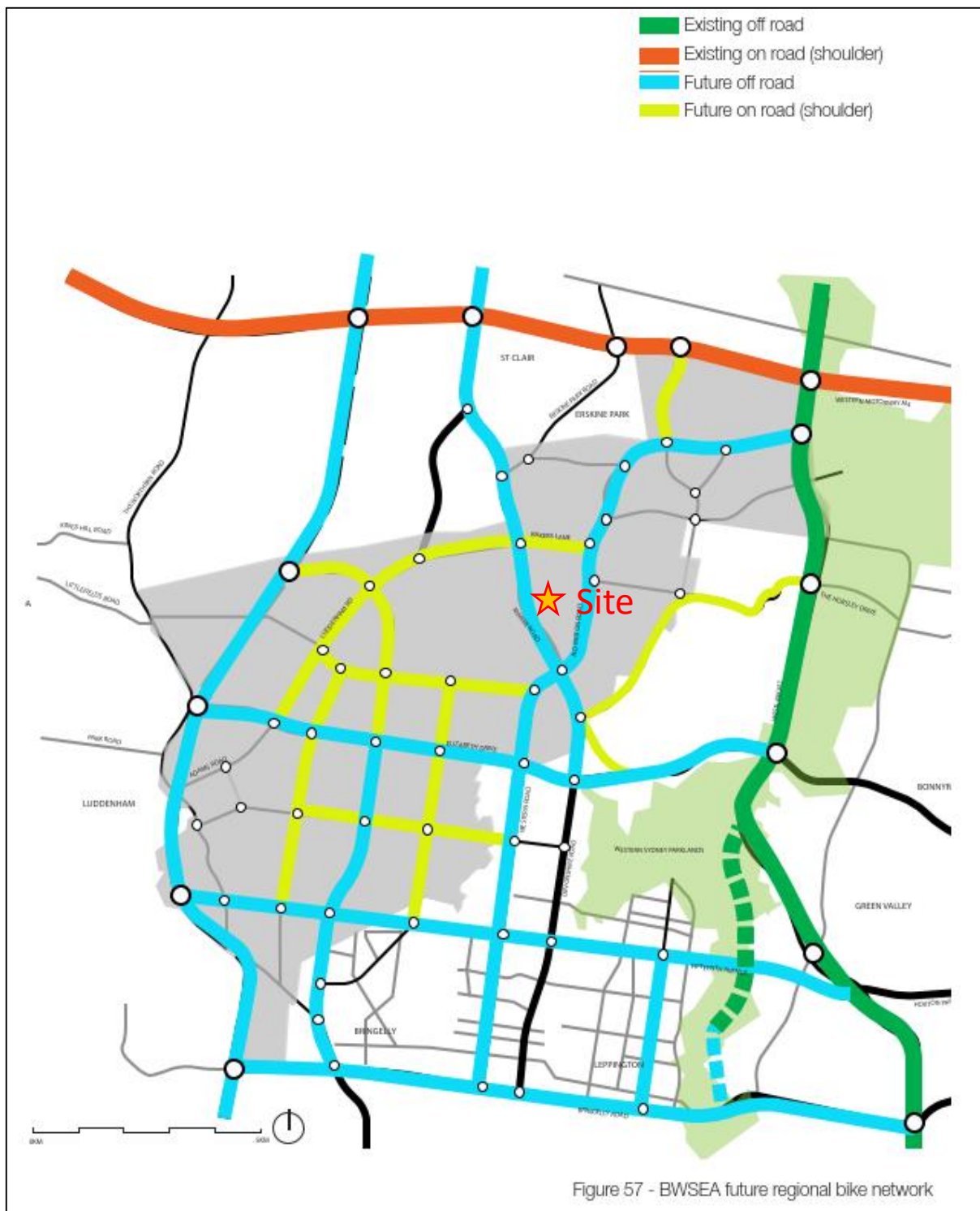


Figure 13: BWSEA Active Transport Network

7 Traffic Impact Assessment

7.1 Assessment Methodology

As discussed, the road layout detailed within the MRP DCP network has been informed by the MRP modelling assessment. Accordingly, the traffic generation impact assessment for the Proposal has considered the following separately:

- The wider MRP modelling assessment in relation to the ultimate MRP DCP road network, of which development of the Site was considered; and
- Further to the ultimate road network performance, the MRP DCP does not provide for a staging strategy. As such, the operation of the road network in 2026 (i.e. the “interim” scenario”) has been considered more closely for the Site.

The modelling assessment detailed in Section 7.5 for the assessment year of 2026 has been based on that undertaken for the approved AIE. However, it is noted that as part of the Voluntary Planning Agreements associated with other development sites within the MRP, a 2026 modelling assessment has recently been undertaken for the Land Owners Group East. It is understood that DPE, TfNSW and Council have been provided this assessment. Development of the Site has been considered within this assessment.

If necessary, further details can be provided to DPE upon request.

7.2 Trip Rates

7.2.1 TfNSW MRP Trip Rates

For the MRP modelling assessment, TfNSW provided Ason Group with trip rates for adoption, as shown by **Table 5**.

The purpose of these trip rates were to provide for some consideration to a range of uses that may be permissible under the current IN1 General Industrial land zoning.

TABLE 5: TFNSW ENDORSED TRIP RATES

Time Period	Rate per 100m ²
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

7.2.2 Surveyed Trip Rates

It is however noted that Ason Group conducted a number of surveys of industrial warehouses in the WSEA for the purposes of the MRP modelling assessment, including:

- Mirvac Calibre
- Huntingwood Drive
- Eastern Creek Drive
- Roussell Road
- First Estate; and
- Sarah Andrews Close

The average trip generation rate for general warehousing developments found by the surveys are summarised in **Table 6** below.

While adoption of conservative rates is deemed appropriate for strategic level assessment, where limited information is known on the ultimate development, it is noted that the Proposal has been designed with the intent for general warehouses and logistics uses. Therefore, adoption of a rate more aligned with the actual use of the Site is considered appropriate.

TABLE 6: SURVEYED TRIP RATES – WAREHOUSE DEVELOPMENT

Time Period	Rate per 100m ²
Daily Trips	2.31
Local Road AM Peak (7am – 8am)	0.17
Local Road PM Peak (4pm – 5pm)	0.15

7.3 Proposal Traffic Generation

Further to the adoption of the trip rate as described above, the below table provides a summary of the Site's traffic generation further to Stage 1. A breakdown of the Site's daily traffic profile based on the TfNSW trip rate and significant survey data available, is shown in **Appendix A**.

TABLE 7: STAGE 1 TRAFFIC GENERATION

SSDA Proposal	GFA (m ²)	Rate per 100m ²	Trips	Rate per 100m ²	Trips
Daily	55,105	2.91	1,604	2.31	1,273
AM		0.23	127	0.17	94
PM		0.24	132	0.15	83

Further to the Stage 1 Proposal, as discussed in Section 2, master planning for the Site suggests that up to 153,700m² of GFA could be achieved on the Site. This equates to the following traffic generation:

TABLE 8: APPROXIMATE MASTERPLAN TRAFFIC GENERATION

SSDA Proposal	GFA (m ²)	Rate per 100m ²	Trips	Rate per 100m ²	Trips
Daily	153,700	2.91	4,473	2.31	3,550
AM		0.23	354	0.17	261
PM		0.24	369	0.15	231

While adoption of more conservative rates is suitable for strategic level assessment, it is noted that the current Proposal has been developed to specifically provide for warehouse and logistics businesses.

Therefore, it is deemed entirely appropriate to adopt the surveyed trip rates, given that:

- Ason Group surveyed trip rates are established having regard for completed or approved developments within Western Sydney Employment Area (WSEA) and the approved and operational intermodals at Moorebank and Enfield respectively. These developments are largely General Warehousing which have similar trip generation characteristics as the SSDs currently proposed within the MRP and are all located within the WSEA.
- The adoption of the more conservative trip rates as agreed with TfNSW is more appropriate for precinct planning. However, the current tenant enquiries and agreements already executed as the MRP, it is evident that the development to be delivered aligns with general warehouse and logistics uses. As such, the application of the surveyed rate is appropriate.
- With reference to the recently approved AIE (SSD-10448⁵), item D3 of Condition of Consent requires an Operational Traffic Monitoring Program to “*verify light and heavy vehicle traffic numbers against the predictions in the ADR prior to commencement of operation of Building 1 or 3 and for a period of 12 months of operation*”.
- It is expected that any approved development within the MRP would be subject to similar Conditions, including the Site. As such, the operation of the road network, and the trip generation associated with the development, will be monitored as a result. Through the monitoring process, changes can be made as necessary to mitigate any potential unacceptable impacts associated with the development

7.4 Traffic Assessment – Ultimate Road Network

Regarding the ultimate road layout and intersection configuration, it is notable that development of the Site was considered within the MRP modelling assessment.

It is understood that the assumptions that underpinned this modelling assessment was as follows:

- The majority of land use will take the form of a large format industrial warehousing.
- The land was separated into smaller land parcels for the purposes of identifying any constraints which will impact the developable GFA.
- The sub-precinct in which the Site lies was assumed to be able to accommodate a GFA which represented 55% of the total site area; and

⁵ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-10448%2120220531T074512.635%20GMT>

- Trips rates adopted (detailed in Table 5) included a level of conservatism to allow for more intensive uses that may be located in the MRP, which are permissible under the land use zoning.

Of particular note to the Proposal is the assumption that 55% of the Site area represented developable GFA. With a Site area of 331,433m², this equates to a GFA of 182,000m². However, it is noted that, following allocation of the required roads reserves and the E2 riparian zone, only 279,433m² of the Site provides for developable area.

As such, the current master planning for the Site achieves a GFA of 153,700m², which represents 46% of the total Site area, with the Stage 1 GFA being significantly less than this. Therefore, it is clear that the Proposal is, not only consistent with the MRP modelling assessment, but it actually represents a less intensive development than was previously assumed could be achieved. As such, the traffic impact of the Site will be less than previously assessed for the MRP DCP.

It has been demonstrated that the Proposal aligns with the MRP modelling assessment. The assessment undertaken for the MRP DCP has already determined the road layout and intersection capacity requirements for the assessment years of 2031 and 2036, on the basis of a precinct-wide cumulative assessment. As such, further assessment of the Site with consideration to the ultimate road network, is not deemed necessary.

7.5 Interim Modelling Assessment

7.5.1 Overview

As discussed, the MRP DCP has not identified any staging requirements for the required road infrastructure. The key consideration in assessment of the Site is therefore the impacts of traffic generation associated with the Site by the opening year (2024) and 2026.

7.5.2 Trip Distribution

Vehicular Classification

Vehicle types have been adopted on the basis of the MRP modelling assessment and are as follows:

TABLE 9: DEVELOPMENT TRAFFIC VEHICLE SPLIT			
Land-use	Light Vehicle	Heavy Rigid	Heavy Articulated
General Warehousing	73%	18%	9%

Arrival and Departure Split

Two scenarios have been assessed for the purposes of the interim modelling scenario, providing consideration for 1) access to the Site via the left-in / left-out (LILO) temporary intersection onto Mamre Road (Access Scenario 1); and 2) access to the Site via the proposed signalised intersection currently proposed under SSD-10448 (Access Scenario 1).

The arrival and departure and directional distribution of trips to and from the Site during the AM and PM peak periods has been based on that agreed with TfNSW as part of the MRP modelling assessment and has been based on surveys of local industrial sites and, the 2019 Land Use Strategic Traffic Forecasting Model (STFM).

The arrival and departure splits adopted are provided below.

TABLE 10: ARRIVAL AND DEPARTURE SPLIT

Vehicle Type	Arrival / Departure	AM	PM
Light Vehicles	Arrival to Site	72%	31%
	Departure from Site	28%	69%
Heavy Vehicles	Arrival to Site	53%	46%
	Departure from Site	47%	54%

7.6 Intersection Operations

7.6.1 SIDRA Intersection Model

The future operation of the proposed signalised intersection of Mamre Road and the AIE access has been assessed using the TfNSW approved SIDRA intersection model. The SIDRA model provides a number of outputs by which to measure the performance of an intersection, including:

- Average Vehicle Delay (AVD): AVD (or average delay per vehicle in seconds) for intersections is used to determine an intersection's Level of Service (see below).
- Degree of Saturation (DOS): DOS is defined as the ratio of demand (arrival) flow to capacity.
- Level of Service (LOS): LOS is a comparative measure that provides an indication of the operating performance, based on AVD.

Table 11 provides the SIDRA recommended criteria for the assessment of intersections with reference to the RTA Guide.

TABLE 11: SIDRA LEVEL OF SERVICE CRITERIA

LOS	AVD (s)	Traffic Signals & Roundabout	Give Way & Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, accident study
D	43 to 56	Operating near capacity	Near capacity, accident study
E	57 to 70	At capacity; at signals, incidents will cause excessive delays	At capacity
F	More than 70	Roundabouts require other control mode	Unsatisfactory

7.6.2 Modelling Methodology

The modelling assessment had been based on the recent methodology of which was agreed with TfNSW and adopted for the approved SSD-10448:

- Apply a 3% per annum growth rate to existing survey data for the through volumes only (noting that turning volumes solely relate to development traffic).
- Only approved developments to be included in the analysis.

It is noted that the only approved development relates to SSD-9522⁶, to the north west of the Site, as well as SSD-10448. Therefore, for the purposes of this assessment, the traffic associated with the AIE, as well as SSD-17647189⁷, located at 884-928 Mamre Road, to the south of the AIE has also been included. It is noted however that SSD-17647189 is still also under assessment by DPE. The resulting traffic flows at the intersection are shown by **Appendix B**.

It is again noted that the focus of this assessment is the opening year of 2024 and the future year of 2026, due to:

- It is evident that Mamre Road requires upgrades from its current configuration of 1 lane in each direction to accommodate the forecast background traffic growth. The upgrade of Mamre Road will impact performance to the Mamre Road / AIE intersection.
- The Special Infrastructure Contributions (SIC) that the Applicant will be required to pay are in place so as to assist in facilitating the relevant upgrades to Mamre Road which are required to service the MRP, as well as the wider area.
- Further, for access to the development sites to the west of Mamre Road would deliver the western side of the intersection. There is no timeframe for when this would occur, as such, for the purpose of this assessment the flows at the intersection are unclear, particularly for the assessment year of 2036.
- The ultimate intersection capacity requirements have been established to inform the finalisation of the MRP DCP. While TfNSW still need to finalise the design for the Mamre Road corridor, ultimately the setbacks and corridor widths have been confirmed by the MRP DCP to allow development to progress.

The LILO intersection is only a temporary measure and will be removed at the time that the AIE signalised intersection is delivered. It is noted that the north-south road within the Site will be delivered as part of Stage 1. Further, it is noted that The GPT Group and Mirvac are coordinating the delivery of the whole road, to ensure that it is delivered at the same time. As such, the LILO is likely to be removed by 2026, if required at all.

7.6.3 Access Scenario 1 Left-In / Left-Out

Prior to the delivery of the signalised Mamre Road / AIE Access intersection, the Site will be accessed via a temporary LILO from Mamre road directly into the Site. The SIDRA analysis undertaken considers the

⁶ <https://www.planningportal.nsw.gov.au/major-projects/project/10376>

⁷ <https://www.planningportal.nsw.gov.au/major-projects/projects/access-logistics-park>

Stage 1 development which is the subject of this SSD. The results of are summarised below, with full SIDRA outputs provided as **Appendix C**.

Both the 2024 and 2026 scenario have been assessed, but it is anticipated that the LILO will not be required by 2026.

TABLE 12: SCENARIO 1 INTERSECTION OPERATIONS

Intersection	Scenario	Period	Intersection Delay	Level of Service
Mamre Road / Site Access	2024	AM	16.9	B
		PM	37.7	C
	2026	AM	18.6	B
		PM	51.2	D

7.6.4 Access Scenario 2 2026 Mamre Road Intersection Operations

Should the temporary LILO intersection not be required, by way of the north-south road connection being established in time for completion of Stage 1, then it is expected that all the development traffic will utilise the AIE intersection. It is critical to note that the 2026 design approved under SSD-10448 provides for the maximum capacity to be provided for the AIE leg of the intersection (the ultimate intersection will provide for 2 right-turn bays and 1 left-turn bay, as per the interim intersection). Any additional capacity provided over and above the proposed interim intersection will relate to through movements on Mamre Road, as well as the provision of a western leg (i.e. a through lane is to be provided at such a time the western side is developed).

The proposed interim intersection layout that has been assessed for the Mamre Road / AIE Road intersection is shown by **Figure 14**.

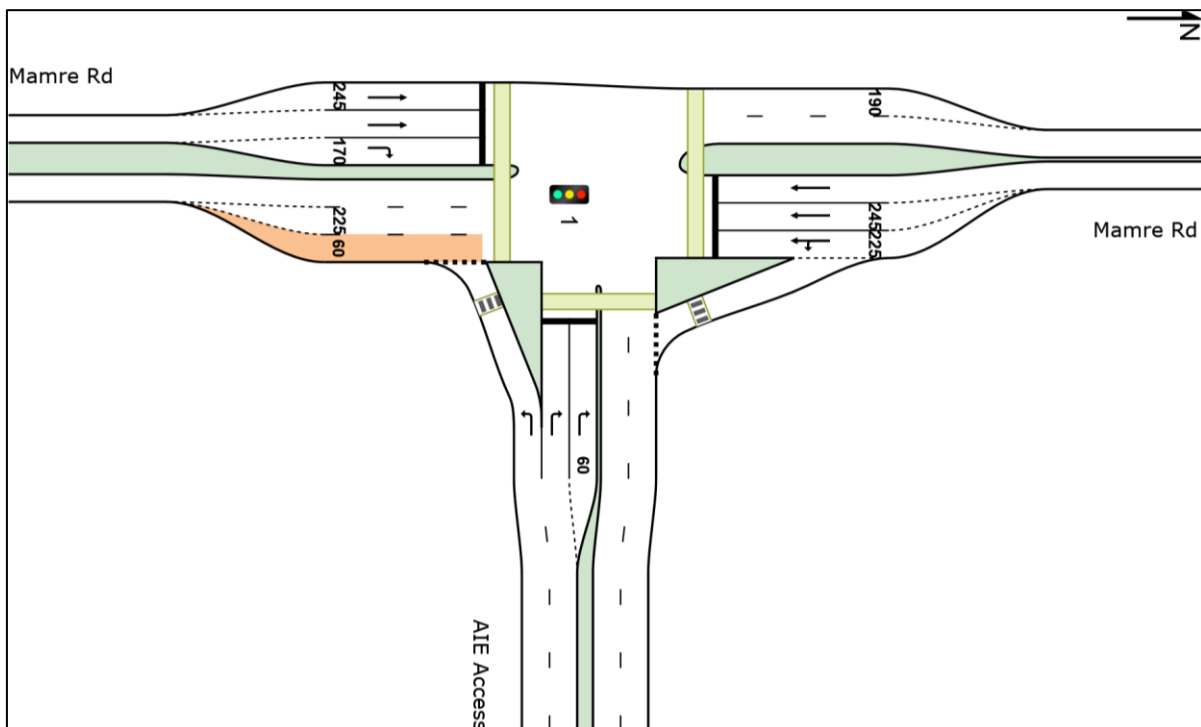


Figure 14: Interim 2026 SIDRA Intersection Layout

The operation of the key Mamre Road / New Road intersection in 2026 is summarised in **Table 13**, with the SIDRA outputs provided as Appendix C.

TABLE 13: SCENARIO 2 INTERSECTION OPERATIONS

Intersection	Scenario	Period	Intersection Delay	Level of Service
Mamre Road / AIE	2026	AM	22.8	B
		PM	24.2	B

With reference to Table 13, the SIDRA analysis indicates that the proposed intersection can accommodate the traffic generation associated with the Proposal, as well as the other key developments which are expected to utilise the intersection (SSD-10448 and SSD-17647189).

It is noted that sensitivity testing was undertaken of the 2031 assessment year, which demonstrates that again the intersection would perform with a LOS B in the AM peak hour, with delays of 24.2 seconds, and a LOS C in the PM peak, with delays of 42.5. However, for the reasons discussed above, these results are not considered meaningful at this stage noting that it doesn't consider traffic associated with other developments (and any other relevant upgrades).

Nevertheless, the assessment has demonstrated that the proposed interim arrangements are sufficient to accommodate the Proposal while the wider upgrades are being finalised and undertaken. It is therefore concluded that the Proposal can be supported on traffic grounds.

The operation of the key Mamre Road / New Road intersection in 2031 is summarised in **Table 14**, with the SIDRA outputs provided as Appendix C.

TABLE 14: 2031 INTERSECTION OPERATIONS

Intersection	Scenario	Period	Intersection Delay	Level of Service
Mamre Road / AIE	2031 Base	AM	22.1	B
		PM	24.2	B
	2031 Base plus Stage	AM	23.2	B
		PM	26.4	B

8 Transport Assessment

8.1 Existing Travel Patterns

8.1.1 Journey to Work Data Analysis

Journey-to-Work (JTW) data from the Australian Bureau of Statistics (ABS) 2016 Census and specifically aggregated Destination Zones (DZ) have been referenced to understand the baseline travel characteristics of the Site.

A summary of key travel modes for those travelling to the locality for work have been reviewed with regard for the surrounding Destination Zone 115184210, within the Horsley Park – Kemps Creek statistical area. The travel modes are presented in **Table 15**.

TABLE 15: TRAVEL MODE SUMMARY (JOURNEY TO WORK)

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

With reference to Table 15, it is evident that the private vehicle (car) is the overwhelming preferred mode of choice for commuters travelling to work in the area. The data indicates that 95% travel to work by car with 92% as the driver and 3% as passenger i.e. car-pooling.

This is reflective of the current nature of the area, which accommodates rural residential properties and agricultural businesses only. However, noting the future land use of the Site as industrial in nature, it is expected that the JTW data accurately reflects the current trends for travel to places of work at industrial sites.

The RMS Guide Update itself provides details in relation to the principal mode of travel used by staff at the Erskine Park and Eastern Creek warehouses surveyed by TfNSW. These surveys indicate that 90% of all workers would travel via private vehicles, with 8% travelling as passengers. Therefore, it is clear that the existing census data is reflective of existing travel patterns of industrial development.

8.2 Measures to Reduce Private Vehicle Use

8.2.1 Delivering the Vision of the Aerotropolis

Noting that, from a strategic planning level, the MRP forms one of the initial precincts of the Aerotropolis (although not included within SEPP WSA), the background studies provide some context with regards to travel demand management.

The AECOM Report is one of the technical reports supporting the delivery of the Draft Aerotropolis Precinct Plan (November 2020) vision, which aims to create “Sustainable urban connections including efficient and accessible public transport links, walking and cycling facilities”. The AECOM Report provides 2 key “enablers” being “Transport Policies and Strategies”, which includes travel demand strategies; and “Transport Infrastructure and Services” which requires planning of a multi-modal, connected network.

Of most relevance to the Site are the following objectives identified for Travel Demand Strategies:

- Provide excellent travel choices and encourage walking, cycling and public transport trips;
- Limit unnecessary car trips, particularly for shorter trips;
- Promote alternatives to vehicle ownership;
- Reduce the need to travel, especially in peak periods;
- Facilitate the efficient use of land, through road space allocation and proximity of jobs and services to people; and
- Create a liveable community, with excellent local environmental quality and community cohesion.

Measures include implementation of Travel Plans and provision of adequate bicycle parking and End of Trip Facilities.

8.2.2 Implementation at Subject Site

A Framework Sustainable Travel Plan (FSTP) has been prepared that will inform future site-specific travel plans, expected to be implemented for each of the warehouse sites within the Estate (refer to **Appendix D**). Each of the end users within the Estate will have slightly different travel characteristics and therefore individual travel plans will be prepared to address the specific needs of the occupier.

A travel plan is a package of measures to assist in managing the transport needs of an organisation. It promotes the uptake of realistic choices of sustainable travel modes to and from a site, thereby reducing reliance upon single occupancy car travel. The travel plans will set targets, a series of measures to meet these targets and the process for monitoring and reviewing the travel plan, including the allocation of a Travel Plan Coordinator.

Each of the end users within the Estate will have slightly different travel characteristics and therefore individual travel plans will be prepared by the future occupiers on site to address their own specific needs.

8.3 Future Travel Patterns

The FSTP within **Appendix D** has identified an initial 5-year target for reducing travel by private vehicle on the Site.

These will be subject to review, prior to finalisation of any travel plan. Nevertheless, **Table 16** presents the relevant mode share details and the results of the application of these target percentages to the Proposal.

With regards to understanding the number of employees on the Site, at this stage in the development it is not clear how many employees the Site would accommodate. However, to inform this assessment, it is understood that the approximate 850 hectares of industrial land within the MRP could accommodate an approximate capacity of 17,000 jobs, based on information provided by DPE. The developable land within the Estate totals 30 hectares. On this basis therefore, it is assumed that the Site could accommodate approximately 600 employees.

TABLE 16: TRAVEL MODE TARGETS AND PERSON TRIPS BY 2026

Travel Mode	Mode Share %	Daily
Car as driver	88%	528
Car as passenger	3%	18
Train	0%	0
Bus	4%	24
Walked only	1%	6
Bicycle	1%	6
Taxi	1%	6
Motorbike/Scooter	1%	6
Other Modes	1%	6

The analysis indicates that 24 persons would use bus to access the Estate during peak hours, or trips when accounting for arrivals and departures.

While these targets are not set, and while the bus services for the MRP are still being planned, it is not anticipated that this level of public transport travel would not be able to be accommodated. It would be recommended to try to exceed the level of bus travel to the Estate; however, this would be subject to the implementation of appropriate services, which would be facilitated by TfNSW as the MRP develops and becomes better connected to the wider network.

9 Parking Requirements

9.1 Car Parking

9.1.1 Precinct Car Parking Rates

The Site is subject to the controls as outlined in Section 4.6 of the MRP DCP. Parking rates applicable to the development are provided in **Table 17**.

TABLE 17: PARKING RATES

Land Use	Minimum Parking Rate
Warehouse	1 space per 300m ² or 1 space per 4 employees, whichever is the greater.
Factory	1 space per 200m ² of gross floor area or 1 space per 2 employees, whichever is the greater
Office	1 space per 40m ²
Accessible Parking	To be in accordance with the Access to Premises Standards, Building Code of Australia.

9.1.2 Car Parking Requirements & Proposed Provision

Table 18 details the requirements for Proposal, based on the parking rates detailed above.

As per Table 18, the Proposal requires 236 parking spaces and 244 parking spaces are provided, exceeding the requirements of the adopted parking rate. Therefore, the proposal can provide full compliance with the adopted rates.

TABLE 18: CAR PARKING REQUIREMENTS & PROPOSED PROVISION

Warehouse	Land Use	GFA (m ²)	Requirement	Proposed
E1	Warehouse	19,690	66	84
	Office	555	14	
	Sub Total	20,245	80	
E3	Warehouse	33,030	110	160
	Office	1,830	46	
	Sub Total	34,860	156	
Total	-	55,105	236	244

9.1.3 Accessible Parking

The MRP DCP provides the following in regard to accessible parking:

Accessible parking should be in accordance with the Access to Premises Standards, Building Code of Australia and AS2890.

In this regard, 2 accessible parking spaces have been provided per every 100 spaces.

9.2 Electric Vehicle Parking

Section 4.6.1(8) of the MRP DCP notes the following:

Parking areas should incorporate dedicated parking bays for electric vehicle charging

However, it does not provide for guidance on the specific number of bays. Therefore, it is proposed that a total of 5% of the parking provision be designated as electric vehicle charging bays.

9.3 Bicycle Parking

The MRP DCP references bicycle parking rates as outlined in **Table 19**. In this regard, the following requirements are relevant for the proposed Site.

TABLE 19: BICYCLE PARKING RATES

Land-Use	Requirement
Office	1 space per 600m ² of gross floor area of office and retail space (over 1200m ² gross floor area)
Warehouse	1 space per 1000m ² of gross floor area of industrial activities (over 2000m ² gross floor area)

Accordingly, bicycle parking requirements for the proposed Site are outlined in **Table 20**. It is anticipated that the below level of cycle parking will be provided. It is anticipated that this could be ensured via a suitable Condition of Consent

TABLE 20: BICYCLE PARKING REQUIREMENTS

Warehouse	Land Use	GFA (m ²)	Requirement (spaces)
E1	Warehouse	19,690	20
	Office	555	N/A
E3	Warehouse	33,030	33
	Office	1,830	N/A
Total	-	55,105	53

Additionally, the MRP DCP also references the following rates for End of Trip (EoT) facilities.

TABLE 21: END-OF-TRIP PROVISION

Land Use	Minimum Parking Rate
Warehouse	For industrial activities with a gross floor area over 4000m ² , at least 1 shower cubicle with ancillary change rooms
Office	For ancillary office and retail space with a gross floor area over 2500m ² , at least 1 shower cubicle with ancillary change rooms

Having regard for the Proposal, **Table 22** demonstrates the provision of EoT facilities required for the Site against the outlined MRP DCP rates. It is anticipated that this could be ensured via a suitable Condition of Consent.

TABLE 22: END-OF-TRIP REQUIREMENTS

Warehouse	Land Use	GFA (m2)	Requirement (spaces)
E1	Warehouse	19,690	1
	Office	555	
E3	Warehouse	33,030	1
	Office	1,830	
Total	-	55,105	2

10 Access, Parking and Servicing Design

Design Standards

The Site's access, car park and loading areas have been generally designed with reference to the following Australian Standards:

- Australian Standard 2890.1:2004: Parking Facilities - Off Street Car Parking (AS 2890.1:2004).
- Australian Standard 2890.2:2018 Parking Facilities - Off Street Commercial Vehicle Facilities (AS 2890.2:2018).
- Australian Standard 2890.6:2009 Parking Facilities - Off Street Parking for People with Disabilities (AS 2890.6:2009).
- Fire + Rescue NSW, Fire Safety Guideline: Access for fire brigade vehicles and firefighters, Version 05, 4 October 2019 (NSW Fire Safety Guidelines).

10.1 Design Vehicles

The check vehicle adopted for the development is a 30m PBS Type 2 vehicle for each of the 2 lots proposed, with a 26m b-double vehicle and 20m Articulated Vehicle (AV) adopted as the design vehicle.

The 12.5 metre Heavy Rigid Vehicle has been adopted for the design of fire access trails in accordance with the NSW Fire + Rescue Guidelines.

The proposed car parking area has been designed to accommodate B99 Vehicles as per AS2890.1:2004.

10.2 Access Driveways

All access driveways (to the proposed road network within the MRP) have been, and shall be, designed with reference to AS 2890.1:2004, AS 2890.2:2018, and any other relevant published road design / road engineering guidelines.

Truck access driveways shall be designed to provide for vehicles up to and including a 30m PBS Type 2 vehicle with maximum gradients, maximum rates of change of grades, and maximum crossfalls in accordance with relevant standards applicable at the time when Construction Certification drawings are prepared and/or in accordance with standards applicable at the time of construction.

Car access driveways shall be designed to provide for B99 vehicles, assuming simultaneous movements in accordance with AS 2890.1:2004 and any other relevant Council Engineering Guidelines.

It is anticipated that full access driveway design compliance with AS 2890.1:2004 and AS 2890.2:2018 would form a standard Condition of Consent further to approval.

10.3 Parking Areas

All parking areas, including access aisles and parking modules shall be designed with reference to AS 2890.1:2004 and AS 2890.6:2009. It is anticipated that full parking area design compliance with AS 2890.1:2004 and AS 2890.6:2009 would form a standard Condition of Consent further to approval.

10.4 Service Areas

All service areas shall be designed with reference to AS 2890.2:2018, and again provide for the movement of vehicles up to and including a 30m PBS Type 2 vehicle as check vehicle, and 20m AV as design vehicle.

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

11 Conclusions

Ason Group has been engaged by The GPT Group to prepare a Transport Management and Accessibility Plan (TMAP) in relation to the State Significant Development for an industrial development located on Lots 59-60, Mamre Road, Kemps Creek (the Site). Further to a detailed assessment of all relevant traffic and transport issues, Ason Group provides the following conclusions:

- The Site is well located for industrial development, with excellent existing and future connections to the sub-regional and regional network, as well as key growth centres across Western Sydney.
- The key long-term access to the Site will be provided via new signalised intersection to Mamre Road, accessed by way of the southern development site (i.e., Mirvac's Aspect Industrial Estate). Therefore, the long-term access to the Site will be dependent on a connection being made available to this neighbouring site.

In the interim period, a temporary access road is proposed providing a direct connection to the Site, which would be restricted to left-in / left-out (LIFO) movements.

- The trip generation rate adopted for the assessment are consistent with the rates being adopted for the MRP background modelling, being undertaken by TfNSW.
- SIDRA intersection analysis indicates that the temporary LIFO intersection will operate at LOS A in the AM peak and LOS B in the PM peak.

Further, assessment of the Mamre Road / AIE Access intersection has found that intersection will operate at LOS A in the AM peak and LOS C in the PM peak.

As such, the assessment has demonstrated that the proposed interim arrangements are sufficient to accommodate the Proposal while the wider upgrades are being finalised and undertaken.

- All internal Lots circulation, hardstand and parking areas have been designed with reference to the Australian Standards and provide for vehicles up to and including a 30m PBS Type 2 vehicle.
- Parking has been provided in accordance with the rates detailed in the MRP DCP, and includes an appropriate allocation of accessible parking spaces.
- All future operators will be encouraged to maximise the use of public and active transport, noting the future pedestrian, cycle and bus provisions included in the MR Upgrade design.
- All access driveways, parking areas and service areas have been designed with reference to the appropriate Australian Standards. It is anticipated that full design compliance with the relevant Australian Standards would form a standard Condition of Consent further to approval, which will also provide for any design changes if required.

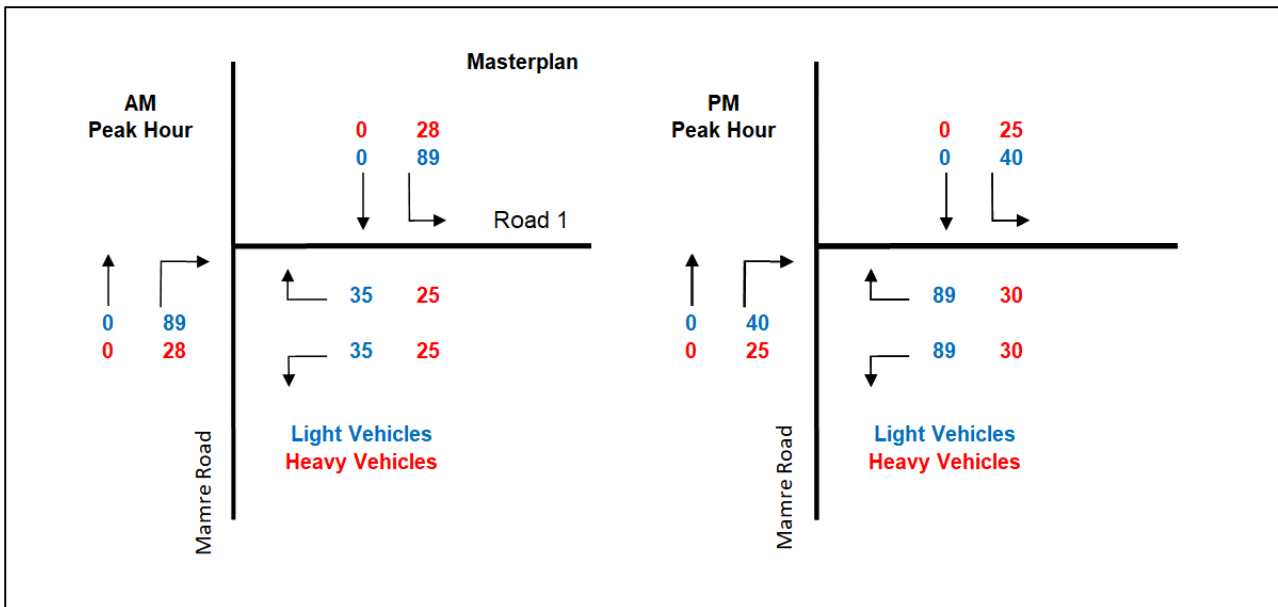
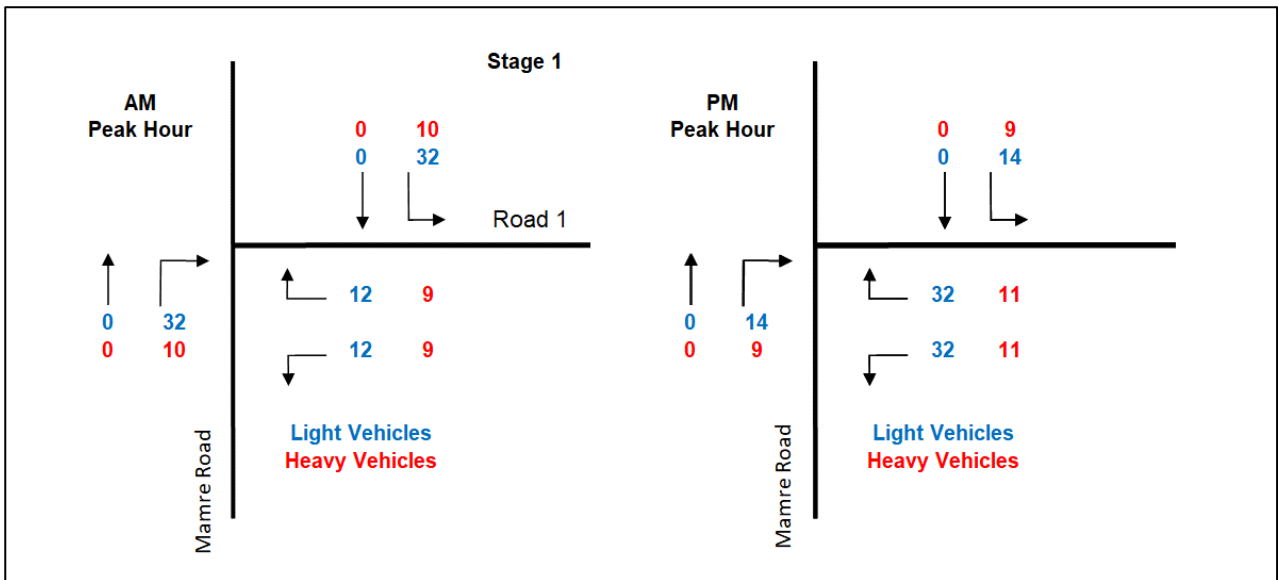
Appendix A. Hourly Traffic Generation

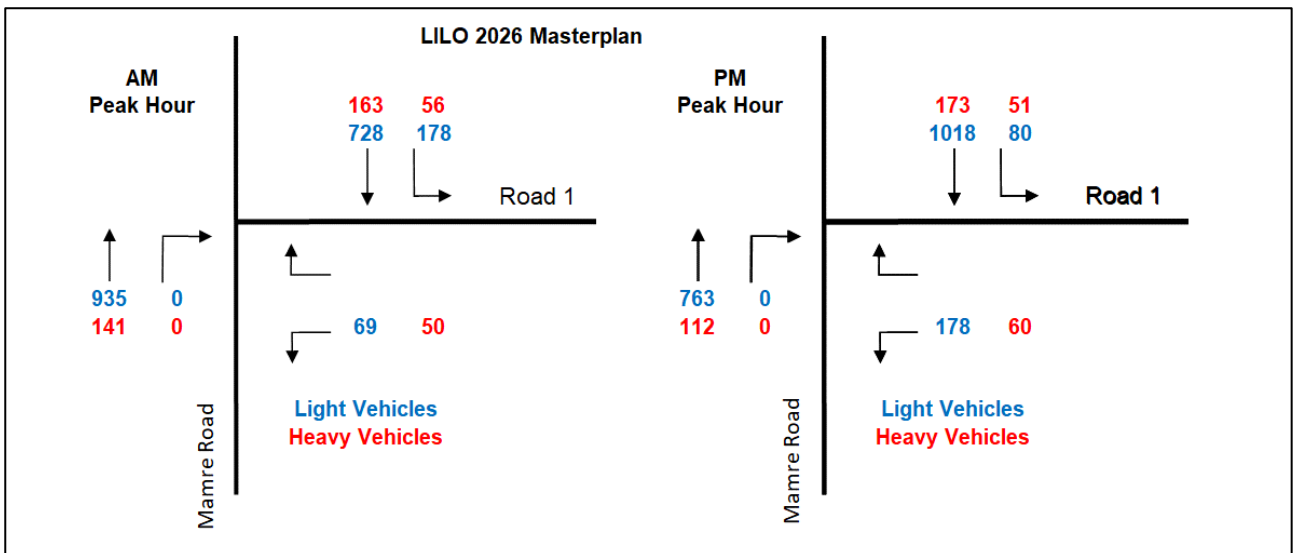
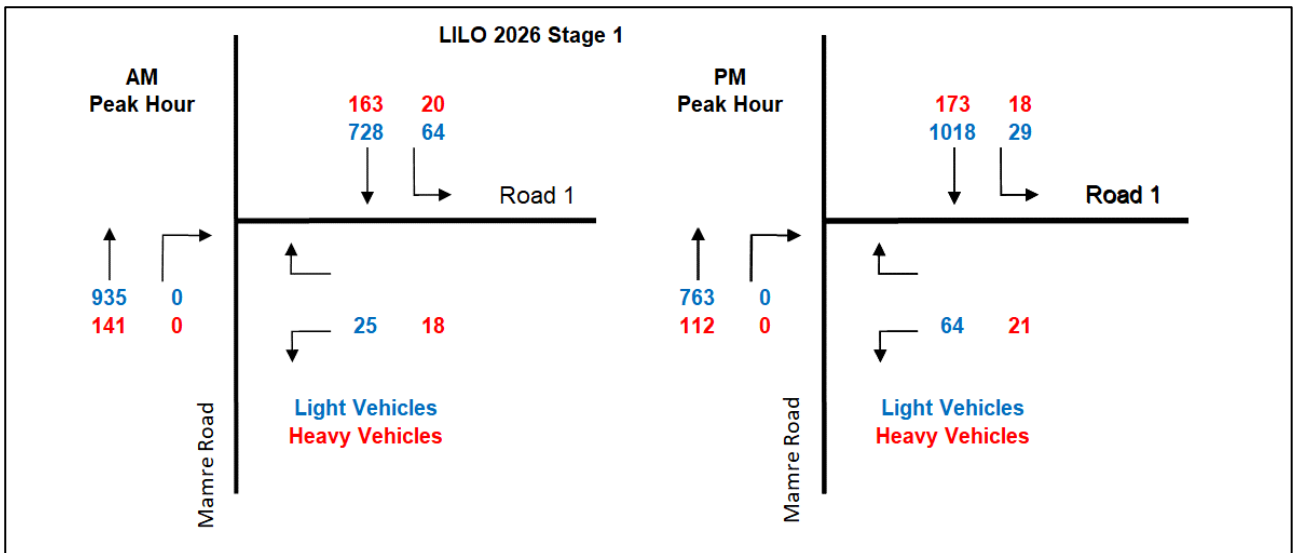
Start Time	All Vehicle	Light Vehicle	Heavy Vehicle	Rigid	Semi-trailer	B-double	A-double
0:00	13	9	4	3	0	0	1
1:00	12	8	4	3	0	0	1
2:00	13	9	4	3	0	0	1
3:00	14	11	3	2	0	0	1
4:00	45	38	8	5	1	0	2
5:00	86	69	17	11	1	0	4
6:00	117	93	24	16	2	0	6
7:00	116	87	29	19	2	0	7
8:00	107	74	33	22	2	1	8
9:00	93	57	36	24	2	1	9
10:00	87	52	35	23	2	1	9
11:00	91	56	36	24	2	1	9
12:00	100	68	32	21	2	1	8
13:00	120	87	33	22	2	1	8
14:00	131	101	29	19	2	0	7
15:00	112	86	26	17	2	0	7
16:00	93	72	21	14	1	0	5
17:00	77	59	17	11	1	0	4
18:00	46	34	12	8	1	0	3
19:00	27	20	7	5	1	0	2
20:00	20	14	6	4	0	0	1
21:00	26	22	4	3	0	0	1
22:00	33	28	5	4	0	0	1
23:00	24	19	5	3	0	0	1
Total	1,604	1,172	431	285	29	7	109

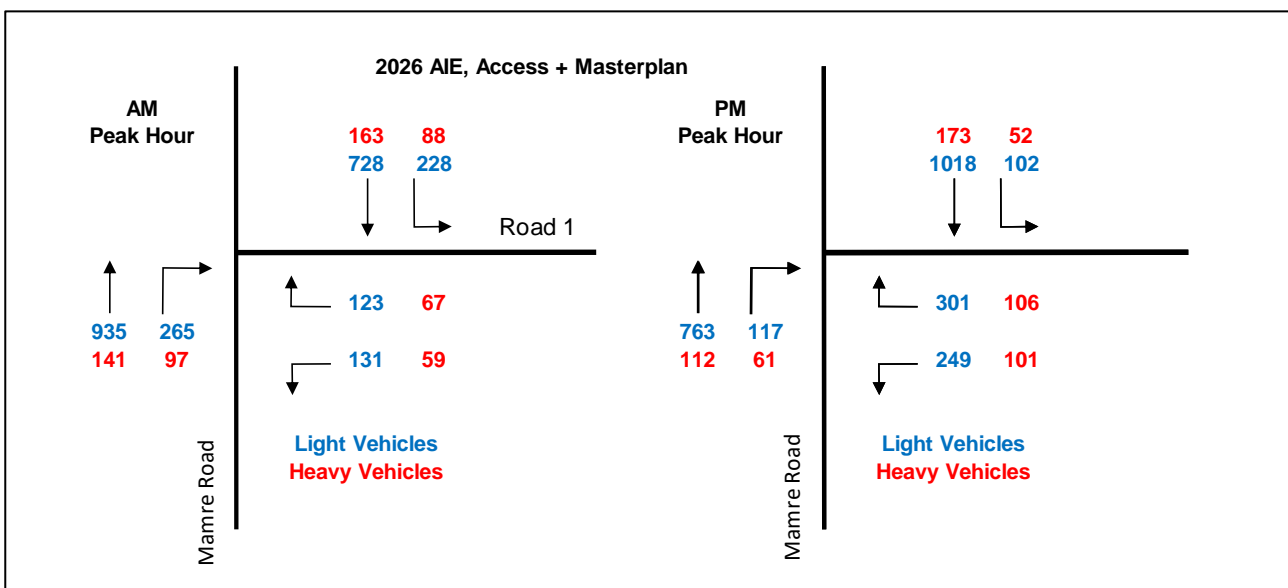
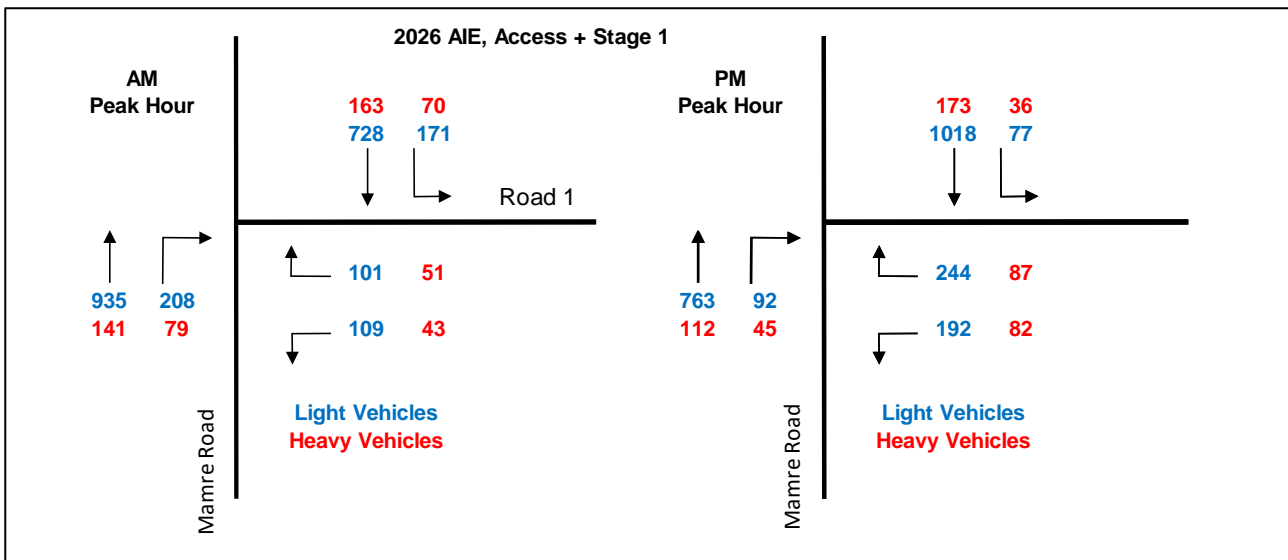
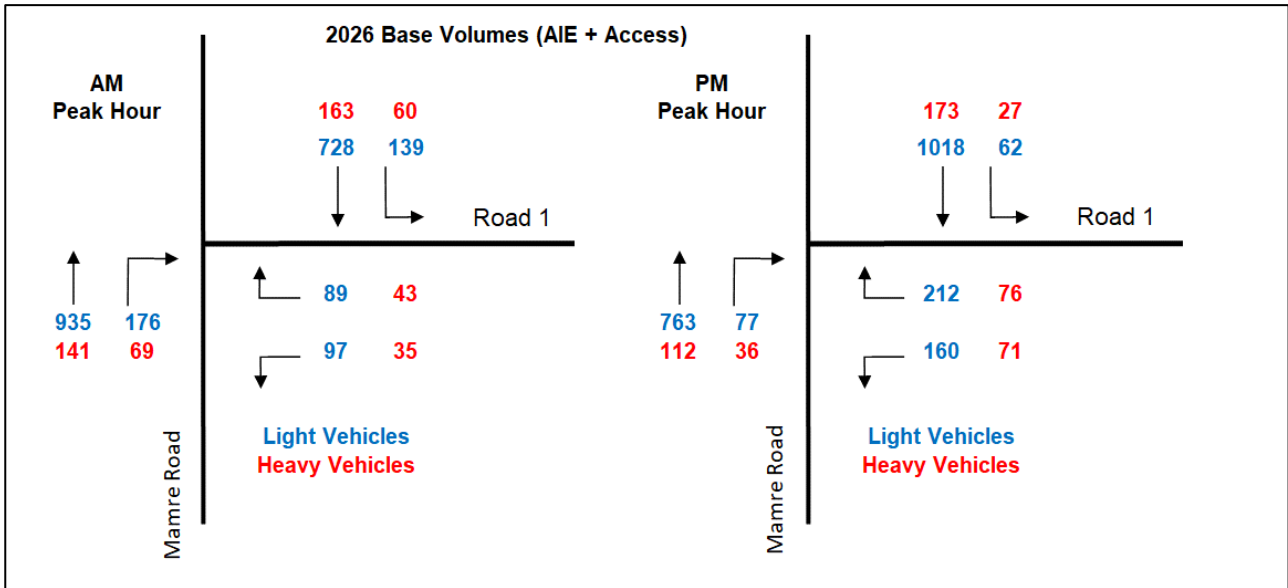
Note: Minor discrepancies between sum numbers due to 'rounding'.

Start Time	All Vehicle	Light Vehicle	Heavy Vehicle	Rigid	Semi-trailer	B-double	A-double
0:00	37	26	11	7	1	0	3
1:00	33	22	11	7	1	0	3
2:00	36	24	12	8	1	0	3
3:00	40	30	10	6	1	0	2
4:00	126	105	22	14	1	0	5
5:00	241	193	48	32	3	1	12
6:00	326	259	67	45	5	1	17
7:00	323	243	80	53	5	1	20
8:00	299	207	92	61	6	2	23
9:00	260	158	101	67	7	2	26
10:00	243	146	98	65	7	2	25
11:00	255	155	100	66	7	2	25
12:00	278	188	90	60	6	2	23
13:00	334	243	91	60	6	2	23
14:00	364	283	81	54	6	1	21
15:00	312	240	72	47	5	1	18
16:00	259	201	58	38	4	1	15
17:00	214	165	48	32	3	1	12
18:00	127	94	34	22	2	1	9
19:00	76	55	21	14	1	0	5
20:00	56	40	16	11	1	0	4
21:00	73	61	12	8	1	0	3
22:00	93	78	15	10	1	0	4
23:00	66	53	13	9	1	0	3
Total	4,473	3,270	1,203	796	81	20	305

Appendix B. Traffic Flow Diagrams



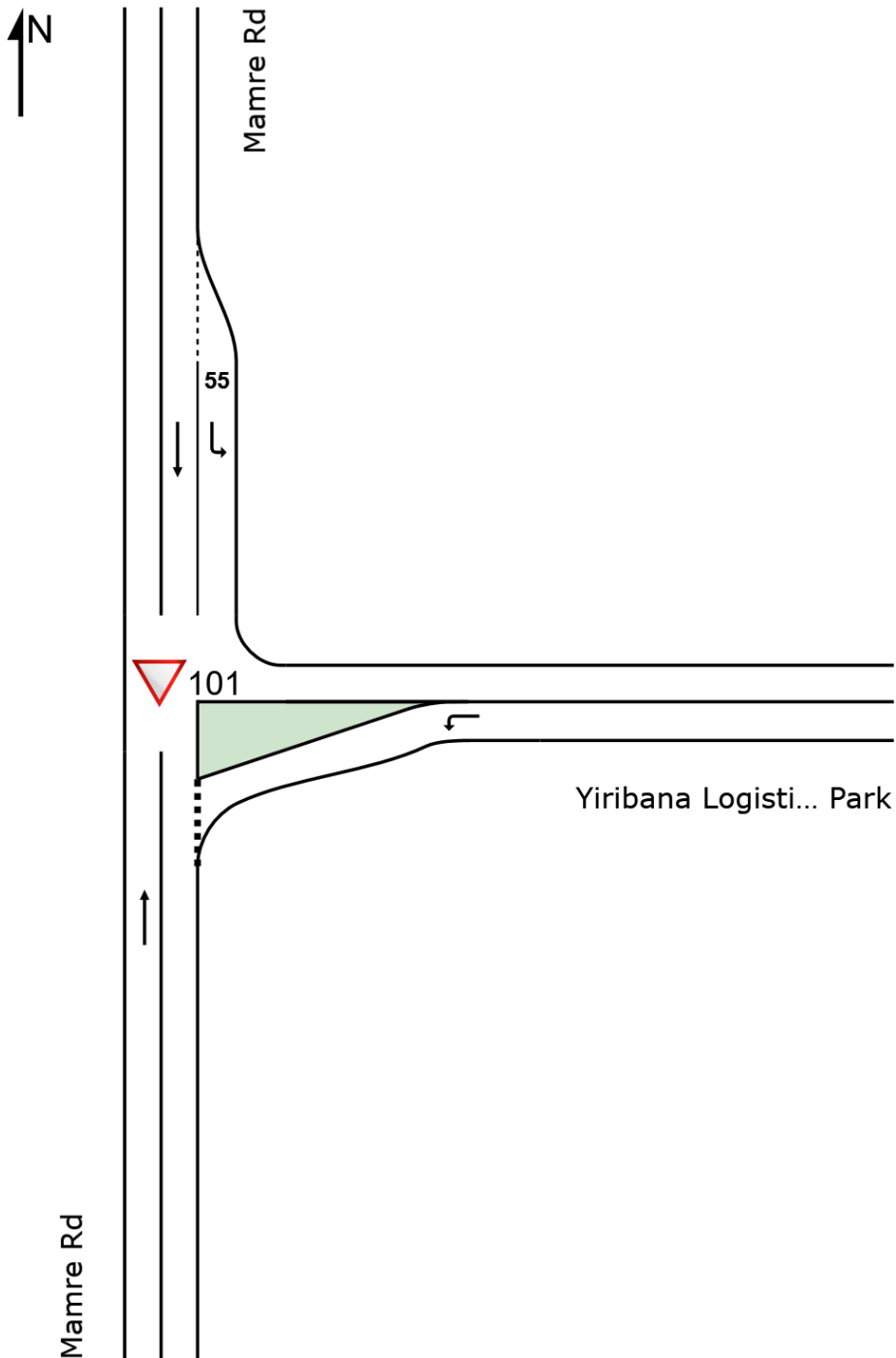




Appendix C. SIDRA Output Summaries

SITE LAYOUT

▼ Site: 101 Mamre LILO



MOVEMENT SUMMARY

▼ Site: 101 [Mamre LILO - 2024 AM (Site Folder: 2024 Stage 1)]

Access Logistics LILO
Period: AM Peak | 2026 Full Master Plan
Layout: Interim (Storage length, less merge)
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	1030	136	1084	13.2	0.604	0.4	LOS A	0.0	0.0	0.00	0.00	0.00	79.2
Approach		1030	136	1084	13.2	0.604	0.4	NA	0.0	0.0	0.00	0.00	0.00	79.2
East: Yiribana Logistics Park														
4	L2	31	13	33	41.9	0.116	16.9	LOS B	0.4	3.6	0.81	0.90	0.81	48.6
Approach		31	13	33	41.9	0.116	16.9	LOS B	0.4	3.6	0.81	0.90	0.81	48.6
North: Mamre Rd														
7	L2	62	15	65	24.2	0.041	7.4	LOS A	0.0	0.0	0.00	0.63	0.00	62.6
8	T1	855	157	900	18.4	0.517	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.4
Approach		917	172	965	18.8	0.517	0.7	NA	0.0	0.0	0.00	0.04	0.00	78.5
All Vehicles		1978	321	2082	16.2	0.604	0.8	NA	0.4	3.6	0.01	0.03	0.01	78.4

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: 101 [Mamre LILO - 2024 PM (Site Folder: 2024 Stage 1)]

Access Logistics LILO
Period: AM Peak | 2026 Full Master Plan
Layout: Interim (Storage length, less merge)
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	834	107	878	12.8	0.488	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach		834	107	878	12.8	0.488	0.2	NA	0.0	0.0	0.00	0.00	0.00	79.5
East: Yiribana Logistics Park														
4	L2	53	13	56	24.5	0.407	37.7	LOS C	1.3	11.2	0.94	1.03	1.14	39.1
Approach		53	13	56	24.5	0.407	37.7	LOS C	1.3	11.2	0.94	1.03	1.14	39.1
North: Mamre Rd														
7	L2	29	11	31	37.9	0.021	7.6	LOS A	0.0	0.0	0.00	0.63	0.00	61.2
8	T1	1139	166	1199	14.6	0.673	0.5	LOS A	0.0	0.0	0.00	0.00	0.00	78.9
Approach		1168	177	1229	15.2	0.673	0.7	NA	0.0	0.0	0.00	0.02	0.00	78.6
All Vehicles		2055	297	2163	14.5	0.673	1.4	NA	1.3	11.2	0.02	0.04	0.03	77.6

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.

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 [Mamre LILO - 2026 AM (Site Folder: 2026 Stage 1)]

Access Logistics LILO
 Period: AM Peak | 2026 Full Master Plan
 Layout: Interim (Storage length, less merge)
 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	HV]	[Total	HV]				[Veh.	Dist]				
		veh/h	veh/h	veh/h	%				v/c	sec				
South: Mamre Rd														
2	T1	1076	141	1133	13.1	0.630	0.4	LOS A	0.0	0.0	0.00	0.00	0.00	79.1
Approach		1076	141	1133	13.1	0.630	0.4	NA	0.0	0.0	0.00	0.00	0.00	79.1
East: Yiribana Logistics Park														
4	L2	31	13	33	41.9	0.130	18.6	LOS B	0.4	3.9	0.83	0.91	0.83	47.6
Approach		31	13	33	41.9	0.130	18.6	LOS B	0.4	3.9	0.83	0.91	0.83	47.6
North: Mamre Rd														
7	L2	62	15	65	24.2	0.041	7.4	LOS A	0.0	0.0	0.00	0.63	0.00	62.6
8	T1	891	163	938	18.3	0.538	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.4
Approach		953	178	1003	18.7	0.538	0.7	NA	0.0	0.0	0.00	0.04	0.00	78.5
All Vehicles		2060	332	2168	16.1	0.630	0.8	NA	0.4	3.9	0.01	0.03	0.01	78.3

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.

MOVEMENT SUMMARY

 **Site: 101 [Mamre LILO - 2026 PM (Site Folder: 2026 Stage 1)]**

Access Logistics LILO
 Period: AM Peak | 2026 Full Master Plan
 Layout: Interim (Storage length, less merge)
 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	875	112	921	12.8	0.512	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach		875	112	921	12.8	0.512	0.3	NA	0.0	0.0	0.00	0.00	0.00	79.5
East: Yiribana Logistics Park														
4	L2	53	13	56	24.5	0.515	51.2	LOS D	1.7	14.1	0.96	1.06	1.23	34.3
Approach		53	13	56	24.5	0.515	51.2	LOS D	1.7	14.1	0.96	1.06	1.23	34.3
North: Mamre Rd														
7	L2	29	11	31	37.9	0.021	7.6	LOS A	0.0	0.0	0.00	0.63	0.00	61.2
8	T1	1191	173	1254	14.5	0.704	0.6	LOS A	0.0	0.0	0.00	0.00	0.00	78.8
Approach		1220	184	1284	15.1	0.704	0.7	NA	0.0	0.0	0.00	0.01	0.00	78.4
All Vehicles		2148	309	2261	14.4	0.704	1.8	NA	1.7	14.1	0.02	0.03	0.03	77.3

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.

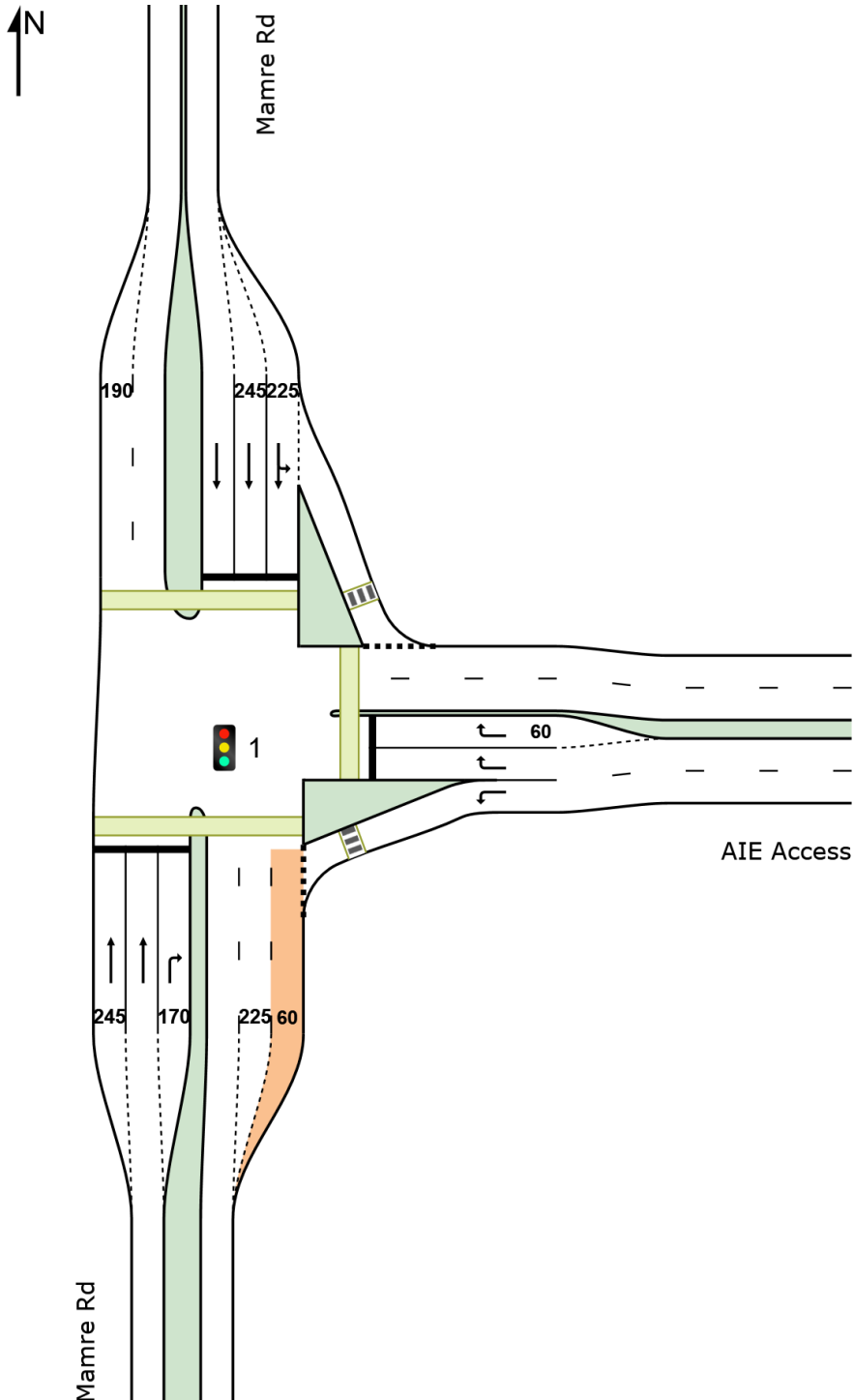
SITE LAYOUT

Site: 1 [Mamre x AIE - 2026]

Mamre Road x Aspect Industrial Estate Access

Layout: Interim

Site Category: Proposed Interim



MOVEMENT SUMMARY

Site: 1 [Mamre x AIE - AM (Site Folder: 2026 Stage 1)]

Mamre Road x Aspect Industrial Estate Access

Period: AM Peak | 2026 Full Master Plan (Aspect)

Layout: Interim

Site Category: Proposed Interim

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] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1078	143	1135	13.3	0.422	7.9	LOS A	12.2	95.3	0.41	0.37	0.41	62.7
3	R2	276	76	291	27.5	<div><div>*</div><div>0.654</div></div>	48.0	LOS D	15.1	130.8	0.94	0.84	0.94	27.0
Approach		1354	219	1425	16.2	0.654	16.1	LOS B	15.1	130.8	0.51	0.46	0.51	53.2
East: AIE Access														
4	L2	147	41	155	27.9	0.179	13.2	LOS A	2.7	23.3	0.38	0.62	0.38	41.2
6	R2	147	49	155	33.3	<div><div>*</div><div>0.383</div></div>	59.5	LOS E	4.3	38.6	0.96	0.77	0.96	21.4
Approach		294	90	309	30.6	0.383	36.4	LOS C	4.3	38.6	0.67	0.69	0.67	28.2
North: Mamre Rd														
7	L2	230	67	242	29.1	0.222	10.8	LOS A	3.7	32.8	0.33	0.66	0.33	49.2
8	T1	893	165	940	18.5	<div><div>*</div><div>0.652</div></div>	31.7	LOS C	22.0	178.5	0.86	0.77	0.86	44.2
Approach		1123	232	1182	20.7	0.652	27.4	LOS B	22.0	178.5	0.75	0.75	0.75	44.8
All Vehicles		2771	541	2917	19.5	0.654	22.8	LOS B	22.0	178.5	0.63	0.60	0.63	46.5

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)

MOVEMENT SUMMARY

Site: 1 [Mamre x AIE - PM (Site Folder: 2026 Stage 1)]

Mamre Road x Aspect Industrial Estate Access

Period: AM Peak | 2026 Full Master Plan (Aspect)

Layout: Interim

Site Category: Proposed Interim

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] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	877	114	923	13.0	0.355	8.5	LOS A	10.0	78.1	0.41	0.37	0.41	62.0
3	R2	127	41	134	32.3	* 0.657	63.1	LOS E	7.8	70.0	1.00	0.83	1.05	22.8
Approach		1004	155	1057	15.4	0.657	15.4	LOS B	10.0	78.1	0.48	0.42	0.49	54.4
East: AIE Access														
4	L2	258	78	272	30.2	0.408	21.3	LOS B	7.1	62.2	0.53	0.69	0.53	38.3
6	R2	315	83	332	26.3	* 0.663	59.8	LOS E	9.5	81.7	0.99	0.84	1.03	21.8
Approach		573	161	603	28.1	0.663	42.5	LOS C	9.5	81.7	0.78	0.77	0.81	27.0
North: Mamre Rd														
7	L2	103	32	108	31.1	0.088	8.3	LOS A	0.9	7.9	0.19	0.61	0.19	52.0
8	T1	1193	175	1256	14.7	* 0.653	24.3	LOS B	26.0	204.4	0.77	0.70	0.77	49.8
Approach		1296	207	1364	16.0	0.653	23.0	LOS B	26.0	204.4	0.73	0.69	0.73	49.9
All Vehicles		2873	523	3024	18.2	0.663	24.2	LOS B	26.0	204.4	0.65	0.62	0.66	46.0

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)

MOVEMENT SUMMARY

Site: 1 [Mamre x AIE - AM Base (Site Folder: 2031)]

Mamre Road x Aspect Industrial Estate Access

Period: AM Peak | 2026 Full Master Plan (Aspect)

Layout: Interim

Site Category: Proposed Interim

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] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1196	156	1259	13.0	0.467	8.8	LOS A	14.3	111.0	0.43	0.39	0.43	62.3
3	R2	245	69	258	28.2	* 0.660	51.1	LOS D	13.8	119.6	0.95	0.84	0.95	26.0
Approach		1441	225	1517	15.6	0.660	16.0	LOS B	14.3	119.6	0.52	0.47	0.52	54.0
East: AIE Access														
4	L2	132	35	139	26.5	0.170	14.5	LOS A	2.6	21.9	0.39	0.62	0.39	41.1
6	R2	132	43	139	32.6	* 0.342	59.7	LOS E	3.8	34.2	0.95	0.76	0.95	21.5
Approach		264	78	278	29.5	0.342	37.1	LOS C	3.8	34.2	0.67	0.69	0.67	28.3
North: Mamre Rd														
7	L2	199	60	209	30.2	0.187	10.1	LOS A	2.9	25.5	0.29	0.65	0.29	49.9
8	T1	985	182	1037	18.5	* 0.665	29.6	LOS C	23.8	192.7	0.85	0.76	0.85	45.5
Approach		1184	242	1246	20.4	0.665	26.3	LOS B	23.8	192.7	0.76	0.74	0.76	45.9
All Vehicles		2889	545	3041	18.9	0.665	22.1	LOS B	23.8	192.7	0.63	0.60	0.63	47.8

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)

MOVEMENT SUMMARY

Site: 1 [Mamre x AIE - PM Base (Site Folder: 2031)]

Mamre Road x Aspect Industrial Estate Access

Period: AM Peak | 2026 Full Master Plan (Aspect)

Layout: Interim

Site Category: Proposed Interim

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	HV]	[Total	HV]				[Veh.	Dist]				
		veh/h	veh/h	veh/h	%	v/c	sec		veh	m				km/h
South: Mamre Rd														
2	T1	978	126	1029	12.9	0.386	8.3	LOS A	11.0	85.2	0.40	0.36	0.40	62.5
3	R2	113	36	119	31.9	0.667*	65.1	LOS E	7.1	63.1	1.00	0.83	1.07	22.3
Approach		1091	162	1148	14.8	0.667	14.1	LOS A	11.0	85.2	0.46	0.41	0.47	55.9
East: AIE Access														
4	L2	231	71	243	30.7	0.401	27.5	LOS B	6.8	60.1	0.56	0.70	0.56	37.3
6	R2	288	76	303	26.4	0.677*	62.3	LOS E	8.9	76.1	1.00	0.84	1.06	21.3
Approach		519	147	546	28.3	0.677	46.8	LOS D	8.9	76.1	0.80	0.78	0.84	26.4
North: Mamre Rd														
7	L2	89	27	94	30.3	0.075	8.2	LOS A	0.7	6.3	0.18	0.61	0.18	52.3
8	T1	1323	191	1393	14.4	0.681*	24.7	LOS B	28.3	222.7	0.76	0.70	0.76	51.1
Approach		1412	218	1486	15.4	0.681	23.7	LOS B	28.3	222.7	0.73	0.69	0.73	51.1
All Vehicles		3022	527	3181	17.4	0.681	24.2	LOS B	28.3	222.7	0.64	0.61	0.65	47.5

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	Dist]					
		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Mamre Rd												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.2	224.8	0.99
East: AIE Access												
P2	Full	50	53	16.6	LOS B	0.1	0.1	0.53	0.53	183.1	216.5	1.18
North: Mamre Rd												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	226.2	223.5	0.99
All Pedestrians		150	158	41.7	LOS E	0.2	0.2	0.81	0.81	212.2	221.6	1.04

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: 1 [Mamre x AIE - PM Base (Site Folder: 2031)]

Mamre Road x Aspect Industrial Estate Access

Period: AM Peak | 2026 Full Master Plan (Aspect)

Layout: Interim

Site Category: Proposed Interim

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	HV]	[Total	HV]				[Veh.	Dist]				
		veh/h	veh/h	veh/h	%				veh	m				
South: Mamre Rd														
2	T1	978	126	1029	12.9	0.386	8.3	LOS A	11.0	85.2	0.40	0.36	0.40	62.5
3	R2	113	36	119	31.9	<div><div>*</div>0.667</div>	65.1	LOS E	7.1	63.1	1.00	0.83	1.07	22.3
Approach		1091	162	1148	14.8	0.667	14.1	LOS A	11.0	85.2	0.46	0.41	0.47	55.9
East: AIE Access														
4	L2	231	71	243	30.7	0.401	27.5	LOS B	6.8	60.1	0.56	0.70	0.56	37.3
6	R2	288	76	303	26.4	<div><div>*</div>0.677</div>	62.3	LOS E	8.9	76.1	1.00	0.84	1.06	21.3
Approach		519	147	546	28.3	0.677	46.8	LOS D	8.9	76.1	0.80	0.78	0.84	26.4
North: Mamre Rd														
7	L2	89	27	94	30.3	0.075	8.2	LOS A	0.7	6.3	0.18	0.61	0.18	52.3
8	T1	1323	191	1393	14.4	<div><div>*</div>0.681</div>	24.7	LOS B	28.3	222.7	0.76	0.70	0.76	51.1
Approach		1412	218	1486	15.4	0.681	23.7	LOS B	28.3	222.7	0.73	0.69	0.73	51.1
All Vehicles		3022	527	3181	17.4	0.681	24.2	LOS B	28.3	222.7	0.64	0.61	0.65	47.5

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

Pedestrian Movement Performance												
Mov ID	Crossing	Input	Dem.	Aver.	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		Vol.	Flow	Delay		[Ped	Dist]					
		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Mamre Rd												
P1	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.2	224.8	0.99
East: AIE Access												
P2	Full	50	53	16.6	LOS B	0.1	0.1	0.53	0.53	183.1	216.5	1.18
North: Mamre Rd												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	226.2	223.5	0.99
All Pedestrians		150	158	41.7	LOS E	0.2	0.2	0.81	0.81	212.2	221.6	1.04

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: 1 [Mamre x AIE - AM Base plus Dev (Site Folder: 2031)]

Mamre Road x Aspect Industrial Estate Access

Period: AM Peak | 2026 Full Master Plan (Aspect)

Layout: Interim

Site Category: Proposed Interim

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] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	1196	156	1259	13.0	0.467	8.9	LOS A	14.3	111.0	0.43	0.39	0.43	62.3
3	R2	276	76	291	27.5	* 0.695	50.4	LOS D	15.6	135.1	0.96	0.85	0.97	26.2
Approach		1472	232	1549	15.8	0.695	16.7	LOS B	15.6	135.1	0.53	0.48	0.53	53.3
East: AIE Access														
4	L2	147	41	155	27.9	0.187	15.0	LOS B	3.0	25.7	0.41	0.63	0.41	40.5
6	R2	147	49	155	33.3	* 0.383	60.2	LOS E	4.3	38.6	0.96	0.77	0.96	21.4
Approach		294	90	309	30.6	0.383	37.6	LOS C	4.3	38.6	0.68	0.70	0.68	28.0
North: Mamre Rd														
7	L2	215	67	226	31.2	0.209	11.0	LOS A	3.6	31.7	0.33	0.66	0.33	48.9
8	T1	985	182	1037	18.5	* 0.691	31.4	LOS C	24.5	198.7	0.87	0.78	0.87	44.5
Approach		1200	249	1263	20.8	0.691	27.7	LOS B	24.5	198.7	0.78	0.76	0.78	45.0
All Vehicles		2966	571	3122	19.3	0.695	23.2	LOS B	24.5	198.7	0.64	0.61	0.64	46.8

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

Suburban 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	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.2	224.8	0.99
East: AIE Access												
P2	Full	50	53	26.7	LOS C	0.1	0.1	0.67	0.67	193.3	216.5	1.12
North: Mamre Rd												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	226.2	223.5	0.99
All Pedestrians		150	158	45.1	LOS E	0.2	0.2	0.86	0.86	215.5	221.6	1.03

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: 1 [Mamre x AIE - PM Base plus Dev (Site Folder: 2031)]

Mamre Road x Aspect Industrial Estate Access

Period: AM Peak | 2026 Full Master Plan (Aspect)

Layout: Interim

Site Category: Proposed Interim

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] %				[Veh. veh	Dist] m				
South: Mamre Rd														
2	T1	978	126	1029	12.9	0.391	8.8	LOS A	11.3	87.9	0.41	0.37	0.41	62.1
3	R2	127	41	134	32.3	<div><div>*</div>0.701</div>	65.1	LOS E	8.0	71.6	1.00	0.85	1.10	22.3
Approach		1105	167	1163	15.1	0.701	15.3	LOS B	11.3	87.9	0.48	0.43	0.49	54.9
East: AIE Access														
4	L2	258	78	272	30.2	0.433	31.1	LOS C	8.0	70.2	0.59	0.72	0.59	37.0
6	R2	315	83	332	26.3	<div><div>*</div>0.700</div>	62.1	LOS E	9.7	83.5	1.00	0.86	1.07	21.4
Approach		573	161	603	28.1	0.700	48.2	LOS D	9.7	83.5	0.81	0.79	0.86	26.4
North: Mamre Rd														
7	L2	103	32	108	31.1	0.088	8.5	LOS A	0.9	8.5	0.20	0.62	0.20	51.9
8	T1	1323	191	1393	14.4	<div><div>*</div>0.701</div>	27.6	LOS B	29.5	231.5	0.79	0.72	0.79	50.0
Approach		1426	223	1501	15.6	0.701	26.3	LOS B	29.5	231.5	0.75	0.71	0.75	50.1
All Vehicles		3104	551	3267	17.8	0.701	26.4	LOS B	29.5	231.5	0.67	0.63	0.68	46.4

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.

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

Suburban 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	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	227.2	224.8	0.99
East: AIE Access												
P2	Full	50	53	17.6	LOS B	0.1	0.1	0.54	0.54	184.2	216.5	1.18
North: Mamre Rd												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	226.2	223.5	0.99
All Pedestrians		150	158	42.1	LOS E	0.2	0.2	0.82	0.82	212.5	221.6	1.04

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

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

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

Appendix D. Framework Sustainable Travel Plan

Framework Sustainable Travel Plan

Yiribana Logistics Estate

Lots 59-60, DP259135 Mamre Road, Kemps Creek

14/07/2022

1427r03

Document Control

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Project	Yiribana Logistics Estate, Mamre Road, Kemps Creek
Client	The GPT Group
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Revision No.	Date	Details	Author	Approved by
-	31/05/2021	Draft	A. Tan R. Butler-Madden	T. Lewis
I	02/06/2021	Issue	A. Tan	R. Butler-Madden
II	08/04/2022	Issue	R. Butler-Madden	R. Butler-Madden
III	08/06/2022	Issue	M. Abdullah	R. Butler-Madden

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APPENDICES

Appendix A. Travel Access Guide

Appendix B. Sample Questionnaire

Glossary

Acronym	Description
AGRD	Austroads Guide to Road Design
AGTM	Austroads Guide to Traffic Management
CC	Construction Certificate
Council	Penrith City Council
DA	Development Application
DCP	Development Control Plan
DoS	Degree of Saturation
DPIE	Department of Planning, Industry and Environment
FSR	Floor space ratio
GFA	Gross Floor Area
HRV	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
LEP	Local Environmental Plan
LGA	Local Government Area
LoS	Level of Service
MOD	Section 4.55 Modification (also referred as a S4.55)
MRV	Medium Rigid Vehicle (as defined by AS2890.2:2018)
NHVR	National Heavy Vehicle Regulator
OC	Occupation Certificate
RMS Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
SRV	Small Rigid Vehicle (as defined by AS2890.2:2018)
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
TIA	Transport Impact Assessment
TIS	Transport Impact Statement
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Introduction

1.1 Context

This Framework Sustainable Travel Plan (FSTP) has been developed to support the State Significant Development Application (SSDA) in relation to a proposed industrial estate to be known as Yiribana Logistics Estate (the Estate) (SSD-10272349). The Estate is legally known as Lots 59-60, DP259135 Kemps Creek (the Site) and is located east of Mamre Road, within the Penrith Local Government Area (LGA).

Furthermore, it is important to note that this GTP has been prepared to address the following requirement within the Mamre Road Precinct DCP 2021, Section 3.4.1, Control 1:

- *“Development applications shall be accompanied by a Traffic and Transport Report. The Traffic and Transport Report shall include a Green Travel Plan and Travel Access Guide, and assess the impact of projected pedestrian and vehicular traffic associated with the proposal, and outline the extent and nature of traffic facilities necessary to preserve or improve the safety and efficiency of the road system.”*

The Site is located to the east of Mamre Road and lies within the Mamre Road Precinct (the MRP). The Department of Planning, Industry and Environment (DPIE) rezoned the MRP, in June 2020. As such, the Site is primarily zoned IN1 General Industrial with an area of land zoned C2 Environmental Conservation traversing Site from the north-west corner to the centre.

The MRP Structure Plan was finalised in June 2020, followed by the release and finalisation of the MRP Development Control Plan (MRP DCP) on 19 November 2021.

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

The Proposal itself relates to the provision of an industrial warehouse development, with ancillary offices, loading areas and car parking. Full details are provided in the Environmental Impact Statement (EIS) prepared by Urbis.

1.2 Background

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

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

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

The AECOM Report is one of the technical reports supporting the delivery of the Draft Aerotropolis Precinct Plan (November 2020), which is currently on exhibition. One of the key “enablers” detailed in the AECOM

Report includes the implementation of transport policies and strategies which foster a mode shift to sustainable transport and recommends the inclusion of Travel Plans for new development applications within the future Aerotropolis Development Control Plan.

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

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

Of particular relevance to this FSTP, are the mode share targets set by the AECOM Report for each of the Aerotropolis precincts, the most comparable precinct to the MRP being the Badgerys Creek Precinct . Of the 5 Aerotropolis Precincts covered, Badgerys Creek has the lowest mode share target (by 2056) to non-car travel of 20% (as shown by **Figure 1**).

This reflects the planned land uses, which are anticipated to support warehousing and logistics, as noted by the AECOM Report. This is a long-term target, which is ambitious but achievable based on the policy framework, actions, initiatives, infrastructure and services defined through the precinct planning process. These targets have been given consideration in setting targets for this FSTP.

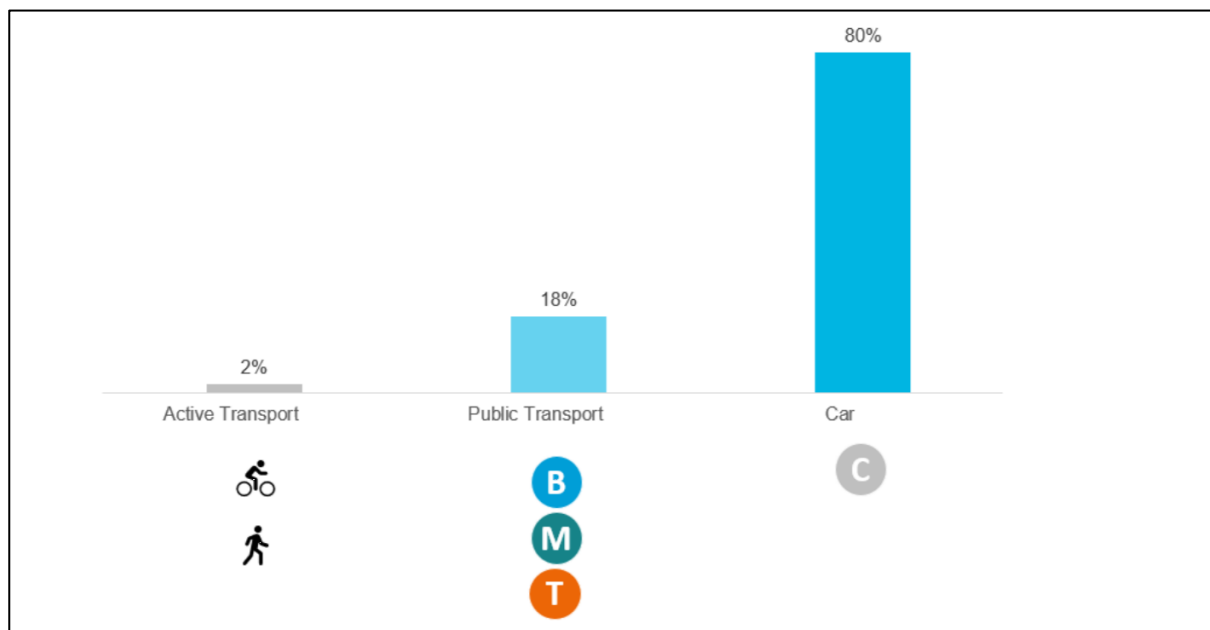


Figure 1: 2056 Badgerys Creek Mode Share Targets

Source: AECOM Report

1.3 Goals

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

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

1.4 Objectives

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

The primary objectives of the FSTP will be to:

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

2 Site Audit

2.1 Introduction

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

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

2.2 Development Site

2.2.1 Location & Description

The Site is legally described as Lots 59 – 60 in DP 259135, Mamre Road Kemps Creek, and has an area of approximately 33.1 hectares (ha). It has approximately 210m of direct frontage to Mamre Road with a proposed intersection providing vehicular access via Mamre Road to the M4 Motorway and Great Western Highway to the north and Elizabeth Drive to the south.

The Site is located approximately 8km north-west of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 12km south-east of the Penrith CBD and 40km west of the Sydney CBD. Its sub-regional context is shown in **Figure 2** as well as the broader MR Precinct Structure Plan area in which the Site lies.

It currently provides for a number of rural residential properties, as well as for small scale agricultural industries businesses.

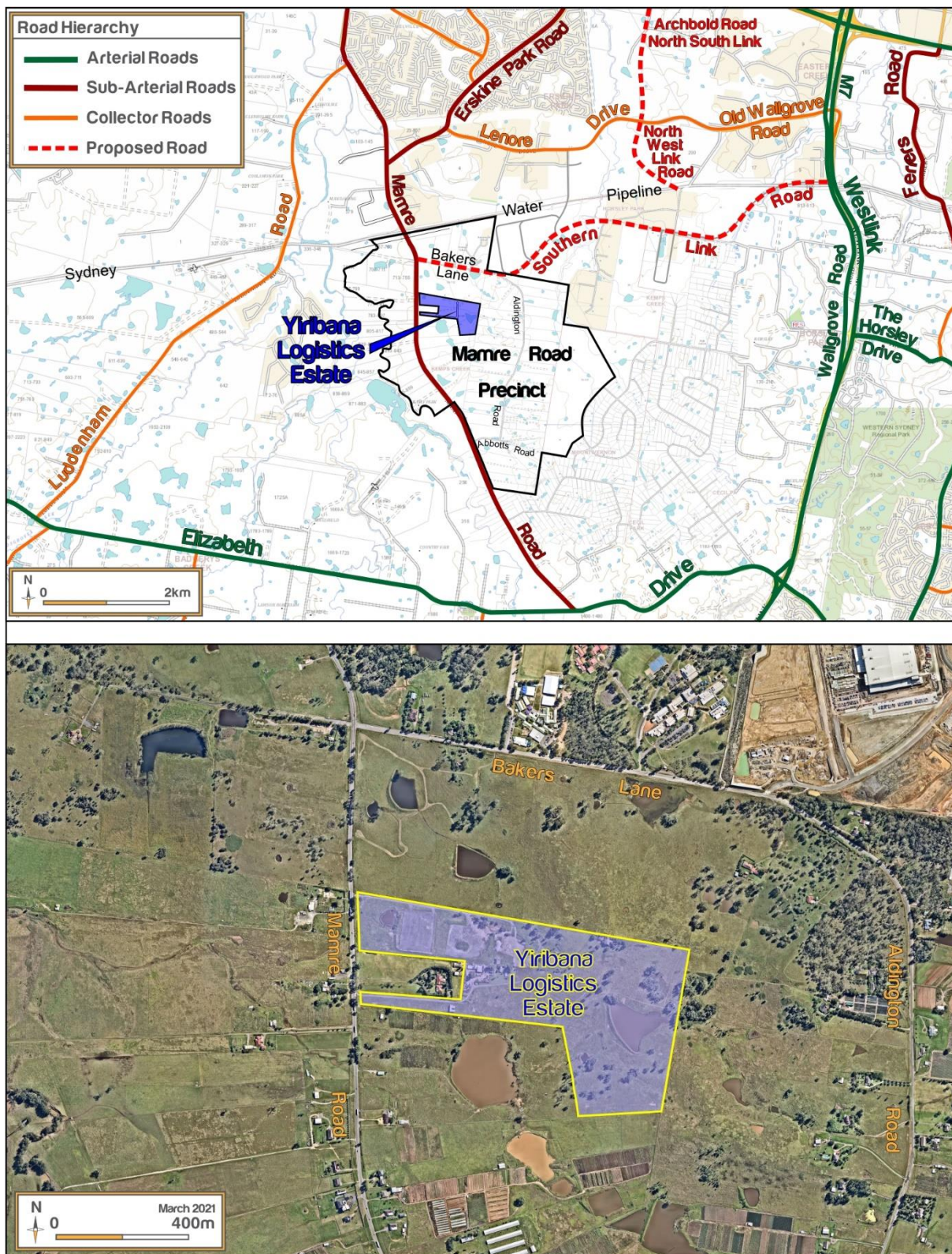


Figure 2: Site Location & Road Hierarchy

2.3 Proposed Development

As stated, the SSDA Proposal seeks approval for:

A detailed description of the SSD Proposal is included in the Environmental Impact Statement (EIS) which this TMAP accompanies. In summary, the application relates to the construction of the Stage 1 development of the future Yiribana Logistics Estate. The following summarises key aspects of the Proposal:

- Construction and use of Warehouse 1 and 3 for the purposes of other manufacturing industries and/or warehouse and distribution centres which will operate 24 hours/day, seven days/week, consisting of:
 - A total of 52,720m² of warehouse GFA and 2,285m² of ancillary office GFA; and
 - Provision for 244 car parking spaces.
- Subdivision of Site;
- Site preparation works including estate-wide clearing of all vegetation and dam-dewatering;
- Estate-wide bulk earthworks;
- Construction of retaining walls;
- Provision of site servicing infrastructure to allow the operation of the industrial unit for warehouse and distribution and/or other manufacturing industries;
- Internal road network (including North-South Collector Road and Temporary Access Road to Mamre Road until the ultimate connection is provided by the adjoining landowner).

The proposed Stage 1 plan is shown in **Figure 3**.

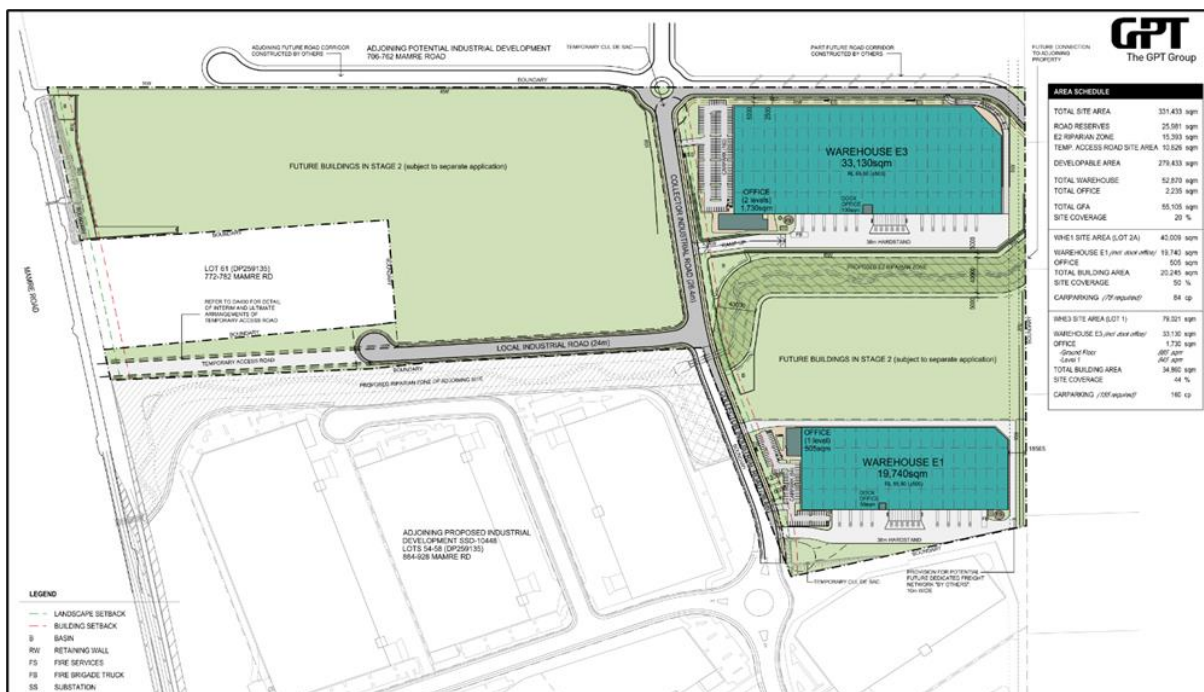


Figure 3: Yiribana Logistics Estate Proposed Stage 1

2.4 Public & Active Transport Opportunities

2.4.1 Introduction

The Site is limited with the current public transport service offering, as shown in **Figure 3**. Therefore, for this Site Audit, the public & active transport opportunities have been identified, noting that there are a number of projects and plans which relate to the strategic development of the MRP and more broadly the Western Sydney Employment Area (WSEA) and Broader Western Sydney Employment Area (BWSEA).

One such project is the Mamre Road Upgrade Project, which will see Mamre Road upgraded between the M4 Motorway and Kerrs Road (south of the Site, and north of Elizabeth Drive). The upgrade specifically provides for new bus stops along its entire route, with bus jump lanes at intersections also included in the strategic design.

This section will need to be updated prior to the finalisation of any future STP, and accordingly as part of the review process, as the wider area develops

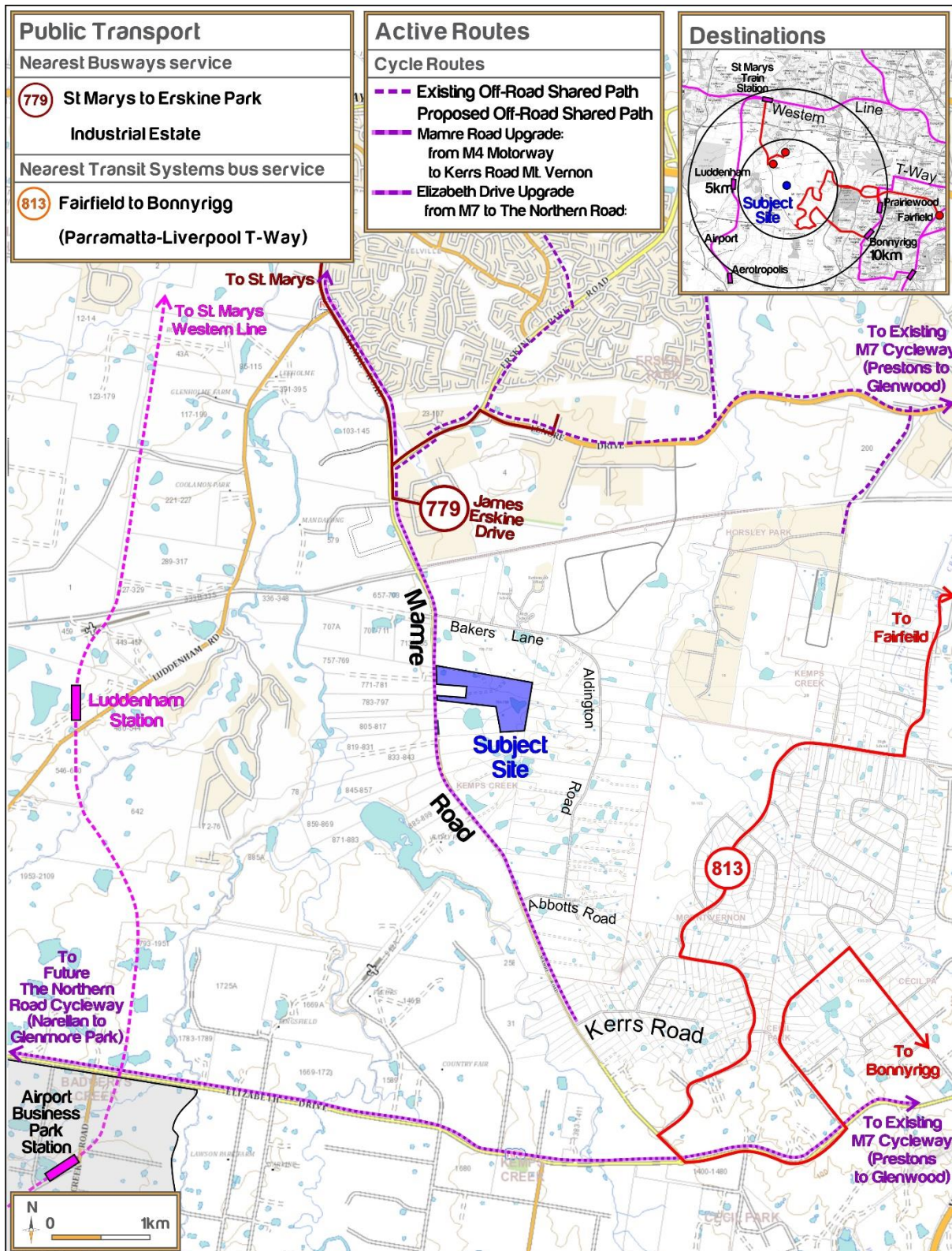


Figure 4: Public & Active Transport Network

2.4.2 Bus Services

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

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

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

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

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

Noting that TfNSW Guidelines state that bus services influence the travel mode choices of sites within 400m (approximately 5 minutes' walk) of a bus stop, access to bus services will be a key factor in influencing travel behaviour.

Key bus routes identified in the BWSEA Structure Plan are shown in **Figure 5**.



Figure 5: BWSEA Public Transport Structure

Source: BWSEA Structure Plan

2.4.3 Train Services – Metro Western Sydney Airport

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

The alignment of the Metro is shown by **Figure 6**. While the closest station to the Site will likely be Luddenham Station, located some 4km (as the crow flies) to the west of the Site, it will undoubtedly improve public transport accessibility to the wider area. This provides an opportunity for bus services to combine with the Metro to improve connectivity to/from the residential areas to the north of the Site.



Figure 6: Metro Western Sydney Airport Alignment

2.4.4 Bicycle Network

At present, shared paths (pedestrian and cycle) are provided along Erskine Park Road and sections of Mamre Road to the north of the Site, but there is little cycling (or pedestrian) infrastructure in Mamre Road between Distribution Drive to the north and Elizabeth Drive to the south.

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

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

Key active transport routes identified in the BWSEA Structure Plan are shown in **Figure 7** noting again that the Mamre Road Upgrade Project will provide shared paths along at least one side of the road for its entire length.



Figure 7: BWSEA Cycle Routes

Source: BWSEA Structure Plan

2.4.5 Pedestrian Connectivity

Due to the current largely undeveloped nature of the land immediately surrounding the Site, pedestrian infrastructure is currently non-existent. Key pedestrian desire lines in the vicinity of the Site would be

triggered by connections to future public transport infrastructure, noting the nature of the area being largely industrial and therefore not representing key destinations and attractions for people to walk to.

In this regard, it is noted that the upgraded Mamre Road will include shared cycle and pedestrian pathways along its length. Further, the Draft DCP requires internal roads to provide a footpath of 1.5m on one side (minimum) and shared path of 2.5m (minimum) on the opposing side of the road.

2.5 On Demand Services

2.5.1 Car Share

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

One of the prominent providers of car sharing in NSW is GoGet. GoGet provides a car share service allowing members to book cars for private use. Each vehicle has a home location which is referred to as a 'pod'. These are typically located in a parking lot or on-street and generally in a highly populated urban neighbourhood.

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

2.6 Existing Travel Patterns

2.6.1 Journey to Work Data Analysis

Journey-to-Work (JTW) data from the Australian Bureau of Statistics (ABS) 2016 Census and specifically aggregated Destination Zones (DZ) has been referenced to understand the baseline travel characteristics of the Site. This data informs the initial targets and should be refined and updated as part of the monitoring process.

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

The travel modes are presented in **Table 1** below.

With reference to **Table 1**, it is evident that the private vehicle (car) is the overwhelming preferred mode of choice for commuters travelling to work in the area. The data indicates that 95% travel to work by car with 92% as the driver and 3% as passenger i.e. car-pooling.

TABLE 1 TRAVEL MODE SUMMARY (JOURNEY TO WORK)

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

3 Development, Scope, & Implementation of the Plan

3.1 Introduction

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

3.2 Responsibility

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

3.3 FSTP Scope

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

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

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

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

3.4 Implementation

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

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

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

The main duties of the TPC are envisaged to be:

- Overseeing final development and implementation of the STP.
- Internal liaison to promote awareness of the STP amongst businesses and staff within the Estate.
- Liaison with outside bodies, such as Penrith City Council (Council) and local bus operators, as required regarding the operation of the STP.
- Providing updated travel information to staff and visitors, as necessary.
- Monitoring, review and (if necessary) updates to the STP.
-

3.5 Consultation

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

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

Other organisations may be added to this list as the Plans evolve.

4 Travel Mode Targets

4.1 Introduction

Based on the existing travel mode splits identified in Section 2.6, the Site and the surrounding areas are considered to have a low dependency on public and active transport. This is reflective of the current nature of the area, which accommodates rural residential properties and agricultural businesses.

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

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

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

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

4.2 Mode Share Targets

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

As per Section 1.2, the AECOM Report provides a mode share target for public & active transport of 20% and by car of 80% by 2056 for the nearby Badgerys Creek Precinct. Sites within the MRP should reflect a similar target. While at least maintaining the existing carpooling mode share of 3% (**Table 1**), this represents a decrease in travel by car (as a driver) by 15% by 2056.

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

The targets should therefore be revisited and updated after the opening of the relevant development as part of the monitoring process. The preliminary targets are nominated in **Table 2**, which represents a 5-year target to coincide with the minimum 5 years of monitoring and review.

TABLE 2 PRELIMINARY 2026 MODE SHARE TARGETS

Travel Mode	Mode Share of Existing Employees	Proposed Targets	Relative Change
Vehicle driver	92%	88%	-4%
Vehicle passenger	3%	3%	—
Train	0%	0%	—
Bus	2%	4%	+2%
Walked only	1%	1%	—
Cycling	0%	1%	+1%
Taxi	1%	1%	—
Motorbike/Scooter	0%	1%	+1%
Other	1%	1%	—

5 Measures and Action Strategies

5.1 Measures

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

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

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

5.2 Strategies

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

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

Table 3: Proposed STP Action Strategies

STRATEGY		HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY	TIMELINE	FUNDING
1 Travel Planning and Demand Management						
1.1	Green Travel Plans	<ul style="list-style-type: none"> Develop a STP to provide information for Travel Access Guide (TAG) (See Appendix A) Management of STPs. Promotion of STPs. 	<p>Provide information resources and implement a range of additional initiatives to reward and encourage those who travel actively to help develop a healthy, active culture and meet travel targets.</p> <p>Continued support of the person/organisation in charge of managing the STP. This would happen with the appointment of a Travel Plan Coordinator.</p> <ul style="list-style-type: none"> Undertake a STP event annually. Promote the following initiatives via bulletins, web pages, social media: Travel Survey Results; and Progress and update of STP. <p>Retain a current copy of the TAG to be relevant, useable, and accessible. TAG should be displayed in communal areas.</p>	<p>Building Manager to be responsible for overall implementation of final STP and providing annual reporting on STP outcomes to Council.</p> <p>Tenant to develop Company specific travel plan based on Final STP prior to the commencement of a new lease/sale of property.</p> <p>Company/Staff/Visitors shall be responsible for ongoing implementation of Company assigned actions and participation in annual monitoring and reporting process to Council</p>	Upon completion of the development and ongoing annual STP events	Tenant / Business Owner
1.2	Travel Information Points	Promotion of STPs Provision of travel and transport information options	<p>Establish locations such as travel information points where staff and visitors and others can access travel information via interactive platforms. These can be similar to wayfinding kiosks provided at public transport stations, shopping centres etc.</p> <p>Information could include walking and cycling routes, bicycle parking, public</p>	Company	Subject to employer preference.	Tenant / Business Owner

			transport availability, routes, real-time timetables, and shared vehicles.			
1.3	Flexible Working hours	Allow employees the flexibility to commute outside peak periods to reduce overall congestion and travel time.	Manage staff rosters where possible.	Company	Subject to employer preference. Action to be considered by employers / Visitors as part of an Employer specific STP to be developed and forwarded to Council prior to building occupation.	Company
1.4	Teleworking	Provide the option to work remotely (where possible) to reduce the number of vehicles travelling to the development and encourage teleconferencing rather than travelling to meetings.	Manage staff rosters and develop work-from-home policies and procedures, where possible.	Company	Subject to employer preference. Action to be considered by employers / visitors	Tenant / Business Owner
2 Promoting Public Transport						
2.1	Opal Card Loan Schemes / Subsidising schemes for public transport travel through pre-paid credit cards	Company may consider subsidising staff public transport travel. Alternatively, staff can pay for their own Opal Cards / pre-paid travel card through their salary, spreading the cost over the year to make it more affordable.	Subject to owner / User negotiations and incentives.	Company / TPC	Subject to employer. Can be implemented at building occupation	Tenant / Business Owner
2.2	Maximise Bus Service Frequency	Meet or exceed Transport NSW bus planning guidelines.	<ul style="list-style-type: none"> Decrease headway where possible, especially during peak periods. Report back to Transport for NSW on perception of bus service adequacy 	TfNSW	Developer to hold on-going discussions with TfNSW after each annual review of STP and report on relevant findings	TfNSW

2.3	Provide bus stops with shelter facilities	Ensuring provision of bus stops suitable for waiting areas for commuters.	Propose or recommend improvements to the proposed / implemented bus stops along Mamre Road to TfNSW.	TfNSW	Subject to discretion of TfNSW. Advisable to be prior to the opening of the development	TfNSW
2.4	Public Transport for work travel	The company and the TPC can promote public transport as one of the main preferences for work travel. This should be supported by all users and visitors to development having access to Opal Cards.	Subject to owner / User negotiations and incentives.	TPC	Subject to employer. Can be implemented at building occupation	Company
2.5	Lobby for Precinct / Estate shuttle service	Shuttle service initiative that would transport staff to / from the MRP to the Railway Station.	<p>Provision of Precinct / Estate wide bus shuttle service running between the development and either nearby homes or Railway Station.</p> <p>Persons signing onto the program or service would be accountable for turning up at the appropriate times so as to not delay the service. This should be promoted as part of the STP and on communal locations such as main website or notice boards.</p>	TPC to lobby Estate Manager	Ongoing in the workplace. Updates can be made to organisation as appropriate	Estate Owner
3 Promoting Carpooling						
3.1	Open Car Sharing	Where anyone in a defined geographical area can join a ride sharing scheme. This involves no input from the employer and is likely to be on the onus of staff to schedule.	This can usually be accomplished by having notice boards in business premises which are a good place for employees to find colleagues looking to share journeys. Utilise car share spaces provided and actively promote on site to staff and visitors.	Staff	Ongoing in the workplace	Fuel costs can be arranged and split equitably by those involved
3.2	Closed Car Sharing	The company / department sets up an in-house car-matching scheme	The company / department sets up an in-house car-matching scheme and gets staff to participate. A points system can be setup to encourage friendly competition between staff and overall reduce carbon footprint from single car usage. Car Pool Vehicle spaces would be provided near	Company, TPC	Ongoing in the workplace. Updates can be made to organisation as appropriate	Company

			building entrances and actively promote on site to staff and visitors. Reward regular car sharers by providing gifts such as free car washes.			
3.3	Third-party Car Sharing Program	Companies such as Liftshare are an online service that facilitates journey sharing between individual users, as well as providing separate services for businesses, organisations and events.	<p>They allows users to search for and post details online of journeys; by car, bike, taxi or walking, for which they wish to find someone else with which to share the journey with.</p> <p>Users can search for people who have entered similar journeys and contact them, wait to be contacted by someone searching for a journey of their own.</p>	Staff	Ongoing in the workplace	Staff
3.4	Carpool week	Arrange for a dedicated carpool campaign week to promote the benefits of carpooling.	One week of the year where a carpool theme is emphasised around the workplace including promotion such as a launch event. Intention is to show that carpooling is a real alternative to travel to work. Provide prize incentive as part of competition to promote raise awareness.	Company	One week per calendar year	Company
4 Promoting Cycling						
4.1	Create a Bicycle Users Group (BUG)	BUGs are local groups of like-minded bike riders who get together generally for social riding in their area. For the purposes of the workplace, this can be adapted as a way of creating as social and healthy aspect of travelling to work.	<p>The BUGs can set up amongst employees and arranged with the help of TPC. An online group such as an email thread, Teams Chat group would be the main channel where participants can communicate and organise rides, suggest areas for improvement. A designated leader would be appointed and ideally affiliated with Bicycle NSW who would manage queries and support in enabling a comfortable riding experience for all wishing to partake.</p> <p>As a minimum, the establishment of the BUGs should be promoted as Precinct wide initiative.</p>	Company, TPC	Ongoing in the workplace	Company

4.2	Providing & Maintaining End of Trip Facilities	Providing facilities such as showers, change rooms, lockers.	<p>Bicycle parking spaces will be provided for staff. Access to other facilities such as showers will also be made.</p> <p>Developer to provide bicycle parking spaces in the parking area together with male and female lockers, male and female showers and an accessible shower as per Building Plans.</p> <p>Provision of shower, lockers and change rooms are to comply with the minimum rates stipulated in Planning Guidelines for Walking and Cycling' (NSW Government 2004).</p>	Developer	To be provided at sports complex completion	Developer
4.3	Promote Bicycle Initiatives	Promotion of bicycle initiatives – NSW bicycle week, Ride to Work etc.	Promote and encourage cycling in the precinct and should actively participate in recognised NSW government bicycle initiatives such as bicycle week and cycle to workday.	TPC	To be promoted annually	Developer
4.4	Advertise Bicycle Routes	Promotion of bike lanes	Prepare and distribute a TAG with site specific maps with guidance on the most optimal way of travelling to/from site by bicycle	TPC	To be promoted and provided at communal areas such as key information kiosks within facility	Company
5 Promoting Walking						
5.1	Providing End of Journey Facilities	Provision of sufficient end of trip facilities such as showers, change rooms, lockers etc to maximise pedestrian activity throughout the site and the wider precinct.	<p>Provide pedestrian facilities and amenities in close proximity in the Site and at the bus stops</p> <p>Developer to provide male and female lockers, male and female showers and an accessible shower as per Building Plans.</p>	Developer	To be provided at completion of development	Company
5.2	Walking routes	Incentivise travelling by foot by highlighting possible routes particularly those to nearest bus stops	Prepare site specific maps highlighting pedestrian desire lines and optimal routes to provide guidance to pedestrians to key public transport and car sharing locations.	Company	To be promoted and provided at communal areas such as key	Company

					information kiosks within facility	
5.3	Promote walking initiatives	Promotion of walking initiatives: walk to game / training day, pedometers / step challenge / gamification of walking / reward programs based on steps to elevate pedestrian activity throughout site and to / from public transport points.	<p>Promote and encourage walking in the complex and should actively participate in recognised NSW government initiatives such as walk to workday and pedometer / step challenges.</p> <p>Friendly challenge competitions can be organised to incentivise and encourage increased walking activity amongst users and visitors to the facilities.</p>	Company, TPC	To be implemented monthly or as appropriate throughout the calendar year.	Company
7 Influencing Travel Behaviour						
7.1	Provision of Sustainable Travel Packs to employees and visitors	Introduces employees and visitors alike to the STP and provides information on walking and cycling routes, and travel by bus & train, timetables, and access routes.	<p>To be distributed to staff, visitors, and neighbouring properties.</p> <p>Contact details as to who is responsible for the STP will also be provided. This would include a TAG.</p>	Company, TPC	Travel Packs to be provided upon occupancy of building to employees.	Company

5.3 Communications Strategy

5.3.1 Welcome Packs

New staff shall be provided with a 'welcome pack' as part of the on-site induction process which includes a STP Pamphlet and other information in relation to sustainable transport choices. This pack shall include an electronic copy of the STP and a Travel Access guide (TAG) as provided in Appendix A, as well as general information regarding the health and social benefits of active transport and advice on where to seek further information.

5.3.2 Accurate Transport Information

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

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

6 Monitoring Strategy

6.1 Plan Maintenance

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

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

- Update baseline conditions to reflect any changes to the transport environment in the vicinity of the Site such as changes to bus services, new cycle routes etc.
- Track progress against target travel mode targets.
- Identify any shortfalls and develop an updated action plan to address issues.
- Ensure travel modes targets are updated (if necessary) to ensure they are realistic and remain ambitious.

6.2 Monitoring

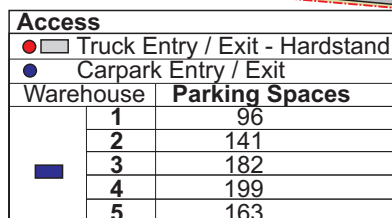
So as to record the overall success, as well as the effectiveness of the individual measures, monitoring and review of the STP is to be conducted at regular intervals. The TPC will act as the primary point of contact for all enquiries relating to the STP's progress.

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

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

Appendix A. Travel Access Guide

April 2021



Appendix B. Sample Questionnaire

Instructions for Surveyor(s)

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

Travel Mode Questionnaire Survey Form

Date:

Approximate Time:

Q1. Are you one of the following?

- | | |
|--|--|
| <input type="checkbox"/> Warehouse staff | <input type="checkbox"/> Casual contractor |
| <input type="checkbox"/> Office staff | <input type="checkbox"/> Company driver / sub-contractor |
| <input type="checkbox"/> Courier / office delivery | <input type="checkbox"/> Other (Please specify) |

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

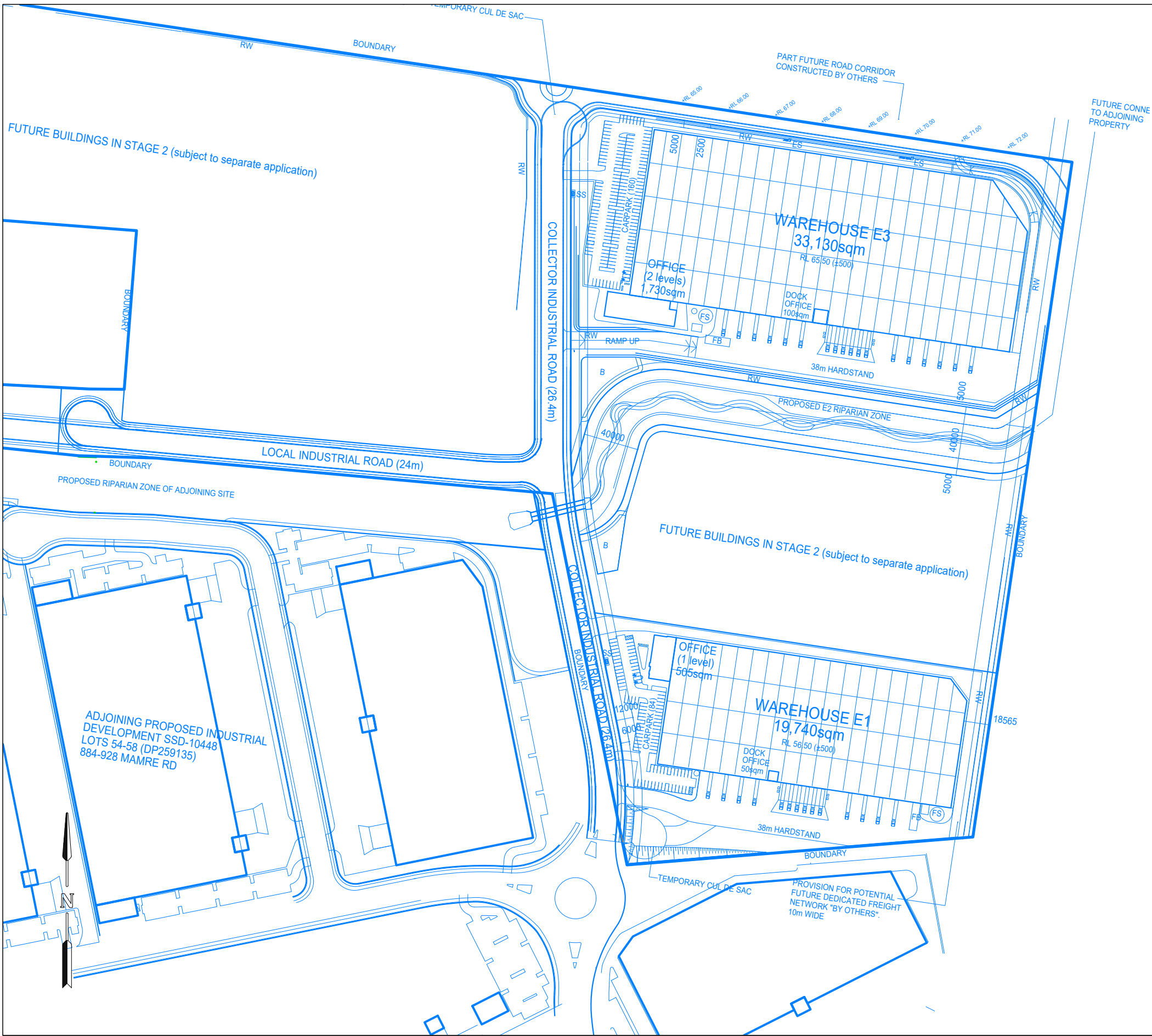
- | | |
|---------------------------------------|---|
| <input type="checkbox"/> Walked only | <input type="checkbox"/> Car share vehicle |
| <input type="checkbox"/> Bicycle only | <input type="checkbox"/> Motorcycle / scooter |
| <input type="checkbox"/> Train | <input type="checkbox"/> Car (as passenger) |
| <input type="checkbox"/> Bus | <input type="checkbox"/> Car (as driver) |
| <input type="checkbox"/> Taxi | <input type="checkbox"/> Other (Please specify) |

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

- ☐ Not applicable – did not drive
- ☐ On-site car park
- ☐ On-site within truck hardstand
- ☐ Other (Please specify)

[Blank Page]

Appendix E. Swept Path Analysis



- General Notes:
- Car parking spaces have been assessed against design for Class 1A (staff car parking) as per Figure 2.2 of AS2890.1:2004.
 - Site accesses have been generally been assessed against 30M A-Doubles, which has been adopted as the Design Vehicle as per MRP DCP for Industrial Developments with Warehouse GFA >20,000 sqm
 - Warehouse E1 has been assessed against 20m Articulated Vehicles, adopted as the Design Vehicle per MRP DCP for Industrial Developments with Warehouse GFA 4000-20,000 sqm.
 - 12.5m HRV Fire Appliance adopted for fire access review. Fire standing area review pending nomination of location by Fire Consultant.
 - The new (unnamed) North-South frontage road is a Collector Industrial Road, with a design speed limit of 50km/h as stipulated within the Final DCP.
 - Road design deferred to the project civil engineer - this advice relates to off-street car parking & loading area design only.
 - Vehicle crossovers to be designed by the Architect and subject to further review. Crossovers should be designed in accordance with Penrith City Council's 'Driveway Standards and Specifications' and / or AS2890.2:2018.
 - Ramps to/from service areas shall comply with AS2890.2:2018. Ramp details not provided; hence not reviewed.
 - Accessible parking spaces shall be designed in accordance with AS2890.6:2009. Quantity of accessible parking provision shall be in accordance with Table 12 of the MRP DCP which refers to Access to Premises 2010 rates at 1 space for every 100 carparking spaces or thereof.
 - For the purposes of this assessment, we have assumed no median within the N-S Local Collector Road. Should a median be required by Council, then additional driveway width may be required to compensate.

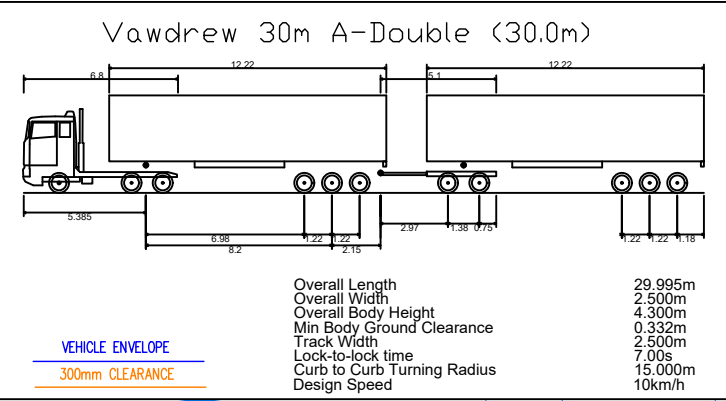
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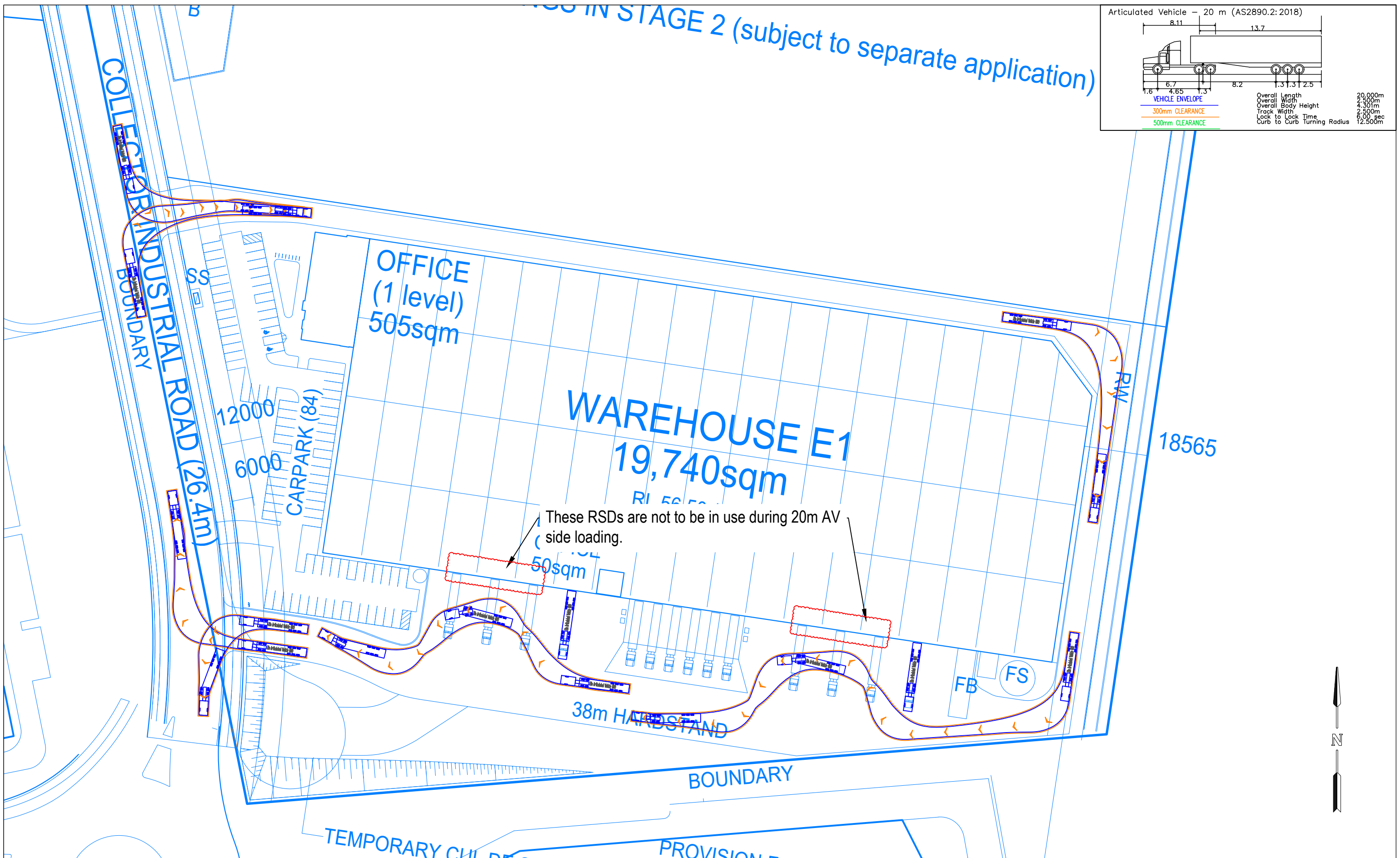
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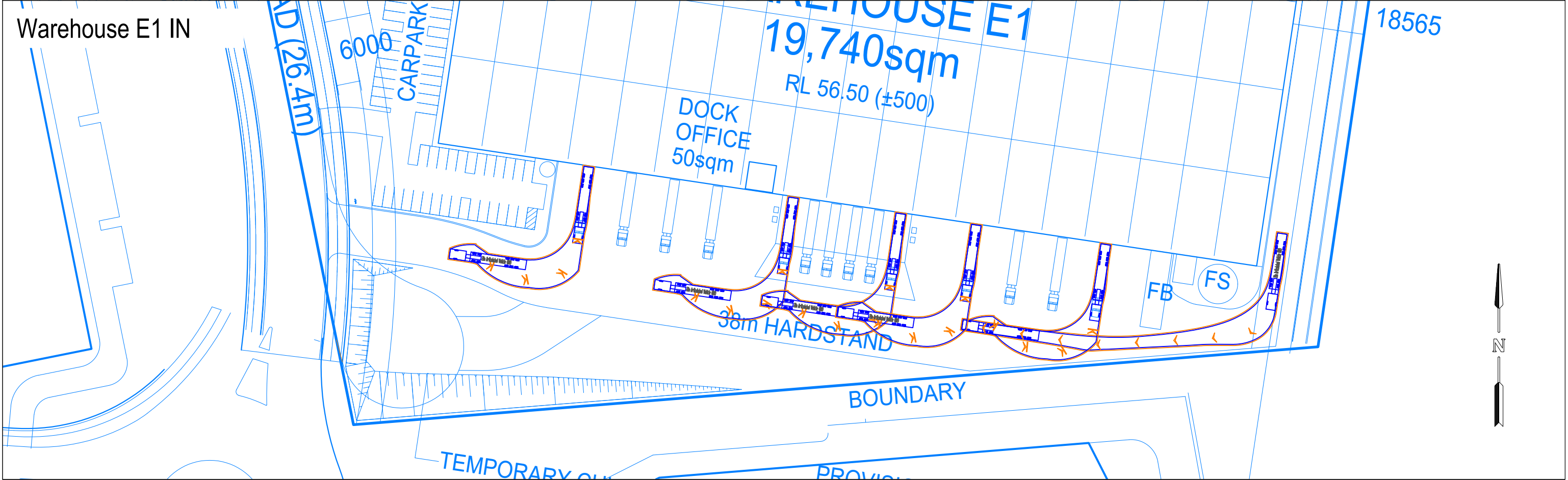
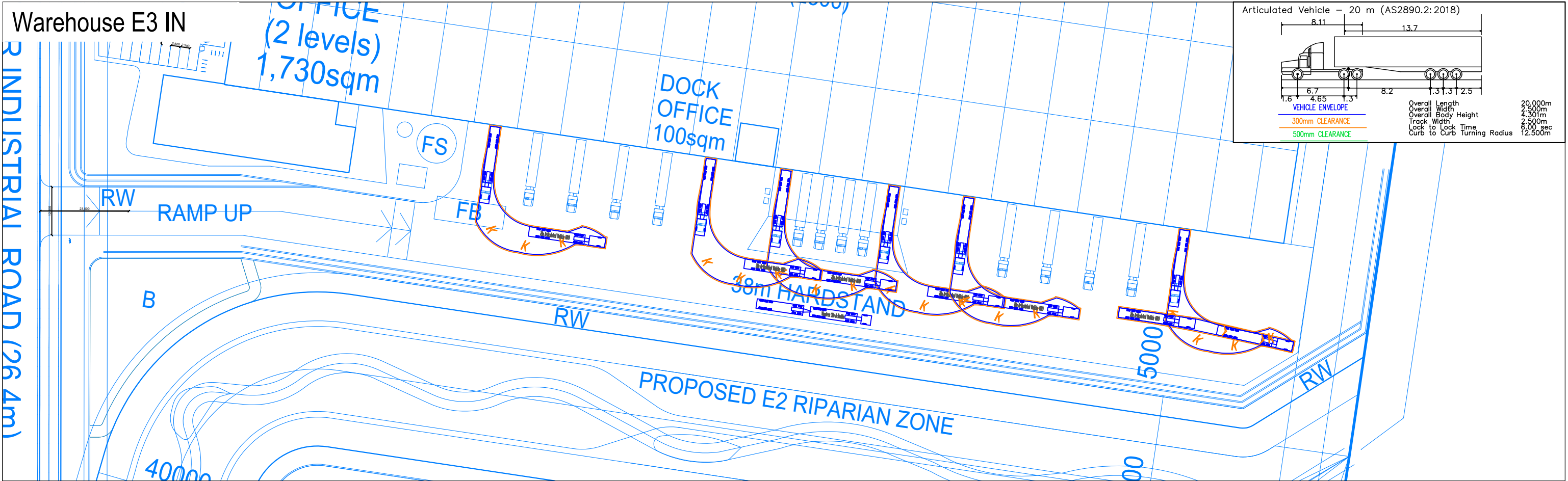
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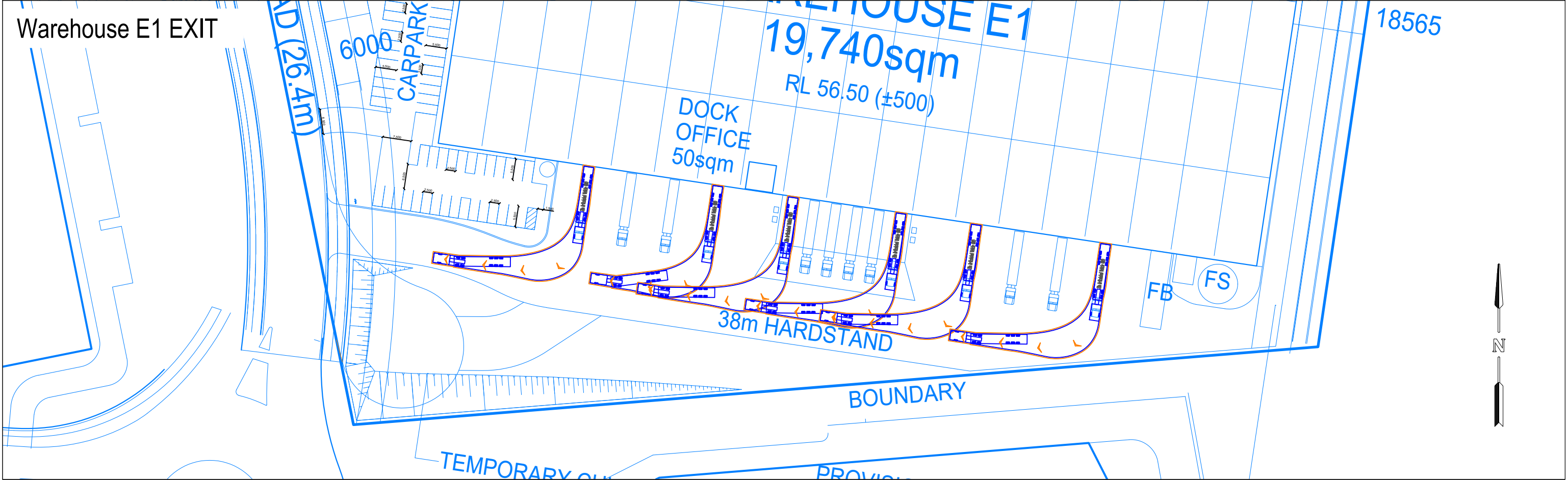
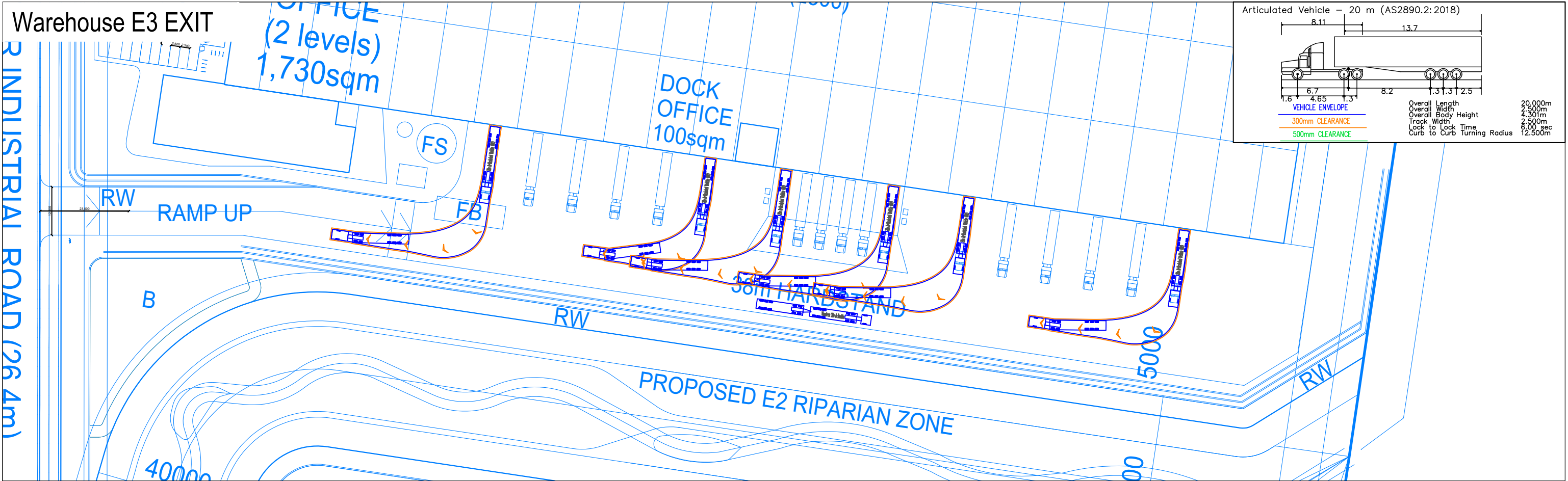


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HRV – Heavy Rigid Vehicle (AS/NZS2890.2: 2002)

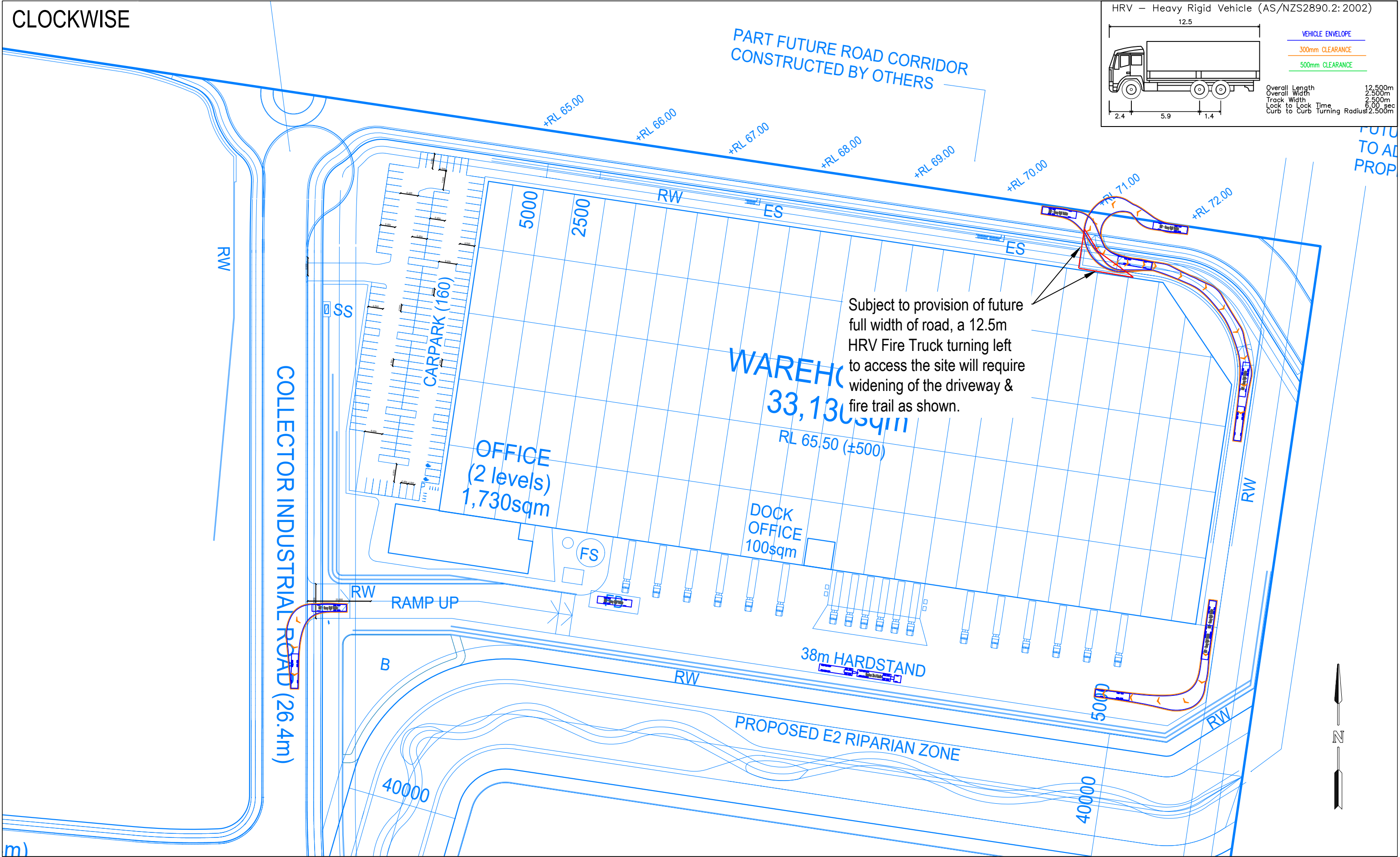
12.5

VEHICLE ENVELOPE

300mm CLEARANCE

500mm CLEARANCE

Overall Length 12.500m
Overall Width 2.500m
Track Width 2.500m
Lock to Lock Time 6.00 sec
Curb to Curb Turning Radius 12.500m



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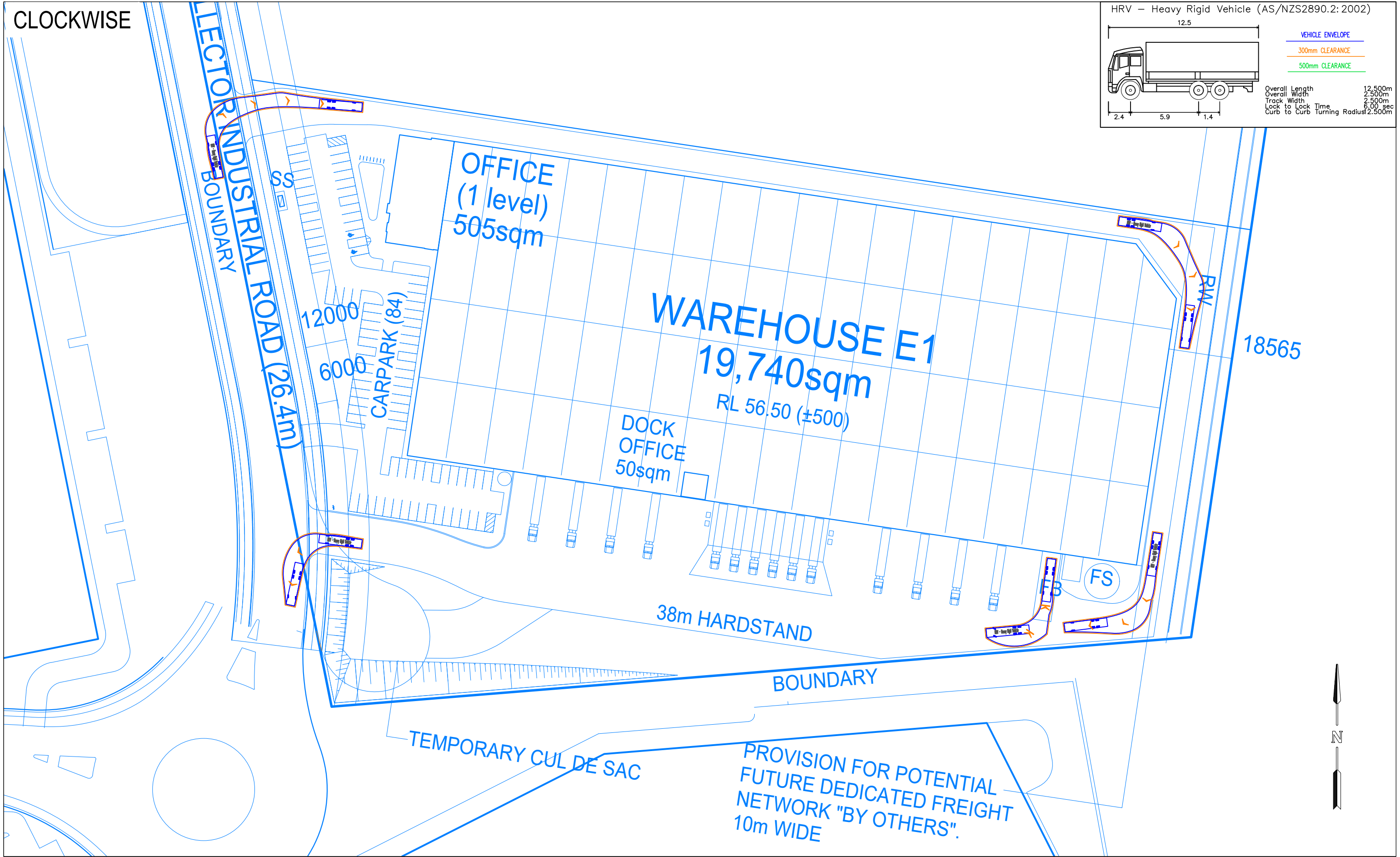
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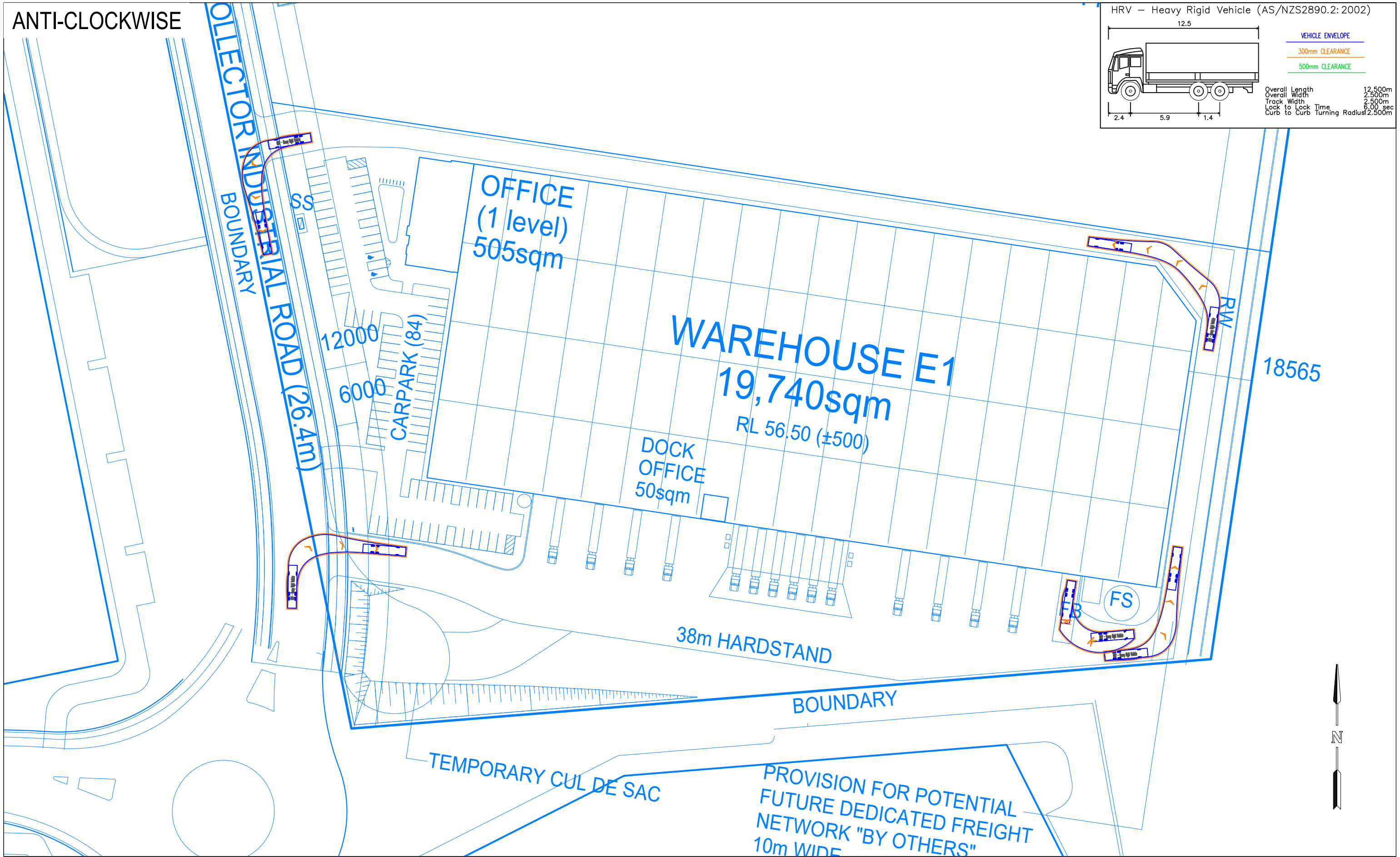
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Mamre Road, Kemps Creek

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

12.5

VEHICLE ENVELOPE

300mm CLEARANCE

500mm CLEARANCE

Overall Length

Overall Width

Track Width

Lock to Curb

Lock to Curb

Time

Turning Radius

12.500m

2.500m

2.500m

6.00 sec

12.500m

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Appendix F. Preliminary Construction Traffic Management Plan

Preliminary Construction Traffic Management Plan

Yiribana Logistics Estate, Mamre Road, Kemps Creek

Lots 59-60, DP259135 Mamre Road, Kemps Creek

14/07/2022

1427r02

Document Control

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III	08/06/2022	Issue	M. Abdullah	R. Butler-Madden
IV	08/06/2022	Issue	M. Abdullah	R. Butler-Madden

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APPENDICES

Appendix A. Driver Code of Conduct

Appendix B. Traffic Guidance Scheme

1 Introduction

1.1 Overview

Ason Group has been engaged by The GPT Group (GPT) to prepare a Preliminary Construction Traffic Management Plan (PCTMP) in regard to the future construction of Yiribana Industrial Estate at Mamre Road, Kemps Creek (the Site).

This PCTMP has been prepared in advance of the development approval and, as such, relevant conditions of consent have not yet been provided. Notwithstanding, as is standard practice, the final CTMP shall demonstrate the proposed management of the impact in relation to construction traffic addressing the following:

- Assessment of cumulative impacts associated with other construction activities (if any).
- Assessment of road safety at key intersections and locations to be subject to heavy vehicle construction traffic movements and high pedestrian activity,
- Details of construction program and detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process,
- Anticipated peak hour and daily construction vehicle movements to and from the Site, • On-site car parking and access arrangements of construction vehicles, construction workers to and from the Site, emergency vehicles and service vehicles; and
- Details of temporary cycling and pedestrian access during construction.

Having regard for the above, the purpose of this report is to establish the broad traffic principles for construction that would minimise traffic impacts on the surrounding road network, ensure safety and efficiency for workers, pedestrians and road users, and provide information regarding construction vehicle access routes and any changed road conditions (if applicable).

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

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

1.2 Proposed Development and Staging

The proposed development relates to the construction of an industrial estate with associated hardstand and parking. The following summarises key aspects of the Stage 1 development:

- A total building area of 59,605 m² across 2 development lots, comprising:
 - A total of 52,720 m² warehouse GFA, 150 m² of dock office GFA, and 2,285m² of ancillary office GFA.

- Internal road layouts and road connection to Mamre Road.
- A 10m reservation for the development of a future potential freight network traversing the east of the Site. It is anticipated that this would be developed by others; and
- Provision for 244 car parking spaces.

The proposed Stage 1 (prepared by SBA Architects) is shown in **Figure 1**.

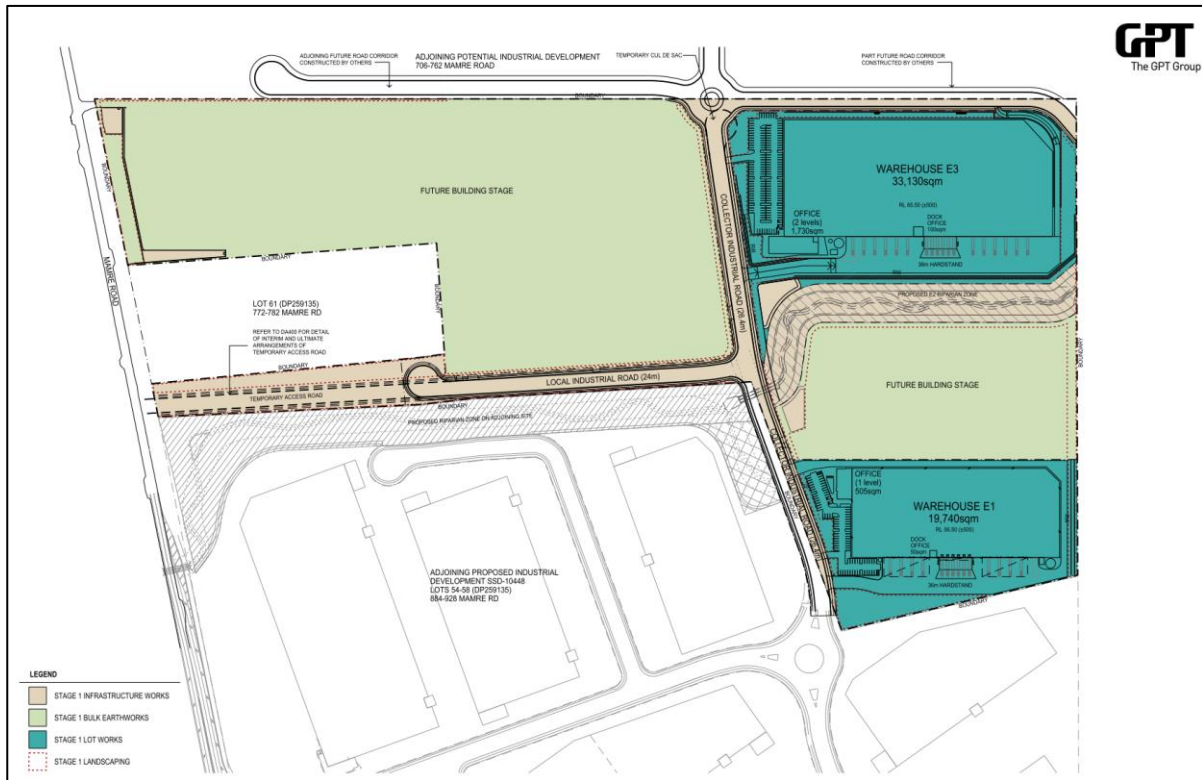


Figure 1: Proposed Stage 1

2 The Site

2.1 Site Location

The site is a part of a master plan which is comprised of 2 separate allotments and is legally described as Lots 59 and 60 in DP259135. The Site is located approximately 8km north-west of the future Western Sydney International (Nancy-Bird Walton) Airport (WSA), 12km south-east of the Penrith CBD and 40km west of the Sydney CBD. The Site in its sub-regional context is shown in **Figure 2** as well as the broader Mamre Road Precinct in which the site lies.

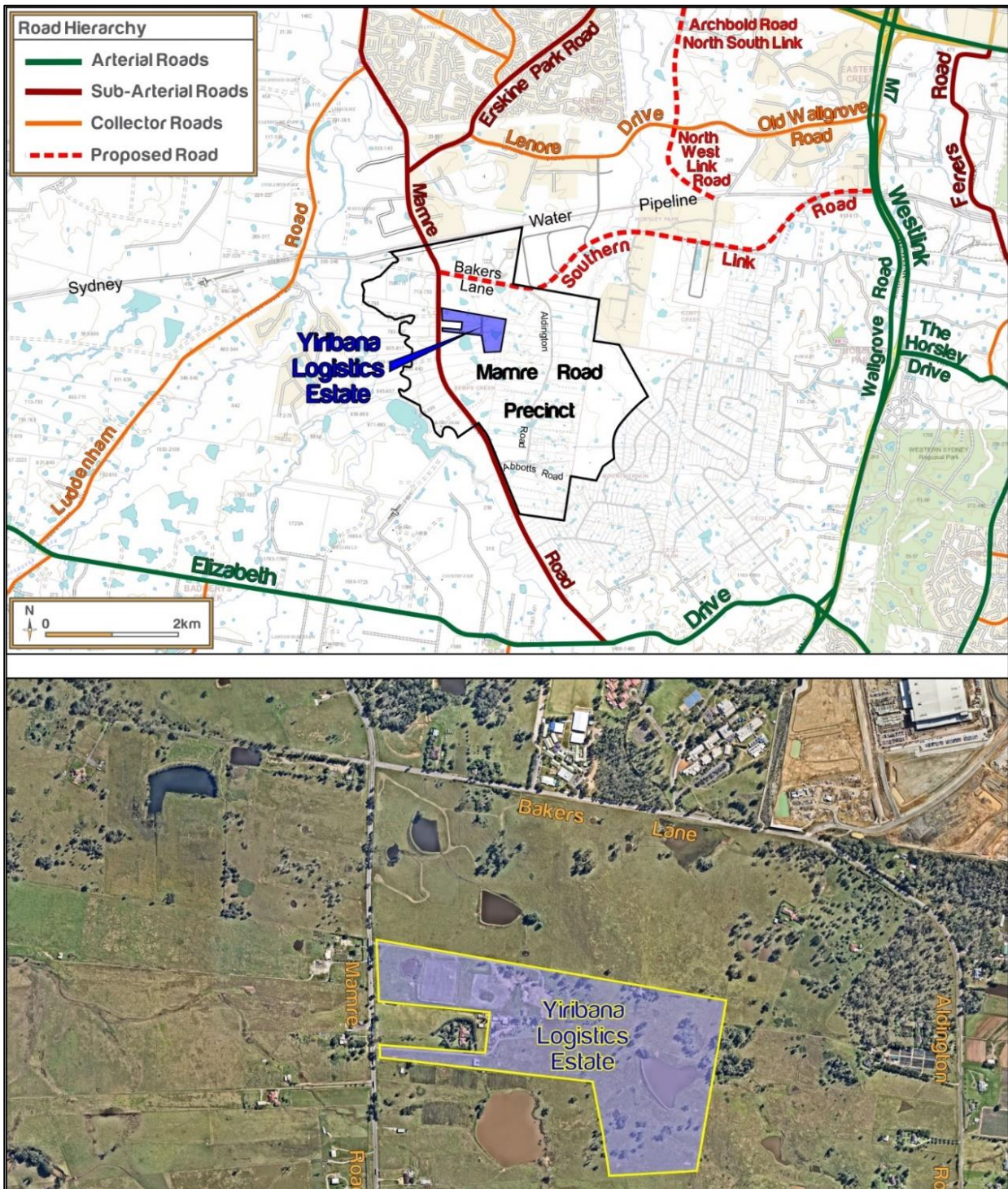


Figure 2: Site Location

2.2 Road Network

Key roads in the vicinity of the Site are shown in Figure 2, and include:

- **Westlink M7 Motorway:** M7 Motorway is a high-capacity road link of state significance and was built to accommodate future traffic growth in the Western Sydney region. It provides a key north-south link between the M2 Motorway to the north and the M5 Motorway to the south as part of the Sydney orbital road network. A major interchange between the M7 Motorway and M4 Western Motorway is located approximately 3.5 km north of the Site, which connects the Sydney CBD and western Sydney suburbs. The M7 Motorway provides 4 lanes (2 lanes per direction, divided carriageway) and has a posted speed limit of 100 km/h
- **(Future) M12 Motorway:** A proposed 16km motorway generally running in an east-west between the existing M7 motorway and the Northern Road. It is expected to run in parallel with Elizabeth Drive and is to have 2 lanes in each direction separated by a central median. Construction is expected to commence in 2020.
- **Wallgrove Road:** Wallgrove Road is an arterial road that runs in a north-south direction to the east of the Site and parallel (to the west of) the M7, functioning as a service road. The 2-lane, two-way road provides a link between the Great Western Highway to the north and Elizabeth Drive to the south. As with the M7, Wallgrove Road connects to the M4 motorway approximately 2.5 kilometres to the north of the Site.
- **Elizabeth Drive:** An TfNSW classified main road (MR 535) that runs in an east-west direction to the south of the site. Elizabeth Drive in the vicinity of the site generally provides 2 lanes (1 lane per direction) and has a posted speed limit of 80km/h. This road forms the Site's southern frontage and provides a vital link between Westlink M7 Motorway and The Northern Road.
- **The Northern Road:** The Northern Road is TfNSW classified main road (MR 154) that runs in a north-south direction to the west of the site. The Northern Road section near the vicinity of the site generally provides 3 lanes (1 to 2 lanes per direction) and has a posted speed limit of 80km/h. Currently, The Northern Road is undergoing multiple stages of road upgrades by RMS, including a realignment of the road in the south. The road upgrades between The Old Northern Road, Narellan and Peter Brock Drive, Oran Park, has been completed.
- **Mamre Road:** Mamre Road is an arterial road servicing traffic between the Great Western Highway and M4 to the north and Elizabeth Drive to the south. In the vicinity of the Site, Mamre Road generally provides 2 lanes for two-way traffic, with additional through movement and turning infrastructure at key intersections to the north through the Erskine Park and Mamre West industrial precincts, and at Elizabeth Drive to the south. Mamre Road has a posted speed limit of 80km/h in the vicinity of the Site. TfNSW has confirmed road upgrades will be undertaken for Mamre Road between Elizabeth Drive and Luddenham Road.

Further to the above, it is clear that the site is well located in regard to immediate access to the local and sub-regional road network, as shown in **Figure 3** with specific reference to the current TfNSW Restricted Access Vehicle (RAC) routes, which allow for up to 25m/26m B-Double combinations.



Figure 3: TfNSW Approved 25/26m B-Double Routes

3 Overview of Construction Works

3.1 Staging and Duration of Works

Recognising the preliminary nature of this PCTMP (in advance of a development Consent), the construction strategy and staging has not yet been finalised. However, preliminary advice from a Contractor has been used to inform the potential staging of the development. Based on this, it is anticipated that construction works for the preliminary stages would commence in August 2022 and be completed over a duration between 1-2 years, subject to authority approvals and inclement weather delays.

The following summarises key aspects of the construction phases:

- Phase 1: Early works are set to have a duration for 8-12 weeks.
- Phase 2: Earthwork activities would continue for 12 months.
- Phase 3: General Construction works are estimated to continue for 8 months (note that at this stage, the programme for the main construction works is uncertain. Main construction works will likely be subject to a future CTMP, independent of the earthworks).

3.2 Construction Hours

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

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

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

3.3 Site Access

3.3.1 Construction Vehicle Access

All construction vehicles will enter and depart the Site from / to Mamre Road. At this stage, a temporary Access Road is intended be used to access the Site during construction. Should neighbouring developments be completed prior to construction of the Site, the strategy will be reviewed.

It is anticipated that the largest vehicle accessing the Site would be a 19.6m Truck & Dog combination, which the temporary access driveway will be designed for.

The following **Figure 4** shows the indicative Site access location and **Figure 5** details the likely key access strategy into the routes between the Site and the regional road network.

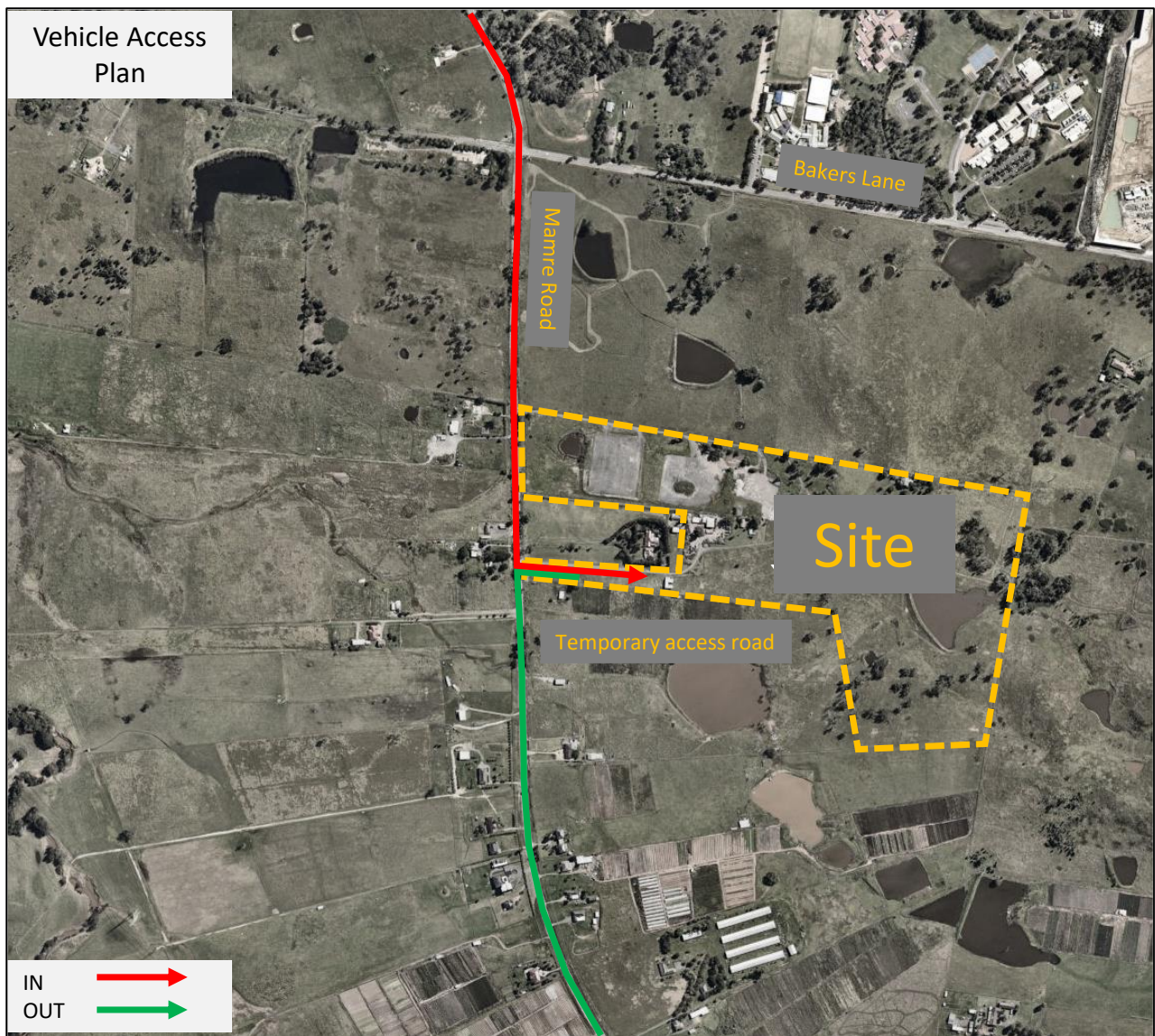


Figure 4: Indicative Vehicle Access Plan

3.3.2 Emergency Vehicle Access

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

3.3.3 Pedestrian Access

There are currently no pedestrian amenities or footpaths along Mamre Road adjacent to the Site. However, the grassed verge on both sides of the road remains usable for any pedestrian that may wish to walk along Mamre Road.

Further to the above, while there is no expectation of pedestrians crossing the future construction access road, pedestrian safety will be managed through the provision of appropriate signage and pedestrian

barriers. Construction personnel will also be able to access the Site by foot via a secure access gate along the temporary access road, though with all construction staff (and vehicle) parking to be provided within the Site there is again little potential for such pedestrian demand

3.4 Construction Vehicle Access Routes

As discussed, all construction vehicles will enter and exit the Site via Mamre Road. It is anticipated that all heavy vehicles will access Site via the following routes:

- Arrival Trips:
 - Route 1: From M4 Western Motorway, southbound along Mamre Road and left into the Site.
 - Route 2: From Westlink M7, westbound on Old Wallgrove Road, Lenore Drive and Erskine Park Road, then south along Mamre Road and left into the Site.
- Departure Trips:
 - Route 1: From the Site, left onto Mamre Road then to Elizabeth Drive and left to the M7 Motorway and sub-regional routes to the east.
 - Route 2: From the Site, onto Mamre Road then to Elizabeth Drive and right to Badgerys Creek and The Northern Road to the west.

These routes are shown in **Figure 5**.

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

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

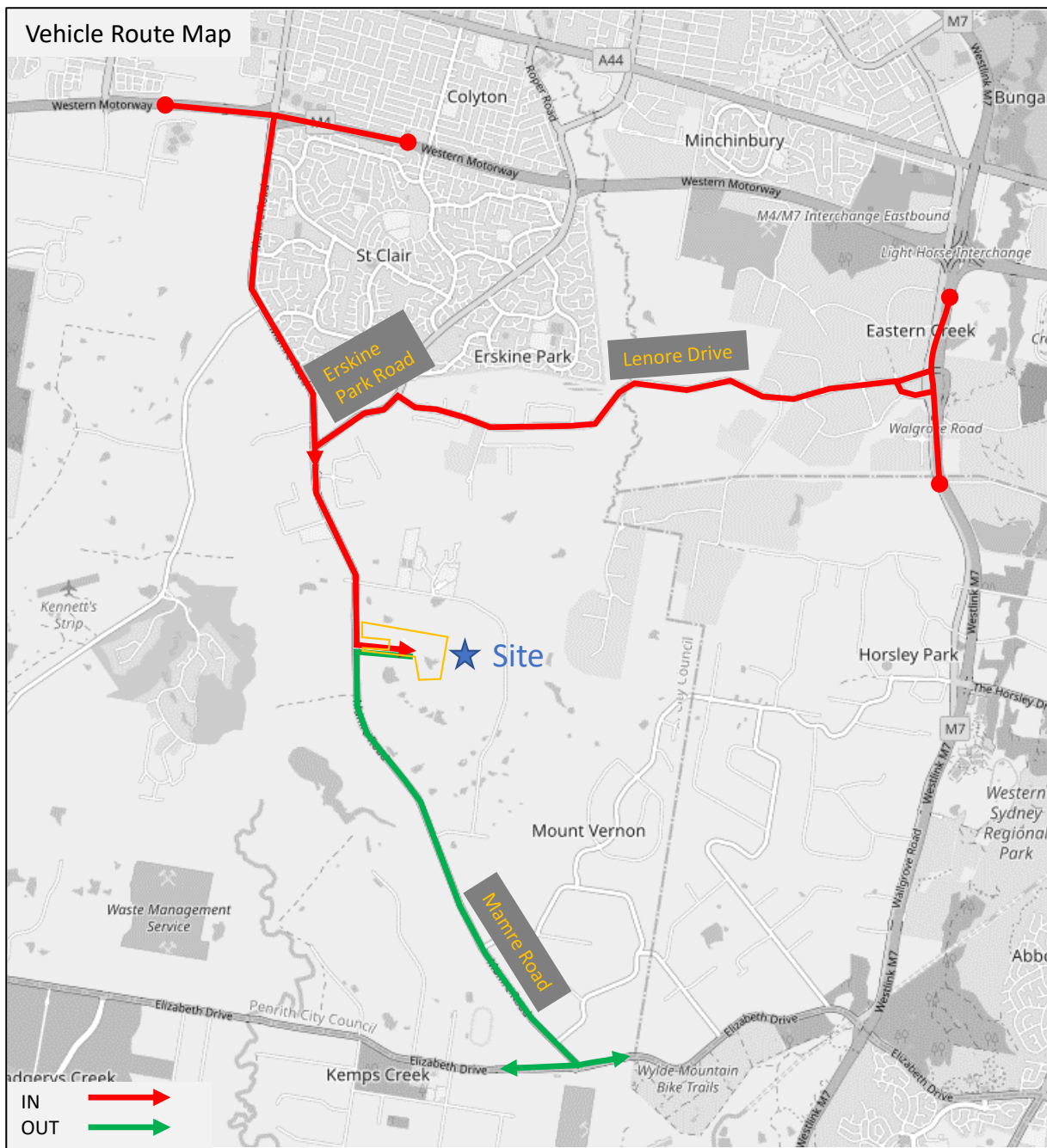


Figure 5: Construction Vehicle Routes

3.5 Fencing Requirements

Security fencing will be erected along the entire boundary of the Site and will be maintained for the duration of the construction works to ensure that unauthorised persons are kept out of the Site. The fencing will either be ATF or 2.4m chain wires.

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

3.6 Materials Handling

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

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

3.7 Additional Site Management

Although it is not expected, in the event that any Site construction traffic management outside of that described in the implemented CTMP is required, the Project Manager will be required to notify adjacent properties of any temporary traffic restrictions (or the like) at least fourteen (14) days in advance.

3.8 CTMP – Monitoring & Review Process

This CTMP has been prepared referencing the existing Site conditions. Consultation with Council, TfNSW and neighbouring developments will continue to be undertaken to ensure that the cumulative traffic impacts of construction within the area do not adversely impact the operations of the neighbouring developments or the local road network

4 Assessment of Traffic & Transport Impacts

4.1 Construction Vehicle Traffic Generation

4.1.1 Staging

Preliminary construction staging has been provided to inform this PCTMP, as per **Table 1**.

TABLE 1: STAGING OVERVIEW

Stage	Site Mobilisation and Early Works	Civil Works	Import	Finishing and Demobilisation
Timeframe	2 months	7 months	3 months	1 month
Workers On-site Numbers	60	75	75	60
Maximum Truck movements / day	500	600	560	410

It is expected that delivery of the temporary access driveway (as shown by Figure 1) would be subject to a dedicated CTMP, with construction anticipated to commence by September 2022 and take 2 months to complete.

4.1.2 Light Vehicle Movements

It is anticipated that a peak construction workforce of up to 75 workers will be on-site at any one time (based on the specific construction tasks being undertaken). Light vehicle traffic generation in the peak hours would generally be associated with construction staff movements to and from the Site, including Project Managers, trade and general employees.

Based on information provided; taking account of the staff arrival and departure patterns as well as any overlap in the stages of construction, it is anticipated that the peak construction period could generate some:

- 60 light vehicle movements per hour in the AM peak; and
- 55 light vehicle movements per hour in the PM peak.

4.1.3 Heavy Vehicle Movements

As indicated in Table 1 the construction works are estimated to generate a peak demand for up to 600 truck movements per day (300 vehicles arriving / 300 vehicles departing). A peak hour truck generation of up to 60 movements (30 vehicles arriving / 30 vehicles departing) has been assigned; on average, it is expected there would be approximately 45 truck movements per hour.

4.1.4 Total Peak Traffic Generation

The peak period for construction traffic will be during the civil works, which are expected to commence in December 2022. **Table 2** details the cumulative traffic associated with the peak stage and compares it to the total traffic generation assessed within the traffic report supporting the development (Ason Group reference: 1427r03).

TABLE 2: SITE PEAK CONTRUCTION TRAFFIC VS DEVELOPMENT TRAFFIC

Vehicle	Construction			Operational			Difference		
	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Light	60	55	410	258	269	3,265	-198	-214	-2,855
Heavy	30	60	560	96	100	1,208	-66	-40	-608
Total	90	115	1,010	354	369	4,473	-264	-254	-3,463

As shown the traffic associated with construction is significantly lower than that assessed for the operational development. Noting that the temporary intersection will be delivered by this stage, it is evident that it will operate satisfactorily during the peak construction phase.

4.2 Cumulative Traffic Generation Assessment

4.2.1 Sites

There are a number of planned developments in the area therefore, the cumulative traffic generation assessment should be updated as part of the final CTMP. It is anticipated that this could be included as a Condition of Consent.

With regards to the Site, the currently proposed key sites related to the following developments along Mamre Road:

- Site 1: 657-769 Mamre Road, to the north west of the Site (SSD-9522¹), which is currently subject to ongoing construction activities relating to the approved development;
- Site 2: 788-882 Mamre Road, directly to the south of the Site (SSD-10448²), which has recently received development consent for an industrial development, inclusive of a Stage 1 with 2 warehouse buildings (construction activities are expected to commence shortly, subject to relevant approvals);
- Site 3: 884-928 Mamre Road, to the south of the Site (SSD-17647189³), which is currently under assessment by the Department of Planning and Environment (DPE).

It is recognised that there are other developments within the MRP, which are at various stages of planning. notably, there are a number of developments proposed along Aldington Road which are in the advanced stages of the assessment process. However, there are a number of issues to be resolved in regard to the

¹ <https://www.planningportal.nsw.gov.au/major-projects/projects/kemps-creek-warehouse-logistics-and-industrial-facilities-hub>

² <https://www.planningportal.nsw.gov.au/major-projects/projects/aspect-industrial-estate>

³ <https://www.planningportal.nsw.gov.au/major-projects/projects/access-logistics-park>

required intersection upgrades and, as such, the sites along Aldington Road are outside the scope for consideration within the PCTMP. This was discussed with DPE during a meeting held on 11 May 2022.

4.2.2 Staging

Table 3 summarises the relevant time for each construction activities on each site.

TABLE 3: CONSTRUCTION TIMEFRAMES

Site	Estimated Commencement	Estimated Completion	Time
Subject Site (Yiribana Estate)	August 2022	July 2023	11 Months
1	March 2021	May 2023	26 Months
2	August 2022	May 2023	9 Months
3	August 2022	August 2023	12 Months

In terms of the intersection works required to be delivered, **Figure 6** identifies the key intersection works to be delivered during construction.

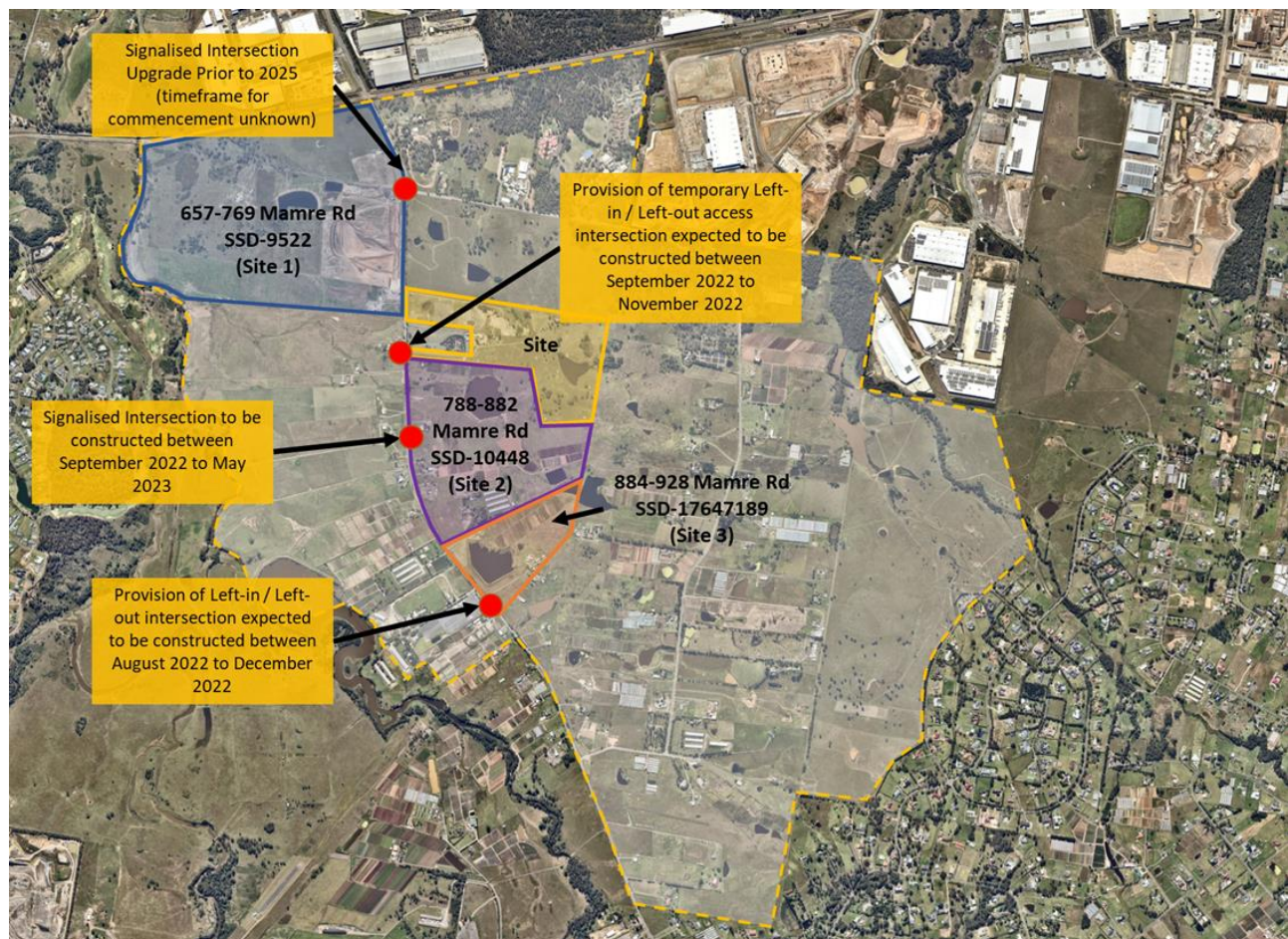


Figure 6: Intersection Works

4.2.3 Site 1 Cumulative Impact

In regard to Site 1, the current construction access is currently in the form of a left-in / left-out to the west of Mamre Road. Noting that the Site, and Sites 2 and 3 are all on the eastern side of Mamre Road, there would be limited cumulative impact from Site 1.

The approval for Site 1 (SSD-9522) requires the upgrade of the Mamre Road / Bakers Lane intersection to signals prior to 2025. Once complete, construction access will be gained via the signalised intersection.

It is understood that the relevant Works Authorisation Deed process is still ongoing; therefore the timeframe for delivery of the intersection is not clear. At the time that the relevant CTMP is prepared for the intersection works, it is envisaged that the construction traffic associated with the Site would be considered, as required.

4.2.4 Sites 2 and 3 Cumulative Impact

The critical sites for consideration are 2 and 3, which neighbour the Site.

For Site 2, the CTMPs for the Stage 1 roadworks is currently being developed for implementation, inclusive of the approved signalised access intersection on Mamre Road. Therefore, Ason Group understands the current construction staging and associated traffic generation. Note that the main construction works for the first 2 warehouses will be subject to future CTMPs, where the cumulative assessment will need to be reviewed to consider the most up to date conditions.

For Site 3, the initial construction stage will relate to the earthworks and roadworks, with main construction for each of the warehouses to be considered in separated CTMPs, as required.

Preliminary construction traffic generation numbers and staging have been provided by the developer of Site 3 for consideration in this assessment.

It has been assumed that construction activities on all 3 sites would commence in August 2022, and would continue until August 2023. The construction traffic forecasts provided have been overlaid to establish the peak *cumulative* construction period, with the peak flows provided in **Table 4**. The peak period for construction is anticipated to be during November 2022, which is expected to be in advance of other construction activities commencing.

TABLE 4: PEAK CUMULATIVE TRAFFIC MOVEMENTS

Site	AM	PM	Daily
Site (Yiribana Estate)	90	115	1,010
Site 2	28	108	556
Site 3	33	33	313
Total	151	256	1,879

With respect to each of the sites, Ason Group has undertaken the assessments to support the proposed / approved developments, each of which include a Stage 1 development. **Table 5** summarises the traffic

generation associated with each of the relevant assessments (Ason Group references: P1029r04⁴ and P1509r03).

TABLE 5: SSD DEVELOPMENT TRAFFIC

Site	Stage	AM	PM	Daily
Site (Yiribana Estate)	Stage 1	127	132	1,604
	Masterplan	354	369	4,473
Site 2	Stage 1	138	144	1,696
	Masterplan	577	602	7,310
Site 3	Stage 1	90	94	1,140
	Masterplan	202	211	2,555
Total	Stage 1	355	370	4,440
	Masterplan	1,133	1,182	14,338

Table 6 provides a comparison of both the total traffic generation forecast for the Stage 1 and masterplan associated with the 3 sites, and compares it against the total forecast construction traffic.

TABLE 6: DEVELOPMENT TRAFFIC VS CONSTRUCTION TRAFFIC

Stage	Period	Operational Traffic	Construction Traffic	Difference
Stage 1	AM	355	151	-204
	PM	370	256	-114
	Daily	1,182	1,879	-2,561
Masterplan	AM	1,133	151	-982
	PM	1,182	256	-926
	Daily	14,338	1,879	-12,459

As shown, the construction traffic associated with the 3 sites is reduced when compared to the operational traffic associated with both the Stage 1 developments and relevant masterplan GFAs. As such, it is evident that outside the delivery of the intersection required to support the individual developments, no further works are required to accommodate construction traffic.

The above assessment will need to be updated to as part of the final CTMP to ensure that the information remains up to date and correct, as the construction programmes are finalised. It is noted the Conditions of Consent associated with the recently approved Site 2 (SSD-10448) requires the landowners within the MRP to coordinate construction activities to ensure suitable management of construction traffic. In this regard, Condition C34 states:

Within three months of the commencement of construction of the Stage 1 Development and until all components of the Stage 1 development are constructed and operational, the Applicant must establish and participate in a working group with relevant consent holders in the MRP, to the satisfaction of the Planning Secretary. The purpose of the working group is to consult and coordinate construction works within the MRP to assist with managing and mitigating potential cumulative environmental impacts.

⁴ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-10448%2120210309T041416.074%20GMT>

It is anticipated that the Conditions of Consent associated with Site would provide for a similar requirement.

4.3 Vehicle Management – Principles

In accordance with TfNSW requirements, all vehicles transporting loose materials would have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the Site.

Further to covering/securing the load to prevent deposits onto the roadway, a Shaker Grid is proposed and installed at the point of vehicle egress to minimise the risk of dirt tracking out onto Mamre Road. The responsibility of the driver to ensure that the Shaker Grid is driven over would be included as part of the Driver Code of conduct; this requirement, and indeed all driver requirements, will be detailed during an induction process for all drivers prior to commencing work at the Site, and will be further detailed in the Driver Code of Conduct, a copy of which included in Appendix A

4.4 Construction Staff Parking

All construction staff and contractors will be required to park wholly within the Site, noting that there will be significant area available (at all times) to meet the peak parking demand

5 Traffic Control

5.1 Traffic Guidance Schemes

Any Traffic Guidance Scheme (TGS's), associated risk assessment, consultation schedules, TGS verification checklist, and inspection checklists shall be prepared by an accredited person, in accordance with the TfNSW Traffic Control at Worksites Manual (Issue 6.0) and AS1742.3:2019.

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

With regard to the proposed temporary access road, a site-specific TGS (as shown in Appendix B) would be implemented for the duration of the works. A copy of all approved TGSs shall be kept on-site for reference at all times.

5.2 Authorised Traffic Controller

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

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

5.3 Road Occupancy

For any works that will impact the traffic flows on the external road network, a permit will need to be obtained from the relevant road authority (Council and / or TfNSW) by the Contractor.

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

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

5.4 Works Authorisation Deed

As well as the ROLs and TGSs that need to be approved and implemented, a Works Authorisation Deed (WAD) will also need to be agreed with TfNSW for the delivery of the signalised intersection. Part of the WAD will be to ensure that impacts to road users is minimised during construction and to ensure that works are completed in a safe and timely fashion.

Through the WAD process, TfNSW will provide GPT with the requirements and conditions under which the intersection can be delivered. It is another approvals process whereby cumulative impacts will be considered.

6 Monitoring and Communication Strategies

6.1 Development of Monitoring Program

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

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

6.2 Communications Strategy

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

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

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

7 Summary

This CTMP has been prepared to ensure appropriate traffic management is undertaken during the proposed industrial development. Ultimately, this CTMP report has been prepared with regard to the management principles outlined in the RMS Traffic Control at Worksites Manual (2018) and AS1742.3, and per the detailed strategies outlined in the CTMP is recommended for adoption at the Site.

In summary though – and further to a determination that the proposal's construction traffic will not impact the local road network - the following measures are recommended to minimise the potential traffic impacts associated with the proposal:

- Traffic control would be required to manage and regulate construction vehicle traffic movements to and from the Site during construction.
- All vehicles transporting loose materials will have the load covered and/or secured to prevent any items depositing onto the roadway during travel to and from the Site.
- All vehicles are to enter and depart the Site in a forward direction, with reverse movements to occur only within the Site boundary.
- All contractor parking is to be contained wholly within the Site, and.
- Pedestrian and cyclist traffic along the Site frontage will be managed appropriately at all times.

In summary, the CTMP report is proposed in accordance with the RMS TCAW.

Appendix A. Driver Code of Conduct

Driver Code of Conduct

Drivers Code of Conduct

Safe Driving Policy for construction of 884-928 Mamre Road, Kemps Creek.

Objectives of the Drivers Code of conduct

- To minimise the impact of earthworks and construction on the local and regional road network;
- Minimise conflict with other road users;
- Minimise road traffic noise; and
- Ensure truck drivers use specified routes.

Code of Conduct

All vehicle operators accessing the site must:

- Take reasonable care for his or her own personal health and safety.
- Not adversely, by way of actions or otherwise, impact on the health and safety of other persons.
- Notify their employer if they are not fit for duty prior to commencing their shift.
- Obey all applicable road rules and laws at all times.
- In the event an emergency vehicle behind your vehicle, pull over and allow the emergency vehicle to pass immediately.
- Obey the applicable driving hours in accordance with legislation and take all reasonable steps to manage their fatigue and not drive with high levels of drowsiness.
- Obey all on-site signposted speed limits and comply with directions of traffic control supervisors in relation to movements in and around temporary or fixed work areas.
- Ensure all loads are safely restrained, as necessary.
- Drive over cattle grids – located at the Site's access – to vibrate off any loose material attached to construction vehicles.
- Operate their vehicles in a safe and professional manner, with consideration for all other road users.
- Hold a current Australian State or Territory issued driver's licence.
- Notify their employer or operator immediately should the status or conditions of their driver's license change in any way.
- Comply with other applicable workplace policies, including a zero tolerance of driving while under the influence of alcohol and/or illicit drugs.
- Not use mobile phones when driving a vehicle or operating equipment. If the use of a mobile device is required, the driver shall pull over in a safe and legal location prior to the use of any mobile device.
- Advise management of any situations in which you know, or think may, present a threat to workplace health and safety.
- Drive according to prevailing conditions (such as during inclement weather) and reduce speed, if necessary.
- Have necessary identification documentation at hand and ready to present to security staff on entry and departure from the site, as necessary, to avoid unnecessary delays to other vehicles.

Crash or Incident Procedure

- Stop your vehicle as close to it as possible to the scene, making sure you are not hindering traffic. Ensure your own safety first, then help any injured people and seek assistance immediately if required.
- Ensure the following information is noted:
 - Details of the other vehicles and registration numbers
 - Names and addresses of the other vehicle drivers.
 - Names and addresses of witnesses.
 - Insurers details
- Give the following information to the involved parties:
 - Name, address and company details
- If the damaged vehicle is not occupied, provide a note with your contact details for the owner to contact the company.
- Ensure that the police are contacted should the following circumstances occur:
 - If there is a disagreement over the cause of the crash.
 - If there are injuries.
 - If you damage property other than your own.
- As soon as reasonably practical, report all details gathered to your manager.

Appendix B. Traffic Guidance Scheme

D.4.7

Static: Access to depot, stockpile, quarry, gravel pit etc. all roads (formerly TCP 195)

