Parramatta Eels

JULY, 2022

Parramatta Eels Community Facility and Centre of Excellence, Kellyville Park, Kellyville

Traffic Impact Assessment Report

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Parramatta Eels Community Facility and Centre of Excellence, Kellyville Park, Kellyville Traffic Impact Assessment Report

Parramatta Eels

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REV	DATE	DETAILS
H	28/07/2022	Traffic Impact Assessment Report – Minor TfNSW Updates

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Approved by:	Chris Hamond	22/07/2022	

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Executive summary

This Traffic Impact Assessment Report has been prepared for the 'Paramatta Eels Centre of Excellence and Community Sports Hub, Kellyville' in response to the traffic and parking items raised under SEARs application number SSD-24452965.

The traffic impact assessment has been prepared primarily to consider the following key items:

- Post development parking requirements for the proposed site use.
- Post development traffic impacts on the wider surrounding road network.
- The dimensions, layout, and configuration of the onsite parking spaces and loading arrangements.
- Traffic management during peak event day scenarios.
- Construction traffic management considerations during site development.

With regards to the above, specific consideration has been given to the potential parking and traffic impacts of the site post development. To assess these impacts, an analysis has been undertaken of the existing site usage to determine possible parking requirements and traffic generation rates. These rates have then been reviewed in the context of the proposed development in order to indicatively determine what the future requirements for the site may be.

Based on a review of parking generation rates for the existing site use, it has been determined that during peak weekend/matchday use of the site there may be a demand for in the order 384 parking spaces. Based on the parking provisions proposed as part of the site development, in conjunction with existing surrounding supplies, it is considered that there should be adequate capacity to meet this demand.

From a traffic impacts perspective, the analysis that has been undertaken as part of this report indicates that under future growth conditions, there should typically be adequate capacity within the surrounding road network to accommodate the development of the subject site.

On the basis of the above, it is considered that the proposed development is appropriate from a traffic engineering perspective given the location of the site and nature of the development.

1 Introduction

1.1 Project Description

The proposed development will provide state of the art facilities which enable physical recreation opportunities in conjunction with improved facilities for staff, players and existing users of the site. The proposed development will be integrated with the existing recreational landscape of the site and complement the upgrades to the existing playing fields being undertaken by Council. The proposed development is defined as a Recreation facility (major), and includes the following components:

- Construction of high-performance Centre of Excellence in the north east of the site adjacent to Training Field 2:
  - Elite level gymnasium.
  - Medical and rehabilitation facilities.
  - Aquatic recovery and rehabilitation pools.
  - Lecture theatre and meeting rooms.
  - Player education and study areas.
  - Administration offices for the Parramatta Eels.
  - New female facilities including a dedicated female change room, cubicle toilets and showers.
  - Balcony and terrace area.
  - End of Trip Facilities and bicycle parking.
  - Refuse Area.
- Construction of a Community Facility, including a grandstand with approximately 1,500 seats in the centre of the site adjacent to the Main Playing Field 3:
  - Unisex changerooms and amenities.
  - Referee changeroom and amenities.
  - First Aid/Medical room.
  - Community gymnasium.
  - Café/kiosk.
  - Concourse terrace.
  - Multipurpose community function room with kitchen and amenities.
  - Refuse Area.
  - Bicycle parking.
- Solar arrays will be included on the roof of both the Centre of Excellence and Community Facility.
- Additional 40 car parking spaces for the proposed facility to operate in conjunction with existing at grade car parking already constructed by Council.
- Additional landscaping throughout the development footprint.
- Removal of a small number of trees internal to the site, however noting perimeter trees will be retained where not affected by the proposed building footprints.
- Hours of operation for the Centre of Excellence and Community Facility are 5:00am to 12:00am, however the following key times are likely:
  - Centre of Excellence: 7.00am - 7.00pm
  - Community Facility: 7.00am - 10.00pm

1.2 SEARs Item Responses

This report has been prepared in response to the SEARs application feedback that was by Transport for NSW (dated 04 August, 2021). This report addresses the following considerations.

Table 1.1 SEARS items

SEARS ITEM	DESCRIPTION AND REQUIREMENTS	SECTION ADDRESSED
5. Public Space	The EIS must demonstrate how the proposed development: – Minimises potential vehicle, bicycle and pedestrian conflicts.	8
9. Transport, Traffic, Parking and Access (Operation and Construction)	The EIS Must include: – A transport and accessibility impact assessment, prepared in consultation with Transport for NSW and Council, with comments addressed prior to lodgement, which provides:	-
	— the predicted transport mode share split and daily trip numbers for the proposal development	5
	— an analysis of the existing traffic conditions within the surrounding road network to at least the nearest Sydney Metro station, including but not limited to a description of the surrounding road hierarchy, current daily and peak hour vehicle movements and an assessment of the existing performance levels of nearby intersections	2
	— a forecast of additional daily and peak hour vehicle movements as a result of the proposal (using SIDRA modelling or similar at 5-year intervals) and identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cycle conflict)	5 6
	— proposals to mitigate any traffic impacts, including intersection upgrades to achieve acceptable performance	6
	— details of car parking provision, having regard to relevant parking rates, specifications and standards	4
	— details of proposed vehicular access, parking areas, loading, deliveries and servicing arrangements, and any proposed infrastructure improvements or measures to reduce potential conflicts with pedestrians and cyclists.	8
	— proposals to improve walking and cycling, such as connections into existing walking and cycling networks, high quality end-of-trip facilities and adequate bicycle parking for visitors, employees and residents (provided in accordance with the relevant rates, specifications and standards)	8
	— measures to promote sustainable travel choices for employees and visitors, such as minimising car parking provision, encouraging car share and public transport, cycling and walking, implementing a green travel plan and providing end of trip facilities and how this can be demonstrated to be implemented.	7
	– a Construction Traffic Management Plan providing details of predicted construction traffic movements, routes and access arrangements, and outline how construction traffic impacts on existing traffic, pedestrian and cycle networks would be appropriately managed and mitigated.	9

In conjunction with the preceding SEARS items, in their letter dated 4th August 2021, Transport for NSW (TfNSW) also identified several other items for consideration as part of the transport and traffic impact assessment. These items, as well as the location they are addressed within the report are presented below.

Table 1.2 TfNSW Additional Items

TfNSW ITEM	DESCRIPTION AND REQUIREMENTS	SECTION ADDRESSED
1.	TfNSW requests the impact on nearby intersections and the need/associated funding for upgrading or road improvement works should be investigated. Key intersections to be examined/modelled include but shall not be limited to: – Windsor Road/Memorial Avenue – Windsor Road/Fairway Drive – Memorial Avenue/Stone Mason Drive – Memorial Avenue/Severn Vale Drive	6
2.	The traffic impact should be assessed for both existing and future scenarios (existing +10 years beyond the operation of the development).	6
3.	The development should be consistent with the TfNSW's Memorial Avenue Upgrade project including vehicular connectivity. All vehicle access to the site should be provided from local road network.	5 6
4.	TfNSW currently have a lease agreement in place until the end of 2024 for a portion of the site. The area shown in Attachment B is being used as a primary site office compound for the Memorial Avenue Upgrade.*	N/A*
5.	Consideration as to how the proposed development will impact upon the Memorial Avenue upgrade project (currently being undertaken) is required. Consultation with TfNSW is required in order to address this matter.	5 6

*No specific response is provided to Item 4 within the following traffic report as it is considered that this is solely an operational condition and will not impact the future use or operation of the site.

1.3 Other Report Considerations

In conjunction with the responses to the SEAR's items, this report also gives considerations to:

- The locality of the subject site and the wider surrounding road network.
- Nearby sustainable transport opportunities.
- The proposed development and the layout of the site from a traffic, parking and loading perspective.
- Typical site operations.
- Post development parking requirements of the site.
- Impacts of site generated traffic on the wider surrounding road network and whether further mitigation is required to accommodate these volumes.
- Provision of detailed traffic modelling of key intersections proximate to the subject site.
- Input on alternative transport measures to and from the site during peak events.
- The preparation of a preliminary Construction Traffic Management Plan to show the potential vehicle routes and impacts during the construction stages of the site.

1.4 Referenced Documents

In the preparation of this assessment, the following documents have been referenced:

- Schematic Design Plans prepared by HB Arch dated 24 January, 2022.
- The Hills Development Control Plan – 2012
  - Part C – Parking
  - Part D7 – Balmoral Road Release Area
- The Hills Local Environmental Plan – 2019
- Australian Standard AS 2890.1:2004 – Parking Facilities – Off-street Car Parking.
- Memorial Avenue Upgrade Traffic and Transport Assessment prepared by Hyder dated 30 June, 2014

In the course of undertaking this assessment, a desktop inspection of the existing conditions proximate to the site has been conducted.

The report concludes that there are no traffic or parking grounds that should warrant refusal of the sought development consent.

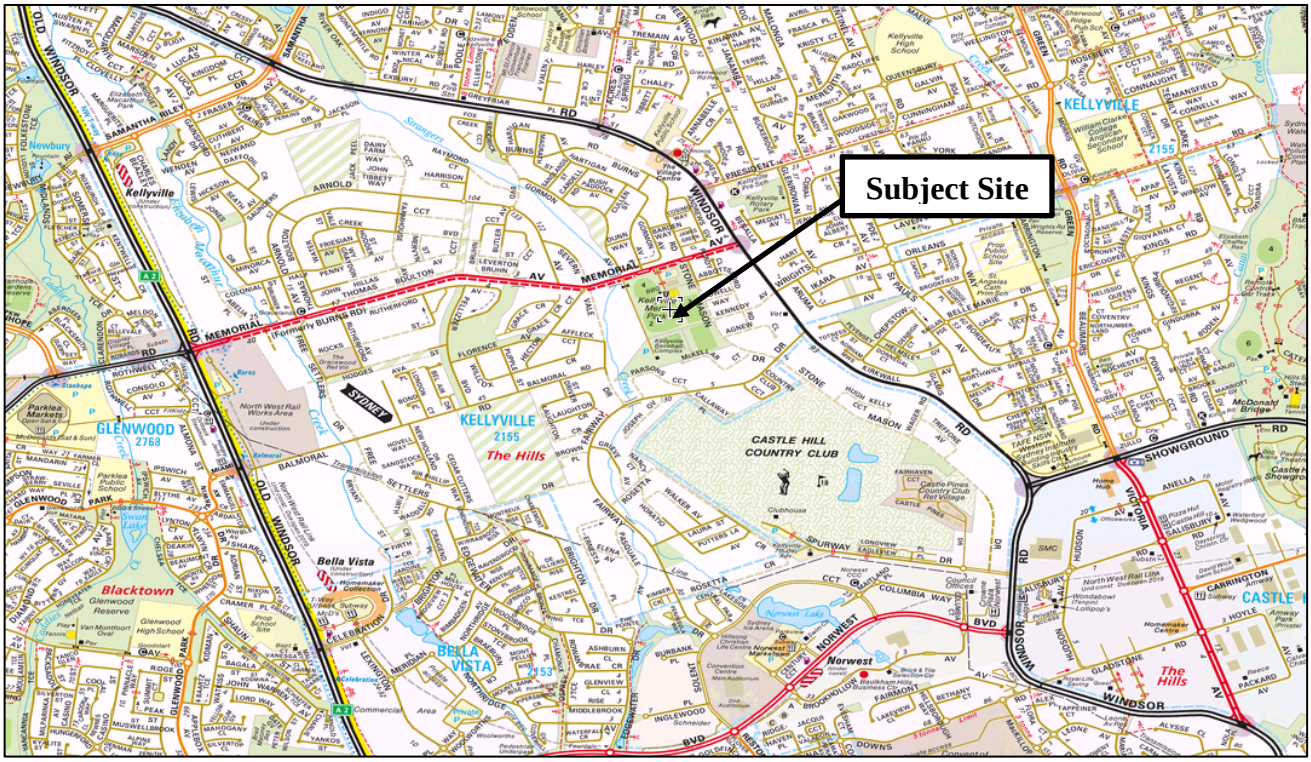
2 Background and Existing Conditions

2.1 Site Location and Land Use

The site is located at 8 Memorial Avenue, Kellyville and is bound by Memorial Avenue to the north, Stone Mason Drive to the east, residential properties to the south, and Strangers Creek to the west. The site primarily consists of five (5) sporting fields, hardstand pavements and a new carpark and access road constructed by Council in 2020.

An internal access road extends through the site, providing access to both the current off-street parking facilities and also providing access to the playing fields.

The location of the subject site with respect to the surrounding area is shown in Figure 2.1.



Source: www.street-directory.com.au

Figure 2.1 Site Locality

2.2 Road Network

The subject site is bound by Stone Mason Drive to the east and Memorial Avenue to the north, and also accommodates an internal access road facilitating access to the fields and onsite parking areas. The following figure shows the existing conditions of the surrounding road network.

Figure 2.2 Existing Road Network Conditions

2.2.1 Internal Access Road

An internal access road extends west into the site from Stone Mason Drive, providing access to the fields and onsite parking areas. The road accommodates an approximately 6.5m wide two-way carriageway, which acts as the main conduit to and from the site. Based on aerial images of the road, it is understood that kerbside parking may be permitted along the northern side of the carriageway.

2.2.2 Stone Mason Drive

Stone Mason Drive is a local access road extending in a north south direction from Fairway Drive in the south through to Memorial Avenue in the north. It accommodates a sealed two-way carriageway of approximately 11.7m, and allows for kerbside parking along both sides. This has been confirmed by The Hills Shire Council, with this confirmation included in Appendix G

At present, vehicle movements along Stone Mason Drive are discontinuous as the road is still undergoing construction and connection to Memorial Avenue. Once this connection is completed, the intersection with Memorial Avenue will function in a left-in/left-out arrangement, with through and right turn movements not permitted.

2.2.3 Memorial Avenue

Memorial Avenue is a secondary arterial extending in an east-west alignment along the northern boundary of the subject site between Old Windsor Road and Windsor Road. Memorial Avenue is currently undergoing duplication works which will see the provision of 2 dedicated travel lanes in both directions along either side of a central median. Kerbside parking is not permitted.

2.3 Existing Parking Provisions

At present a total of 223 spaces are accommodated in the car park to the east of the playing fields comprising 213 conventional 90-degree spaces and a further 10 spaces in a parallel configuration along the western car park edge. A further 67 spaces are accommodated in the secondary car park near the baseball field, providing a total of 290 formalised parking spaces within the precinct.

Further to this, approximately 25 -30 parked vehicles can be accommodated along the western side of Stone Mason Drive, directly along the eastern frontage of the site, with potential for another 25 kerbside spaces along the northern side of the internal access road if required. It is considered that as these parking spaces directly front the subject site, and are not situated on the residential side of Stone Mason Drive, that their intended use is to service those attending the existing facilities at Kellyville Memorial Park.

On this basis, it is understood that the site can currently accommodate a parking demand in the order of 345 spaces.

2.4 Parking Occupancy Surveys

2.4.1 Existing parking occupancy surveys

Parking occupancy surveys were undertaken of the subject site on Tuesday 1st June 2021, between 7:00am and 7:00pm. In conjunction with these surveys, tube count surveys capturing inbound and outbound movements were also undertaken at each car park access. The figure below shows the surveyed areas and locations.

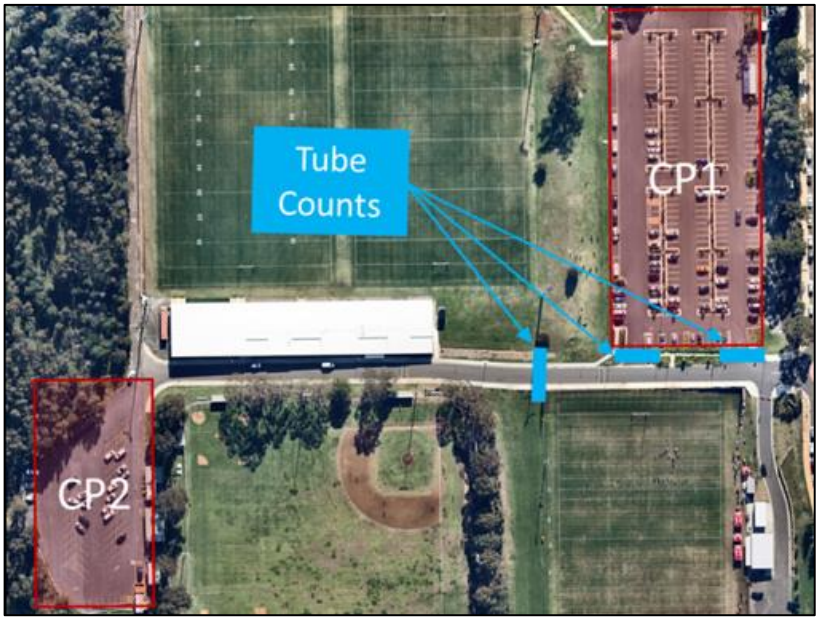


Figure 2.3 Survey Areas/Locations

For this survey period, the surveys subsequently showed a total provision of 290 spaces across the two (2) parking areas with a maximum occupancy of 72 spaces across the two parking areas occurring at 2:00pm. Outputs of the parking occupancy surveys are shown in Table 2.1 and Figure 2.4. With detailed outputs included within Appendix B to this report.

Table 2.1 Parking Occupancy Survey Outputs

Car Park	Capacity	Parking Occupancy												
		7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00
CP1	223	6	9	19	28	29	29	27	36	31	31	24	11	13
CP2	67	29	38	36	35	34	37	34	36	28	14	0	1	1
Capacity		**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**
Occupied		**35**	**47**	**55**	**63**	**63**	**66**	**61**	**72**	**59**	**45**	**24**	**12**	**14**

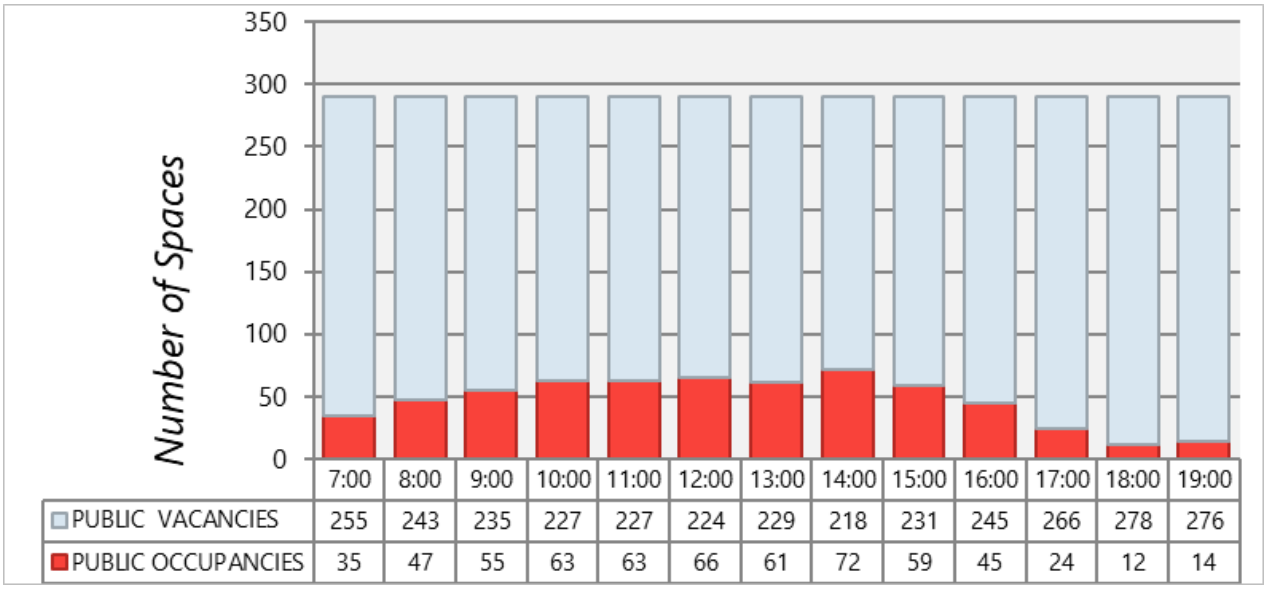


Figure 2.4 Parking Occupancy Survey Outputs

2.5 Existing Traffic Generation

In conjunction with the parking occupancy surveys, tube counts and turning movement counts were also undertaken during the week starting Sunday 30th May 2021. These surveys were undertaken for the intersection of Stone Mason Drive / Fairway Drive and Fairway Drive / Windsor Road, with the tub count surveys undertaken at the entries to the existing onsite parking areas. Based on these surveys, it was found that the peak period within the surrounding road network occurred between 7:45am – 8:45am for the morning peak and 4:30pm – 5:30pm for the afternoon peak.

The recorded volumes during the peak periods are shown overleaf with detailed outputs provided in Appendix C.

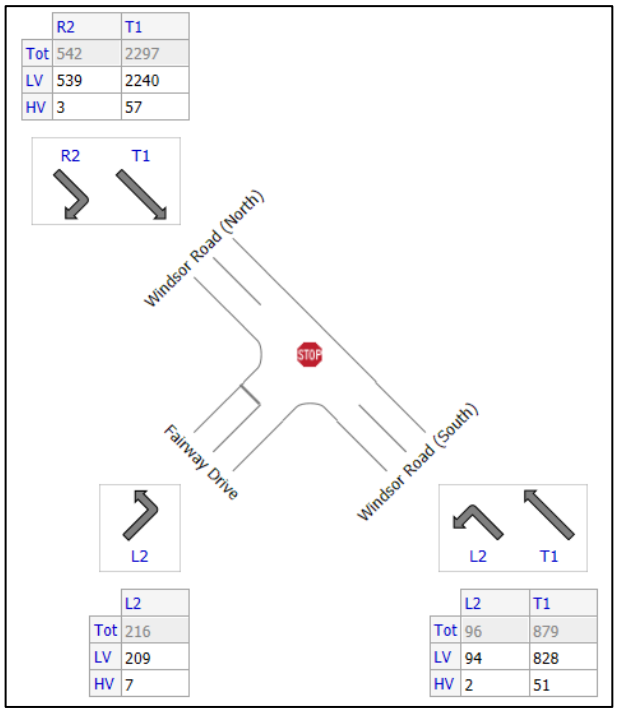


Figure 2.5 Windsor/Fairway AM Peak

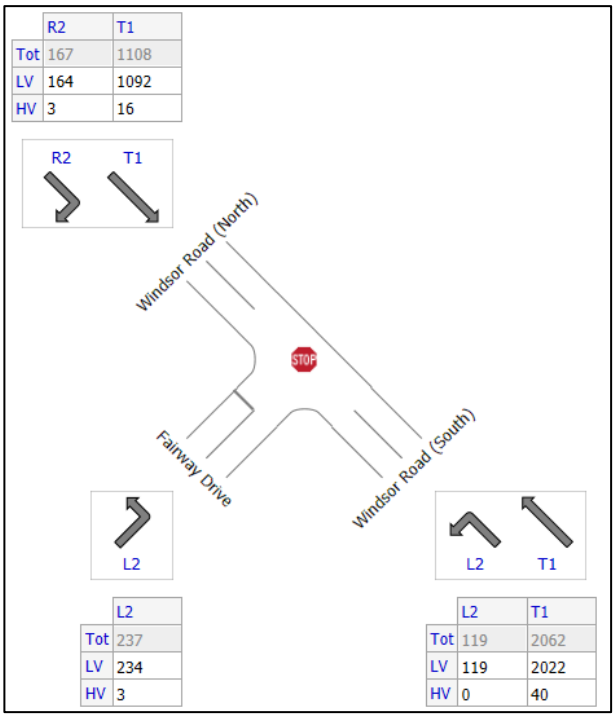


Figure 2.6 Windsor/Fairway PM Peak

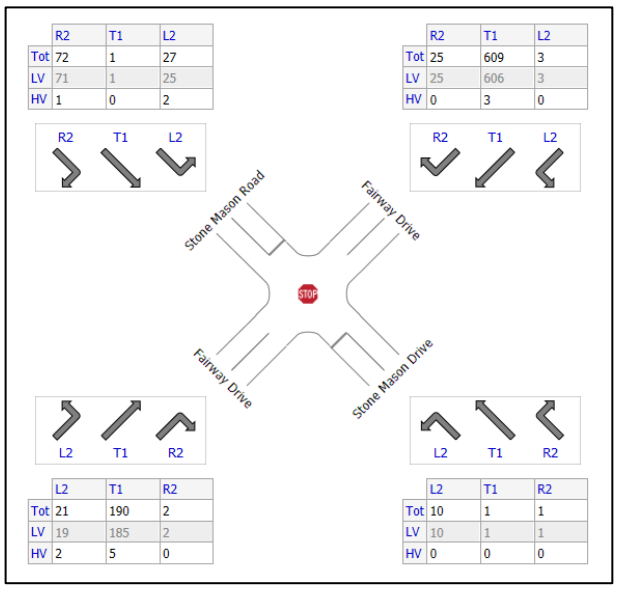


Figure 2.7 Fairway/Stone Mason AM Peak

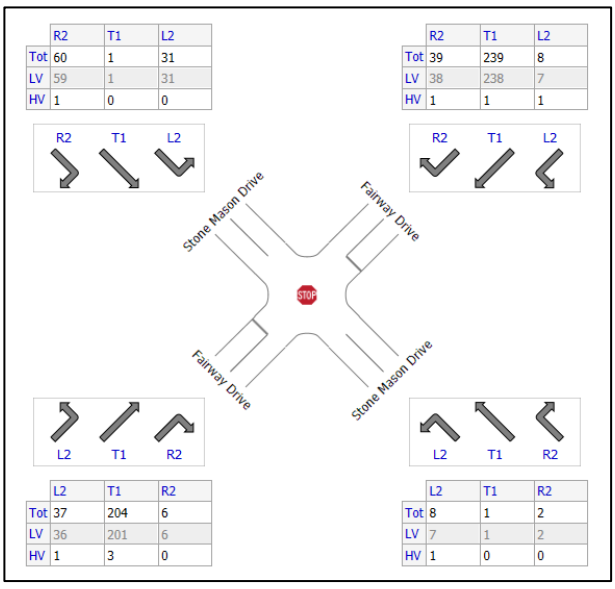


Figure 2.8 Fairway/Stone Mason PM Peak

Surveys were not undertaken at any of the intersection with Memorial Avenue due to the current duplication works being undertaken and the resulting change in intersection configurations that would result. It is also noted that the intersection of Severn Vale Drive is yet to be constructed.

For these intersections, consideration has been given to the modelling undertaken as part of the *Memorial Avenue Upgrade Traffic and Transport Assessment* in accordance with the SEARs letter issued by TfNSW (dated 4th August, 2021) with particular consideration given to the projected 2026 traffic volumes as it is considered that this best represents likely surrounding road network volumes upon completion of the subject proposal.

2.6 Sustainable Transport

The subject site is located within 2.0km of two (2) train stations with Kellyville Station located 1.9km to the north-west of the site and Bella Vista station approximately 1.7km south-west. Both stations operate along the Tallawong to Chatswood metro lines.

Several bus routes (as shown below) also operate from both stations, providing connections throughout the wider area, with particular consideration to bus route 651 which travels from Kellyville Station, along Memorial Avenue past the subject site.

Whilst it is noted that the stations may not be within a distance of the site whereby walking is considered viable for all, the existence of the noted bus routes does mean that use of these stations is a viable means of sustainable transport.

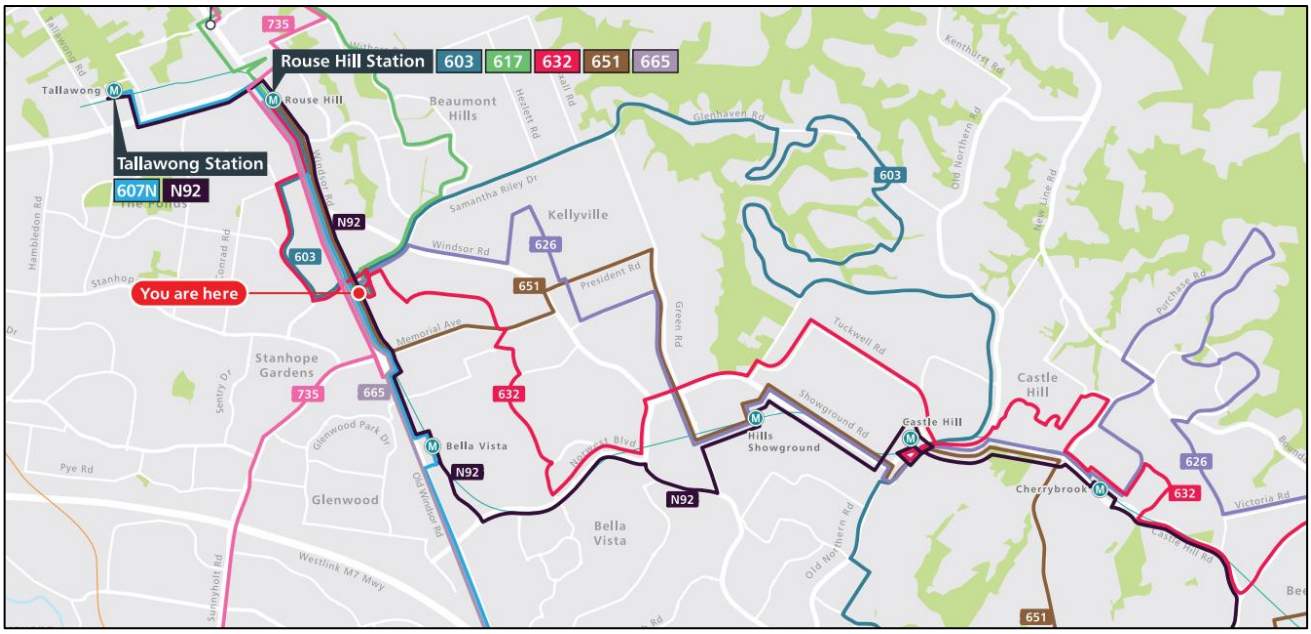


Figure 2.9 Kellyville Station and Connecting Bus Routes

Figure 2.10 Bella Vista Station and Connecting Bus Routes

3 Proposal

3.1 Site Upgrade

The proposed upgrade of the subject site will see:

- Improvement to the quality of each of the playing fields.
- The delivery of a new Centre of Excellence for NRL and (where applicable) community use.
- The provision of a new 1,504 seat grandstand and spectator mound.
- An extension to the car park accommodating an additional 40 parking spaces (including 1 DDA compliant space). This will result in the provision of 263 spaces within the off-street car park adjacent the CoE and a further 67 spaces within the other off street car park for a total provision of 330 spaces.
- Provision of 53 bicycle parking spaces.
- Provision of 7 motorcycle parking spaces.

A copy of the proposed site plan is shown below and also included in Appendix A to this report. A plan further detailing the car park extension is also included following.

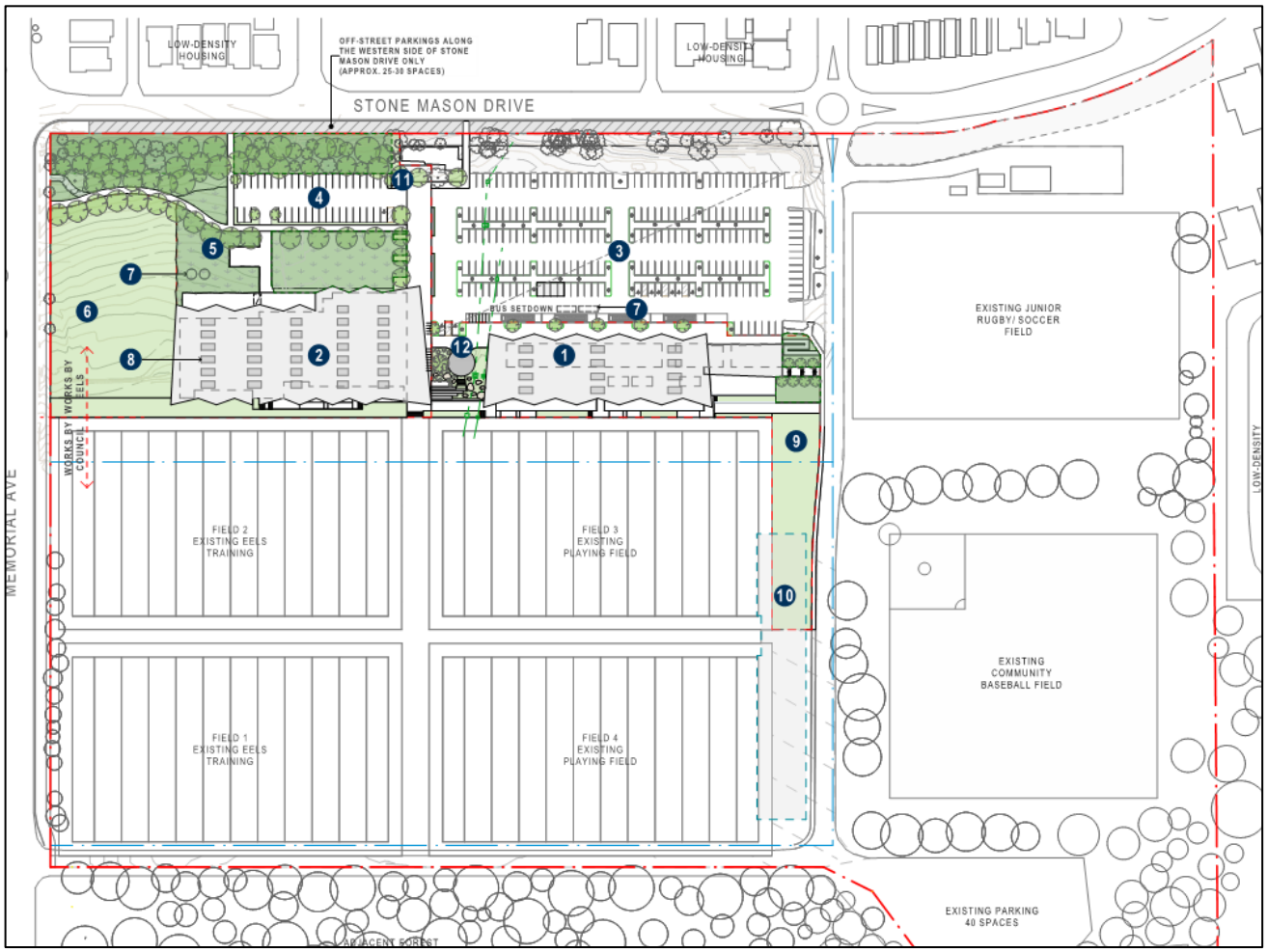


Figure 3.1 Site Development Plan

Figure 3.2 Car Park Extension Plan

3.2 Post Upgrade Site Operations

Post upgrade, the subject site is typically to cater for a variety of uses including:

- NRL/Centre of Excellence (CoE);
- Community Use,
- Club Training,
- Matchday (Weekend Sport); and
- Large scale event use.

A summary of the anticipated use schedules and patronage numbers for each of these uses on a two-hourly basis across both weekdays and weekends are presented below. It is noted that use of the site by locals walking to the precinct, and arranged use of facilities by the community on non-match days has been excluded from the following analysis. It has also been assumed that any weekend community training use of the CoE facilities will finish prior to any matchday events occurring (no overlap).

Table 3.1 Site Use and Patronage Schedule – Weekday

Use	Monday to Friday							
	6am - 8am	8am - 10am	10am - 12pm	12pm - 2pm	2pm - 4pm	4pm - 6pm	6pm - 8pm	8pm - 10pm
PNRL Eels COE	80	130	130	130	130	90	40	0
Community Facilities - Training	0	0	0	0	0	275	300	250
Community Facilities - Public	85	45	45	45	45	55	50	50
Match Day - Field 5 - Community	0	0	0	0	0	0	0	0
Match Day - Fields 3 & 4 - Eels Pathway	0	0	0	0	0	0	0	0
Total Regular User Numbers	165	175	175	175	175	390	340	300

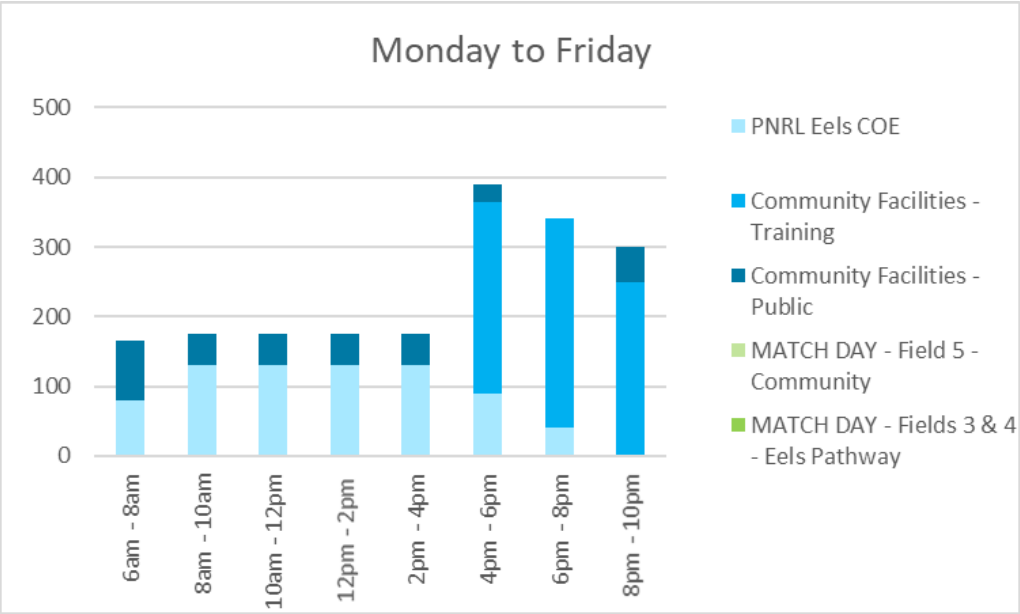


Figure 3.3 Weekday Site Use Patronage Numbers

Table 3.2 Site Use and Patronage Schedule – Saturday

Use	Saturday							
	6am - 8am	8am - 10am	10am - 12pm	12pm - 2pm	2pm - 4pm	4pm - 6pm	6pm - 8pm	8pm - 10pm
PNRL Eels COE	0	95	95	0	0	0	0	0
Community Facilities - Training	230	230	0	0	0	0	0	0
Community Facilities - Public	0	20	20	70	70	30	0	0
Match Day - Field 5 - Community	0	131	130	130	130	130	0	0
Match Day - Fields 3 & 4 - Eels Pathway	0	0	550	550	550	550	0	0
Total Regular User Numbers	230	476	795	750	750	710	0	0

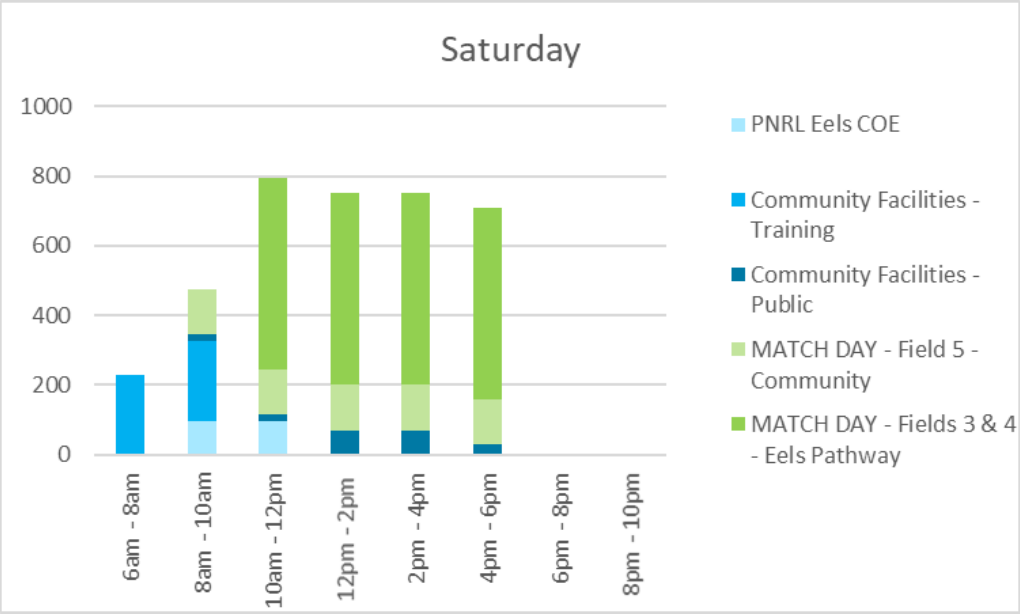


Figure 3.4 Saturday Site Use Patronage Numbers

Table 3.3 Site Use and Patronage Schedule – Sunday

Use	Sunday							
	6am - 8am	8am - 10am	10am - 12pm	12pm - 2pm	2pm - 4pm	4pm - 6pm	6pm - 8pm	8pm - 10pm
PNRL Eels COE	0	95	95	0	0	0	0	0
Community Facilities - Training	0	0	0	0	0	0	0	0
Community Facilities - Public	0	50	50	30	30	30	0	0
Match Day - Field 5 - Community	0	145	145	145	145	145	0	0
Match Day - Fields 3 & 4 - Eels Pathway	0	0	550	550	550	550	0	0
Total Regular User Numbers	0	290	840	725	725	725	0	0

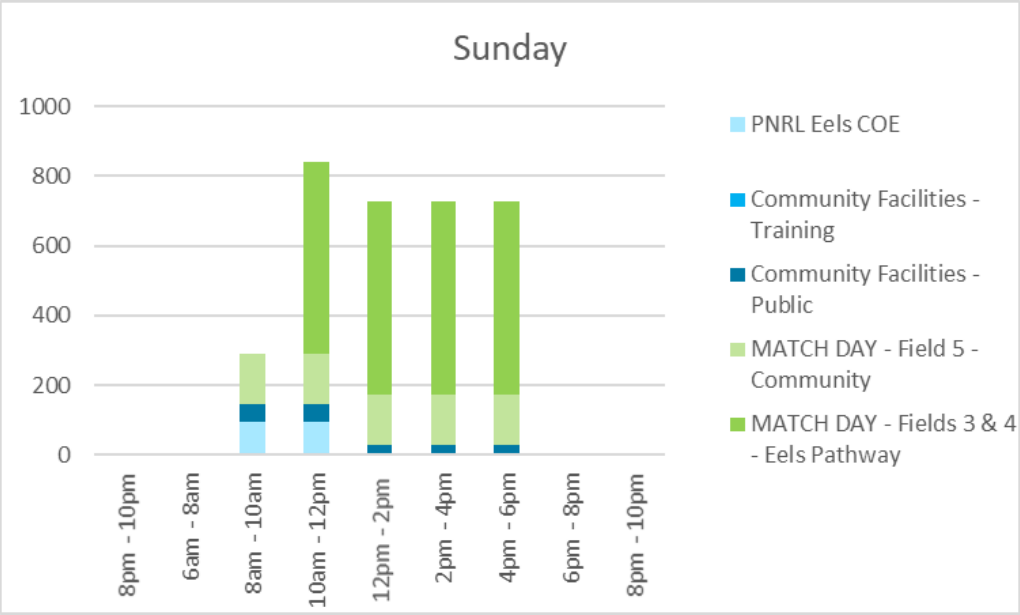


Figure 3.5 Sunday Site Use Patronage Numbers

In addition to these site use projections across regular use, it is also anticipated that occasional events may also occur at the site generating up to 2,870 patrons. These events would likely be in the form of NRLW matches being played at the site. It is understood that these events would likely occur on either a Saturday or Sunday and would be of an infrequent nature in occurrence (potentially 4 – 5 times annually).

4 Parking Requirements

4.1 Statutory Car Parking Requirements

The subject site is located within The Hills Shire Council precinct and is subsequently subject to the parking provision rates as set out within Table 1 to Part C of The Hills 2012 Development Control Plan (DCP). In line with existing conditions, and inclusive of the current community uses, the site is to continue be used as a *Recreational Facility*.

Whilst the general use of the site as a *Recreational Facility* is referenced in the table, the specific use is not categorised or provided with a parking provision rate and as such proposed parking provisions are to be substantiated based on the provision of a parking study. Subsequently the following is provided.

4.2 Parking Study

4.2.1 Anticipated Parking Demands – Case Study of Existing Site Use

A review of the outputs of the existing conditions parking study has been undertaken in correlation with the provided site usage and patronage data in order to determine indicative parking generation rates for the various regular/typical site uses. It is noted that use of the site for large scale events is likely to generate parking demands greater than what can be accommodated onsite, however given the infrequent nature of these events, it is proposed that these parking demands and accommodations will be addressed through alternate arrangements as presented later in this report. Subsequently, the case study rates for regular site use are as follows:

4.2.1.1 NRL/Centre of Excellence Use

Based on the provided operational information, NRL use of the Centre of Excellence is typically expected to generate a weekday peak of up to 130 people onsite across players and staff. The breakdown of attendees for this use comprises 40 people for the NRL Squad, 40 people for the NRL football department (coaches, assistants, medical, etc) and 50 people for further admin staff.

In terms of the parking demands as generated by these players and staff, the parking occupancy surveys were that were undertaken on Tuesday 1st of June were done with the understanding that all staff and players were to be onsite between 9am – 12pm, and as such are considered to be representative of the typical demands that this use of the site may generate.

Between 9am – 12pm the parking surveys showed a peak parking occupancy of 66 spaces. Conservatively however it was noted that a peak occupancy of 72 spaces occurred at 2pm. On this basis it is therefore considered that on the basis that all players and staff were present, the CoE/NRL use of the site may generate parking demands at a rate of between 0.51 and 0.55 spaces per person in attendance.

From a conservative perspective however it is noted that as the current arrangements are still temporary, full admin staff attendance may not have occurred during the survey period, subsequently a parking rate has been considered whereby only players, coaching staff and 50% of admin staff were onsite during the survey period (105 people) which therefore indicates a parking demand rate of 0.63 – 0.68 spaces per person.

4.2.1.2 Community/Training Use

Community use of the site for training purposes is understood to generally peak between 4:30pm and 7:30pm on weekdays. At present, not all fields are developed so it is considered that full use/occupation of the site is not currently occurring for training purposes, however based on the schedule of site use and the fields that were available, it is understood that in the order of 125 – 150 people may have been onsite between 4pm – 8pm on the day the parking surveys were undertaken. It is noted that this number is inclusive of NRLW use of the CoE which occurs at this time and estimates approximately 40 people across players and staff.

Based on the available survey data, it was noted that a peak of 45 occupied spaces was observed between 4pm – 5pm, before decreasing to 24 occupied spaces between 5pm – 6pm. Given the initial presence of up to 40 NRLW players and staff, and assuming that they generated parking demands at the lower limit of 0.51 – 0.55 spaces per player (i.e. 20 – 21 spaces), it has been assumed that the reduction in peak parking demand is generated through the NRLW players and staff leaving the site, thereby resulting in a remainder of 24 occupied spaces across 85 – 110 people. On this basis it is estimated that the site may generate a weekday evening parking demand associated with community/training use of the site at a rate of between 0.22 – 0.28 spaces per person.

4.2.1.3 Matchday (Weekend Sport) Use

To determine potential parking rates associated with matchday use of the site, investigation of site parking demands has been undertaken based on aerial imagery of the site from Saturday 5th June 2021 at approximately 12:30pm, during which time Field 5 was in use.

This investigation indicates in the order of 125 people (players/staff/spectators) being onsite at this time, with 56 vehicles parked within the off-street car park and a further 25 cars along the western side of Stone Mason Drive for a total provision of 81 parked cars proximate to Field 5. The area investigated is noted in the figure below and is followed by some of the assumptions made during this investigation.

Figure 4.1 Site Use – Saturday 5th June 2021 – Approx. 12:30pm

- All cars in the car park (CP1), along with 60% of vehicles along the western side of Stone Mason Drive fronting the site are associated with those attending the playing field. It is noted that on non-match days, there can be between 8 – 19 vehicles parked along the western side of Stone Mason Drive and as such these have been removed from the count of spaces associated with the matchday use.
- Cars in car park CP2 are located too far away from the used field, and therefore may not be at the site for the purposes of attending the game at Field 5 and as such have not been included in the count of onsite vehicles.
- Whilst some vehicles in the counted area may be associated with nearby residential dwellings or construction works being undertaken, for the purposes of this assessment, it is considered they are associated with the site.
- Only patrons that are visible in the aerial image have been counted. Whilst it is also noted that a number of patrons may be in undercover positions, or within buildings, as these patrons are not visible, they have not been included in the count of players/patrons to the site.

Further to the above, it is also noted that operational information provided for the site indicates that on a matchday, Field 5 is expected to accommodate in the order of 130 players/staff/ and spectators, aligning with the observations made.

On the basis of the above observations and assumptions, it is therefore considered that the matchday use of the site would be expected to generate a demand for in the order of 71 spaces by between 125 – 130 people generating parking demands of between 0.55 – 0.57 spaces per person. Further extrapolation of the patronage numbers and observed parking demands suggest that these parking demand rates could also be presented as a rate of 1.42 spaces per player or staff member in attendance.

4.2.2 Additional Case Study Rates

Further to the above assessment of site observed parking demands, and in order to support the outcomes of these findings, consideration has also been given to rates as presented within other publicly available car parking assessments undertaken for other recent sporting precinct developments, as well as case study data held by WSP. These locations have been chosen as case studies as they are considered to be representations of sites similar in nature to the proposed development both with respect to scale and community/training uses. Details on these additional rates are as follows:

- Cricket NSW Centre of Excellence (2019, Sydney Olympic Park, NSW) - Analysis undertaken within the traffic impact analysis report for this development suggests a weekday peak parking provision rate of 0.51 spaces person in attendance (noting that this assumes CoE and training occurring at the same time) and a weekend/matchday peak parking provision rate of 0.50 spaces person in attendance.
- Orange Regional Sporting Precinct (2021, Orange, NSW) – Development of this precinct includes the provision of eight rugby league fields. Analysis undertaken within the traffic impact analysis report for this precinct suggests a matchday parking provision rate of 0.41 spaces person in attendance. Alternatively, this provision can also be presented as a rate of 1.06 spaces per player/staff.
- State Hockey and Netball Centre (Parkville, Vic) – Available survey data indicates that on a typical Saturday there was a peak parking demand of 0.44 spaces per person generated during typical weekend matchday conditions.
- Bulleen Park (Bulleen, Vic) – Multiple football (AFL / Soccer) fields accommodated onsite. Available survey data indicates that matchday use of the site may generate parking demands at a rate of up to 1.15 spaces per player/staff.

Comparative review of these case study rates against the existing observed site generation rates for matchdays indicates an element of conservatism within the values observed during the survey of the subject site.

4.2.3 Summary of Case Study Rates

On the basis of the preceding analysis and comparison to other case study data, it is considered that the observed rates for the subject site are generally representative of the parking demands rates that other similar sites may also generate for varying uses. Subsequently, it is proposed that the following parking provision rates are used for assessment of future site demands:

- NRL/CoE – 0.68 spaces per person in attendance.
- Weekday Community Use and Training – 0.28 spaces per person in attendance.
- Matchday Use (All) –1.42 spaces per player/staff.

For matchday use, it is considered that given possible economies of scale with respect to the parking demands of larger events (i.e. more local foot traffic and higher utilisation of shared trips) a per player/staff rate of parking demand is more appropriate for further assessment. This rate therefore includes provision for the players and staff, as well as any spectators or support that may also be generated during the match.

4.2.4 *Application of Case Study Rates and Adequacy of Parking Provision*

Based on the preceding, the following assessment of anticipated peak patronage numbers for each of the varying regular uses of the site is presented below, along with the corresponding anticipated parking demands associated with each of these uses.

Table 4.1 Peak Site Patronage Numbers

USE		**PATRONS**			
		Weekday Daytime Peak (9-am – 4pm)	**Weekday Evening Peak (4pm – 8pm)**	**Saturday Peak (All Day)**	**Sunday Peak (All Day)**
CoE		130	90	95	95
Community Use and Facilities		45	330	20	50
Matchday Use	Player/Staff	-	-	200	215
	Spectator	-	-	480	480
Total Patronage/ People in Attendance		**175**	**390**	**795**	**840**

Table 4.2 Anticipated Regular Use Parking Demands

USE	**PARKING PROVISION RATE**	**ESTIMATED PARKING SPACE DEMANDS**			
		Weekday Daytime Peak	**Weekday Evening Peak**	**Saturday Peak**	**Sunday Peak**
CoE	0.68 spaces per person	88	61	65	65
Community Use - Facilities	0.28 spaces per person	13	92	6	14
Community Use - Matchday	1.42 spaces per player/staff	0	0	284	305
Total Anticipated Site Parking Demand		**101**	**153**	**355**	**384**

With respect to the above estimated parking demands, it is considered that under typical weekday and weekend matchday conditions, the existing on and off-street parking supply of 345 spaces, plus the proposed car park expansion of 40 spaces, resulting in a total provision of 385 spaces, should provide sufficient capacity to accommodate the anticipated peak demands.

Furthermore, and with regards to the anticipated parking demands for the community (matchday) use of the site, as this is an existing condition, it is considered these demands would already occurring under typical site use and as such would not be an unfamiliar occurrence for the precinct.

In terms of the use of on-street parking to accommodate site demands, as identified within Section 2.3, the only on-street provisions that have been considered are those directly fronting the site along the western side of Stone Mason Drive, or situated within the internal access road to the site. On-street provisions do not include any parking directly fronting surrounding residential properties.

In addition to the above, it is again noted that these demands and provisions are for typical peak site use with the larger (and infrequent) event use of the site and associated parking demands to be addressed via the use of alternative arrangements.

4.3 Other Parking Considerations

4.3.1 DDA provisions

As per Table 2 to Part C of The Hills 2012 Development Control Plan (DCP) the use of the site as a *Recreational Facility* has a requirement that 3% of total car parking spaces are to be provided as DDA compliant spaces.

A total of nine (9) DDA compliant parking spaces are already provided across the existing 290 off-street parking spaces, in line with the required provisions rates, therefore the proposal for a further 40 parking spaces would require the provision of 1 more DDA complaint space.

The development plans meet this requirement with the provision of 1 additional DDA compliant space located in the new parking area.

4.3.2 Motorcycle Parking

As per Clause 2.4 to Part C of The Hills 2012 Development Control Plan (DCP), where more than 50 onsite parking spaces are proposed, motorcycle parking should also be provided at a rate of 1 space per 50 parking spaces or part thereof.

Given the proposed site upgrade only currently proposes the provision of an additional 40 spaces as part of the sites redevelopment, it is not considered that any motorcycle parking is required from a standalone perspective.

Notwithstanding this, on the basis of the overall precinct accommodating a total post development provision of 330 spaces, it is considered that allowance for 7 motorcycle spaces would be appropriate and in line with the statutory requirements.

In line with this requirement, the prepared development plans have shown a provision of 7 motorcycle parking spaces located along the western edge of the existing parking area.

4.3.3 Bicycle Parking

Clause 2.3 to Part C of The Hills 2012 Development Control Plan (DCP) outlines the bicycle parking requirements for a variety of proposed development uses, however does not provide a provision rate for the identified use of the site as a *Recreational Facility*.

Noting this, consideration has subsequently been given to the provision of bicycle parking based on ESD input which has identified the following rates for the provision of secure bicycle parking facilities:

- 7.5% of total regular site occupants.
- 5% of peak site visitors.

In applying the above rates to the site it is assumed that regular site occupants relate to those attending the site during the weekday for use of the CoE and Community Facilities, with the peak site use being aligned with the weekend/matchday use of the site.

Subsequently, and as per the numbers assessed in the preceding parking analysis, it is noted that there would be 390 regular occupants with a further 450 occupants onsite during peak/matchday conditions (taking the total site occupancy up to 840 patrons).

Based on these numbers and application of the identified bicycle parking provision rates, the following table has been prepared identifying the potential requirement for the proposed development.

Table 4.3 Anticipated Bicycle Parking Provision Requirements

USE	PROVISION RATE	PATRON NUMBERS	BIKE SPACES REQ.
Regular	7.5%	390	30
Peak	5%	450	23
Total	**-**	**840**	**53**

Based on the above, it is considered that the site may require the provision of 53 bicycle parking spaces. In line with this requirement, the development plans show the provision of 53 spaces comprising a mixture of at-grade and vertical hanging spaces situated along the outer walls of the CoE and Community Facility.

5 Traffic Generation

5.1 Anticipated Traffic Generation Rates – Case Study of Existing Site Use

As previously noted, tube and traffic movement count surveys were undertaken during the week starting Sunday 30th May, 2021. The outputs of these surveys have subsequently been reviewed in conjunction with the provided site usage data in order to determine indicative peak hour traffic generation rates for the various typical site uses.

With regards to site traffic generation, it is considered that the critical periods will be during the AM and PM typical weekday peaks for the surrounding road networks, during which times the site will be generating traffic for both the NRL/CoE use and also the community use of the playing fields for training purposes.

These case study rates for these uses are therefore presented as follows:

5.1.1 NRL/Centre of Excellence Use

Based on the provided operational information, NRL use of the Centre of Excellence (CoE) is typically expected to generate a weekday peak of up to 130 people onsite across players and staff. The breakdown of attendees for this use comprises 40 people for the NRL Squad, 40 people for the NRL football department (coaches, assistants, medical, etc) and 50 people for further admin staff.

In terms of the traffic volumes generated by these players and staff, the tube count surveys that were undertaken on Tuesday 1st of June, 2021 were done with the understanding that all staff and players were to be onsite by 9am. For the purposes of a conservative assessment, it is considered that all vehicle movements to and from the site prior to 9am are subsequently associated with the NRL and Centre of Excellence use.

Between 5am – 9am, the tube counts recorded a total of 64 inbound vehicle movements and 13 outbound vehicle movements totalling of 77 vehicle movements. Of these movements, a peak of 25 vehicle movements was observed occurring between 7am – 8am comprising 19 'in' movements and 6 'out' movements.

As noted above, under typical operations, a total of 130 players and staff would be expected to be onsite. From a conservative perspective however it is noted that as the current arrangements are still temporary, full admin staff attendance may not have occurred during the survey period, subsequently a traffic generation rate has been considered whereby only players, coaching staff and 50% of admin staff were onsite during the survey period (105 people).

With consideration to this, the following traffic generation observations have been made given the results of the surveys:

- The NRL/CoE use had an overall (pre9am) traffic generation rate of 0.73 vehicle movements per patron in attendance.
- The NRL/CoE use had a peak hour traffic generation rate of 0.24 vehicle movements per patron with a distributional split of 85/15 (inbound/outbound) in the AM peak.

5.1.2 Community/Training Use

Community use of the site for training purposes is understood to generally peak between 4:30pm and 7:30pm on weekdays. At present, not all fields are developed so it is considered that full use/occupation of the site is not currently occurring for training purposes, however based on the schedule of site use and the fields that were available, it is understood that in the order of 85 – 110 people associated with the community use for training purposes may have been on-site between 4pm – 8pm.

Based on a review of the tube count and turning movement count surveys (giving consideration to traffic movements as generated through the adjacent residential developments and the NRL/CoE use of the site) it is noted that in the order of 92 vehicle movements during the peak hour, with a distributional inbound/outbound split of 50/50.

Conservatively assuming only 85 patrons were in attendance at the time of the surveys, it is therefore noted that the community/training use of the site would be generating peak hour traffic at a rate of 1.08 movements per patron.

5.2 Application of Case Study Rates

Based on the preceding case study analysis, consideration has been given to the potential post development traffic generation of the subject site during both the AM and PM road network peak periods. The following tables assess the peak patronage of the site during both of these periods, and identify the additional site traffic that this patronage may generate on the surrounding road network.

Table 5.1 Site Patronage Numbers During Road Network AM and PM Peak Periods

USE	**PATRONS***	
	Weekday AM Peak	**Weekday PM Peak**
	7:45am – 8:45am	**4:30pm – 5:30pm**
NRL/CoE	130	90
Community Use and Facilities	45	300
Total Patronage/ People in Attendance	**175**	**390**

- Patronage rates are as set out in Section 3.2 of this report.

Table 5.2 Post Development Traffic Generation

USE	**PEAK HOURTRAFFIC GENERATION RATE**	**TRAFFIC MOVEMENTS**	
		Weekday AM Peak (veh/hr)	**Weekday PM Peak (veh/hr)**
		7:45am – 8:45am	**4:30pm – 5:30pm**
NRL/CoE	0.24 veh/patron	32	22
Community Use and Facilities	1.08 veh/patron	49	324
Total Peak Site Traffic Generation (veh/hr)		**81**	**346**

Table 5.3 Post Development Traffic Distributional

USE	TRAFFIC MOVEMENTS			
	Weekday AM Peak 7:45am – 8:45am		Weekday PM Peak 4:30pm – 5:30pm	
	Inbound	Outbound	Inbound	Outbound
NRL/CoE (85/15 - AM, 15/85 - PM)	27	5	19	3
Community Use and Facilities (50/50 AM and PM)	25	25	162	162
Resultant Additional Road Network Traffic	**52**	**30**	**181**	**165**

Table 5.4 Additional Peak Hour Road Network Traffic

USE	TRAFFIC MOVEMENTS			
	Weekday AM Peak 7:45am – 8:45am		Weekday PM Peak 4:30pm – 5:30pm	
	Inbound	Outbound	Inbound	Outbound
Total Post Development Traffic	52	30	181	165
Existing Traffic (From Surveys)	19	6	46	46
Resultant Additional Road Network Traffic	**33**	**24**	**135**	**119**

The above analysis indicatively shows that post development, the subject site could be anticipated to generate in the order of 57 additional AM peak movements and 254 additional PM peak vehicle movements on the surrounding road network.

5.3 Site Traffic Distribution

In conjunction with the preceding calculation of site generated traffic movements, the Turning Movement Count (TMC) survey data for the intersections of Fairway Drive / Windsor Road and Stone Mason Drive / Fairway Drive have been reviewed in order to determine the distribution of traffic to and from the site.

In conjunction with these surveys, consideration has also been given to the traffic distributions that have been modelled in the *Memorial Avenue Upgrade Traffic and Transport Assessment* for the intersections of Memorial Avenue / Severn Vale Drive and Memorial Avenue / Windsor Road.

Other key considerations that have been factored into determining the distribution of traffic to and from the site are:

- No right turns from Fairway Drive are permitted between the times of 6am-10am and 3pm-7pm at the intersection between Fairway Drive and Windsor Road.
- At the time of the TMC surveys, Stone Mason Drive was not fully constructed and as such, the sporting ovals and Centre of Excellence could only be accessed via the south through Fairway Drive.
- Future conditions of the unsignalised intersection of Stone Mason Drive / Memorial Avenue will only allow for a Left-in/Left-out arrangement into Stone Mason Drive, noting that proposed functional layout plans do not illustrate any median break at the intersection.

Accordingly, Figure 5.1 below illustrates the anticipated traffic distributions and resultant volumes during typical AM and PM peak periods.

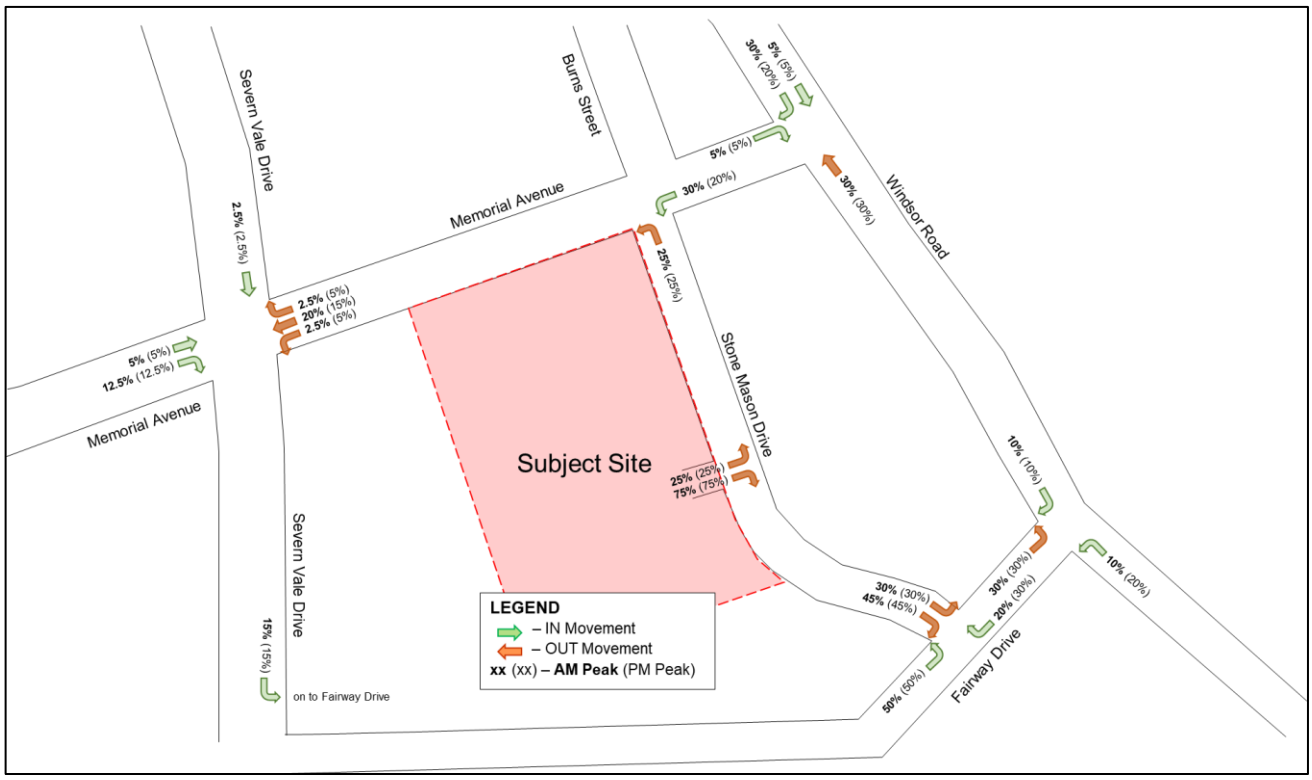


Figure 5.1 Anticipated Traffic Distributions

5.4 Post Development Site Generated Traffic Volumes

Given the preceding traffic distributions as well as the case study projected AM and PM peak period traffic volumes, Figure 5.2 has been prepared showing the distribution of site generated traffic.

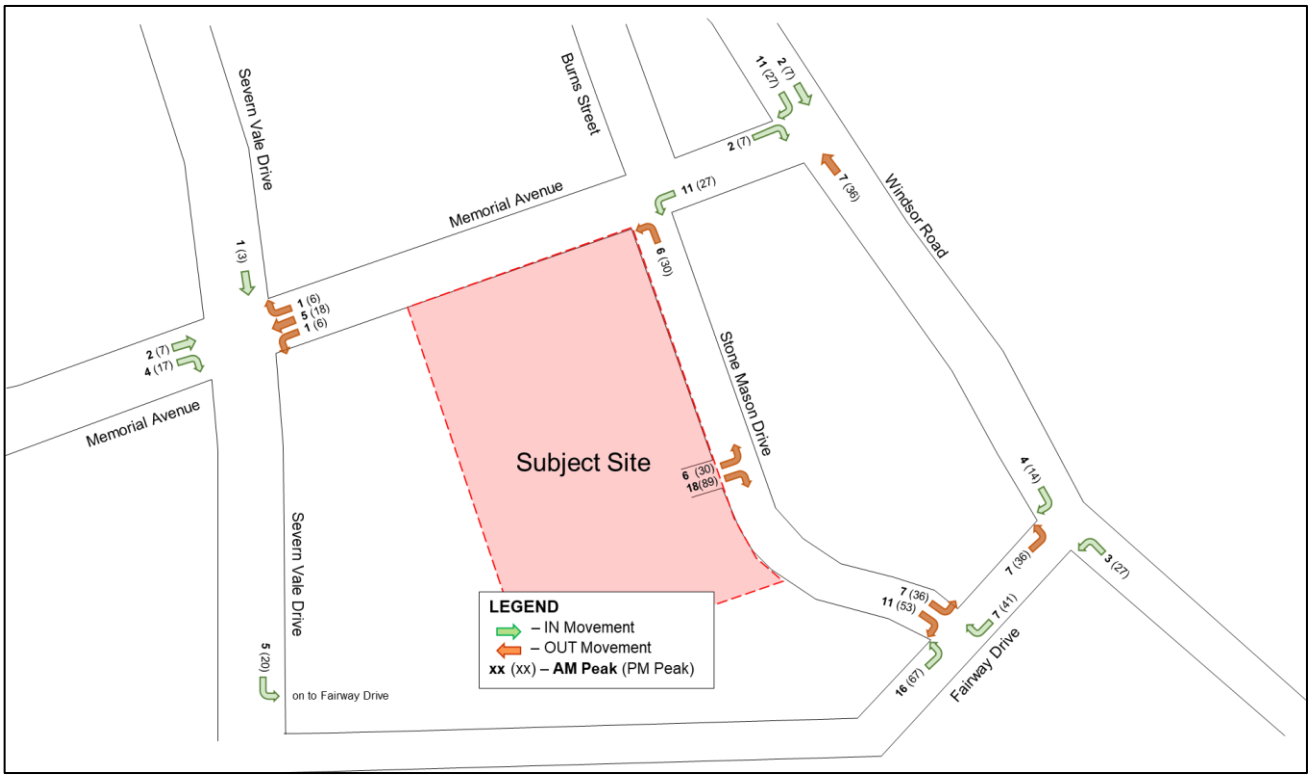


Figure 5.2 Subject Site Distributed Traffic Volumes

5.5 Road Network Growth Rates

Based on a review of the *Memorial Avenue Upgrade Traffic and Transport Assessment* it is noted that whilst traffic surveys were undertaken in 2014, growth rate projects have been used in order to estimate traffic scenarios for assessment of 2026 and 2036 road network conditions. It is considered that as the traffic volumes and subsequent growth projections that have been presented in this report are representative of the entire area surrounding the subject site and give consideration to the future upgraded road network rather than the current configuration, that use of these rates is appropriate in order to align the outcomes of the site analysis, with the assessment that has been undertaken for the wider precinct. Use of these rates also aligns with TfNSW requirements as noted within Item 5 of their letter (Table 1.2).

Based on a review of the projected traffic volumes, it is understood that growth rates of 2.5% per annum are anticipated for the road network up until 2026, following which they are anticipated to decline slightly to a rate of 1.7% per annum.

Subsequently, these same growth rates have been considered with respect to future growth of existing traffic volumes at surveyed intersections, as well as for calibrating traffic analysis models.

6 Traffic Impacts

6.1 Key Intersections and Assessment Considerations

Access to the subject site is facilitated via a number of key intersections within the surrounding road network through which the use of the site may ultimately generate additional traffic movements as have been presented in Section 5 preceding. These intersections are:

- Stone Mason Drive / Fairway Drive
- Fairway Drive / Windsor Road
- Stone Mason Drive / Memorial Avenue
- Memorial Avenue / Severn Vale Drive
- Memorial Avenue / Windsor Road

Analysis has subsequently been undertaken in order to determine the potential impacts that any additional site generated movements may have on the future operation and functionality of these intersection. Assessment of this has been conducted either via the use of SIDRA analysis, or through examination of future traffic volumes and capacities at the intersections as presented within the *Memorial Avenue Upgrade Traffic and Transport Assessment* and how these compare to the additional traffic as may be generated by the subject site.

As noted in Section 5.6, analysis of these intersections has been undertaken for 2026 conditions, to align with initial site use once development has been completed, and for 2036 conditions to allow for 10 years growth within the surrounding road network. All road network growth rates are as presented in Section 5.6 as calculated from the *Memorial Avenue Upgrade Traffic and Transport Assessment.*

Assessment of these intersections, along with the time frames assessed and the methodology considered align with the additional TfNSW SEARs request items as noted in Table 1.2.

6.2 SIDRA

SIDRA Intersection is a computer package developed to assess the operating characteristics of an intersection including Degree of Saturation, Average Delay, 95%ile queue, and Level of Service.

Degree of Saturation (DoS) is the ratio of traffic undertaking a particular movement within the intersection compared to the maximum capacity calculated for that movement. The various DoS ranges are described as:

- Up to 0.6 Excellent
- 0.6 to 0.7 Very Good
- 0.7 to 0.8 Good
- 0.8 to 0.9 Fair
- 0.9 to 1.0 Poor
- 1.0+ Very Poor

Average Delay is the delay, in seconds, which can be expected over all the vehicles making a particular movement in the intersection during the peak hour.

The **95%ile Queue** represents the maximum queue length, in metres, expected in 95% of the calculated queue events during the peak hour.

Level of Service (LoS) relates to the performance of the intersection with respect to the average delay experienced. LoS classifications vary depending on whether signal or sign controls are used at an intersection. These various levels are presented as follows:

Table 6.1 Level of Service Classifications

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE IN SECONDS (**d**)	
	Signals	**Sign Control**
A	**d** ≤ 10	**d** ≤ 10
B	10 < **d** ≤ 20	10 < **d** ≤ 15
C	20 < **d** ≤ 35	15 < **d** ≤ 25
D	35 < **d** ≤ 55	25 < **d** ≤ 35
E	55 < **d** ≤ 80	35 < **d** ≤ 50
F	80 < **d**	50 < **d**
N/A	-	In some cases the intersection LOS and Major Road Approach LOS values are considered Not Applicable (N/A) for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements."

With respect to these assessment criteria, analysis of the intersections and the subsequent outcomes are presented as follows:

6.3 Stone Mason Drive / Fairway Drive

SIDRA analysis has been undertaken for existing conditions at the intersection of Fairway Drive and Stone Mason Drive based on the volumes recorded within the traffic movements counts. A summary of the outcomes of this analysis is presented below, with detailed analysis included within Appendix E.

Table 6.2 Existing Traffic Volumes

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Stone Mason / Fairway	AM	0.45	5	28	A
	PM	0.21	5	10	A

Table 6.3 Existing Traffic Volumes + Site

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Stone Mason / Fairway	AM	0.46	5	29	A
	PM	0.26	6	13	A

Table 6.4 Existing Traffic Volumes +2026 Growth + Site

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Stone Mason / Fairway	AM	0.52	6	36	A
	PM	0.29	6	15	A

Table 6.5 Existing Traffic Volumes +2036 Growth + Site

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Stone Mason / Fairway	AM	0.66	6	55	A
	PM	0.37	6	21	A

Based on a review of the above outputs, it is therefore noted that even under 2036 growth conditions, the intersection of Stone Mason Drive and Fairway Drive will operate under acceptable conditions, adequately accommodating the site generated traffic movements.

6.4 Fairway Drive / Windsor Road

SIDRA analysis has been undertaken for existing conditions at the intersection of Fairway Drive and Windsor Road based on the volumes recorded within the traffic movements counts. A summary of the outcomes of this analysis is presented below, with detailed analysis included within Appendix E.

Table 6.6 Existing Traffic Volumes

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Fairway/ Windsor	AM	1.0+	64	966	N/A*
	PM	1.0+	200+	1000+	N/A*

*Refer LoS Classification table

Based on this analysis, it is noted that under existing conditions, the intersection of Fairway Drive and Windsor Road is already operating at a level whereby its functional capacity is being exceeded in both the AM and PM peak periods.

Subsequently it is considered that there is warrant for the responsible authority to look at upgrading this intersection to address these existing constraints.

It is noted that the above identified need to upgrade the intersection is a function of existing conditions and is not at all related to the proposed site development. As such, it is considered that any upgrades would be irrespective of the proposal and would be required to be undertaken by the relevant authority in control of this intersection.

Notwithstanding the above, a comparative assessment has been undertaken for the Fairway Drive and Windsor Road intersection, assessing the projected operation of the intersection under 2026 traffic volumes, and comparing that to 2026 conditions with the inclusion of site generated traffic volumes. The outputs of this analysis are presented below.

Table 6.7 Comparison between 2026 Traffic Volumes and 2026 + Site Traffic Volumes

ASSESSMENT CRITERIA	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
2026 Volumes	AM	1.0+	180	1000+	N/A*
	PM	1.0+	200+	1000+	N/A*
2026 + Site Volumes	AM	1.0+	185	1000+	N/A*
	PM	1.0+	200+	1000+	N/A*
Comparison	**AM**	-	**+5**	-	-
	PM	-	-	-	-

*Refer LoS Classification table

This analysis further confirms that prior to the introduction of site generated movements, the intersection will already be operating beyond functional capacity, subsequently warranting an upgrade, and that the introduction of site generated movements will not change this condition.

6.5 Stone Mason Drive / Memorial Avenue

Post completion of the Memorial Avenue duplication, the intersection of Stone Mason Drive and Memorial Avenue is to operate as a left-in/left-out arrangement only. Whilst it is noted that from a traffic engineering perspective, this configuration has a high potential vehicle capacity and should therefore adequately cater towards accommodating site generated traffic volumes, consideration has been given to the assessment of this intersection under 2036 conditions.

At this stage, external traffic volumes are unknow, however for the purposes of conservative assessment, an allowance has been made for an additional 200 movements on top of what is generated by the site. Through movements along Memorial Avenue have been determined based on the estimated volumes at the downstream Severn Vale Road intersection as presented within the *Memorial Avenue Upgrade Traffic and Transport Assessment*.

On this basis, SIDRA analysis has been undertaken for both the AM and PM traffic conditions with a summary of these outcomes presented below. Full SIDRA outputs are also included within Appendix E.

Table 6.8 2036 Traffic Volumes + Site

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Stone Mason/ Memorial	AM	0.34	2	7	N/A*
	PM	0.55	3	17	N/A*

*Refer LoS Classification table

Based on these outputs, it is considered that post development of the site, the intersection of Stone Mason Drive and Memorial Avenue will operate under acceptable conditions, adequately accommodating the site generated traffic movements.

6.6 Memorial Avenue / Severn Vale Drive

SIDRA analysis has been undertaken for the intersection of Severn Vale Drive and Memorial Avenue based on the modelling that was conducted as part of the *Memorial Avenue Upgrade Traffic and Transport Assessment*. The modelling has been undertaken for 2026 and 2036 scenarios for both base case (Memorial Avenue Upgrade analysis) and post development volumes. A summary of the outputs of this Analysis is presented below with complete details included within Appendix E to this report.

Table 6.9 2026 Traffic Volumes

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Memorial/ Severn Vale	AM	0.79	36	247	D
	PM	0.86	35	199	D

Table 6.10 2026 Traffic Volumes + Site Traffic

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Memorial/ Severn Vale	AM	0.80	36	247	D
	PM	0.88	36	201	D

Table 6.11 Comparison between 2026 Traffic Volumes and 2026 + Site Traffic Volumes

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)
Memorial/ Severn Vale	AM	+0.01	0	0
	PM	+0.02	+1	+2

Table 6.12 2036 Traffic Volumes

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Memorial/ Severn Vale	AM	0.92	47	367	D
	PM	0.86	38	224	D

Table 6.13 2036 Traffic Volumes + Site Traffic

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)	LEVEL OF SERVICE
Memorial/ Severn Vale	AM	0.92	47	370	D
	PM	0.88	38	227	D

Table 6.14 Comparison between 2036 Traffic Volumes and 2036 + Site Traffic Volumes

INTERSECTION	PEAK PERIOD	DEGREE OF SATURATION	AVERAGE DELAY (SEC)	95TH PERCENTILE QUEUE (M)
Memorial/ Severn Vale	AM	0	+1	+3
	PM	+0.02	0	+3

Based on a review of the above outputs, and the comparison between the base case scenarios and the post development scenarios, it is considered that the intersection of Severn Vale Drive and Memorial Avenue will continue to operate under appropriate conditions beyond 2036. Furthermore, the comparative assessment of these scenarios shows that the additional traffic as generated by the development will have minimal change on the predicted operation of the intersection between the two scenarios.

6.7 Memorial Avenue / Windsor Road

The intersection of Memorial Avenue and Windsor Road is currently undergoing an upgrade as part of the Memorial Avenue duplication and subsequently will comprise an alternative configuration upon completion. Subsequently it is not considered that an assessment of existing conditions would be relevant given the changes being undertaken.

On this basis, consideration has been given to the analysis undertaken within the *Memorial Avenue Upgrade Traffic and Transport Assessment*, noting that whilst detailed analysis is not provided, high level intersections volumes are referenced, allowing for a comparative assessment between these volumes and those anticipated to be generated by the subject site. Subsequently, the following traffic volume estimations have been identified:

- 2026 AM – Approximately 5,600 peak hourly movements through the intersection.
- 2026 PM – Approximately 5,400 peak hourly movements through the intersection.
- 2036 AM – Approximately 6,300 peak hourly movements through the intersection.
- 2036 PM – Approximately 6,300 peak hourly movements through the intersection.

As shown in Figure 5.2, post development of the subject site it is anticipated that in the order of 22 movements may travel through this intersection in the AM peak and up to 77 movements in the PM peak.

Subsequently, it is therefore noted that the site generated volumes equate to between 0.4% and 1.4% of the daily traffic volumes.

These volumes are therefore within typical daily variations that would likely be experienced at the intersection ,and therefore it is on this basis that it is considered that there will be adequate capacity within the upgraded Memorial Avenue/Windsor Road intersection to accommodate the additional traffic as generated by the proposed development.

7 Green Travel Initiatives

7.1 Event Parking and Access Management

Under peak event conditions (ie NRLW matches as noted in Section 3.2), it is understood that the subject site may generate patronage of up to 2,870 people. Based on typical parking provision rates for events spaces (places of assembly) a parking provision rate of 0.3 spaces per person in attendance could be considered applicable to the site. This would equate to a parking allowance of 861 spaces to accommodate the potential demand.

Given that a post development total of only 385 spaces exists within and surrounding the site, this demand is not something that could be met without further extensive change to the current conditions. Furthermore, given the infrequent nature and occurrence of events of this scale (2 -3 times annually), it is considered that provision of parking to accommodate this demand would result in the supply of infrastructure that is largely underutilised for over 99% of the year.

Subsequently, it has been assumed that on peak event days, the majority of the existing supply of parking will be made available for players, team staff, admin staff, and others involved with the operation of the site, with most spectators then requiring alternate means of transport to access the site.

Subsequently, the following alternative initiatives with respect to getting people to and from the site have been considered. These initiatives look to allow for site access without the need for accommodating onsite parking, and also lessening the reliance of private vehicles.

7.1.1 Shuttle Bus Provisions

Provision of a shuttle bus service between Kellyville/Bella Vista Stations and the subject site on peak event days could act as a way in which spectators/patrons could conveniently access the site without the reliance on a private vehicle or the associated need for onsite parking. Operation and management of this shuttlebus service would be undertaken by the club who would be in charge of all vehicle scheduling as well as alerting patrons to the service and how it could be accessed.

As previously noted, public bus services already run from Kellyville Station, along Memorial Avenue past the site that could be utilised by some patrons, however the provision of an additional higher frequency shuttle bus service could further improve this connection, and increase the volume of patrons that could be accommodated without a private vehicle.

The location of Kellyville Station relative to the subject site is shown in the figure below.

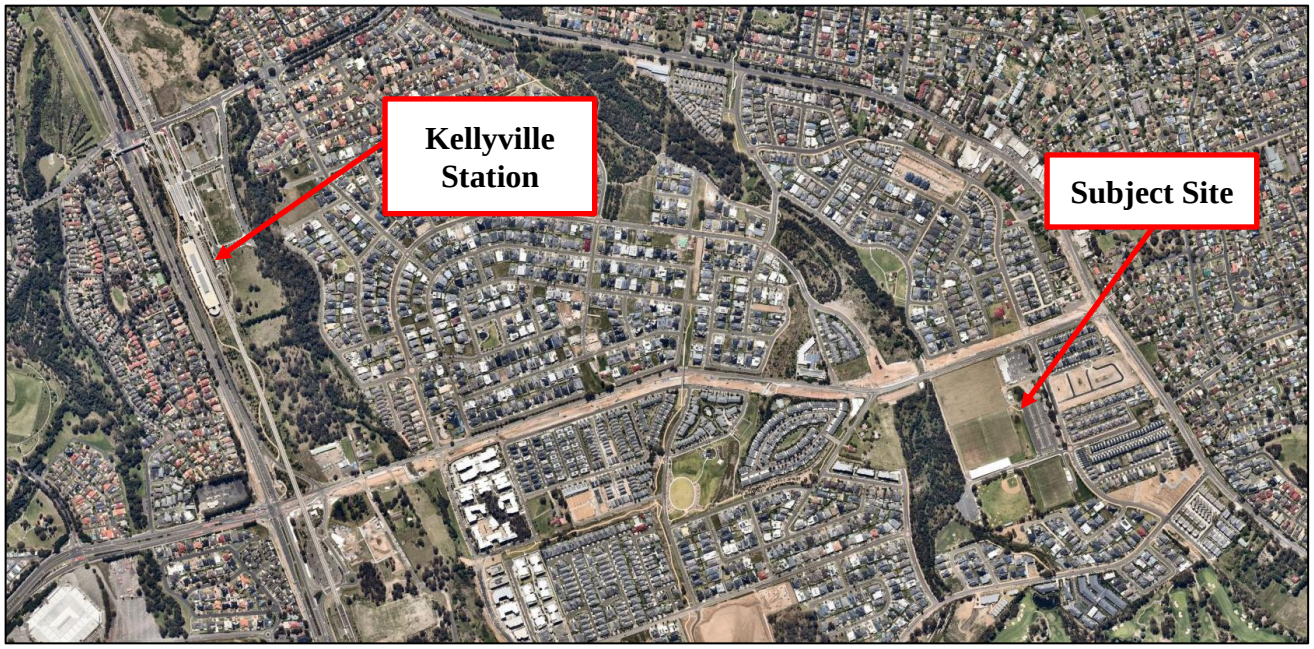


Figure 7.1 Kellyville Station Proximity to Site

7.1.2 Drop-Off Bay Provisions

A possible vehicle access path to and from the site is depicted in the figure below. It is considered that this path may potentially limit the impacts of site traffic on the area by means of diverting traffic through the site for drop-off and pick-up movements, and limiting the number of through and right turn movements at intersections that may otherwise impede other traffic flows. It is considered that traffic management would be required to ensure that this vehicle path was followed by vehicles accessing the site.

Figure 7.2 Possible Event Day Site Access Route

7.1.3 Temporary Bike Parking Facilities

A possible option during key events to encourage patrons to access the site via alternate means to private vehicle, could be the provision of additional (temporary) bicycle parking provisions and facilities. These facilities could be placed in an area not under use on the event day, and could be freely available to all those who choose to ride to the site.

8 Design Considerations

8.1 Site Access and Circulation

Development plans show that vehicle access to the additional proposed onsite parking will be via the extension of the eastern aisle of the existing car park, to provide 40 additional parking spaces within a blind aisle configuration.

This aisle is also to facilitate service and loading movements to and from the Centre of Excellence (CoE) with an access provided from the car park extension, extending to the CoE loading/delivery bay.

In order to facilitate vehicle turnaround movements in the event that all spaces are occupied, it is considered that the loading/service bay access, located towards the northern end of the car park, will also function in the capacity of a turnaround bay as per the requirements of AS2890.1:2004 for a blind aisle car park.

On this basis, the proposed access/egress for car park lifts and site access/egress is considered satisfactory.

8.2 Car Parking Design

Development plans show that the additional 40 onsite parking spaces are to be situated either side of a central access aisle.

These spaces are all to have minimum dimensions of 2.5m width by 5.4m length (end 0.3m of space is to be kerb/landscape overhang) and are to be accessed from an aisle of 7.1m. These dimensions all accord with or exceed the required dimensions as per AS2890.1:2004.

Subject to the above, the car parking spaces have therefore been designed in accordance with the relevant standards and are considered satisfactory for the proposed development.

8.3 Loading and Waste Collection

On-site loading/servicing and waste collections are to be facilitated via the provision of a loading area accessed from an access aisle extending out of the new car park, to the onsite loading/service area on the eastern side of the CoE.

Loading/servicing and waste collection will typically occur during standard weekday business hours, outside of the AM and PM peak periods. This will be done to coincide with when management will be onsite to facilitate these movements occurring, and also to reduce loading/waste vehicle interactions with other vehicles on the site.

A turning area is to be provided off this access aisle, such that loading vehicles can enter and exit the service aisle in a forward's direction and undertake any required turning movements proximate to the loading bay. A swept path diagram has been prepared using an 8.8m MRV form AS2890.2 (typical loading vehicle, waste collection vehicle, emergency vehicle) which confirms that there will be sufficient room in the turning area for a loading vehicle to undertake the required turning manoeuvre in a single movement. This diagram is attached in Appendix D to this report.

On this basis, the proposed loading area access arrangements are considered appropriate.

8.4 Pedestrian and Cyclist Considerations

Pedestrian and cyclist safety within the site is to be considered via the provision of dedicated paths providing connections from the surrounding path network directly to the Centre of Excellence and surrounding facilities with the intent of keeping these connections away from vehicles within the parking area. Providing highly visible wayfinding as well as clearly located end of trip facilities for cyclists (i.e. bike racks) will also assist with helping providing separation to vehicle areas.

In conjunction with these arrangements, a highly permeable design will assist with providing pedestrians quick and convenient access to the playing fields.

9 Construction Traffic Management Considerations

9.1 Proposed Construction Works Details

9.1.1 Site Access and Routes

Opportunity for vehicle access to the site exists in several locations with the primary potential access being directly from Stone Mason Drive in the same location as is currently used for the Memorial Avenue Duplication site staging area. Access will only occur under the supervision of traffic management controllers, with candlestick bollards or gates to be removed/opened as required to enable access. A rumble grid will be provided prior to the exit to assist in removing dirt and debris from construction vehicle tyres.

It is anticipated the construction vehicle access to the precinct may potentially come from any direction, and as such Figure 9.1 and Figure 9.2 below have been prepared showing the potential site access routes to and from the site in all directions.

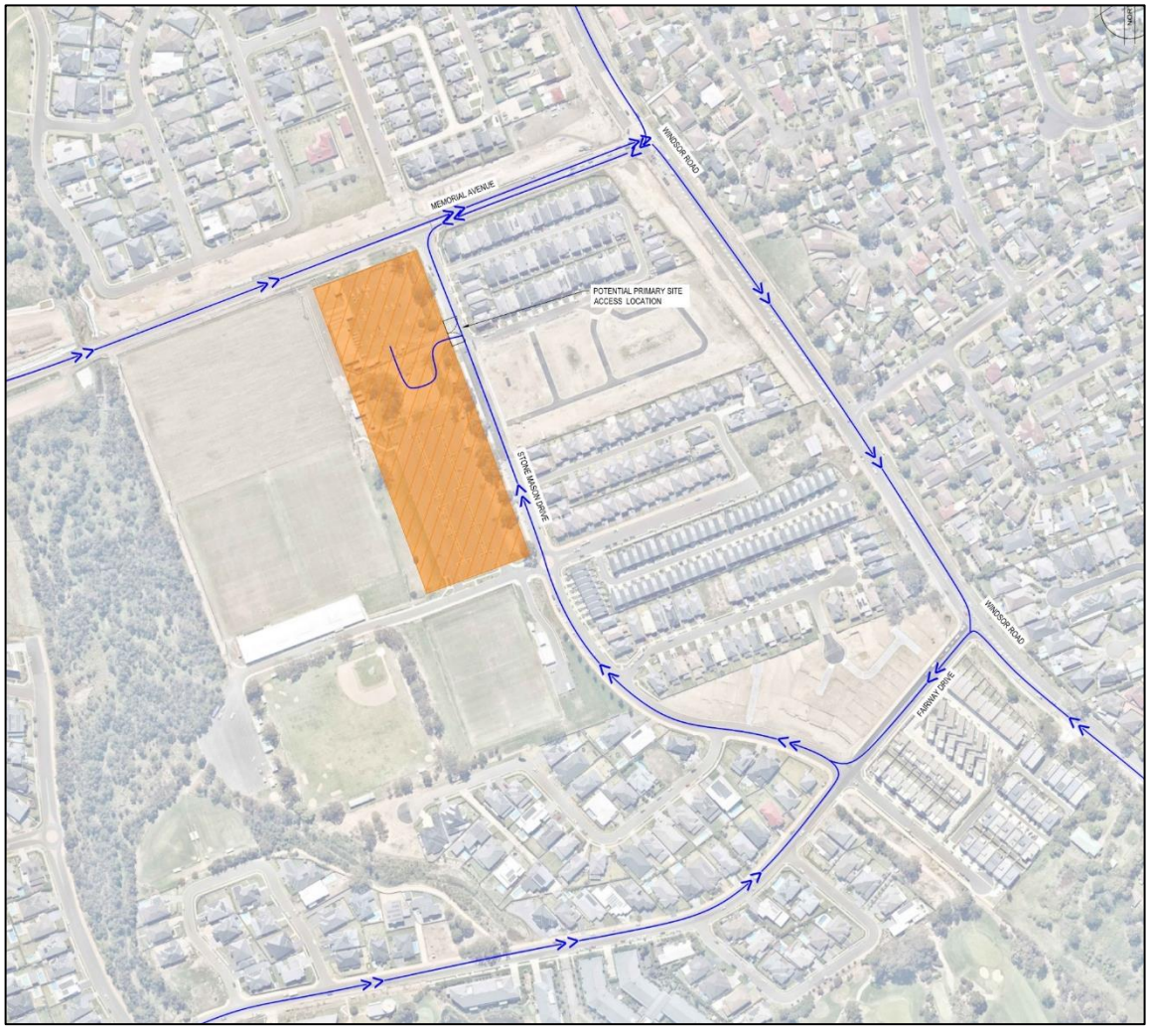


Figure 9.1 Inbound Vehicle Access Routes

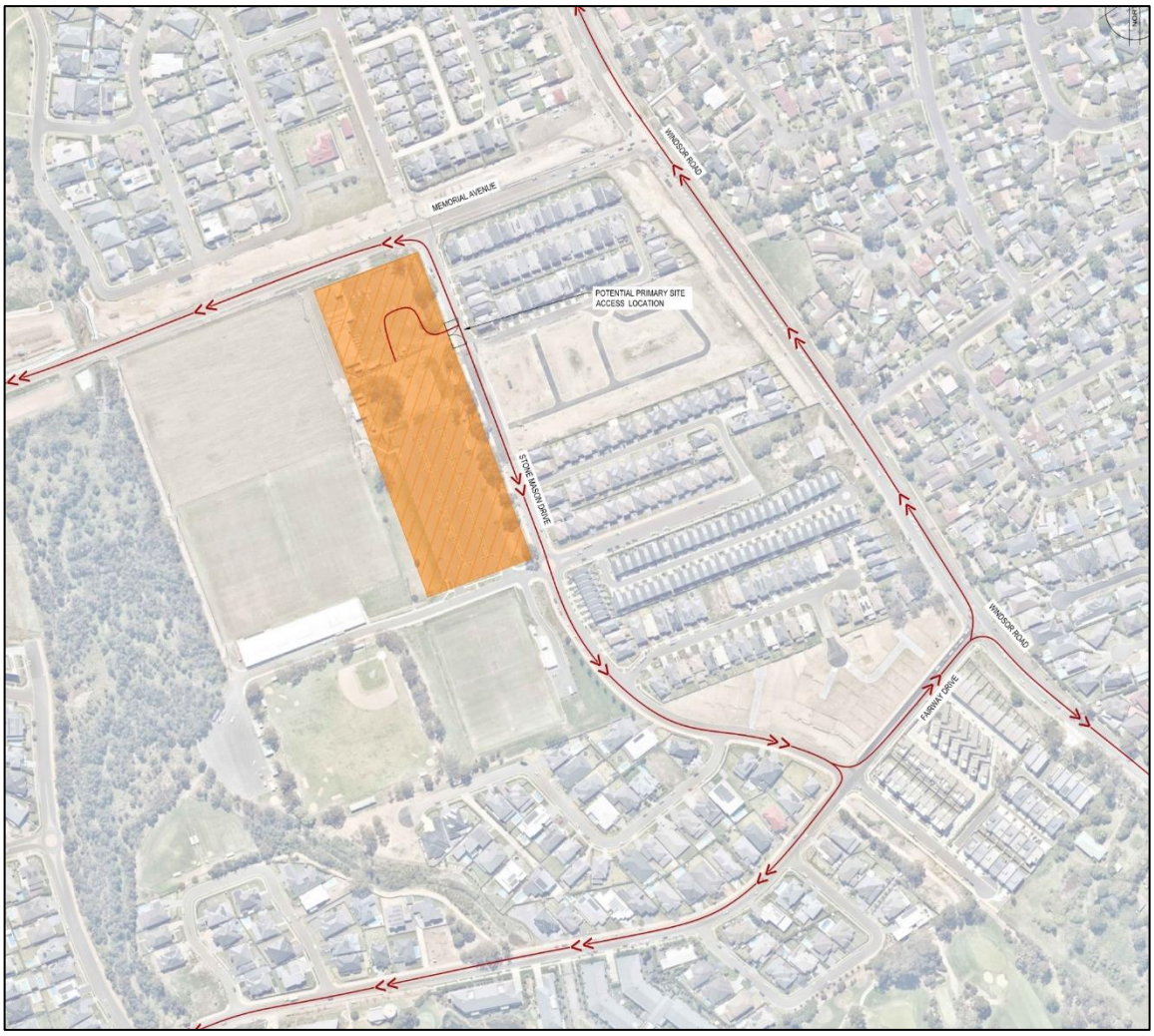


Figure 9.2 Outbound Vehicle Access Routes

9.1.2 Working Hours

In accordance with the Hills Shire Council requirements, all construction works will be conducted in line with the following hours, or an Out of Hours Permit will be sought where necessary:

- Monday to Friday: 7am to 6pm.
- Saturday: 9am to 3pm.
- Sunday and public holidays: no works to be undertaken.

9.2 Construction Vehicle Types and Loads

For a development of this size and nature, it would typically be anticipated that the following vehicles may be required during construction:

- 8.8m MRV (Concrete Truck, Small Deliveries)
- 12.5m HRV (General Construction Works)
- 19.0m Articulated Semi 9 (Large Deliveries, Concrete Panels)

Swept path diagrams have been prepared for both the 12.5m HRV and the 19.0m Semi for key intersections along the identified site access routes in order to identify how vehicle access can be facilitated and to highlight points where traffic management may be required. These diagrams are included in Appendix F to this report.

Wherever possible, deliveries involving the Austroads 19m semi shall be arranged such that they minimise impacts on the surrounding road network. Traffic controllers may be required at some intersections where swept path diagrams indicate that 19m semi turn movements may encroach over the adjacent side of the carriageway.

9.3 Delivery Times

All deliveries are to be in accordance with the construction work hours as stipulated by the Hills Shire Council. Trucks involved in all deliveries, including concrete pours, are expected to dwell on-site for a maximum of one hour. The first delivery of the day shall be received no earlier than 7am, and the last delivery of the day shall be received no later than 5pm. This allows sufficient time for the last truck of the day to complete loading or offloading, and depart by 6pm.

9.4 Construction Traffic Management Plans

During construction, it is anticipated that all loading and unloading of vehicles will be undertaken within a secured site area accessed from Stone Mason Drive. To facilitate manoeuvres in and out of this area, as well as in and out of the construction site gates, traffic controllers will be required as well as advanced warning signage.

Indicative traffic management plans have been prepared for the subject and are shown below and included in Appendix F to this report.

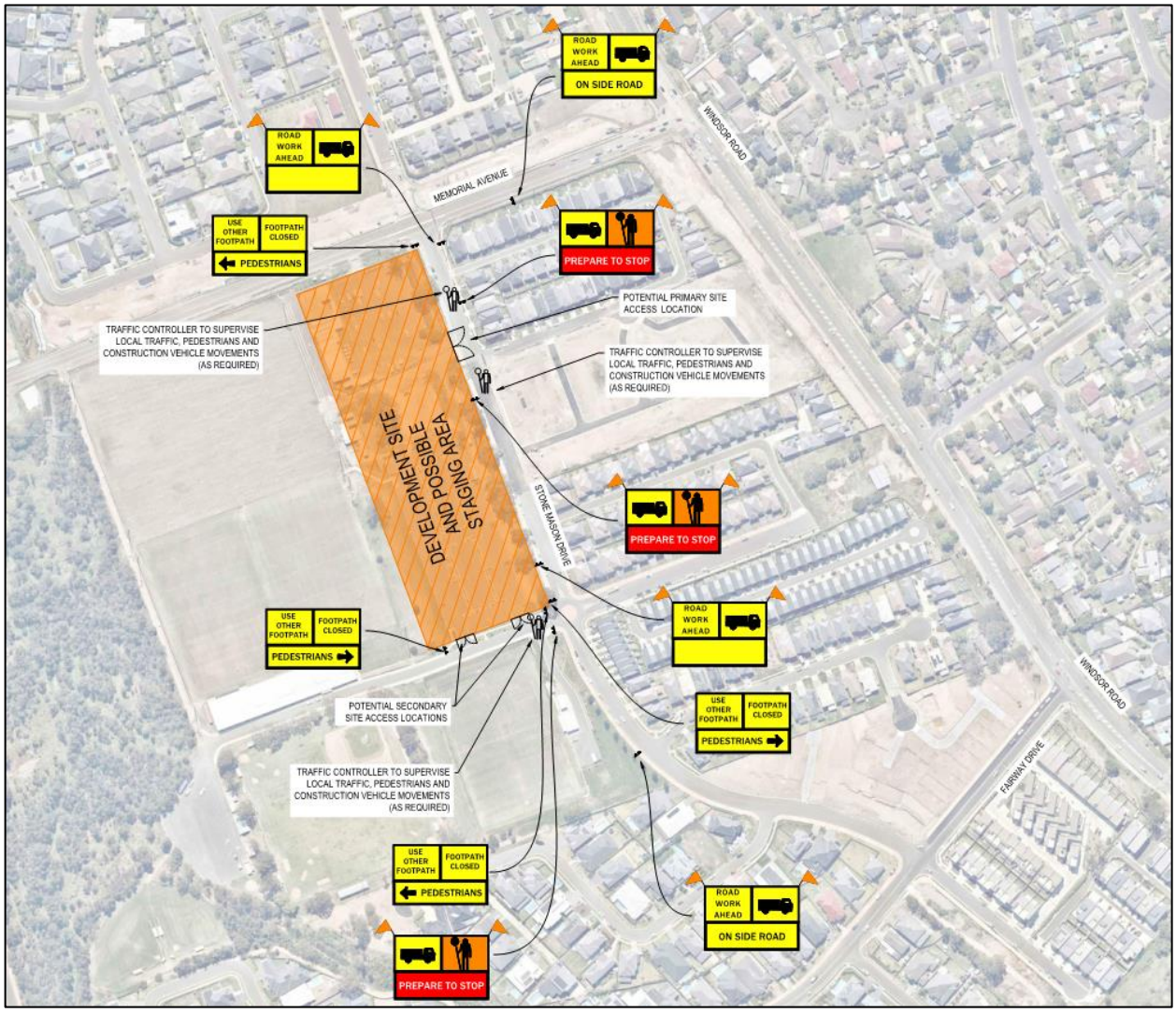


Figure 9.3 Indicative Construction Traffic Management Plans

It is expected that during construction, all existing infrastructure will remain as per existing conditions wherever possible, unless modifications are required to facilitate construction works.

9.5 Impacts on Cyclists and Pedestrians

At present, Stone Mason Drive is still in the process of being completed and does not provide a through connection between Memorial Avenue and Fairway Drive. As such, whilst pedestrian movements can occur, there are currently no cyclist movements to be displaced along the street frontage to the construction area.

Furthermore, a works zone already exists in the same location as that proposed for the subject site, and as such there is a local awareness of this area being used for construction vehicles.

Notwithstanding the above, during construction, traffic management will be employed along Stone Mason Avenue in order to advise and alert cyclists and pedestrians to construction vehicle movements.

9.6 Environmental Controls

9.6.1 Noise and Vibration Control

All reasonable and practical measures to reduce or regulate noise emissions should be taken. This includes the sitting of noisy static works onto parts of the site where the noise can be shielded, enclosing noisy machinery within an acoustic barrier or undertaking work off-site wherever possible. All noisy works should be undertaken during the regular hours of operation as outlined in this report.

9.6.2 Air and Dust Management

Wherever possible it is preferable to limit the amount of dust being generated as opposed to suppressing dust. However, dust suppression measures should also be available. During dry periods, the site should be watered periodically to reduce the impact of dust generated from the site. Ensure that when watering is used, the runoff does not contaminate surface waters.

Vehicles are to be brushed or sprayed prior to leaving the site so that dirt and dust is not carried off-site. Should any dust be carried out of the site, footpaths and roads in the surrounding road network should be swept to maintain a clean space for the public.

9.6.3 Stormwater and Sediment Management

Building works will not cause any detriment to the storm water systems surrounding the site, as such measures will be taken to prevent waste, sediment, sand, soil, clay and stones from entering the storm water drainage system.

The natural falls of the site will be utilised to channel runoff through geotextile materials and gravel surface barriers to collect sediment. It is considered that storm water will be contained on site and prevent the run-off of sediment to neighbouring properties. Captured water on-site will be treated, if required, to the satisfaction of the responsible authority before being discharged from the site. Silt traps will be applied to all open drains and a bobcat with road sweeper attachment will also be on standby if required. Street sweepers will be on call during the construction program and called in as necessary to maintain a safe and clean work site and surrounds.

9.6.4 On-site Waste Management

Waste water is to be controlled and disposed of via the sewer as per regulations. On-site amenities including toilets and site office waste will be stored until arranged collection times. Where possible, work will be encouraged to be completed off-site, as such only the materials brought on-site will be used for the construction. Pre-cast concrete is one example of a measure taken in this case. Minimal packaging is required for many of the construction materials, and sub-contractors will be encouraged to remove any packaging materials not required for the build.

Additionally, bins will be provided on-site to contain any further waste which will be collected from the site weekly, or more frequently if required. Bins will be labelled for general waste and recycling as a commitment to reduce, reuse and recycle resources. Litter trapped against fencing must be regularly disposed of.

Any hazardous waste materials will be dealt with on a case by case basis and disposed of as per the relevant environmental or regulatory procedures.

9.7 Communication Strategy

9.7.1 Local Residents

Local residents will be letter dropped prior to works to inform them of the impending works. Additionally, contact details for the site manager will be provided in case any issues arise.

Regular communication will be undertaken with residents to ensure disruptions are kept minimal. Face to face meetings or door knocks will also be undertaken as required.

9.8 Ongoing Monitoring

9.8.1 Implementation of Traffic Management Plan

The Project Manager shall be responsible for the ongoing review and implementation of the TMP, including:

- The need to review and update the TMP to reflect any changes in the construction approach;
- The implementation and verification of any TMPs with the appointed Traffic Controllers;
- A record of implementation of TMPs including the installation and removal of all equipment and any incidents.

10 Conclusions

A summary of the preceding assessment in provided as follows:

- The proposed site upgrades will see the delivery of a new Centre of Excellence for NRL and community use. This will include the provision of a new 1,504 seat grandstand plus spectator mound, and an extension to the car park accommodating an additional 40 parking spaces.
- Under typical week and weekday use, peak parking demands as generated by the site use are generally anticipated to be accommodated within the on-site and surrounding on-street parking provisions directly fronting the subject site.
- For peak event conditions the following alternative initiatives are proposed to limit the potential site parking demands and assist with mitigating impacts on the wider surrounding area.
  - Provision of a shuttle bus arrangement between the subject site and the nearby Kellyville and Bella Vista Train Stations.
  - Provision of dedicated drop-off / pick-up bay arrangements within the existing car park to accommodate site access via taxi, ride-share, or other means where parking isn't required.
  - Provision of temporary (overflow) bike parking facilities.
- The proposed additional onsite parking is proposed to be accessed via extension of the eastern aisle of the existing car park. Turning movements within this aisle extension are to be facilitated via use of the CoE loading/service bay access aisle as a turnaround bay for cars.
- The dimensions of the proposed car parking spaces and aisle width within the car park extension accord with relevant statuory requirements.
- Allowance has been made for a turning bay off the service access such that loading and delivery vehicles can enter and exit the area in a forwards direction. Vehicles within the car park will also be able to use the entrance of the service access in order to turn-around to exit the car park in a forwards direction.
- SIDRA analysis indicates that the existing traffic volumes at the intersection of Windsor Road and Fairway Drive currently exceed the available capacity and subsequently the responsible authority may warrant consideration to the upgrade of this intersection to meet current demands, noting that these demands and irrespective of the proposed development.
- Aside from the Windsor Road and Fairway Drive intersection analysis of surrounding road network indicates that there is sufficeinct capacity to accomaote the additional traffic volumes as are predicated to be generated by the proposed development.
- Construction traffic management is to be considered in line with the prelimnary plan and vehicle routes included in this report.

Based on the preceding assessment and subject to the above considerations, the proposed site upgrade is considered appropriate from a traffic engineering perspective given the location of the site and nature of the development.

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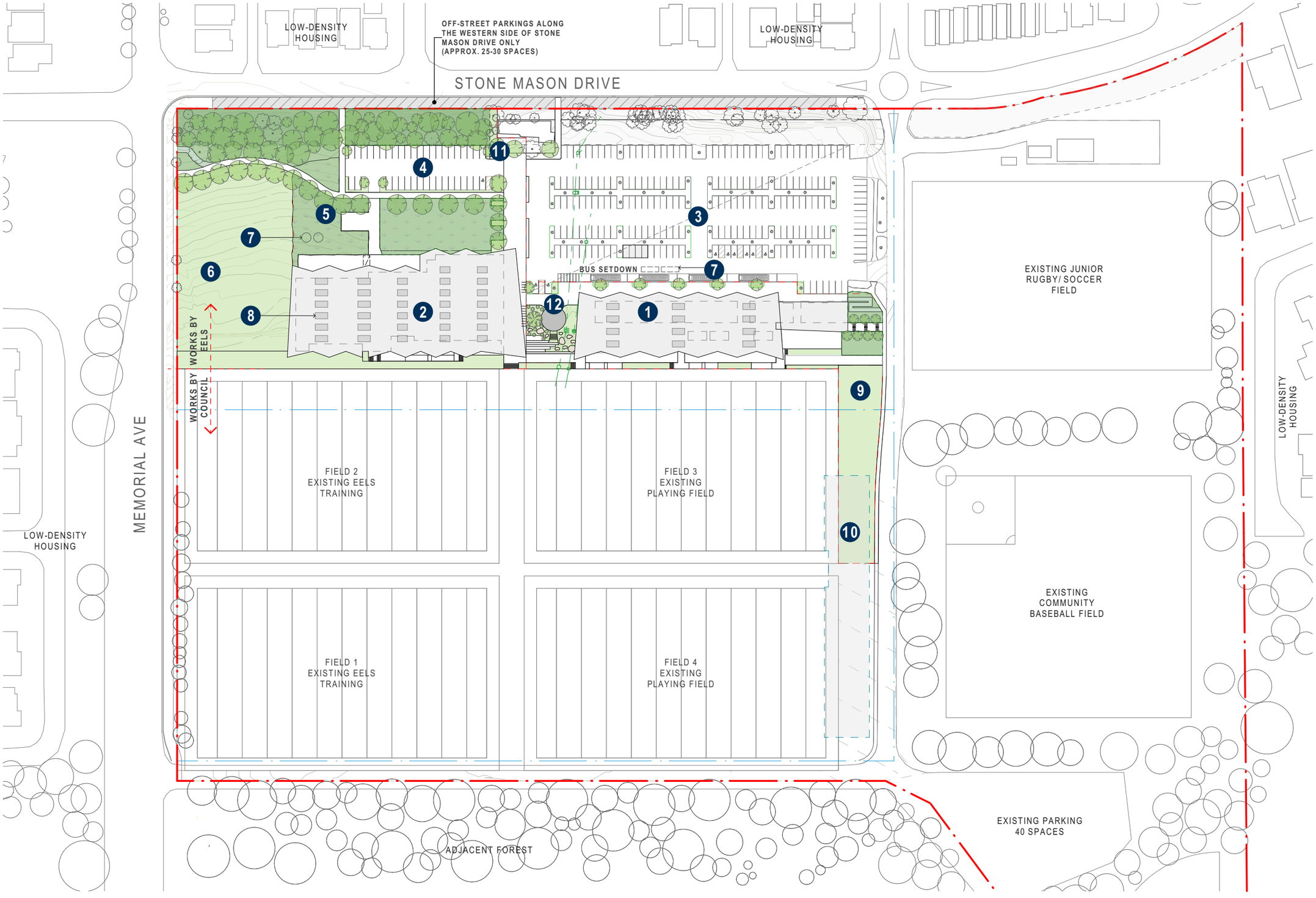
Appendix A

Development Plans



HB ARCH ARCHITECTURE & PLANNING

LEGEND

- EXISTING SITE VEGETATION
- SURROUNDING VEGETATION
- NEW VEGETATION
- GRASED AREA
- EXTENTS OF PROPOSED LANDSCAPING
- TEMPORARY STRUCTURE

1. STAGE 1 - COMMUNITY FACILITIES (A)
2. STAGE 2 - CENTRE OF EXCELLENCE (B)
3. EXISTING SITE CARPARKING TO BE RETAINED
4. PROPOSED CARPARKING (40 SPACES)
5. LANDSCAPING OFFSET IN CONJUNCTION WITH PARKING NUMBERS
6. PASSIVE RECREATION AREA
7. PROPOSED R.W TANKS (ABOVE GROUND /IN GROUND)
8. PROPOSED PV ARRAYS ON ROOF
9. SPECTATOR MOUND
10. EXISTING PNRL EELS TRAINING AND ADMIN FACILITY
11. PROPOSED REFUSE AREA (CF BUILDING)
12. PROPOSED 'MEETING PLACE' / LANDSCAPING

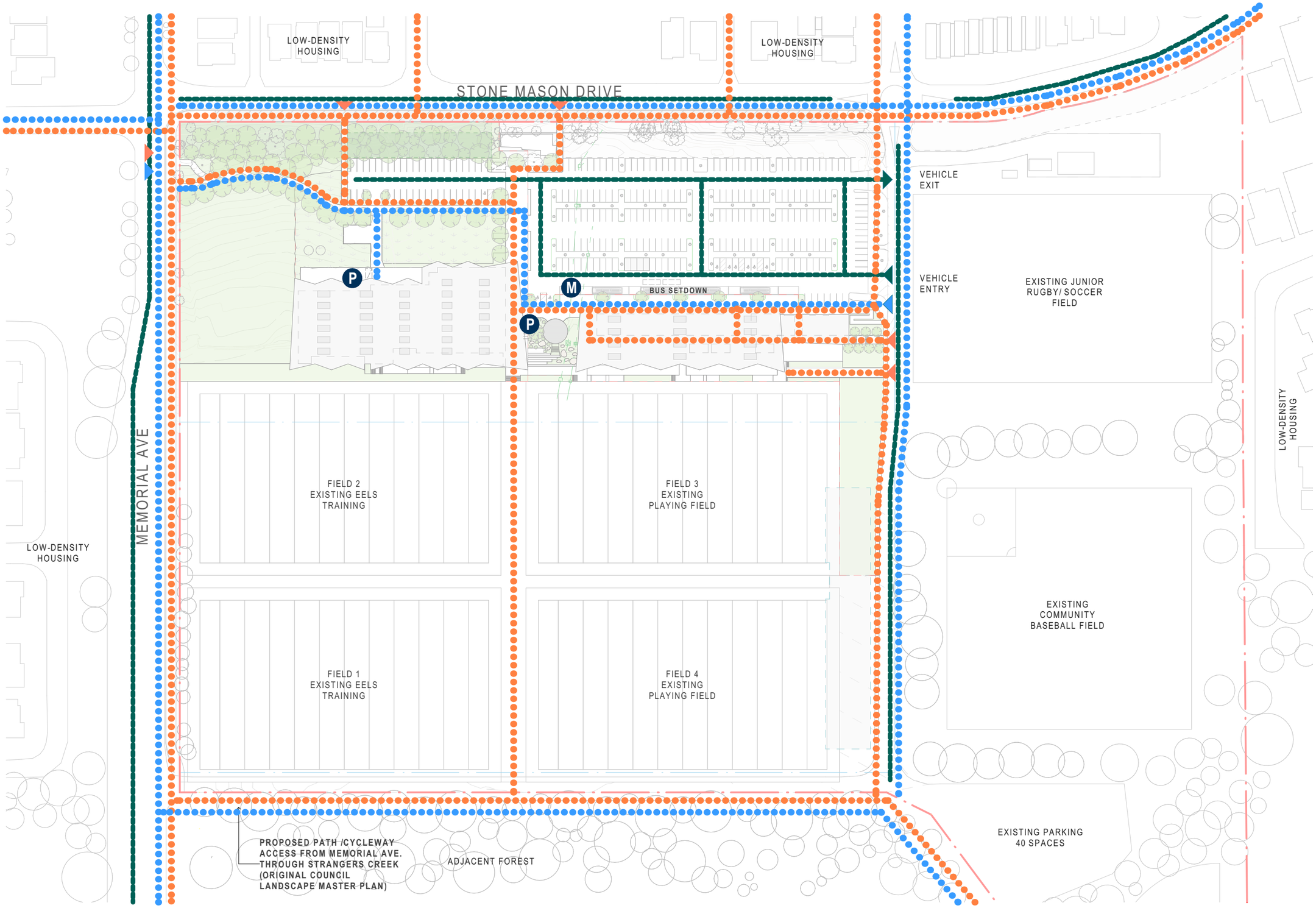
N

KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

KELLYVILLE PARK - SITE PLAN - NEW WORKS

Client	PARRAMATTA EELS
Scale	1:750 @ A1
10/03/2022	SSDA - 'C'
	email@hbarch.com.au

A017



HB ARCH ARCHITECTURE & PLANNING

LEGEND

- EXISTING SITE VEGETATION
- SURROUNDING VEGETATION
- NEW VEGETATION
- GRASED AREA
- EXTENTS OF PROPOSED LANDSCAPING
- TEMPORARY STRUCTURE
- VEHICULAR TRAFFIC ACCESS
- PEDESTRIAN TRAFFIC ACCESS
- BICYCLE ACCESS
- TRAFFIC CIRCULATION
- PEDESTRIAN CIRCULATION
- BICYCLE CIRCULATION
- P PROPOSED BICYCLE PARKING (TOTAL 53 SPACES, INCL. 23 VISITOR PARKING)
- M PROPOSED MOTORCYCLE PARKING (TOTAL 7 SPACES)

N

KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

KELLYVILLE PARK - SITE PLAN - CONNECTIVITIES

Client	PARRAMATTA EELS
Scale	1:750 @ A1
10/03/2022	SSDA - 'C'
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A018

HB ARCH ARCHITECTURE & PLANNING

LEGEND

- PLAYER AMENITIES
- FOOTBALL DEPARTMENT
- CIRCULATION
- PLANT /STORE
- PEDESTRIAN CIRCULATION

1. HIGH PERFORMANCE / MEDICAL -SOCIAL CLUB
2. NRL / NRLW GYMNASIUM
3. FOOTBALL DEPARTMENT OFFICE & MEETING ROOMS
4. NRL / NRLW PLAYERS LOCKERS AND AMENITIES
5. AQUATIC RECOVERY
6. COE LOWER TERRACE
11. EOT (END OF TRIP FACILITIES)

N

KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

KELLYVILLE PARK - GA COE LOWER PLAN

Client	PARRAMATTA EELS
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10/03/2022	SSDA - 'C'
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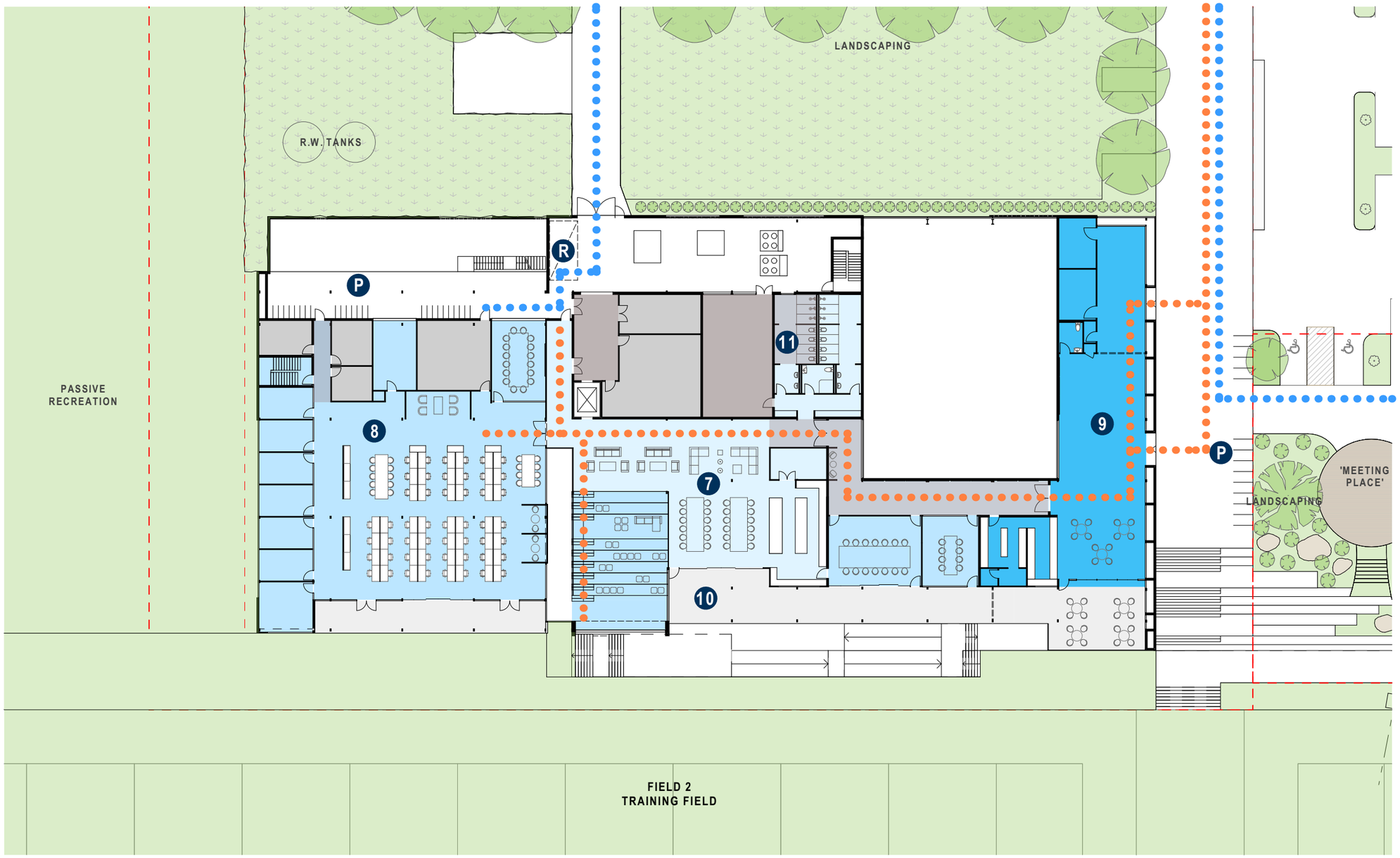
A023



GA SSDA PLAN UPPER A1

HB ARCH ARCHITECTURE & PLANNING

LEGEND

- PLAYER AMENITIES
- FOOTBALL DEPARTMENT
- CIRCULATION
- PLANT /STORE
- PEDESTRIAN CIRCULATION
- BICYCLE CIRCULATION

7 PNRL EELS SOCIAL CLUB/ KITCHEN
8 ADMINISTRATION OFFICES AND MEETING ROOMS
9 FOH MAIN ENTRY / RECEPTION / RETAIL / CAFE
10 PNRL EELS & MEMBERS BALCONY
11 EOT (END OF TRIP FACILITIES)
P PROPOSED BICYCLE PARKING (TOTAL 53)
R PROPOSED REFUSE AREA

N

KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

KELLYVILLE PARK - GA COE UPPER PLAN

Client	PARRAMATTA EELS
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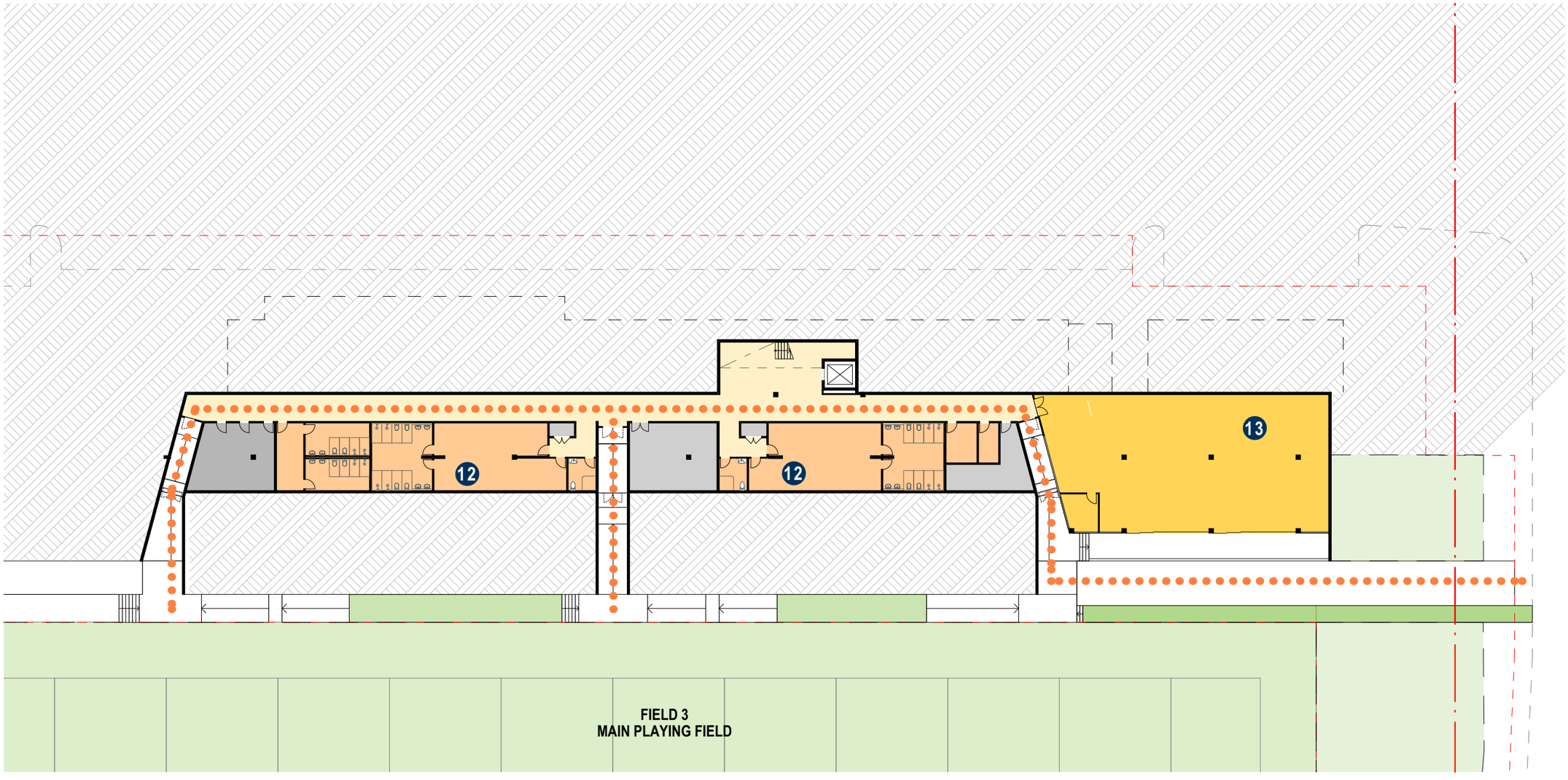


HB ARCH ARCHITECTURE & PLANNING

LEGEND

- STORAGE / PLANT
- AMENITIES
- COMMUNITY / MULTIPURPOSE SPACE
- CIRCULATION
- PEDESTRIAN CIRCULATION

12 CHANGE ROOMS / AMENITIES
13 PRNL EELS JUNIOR PATHWAY GYMNASIUM

N

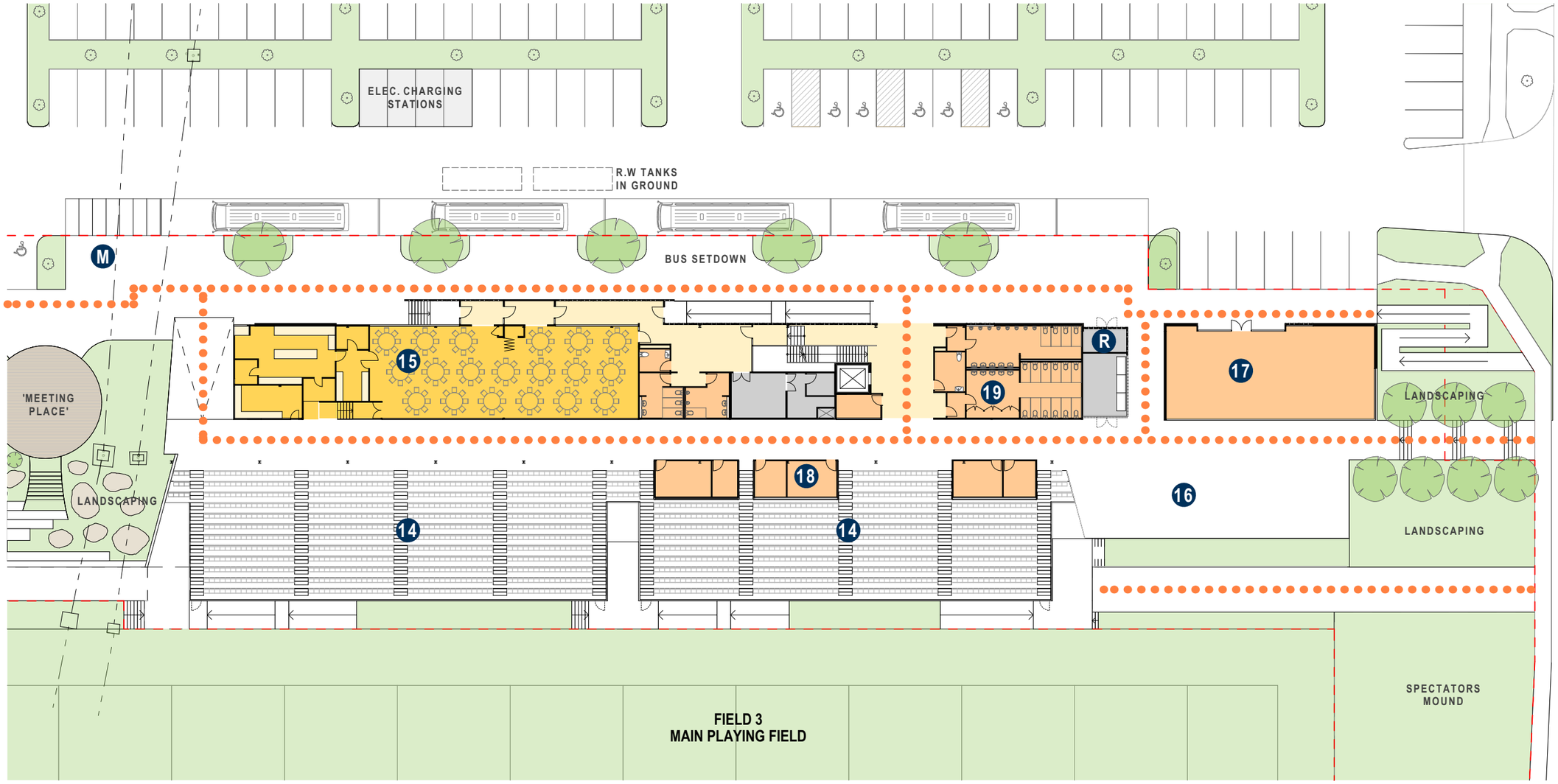
KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

KELLYVILLE PARK - GA COMMUNITY FACILITY LOWER PLAN

Client PARRAMATTA EELS
Scale 1:200 @ A1
10/03/2022 SSDA - 'C'

email@hbarch.com.au

A027



HB ARCH ARCHITECTURE & PLANNING

LEGEND

- STORAGE/ PLANT
- AMENITIES
- COMMUNITY/ MULTIPURPOSE SPACE
- CIRCULATION
- PEDESTRIAN CIRCULATION

- 14 GRANDSTAND SEATING - 1500 SEATS
- 15 COMMUNITY/ MULTIPURPOSE SPACE
- 16 CONCOURSE MATCHDAY TERRACE
- 17 TENANCY
- 18 COACHES / MEDIA
- 19 SPECTATOR AMENITIES
- R PROPOSED REFUSE AREA
- M PROPOSED MOTORCYCLE PARKING (7 SPACES)

N

KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

KELLYVILLE PARK - GA COMMUNITY FACILITY UPPER PLAN

Client	PARRAMATTA EELS
Scale	1:200 @ A1
10/03/2022	SSDA - 'C'
	email@hbarch.com.au

A028

Appendix B

Parking Surveys

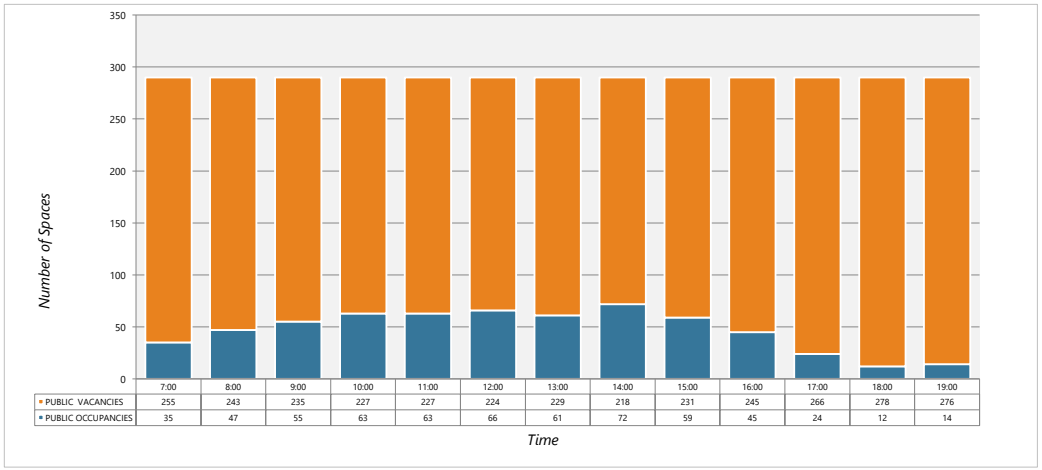
TRANS TRAFFIC SURVEY
trafficsurvey.com.au

Parking Occupancy Survey

Date:	Tuesday, June 1, 2021
Location:	Kellyville Park
GPS:	-33.718652, 150.958944
Weather:	Fine
Customer:	N/A

Public Parking (1/0)	Map Ref	Street	Section (GPS/Street Address if Off-Street Car Park)	Side	Restriction	Capacity	Parking Occupancy												
							7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00
1		Kellyville Park	Car Park 6		Unrestricted	217	6	9	19	28	29	29	27	36	31	31	24	11	13
1					P Disable	6	0	0	0	0	0	0	0	0	0	0	0	0	0
1			Baseball Club Car Park		Unrestricted	65	29	38	36	35	34	37	34	36	28	14	0	1	1
1					P Disable	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1					Evergency Vehicles Expected	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	PUBLIC CAPACITY						**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**	**290**
	PUBLIC OCCUPANCIES						**35**	**47**	**55**	**63**	**63**	**66**	**61**	**72**	**59**	**45**	**24**	**12**	**14**
	PUBLIC VACANCIES						**255**	**243**	**235**	**227**	**227**	**224**	**229**	**218**	**231**	**245**	**266**	**278**	**276**
	PUBLIC % OCCUPANCIES						**12%**	**16%**	**19%**	**22%**	**22%**	**23%**	**21%**	**25%**	**20%**	**16%**	**8%**	**4%**	**5%**

not available for public parking



Appendix C

Traffic Surveys

TRANS TRAFFIC SURVEY
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Site Kennedy Ave (Car Park Entry)

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	31-05-21	01-06-21	02-06-21	03-06-21	04-06-21	05-06-21	30-05-21	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	09:00	08:00	08:00	N/A	08:00	N/A	08:00	N/A	08:00
PM Peak	17:00	17:00	18:00	12:00	17:00	14:00	13:00	N/A	17:00	N/A	18:00	N/A	13:00
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	0	0	0	0	0	2	0	2	0	0	0
06:00	0	0	0	0	0	0	1	1	0	0	0	1	1
07:00	3	5	1	2	0	8	1	20	3	11	2	9	5
08:00	10	10	15	12	3	47	7	104	15	50	10	54	27
09:00	8	6	6	10	7	45	3	85	12	37	7	48	24
10:00	1	3	6	6	2	28	3	49	7	18	4	31	16
11:00	2	4	1	3	6	32	2	50	7	16	3	34	17
12:00	3	4	5	9	1	29	0	51	7	22	4	29	15
13:00	4	10	4	3	3	38	7	69	10	24	5	45	23
14:00	3	2	2	6	2	41	2	58	8	15	3	43	22
15:00	3	10	1	3	1	30	2	50	7	18	4	32	16
16:00	4	3	9	5	4	32	0	57	8	25	5	32	16
17:00	23	13	16	4	11	23	0	90	13	67	13	23	12
18:00	22	10	32	7	4	4	0	79	11	75	15	4	2
19:00	16	5	14	3	0	4	4	46	7	38	8	8	4
20:00	1	0	0	0	0	0	0	1	0	1	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	103	87	112	73	44	361	32	812	115	419	83	393	200
% Heavy	0.00%	1.15%	1.79%	5.48%	2.27%	0.55%	3.13%	1.35%		1.91%		0.76%	

TRANS TRAFFIC SURVEY
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Site Kennedy Ave (Car Park Exit)

Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	31-05-21	01-06-21	02-06-21	03-06-21	04-06-21	05-06-21	30-05-21	Total	Average	Total	Average	Total	Average
AM Peak	09:00	09:00	10:00	08:00	11:00	11:00	08:00	N/A	11:00	N/A	09:00	N/A	11:00
PM Peak	19:00	17:00	19:00	18:00	17:00	19:00	13:00	N/A	19:00	N/A	19:00	N/A	16:00
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	0	0	0	0	0	0	1	0	1	0	0	0
06:00	2	1	0	0	0	0	0	3	0	3	1	0	0
07:00	2	3	0	0	0	0	0	5	1	5	1	0	0
08:00	2	6	2	7	0	15	4	36	5	17	3	19	10
09:00	7	8	1	7	5	26	3	57	8	28	6	29	15
10:00	2	3	3	2	3	26	1	40	6	13	3	27	14
11:00	2	4	2	1	7	41	4	61	9	16	3	45	23
12:00	2	7	11	4	7	26	0	57	8	31	6	26	13
13:00	4	4	4	7	0	23	7	49	7	19	4	30	15
14:00	4	7	4	4	5	24	1	49	7	24	5	25	13
15:00	2	14	2	5	1	27	0	51	7	24	5	27	14
16:00	11	7	14	10	1	38	5	86	12	43	9	43	22
17:00	22	21	10	6	10	24	0	93	13	69	14	24	12
18:00	21	14	18	19	7	39	0	118	17	79	16	39	20
19:00	29	12	30	11	3	41	1	127	18	85	17	42	21
20:00	12	1	11	0	6	31	1	62	9	30	6	32	16
21:00	0	0	9	0	0	18	2	29	4	9	2	20	10
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	125	112	121	83	55	399	29	924	131	496	101	428	218
% Heavy	0.00%	0.89%	3.31%	0.00%	1.82%	1.00%	3.45%	1.19%		1.21%		1.17%	

TRANS TRAFFIC SURVEY
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Site Kennedy Ave

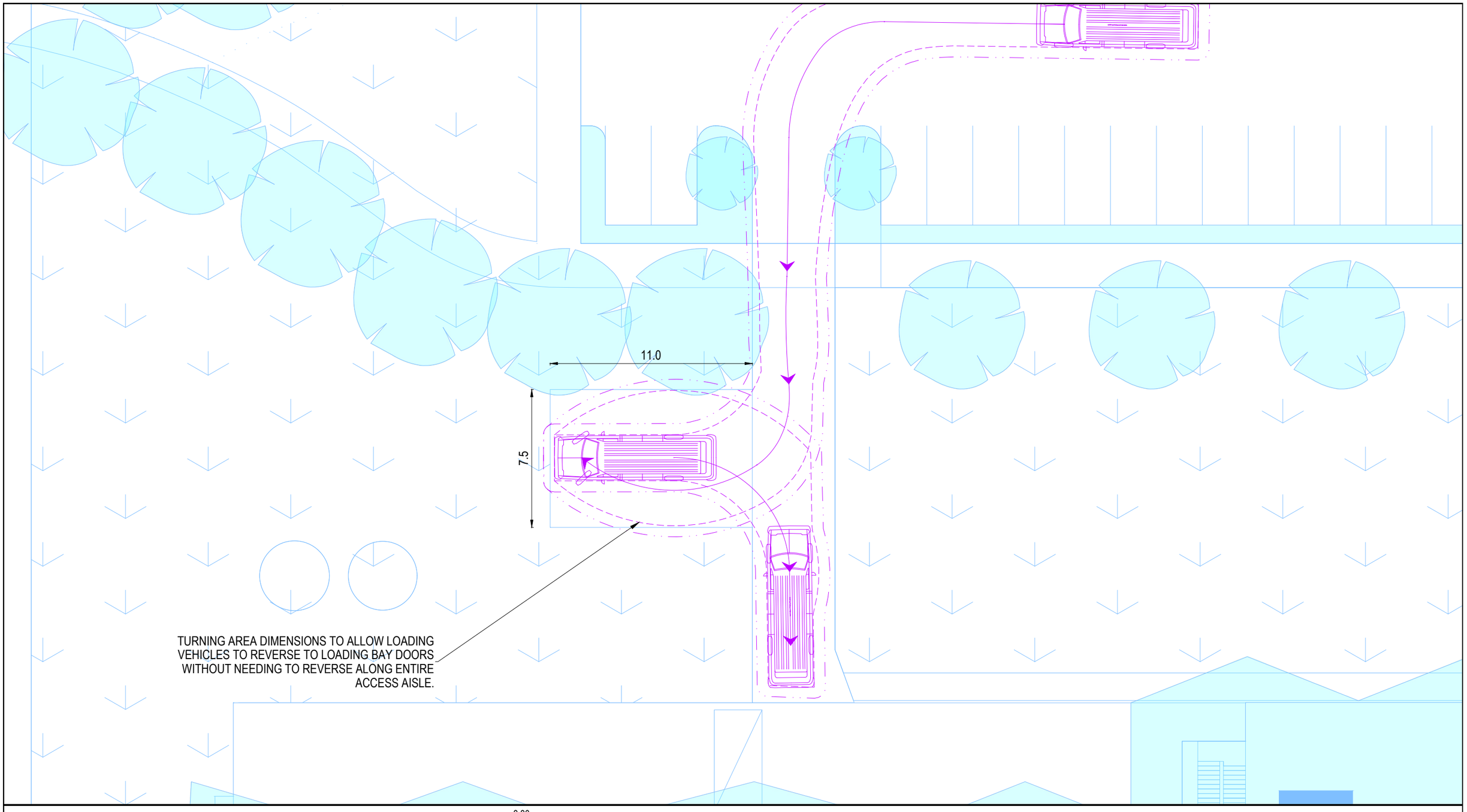
Direction Both directions

Back to Site Summary Page

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	31-05-21	01-06-21	02-06-21	03-06-21	04-06-21	05-06-21	30-05-21	Total	Average	Total	Average	Total	Average
AM Peak	08:00	06:00	10:00	07:00	09:00	11:00	09:00	N/A	11:00	N/A	07:00	N/A	10:00
PM Peak	12:00	15:00	13:00	16:00	16:00	13:00	19:00	N/A	16:00	N/A	16:00	N/A	13:00
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	2	0	0	0	0	0	0	2	0	2	0	0	0
04:00	1	1	0	0	0	0	0	2	0	2	0	0	0
05:00	4	12	0	7	0	9	0	32	5	23	5	9	5
06:00	4	19	1	9	1	4	0	38	5	34	7	4	2
07:00	4	17	6	18	5	25	2	77	11	50	10	27	14
08:00	11	2	4	17	7	23	11	75	11	41	8	34	17
09:00	8	3	5	6	9	20	28	79	11	31	6	48	24
10:00	5	6	7	0	5	29	24	76	11	23	5	53	27
11:00	10	5	6	3	9	33	20	86	12	33	7	53	27
12:00	9	1	7	2	3	22	5	49	7	22	4	27	14
13:00	8	8	10	3	4	32	4	69	10	33	7	36	18
14:00	6	14	3	22	5	13	0	63	9	50	10	13	7
15:00	3	18	1	11	2	3	2	40	6	35	7	5	3
16:00	1	18	8	38	6	13	2	86	12	71	14	15	8
17:00	5	7	7	8	2	0	2	31	4	29	6	2	1
18:00	4	2	3	8	2	6	0	25	4	19	4	6	3
19:00	2	5	2	5	3	0	6	23	3	17	3	6	3
20:00	6	0	1	2	1	0	1	11	2	10	2	1	1
21:00	1	0	0	1	0	0	0	2	0	2	0	0	0
22:00	2	1	0	0	2	0	0	5	1	5	1	0	0
23:00	0	0	2	2	0	2	2	8	1	4	1	4	2
Total	96	139	73	162	66	234	109	879	125	536	107	343	176
% Heavy	6.25%	7.19%	5.48%	4.94%	15.15%	2.56%	1.83%	5.23%		7.09%		2.33%	

Appendix D

Loading Bay Turning Area



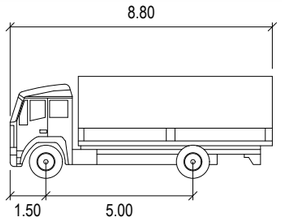
VEHICLE LEGEND

8.8m TRUCK 600mm CLEARANCE

8.8m TRUCK OVERHANG

8.8m TRUCK CENTRELINE

AUSTROADS 8.8m TRUCK



MRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

PS123790 SK001

AUSTROADS 8.8M MRV
CoE LOADING AREA TURN BAY
C.H. 25.01.2022

0 5 8m

SCALE 1:200 @A3

wsp

NORTH

Appendix E

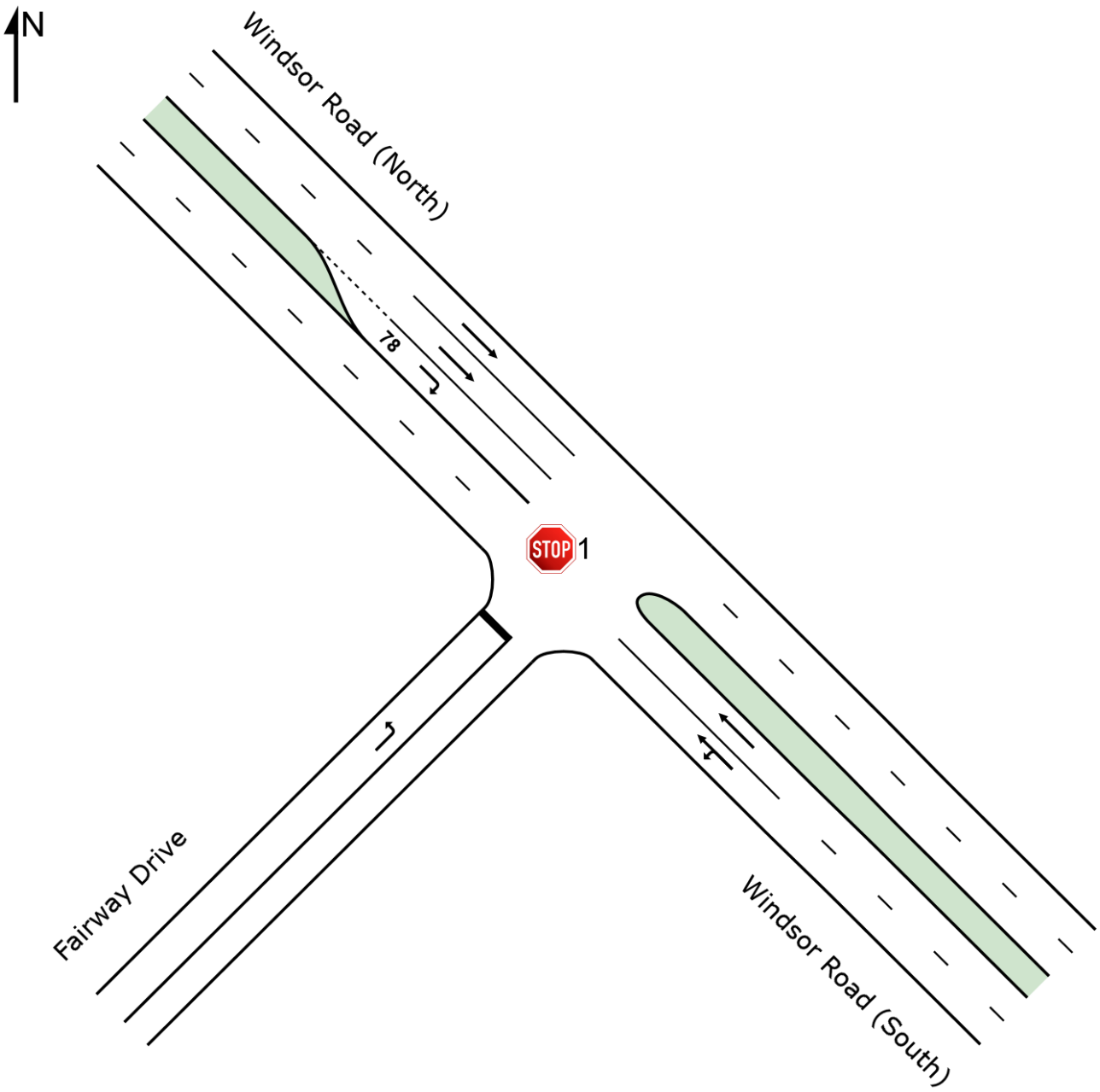
SIDRA Outputs

SITE LAYOUT

Site: 1 [Windsor/Fairway - AM Peak - Existing Conditions (Site Folder: Base Case Models)]

Three-way intersection with 3-lane major road (Stop control)
Site Category: (None)
Stop (Two-Way)

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

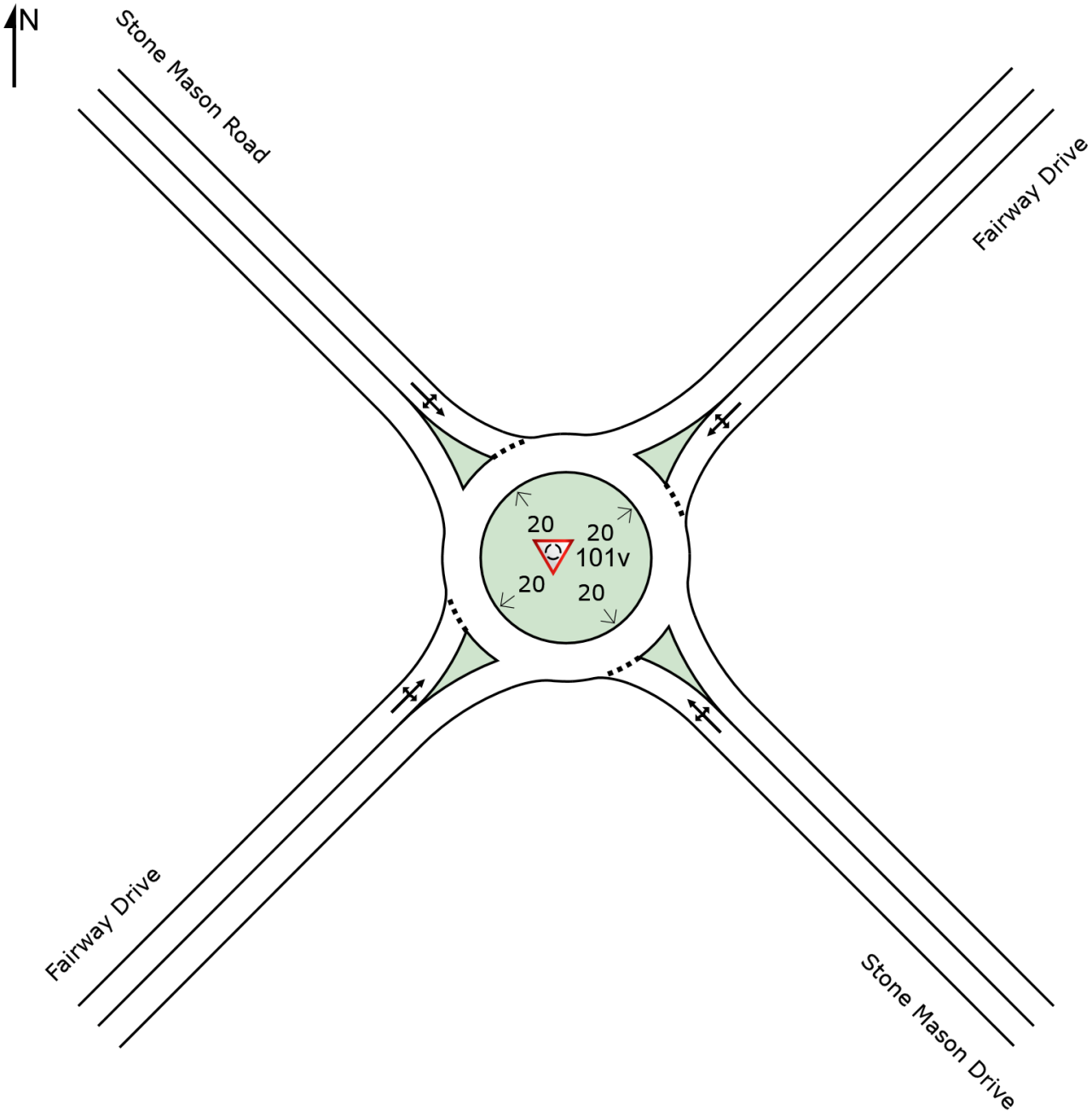


SITE LAYOUT

Site: 101v [Fairway Drive / Stone Mason Drive - AM Peak - Existing Conditions - Conversion (Site Folder: Base Case Models)]

New Site
Site Category: (None)
Roundabout

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

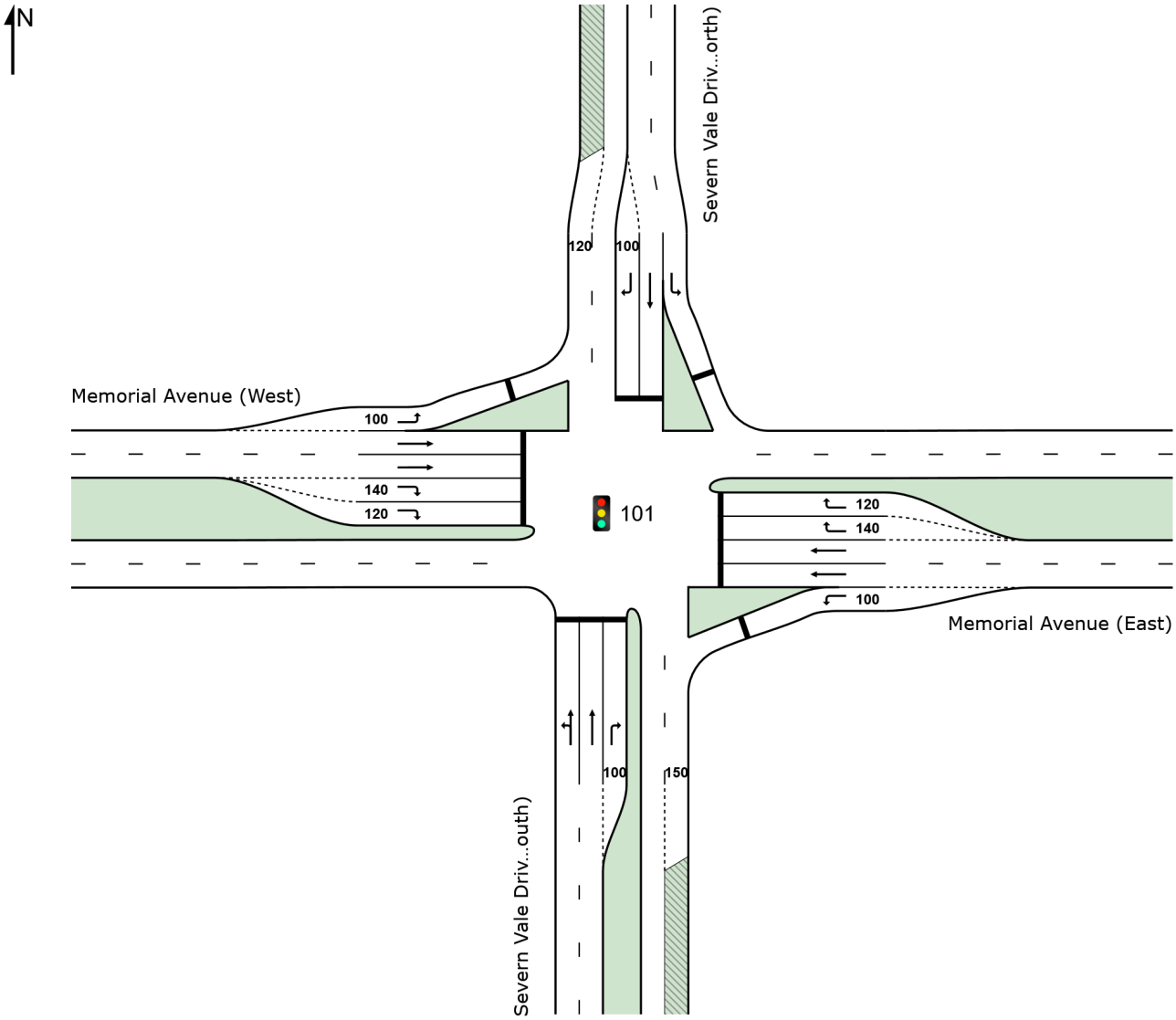


SITE LAYOUT

Site: 101 [Memorial Ave / Severn Vale Drive - AM Peak - Base (2026) (Site Folder: Base Case Models)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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

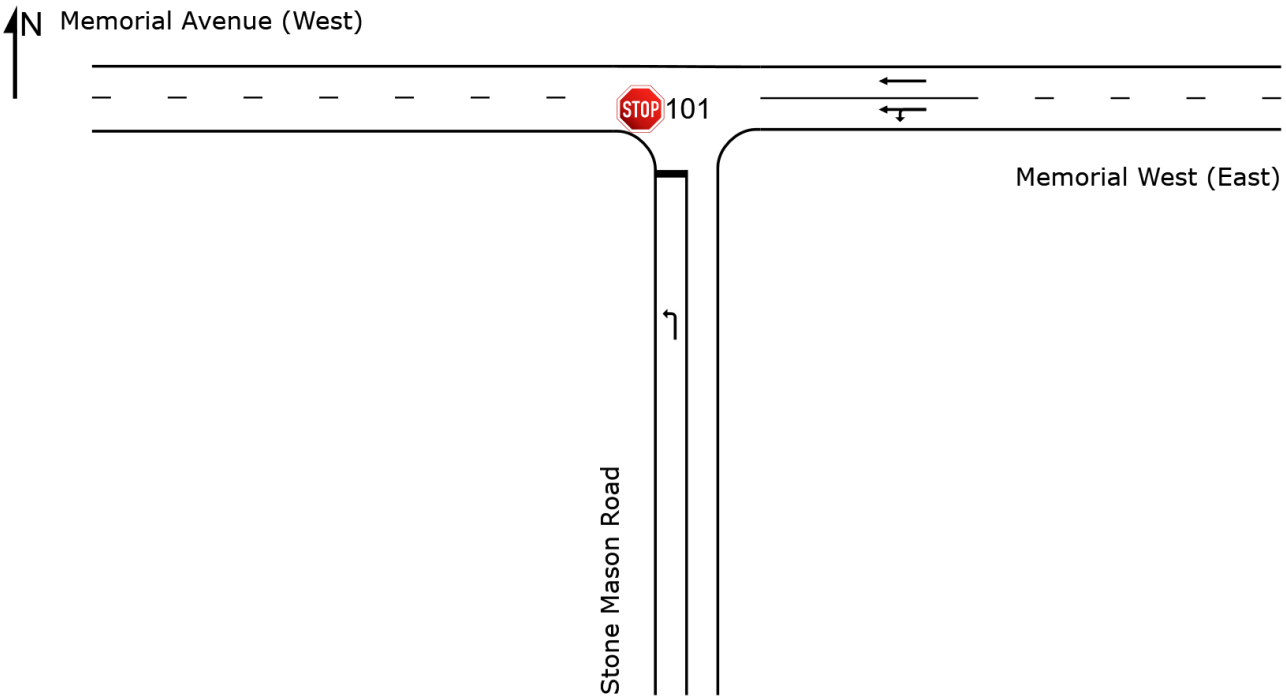


SITE LAYOUT

Site: 101 [Memorial Ave / Stone Mason Road - AM Peak - 2036 (Site Folder: Site Traffic Model)]

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

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



MOVEMENT SUMMARY

Site: 1 [Windsor/Fairway - AM Peak - Existing Conditions (Site Folder: Base Case Models)]

Three-way intersection with 3-lane major road (Stop control)
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (South)														
3	L2	96	2	96	2.1	0.259	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	57.1
4	T1	879	51	879	5.8	0.259	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach		975	53	975	5.4	0.259	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.1
NorthWest: Windsor Road (North)														
5	T1	2297	57	2297	2.5	0.796	6.2	LOS A	15.2	108.7	0.33	0.00	0.85	54.4
6	R2	542	3	542	0.6	1.233	445.0	LOS F	137.3	966.0	1.00	8.57	27.76	7.2
Approach		2839	60	2839	2.1	1.233	90.0	NA	137.3	966.0	0.46	1.64	5.98	24.0
SouthWest: Fairway Drive														
1	L2	216	7	216	3.2	0.293	11.3	LOS B	1.3	9.1	0.52	0.98	0.56	50.1
Approach		216	7	216	3.2	0.293	11.3	LOS B	1.3	9.1	0.52	0.98	0.56	50.1
All Vehicles		4030	120	4030	3.0	1.233	64.2	NA	137.3	966.0	0.35	1.22	4.25	29.0

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 1 [Windsor/Fairway - PM Peak - Existing Conditions (Site Folder: Base Case Models)]

Three-way intersection with 3-lane major road (Stop control)
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (South)														
3	L2	119	0	119	0.0	0.566	5.8	LOS A	0.0	0.0	0.00	0.07	0.00	57.4
4	T1	2062	40	2062	1.9	0.566	0.3	LOS A	0.0	0.0	0.00	0.03	0.00	59.2
Approach		2181	40	2181	1.8	0.566	0.6	NA	0.0	0.0	0.00	0.03	0.00	59.1
NorthWest: Windsor Road (North)														
5	T1	1108	16	1108	1.4	0.556	4.3	LOS A	3.1	21.9	0.03	0.00	0.03	56.0
6	R2	167	3	167	1.8	5.860	8813.4	LOS F	187.5	1332.7	1.00	3.95	14.76	0.4
Approach		1275	19	1275	1.5	5.860	1158.1	NA	187.5	1332.7	0.16	0.52	1.96	3.0
SouthWest: Fairway Drive														
1	L2	237	3	237	1.3	0.913	59.2	LOS F	8.5	59.8	0.98	1.71	3.76	30.5
Approach		237	3	237	1.3	0.913	59.2	LOS F	8.5	59.8	0.98	1.71	3.76	30.5
All Vehicles		3693	62	3693	1.7	5.860	404.0	NA	187.5	1332.7	0.12	0.31	0.92	7.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101v [Fairway Drive / Stone Mason Drive - AM Peak - Existing Conditions - Conversion (Site Folder: Base Case Models)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
1	L2	10	0	10	0.0	0.017	8.3	LOS A	0.1	0.7	0.72	0.62	0.72	48.5
2	T1	1	0	1	0.0	0.017	8.6	LOS A	0.1	0.7	0.72	0.62	0.72	47.2
3	R2	1	0	1	0.0	0.017	13.2	LOS B	0.1	0.7	0.72	0.62	0.72	42.3
Approach		12	0	12	0.0	0.017	8.7	LOS A	0.1	0.7	0.72	0.62	0.72	48.1
NorthEast: Fairway Drive														
4	L2	3	0	3	0.0	0.447	4.4	LOS A	4.0	28.0	0.36	0.44	0.36	44.2
11	T1	609	3	609	0.5	0.447	4.7	LOS A	4.0	28.0	0.36	0.44	0.36	52.8
12	R2	25	0	25	0.0	0.447	9.3	LOS A	4.0	28.0	0.36	0.44	0.36	50.6
Approach		637	3	637	0.5	0.447	4.9	LOS A	4.0	28.0	0.36	0.44	0.36	52.7
NorthWest: Stone Mason Road														
1	L2	27	2	27	7.4	0.088	5.1	LOS A	0.5	3.6	0.40	0.60	0.40	44.8
8	T1	1	0	1	0.0	0.088	5.2	LOS A	0.5	3.6	0.40	0.60	0.40	47.3
3	R2	72	1	72	1.4	0.088	9.9	LOS A	0.5	3.6	0.40	0.60	0.40	51.6
Approach		100	3	100	3.0	0.088	8.5	LOS A	0.5	3.6	0.40	0.60	0.40	50.2
SouthWest: Fairway Drive														
4	L2	21	2	21	9.5	0.144	4.1	LOS A	0.9	6.6	0.15	0.40	0.15	53.5
5	T1	190	5	190	2.6	0.144	4.3	LOS A	0.9	6.6	0.15	0.40	0.15	54.2
12	R2	2	0	2	0.0	0.144	8.9	LOS A	0.9	6.6	0.15	0.40	0.15	54.4
Approach		213	7	213	3.3	0.144	4.3	LOS A	0.9	6.6	0.15	0.40	0.15	54.1
All Vehicles		962	13	962	1.4	0.447	5.2	LOS A	4.0	28.0	0.32	0.45	0.32	52.7

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

MOVEMENT SUMMARY

Site: 101v [Fairway Drive / Stone Mason Drive - PM Peak - Existing Conditions - Conversion (Site Folder: Base Case Models)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
4	L2	8	1	8	12.5	0.011	5.9	LOS A	0.1	0.5	0.50	0.54	0.50	49.8
11	T1	1	0	1	0.0	0.011	5.9	LOS A	0.1	0.5	0.50	0.54	0.50	49.6
12	R2	2	0	2	0.0	0.011	10.5	LOS B	0.1	0.5	0.50	0.54	0.50	49.5
Approach		11	1	11	9.1	0.011	6.8	LOS A	0.1	0.5	0.50	0.54	0.50	49.7
NorthEast: Fairway Drive														
1	L2	8	1	8	12.5	0.207	4.4	LOS A	1.4	9.9	0.26	0.45	0.26	47.6
8	T1	239	1	239	0.4	0.207	4.5	LOS A	1.4	9.9	0.26	0.45	0.26	54.3
3	R2	39	1	39	2.6	0.207	9.2	LOS A	1.4	9.9	0.26	0.45	0.26	52.4
Approach		286	3	286	1.0	0.207	5.1	LOS A	1.4	9.9	0.26	0.45	0.26	53.9
NorthWest: Stone Mason Drive														
4	L2	31	0	31	0.0	0.082	5.0	LOS A	0.5	3.3	0.42	0.60	0.42	48.7
5	T1	1	0	1	0.0	0.082	5.3	LOS A	0.5	3.3	0.42	0.60	0.42	47.7
12	R2	60	1	60	1.7	0.082	10.0	LOS A	0.5	3.3	0.42	0.60	0.42	51.9
Approach		92	1	92	1.1	0.082	8.3	LOS A	0.5	3.3	0.42	0.60	0.42	50.9
SouthWest: Fairway Drive														
1	L2	37	1	37	2.7	0.171	4.1	LOS A	1.1	7.7	0.19	0.41	0.19	53.5
2	T1	204	3	204	1.5	0.171	4.3	LOS A	1.1	7.7	0.19	0.41	0.19	55.1
3	R2	6	0	6	0.0	0.171	9.0	LOS A	1.1	7.7	0.19	0.41	0.19	54.0
Approach		247	4	247	1.6	0.171	4.4	LOS A	1.1	7.7	0.19	0.41	0.19	54.9
All Vehicles		636	9	636	1.4	0.207	5.3	LOS A	1.4	9.9	0.26	0.46	0.26	53.8

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

MOVEMENT SUMMARY

Site: 101 [Memorial Ave / Severn Vale Drive - AM Peak - Base (2026) (Site Folder: Base Case Models)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	279	3.0	279	3.0	* 0.767	57.8	LOS E	16.3	117.1	1.00	0.88	1.09	30.3
2	T1	110	3.0	110	3.0	0.288	44.2	LOS D	5.5	39.5	0.89	0.71	0.89	34.9
3	R2	269	3.0	269	3.0	0.740	56.6	LOS E	15.4	110.8	1.00	0.87	1.06	31.0
Approach		658	3.0	658	3.0	0.767	55.0	LOS E	16.3	117.1	0.98	0.85	1.04	31.3
East: Memorial Avenue (East)														
4	L2	132	6.0	132	6.0	* 0.127	14.6	LOS B	2.9	21.4	0.49	0.66	0.49	47.9
5	T1	890	6.0	890	6.0	0.517	24.6	LOS C	18.3	134.7	0.76	0.67	0.76	42.8
6	R2	56	6.0	56	6.0	0.378	69.2	LOS E	2.0	15.1	1.00	0.72	1.00	27.8
Approach		1078	6.0	1078	6.0	0.517	25.7	LOS C	18.3	134.7	0.74	0.67	0.74	42.2
North: Severn Vale Drive (North)														
7	L2	287	3.0	287	3.0	* 0.460	26.4	LOS C	10.9	78.0	0.75	0.79	0.75	41.5
8	T1	137	3.0	137	3.0	0.781	63.1	LOS E	8.5	61.2	1.00	0.89	1.20	29.7
9	R2	130	3.0	130	3.0	0.780	68.9	LOS E	8.1	58.2	1.00	0.89	1.20	28.1
Approach		554	3.0	554	3.0	0.781	45.4	LOS D	10.9	78.0	0.87	0.84	0.97	34.3
West: Memorial Avenue (West)														
10	L2	86	6.0	86	6.0	0.075	13.4	LOS B	1.8	13.2	0.40	0.63	0.40	48.7
11	T1	1331	6.0	1331	6.0	* 0.793	29.8	LOS C	33.5	246.5	0.91	0.83	0.92	40.3
12	R2	107	6.0	107	6.0	0.659	71.2	LOS E	3.7	27.1	1.00	0.78	1.09	27.4
Approach		1524	6.0	1524	6.0	0.793	31.8	LOS C	33.5	246.5	0.88	0.81	0.90	39.4
All Vehicles		3814	5.0	3814	5.0	0.793	36.1	LOS D	33.5	246.5	0.86	0.78	0.89	37.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101 [Memorial Ave / Severn Vale Drive - AM Peak - Base (2036) (Site Folder: Base Case Models)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	338	3.0	338	3.0	* 0.892	68.4	LOS E	22.5	161.7	1.00	0.97	1.28	27.9
2	T1	139	3.0	139	3.0	0.349	44.0	LOS D	7.0	50.3	0.90	0.73	0.90	35.0
3	R2	324	3.0	324	3.0	0.855	63.5	LOS E	20.5	147.2	1.00	0.95	1.20	29.3
Approach		801	3.0	801	3.0	0.892	62.2	LOS E	22.5	161.7	0.98	0.92	1.18	29.5
East: Memorial Avenue (East)														
4	L2	145	6.0	145	6.0	* 0.148	15.9	LOS B	3.4	25.1	0.52	0.67	0.52	47.1
5	T1	872	6.0	872	6.0	0.526	26.0	LOS C	18.4	135.3	0.78	0.69	0.78	42.1
6	R2	69	6.0	69	6.0	0.465	69.7	LOS E	2.5	18.7	1.00	0.73	1.00	27.7
Approach		1086	6.0	1086	6.0	0.526	27.4	LOS C	18.4	135.3	0.76	0.69	0.76	41.3
North: Severn Vale Drive (North)														
7	L2	352	3.0	352	3.0	* 0.620	35.4	LOS D	16.2	116.2	0.89	0.83	0.89	37.6
8	T1	171	3.0	171	3.0	0.894	70.1	LOS E	11.5	82.2	1.00	1.01	1.40	28.1
9	R2	162	3.0	162	3.0	0.891	75.7	LOS E	10.9	78.0	1.00	1.00	1.41	26.7
Approach		685	3.0	685	3.0	0.894	53.6	LOS D	16.2	116.2	0.94	0.92	1.14	31.9
West: Memorial Avenue (West)														
10	L2	106	6.0	106	6.0	0.094	14.0	LOS B	2.3	17.1	0.41	0.64	0.41	48.3
11	T1	1468	6.0	1468	6.0	* 0.921	50.9	LOS D	49.9	367.3	0.99	1.07	1.20	32.8
12	R2	125	6.0	125	6.0	0.769	72.7	LOS E	4.4	32.4	1.00	0.83	1.20	27.1
Approach		1699	6.0	1699	6.0	0.921	50.2	LOS D	49.9	367.3	0.95	1.02	1.15	32.9
All Vehicles		4271	5.0	4271	5.0	0.921	47.2	LOS D	49.9	367.3	0.91	0.90	1.06	33.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101 [Memorial Ave / Severn Vale Drive - PM Peak - Base (2026) (Site Folder: Base Case Models)]

New Site
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 [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	105	3.0	105	3.0	0.495	60.9	LOS E	6.0	42.8	0.98	0.79	0.98	29.6
2	T1	137	3.0	137	3.0	* 0.614	56.2	LOS E	7.9	56.8	1.00	0.81	1.01	31.4
3	R2	101	3.0	101	3.0	0.476	60.8	LOS E	5.7	41.1	0.98	0.78	0.98	30.0
Approach		343	3.0	343	3.0	0.614	59.0	LOS E	7.9	56.8	0.99	0.79	0.99	30.4
East: Memorial Avenue (East)														
4	L2	291	6.0	291	6.0	* 0.265	14.2	LOS B	6.3	46.2	0.48	0.70	0.48	48.2
5	T1	902	6.0	902	6.0	0.524	24.7	LOS C	18.6	137.1	0.77	0.68	0.77	42.8
6	R2	297	6.0	297	6.0	0.858	67.7	LOS E	11.6	85.2	1.00	0.89	1.18	28.2
Approach		1490	6.0	1490	6.0	0.858	31.2	LOS C	18.6	137.1	0.76	0.72	0.79	39.6
North: Severn Vale Drive (North)														
7	L2	82	3.0	82	3.0	* 0.100	14.2	LOS B	1.8	12.8	0.45	0.66	0.45	48.1
8	T1	110	3.0	110	3.0	0.531	56.8	LOS E	6.3	45.3	0.99	0.78	0.99	31.3
9	R2	88	3.0	88	3.0	0.447	61.6	LOS E	5.0	35.9	0.98	0.77	0.98	29.8
Approach		280	3.0	280	3.0	0.531	45.8	LOS D	6.3	45.3	0.83	0.75	0.83	34.3
West: Memorial Avenue (West)														
10	L2	134	6.0	134	6.0	0.115	13.7	LOS B	2.8	20.9	0.40	0.64	0.40	48.7
11	T1	1165	6.0	1165	6.0	* 0.686	27.2	LOS C	27.1	199.2	0.85	0.76	0.85	41.5
12	R2	264	6.0	264	6.0	0.696	63.0	LOS E	8.6	63.4	1.00	0.82	1.04	29.2
Approach		1563	6.0	1563	6.0	0.696	32.1	LOS C	27.1	199.2	0.83	0.76	0.84	39.2
All Vehicles		3676	5.5	3676	5.5	0.858	35.3	LOS D	27.1	199.2	0.82	0.75	0.84	37.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101 [Memorial Ave / Severn Vale Drive - PM Peak - Base (2036) (Site Folder: Base Case Models)]

New Site
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 [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	123	3.0	123	3.0	0.580	61.6	LOS E	7.1	50.7	0.99	0.80	0.99	29.4
2	T1	171	3.0	171	3.0	* 0.766	59.9	LOS E	10.4	74.7	1.00	0.89	1.15	30.4
3	R2	114	3.0	114	3.0	0.537	61.3	LOS E	6.5	46.7	0.99	0.79	0.99	29.8
Approach		408	3.0	408	3.0	0.766	60.8	LOS E	10.4	74.7	1.00	0.83	1.06	29.9
East: Memorial Avenue (East)														
4	L2	346	6.0	346	6.0	* 0.332	16.9	LOS B	8.0	58.9	0.55	0.75	0.55	46.7
5	T1	1140	6.0	1140	6.0	0.709	28.7	LOS C	27.8	204.3	0.86	0.77	0.86	40.8
6	R2	362	6.0	362	6.0	0.861	65.7	LOS E	14.1	103.6	0.99	0.89	1.16	28.6
Approach		1848	6.0	1848	6.0	0.861	33.7	LOS C	27.8	204.3	0.83	0.79	0.86	38.5
North: Severn Vale Drive (North)														
7	L2	95	3.0	95	3.0	* 0.117	15.9	LOS B	2.3	16.3	0.49	0.68	0.49	47.0
8	T1	139	3.0	139	3.0	0.727	60.9	LOS E	8.4	60.4	1.00	0.86	1.12	30.3
9	R2	108	3.0	108	3.0	0.594	63.8	LOS E	6.3	45.4	1.00	0.79	1.01	29.3
Approach		342	3.0	342	3.0	0.727	49.3	LOS D	8.4	60.4	0.86	0.79	0.91	33.2
West: Memorial Avenue (West)														
10	L2	166	6.0	166	6.0	0.148	15.2	LOS B	3.8	28.2	0.43	0.65	0.43	47.9
11	T1	1218	6.0	1218	6.0	* 0.755	29.6	LOS C	30.5	224.3	0.89	0.80	0.89	40.4
12	R2	323	6.0	323	6.0	0.702	60.4	LOS E	10.4	76.3	0.99	0.83	1.03	29.8
Approach		1707	6.0	1707	6.0	0.755	34.0	LOS C	30.5	224.3	0.87	0.79	0.87	38.4
All Vehicles		4305	5.5	4305	5.5	0.861	37.6	LOS D	30.5	224.3	0.86	0.79	0.89	37.0

Site Level of Service (LOS) Method: Delay (SIDRA). 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 [Windsor/Fairway - AM Peak - Base (2026) (Site Folder: Site Traffic Model)]

Three-way intersection with 3-lane major road (Stop control)
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (South)														
3	L2	96	2	108	2.1	0.292	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	57.1
4	T1	879	51	989	5.8	0.292	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.3
Approach		975	53	1097	5.4	0.292	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.1
NorthWest: Windsor Road (North)														
5	T1	2297	57	2584	2.5	0.947	15.7	LOS C	32.7	233.5	0.30	0.00	1.57	47.6
6	R2	542	3	610	0.6	1.691	1262.2	LOS F[11]	318.4	2239.1	1.00	14.59	51.18	2.7
Approach		2839	60	3194	2.1	1.691	253.7	NA	318.4	2239.1	0.43	2.78	11.04	11.5
SouthWest: Fairway Drive														
1	L2	216	7	243	3.2	0.353	12.4	LOS B	1.7	12.3	0.57	1.05	0.69	49.5
Approach		216	7	243	3.2	0.353	12.4	LOS B	1.7	12.3	0.57	1.05	0.69	49.5
All Vehicles		4030	120	4534	3.0	1.691	179.5	NA	318.4	2239.1	0.33	2.03	7.82	15.1

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: 1 [Windsor/Fairway - PM Peak - Base (2026) (Site Folder: Site Traffic Model)]

Three-way intersection with 3-lane major road (Stop control)
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (South)														
3	L2	119	0	134	0.0	0.636	5.8	LOS A	0.0	0.0	0.00	0.06	0.00	57.2
4	T1	2062	40	2320	1.9	0.636	0.4	LOS A	0.0	0.0	0.00	0.03	0.00	59.0
Approach		2181	40	2454	1.8	0.636	0.7	NA	0.0	0.0	0.00	0.03	0.00	58.9
NorthWest: Windsor Road (North)														
5	T1	1108	16	1247	1.4	0.637	4.7	LOS A	3.8	27.1	0.01	0.00	0.01	55.7
6	R2	167	3	188	1.8	18.270	31184.6	LOS F[11]	264.0	1876.4	1.00	2.27	7.17	0.1
Approach		1275	19	1434	1.5	18.270	4088.6	NA	264.0	1876.4	0.14	0.30	0.95	0.9
SouthWest: Fairway Drive														
1	L2	237	3	267	1.3	1.421	798.6	LOS F[11]	104.9	742.1	1.00	7.03	25.71	4.2
Approach		237	3	267	1.3	1.421	798.6	LOS F[11]	104.9	742.1	1.00	7.03	25.71	4.2
All Vehicles		3693	62	4155	1.7	18.270	1463.2	NA	264.0	1876.4	0.11	0.57	1.98	2.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: 1 [Windsor/Fairway - AM Peak - Base (2026) + Site (Site Folder: Site Traffic Model)]

Three-way intersection with 3-lane major road (Stop control)
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (South)														
3	L2	99	2	111	2.0	0.293	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	57.1
4	T1	879	51	989	5.8	0.293	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.3
Approach		978	53	1100	5.4	0.293	0.7	NA	0.0	0.0	0.00	0.06	0.00	59.1
NorthWest: Windsor Road (North)														
5	T1	2297	57	2584	2.5	0.949	16.1	LOS C	32.9	235.2	0.30	0.00	1.58	47.4
6	R2	546	3	614	0.5	1.712	1301.4	LOS F[11]	326.5	2295.9	1.00	14.77	51.93	2.7
Approach		2843	60	3198	2.1	1.712	262.9	NA	326.5	2295.9	0.43	2.84	11.25	11.2
SouthWest: Fairway Drive														
1	L2	223	7	251	3.1	0.364	12.5	LOS B	1.8	12.9	0.57	1.05	0.71	49.5
Approach		223	7	251	3.1	0.364	12.5	LOS B	1.8	12.9	0.57	1.05	0.71	49.5
All Vehicles		4044	120	4550	3.0	1.712	185.7	NA	326.5	2295.9	0.33	2.07	7.95	14.7

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: 1 [Windsor/Fairway - PM Peak - Base (2026) + Site (Site Folder: Site Traffic Model)]

Three-way intersection with 3-lane major road (Stop control)
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Windsor Road (South)														
3	L2	146	0	164	0.0	0.645	5.9	LOS A	0.0	0.0	0.00	0.08	0.00	57.1
4	T1	2062	40	2320	1.9	0.645	0.4	LOS A	0.0	0.0	0.00	0.04	0.00	58.9
Approach		2208	40	2484	1.8	0.645	0.7	NA	0.0	0.0	0.00	0.04	0.00	58.8
NorthWest: Windsor Road (North)														
5	T1	1108	16	1247	1.4	0.635	6.1	LOS A	5.1	35.9	0.02	0.00	0.02	54.5
6	R2	181	3	204	1.7	22.429	38674.8	LOS F[11]	294.4	2090.1	1.00	2.14	6.55	0.1
Approach		1289	19	1450	1.5	22.429	5435.9	NA	294.4	2090.1	0.15	0.30	0.93	0.7
SouthWest: Fairway Drive														
1	L2	273	3	307	1.1	1.561	1044.6	LOS F[11]	144.2	1019.2	1.00	8.51	31.62	3.3
Approach		273	3	307	1.1	1.561	1044.6	LOS F[11]	144.2	1019.2	1.00	8.51	31.62	3.3
All Vehicles		3770	62	4241	1.6	22.429	1934.7	NA	294.4	2090.1	0.13	0.74	2.61	1.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

MOVEMENT SUMMARY

Site: 101 [Memorial Ave / Severn Vale Drive - AM Peak - Base (2026) + Site Generated (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	279	3.0	279	3.0	*0.767	57.8	LOS E	16.3	117.1	1.00	0.88	1.09	30.3
2	T1	110	3.0	110	3.0	0.288	44.2	LOS D	5.5	39.5	0.89	0.71	0.89	34.9
3	R2	269	3.0	269	3.0	0.740	56.6	LOS E	15.4	110.8	1.00	0.87	1.06	31.0
Approach		658	3.0	658	3.0	0.767	55.0	LOS E	16.3	117.1	0.98	0.85	1.04	31.3
East: Memorial Avenue (East)														
4	L2	133	6.0	133	6.0	*0.130	15.0	LOS B	3.0	22.1	0.49	0.66	0.49	47.6
5	T1	895	6.0	895	6.0	0.520	24.6	LOS C	18.4	135.7	0.76	0.67	0.76	42.8
6	R2	57	6.0	57	6.0	0.384	69.3	LOS E	2.1	15.3	1.00	0.72	1.00	27.8
Approach		1085	6.0	1085	6.0	0.520	25.8	LOS C	18.4	135.7	0.74	0.67	0.74	42.1
North: Severn Vale Drive (North)														
7	L2	287	3.0	287	3.0	*0.460	26.4	LOS C	10.9	78.0	0.75	0.79	0.75	41.5
8	T1	138	3.0	138	3.0	0.787	63.3	LOS E	8.6	61.8	1.00	0.90	1.21	29.6
9	R2	130	3.0	130	3.0	0.780	68.9	LOS E	8.1	58.2	1.00	0.89	1.20	28.1
Approach		555	3.0	555	3.0	0.787	45.5	LOS D	10.9	78.0	0.87	0.84	0.97	34.2
West: Memorial Avenue (West)														
10	L2	86	6.0	86	6.0	0.075	13.4	LOS B	1.8	13.2	0.40	0.63	0.40	48.7
11	T1	1333	6.0	1333	6.0	*0.795	29.9	LOS C	33.6	247.4	0.91	0.83	0.92	40.3
12	R2	111	6.0	111	6.0	0.683	71.4	LOS E	3.8	28.3	1.00	0.79	1.11	27.3
Approach		1530	6.0	1530	6.0	0.795	32.0	LOS C	33.6	247.4	0.89	0.82	0.90	39.3
All Vehicles		3828	5.0	3828	5.0	0.795	36.2	LOS D	33.6	247.4	0.86	0.78	0.89	37.6

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101 [Memorial Ave / Severn Vale Drive - AM Peak - Base (2036) + Site Generated (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	338	3.0	338	3.0	* 0.892	68.4	LOS E	22.5	161.7	1.00	0.97	1.28	27.9
2	T1	139	3.0	139	3.0	0.349	44.0	LOS D	7.0	50.3	0.90	0.73	0.90	35.0
3	R2	324	3.0	324	3.0	0.855	63.5	LOS E	20.5	147.2	1.00	0.95	1.20	29.3
Approach		801	3.0	801	3.0	0.892	62.2	LOS E	22.5	161.7	0.98	0.92	1.18	29.5
East: Memorial Avenue (East)														
4	L2	146	6.0	146	6.0	* 0.150	16.0	LOS B	3.5	25.4	0.53	0.67	0.53	47.1
5	T1	877	6.0	877	6.0	0.529	26.0	LOS C	18.5	136.3	0.78	0.69	0.78	42.1
6	R2	70	6.0	70	6.0	0.472	69.7	LOS E	2.6	19.0	1.00	0.73	1.00	27.7
Approach		1093	6.0	1093	6.0	0.529	27.5	LOS C	18.5	136.3	0.76	0.69	0.76	41.3
North: Severn Vale Drive (North)														
7	L2	352	3.0	352	3.0	* 0.620	35.4	LOS D	16.2	116.2	0.89	0.83	0.89	37.6
8	T1	172	3.0	172	3.0	0.899	70.8	LOS E	11.6	83.2	1.00	1.02	1.42	27.9
9	R2	162	3.0	162	3.0	0.891	75.7	LOS E	10.9	78.0	1.00	1.00	1.41	26.7
Approach		686	3.0	686	3.0	0.899	53.8	LOS D	16.2	116.2	0.94	0.92	1.14	31.8
West: Memorial Avenue (West)														
10	L2	106	6.0	106	6.0	0.094	14.0	LOS B	2.3	17.1	0.41	0.64	0.41	48.3
11	T1	1470	6.0	1470	6.0	* 0.923	51.3	LOS D	50.2	369.5	0.99	1.07	1.21	32.6
12	R2	129	6.0	129	6.0	0.794	73.2	LOS E	4.6	33.7	1.00	0.84	1.23	27.0
Approach		1705	6.0	1705	6.0	0.923	50.7	LOS D	50.2	369.5	0.96	1.03	1.16	32.8
All Vehicles		4285	5.0	4285	5.0	0.923	47.4	LOS D	50.2	369.5	0.91	0.90	1.06	33.7

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101 [Memorial Ave / Severn Vale Drive - PM Peak - Base (2026) + Site Generated (Site Folder: Site Traffic Model)]

New Site
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 [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	105	3.0	105	3.0	0.495	60.9	LOS E	6.0	42.8	0.98	0.79	0.98	29.6
2	T1	137	3.0	137	3.0	* 0.614	56.2	LOS E	7.9	56.8	1.00	0.81	1.01	31.4
3	R2	101	3.0	101	3.0	0.476	60.8	LOS E	5.7	41.1	0.98	0.78	0.98	30.0
Approach		343	3.0	343	3.0	0.614	59.0	LOS E	7.9	56.8	0.99	0.79	0.99	30.4
East: Memorial Avenue (East)														
4	L2	297	6.0	297	6.0	* 0.273	15.0	LOS B	6.4	47.4	0.49	0.71	0.49	47.8
5	T1	920	6.0	920	6.0	0.535	24.8	LOS C	19.1	140.7	0.77	0.68	0.77	42.7
6	R2	303	6.0	303	6.0	0.875	68.7	LOS E	12.0	88.3	1.00	0.90	1.21	27.9
Approach		1520	6.0	1520	6.0	0.875	31.7	LOS C	19.1	140.7	0.76	0.73	0.80	39.4
North: Severn Vale Drive (North)														
7	L2	82	3.0	82	3.0	* 0.101	14.2	LOS B	1.8	12.8	0.45	0.66	0.45	48.1
8	T1	113	3.0	113	3.0	0.545	56.9	LOS E	6.5	46.6	0.99	0.78	0.99	31.3
9	R2	88	3.0	88	3.0	0.447	61.6	LOS E	5.0	35.9	0.98	0.77	0.98	29.8
Approach		283	3.0	283	3.0	0.545	46.0	LOS D	6.5	46.6	0.83	0.75	0.83	34.2
West: Memorial Avenue (West)														
10	L2	134	6.0	134	6.0	0.115	14.0	LOS B	2.9	21.1	0.40	0.63	0.40	48.6
11	T1	1172	6.0	1172	6.0	* 0.691	27.3	LOS C	27.3	201.2	0.85	0.76	0.85	41.5
12	R2	281	6.0	281	6.0	0.741	63.9	LOS E	9.3	68.6	1.00	0.84	1.08	29.0
Approach		1587	6.0	1587	6.0	0.741	32.7	LOS C	27.3	201.2	0.84	0.76	0.85	39.0
All Vehicles		3733	5.5	3733	5.5	0.875	35.7	LOS D	27.3	201.2	0.82	0.75	0.84	37.8

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101 [Memorial Ave / Severn Vale Drive - PM Peak - Base (2036) + Site Generated (Site Folder: Site Traffic Model)]

New Site
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 [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Severn Vale Drive (South)														
1	L2	123	3.0	123	3.0	0.580	61.6	LOS E	7.1	50.7	0.99	0.80	0.99	29.4
2	T1	171	3.0	171	3.0	* 0.766	59.9	LOS E	10.4	74.7	1.00	0.89	1.15	30.4
3	R2	114	3.0	114	3.0	0.537	61.3	LOS E	6.5	46.7	0.99	0.79	0.99	29.8
Approach		408	3.0	408	3.0	0.766	60.8	LOS E	10.4	74.7	1.00	0.83	1.06	29.9
East: Memorial Avenue (East)														
4	L2	352	6.0	352	6.0	* 0.340	17.7	LOS B	8.2	60.2	0.56	0.75	0.56	46.3
5	T1	1158	6.0	1158	6.0	0.725	28.9	LOS C	28.6	210.9	0.87	0.78	0.87	40.7
6	R2	368	6.0	368	6.0	0.876	66.7	LOS E	14.5	107.0	0.99	0.90	1.18	28.4
Approach		1878	6.0	1878	6.0	0.876	34.2	LOS C	28.6	210.9	0.84	0.80	0.87	38.4
North: Severn Vale Drive (North)														
7	L2	95	3.0	95	3.0	* 0.118	15.9	LOS B	2.3	16.3	0.49	0.68	0.49	47.0
8	T1	142	3.0	142	3.0	0.742	61.4	LOS E	8.6	62.1	1.00	0.87	1.14	30.2
9	R2	108	3.0	108	3.0	0.594	63.8	LOS E	6.3	45.4	1.00	0.79	1.01	29.3
Approach		345	3.0	345	3.0	0.742	49.6	LOS D	8.6	62.1	0.86	0.79	0.92	33.1
West: Memorial Avenue (West)														
10	L2	166	6.0	166	6.0	0.148	15.3	LOS B	3.8	28.3	0.43	0.65	0.43	47.9
11	T1	1225	6.0	1225	6.0	* 0.760	29.7	LOS C	30.8	226.5	0.89	0.80	0.89	40.4
12	R2	340	6.0	340	6.0	0.739	61.2	LOS E	11.1	81.6	1.00	0.84	1.05	29.6
Approach		1731	6.0	1731	6.0	0.760	34.5	LOS C	30.8	226.5	0.87	0.80	0.88	38.3
All Vehicles		4362	5.5	4362	5.5	0.876	38.0	LOS D	30.8	226.5	0.87	0.80	0.90	36.9

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101 [Memorial Ave / Stone Mason Road - AM Peak - 2036 (Site Folder: Site Traffic Model)]

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

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Stone Mason Road														
1	L2	206	3.0	206	3.0	0.234	10.7	LOS B	1.0	7.1	0.52	0.95	0.52	50.6
Approach		206	3.0	206	3.0	0.234	10.7	LOS B	1.0	7.1	0.52	0.95	0.52	50.6
East: Memorial West (East)														
4	L2	213	3.0	213	3.0	0.342	5.7	LOS A	0.0	0.0	0.00	0.20	0.00	56.4
5	T1	1086	3.0	1086	3.0	0.342	0.1	LOS A	0.0	0.0	0.00	0.08	0.00	59.1
Approach		1299	3.0	1299	3.0	0.342	1.0	NA	0.0	0.0	0.00	0.10	0.00	58.6
All Vehicles		1505	3.0	1505	3.0	0.342	2.3	NA	1.0	7.1	0.07	0.21	0.07	57.4

Site Level of Service (LOS) Method: Delay (SIDRA). 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 [Memorial Ave / Stone Mason Road - PM Peak - 2036 (Site Folder: Site Traffic Model)]

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

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Stone Mason Road														
1	L2	230	3.0	230	3.0	0.464	17.5	LOS C	2.3	16.8	0.78	1.11	1.13	46.5
Approach		230	3.0	230	3.0	0.464	17.5	LOS C	2.3	16.8	0.78	1.11	1.13	46.5
East: Memorial West (East)														
4	L2	241	3.0	241	3.0	0.549	5.8	LOS A	0.0	0.0	0.00	0.14	0.00	56.6
5	T1	1848	3.0	1848	3.0	0.549	0.3	LOS A	0.0	0.0	0.00	0.06	0.00	59.0
Approach		2089	3.0	2089	3.0	0.549	0.9	NA	0.0	0.0	0.00	0.07	0.00	58.7
All Vehicles		2319	3.0	2319	3.0	0.549	2.5	NA	2.3	16.8	0.08	0.17	0.11	57.2

Site Level of Service (LOS) Method: Delay (SIDRA). 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: 101v [Fairway Drive / Stone Mason Drive - AM Peak - Existing Conditions + Site - Conversion (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
1	L2	10	0	10	0.0	0.017	8.5	LOS A	0.1	0.7	0.73	0.63	0.73	48.3
2	T1	1	0	1	0.0	0.017	8.7	LOS A	0.1	0.7	0.73	0.63	0.73	47.0
3	R2	1	0	1	0.0	0.017	13.4	LOS B	0.1	0.7	0.73	0.63	0.73	42.0
Approach		12	0	12	0.0	0.017	8.9	LOS A	0.1	0.7	0.73	0.63	0.73	47.9
NorthEast: Fairway Drive														
4	L2	3	0	3	0.0	0.460	4.5	LOS A	4.1	29.1	0.39	0.45	0.39	43.8
11	T1	609	3	609	0.5	0.460	4.8	LOS A	4.1	29.1	0.39	0.45	0.39	52.5
12	R2	32	0	32	0.0	0.460	9.4	LOS A	4.1	29.1	0.39	0.45	0.39	50.3
Approach		644	3	644	0.5	0.460	5.0	LOS A	4.1	29.1	0.39	0.45	0.39	52.4
NorthWest: Stone Mason Road														
1	L2	34	2	34	5.9	0.104	5.1	LOS A	0.6	4.2	0.41	0.61	0.41	45.0
8	T1	1	0	1	0.0	0.104	5.2	LOS A	0.6	4.2	0.41	0.61	0.41	47.4
3	R2	83	1	83	1.2	0.104	9.9	LOS A	0.6	4.2	0.41	0.61	0.41	51.7
Approach		118	3	118	2.5	0.104	8.5	LOS A	0.6	4.2	0.41	0.61	0.41	50.2
SouthWest: Fairway Drive														
4	L2	37	2	37	5.4	0.157	4.1	LOS A	1.0	7.4	0.17	0.40	0.17	53.6
5	T1	190	5	190	2.6	0.157	4.3	LOS A	1.0	7.4	0.17	0.40	0.17	54.1
12	R2	2	0	2	0.0	0.157	8.9	LOS A	1.0	7.4	0.17	0.40	0.17	54.2
Approach		229	7	229	3.1	0.157	4.3	LOS A	1.0	7.4	0.17	0.40	0.17	54.0
All Vehicles		1003	13	1003	1.3	0.460	5.3	LOS A	4.1	29.1	0.35	0.46	0.35	52.4

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

MOVEMENT SUMMARY

Site: 101v [Fairway Drive / Stone Mason Drive - PM Peak - Existing Conditions + Site - Conversion (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
4	L2	8	1	8	12.5	0.013	6.6	LOS A	0.1	0.5	0.57	0.56	0.57	49.3
11	T1	1	0	1	0.0	0.013	6.5	LOS A	0.1	0.5	0.57	0.56	0.57	48.9
12	R2	2	0	2	0.0	0.013	11.1	LOS B	0.1	0.5	0.57	0.56	0.57	48.9
Approach		11	1	11	9.1	0.013	7.4	LOS A	0.1	0.5	0.57	0.56	0.57	49.2
NorthEast: Fairway Drive														
1	L2	8	1	8	12.5	0.256	4.8	LOS A	1.8	12.7	0.38	0.51	0.38	46.4
8	T1	239	1	239	0.4	0.256	4.9	LOS A	1.8	12.7	0.38	0.51	0.38	53.3
3	R2	80	1	80	1.3	0.256	9.5	LOS A	1.8	12.7	0.38	0.51	0.38	51.5
Approach		327	3	327	0.9	0.256	6.0	LOS A	1.8	12.7	0.38	0.51	0.38	52.8
NorthWest: Stone Mason Drive														
4	L2	67	0	67	0.0	0.162	5.2	LOS A	1.0	7.0	0.45	0.62	0.45	48.6
5	T1	1	0	1	0.0	0.162	5.4	LOS A	1.0	7.0	0.45	0.62	0.45	47.6
12	R2	114	1	114	0.9	0.162	10.1	LOS B	1.0	7.0	0.45	0.62	0.45	51.9
Approach		182	1	182	0.5	0.162	8.2	LOS A	1.0	7.0	0.45	0.62	0.45	50.8
SouthWest: Fairway Drive														
1	L2	104	1	104	1.0	0.233	4.4	LOS A	1.6	11.3	0.30	0.44	0.30	53.1
2	T1	204	3	204	1.5	0.233	4.6	LOS A	1.6	11.3	0.30	0.44	0.30	54.7
3	R2	6	0	6	0.0	0.233	9.2	LOS A	1.6	11.3	0.30	0.44	0.30	53.5
Approach		314	4	314	1.3	0.233	4.6	LOS A	1.6	11.3	0.30	0.44	0.30	54.1
All Vehicles		834	9	834	1.1	0.256	6.0	LOS A	1.8	12.7	0.37	0.51	0.37	52.8

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

MOVEMENT SUMMARY

Site: 101v [Fairway Drive / Stone Mason Drive - AM Peak - Existing Conditions + Site (2026) - Conversion (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
1	L2	10	0	11	0.0	0.021	9.5	LOS A	0.1	1.0	0.78	0.66	0.78	47.3
2	T1	1	0	1	0.0	0.021	9.7	LOS A	0.1	1.0	0.78	0.66	0.78	45.8
3	R2	1	0	1	0.0	0.021	14.4	LOS B	0.1	1.0	0.78	0.66	0.78	40.5
Approach		12	0	14	0.0	0.021	9.9	LOS A	0.1	1.0	0.78	0.66	0.78	46.9
NorthEast: Fairway Drive														
4	L2	3	0	3	0.0	0.524	4.7	LOS A	5.1	36.1	0.45	0.47	0.45	43.3
11	T1	609	3	685	0.5	0.524	5.0	LOS A	5.1	36.1	0.45	0.47	0.45	52.2
12	R2	32	0	36	0.0	0.524	9.6	LOS A	5.1	36.1	0.45	0.47	0.45	49.8
Approach		644	3	725	0.5	0.524	5.2	LOS A	5.1	36.1	0.45	0.47	0.45	52.0
NorthWest: Stone Mason Road														
1	L2	34	2	38	5.9	0.120	5.3	LOS A	0.7	5.0	0.44	0.62	0.44	44.9
8	T1	1	0	1	0.0	0.120	5.4	LOS A	0.7	5.0	0.44	0.62	0.44	47.2
3	R2	83	1	93	1.2	0.120	10.1	LOS B	0.7	5.0	0.44	0.62	0.44	51.6
Approach		118	3	133	2.5	0.120	8.6	LOS A	0.7	5.0	0.44	0.62	0.44	50.1
SouthWest: Fairway Drive														
4	L2	37	2	42	5.4	0.178	4.1	LOS A	1.2	8.6	0.19	0.40	0.19	53.5
5	T1	190	5	214	2.6	0.178	4.3	LOS A	1.2	8.6	0.19	0.40	0.19	54.0
12	R2	2	0	2	0.0	0.178	8.9	LOS A	1.2	8.6	0.19	0.40	0.19	54.1
Approach		229	7	258	3.1	0.178	4.3	LOS A	1.2	8.6	0.19	0.40	0.19	53.9
All Vehicles		1003	13	1128	1.3	0.524	5.5	LOS A	5.1	36.1	0.39	0.47	0.39	52.1

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

MOVEMENT SUMMARY

Site: 101v [Fairway Drive / Stone Mason Drive - PM Peak - Existing Conditions + Site (2026) - Conversion (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
4	L2	8	1	9	12.5	0.015	7.0	LOS A	0.1	0.6	0.60	0.58	0.60	48.9
11	T1	1	0	1	0.0	0.015	6.8	LOS A	0.1	0.6	0.60	0.58	0.60	48.4
12	R2	2	0	2	0.0	0.015	11.4	LOS B	0.1	0.6	0.60	0.58	0.60	48.4
Approach		11	1	12	9.1	0.015	7.8	LOS A	0.1	0.6	0.60	0.58	0.60	48.8
NorthEast: Fairway Drive														
1	L2	8	1	9	12.5	0.293	5.0	LOS A	2.1	15.1	0.42	0.52	0.42	46.2
8	T1	239	1	269	0.4	0.293	5.0	LOS A	2.1	15.1	0.42	0.52	0.42	53.2
3	R2	80	1	90	1.3	0.293	9.7	LOS A	2.1	15.1	0.42	0.52	0.42	51.3
Approach		327	3	368	0.9	0.293	6.2	LOS A	2.1	15.1	0.42	0.52	0.42	52.6
NorthWest: Stone Mason Drive														
4	L2	67	0	75	0.0	0.187	5.4	LOS A	1.2	8.3	0.49	0.63	0.49	48.5
5	T1	1	0	1	0.0	0.187	5.6	LOS A	1.2	8.3	0.49	0.63	0.49	47.5
12	R2	114	1	128	0.9	0.187	10.3	LOS B	1.2	8.3	0.49	0.63	0.49	51.8
Approach		182	1	205	0.5	0.187	8.4	LOS A	1.2	8.3	0.49	0.63	0.49	50.7
SouthWest: Fairway Drive														
1	L2	104	1	117	1.0	0.265	4.4	LOS A	1.9	13.4	0.33	0.45	0.33	53.0
2	T1	204	3	230	1.5	0.265	4.7	LOS A	1.9	13.4	0.33	0.45	0.33	54.5
3	R2	6	0	7	0.0	0.265	9.3	LOS A	1.9	13.4	0.33	0.45	0.33	53.3
Approach		314	4	353	1.3	0.265	4.7	LOS A	1.9	13.4	0.33	0.45	0.33	54.0
All Vehicles		834	9	938	1.1	0.293	6.1	LOS A	2.1	15.1	0.40	0.52	0.40	52.7

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

MOVEMENT SUMMARY

Site: 101v [Fairway Drive / Stone Mason Drive - AM Peak - Existing Conditions + Site (2036) - Conversion (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 15 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
1	L2	10	0	14	0.0	0.034	12.2	LOS B	0.2	1.7	0.89	0.74	0.89	44.9
2	T1	1	0	1	0.0	0.034	12.5	LOS B	0.2	1.7	0.89	0.74	0.89	42.7
3	R2	1	0	1	0.0	0.034	17.1	LOS B	0.2	1.7	0.89	0.74	0.89	37.0
Approach		12	0	17	0.0	0.034	12.6	LOS B	0.2	1.7	0.89	0.74	0.89	44.4
NorthEast: Fairway Drive														
4	L2	3	0	4	0.0	0.656	5.1	LOS A	7.8	54.8	0.60	0.51	0.60	41.9
11	T1	609	3	837	0.5	0.656	5.4	LOS A	7.8	54.8	0.60	0.51	0.60	51.2
12	R2	32	0	44	0.0	0.656	10.0	LOS B	7.8	54.8	0.60	0.51	0.60	48.6
Approach		644	3	886	0.5	0.656	5.7	LOS A	7.8	54.8	0.60	0.51	0.60	51.1
NorthWest: Stone Mason Road														
1	L2	34	2	47	5.9	0.153	5.6	LOS A	0.9	6.6	0.49	0.64	0.49	44.6
8	T1	1	0	1	0.0	0.153	5.8	LOS A	0.9	6.6	0.49	0.64	0.49	47.0
3	R2	83	1	114	1.2	0.153	10.4	LOS B	0.9	6.6	0.49	0.64	0.49	51.4
Approach		118	3	162	2.5	0.153	9.0	LOS A	0.9	6.6	0.49	0.64	0.49	49.9
SouthWest: Fairway Drive														
4	L2	37	2	51	5.4	0.220	4.2	LOS A	1.6	11.5	0.23	0.41	0.23	53.3
5	T1	190	5	261	2.6	0.220	4.4	LOS A	1.6	11.5	0.23	0.41	0.23	53.7
12	R2	2	0	3	0.0	0.220	9.0	LOS A	1.6	11.5	0.23	0.41	0.23	53.9
Approach		229	7	315	3.1	0.220	4.4	LOS A	1.6	11.5	0.23	0.41	0.23	53.6
All Vehicles		1003	13	1379	1.3	0.656	5.8	LOS A	7.8	54.8	0.51	0.50	0.51	51.4

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

MOVEMENT SUMMARY

Site: 101v [Fairway Drive / Stone Mason Drive - PM Peak - Existing Conditions + Site (2036) - Conversion (Site Folder: Site Traffic Model)]

New Site
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 15 years

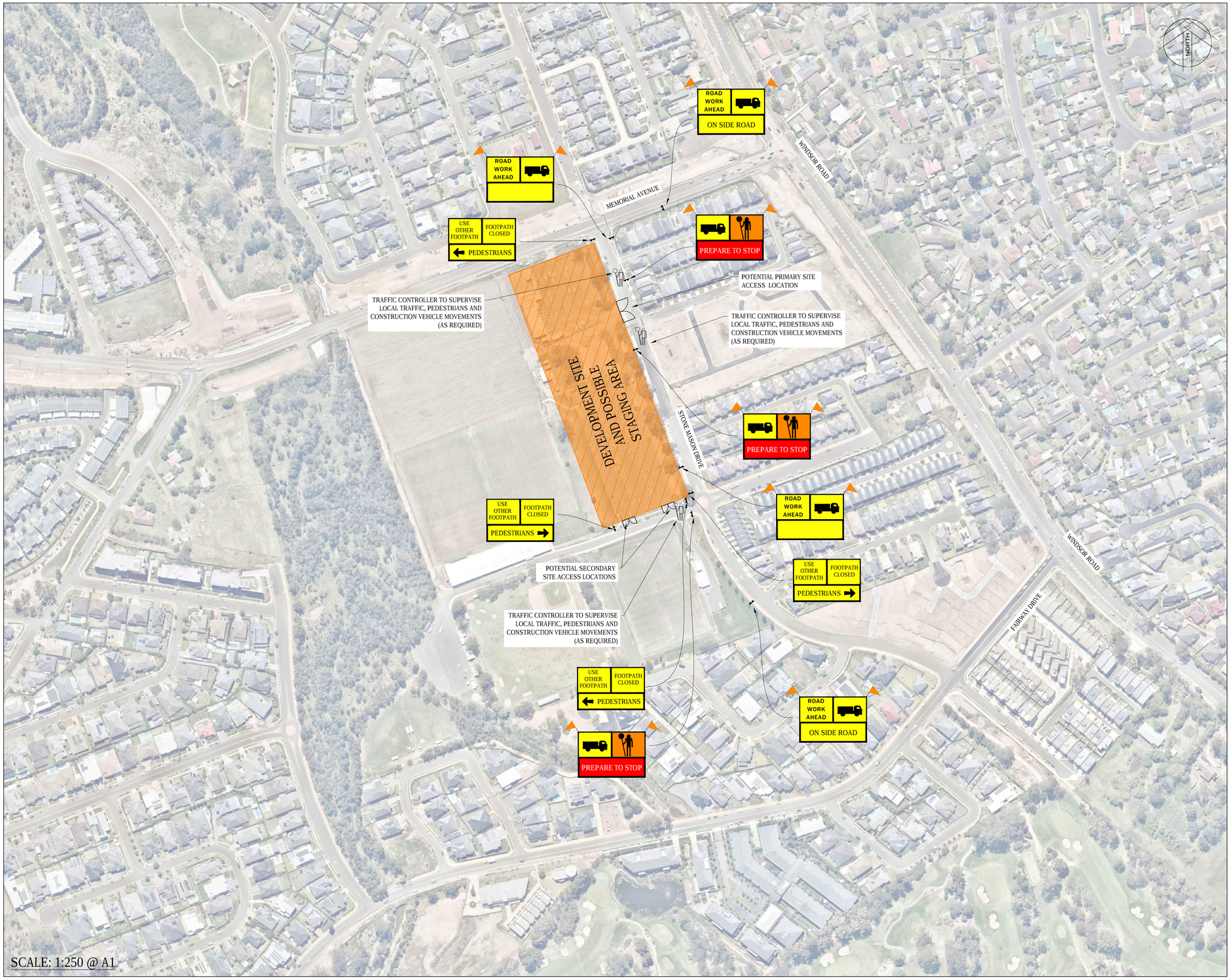
Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Stone Mason Drive														
4	L2	8	1	11	12.5	0.020	7.9	LOS A	0.1	0.9	0.67	0.62	0.67	48.1
11	T1	1	0	1	0.0	0.020	7.6	LOS A	0.1	0.9	0.67	0.62	0.67	47.4
12	R2	2	0	3	0.0	0.020	12.3	LOS B	0.1	0.9	0.67	0.62	0.67	47.3
Approach		11	1	15	9.1	0.020	8.6	LOS A	0.1	0.9	0.67	0.62	0.67	47.9
NorthEast: Fairway Drive														
1	L2	8	1	11	12.5	0.371	5.3	LOS A	2.9	20.6	0.50	0.55	0.50	45.7
8	T1	239	1	329	0.4	0.371	5.3	LOS A	2.9	20.6	0.50	0.55	0.50	52.8
3	R2	80	1	110	1.3	0.371	10.0	LOS A	2.9	20.6	0.50	0.55	0.50	50.9
Approach		327	3	450	0.9	0.371	6.5	LOS A	2.9	20.6	0.50	0.55	0.50	52.2
NorthWest: Stone Mason Drive														
4	L2	67	0	92	0.0	0.241	5.8	LOS A	1.6	11.2	0.56	0.67	0.56	48.2
5	T1	1	0	1	0.0	0.241	6.1	LOS A	1.6	11.2	0.56	0.67	0.56	47.1
12	R2	114	1	157	0.9	0.241	10.7	LOS B	1.6	11.2	0.56	0.67	0.56	51.6
Approach		182	1	250	0.5	0.241	8.9	LOS A	1.6	11.2	0.56	0.67	0.56	50.4
SouthWest: Fairway Drive														
1	L2	104	1	143	1.0	0.332	4.6	LOS A	2.6	18.1	0.40	0.47	0.40	52.7
2	T1	204	3	281	1.5	0.332	4.9	LOS A	2.6	18.1	0.40	0.47	0.40	54.2
3	R2	6	0	8	0.0	0.332	9.5	LOS A	2.6	18.1	0.40	0.47	0.40	52.9
Approach		314	4	432	1.3	0.332	4.9	LOS A	2.6	18.1	0.40	0.47	0.40	53.6
All Vehicles		834	9	1147	1.1	0.371	6.4	LOS A	2.9	20.6	0.48	0.55	0.48	52.3

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

Appendix F

Preliminary Construction Traffic Management Plans



SCALE: 1:250 @ A1

LEGEND

- DEVELOPMENT SITE
- ACCESS GATES
- TRAFFIC CONTROLLER
- TEMPORARY SIGN AND FRAME
- INBOUND CONSTRUCTION VEHICLE MOVEMENTS
- OUTBOUND CONSTRUCTION VEHICLE MOVEMENTS

NOTES

THE FOLLOWING NOTES RELATE ARE TO BE CONSIDERED WITH RESPECT TO THE PREPARATION OF FORMAL CONSTRUCTION TRAFFIC MANAGEMENT PLANS DURING THE CONSTRUCTION STAGE:

1. TRAFFIC MANAGEMENT PLAN(S) TO COMPLY WITH PROVISIONS OF AS1742.3-2002 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
2. TRAFFIC MANAGEMENT PLAN(S) SHOULD BE READ IN CONJUNCTION WITH AUSTRALIAN STANDARD AS1742.3-2009 AND ROAD MANAGEMENT ACT 2004, CODE OF PRACTICE TO ENSURE CORRECT INSTALLATION OF TRAFFIC CONTROL DEVICES.
3. TRAFFIC MANAGEMENT PLAN(S) WHERE APPLICABLE SHOULD FOLLOW THE STANDARD CONDITIONS SET OUT BY THE HILLS SHIRE COUNCIL FOR TRAFFIC MANAGEMENT PLAN APPROVALS.
4. ADVANCED WARNING SIGNS TO BE FITTED WITH FLAGS AS SHOWN.
5. ALL SIGNS SHALL BE PERMANENTLY HIGH MOUNTED, WHERE APPROPRIATE.
6. SIGNS SHALL FACE TOWARDS APPROACHING TRAFFIC APPROXIMATELY AT RIGHT ANGLES TO THE LINE OF SIGHT FROM THE DRIVER TO THE SIGN.
7. ALL LINEMARKING TO BE IN ACCORDANCE WITH AS1742.2 (INCLUDING ALL AMENDMENTS)
8. ALL PAINT USED FOR ROAD/LINEMARKING PURPOSES SHALL CONFORM WITH AS4049 (INCLUDING ALL AMENDMENTS).
9. USE OF TRAFFIC CONTROL DEVICES TO CONTROL TRAFFIC AND PARKING TO BE IN ACCORDANCE WITH THE ROAD SAFETY (TRAFFIC MANAGEMENT) REGULATIONS 2019, AND ROAD SAFETY ROAD RULES 2017.
10. TRIM/REMOVE TREES TO SUIT WORK ZONE / TO PROVIDE REQUIRED SIGHT DISTANCE TO SIGNS. COUNCIL APPROVAL TO BE OBTAINED
11. TRAFFIC CONTROLLERS TO ACT (SUPERVISE CONSTRUCTION TRAFFIC, PEDESTRIAN AND CYCLIST MOVEMENTS AS REQUIRED) IN ACCORDANCE WITH ROAD MANAGEMENT ACT 2004, CODE OF PRACTICE - CLAUSE 84.
12. TRAFFIC MANAGEMENT PLAN(S) TO COMPLY WITH PROVISIONS OF AS1742.3-2002 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROAD.
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6. NO STAGING OF CONSTRUCTION VEHICLES ON LOCAL ROADS. BUILDING TO COORDINATE TIMING OF DELIVERIES TO MINIMISE CONGESTION ON AND AROUND SITE.

OPERATIONAL CONSIDERATIONS

1. CONSTRUCTION HOURS (SUBJECT TO AUTHORITY CONDITIONS):
   - 7:00AM - 6:00PM MONDAY TO FRIDAY
   - 9:00AM - 3:00PM SATURDAY
2. REMOVE OR COVER UP PERMANENT SIGNS THAT CONFLICT WITH TEMPORARY TRAFFIC MANAGEMENT SIGNS DURING HOURS OF OPERATION.
3. REMOVE OR COVER UP TEMPORARY TRAFFIC MANAGEMENT SIGNS AND OTHER TRAFFIC CONTROL DEVICES NOT REQUIRED OUTSIDE HOURS OF OPERATION.

INDICATIVE PLAN
FOR INFORMATION ONLY

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REV	DATE	DESCRIPTION	BY	CHK
B	02/12/21	TITLE BLOCK UPDATE	C.H.	
A	17/10/21	INITIAL ISSUE	C.H.	

Level 15
28 Freshwater Place
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Meblourne VIC 3006
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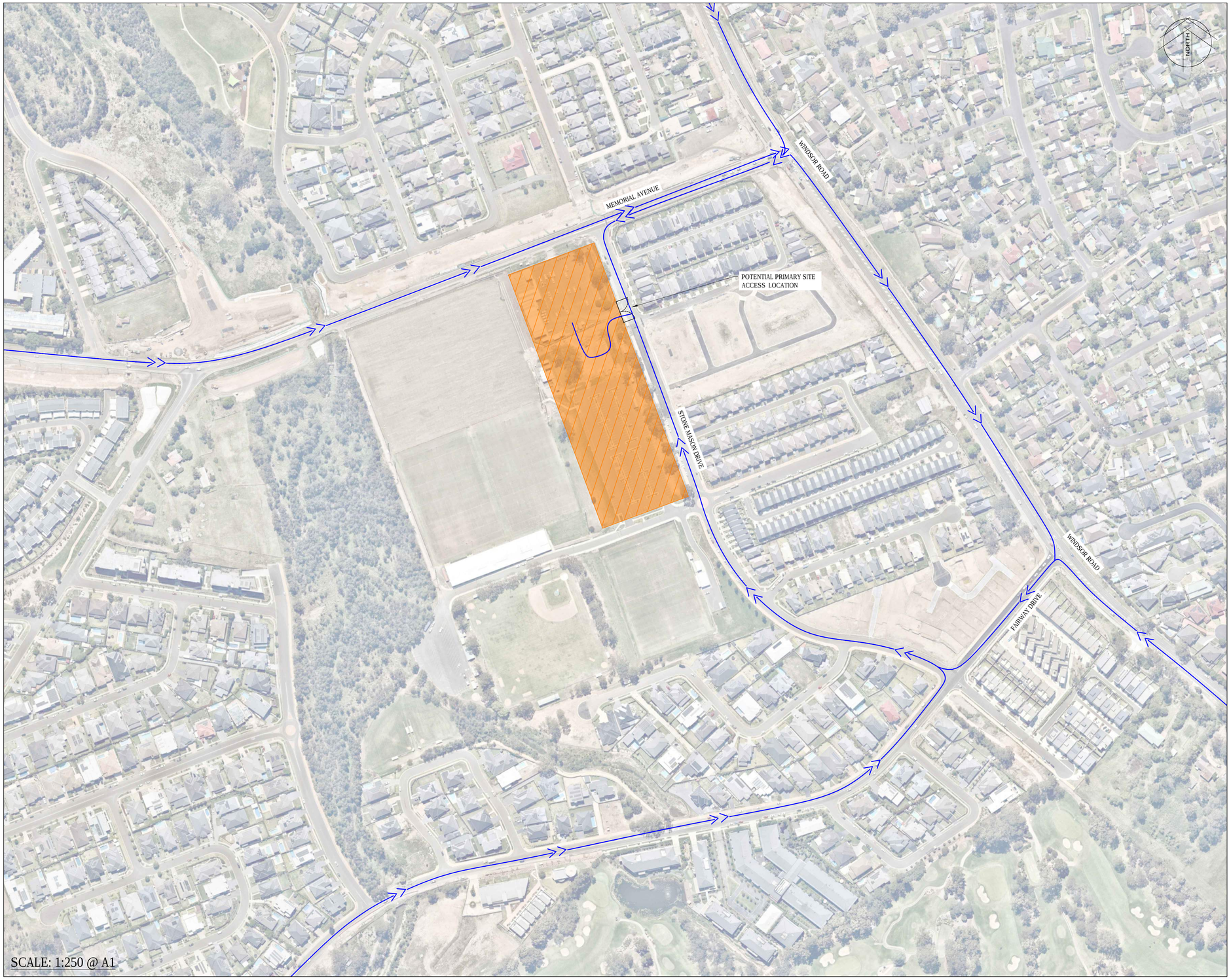
Website: www.wsp.com

DATE	17/10/2021
SCALE AT A1	0 20 40 60m, SCALE 1:2000
GRID	MGA20 ZONE56
PREPARED	C. HAMOND
SHEET	01 of 03

PROJECT	PARRAMATTA EELS COMMUNITY FACILITY AND CENTRE OF EXCELLENCE
TITLE	PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN INDICATIVE CONSTRUCTION SIGN AND CONTROLLER LOCATIONS

PROJECT No.	SKETCH No.	REV
PS126940	T001	B



LEGEND

- DEVELOPMENT SITE
- ACCESS GATES
- TRAFFIC CONTROLLER
- TEMPORARY SIGN AND FRAME
- INBOUND CONSTRUCTION VEHICLE MOVEMENTS
- OUTBOUND CONSTRUCTION VEHICLE MOVEMENTS

NOTES

THE FOLLOWING NOTES RELATE ARE TO BE CONSIDERED WITH RESPECT TO THE PREPARATION OF FORMAL CONSTRUCTION TRAFFIC MANAGEMENT PLANS DURING THE CONSTRUCTION STAGE:

1. TRAFFIC MANAGEMENT PLAN(S) TO COMPLY WITH PROVISIONS OF AS1742.3-2002 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
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OPERATIONAL CONSIDERATIONS

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INDICATIVE PLAN

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B	02/12/21	TITLE BLOCK UPDATE	C.H.	
A	17/10/21	INITIAL ISSUE	C.H.	

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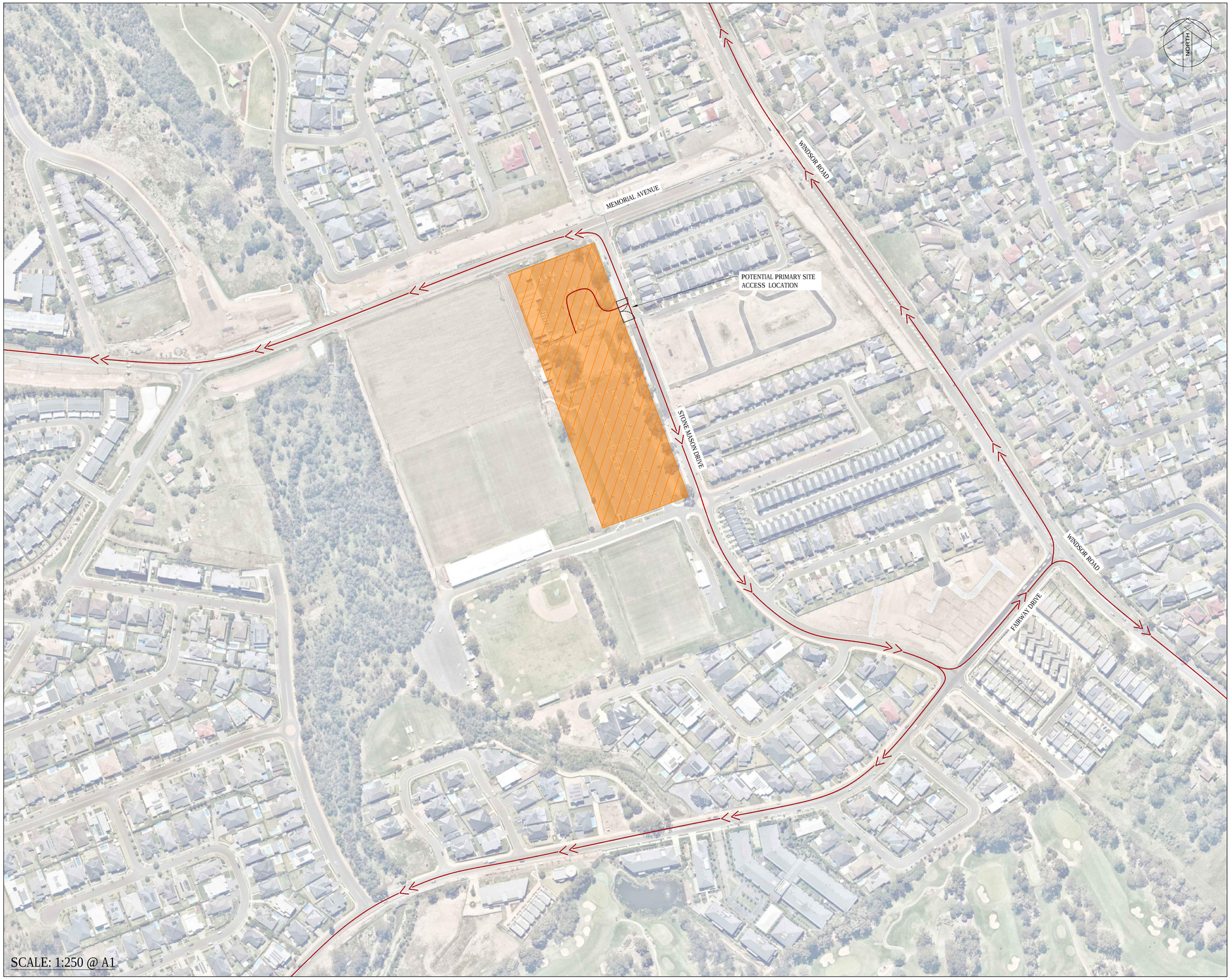
Website: www.wsp.com

DATE	17/10/2021
SCALE AT A1	0 20 40 60m, SCALE 1:2000
GRID	MGA20 ZONE56
PREPARED	C. HAMOND
SHEET	02 of 03

PROJECT	PARRAMATTA EELS COMMUNITY FACILITY AND CENTRE OF EXCELLENCE
TITLE	PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN INBOUND CONSTRUCTION VEHICLES POSSIBLE ACCESS ROUTES
PROJECT No.	PS126940
SKETCH No.	T002
REV	B



LEGEND

- DEVELOPMENT SITE
- ACCESS GATES
- TRAFFIC CONTROLLER
- TEMPORARY SIGN AND FRAME
- INBOUND CONSTRUCTION VEHICLE MOVEMENTS
- OUTBOUND CONSTRUCTION VEHICLE MOVEMENTS

NOTES

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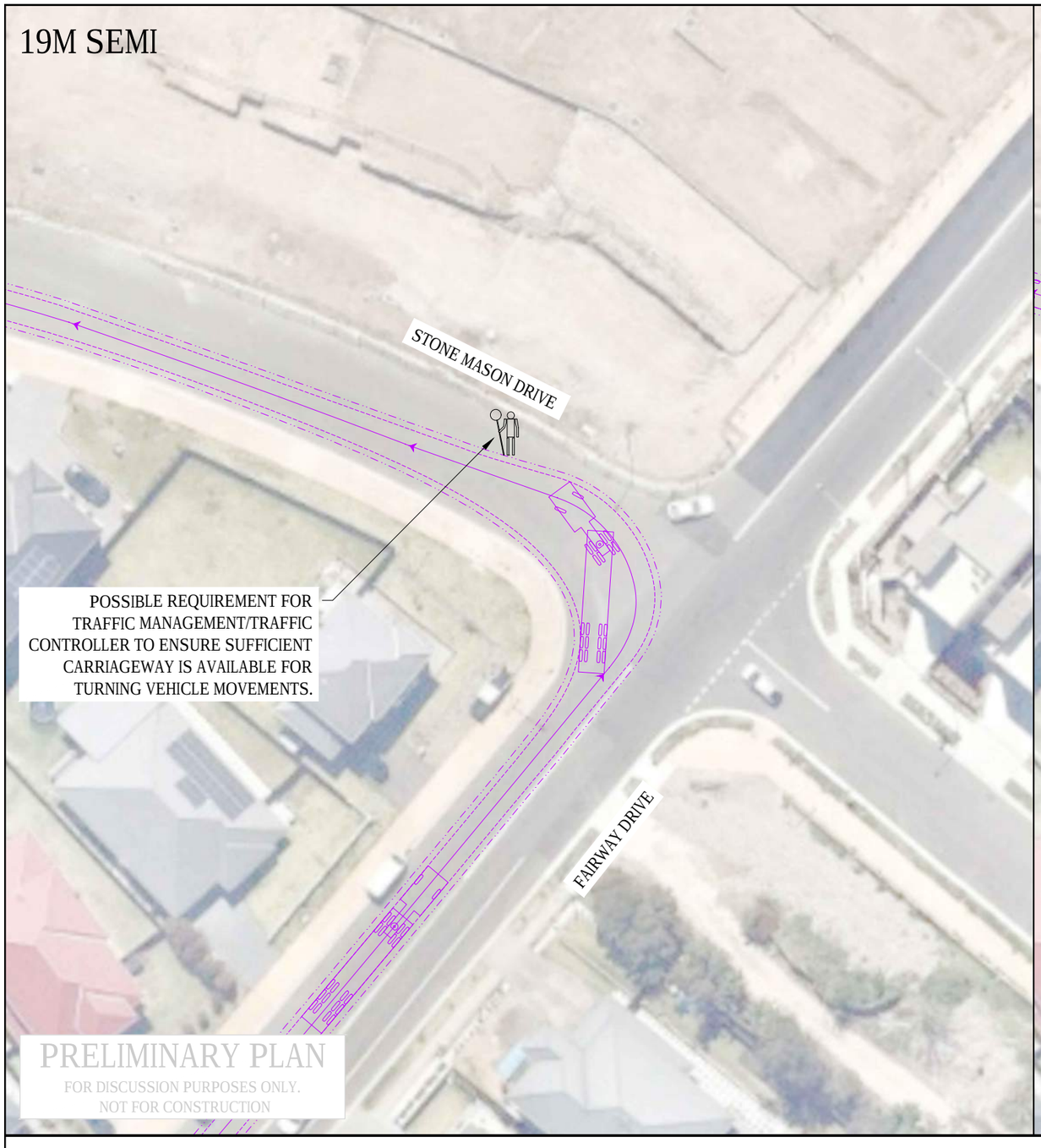
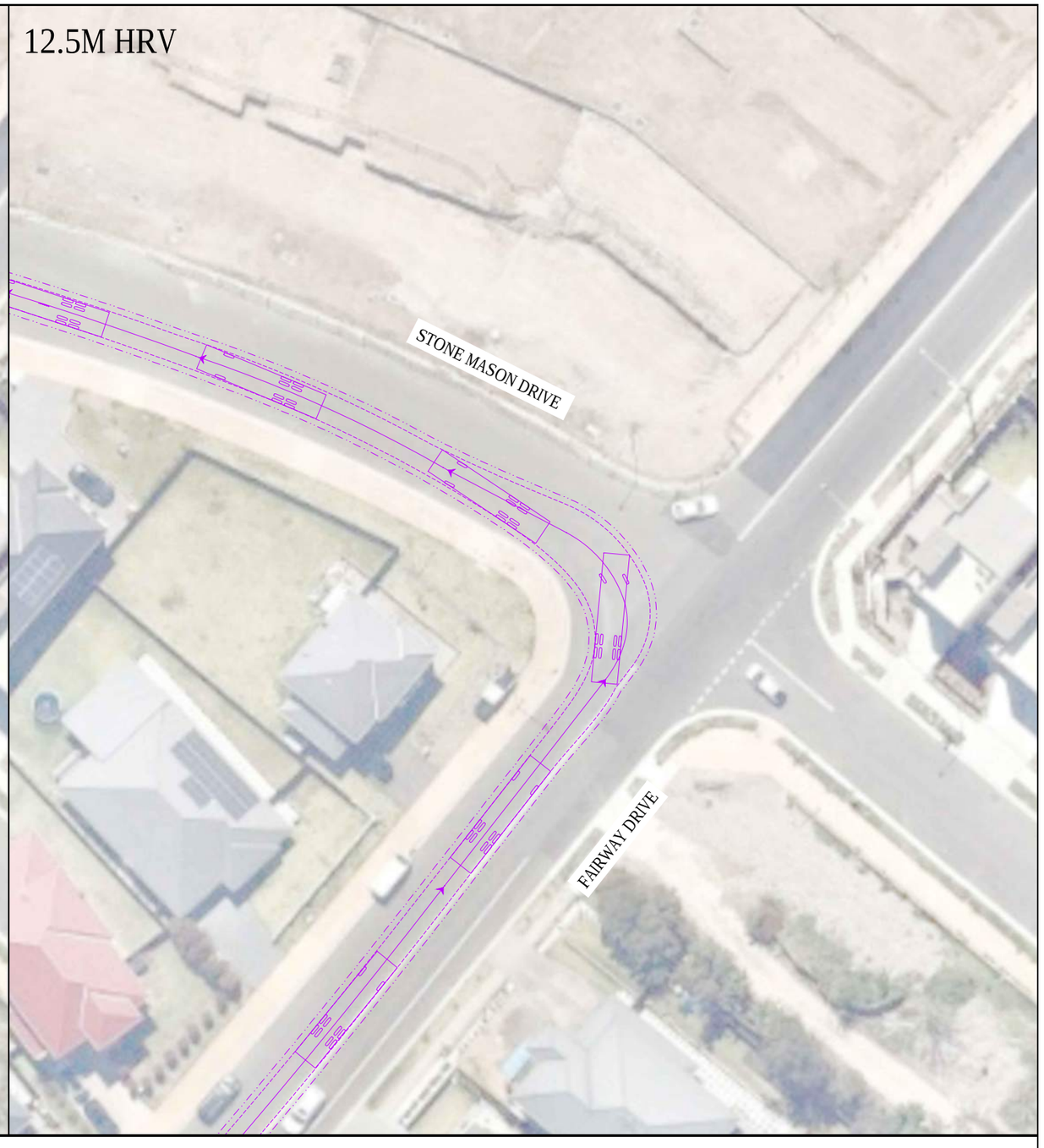
DATE	17/10/2021
SCALE AT A1	0 20 40 60m, SCALE 1:2000
GRID	MGA20 ZONE56
PREPARED	C. HAMOND
SHEET	03 of 03
PROJECT	PARRAMATTA EELS COMMUNITY FACILITY AND CENTRE OF EXCELLENCE
TITLE	PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN OUTBOUND CONSTRUCTION VEHICLES POSSIBLE ACCESS ROUTES
PROJECT No.	PS126940
SKETCH No.	T003
REV	B

19M SEMI



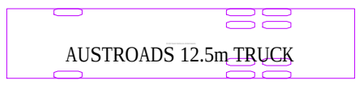
PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY.
NOT FOR CONSTRUCTION

12.5M HRV



VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE



PS126940 SK002

INDICATIVE INBOUND CONSTRUCTION
VEHICLE MOVEMENTS 01
C.H. 17.10.2021

0 10 20m

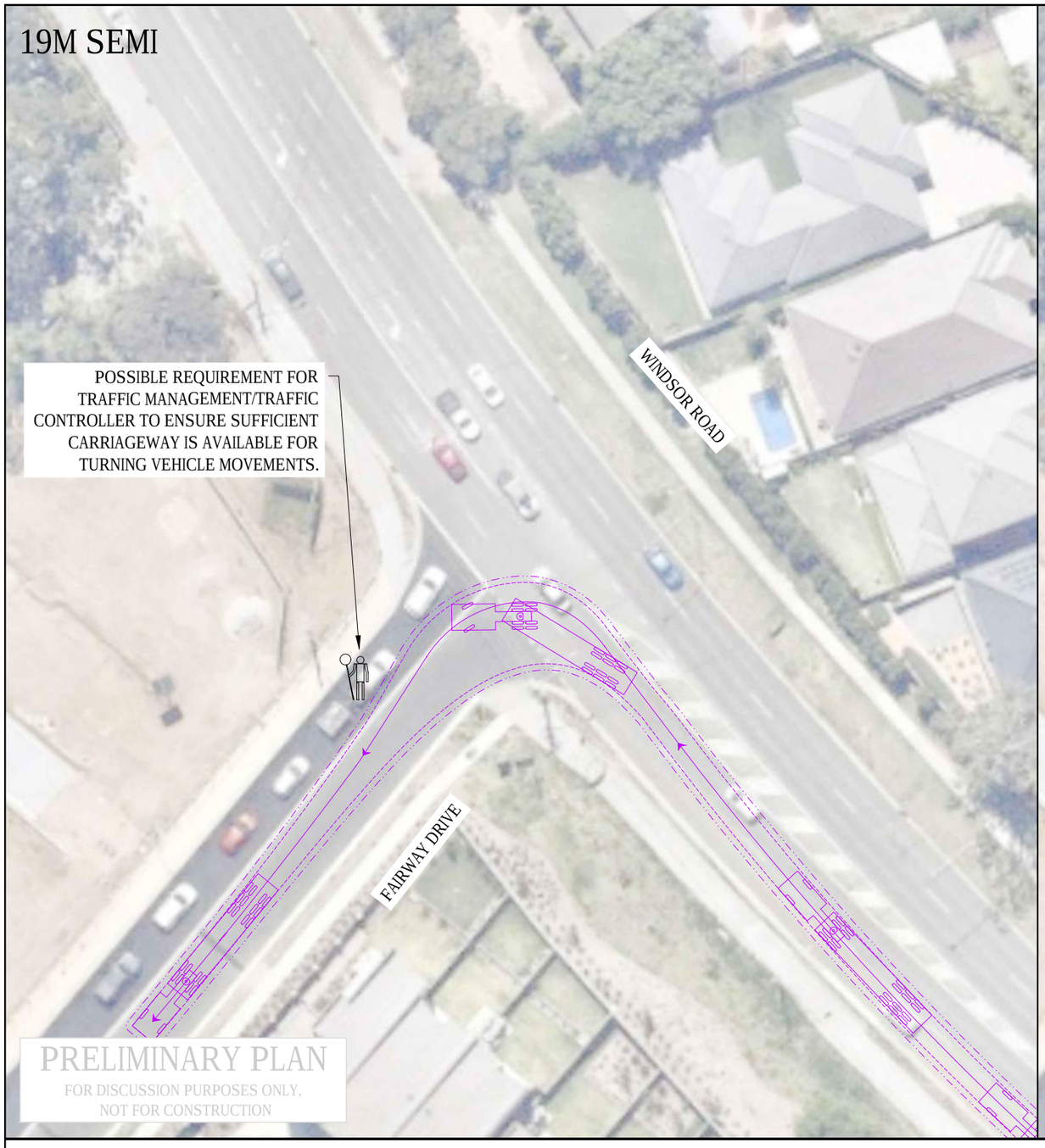
SCALE 1:500 @A3

wsp

NORTH

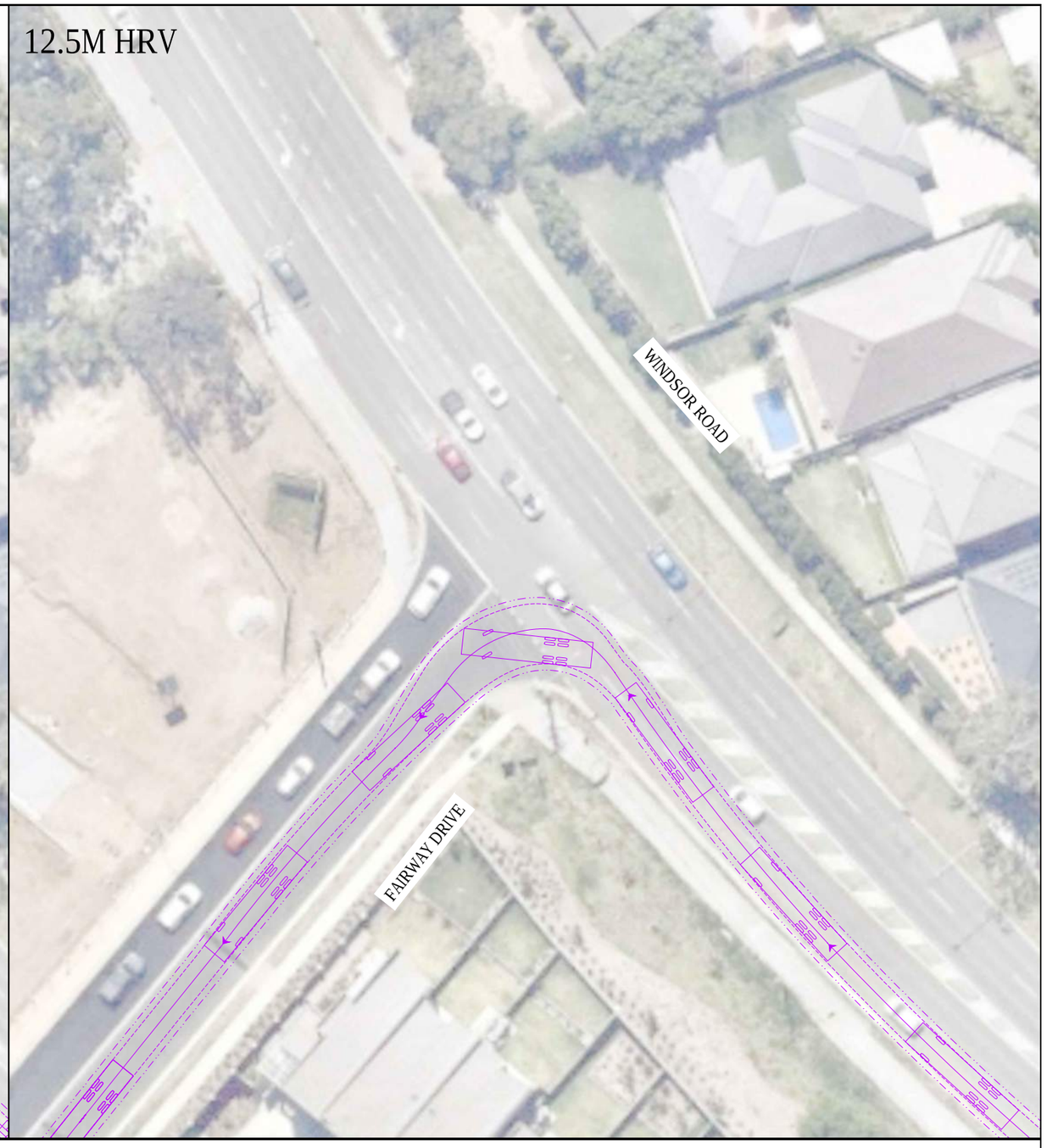
19M SEMI

POSSIBLE REQUIREMENT FOR TRAFFIC MANAGEMENT/TRAFFIC CONTROLLER TO ENSURE SUFFICIENT CARRIAGEWAY IS AVAILABLE FOR TURNING VEHICLE MOVEMENTS.



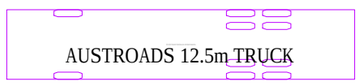
PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY.
NOT FOR CONSTRUCTION

12.5M HRV



VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE



PS126940 SK003

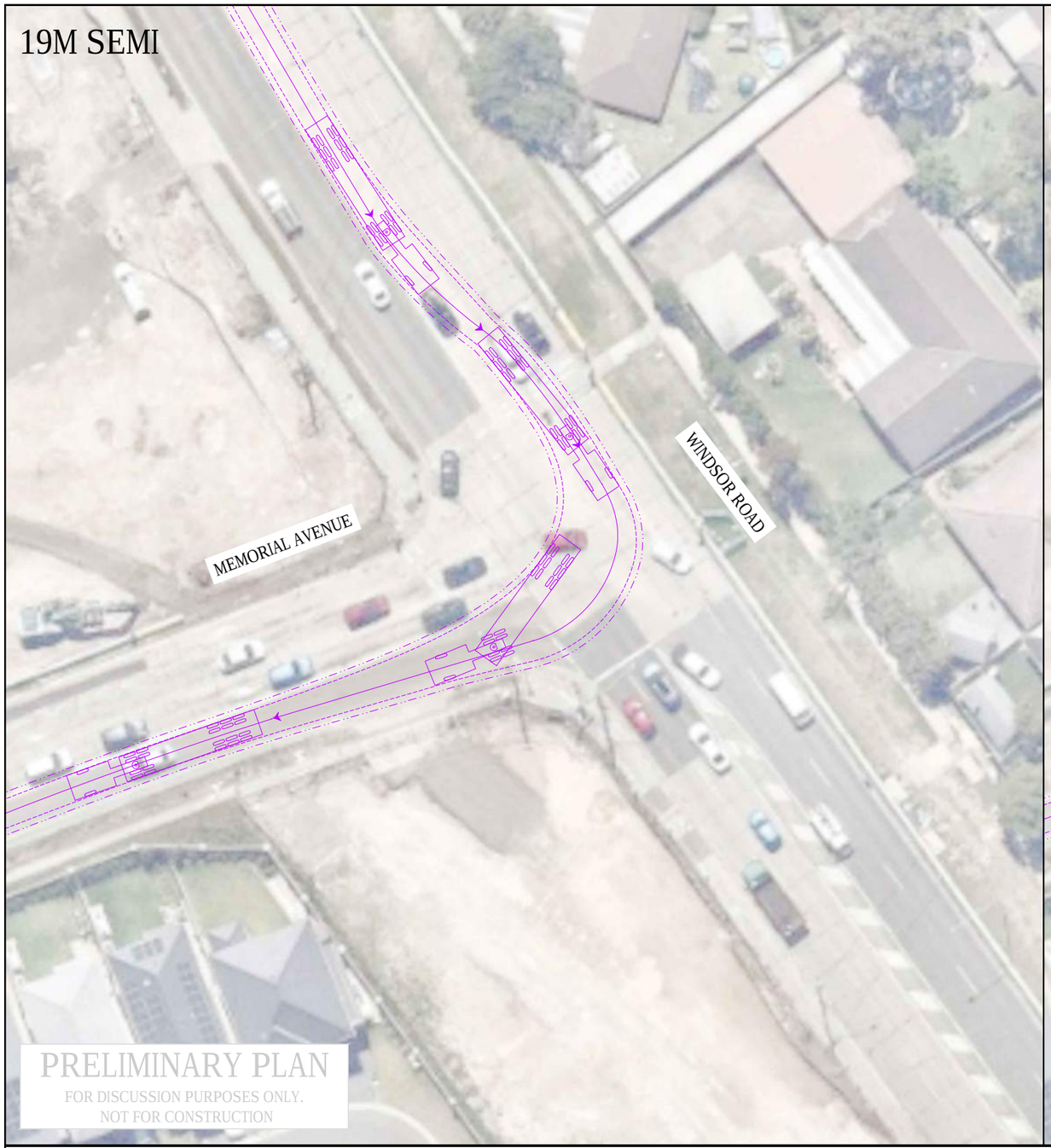
INDICATIVE INBOUND CONSTRUCTION VEHICLE MOVEMENTS 02

C.H. 17.10.2021

0 10 20m

SCALE 1:500 @A3

19M SEMI

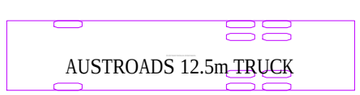


12.5M HRV

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY.
NOT FOR CONSTRUCTION

VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE



PS126940 SK004

INDICATIVE INBOUND CONSTRUCTION
VEHICLE MOVEMENTS 03
C.H. 17.10.2021

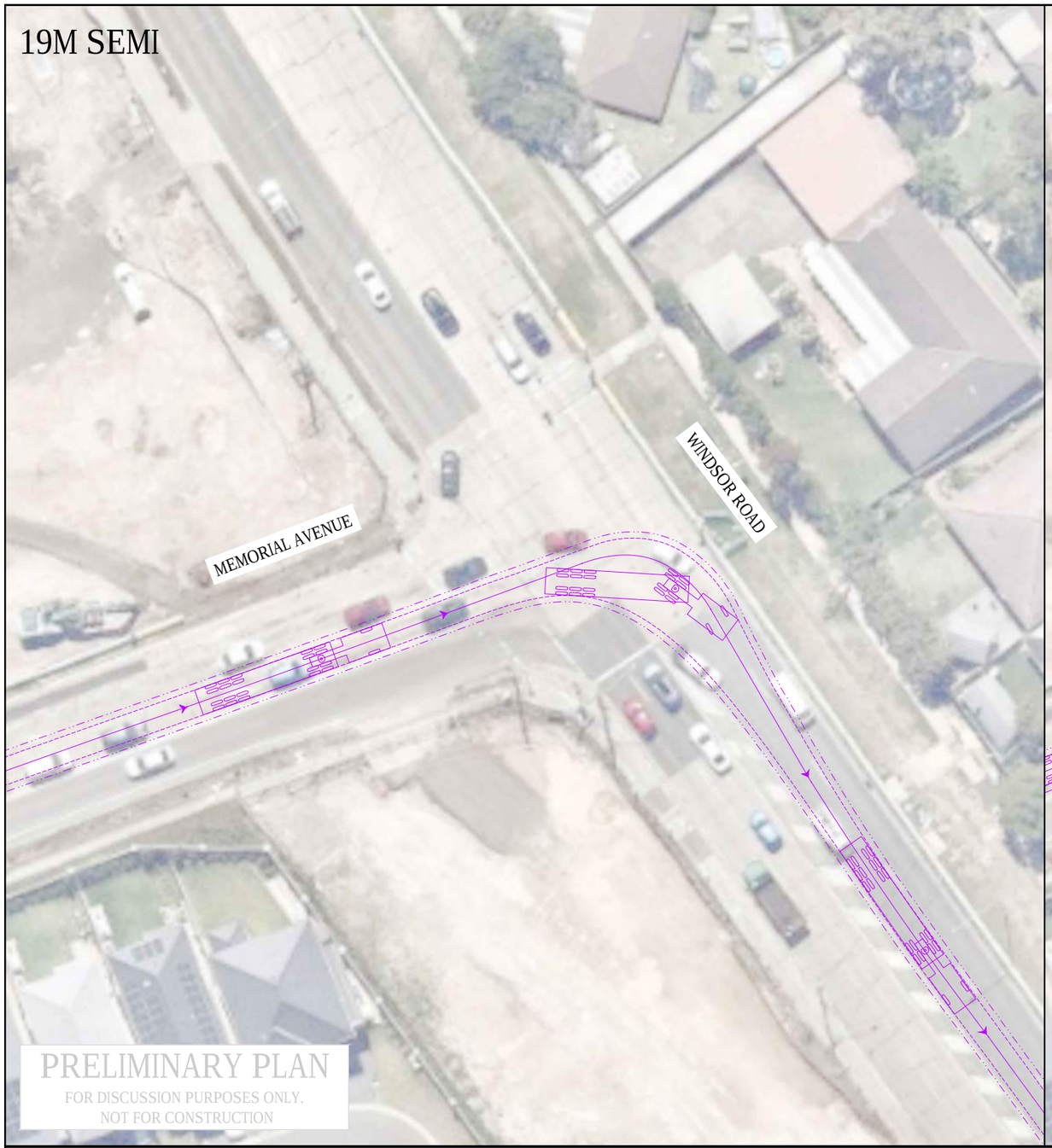
0 10 20m

SCALE 1:500 @A3

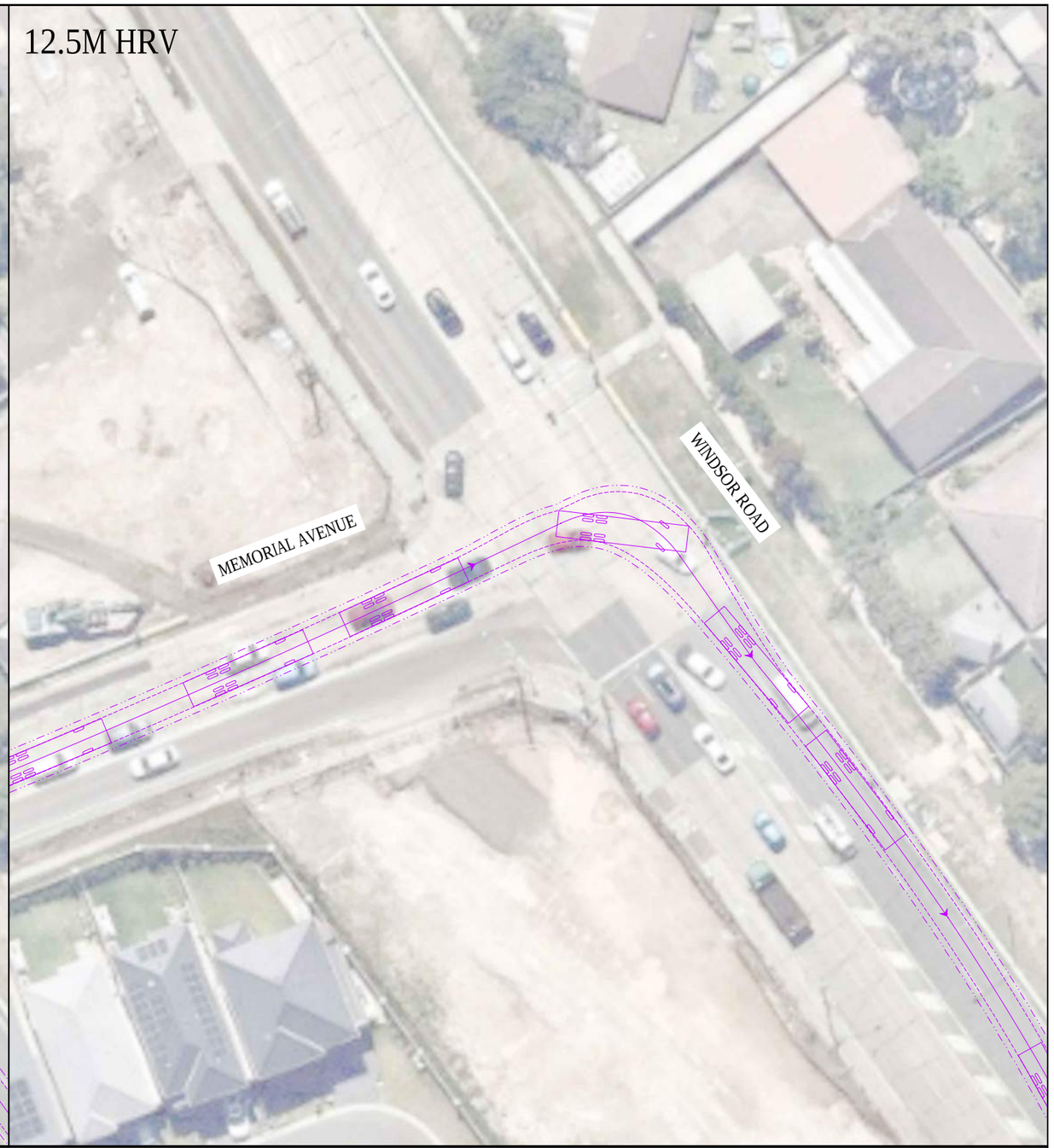
wsp

NORTH

19M SEMI



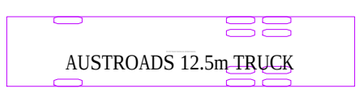
12.5M HRV



PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY.
NOT FOR CONSTRUCTION

VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE



PS126940 SK005

INDICATIVE INBOUND CONSTRUCTION
VEHICLE MOVEMENTS 04
C.H. 17.10.2021

0 10 20m

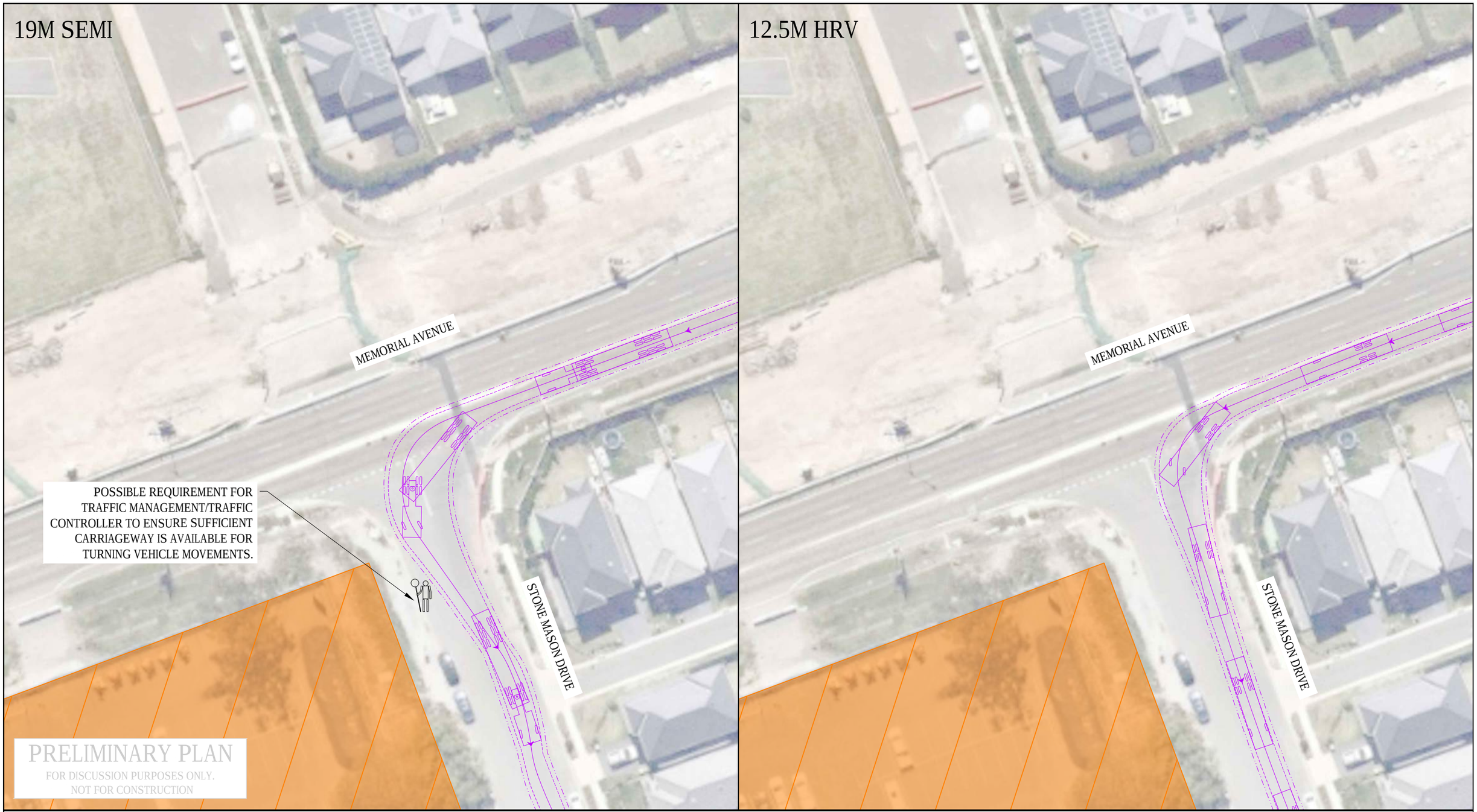
SCALE 1:500 @A3

wsp

NORTH

19M SEMI

12.5M HRV



VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE

AUSTROADS 19m SEMI

AUSTROADS 12.5m TRUCK

PS126940 SK006

INDICATIVE INBOUND CONSTRUCTION VEHICLE MOVEMENTS 05

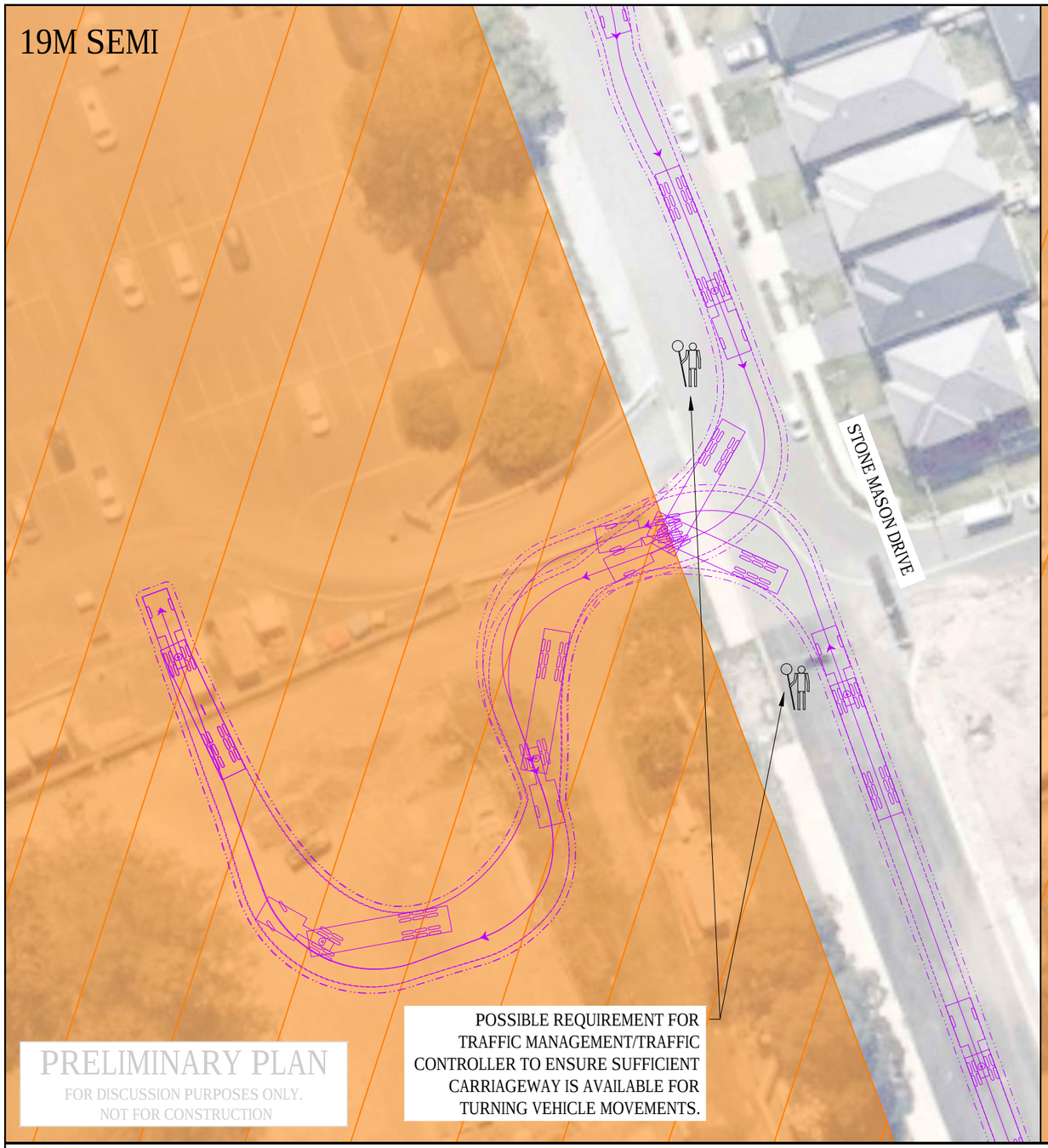
C.H. 17.10.2021

0 10 20m

SCALE 1:500 @A3

NORTH

19M SEMI

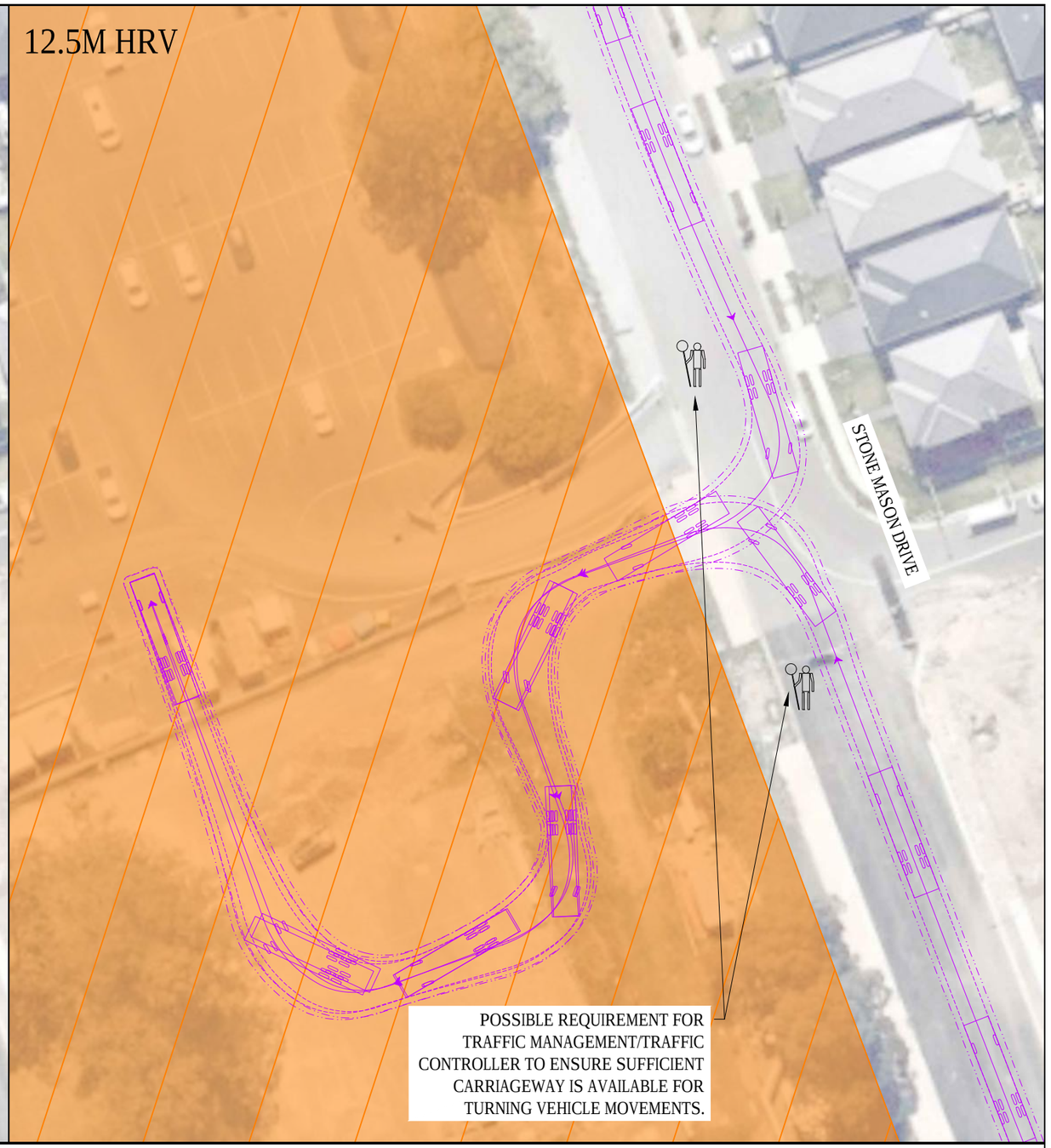


POSSIBLE REQUIREMENT FOR TRAFFIC MANAGEMENT/TRAFFIC CONTROLLER TO ENSURE SUFFICIENT CARRIAGEWAY IS AVAILABLE FOR TURNING VEHICLE MOVEMENTS.

PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY.
NOT FOR CONSTRUCTION

12.5M HRV



POSSIBLE REQUIREMENT FOR TRAFFIC MANAGEMENT/TRAFFIC CONTROLLER TO ENSURE SUFFICIENT CARRIAGEWAY IS AVAILABLE FOR TURNING VEHICLE MOVEMENTS.

VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE

PS126940 SK007

INDICATIVE INBOUND CONSTRUCTION VEHICLE MOVEMENTS 06

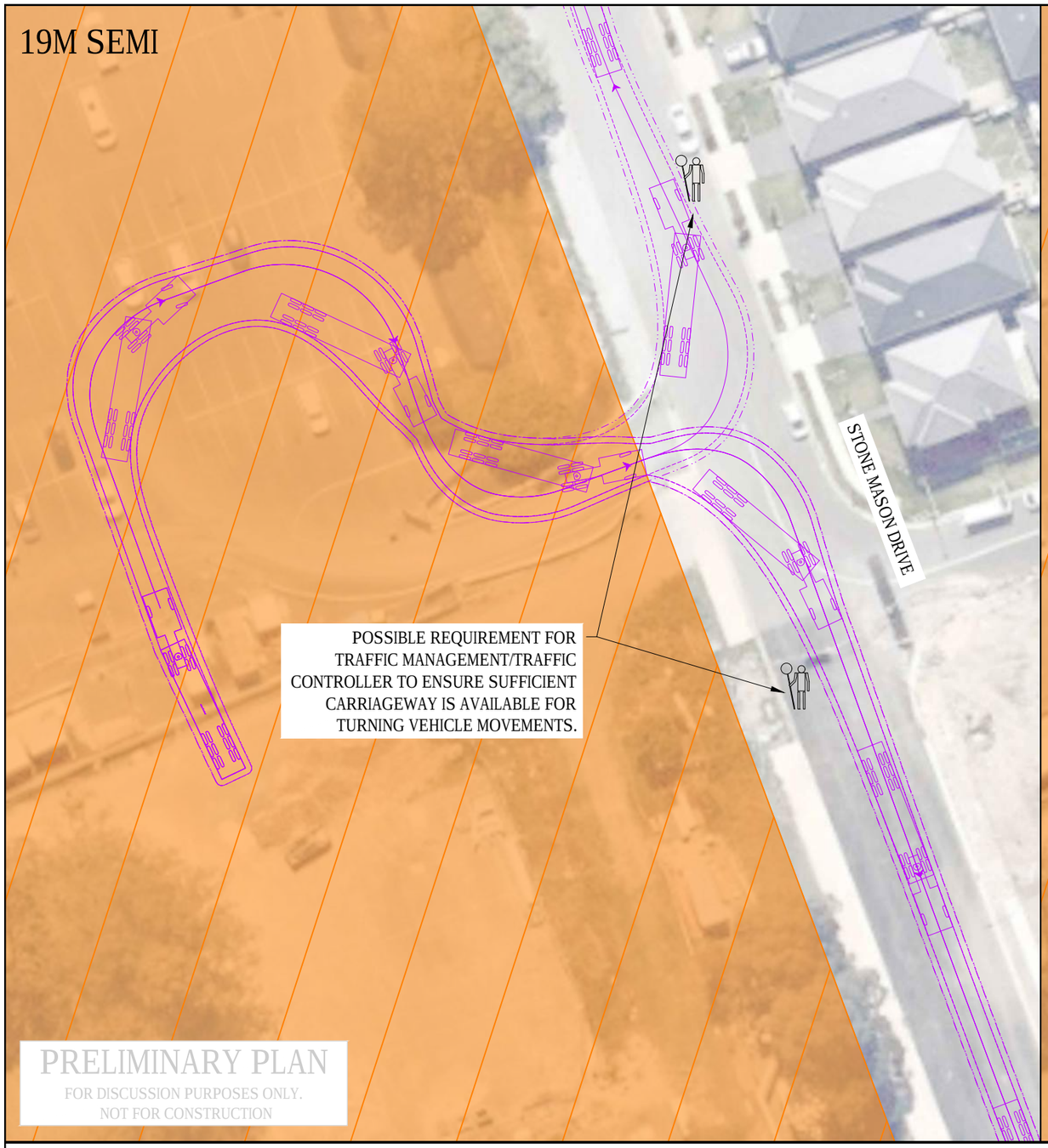
C.H. 17.10.2021

0 10 20m

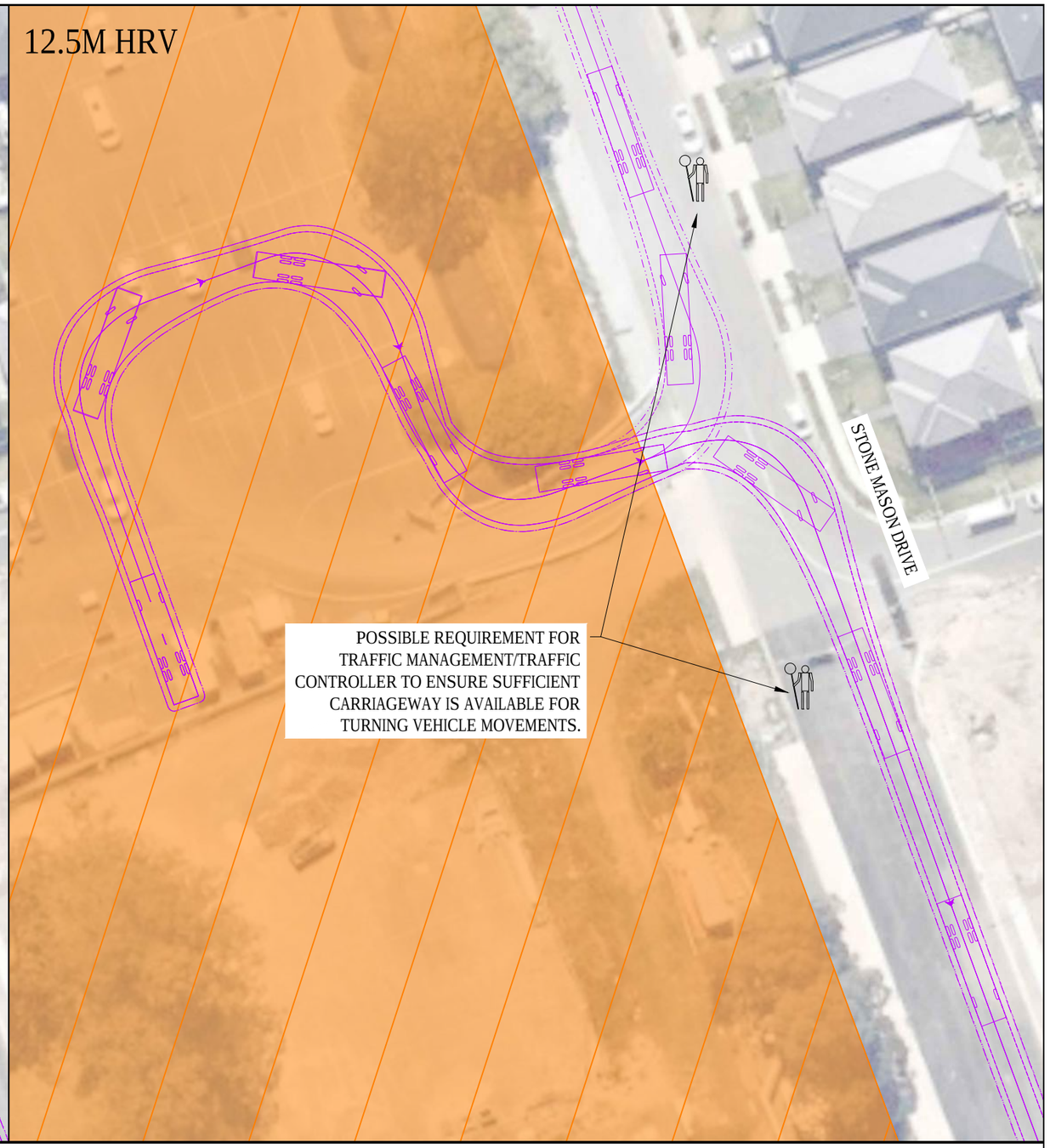
SCALE 1:500 @A3

NORTH

19M SEMI



12.5M HRV



PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY.
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VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE

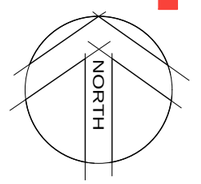
PS126940 SK008

INDICATIVE OUTBOUND CONSTRUCTION VEHICLE MOVEMENTS 01

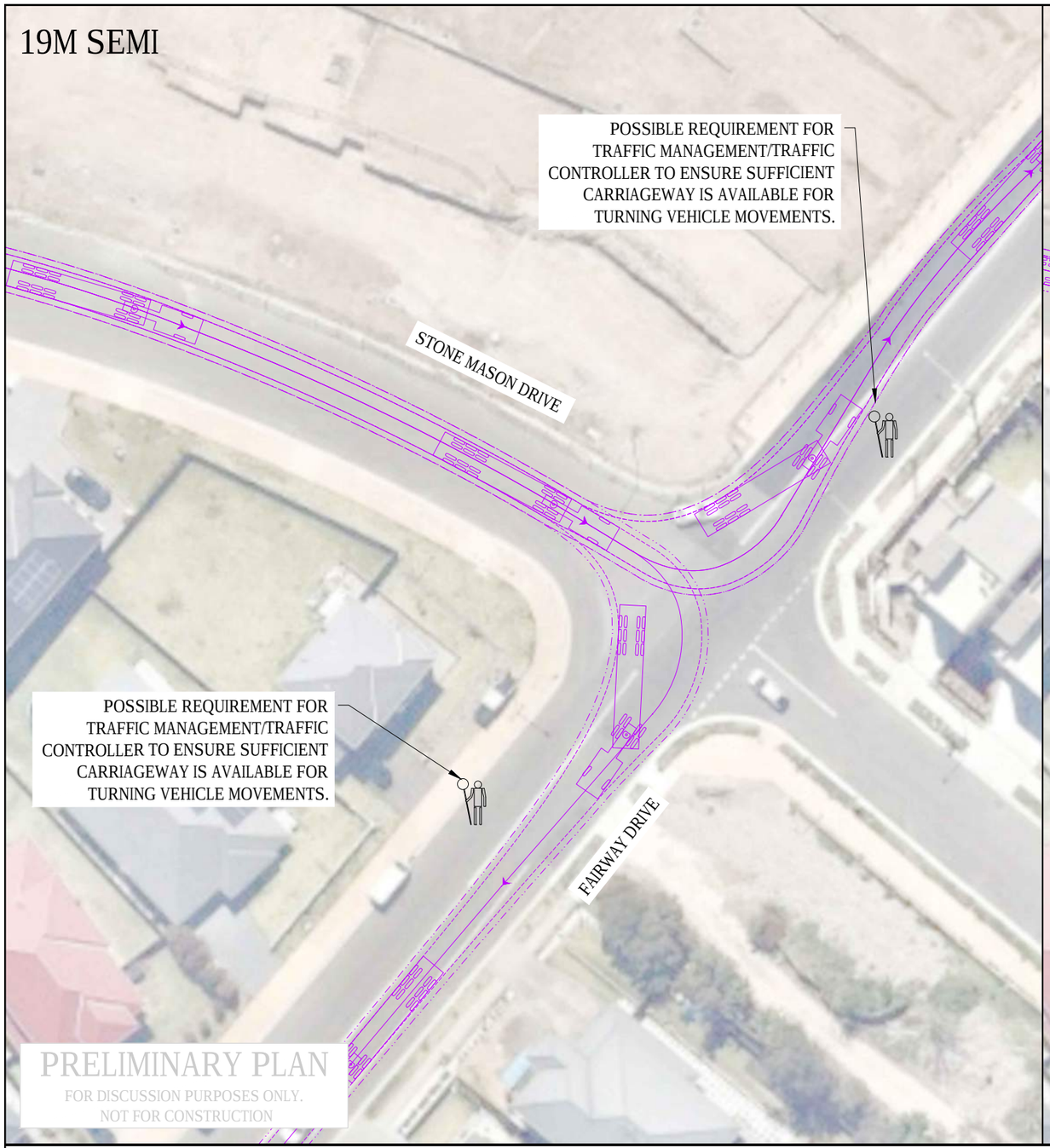
C.H. 17.10.2021

0 10 20m

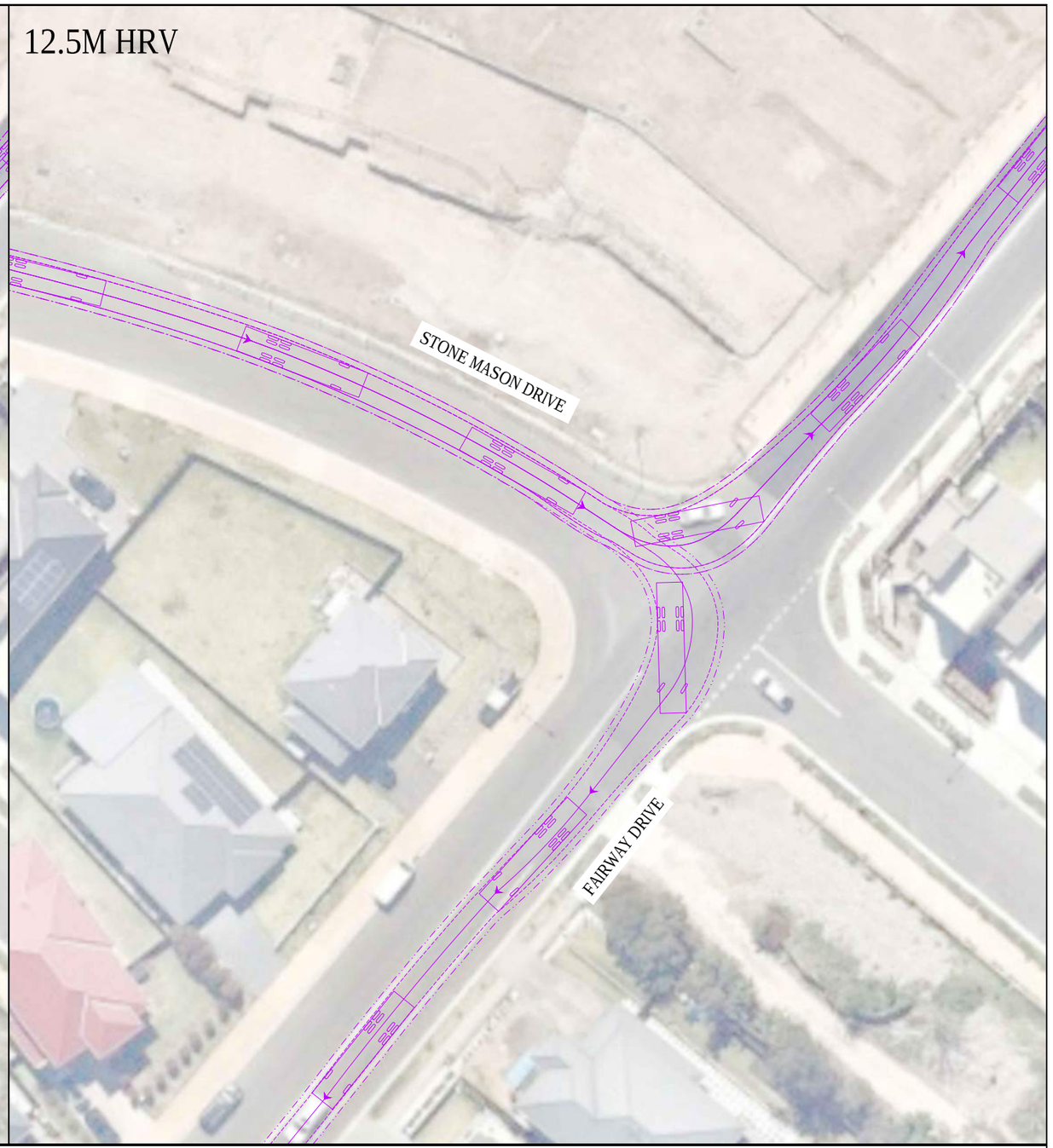
SCALE 1:500 @A3



19M SEMI



12.5M HRV



VEHICLE LEGEND

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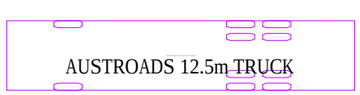
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE



PS126940 SK009

INDICATIVE OUTBOUND CONSTRUCTION
VEHICLE MOVEMENTS 02
C.H. 17.10.2021

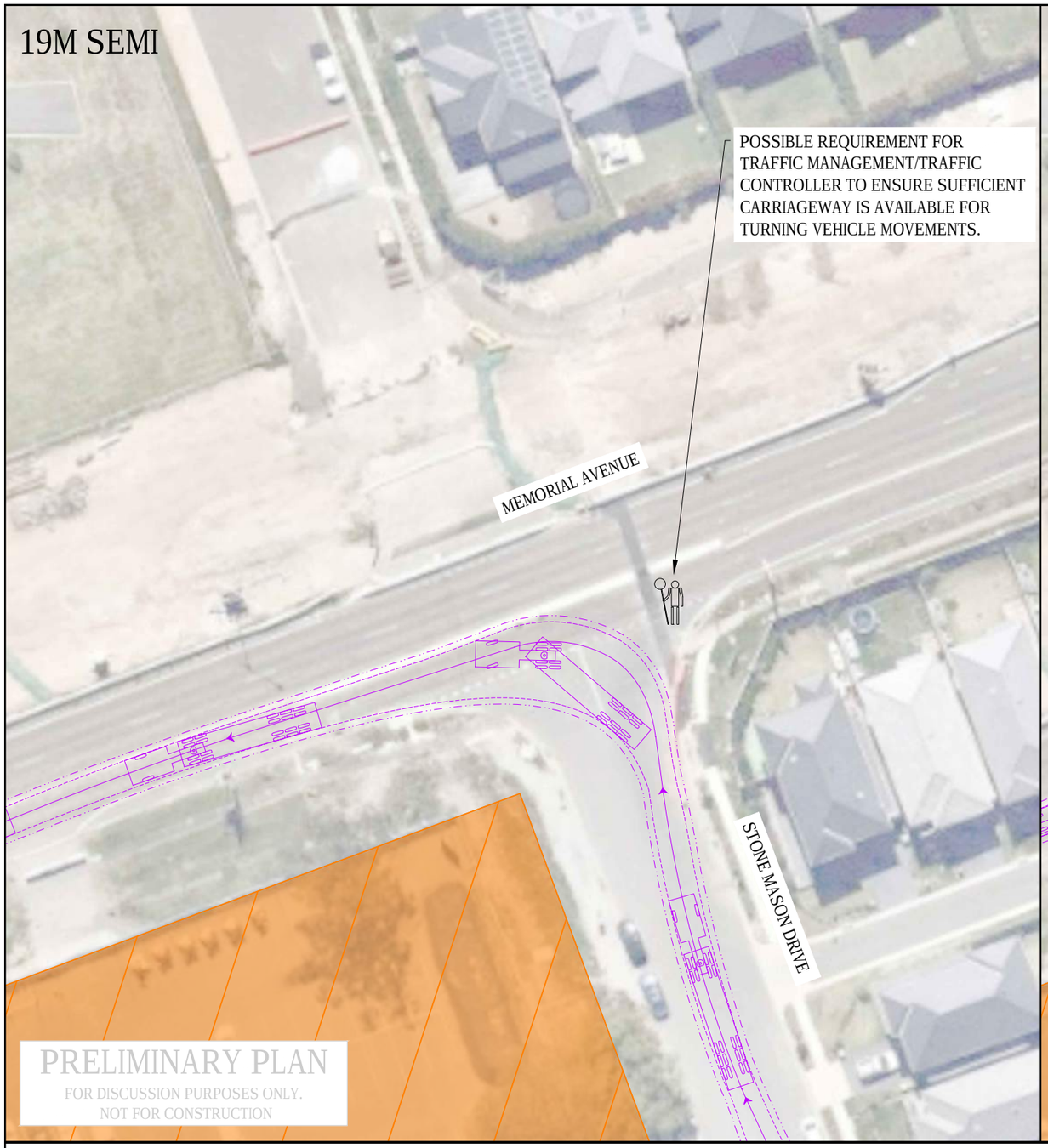
0 10 20m

SCALE 1:500 @A3

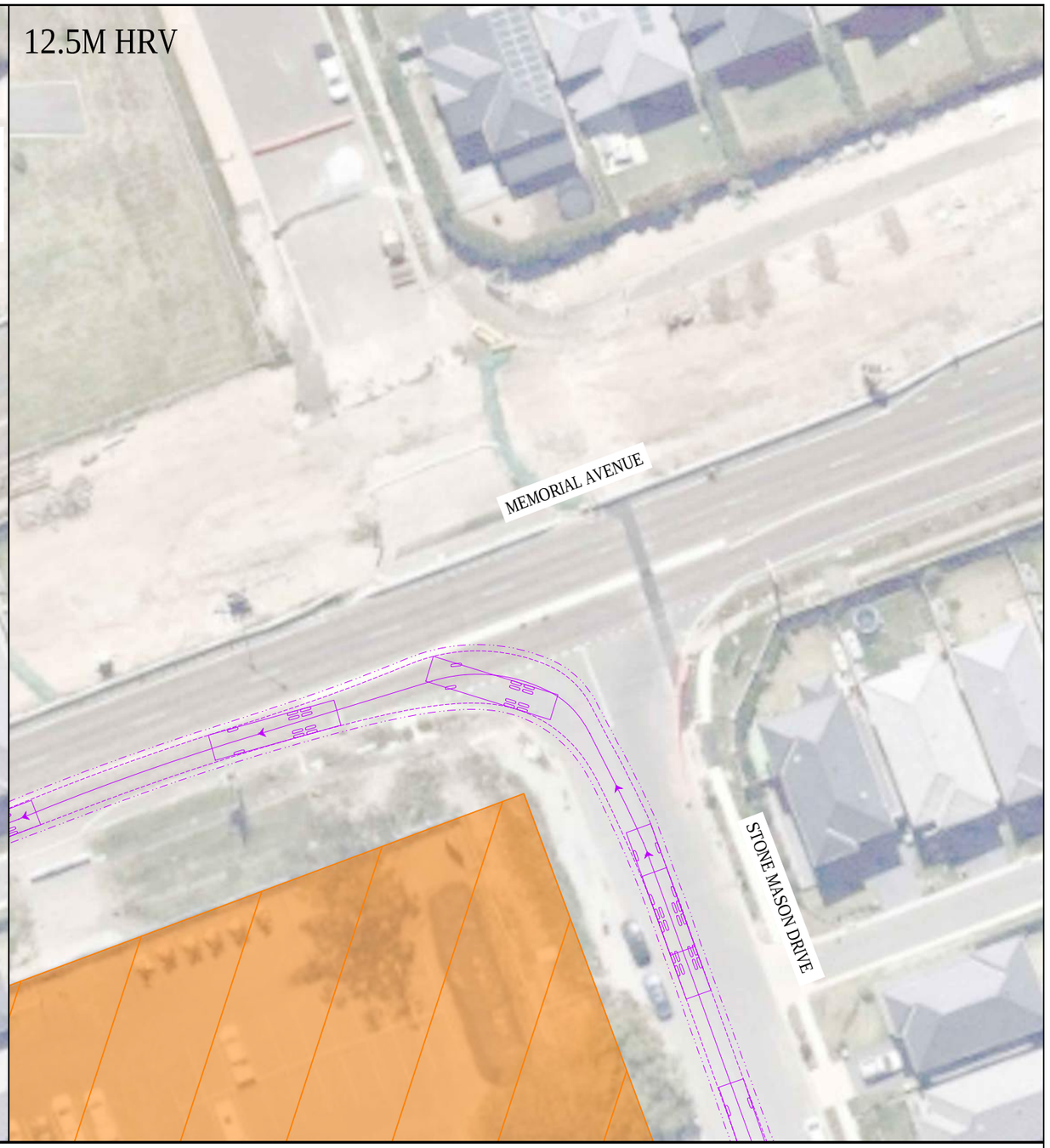
wsp

NORTH

19M SEMI

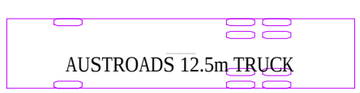


12.5M HRV



VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE



PS126940 SK010

INDICATIVE INBOUND CONSTRUCTION
VEHICLE MOVEMENTS 03
C.H. 17.10.2021

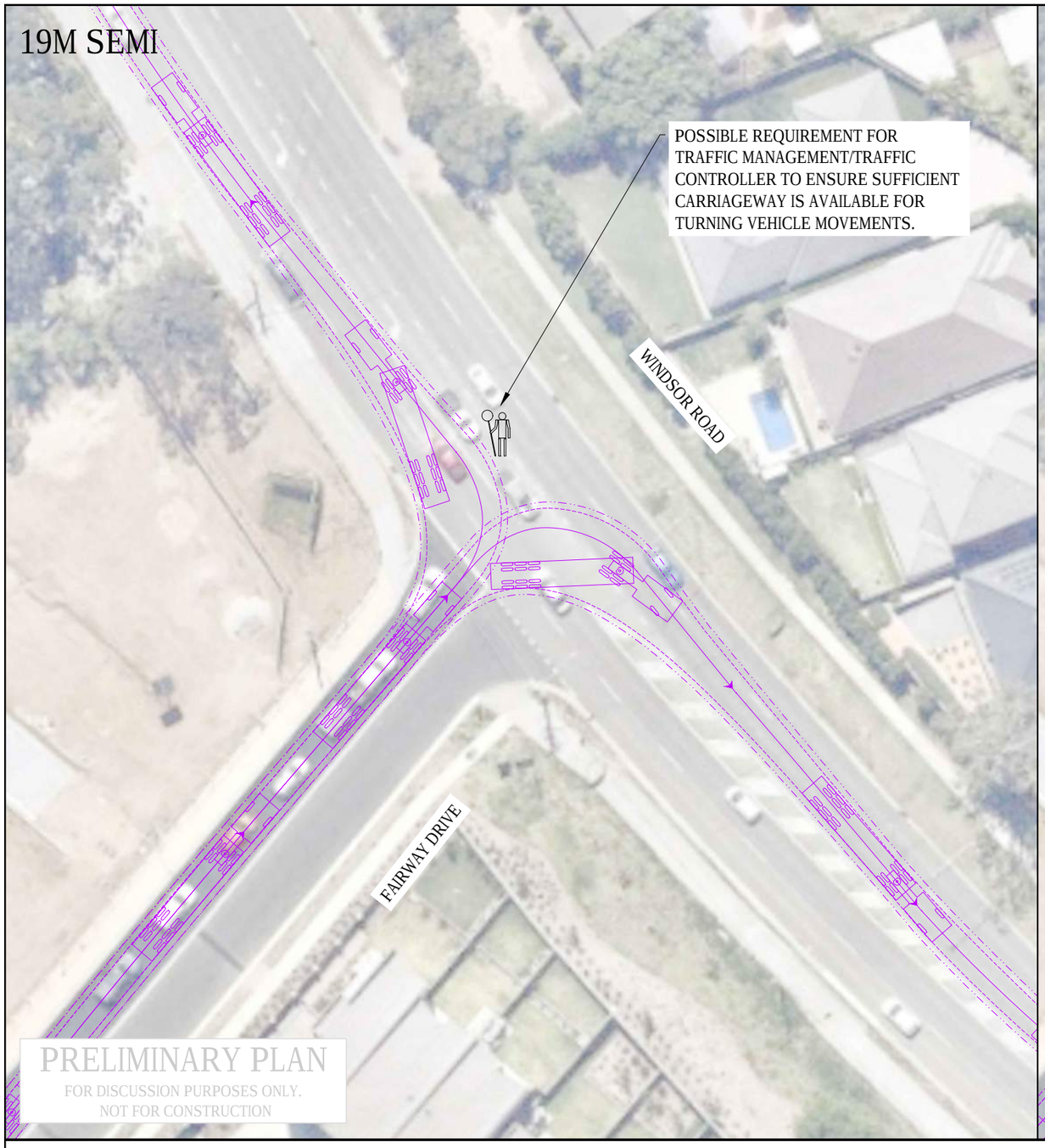
0 10 20m

SCALE 1:500 @A3

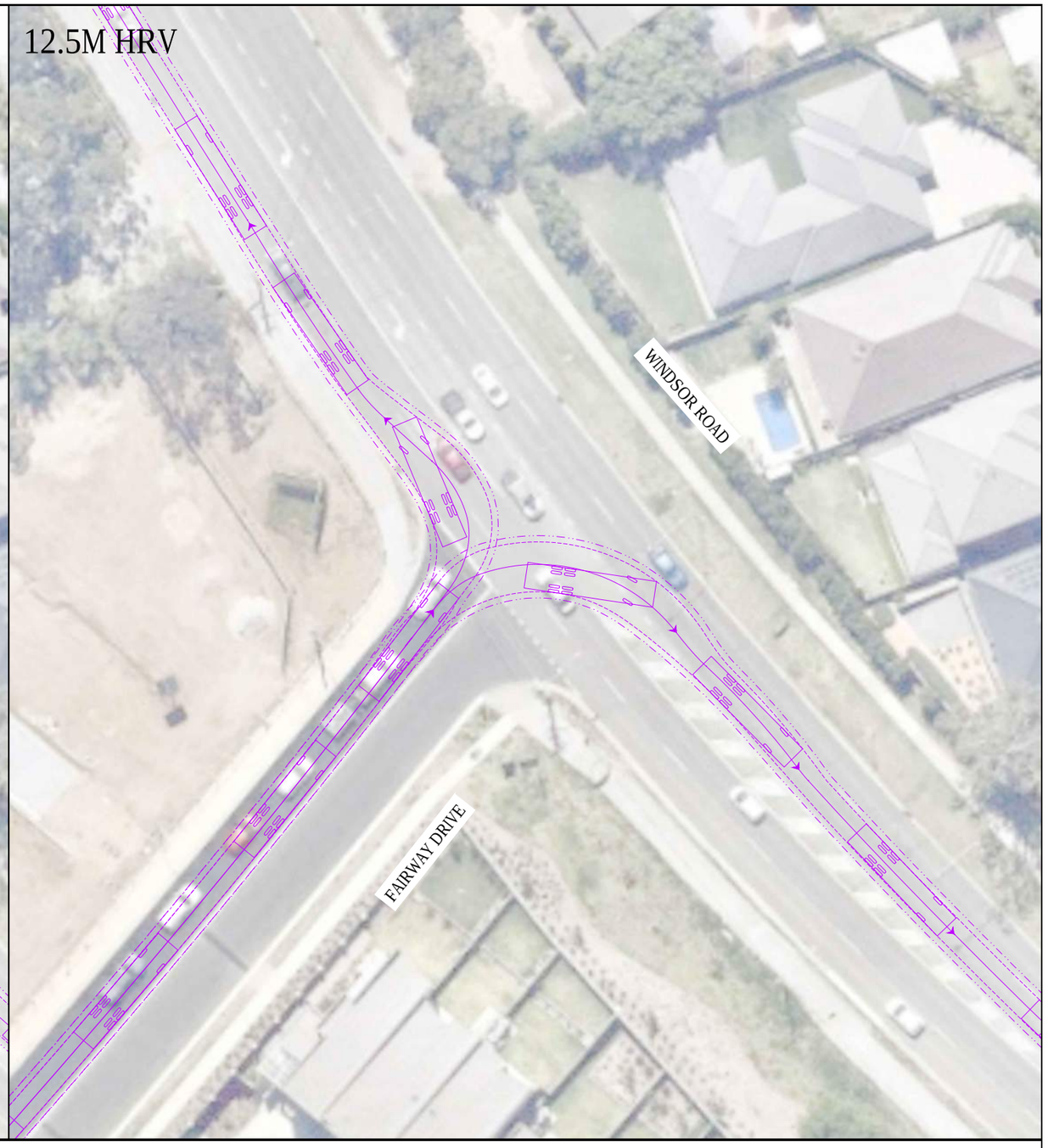
wsp

NORTH

19M SEMI



12.5M HRV

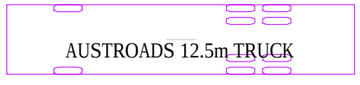


PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY.
NOT FOR CONSTRUCTION

VEHICLE LEGEND

- 19m SEMI 600mm CLEARANCE
- 19m SEMI OVERHANG
- 19m SEMI CENTRELINE
- 12.5m TRUCK 600mm CLEARANCE
- 12.5m TRUCK OVERHANG
- 12.5m TRUCK CENTRELINE



PS126940 SK011

INDICATIVE INBOUND CONSTRUCTION VEHICLE MOVEMENTS 04

C.H. 17.10.2021

0 10 20m

SCALE 1:500 @A3

wsp

NORTH

Appendix G

Stone Mason Drive Parking Confirmation

From: **Robert Szoszkiewicz** <rszoszkiewicz@thehills.nsw.gov.au>
Date: Fri, 11 Mar 2022, 2:37 pm
Subject: RE: Kellyville Park - Stone Mason Drive Parking
To: Chris Brown <chris.brown@waypointgrp.com.au>

Hi Chris,

The road width of Stone Mason Drive can accommodate two way traffic plus parking on both sides. There are no parking restrictions in place.

Regards –

Robert.

From: Chris Brown [mailto:chris.brown@waypointgrp.com.au]
Sent: Thursday, 10 March 2022 9:43 AM
To: Robert Szoszkiewicz
Subject: Kellyville Park - Stone Mason Drive Parking

Hi Robert,

Hope you are well.

Are you able to advise if Stone Mason Drive was designed to accommodate on-street parking on either side? Our initial observations (in person and via Google Maps) indicate that cars regularly park on each side of Stone Mason Drive, with the road maintaining enough width to accommodate one lane of traffic in each direction.

Any advice that you can provide would be appreciated.

Regards,

Chris Brown
m 0400 956 660 | e chris.brown@waypointgrp.com.au | w waypointgrp.com.au

Waypoint
MAKING MORE POSSIBLE

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