

Transport Statement

Subdivision Development Application

270 Aldington Road, Kemps Creek

20/12/2023

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Appendix B. Traffic Signal Warrant Analysis

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
DPE	Department of Planning, 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)
MRP	Mamre Road Precinct
MRV	Medium Rigid Vehicle (as defined by AS2890.2:2018)
NHVR	National Heavy Vehicle Regulator
RSA	Road Safety Audit
RTA 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)
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 Stockland Pty Ltd to prepare a Transport Statement (TS) in relation to the proposed subdivision of the land at 270 Aldington Road, Kemps Creek (Site). The Site is located within the Penrith City Council (Council) Local Government Area.

The Site is within the Mamre Road Precinct (MRP), which was rezoned in June 2020 for primarily industrial uses. The Department of Planning and Environment (DPE) adopted a precinct-wide Development Control Plan on the 19 November 2021 (herein referred to as the MRP DCP). The Site is zoned as *IN1 Industrial*.

The Site location is shown below.

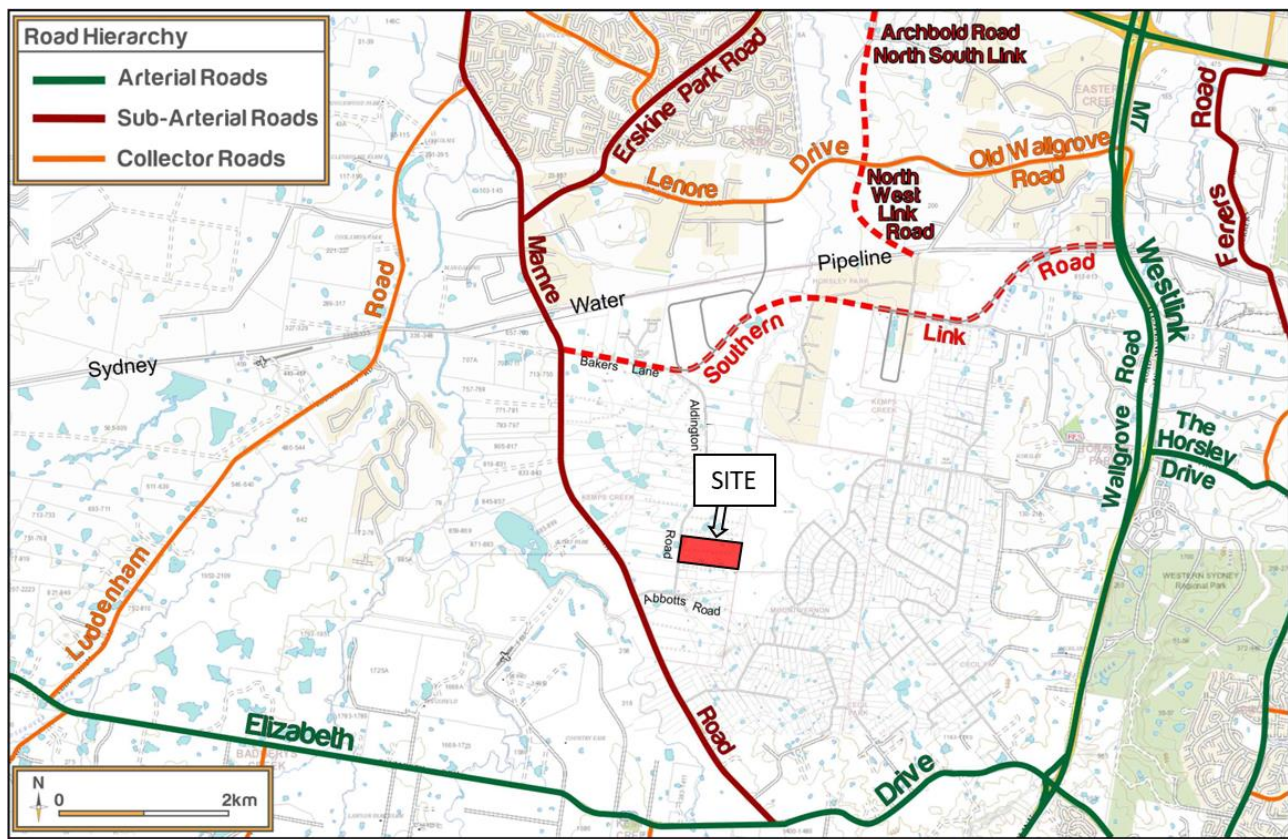


Figure 1: Site Location

1.2 The Proposal

1.2.1 Overview

A detailed description of the proposal is included in the Statement of Environmental Effects, prepared separately. In summary, the application relates to the subdivision of land to create 4 separate lots with the following areas:

TABLE 1: PROPOSED LOTS

Lot	Area (Ha)
1	2.30
2	1.66
3	4.91
4	10.05
Total	18.92

The Proposal also includes delivery of two internal roads (in compliance with the MRP DCP), with access via a signalised intersection with Aldington Road.

From the outset, it should be noted that this application relates to the subdivision of the land only and internal roads. Any future built-form shall be subject to separate Development Applications (DA) in due course.

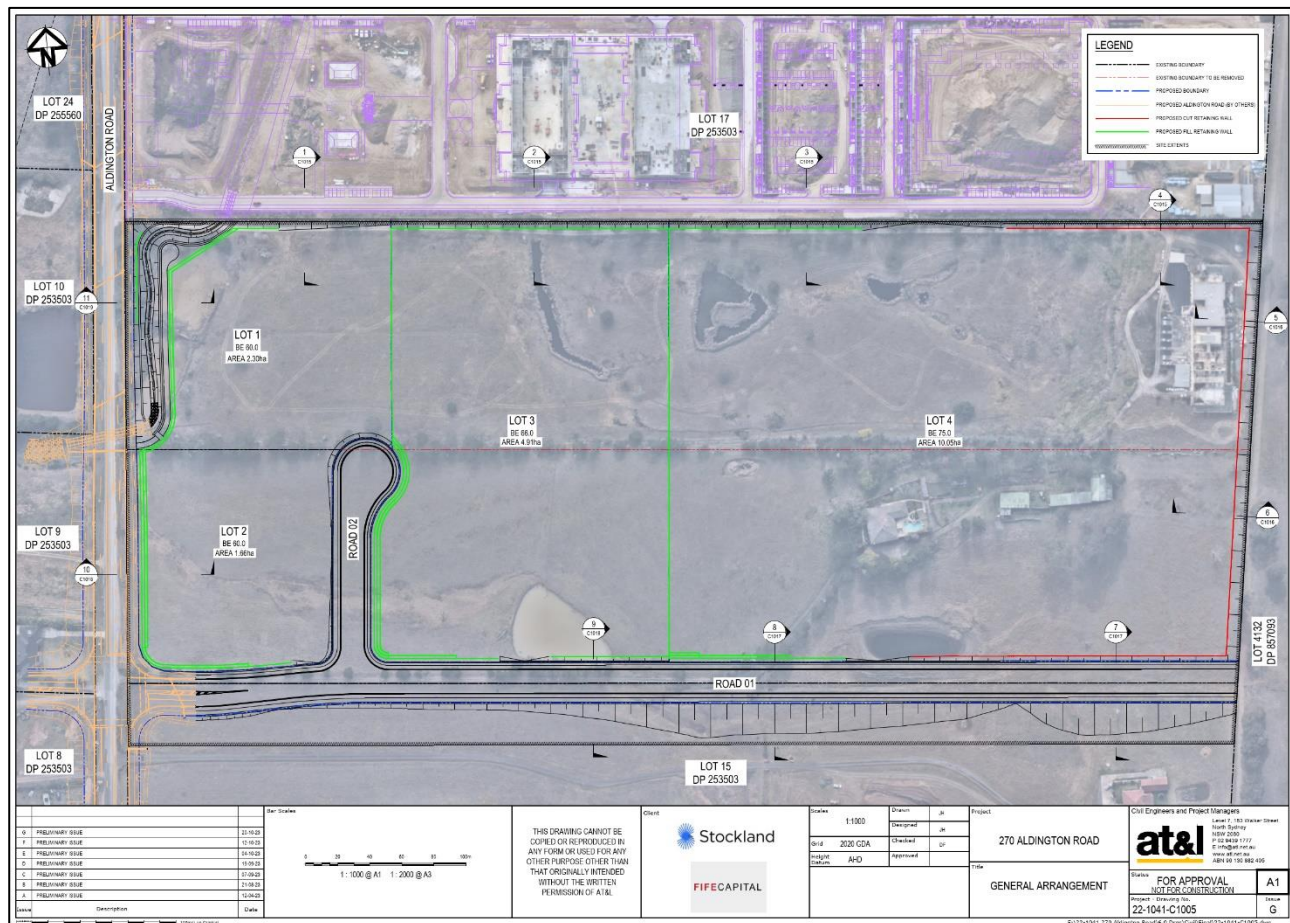


Figure 2: Proposed Subdivision Plan

1.2.2 Proposed Access Arrangements

As shown by Figure 2, access into the Site will be by way of a signalised intersection with Aldington Road, as identified by the MRP DCP. It is proposed to deliver the full width of the east-west road, as well as the whole intersection. The proposed design, prepared by AT&L, is reproduced below.

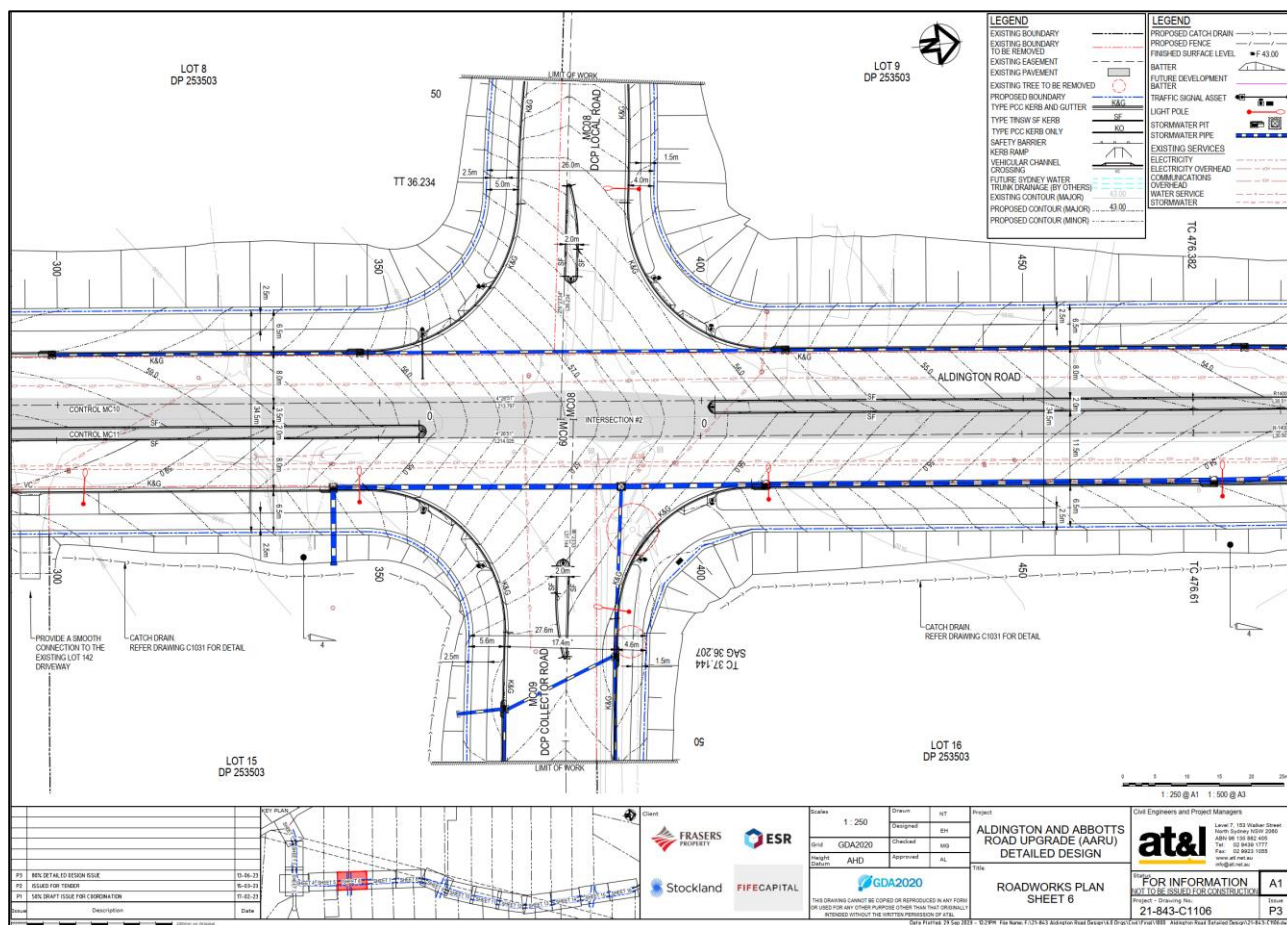


Figure 3: Proposed Aldington Road / Site Access Road Intersection

The Proponent is working with the landowners of the following properties to secure landowners' consent:

- Lot 15 DP253503, 272-280 Aldington Road Kemps Creek, to the south of the Site
- Lot 8 DP253503, 269 Aldington Road Kemps Creek, to the southwest of the Site; and
- Lot 9 DP253503, 253-267 Aldington Road Kemps Creek, to the west of the Site.

It is noted that is planning underway for a development on the Site at 253-267 Aldington Road Kemps Creek for a development know as Westgate Industrial Estate¹ (Westgate). The development traffic associated with this site has been considered in the modelling assessment.

The intersection is planned to be delivered as part of a wider project to upgrade Aldington Road by a group of landowners who have significant landholdings on Aldington Road, which is currently subject to planning.

¹ <https://www.planningportal.nsw.gov.au/major-projects/projects/westgate-kemps-creek>

Notably, 2 of the developments have recently been provided consent on the basis of these proposed road upgrades. Referred to as the Land Owners Group East (LOG-E) the sites include:

- ESR Australia, developing the Westlink Industrial Estate at 59-63 Abbots Road & 290-308 Aldington Road, Kemps Creek. Stage 1 has received development consent (SSD-9138102²);
- Fife Kemps Creek, developing the 200 Aldington Road Estate. The Concept Masterplan and Stage development has received development consent (SSD- 10479³).
- Fraser Property Industrial, developing 2 land holdings known as Edge North (99-111 Aldington Road) and Edge South (155-217 Aldington Road).

The 200 Aldington Road Estate is also being developed by the Proponent. Therefore, the intent is to deliver the signalised intersection into the Site, alongside the wider Aldington Road upgrades.

1.3 Mamre Road Precinct Road Network Requirements

1.3.1 Strategic Road Network Requirements

Underlying traffic modelling to identify the required road network layout to facilitate the development of the MRP (see **Section 3**), was finalised in late 2021. Results of that modelling has underpinned the road network detailed within the MRP DCP and considered the traffic growth associated within the wider Western Sydney area.

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

With regard to 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 were 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.

1.3.2 Interim Intersection Requirements

While the MRP DCP identifies the ultimate road network (by 2036), no staging strategy was identified which allows for the initial stages of development in the interim period prior to delivery of the ultimate road network.

² <https://www.planningportal.nsw.gov.au/major-projects/projects/westlink-industrial-estate-stage-1>

³ <https://www.planningportal.nsw.gov.au/major-projects/projects/200-aldington-road-industrial-estate>

Therefore, LOG-E worked together to identify the relevant upgrades to the Abbotts Road and Aldington Road corridor to facilitate development of their site(s) by 2026.

Ason Group worked on behalf of LOG-E to deliver the modelling assessment of the interim road network, which was agreed with TfNSW. In regard to the LOG-E modelling assessment, the following document provide the key reference point:

- Ason Group, *P1815 – Mamre Road Precinct – LOG East – Revised Modelling*, P1815m03_v4 MRP_LOG East 2026 Revised Modelling, 19 September 2022 (LOG-E Modelling Memo).

The road upgrades proposed by LOG-E have formed the basis for approval of the Westlink Industrial Estate as well as the 200 Aldington Road Estate. They will be delivered through a joint Voluntary Planning Agreement (VPA) between LOG-E and Council for Aldington Road and Abbotts Road and DPE for the Mamre Road / Abbotts Road intersection.

2 Existing Conditions

2.1 Site Context

The Site is located within the MRP and is currently zoned *IN1 – General Industrial*. The existing Site is shown by **Figure 5**.

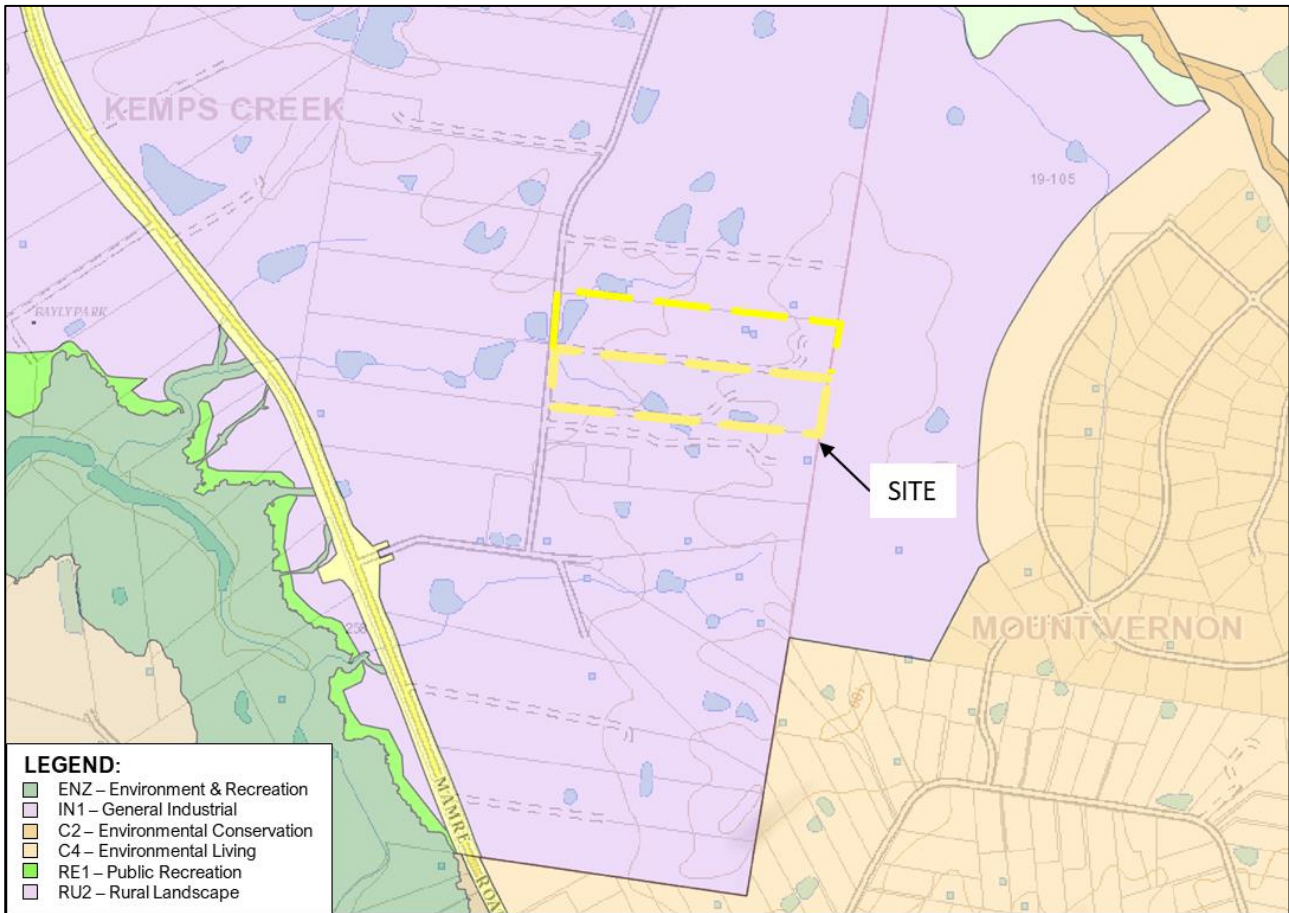


Figure 4: Site Context & Land Zoning

As noted in Section 1.2.2, the full width of east-west road is proposed to be delivered. Therefore, the relevant part of the neighbouring site has also been considered. On this basis, the existing Site is comprised of the following:

TABLE 2: SITE DESCRIPTION

Address	Title	Area (Ha)
244-256 Aldington Road	Lot 17 DP253503	10.2
258-270 Aldington Road	Lot 16 / DP253503	10.2
Part of 272-280 Aldington Road	Lot 15 / DP253503	2.6
Total	-	23.0

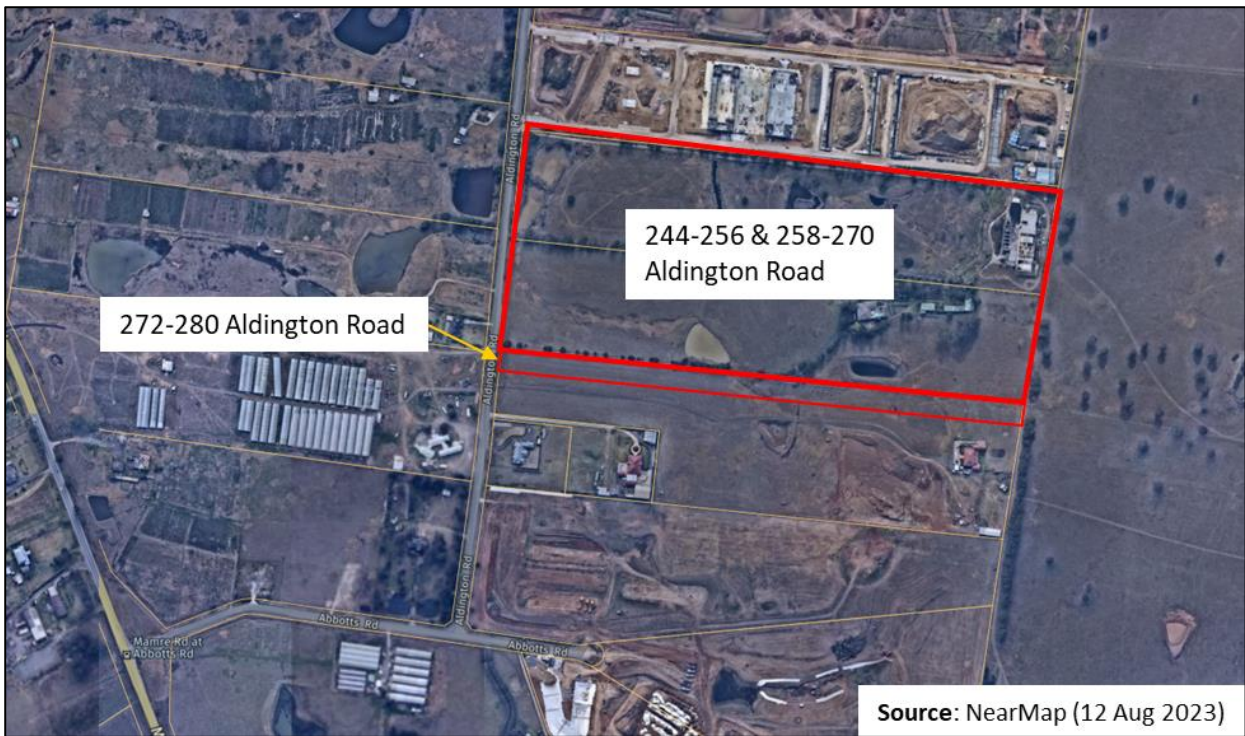


Figure 5: Site Overview

2.2 Existing Site Access

The existing site access driveways are located on Aldington Road. The existing site access driveways to 244-256 Aldington Road are shown below, with the driveway for 258-270 Aldington Road shown in **Figure 8**.



Figure 6: Existing northern Site Access, 244-256 Aldington Road (Source: Google Earth)



Figure 7: Existing southern Site Access, 244-256 Aldington Road (Source: Google Earth)



Figure 8: Existing Site Access, 258-270 Aldington Road (Source: Google Earth)

2.3 Road Hierarchy

The existing road network providing access to the Site is shown in **Figure 9** and detailed further below:

TABLE 3: KEY ROAD NETWORK

Road	Description	Typical Road Characteristics
Mamre Road	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 has a posted speed limit of 80km/h.	
Aldington Road	A local access that runs north-south (to the east of Mamre Road) and currently provides access for a number of rural residential properties. It connects with Bakers Lane to the north and Abbots Road to the south. It provides 1 traffic lane in each direction and has a posted speed limit of 80km/h.	
Abbots Road	A local access road that runs east-west connecting to Mamre Road (to the east of Mamre Road) and currently provides access for a number of rural residential properties. Abbots Road provides 1 traffic lane in each direction and has a posted speed limit of 60km/h.	

2.4 Public & Active Transport

2.4.1 Public Transport

The Site is not currently well serviced by public and active transport. However, there will be opportunity to improve services as the MRP develops more broadly. For example, the proposed upgrade to Abbots Road and Aldington Road includes a provision for bus services in the future. Note that provision of the bus services will be subject to the relevant funding.

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

The alignment of the Metro is shown by **Figure 9**. The Metro will 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.

2.4.2 Bicycle Network & Pedestrian Connectivity

At present, shared paths (pedestrian and cycle) are provided along Erskine Park Road and sections of Mamre Road to the north of the Site, but there is little cycling (or pedestrian) infrastructure within the MRP. This is due to the current largely undeveloped nature of the land immediately surrounding the Site.

It is noted however, that the MRP road network will provide shared paths through the future road network. The MRP 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.

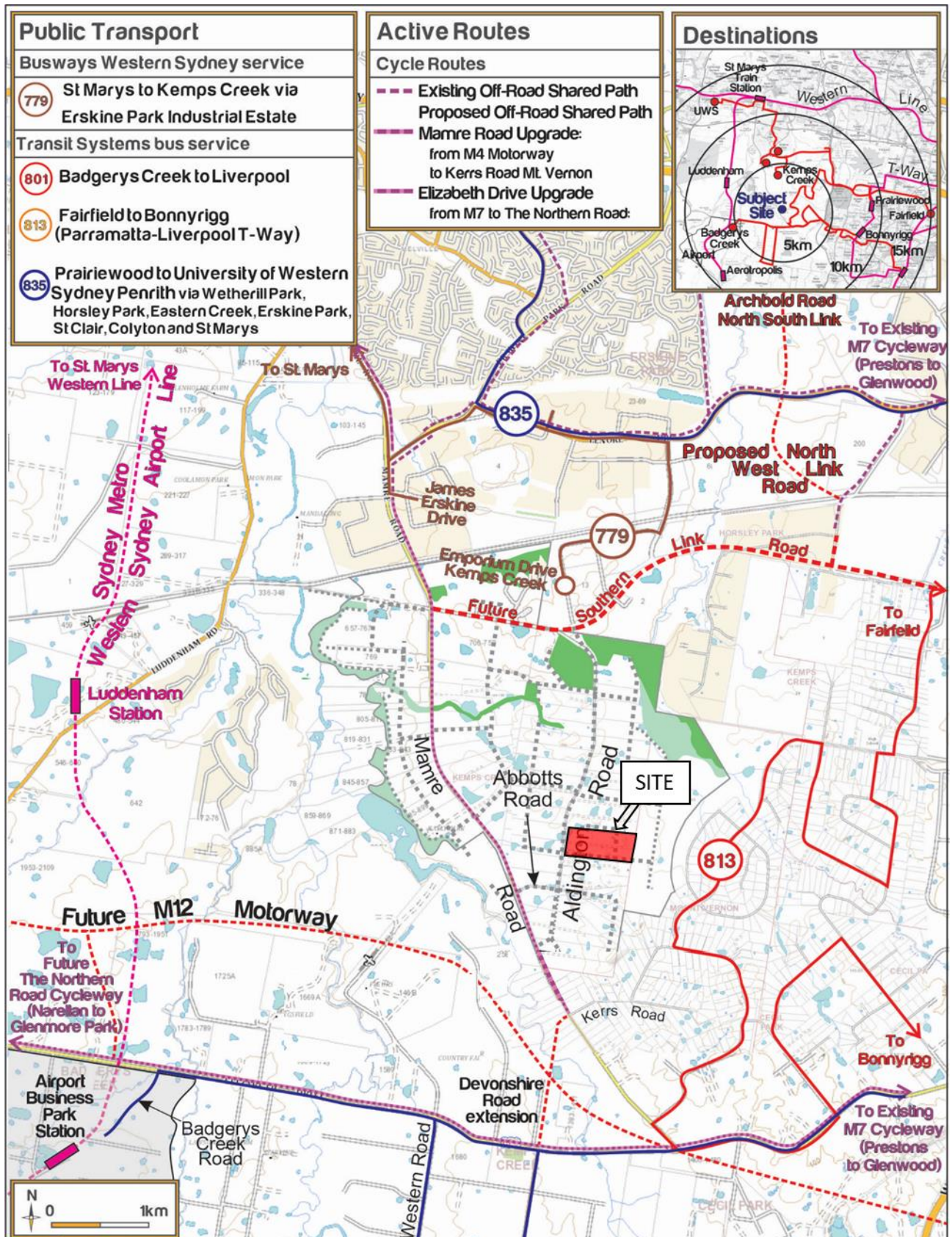


Figure 9: Public & Active Transport Network

3 Strategic Context

3.1 Strategic Policies

The Mamre Road Precinct Structure Plan is shown in **Figure 10** with key infrastructure summarised as follows:

- **Mamre Road:** Mamre Road provides the central north-west access corridor to/through the MRP.
- **Southern Link Road:** The SLR is a proposed east-west link from Wallgrove Road to Mamre Road, connecting the MRP to the existing Western Sydney Employment Area (WSEA) lands.
- **Future Internal Roads:** The internal network for the MRP is detailed within the MRP DCP.

The design of the Proposal provides for integration with the future internal MRP road network by delivery of the east-west road along the Site's southern boundary.

- **Active & Public Transport:** As already discussed, there is very little active transport infrastructure within the MRP at this time. However, the proposed road upgrades, as well as the future internal MRP road network, would facilitate bus services as they are delivered.
- **Intermodal:** The Site does not interact with the proposed intermodal. However, any future built form will be delivered in line with the MRP DCP, which safeguards for changes in transport following the completion of the intermodal.

3.2 Mamre Road Upgrade

Mamre Road is currently subject to planned upgrades between the M4 and Kerrs Road. The NSW Government has committed \$248 million in funding to Stage 1 (between the M4 and Erskine Park Road). The Stage 2 upgrade (from Erskine Park Road to Kerrs Road) has funding allocated to the strategic design review.

Mamre Road 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 Mamre Road Upgrade is shown in **Figure 11**.

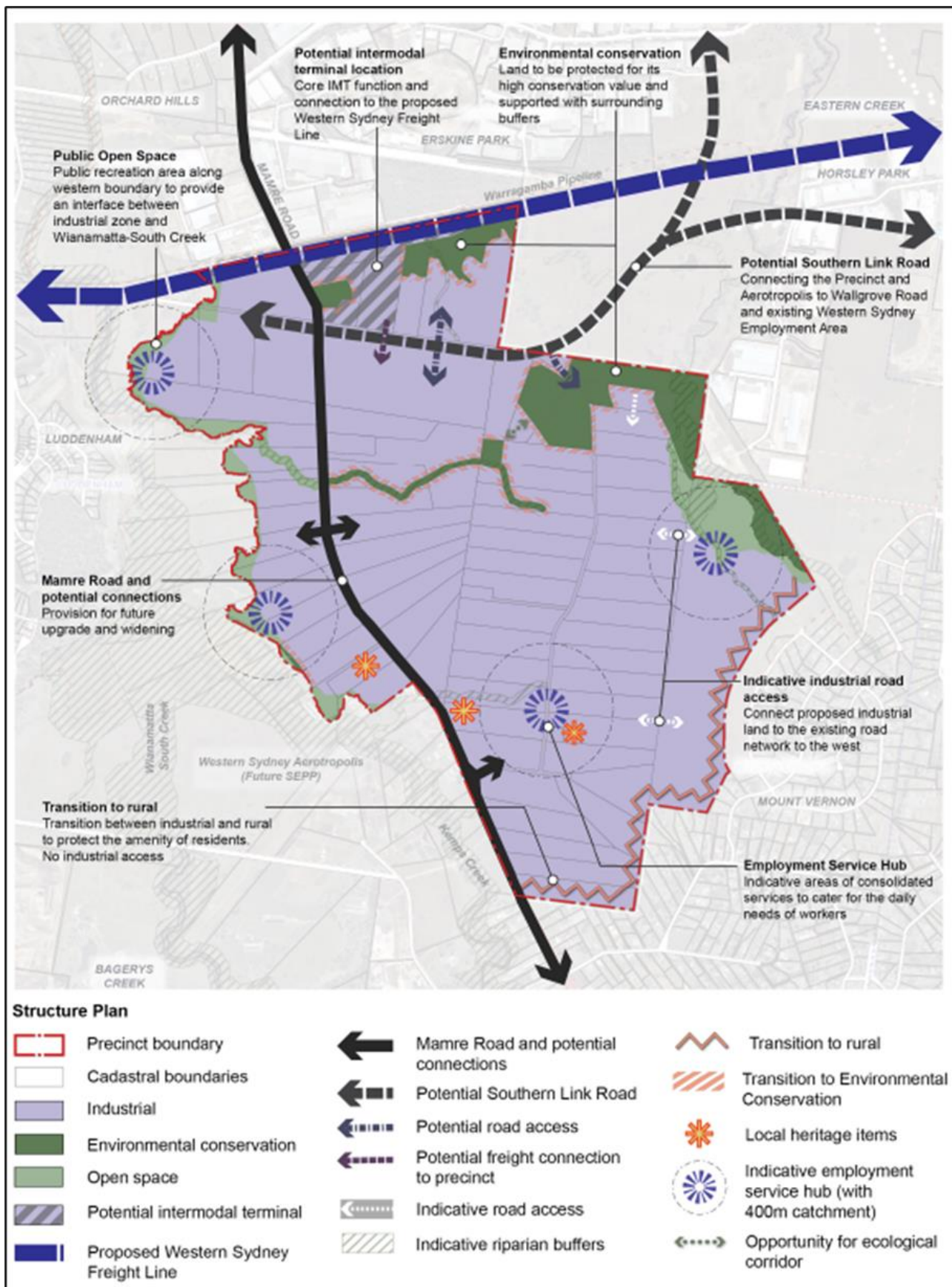


Figure 10: Mamre Road Precinct Structure Plan

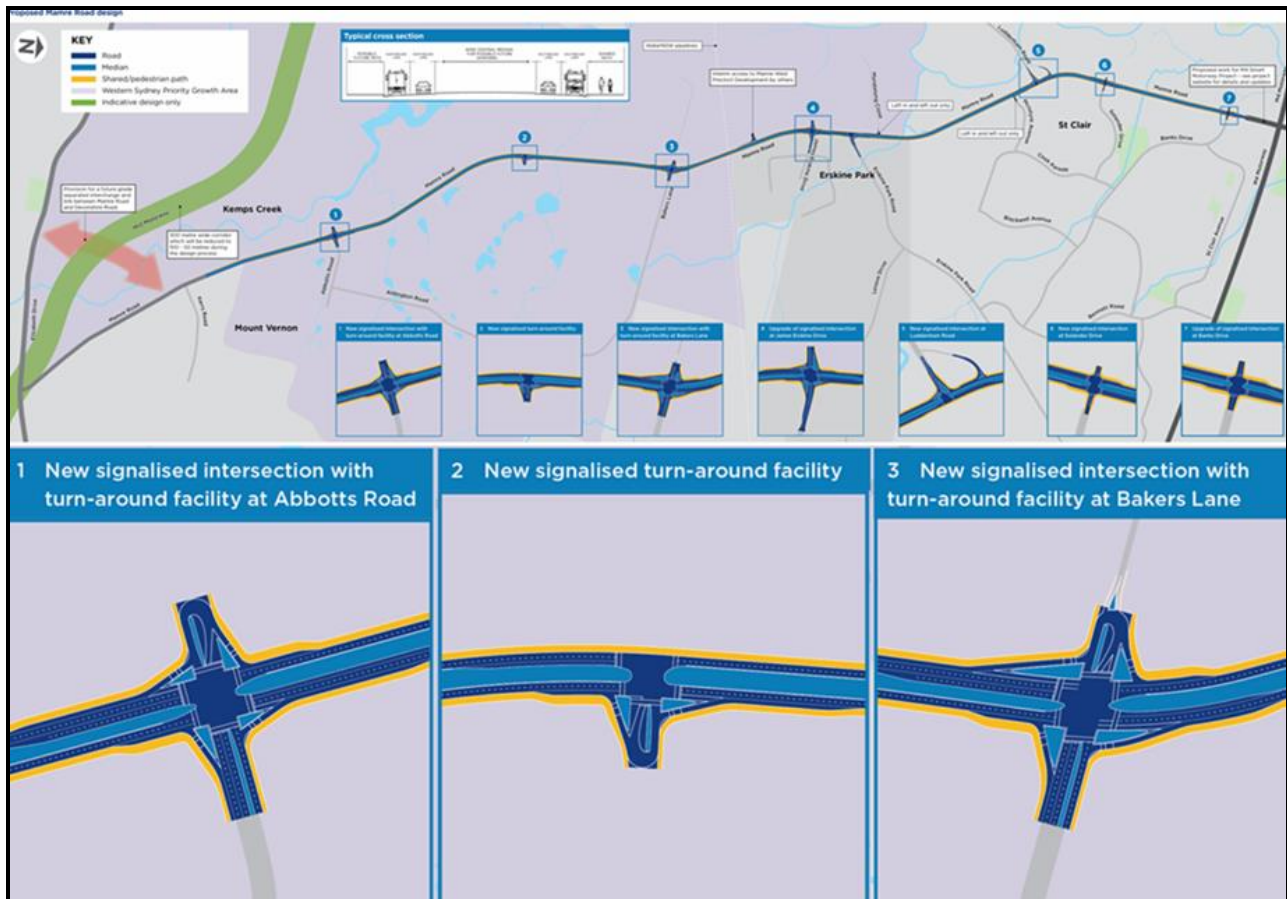


Figure 11: Mamre Road Upgrade⁴

3.2.1 Mamre Road / Abbotts Road Intersection Upgrades

The ultimate future signalised intersection capacity requirements at the Abbotts Road and Bakers Lane intersections with Mamre Road have been identified as part of the MRP modelling assessment process.

Acquisition of land on the eastern side of Mamre Road has been facilitated by LOG-E to support the ultimate road upgrade to the southbound carriageway and Abbotts Road connection, per TfNSW's directive for the ultimate road network to be delivered. The northbound carriageway will be delivered as an interim configuration, with the future Mamre Road Stage 2 Upgrade to complete the upgrade.

The proposed intersection developed is shown by **Figure 12**. The intersection will be delivered collectively by the LOG-E.

In terms of current status, it is noted that:

- Approval In Principle (AIP) has been obtained from TfNSW concept design;
- TCS designs have been submitted to TfNSW for their review; and
- The roadworks Works Authorisation Deed (WAD) design is currently up to an 80% detailed design, which is to be submitted to TfNSW in November 2023.

⁴ <https://roads-waterways.transport.nsw.gov.au/projects/01documents/mamre-road-upgrade/mamre-road-community-update-2017-11.pdf>

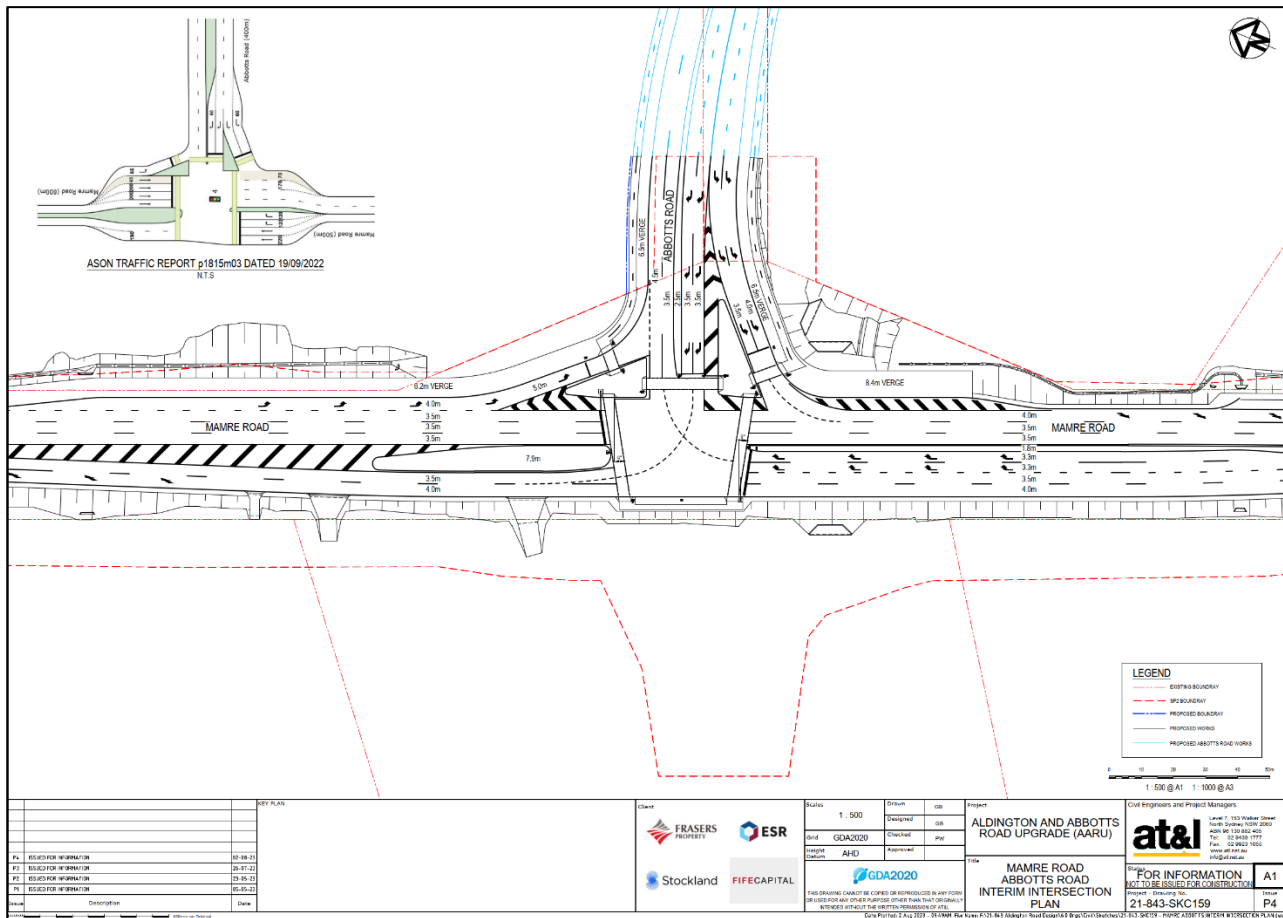


Figure 12: Abbots Road / Mamre Road - Currently Proposed Intersection (by LOG-E)

3.3 Abbots Road and Aldington Road Upgrade Project

As already discussed, LOG-E are in the process for planning for the Abbots Road and Aldington Road upgrade (AARU).

The proposed AARU is shown in **Figure 13**, which shows the extent of the AARU, with the subsequent figures demonstrating the intersections in more detail. The upgrades are proposed to represent the ultimate road corridors, per TfNSW's directive for the ultimate road network to be delivered and are per Council requirements.

Intersection 2, as shown by the below, provides for the access into the Site. The intent is for Intersection 2 to be delivered at the same time as Intersections 1, 3 and 4, subject to receipt of the relevant approvals.

As part of the AARU project, a Road Safety Audit (RSA) has been constructed of the upgrades, inclusive of the proposed Site access intersection (Intersection 2). We note that Council requested an RSA be prepared for this DA submission. However, noting that one has already been undertaken, and the outcomes already considered by the Project Team, it is not necessary to undertake the exercise again, at this stage.

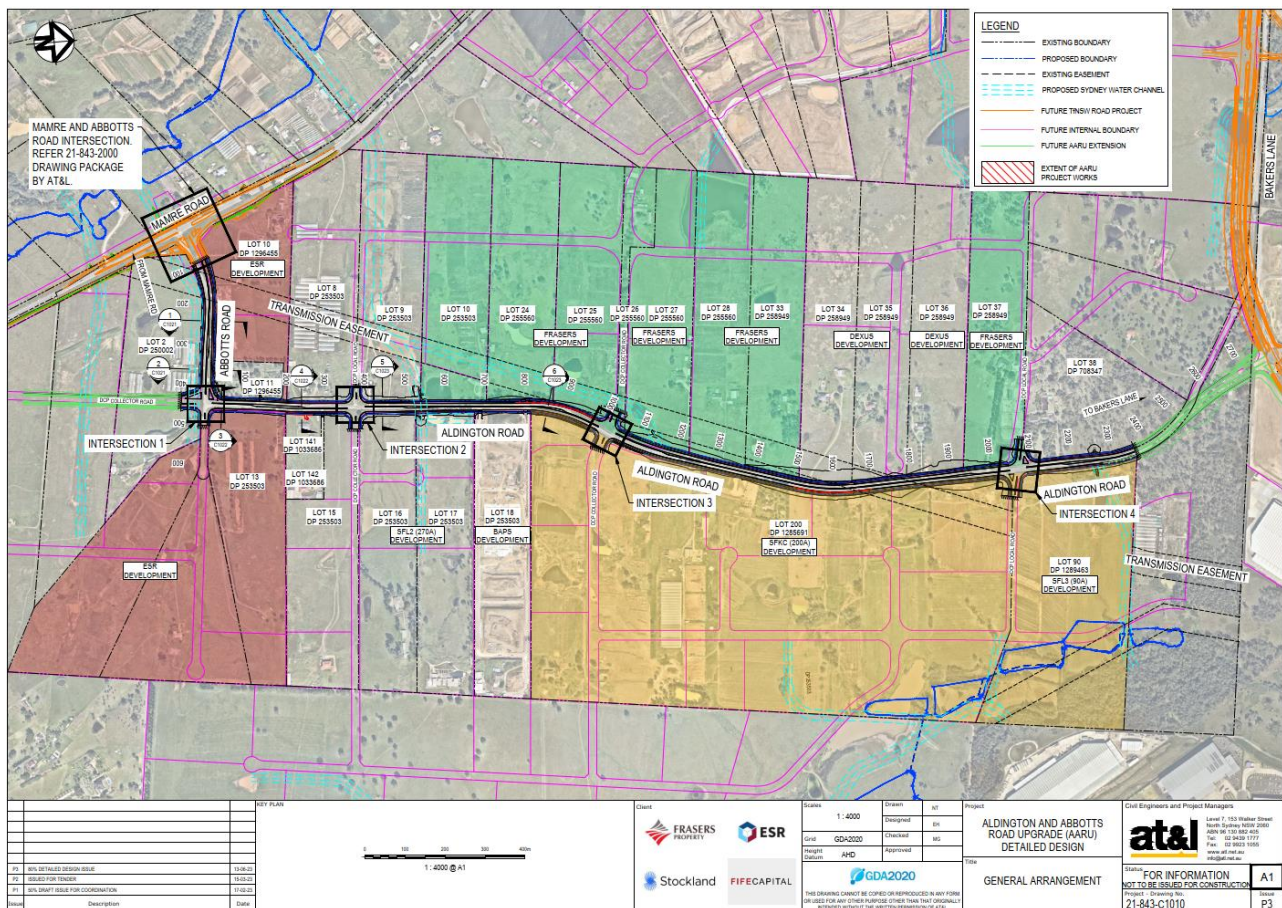


Figure 13: AARU – General Intersection Arrangement (Prepared by AT&L)

In terms of the current status of the upgrades:

- AIP has been obtained from TFNSW for the intersection concept designs; and
- TCS designs have been submitted to TFNSW for their review.

3.4 Mamre Road Development Control Plan

The MRP DCP provides planning controls for future development within the MRP including building design controls, road network and parking requirements. The road network outlined within the MRP DCP is shown by **Figure 14**.

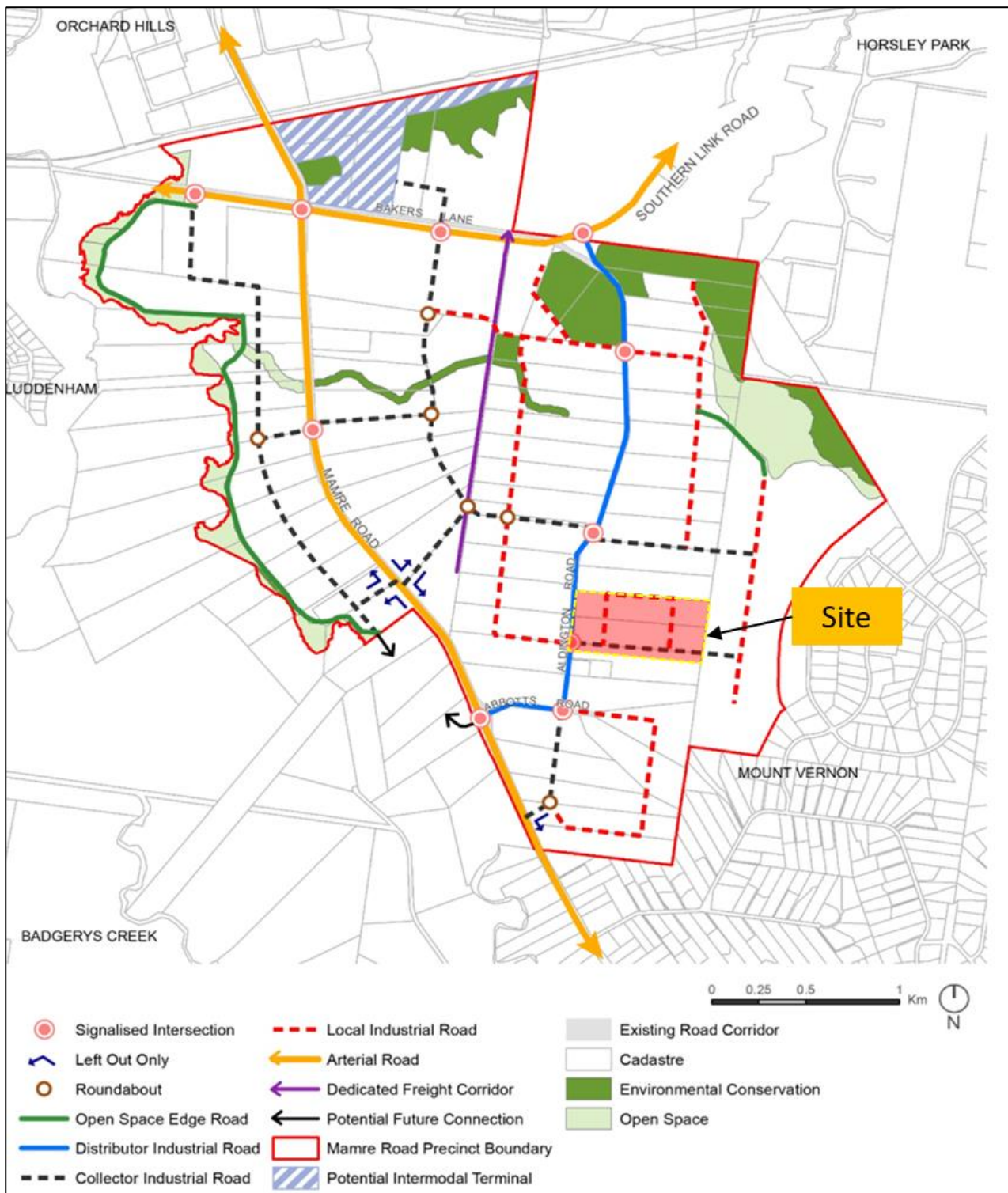


Figure 14: DCP Precinct Road Network

Figure 14 provides context to the configuration of MRP roads and confirms the east-west connection along the southern boundary of the Site as a collector industrial road. This road is being delivered as part of the Proposal.

Further, 2 north-south local industrial roads are identified, which only provide for access to the 1 northern neighbouring lot. However, it is noted that the lot to the north (Lot 18 DP253503, 230-242 Aldington Road) is

currently subject to construction works relating to a Place of Worship, which will be accessed from Aldington Road. Therefore, a connection through to the northern lot, and the DCP road which traverses the northern Site boundary, is not required. This has been discussed with the land owner, who has confirmed that they do not desire it to be delivered.

The Proposal therefore includes approximately 140m of the western road. At this stage, it is not considered necessary to deliver the eastern road as access is not required to the neighbouring lot, and access can be provided for the proposed Lot 4 via the east-west road.

The requirements the MRP DCP for the internal roads are shown below. The proposed roads are in accordance with these typical details of the MRP DCP.

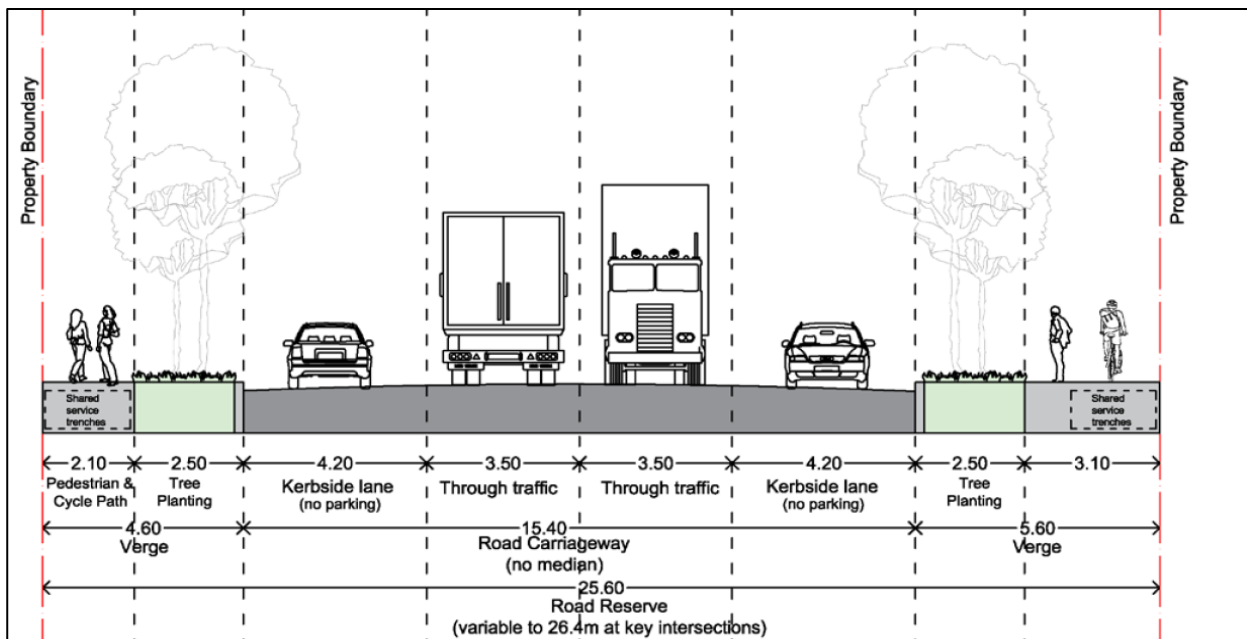


Figure 15: MRP DCP Typical Collector Industrial Road

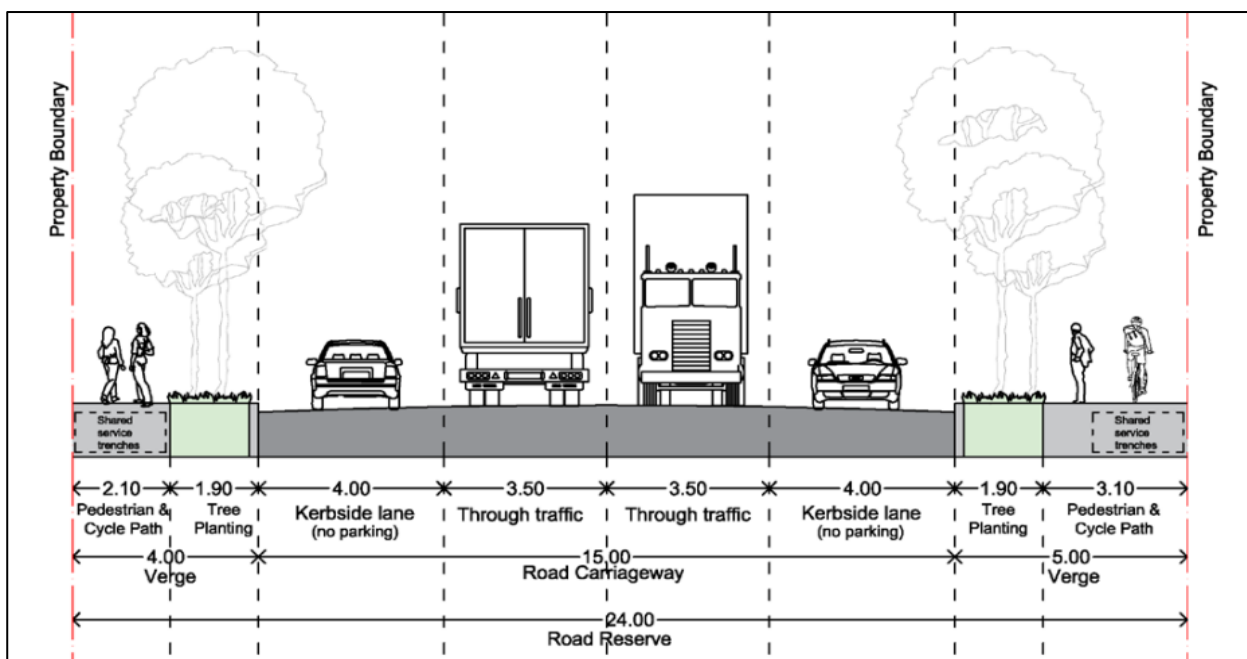


Figure 16: MRP DCP Typical Local Industrial Road

The eastern road, and the road which traverses the northern boundary are excluded from the Proposal. The relevant controls of the MRP were considered in developing this Proposal, notably Section 3.4 – Transport Network, which states that internal roads are to be designed to *Provide access to and facilitate the development of adjoining properties*. As already discussed, the only affected neighbouring landowner is to the north who has no desire for the connectivity through to the Site.

Further, Lots 1, 2 and 3 can all be accessed via the proposed Road 02. Lot 04 can be access via the proposed Road 01, which provides for connectivity through to the eastern site.

Control 12 of Section 3.4 states that *The internal road pattern is to facilitate 'through-roads' with cul-de-sacs to be avoided unless dictated by topography or other constraints*. Noting that: 1) the landowner to the north has no desire for the connection to be delivered, and 2) the development which is currently under construction does not facilitate for the proposed connection, a turning head is proposed for Road 02.

This is considered acceptable in this instance as there is no requirement for the road to connect through to the north, and it provides for better arrangement for the proposed Lots, notably Lot 1.

Finally, Control 24 of Section 3.4 states that *Alternate road configurations may be considered in special circumstances where it can be demonstrated...* The Proposal meets this Control as:

- Proposed roads are to be delivered in compliance with the MRP DCP (i.e. Figure 15 and Figure 16) and therefore meet the relevant criteria required.
- The turning head facilitates turning for vehicles up to 36.5m PBS Level 3 Type A vehicles.

Therefore, the road configuration is considered appropriate for this Proposal.

4 Traffic Assessment

4.1 Assessment Methodology

It is reiterated that this application is for subdivision only, therefore the traffic generation of the built form should be subject to future applications, as necessary. Nevertheless, consideration has been given to development on the Site, via adopting the same methodology as that for the MRP modelling assessment (Section 1.3.1), to assess the staging requirements for the signalised intersection.

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 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
- Consideration to the appropriateness of delivery of the ultimate signalised intersection in advance of it being required (i.e. in an assessment year of 2026). This assessment is consistent with the LOG-E assessment, which considers TfNSW's directive for the ultimate road network to be delivered and is per Council requirements.

4.2 Indicative Operational Impacts – Ultimate Road network

As discussed in Section 1.3.1, the development of the Site was considered within the MRP modelling assessment.

Of particular note to the Site is the assumption that 55% of the Site area represented developable GFA. Based on a total Site area of 20.35ha, this could equate to 111,925m².

However, as per Table 1, the total area of the Lots is approximately 18.92ha, taking account of the proposed roads. Therefore it is evident that the future traffic generation of the proposed lots would be less than assumed for the MRP modelling assessment.

While this would be subject to confirmation by a suitable traffic assessment to support any built-form DA, there is nothing to suggest that the proposed Lot configuration would result in higher traffic generation users than previously assumed.

4.3 GFA Trip Generation

4.3.1 Trip rates

For the purposes of the background MRP modelling assessment, trip rates were provided by TfNSW and DPE for adoption in the assessment of industrial developments in the MRP are shown by **Table 4**. These rates include an element of conservatism to allow for any higher traffic generation uses that may be permissible under the land use zoning.

TABLE 4: TFNSW AGREED 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

The MRP modelling assessment, adopted a vehicle type split of 73% light vehicles and 27% heavy vehicles during the AM and PM Peaks.

4.3.2 Traffic Generation

Based on a total Site area of 20.35ha and adoption of 55% being developable area, a total of GFA of 111,925m² could be achieved on the Site.

The indicative traffic generation based on the above trip generation rates and indicative GFA is as follows:

TABLE 5: INDICATIVE SITE TRAFFIC GENERATION

Time Period	GFA (m ²)	Rate per 100m ²	Trips
Daily Trips	111,925	2.91	3,257
Local Road AM Peak		0.23	257
Local Road PM Peak		0.24	268

4.4 Indicative Operational Impacts - 2026

4.4.1 Overview

Noting that the Proposal includes the delivery of the signalised intersection, as per the MRP DCP, an assessment of the proposed intersection in an assessment year of 2026 has been undertaken, consistent with the endorsed LOG-E modelling methodology.

4.4.2 LOG-E Modelling Assumptions

The road network which was adopted for the LOG-E modelling assessment (reported in the LOG-E Modelling Memo), forms part of the relevant applications either currently under consideration or those which have been approved by DPE, as shown in **Figure 17**. Traffic generation associated with each of the sites shown by Figure 17 was considered in the LOG-E modelling.

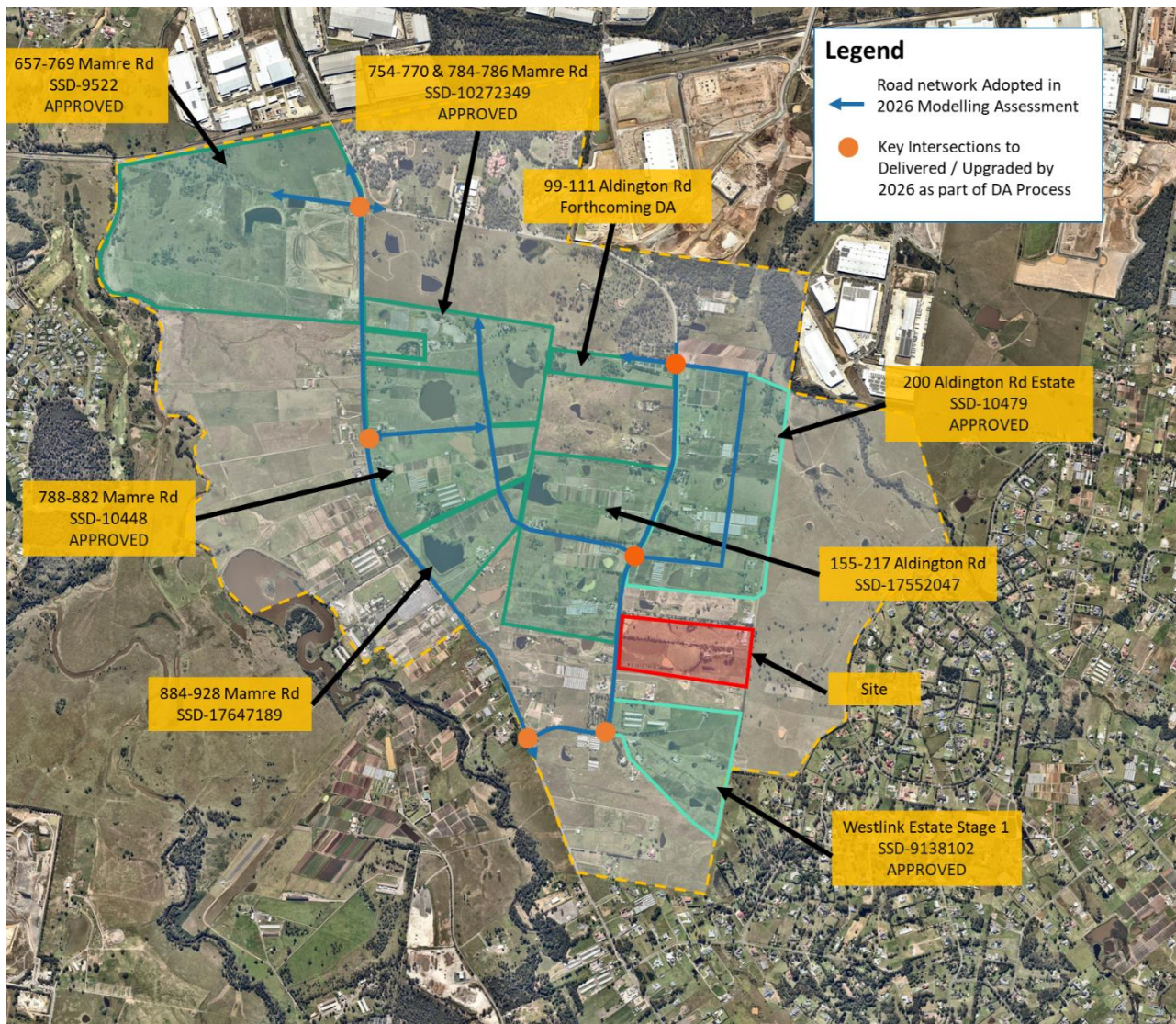


Figure 17: 2026 LOG-E Modelling Assessment Interim Road Network

The LOG-E modelling included the following parameters:

- Approximately 990,215m² of the total GFA within the MRP;
- Trips rates as provided by TfNSW (Table 4).
- The road network as currently proposed. That is, completely consistent with either the current SSD applications, approved intersection layouts or current VPA offers.
- Internal MRP road network assumed to be delivered by 2026.

4.4.3 Traffic Flows

The volumes from the LOG-E model have been adopted for the through volumes on Aldington Road. With regards to the turn volumes to the minor legs on either side of Aldington Road, development of the Site, and the proposed Westgate development have been considered, noting that no other development is currently planned on the neighbouring Lots.

The below figure demonstrates the location of the additional intersection proposed.

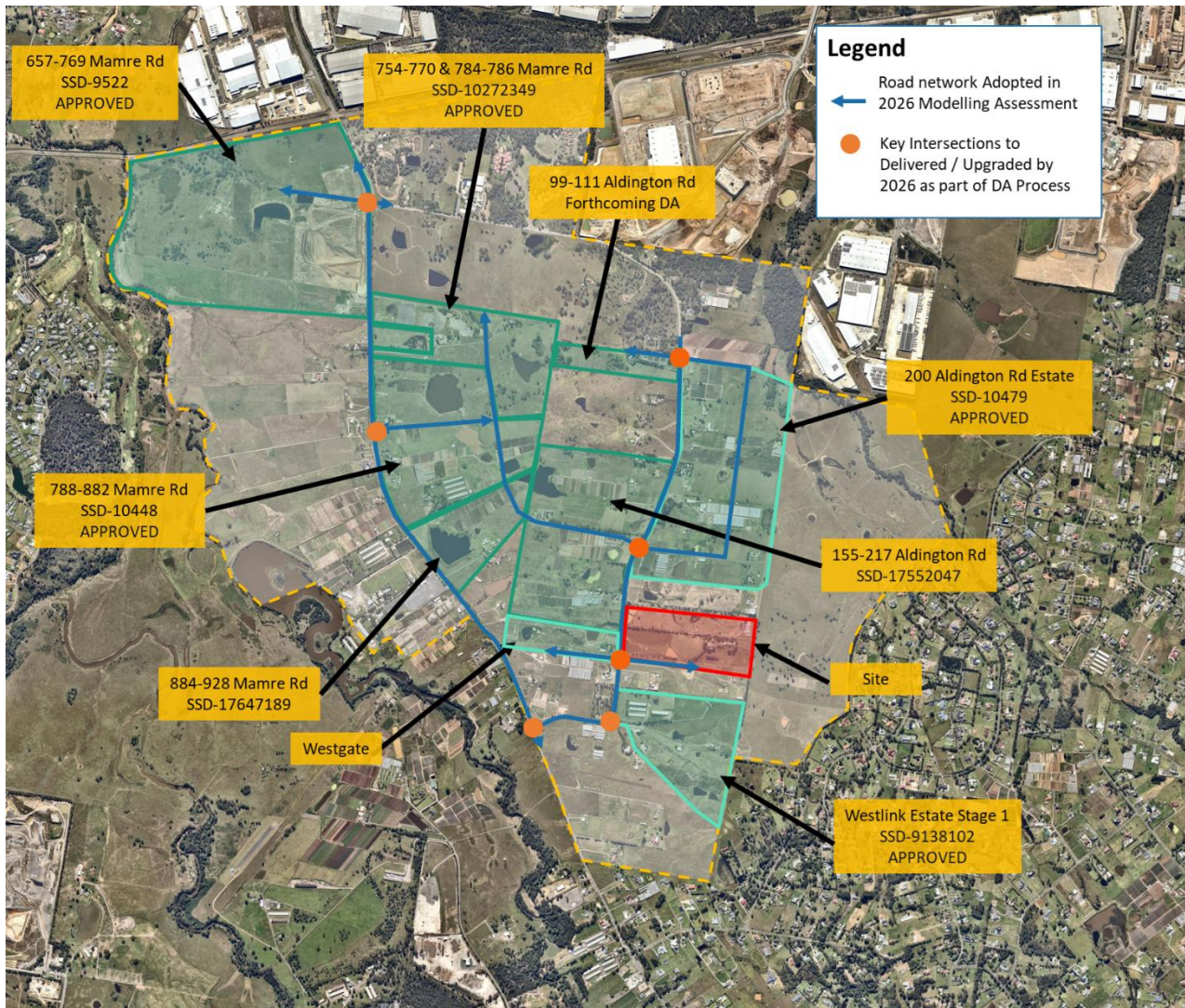


Figure 18: 2026 LOG-E Modelling Assessment Interim Road Network

The traffic flows expected at the intersection in 2026 is shown by the below figure.

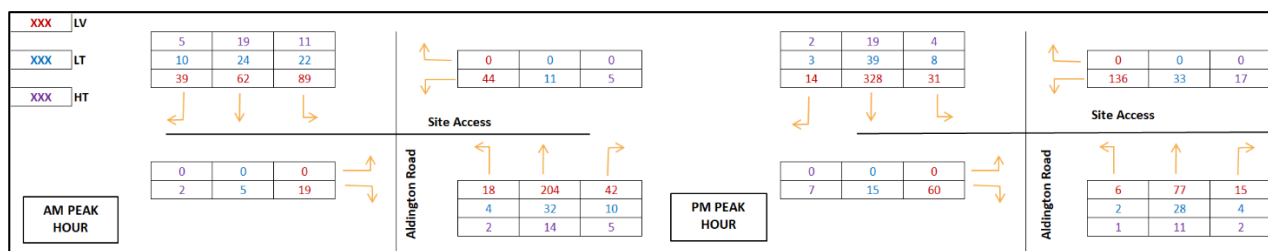


Figure 19: 2026 Traffic Profile for the Aldington Road / Site Access Intersection

4.4.4 Site Access Intersection Performance

The SIDRA layout adopted for the proposed intersection is shown below. It is consistent with that of the other intersections proposed along Aldington Road.

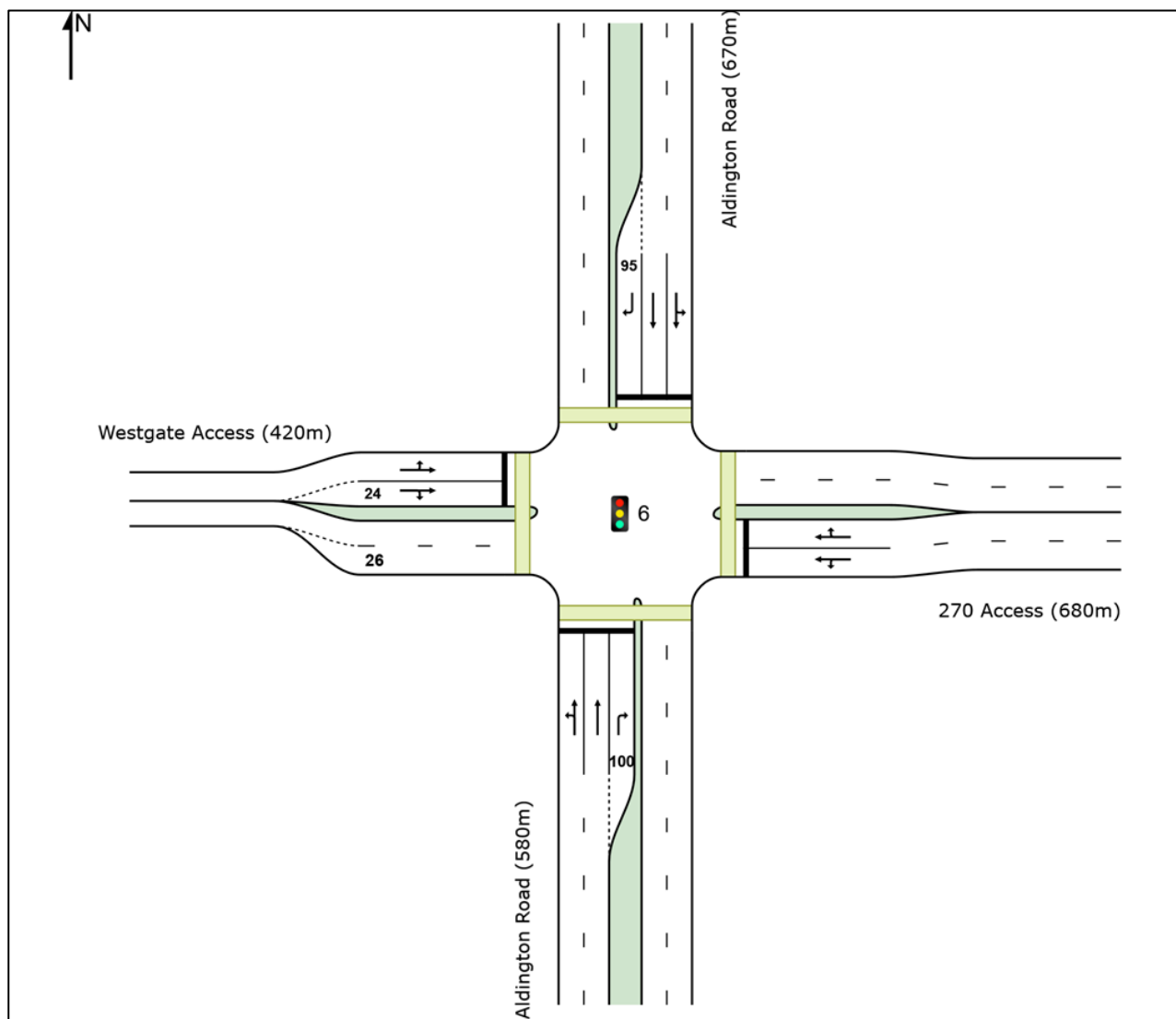


Figure 20: Interim Mamre Road / Site Access Intersection Layout

The modelling results for the proposed access are provided in the table below. Reference should also be made to the SIDRA modelling results attached in **Appendix A**.

TABLE 6: 2026 INTERSECTION PERFORMANCE			
Intersection	Period	Level of Service (LoS)	Degree of Saturation (DOS)
Aldington Road / Site Access	AM	C	0.30
	PM	C	0.84

The above results demonstrate satisfactory performance for the intersection with a LoS C for the AM and PM periods in the assessment year of 2026. Therefore, it is concluded that the proposed subdivision is acceptable.

4.4.5 Traffic Signal Warrant

A traffic warrant assessment has been completed for the design horizon year of 2026 and 2036 under full development of the MRP. It is noted that whilst this assessment has been completed, the need for signals should be considered across multiple criteria and not just the warrants in isolation, particularly for Greenfield developments.

The RTA *Traffic Signal Design Section 2 – Warrants* stipulates:

“traffic signals are sometimes installed due to public pressure or an administrative directive irrespective of the general warrants”.

In the case of the Aldington Road intersections the MRP DCP can be seen as an administrative directive, that identifies where signalised intersections are to be located. Council has also made it clear that they prefer signals in part due to the delivery of what is viewed as the ultimate solution for the intersections, which has cost and delivery implications.

Notwithstanding this, a traffic warrant assessment was conducted in accordance with the guidelines set forth by the RTA in the *Traffic Signal Design Section 2 – Warrants*, the traffic flow warrants are listed below:

- Traffic Demand:
 - The major road flow exceeds 600 vehicles/hour in each direction, and
 - The minor road flow exceeds 200 vehicles/hour in one direction.
- Continuous Traffic:
 - The major road flow exceeds 900 vehicles/hour in each direction, and
 - The minor road flow exceeds 100 vehicles/hour in one direction.

Table 7 below summarizes the traffic signal warrant for intersections along Aldington Road corridor for the 2026 and 2036 scenarios. A detailed analysis of each movement and approach is also provided in **Appendix B**.

TABLE 7: TRAFFIC SIGNAL WARRANT ASSESSMENT

Intersection	Traffic Signal Warrant Satisfied – 2026		Traffic Signal Warrant Satisfied – 2036	
	AM	PM	AM	PM
Aldington Road / Site Access	X	X	✓	✓
	X	X	✓	✓

The warrant assessment demonstrates compliance with all proposed signalised intersection by 2036.

Whilst technical traffic flow warrants are not met under the 2026 Scenario, further considerations must be considered as noted in the RTA Traffic Signal Design strategic direction. The relevant qualitative merits considered under this guidance are outlined in Table 8.

TABLE 8: CONSIDERATIONS IN SIGNALISATION OF ALDINGTON ROAD

Factors for Consideration	Application to Aldington Road
Traffic flows	The 2026 modelling does not meet the traffic flows criterion in the guide. However, the 2026 scenario only assumes development on the Mamre Road Precinct Landowner Group sites (shown by Figure 17). The 2036 modelling of the precinct, which is the ultimate scenario, does meet the traffic flow warrant criterion. Given the current demand for zoned industrial land, it is noted there are more development applications proposed along this corridor other than the Mamre Road Precinct Landowners Group. These sites will contribute to overall traffic generation as the Precinct is delivered.
Traffic conflicts	The relationship and interaction between trucks, light vehicles and pedestrians is a significant criterion for assessment of warrants. The strategic planning for the MRP identified the need to create an employment precinct which contributes toward all forms of transport, including cycling and walking. The delivery of signalised intersections enables safe crossings along the corridor for pedestrians and cyclists. Given the nature of trucks entering and exiting this corridor and their restricted visibility compared to light vehicles, traffic signals are required to minimise traffic conflict and enable a pedestrian safe environment along the corridor.
Traffic accident statistics	The statistics on traffic accidents is unknown for the upgraded corridor. It is viewed that the delivery of signalised intersections along the corridor will be a preventative measure to minimise risk associated with this criterion.
Pedestrian requirements	Pedestrian access is being encouraged with a requirement for Green Travel Plans, bus routes. Crossing facilities must be provided within the corridor to facilitate safe pedestrian movements.
Access to major roads	Aldington Road and Abbots Road are designated as Distributor Industrial roads under the MRP DCP. As the MRP road network is delivered, Abbots Road and Aldington Road will become a major thoroughfare connecting Mamre Road to the future Southern Link Road. The precinct-wide modelling identifies a significant increase of traffic flows along this corridor once Southern Link Road is delivered, as it provides the most direct link route from Erskine Park to Elizabeth Drive.
Cost of installation	The cost of installation of signals along Abbots and Aldington Roads is factored into the Mamre Road Precinct Section 7.11 Contribution Plan and will be funded by developer contributions. Future costs and redundant works have no source of funding.

	The cost to deliver signalised intersection in today's dollars will be significantly cheaper compared to future augmentation. Therefore, it is the Government's best value for money to deliver the signals today versus future as money and levy mechanism is identified and developers are willing to assist in delivering the ultimate in line with their forecasted delivery programs. This is not guaranteed in the future if signalised intersections are not delivered with the proposed planning agreement with Council.
Availability of funds	The funds to deliver signalised intersections and the upgrade of Abbots and Aldington Roads are available now via developers (under Section 7.11 contributions and works-in-kind). Further, Council has been awarded funding by NSW Government to deliver the ultimate corridor including signalised intersections. This funding has been awarded on the basis the ultimate corridor can be delivered in line with delivery of industrial estates, which is occurring now and not in the future.
Maintenance Costs	Maintenance of signals, in the short term, can be facilitated via developers through either the planning agreement or contribution to ensure no additional costs are incurred in lieu of required traffic flows.
Practicality	The delivery of the ultimate outcome would simplify land acquisition and delivery of infrastructure. It significantly reduces the risk to fund future upgrades and minimises redundant works by developers or Council.
Feasibility	Traffic signals have been developed in the concept design and costing of the Section 7.11 contribution plan. This concept design has been endorsed by Council and DPE Strategic Planning teams. It is understood 7.11 does not consider any intersection treatments outside of signalised intersections as per the DCP.
Signposted speed limit is not more than 80km/hr	Signposted speed limit expected to be 60km/hr.

Noting the above, there is sufficient justification for TfNSW to approve signals along Aldington Road, consistent with the recently endorsed MRP DCP. The construction of signals will improve traffic and road user safety with minimal, if any, impact to TfNSW. Furthermore, there is sufficient risk that funding for future signalisation of the subject intersections would not be available in the future.

5 Conclusions

In summary, the proposed subdivision is supportable on traffic planning grounds noting the following:

- Future development shall form scope for future assessment as relevant built-form applications are submitted. However, it is evident that suitable site access can readily be provided to each future Lot.
- No change to existing land use zoning is proposed and, as such, there will be no material impact to the traffic generating potential of the combined Lot(s). Therefore, the current application will have no material impact on the performance of the surrounding MRP DCP road network.
- The Proposal will deliver an intersection identified by the MRP DCP, as well a key east-west road providing access to the land to the east of the MRP, which currently does not have any direct access to the key roads.
- Assessment of the signalised access, based on an indicative GFA, has demonstrated that it can achieve satisfactory performance under a scenario where the Site is developed.
- Under the modelled scenarios, the traffic signal warrants are not met in the short term. However, the 2036 modelling confirms that the intersection requires signalised intersection.
- Traffic signal warrants are not the only criteria that should be considered in TfNSW's assessment and consideration to all road users and the recently endorsed DCP must also be considered. It is therefore concluded that provision of the signalised intersection as part of the Proposal is appropriate.

Appendix A. SIDRA Modelling Outputs

MOVEMENT SUMMARY

Site: 6 [AM Aldington Road / 270 Access / Westgate Access (Site Folder: 2026 - AM)]

Aldington Road / 270 / Westgate Access

Site Category: (None)

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

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Aldington Road (580m)														
1	L2	24	6	25	25.0	0.258	34.5	LOS C	5.8	52.0	0.74	0.64	0.74	39.3
2	T1	250	46	263	18.4	* 0.258	28.9	LOS C	6.0	52.7	0.74	0.63	0.74	43.3
3	R2	57	15	60	26.3	* 0.267	54.2	LOS D	3.2	30.4	0.91	0.76	0.91	30.6
Approach		331	67	348	20.2	0.267	33.7	LOS C	6.0	52.7	0.77	0.65	0.77	40.5
East: 270 Access (680m)														
4	L2	60	16	63	26.7	0.304	55.3	LOS D	3.4	32.7	0.93	0.76	0.93	29.7
5	T1	1	0	1	0.0	0.007	45.2	LOS D	0.1	0.7	0.86	0.58	0.86	31.2
6	R2	1	0	1	0.0	0.007	49.7	LOS D	0.1	0.7	0.86	0.58	0.86	33.4
Approach		62	16	65	25.8	0.304	55.1	LOS D	3.4	32.7	0.93	0.75	0.93	29.8
North: Aldington Road (670m)														
7	L2	122	33	128	27.0	* 0.227	16.3	LOS B	2.8	27.5	0.62	0.71	0.62	45.1
8	T1	105	43	111	41.0	0.227	27.0	LOS B	4.0	47.0	0.72	0.61	0.72	44.0
9	R2	54	15	57	27.8	0.257	54.1	LOS D	3.0	29.2	0.91	0.76	0.91	33.4
Approach		281	91	296	32.4	0.257	27.6	LOS B	4.0	47.0	0.72	0.68	0.72	41.7
West: Westgate Access (420m)														
10	L2	2	1	2	50.0	0.025	54.5	LOS D	0.2	2.2	0.89	0.62	0.89	33.1
11	T1	2	1	2	50.0	0.025	49.5	LOS D	0.2	2.2	0.89	0.62	0.89	30.1
12	R2	26	7	27	26.9	* 0.152	55.9	LOS D	1.5	13.9	0.92	0.72	0.92	31.5
Approach		30	9	32	30.0	0.152	55.3	LOS D	1.5	13.9	0.92	0.71	0.92	31.5
All Vehicles		704	183	741	26.0	0.304	34.0	LOS C	6.0	52.7	0.77	0.68	0.77	39.4

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

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Aldington Road (580m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.9	220.5	0.93
East: 270 Access (680m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.1	219.5	0.93
North: Aldington Road (670m)												
P3	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.9	220.5	0.93
West: Westgate Access (420m)												
P4	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.7	219.0	0.93

All Pedestrians	0	42	54.2	LOS E	0.0	0.0	0.95	0.95	237.4	219.9	0.93
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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: 6 [PM Aldington Road / 270 Access / Westgate Access (Site Folder: 2026 - PM)]

Aldington Road / 270 / Westgate Access

Site Category: (None)

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

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Aldington Road (580m)														
1	L2	9	3	9	33.3	0.135	33.2	LOS C	2.6	26.0	0.70	0.58	0.70	39.8
2	T1	116	39	122	33.6	0.135	27.6	LOS B	2.6	26.4	0.70	0.57	0.70	43.9
3	R2	21	6	22	28.6	* 0.101	52.5	LOS D	1.1	11.0	0.88	0.71	0.88	31.0
Approach		146	48	154	32.9	0.135	31.5	LOS C	2.6	26.4	0.73	0.59	0.73	41.5
East: 270 Access (680m)														
4	L2	179	43	188	24.0	* 0.840	67.5	LOS E	12.1	105.6	1.00	0.95	1.27	27.1
5	T1	1	0	1	0.0	0.007	45.2	LOS D	0.1	0.7	0.86	0.58	0.86	31.2
6	R2	1	0	1	0.0	0.007	49.7	LOS D	0.1	0.7	0.86	0.58	0.86	33.4
Approach		181	43	191	23.8	0.840	67.3	LOS E	12.1	105.6	1.00	0.95	1.26	27.2
North: Aldington Road (670m)														
7	L2	43	12	45	27.9	0.393	36.6	LOS C	9.2	80.6	0.79	0.72	0.79	38.3
8	T1	386	58	406	15.0	* 0.393	30.8	LOS C	10.0	85.2	0.79	0.69	0.79	42.5
9	R2	19	5	20	26.3	0.090	52.3	LOS D	1.0	9.9	0.88	0.71	0.88	33.8
Approach		448	75	472	16.7	0.393	32.3	LOS C	10.0	85.2	0.80	0.70	0.80	41.7
West: Westgate Access (420m)														
10	L2	2	1	2	50.0	0.025	54.5	LOS D	0.2	2.2	0.89	0.62	0.89	33.1
11	T1	2	1	2	50.0	0.025	49.5	LOS D	0.2	2.2	0.89	0.62	0.89	30.1
12	R2	82	22	86	26.8	* 0.483	58.9	LOS E	4.9	47.1	0.97	0.78	0.97	30.8
Approach		86	24	91	27.9	0.483	58.6	LOS E	4.9	47.1	0.97	0.77	0.97	30.9
All Vehicles		861	190	906	22.1	0.840	42.1	LOS C	12.1	105.6	0.84	0.74	0.90	36.8

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

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

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

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

Queue Model: SIDRA Standard.

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

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Effective Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Aldington Road (580m)												
P1	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.9	220.5	0.93
East: 270 Access (680m)												
P2	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.1	219.5	0.93
North: Aldington Road (670m)												
P3	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	237.9	220.5	0.93
West: Westgate Access (420m)												

P4	Full	10	11	54.2	LOS E	0.0	0.0	0.95	0.95	236.7	219.0	0.93
All Pedestrians		0	42	54.2	LOS E	0.0	0.0	0.95	0.95	237.4	219.9	0.93

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

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

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

Appendix B. Traffic Signal Warrant Analysis

TRAFFIC WARRANTS						
Intersection	Warrant A	Major Road>900vph	Minor>100vph	Major>900vph	Minor>100vph	Warrant Met?
	Warrant B	Major Road>600vph	Minor>200vph	Major>600vph	Minor>200vph	
	Scenario	South (veh)	East (veh)	North (veh)	West (veh)	
Aldington Road / Site Access	2026 AM	331	60	280	26	No
	2026 PM	145	186	447	82	No
	2036 AM	1,033	137	999	91	Yes
	2036 PM	1,002	193	1,401	101	Yes