North Maclean Industrial Estate

Traffic Impact Assessment

CH Hydrangea Pty Ltd

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1. INTRODUCTION

1.1 Background

Bitzios Consulting (Bitzios) has been commissioned by CH Hydrangea Pty Ltd to provide traffic engineering services in relation to a proposed industrial subdivision at 4499-4651 Mount Lindesay Highway, North Maclean (subject site). The subject site is formally described as Lot 39 on SP258739 and is located within the Logan City Council (Council) Local Government Area (LGA) and the Greater Flagstone Priority Development Area (PDA) and as such is under the jurisdiction of Economic Development Queensland (EDQ).

A PDA development approval (DEV2018/961) was granted over the subject site on 10 September 2021 for a Development Permit for Reconfiguring a Lot - 1 into 4 lots, plus roads and open space. In accordance with Section 99 of the Economic Development Act 2012 Charter Hall Group Pty Ltd requests to make a change to this PDA development approval. The amendment application seeks PDA development approval for a Development Permit for Reconfiguring a Lot - 1 into 11 lots (5 industrial/business lots, 1 drainage/open space lot, 1 pump station lot, 4 drainage lots). Importantly, key traffic engineering related items, such as access locations and yields will generally remain consistent with the PDA development approval.

1.2 Development Overview

The proposed subdivision includes the following yields:

- **Use:** Industry and Warehouse
- **Yield:** five (5) industrial lots across three (3) stages with a total estimated yield of 520,000m^2 GFA
- **Access:** via three (3) access intersections, consisting of:
  - One (1) all movements entry and left out only intersection on the future Mount Lindesay Highway Service Road (Service Road)
  - One (1) all movements intersections on the Service Road
  - One (1) all movements intersection via a fourth leg to the Crowson Lane / Greenhill Road intersection.

A copy of the development plans is included at **Appendix A**.

1.3 Previous Approval

As noted, the subject site has a previous DA approval for a four (4) lot industrial subdivision (DEV2018/961). Table 1.1 presents the proposed changes from a traffic engineering perspective.

Table 1.1: Proposed Changes to Previous Approval

Element	Approved Development (DEV2018/961)	Proposed Development	Change
Uses	Industry and Warehouse	Industry and Warehouse	No change
Lots	4	5	+1
Ultimate Yields	503,000m^2	520,000m^2	+17,000m^2
Traffic Generation Rate	0.4 trips per 100m^2 GFA	0.4 trips per 100m^2 GFA	No change
Access	Three access locations. With two (2) on the Service Road and one (1) from a fourth leg of Greenhill Road / Crowson Lane intersection	Three access locations. With two (2) on the Service Road and one (1) from a fourth leg of Greenhill Road / Crowson Lane intersection	No change

In summary, the proposal seeks to retain the intended land uses and access conditions to the surrounding road network, while minorly increasing the development yields.

1.4 Scope of Works

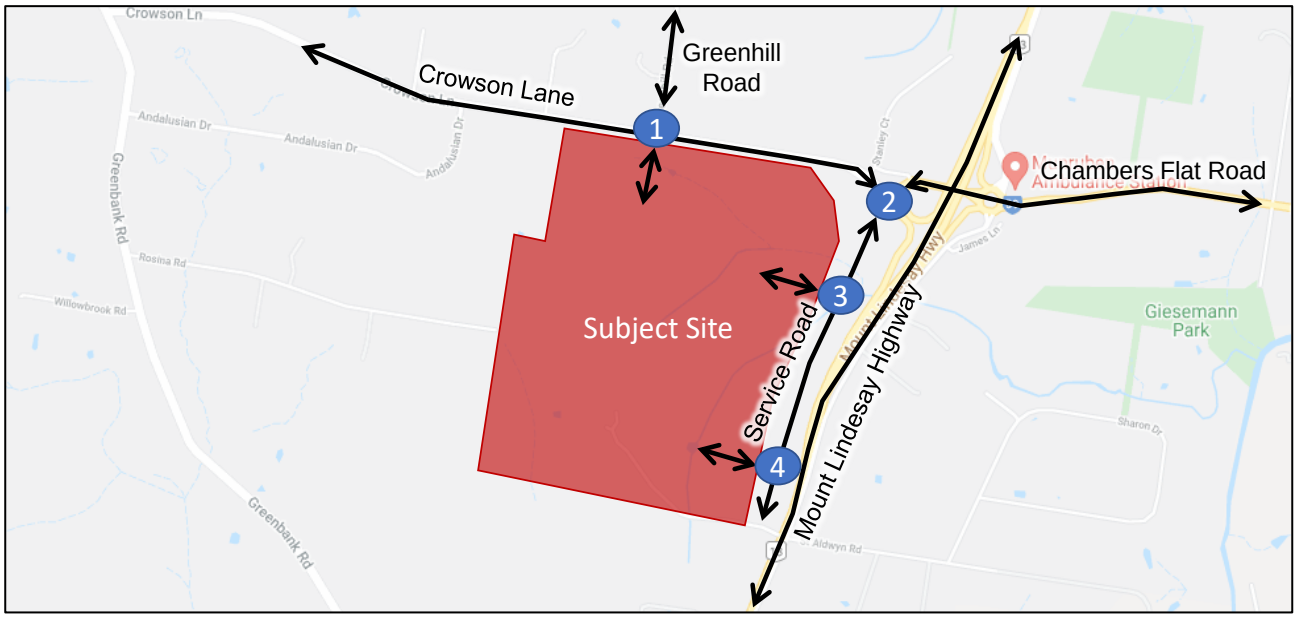
The scope of this TIA included the following tasks:

- Estimating the expected additional traffic generation as a result of the proposed increases in yield
- Estimating future year design volumes at the proposed access intersection for the proposed year of opening and a 10-year design horizon
- Undertaking SIDRA modelling for the proposed access intersections to determine the required controls and lane requirements to support the proposed development. This will be based on ultimate traffic volumes for the external network sourced from EDQ / DEV2018/961
- Reviewing the proposed access layout and treatments against Austroads Guide to Road Design and relevant industry guidelines and standards
- Reviewing the proposed site arrangements against relevant standards and guidelines.

2. EXISTING CONDITIONS

2.1 Road Network Overview

Figure 2.1 illustrates key elements of the existing road network close to the subject site.



Source: Google Maps

Figure 2.1: Road Network

Table 2.1 provides a summary of the key roads located near the subject site.

Table 2.1: Key Roads

Road Name	Jurisdiction	Hierarchy	Cross Section	Posted Speed
Crowson Lane	Council	Arterial	2 lanes undivided	80km/h
Future Mount Lindesay Highway Service Road	TMR	Trunk Connector	2 lanes undivided	60km/h
Chambers Flat Road	Council	Arterial	2 lanes undivided	80km/h
Mount Lindesay Highway	TMR [1]	Highway	2 lanes divided	90km/h
Greenhill Road	Council	Rural Collector	2 lanes undivided	60km/h

1. TMR = Department of Transport and Main Roads

Table 2.2 provides a summary of the key intersections located near the subject site.

Table 2.2: Key Intersections

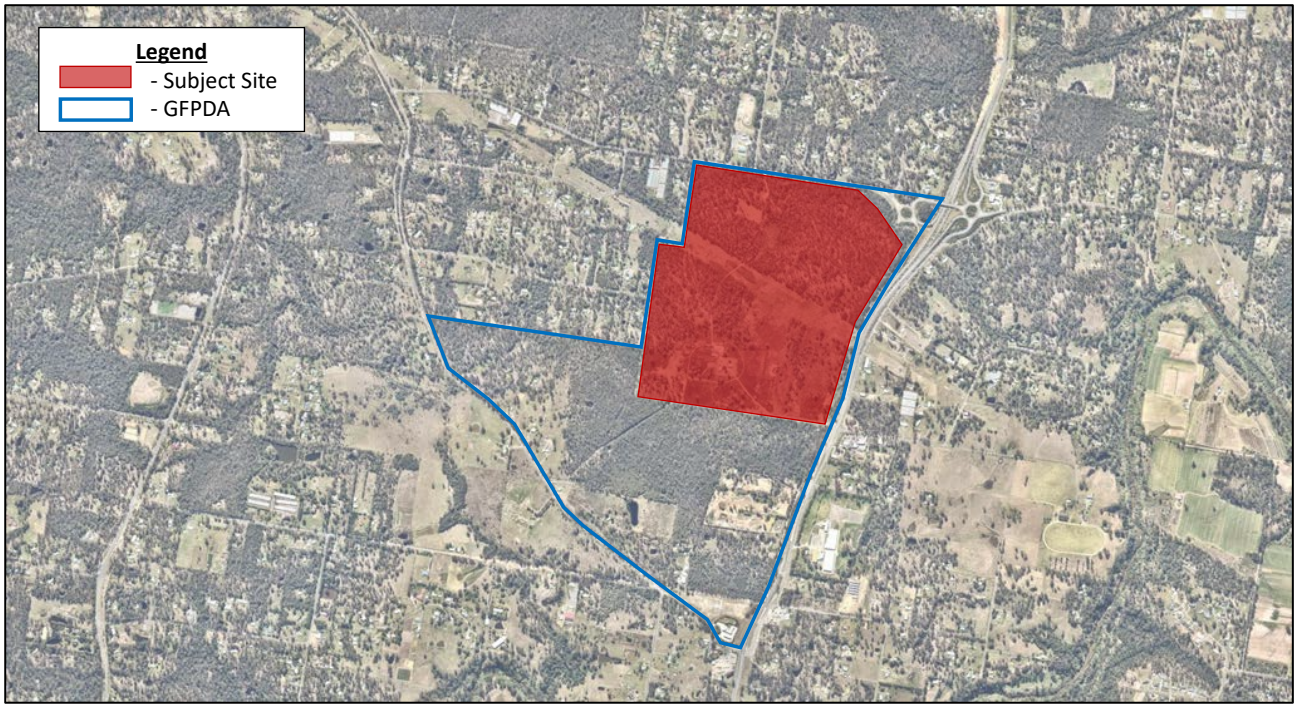
ID	Name	Jurisdiction	Control
1	Crowson Lane / Greenhill Road	Council	Priority [1]
2	Mount Lindesay Highway / Crowson Lane / Chambers Flat Road / Service Road	TMR [2]	Roundabout
3	Service Road / New Internal Road	TMR [2]	Priority
4	Service Road / New Internal Road	TMR [2]	Priority

1. Intersection 1 to be upgraded to signal control as part of Crowson Lane upgrade or as required by the development
2. TMR = Department of Transport and Main Roads

2.2 Greater Flagstone Priority Development Area

The subject site is located within the Greater Flagstone Priority Development Area (GFPDA) and is part of the North Maclean Industry and Business Zone.

Figure 2.2 illustrates the location of the subject site within the surrounding GFPDA.



Source: Nearmaps

Figure 2.2: Greater Flagstone Priority Development Area

2.3 Road Network Planning

It is understood that Crowson Lane is proposed to be upgraded to a four (4) lane arterial road, which will provide a primary connection between Flagstone and the Mount Lindesay Highway. Land acquisition has already commenced to allow for the widening of Crowson Lane, however, timing of the upgrades is still yet to be confirmed. It is understood that the ultimate connection will accommodate in the order of 30,000 vehicles per day by 2041.

Figure 2.3 presents the proposed layout of Crowson Lane along the frontage of the subject site which has been supplied by Council/EDQ.

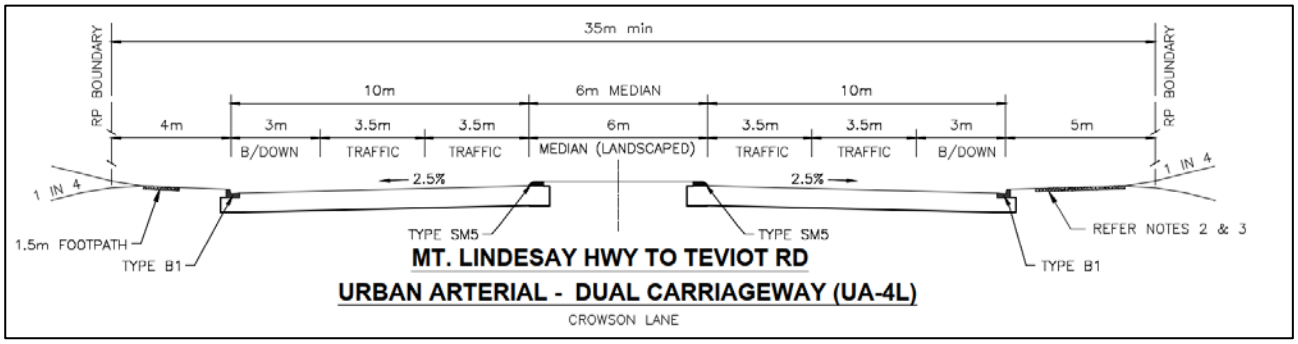


Figure 2.3: Crowson Road Layout

3. TRAFFIC GENERATION

3.1 Overview

Detailed traffic analysis was undertaken as part of the previous PDA development approval (DEV2018/961). This analysis considered amongst other things, the expected traffic generation of the precinct and informed the provision of the local road and intersection infrastructure.

As detailed herein, a comparison of the subject site's traffic generation estimated as part of the previous PDA development approval and that expected to be generated by the proposed development has been undertaken. The purpose being to confirm that the proposed development traffic impacts are in accordance with the previous approval.

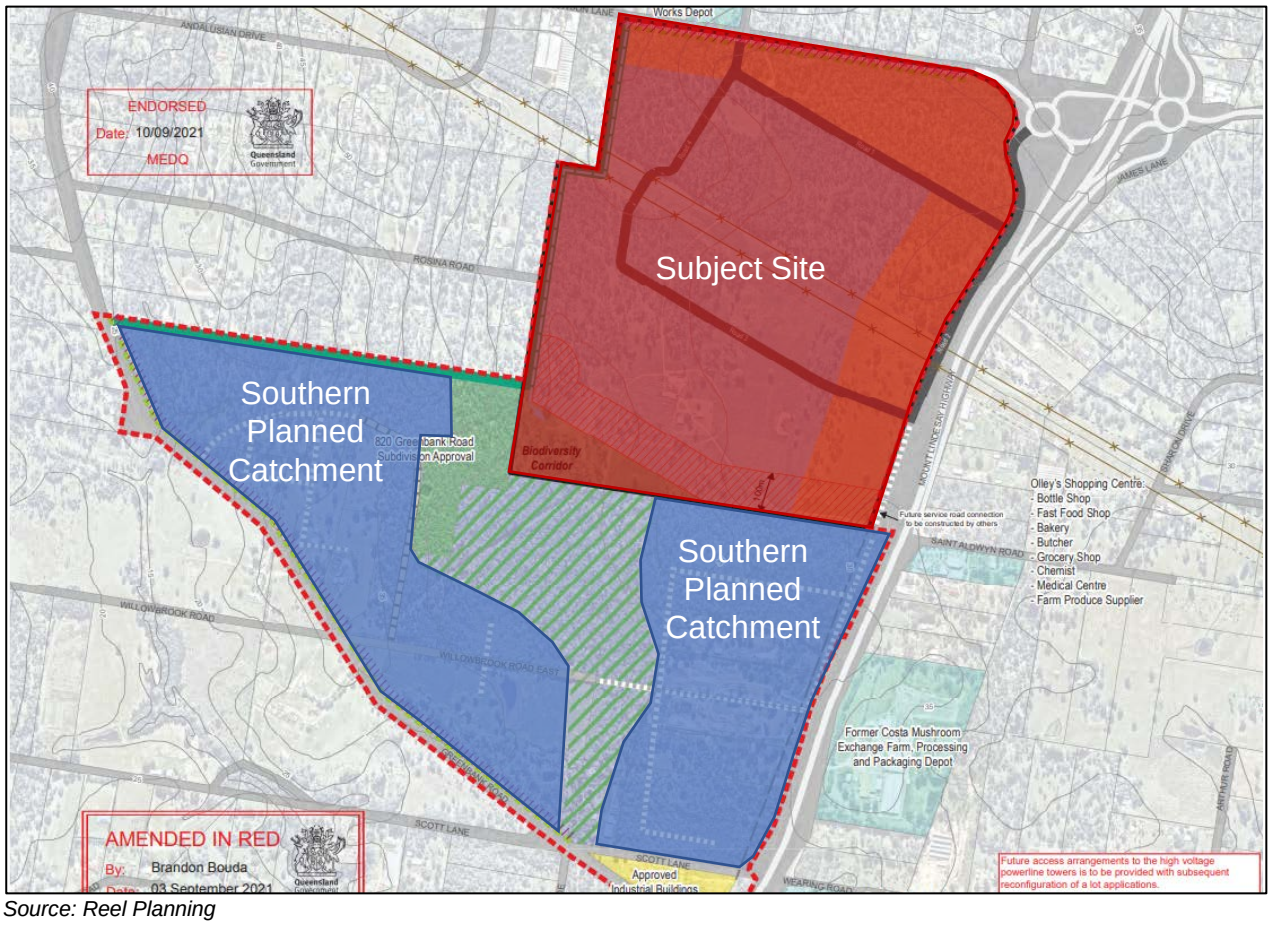
3.2 Background Traffic Volumes

3.2.1 Overview

As the development and service road have not yet been constructed, we are unable to undertake turning movement surveys at the subject intersections to determine the expected background traffic volumes. Alternatively, we have undertaken a review of the catchment to the south (Southern Planned Catchment) of the subject site that may provide a future connection to the service road.

It should be noted that this catchment and 'background traffic' was not considered as part of the previous assessment undertaken and that it has been included as part of this assessment for completeness.

Figure 3.1 illustrates the endorsed master planning for the area including the subject site and industry and business zone to the south.



Source: Reel Planning

Figure 3.1: Surrounding Future Developments

Considering the proposed road alignments and most convenient connections to the surrounding higher order roads, it is expected that

- All of the development generated traffic will access the subject site from the north
- Only a very small portion of the Southern Planned Catchment traffic will use the service road to the north as it is serviced by convenient access to Mt Lindesay Highway via Greenbank Road

For this assessment, we have made the following assumptions:

- The Southern Planned Catchment will be constructed by 2030
- A 40% plot ratio will be applied to the total developable area of the Southern Planned Catchment to determine the expected yields
- Southern Planned Catchment traffic will be generated at a rate of 0.40 trips per 100m^2, which is consistent with the subject site and was approved over the subject site
- 10% of Southern Planned Catchment traffic will use the service road along the frontage of the subject site. 90% of Southern Planned Catchment traffic will exit the zone via Greenbank Road.
- For the volumes attributed to the Service Road, Southern Planned Catchment traffic will have a 50% inbound and 50% outbound distribution along the service road.

3.2.2 Southern Planned Catchment Traffic Generation

Table 3.1 identifies the peak hour generation rate adopted for the Southern Planned Catchment.

Table 3.1: Trip Generation Rate – Southern Planned Catchment

Land Use	AM Peak Hour Rate	PM Peak Hour Rate	Source
Business, Industry & Warehouse	0.40 trips / 100m^2 GFA	0.40 trips / 100m^2 GFA	DEV2018/961

Table 3.2 summarises the adopted directional splits for the Southern Planned Catchment traffic.

Table 3.2: Directional Splits – Southern Planned Catchment

Land Use	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Business, Industry & Warehouse	50%	50%	50%	50%

Table 3.3 summarises the traffic generation estimated as part of the Southern Planned Catchment.

Table 3.3: Estimated Traffic Generation – Southern Planned Catchment

Land Use	Estimated Lot Size	Plot Ratio	Estimated Yield	AM Peak (Trips)			PM Peak (Trips)		
				In	Out	Total	In	Out	Total
Business, Industry & Warehouse	~910,000m^2	40%	364,000m^2	728	728	1,456	728	728	1,456

Table 3.4 summarises the traffic generation estimated as part of the Southern Planned Catchment.

Table 3.4: Estimated Traffic Generation on Service Road – Southern Planned Catchment

Land Use	Directional Factor	AM Peak (Trips)			PM Peak (Trips)		
		In	Out	Total	In	Out	Total
Business, Industry & Warehouse	10% North	73	73	146	73	73	146

In summary, the Southern Planned Catchment is expected to generate in the order of 1,456 peak hour trips, with 146 of these trips (i.e. 10%) utilising the Service Road along the subject site's frontage. These trips have been considered as part of our intersection assessment below. As previously noted, the Southern Planned Catchment was not considered as part of the previous assessment but has been included for completeness.

3.3 Development Traffic Generation

Table 3.5 identifies the peak hour traffic generation rate for the approved industrial development which was utilised as part of the PDA development approval and for the proposed development.

Table 3.5: Trip Generation Rate

Scenario	Land Use	AM Peak Hour Rate	PM Peak Hour Rate	Source
Approved	Industry & Warehouse	0.40 trips / 100m^2 GFA	0.40 trips / 100m^2 GFA	DEV2018/961
Proposed	Industry & Warehouse	0.40 trips / 100m^2 GFA	0.40 trips / 100m^2 GFA	DEV2018/961

Table 3.6 summarises the adopted directional splits for approved and proposed which are based on typical industry rates and were utilised as part of the approved DA and for the proposed development.

Table 3.6: Directional Splits

Scenario	Land Use	AM Inbound	AM Outbound	PM Inbound	PM Outbound
Approved	Industry & Warehouse	70%	30%	40%	60%
Proposed	Industry & Warehouse	70%	30%	40%	60%

Table 3.7 summarises the traffic generation estimated as part of the approved DA and proposed development. It is noted that the Masterplan does not nominate the proposed yields for each use.

Table 3.7: Estimated Subject Site Traffic Generation – ROL DA

Scenario	Stage	Land Use	Estimated Yield	AM Peak (Trips)			PM Peak (Trips)		
				In	Out	Total	In	Out	Total
Approved	Ultimate	Industry & Warehouse	503,000m^2	1,409	603	2,012	805	1,207	2,012
Proposed	1	Industry & Warehouse	186,017m^2	521	223	744	298	446	744
	2		208,817m^2	585	251	835	334	501	835
	3		125,167m^2	350	150	501	200	300	501
	Ultimate		**520,000m^2**	**1,456**	**624**	**2,080**	**832**	**1,248**	**2,080**
Difference			**+17,000m^2**	**+47**	**+21**	**+68**	**+27**	**+41**	**+68**

As noted above, the proposed land use, trip generation rate, and directional splits are consistent with the approved DA.

A minor trip generation increase compared to the previous approval is expected as a result of a minor increase in yields.

In summary, the proposed development is expected to generate an additional 68 peak hour trips (+3%) compared to the previous approval. This results in a total peak hour generation of 2,080 trips.

3.4 Network Distribution

Table 3.8 summarises the road network distributions for the approved and proposed development.

Table 3.8: Traffic Distribution

Scenario	Land Use	North	South	East	West
Approved	Industry & Warehouse	65%	10%	10%	15%
Proposed	Proposed Industry & Warehouse	65%	10%	10%	15%

In summary, the proposed development is expected to be distributed across the external road network in accordance with the previous approval.

3.5 Design Traffic Volumes

For the purposes of the traffic assessment, we have assumed the following:

- **Stage 1 Year of Opening**: 2024
- **Stage 1 10-year Post Opening Design Horizon**: 2034
- **Stage 2 Year of Opening**: 2026
- **Stage 2 10-year Post Opening Design Horizon**: 2036
- **Stage 3 Year of Opening**: 2029
- **Stage 3 10-year Post Opening Design Horizon**: 2039

Design traffic volumes have been derived for each stages year of opening and 10-year design horizon allowing for a 4% per annum growth rate on Crowson Lane traffic volumes in accordance with the previous approval.

Additionally, 2041 traffic volumes have been derived for an ultimate Crowson Lane scenario to allow for 3,000 peak hour vehicles along Crowson Lane in accordance with the previous approval.

Design traffic volumes are included at **Appendix B**.

4. TRAFFIC IMPACTS

Table 4.1 summarises the subject site's traffic generation estimated as part of the approved DA and proposed development.

Table 4.1: Estimated Subject Site Traffic Generation – ROL DA

Land Use	Estimated Yield	AM Peak (Trips)			PM Peak (Trips)		
		In	Out	Total	In	Out	Total
Approved Use							
Approved Industry & Warehouse	503,000m^2	1,409	603	2,012	805	1,207	2,012
Approved Use Sub Total		**1,409**	**603**	**2,012**	**805**	**1,207**	**2,012**
Proposed Industry & Warehouse	520,000m^2	1,435	615	2,050	820	1,230	2,050
Proposed Use Sub Total		**1,456**	**624**	**2,080**	**832**	**1,248**	**2,080**
Net Difference		**+47**	**+21**	**+68**	**+27**	**+41**	**+68**

Based on the above, the proposed development will result in a net increase of approximately 68 trips during the peak hour periods compared to PDA development approval. This increase in trips is equal to one (1) trip every 53 seconds on average and represents an ~3% increase from the approved traffic volumes. This increase in trips is considered low and not expected to result in significant impacts compared to the existing approval on the surrounding road network.

The assessment undertaken as part of the previous DA determined that:

- The road network would operate within typically adopted performance thresholds up to a 2041 ultimate design horizon (30,000vpd along Crowson Lane)
- The Crowson lane Interchange is expected to operate within typically adopted performance thresholds up to a 2030 design horizon, which is after the development's year of opening for its final stage (2029). This aligns with the requirements of TMR's Guide to Traffic Impact Assessment's which only requires the year of opening to be assessed.

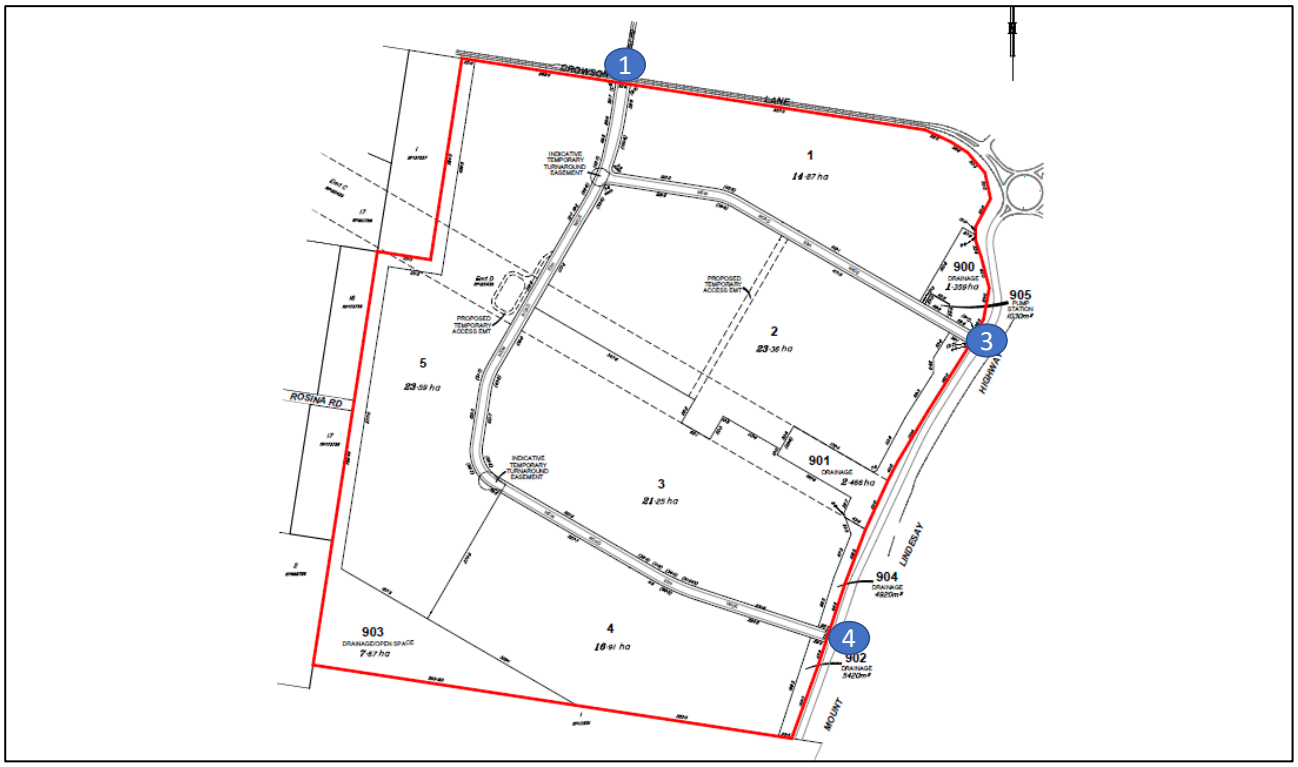
Noting the above, we are of the view that:

- The development is not expected to significantly increase impacts on the surrounding road network compared to the previous Masterplan DA
- Further detailed traffic analysis (SIDRA) is not warranted at any external intersections
- Road upgrades are not expected to be warranted to offset development traffic impacts on the external road network (consistent with the Masterplan DA findings).

5. ACCESS REVIEW

5.1 Overview

The proposed access locations are indicatively illustrated on Figure 5.1.



Source: Wolter Consulting Group

Figure 5.1: Access Locations

Three (3) access locations are proposed to support the development including:

- **Access Intersection 1**: A new southern leg to the existing Greenhill Road / Crowson Lane intersection and upgrading the intersection to a signalised configuration
- **Access Intersection 3**: A new priority-controlled T-intersection with left out only
- **Access Intersection 4:** A new priority-controlled T-intersection.

All access locations and configurations are generally in accordance with the previous approval. Nevertheless, a detailed assessment of each access configuration has been undertaken herein to confirm treatments and land dedication requirements.

Refer to civil engineering documentation for concept drawings of intersection layouts.

It is understood, that as part of the proposed staging, that Access intersections will come online once the corresponding stage is constructed. The proposed access staging arrangements are listed below:

- **Stage 1 (186,017m^2 GFA):** Via Access Intersection 3 in 2024
- **Stage 2 (394,834m^2 GFA):** Via Access Intersections 3 & 4 in 2026
- **Stage 3 (520,000m^2 GFA):** Via Access Intersections 1, 3 & 4 in 2029.

5.2 Access Intersection 1

5.2.1 Overview

Access Intersection 1 (Access 1) is proposed to be configured as a fourth leg to the existing Greenhill Road / Crowson Lane intersection and upgraded to a signalised configuration as part of the Crowson Lane upgrade project or Stage 3 development works (whichever occurs first). The interim upgrades proposed are expected to accommodate the Stage 3 year of opening (2029) traffic volumes and 10-year design horizon (2039) traffic volumes.

These upgrades include the following:

- A 60m auxiliary left turn lane (Crowson Lane westbound)
- A 60m channelised right turn lane (Crowson Lane westbound)
- An 80m channelised right turn lane (Crowson Lane eastbound)
- A 70m channelised right turn lane (Site Access northbound).

It is expected that works on Crowson Lane can form part of the ultimate configuration and as such should be creditable to the development (if constructed by the developer).

As part of the ultimate 2041 configuration, once Crowson Lane has been upgraded to four (4) lanes as per Council's indicative plans and carries 30,000vpd, the following additional treatments will be required:

- Extension of the 70m channelised right turn lane to 80m (Site Access northbound)
- Provision of a 40m left slip turn lane (Site Access northbound).

A detailed SIDRA intersection assessment has been undertaken for the proposed access intersection to confirm that the configuration is suitable for all design scenarios. Traffic generation volumes have been utilised in accordance with Section 3 of this report.

5.2.2 Access 1 SIDRA Assessment

Figure 5.2 illustrates the modelled geometry of the Access 1.

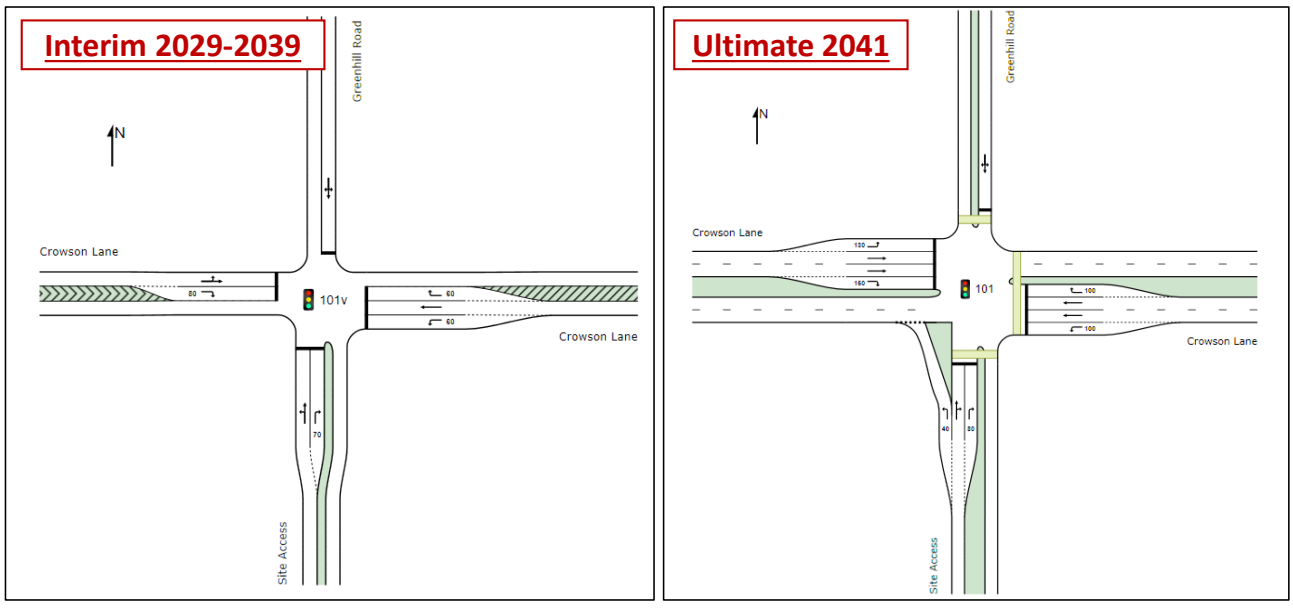


Figure 5.2: SIDRA Geometry: Access 1

Table 5.1 summarises the SIDRA results for Access 1. Detailed SIDRA outputs have been included at **Appendix C**.

Table 5.1: SIDRA Results: Access 1

Year	Peak	Scenario	Volume (vph)	Degree of Saturation	Average Delay (s)	Level of Service	95th Percentile Queue (m)	Cycle Time (s)
2029 (Stage 3)	AM	With Development	861	0.78	34	C	75	70
	PM		885	0.72	34	C	64	70
2039 (Stage 3 + 10 years)	AM		892	0.78	34	C	75	70
	PM		921	0.72	33	C	64	70
2041 (Stage 3 Horizon)	AM		3,907	0.82	35	C	327	140
	PM		3,907	0.88	38	D	427	150

In summary, the study intersection operates within typically adopted performance thresholds (DOS <0.9, LOS C/D) during all relevant design horizons and as such is considered suitable to support the development. Furthermore, in all scenarios, 95th percentile queuing does not exceed the provided channelised lanes, ensuring reduced likelihood of any overflow impacting through lanes.

5.3 Access Intersection 3

5.3.1 Overview

Access Intersection 3 (Access 3) is proposed to be configured as a new priority-controlled intersection connecting the site access to the Service Road. Due to the relatively high volumes of vehicles opposing the right turn exit from the site resulting in extensive delays, this movement has been restricted.

Traffic generation volumes have been utilised in accordance with Section 3 of this report.

5.3.2 Access 3 Location

Table 5.2 summarises our review of the proposed intersection location against EDQ's requirements.

Table 5.2: Location Review: Access 3

Road Frontage	Required Intersection Separation	Provided Intersection Separation	Compliant
Trunk Connector	300m	>300m	Yes

In summary, the proposed intersection location complies with EDQ's requirements.

5.3.3 Access 3 Sight Distances

Table 5.3 summarises our review of the intersection sight distances against Austroads requirements.

Table 5.3: Sight Distance Review: Access 3

Speed Environment	Direction	AS2890 Requirement	Available Sight Distance	Compliant
60km/h	North	151m	>160m	Yes
	South		>160m	Yes

As outlined above, available intersection sight distances comply with Austroads requirements. Sight lines to the north will be across a bio-retention basin which will not have any visibility obstructions.

5.3.4 Access 3 Turn Warrants Assessment

Table 5.4 summarises turn warrants results for Access 3. It should be noted that no left turn assessment has been undertaken as all traffic will be approaching the site from the north.

It is important to note that the proposed cross section provided for the Service Road consists of a break down lane on either side of the carriageway, which could be utilised in future to provide a basic left turn treatment with minimal impacts on the verge if required.

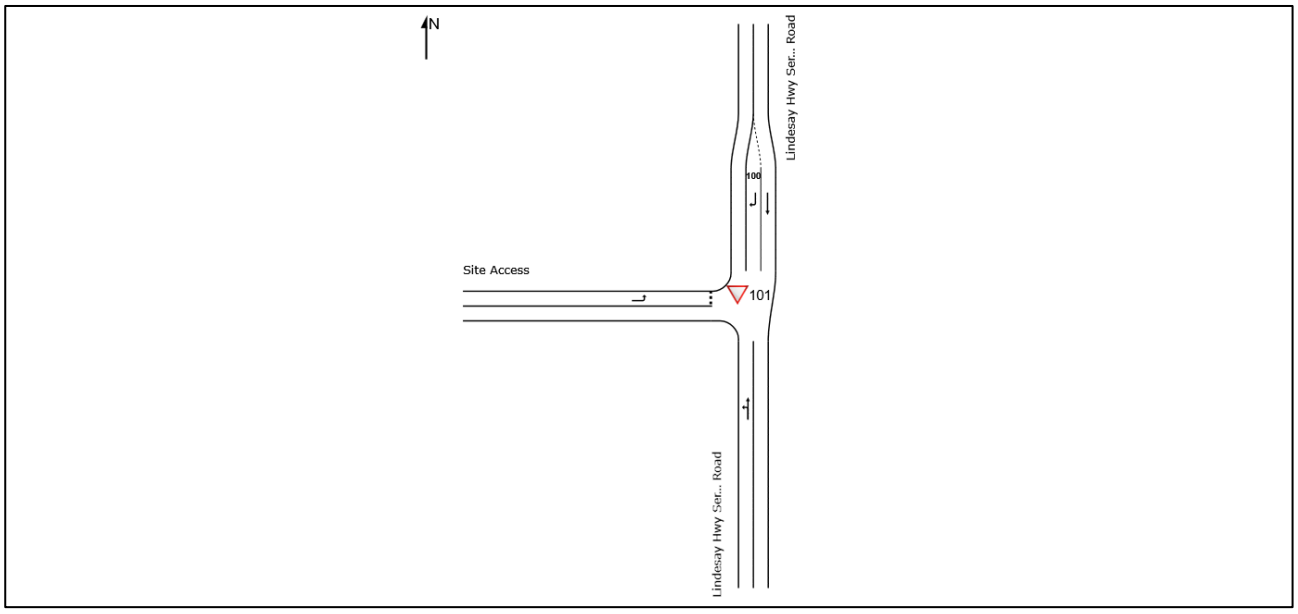
Table 5.4: Turn Warrants Results: Access 3

Year	Peak Hour	Direction	Q_M	Q_R	Required	Provided
2034 (Stage 1+10-years)	AM	Right	146	521	CHR	CHR
	PM		146	298	CHR	CHR
2036 (Stage 2+10-years)	AM	Right	981	521	CHR	CHR
	PM		480	298	CHR	CHR
2039 (Stage 3+10-years)	AM	Right	870	507	CHR	CHR
	PM		436	290	CHR	CHR

Based on the above, the access intersection will require a channelised right (CHR) turn treatment designed in accordance with Austroads: Guide to Road Design.

5.3.5 Access 3 SIDRA Assessment

Figure 5.2 illustrates the modelled geometry of the Access 3.



Source: SIDRA 9

Figure 5.3: SIDRA Geometry: Access 3

Table 5.1 summarises the SIDRA results for Access 3. Detailed SIDRA outputs have been included at **Appendix C**.

Table 5.5: SIDRA Results: Access 3

Year	Peak	Scenario	Volume (vph)	Degree of Saturation	Critical Delay (s)	Level of Service	95th Percentile Queue (m)
2024 (Stage 1)	AM	With Development	786	0.36	6	A	21
	PM		786	0.34	6	A	17
2026 (Stage 2)	AM		1,664	0.51	9	A	40
	PM		1,663	0.75	18	B	62
2029 (Stage 3)	AM		1,525	0.47	8	A	33
	PM		1,527	0.64	14	A	46
2034 (Stage 1+10-years)	AM		938	0.39	6	A	23
	PM		938	0.37	6	A	18
2036 (Stage 2+10-years)	AM		1,816	0.57	11	A	48
	PM		1,817	0.89	29	C	99
2039 (Stage 3+10-years)	AM		1,679	0.53	10	A	42
	PM		1,681	0.74	18	B	59

In summary, the study intersection generally operates within typically adopted performance thresholds (DOS <0.8) during all relevant design horizons and as such is considered suitable to support the development.

The only exclusion to this is the 2036 (Stage 2+10-years) scenario, which operates at a DoS of 0.89. This is considered acceptable as this is an interim scenario that would only occur if Stage 3 were not developed prior to 2036, which is considered unlikely noting that it is intended to be developed in 2029. Importantly, during this scenario the critical delay is only 29 seconds, which is well below TMR's acceptable delay threshold of 42 seconds.

Furthermore, in all scenarios, 95th percentile queuing does not exceed the provided channelised lane, ensuring reduced likelihood of any overflow traffic impacting the through lanes.

5.4 Access Intersection 4

5.4.1 Overview

Access Intersection 4 (Access 4) is proposed to be configured as a new priority-controlled intersection connecting the site access to the Service Road. To determine the configuration of the access intersection SIDRA and turn warrants assessments have been undertaken.

5.4.2 Access 4 Location

Table 5.6 summarises our review of the proposed intersection location against EDQ's requirements.

Table 5.6: Location Review: Access 4

Road Frontage	Required Intersection Separation	Provided Intersection Separation	Compliant
Trunk Connector	300m	>300m	Yes

In summary, the proposed intersection location complies with EDQ's requirements.

5.4.3 Access 4 Sight Distances

Table 5.7 summarises our review of the intersection sight distances against Austroads requirements.

Table 5.7: Sight Distance Review: Access 4

Speed Environment	Direction	AS2890 Requirement	Available Sight Distance	Compliant
60km/h	North	151m	>160m	Yes
	South		NA	Yes

In summary, the available sight distances to the north comply with Austroads requirements and the sight distances to the south are expected to comply. However, the service road is not proposed to be constructed past the intersection and as such, the sight distance has not been assessed.

5.4.4 Access 4 Turn Warrants Assessment

Table 5.8 summarises turn warrants results for Access 4. It should be noted that no left turn assessment has been undertaken as all traffic will be approaching the site from the north.

It is important to note that the proposed cross section provided for the Service Road consists of a break down lane on either side of the carriageway, which could be utilised in future to provide a basic left turn treatment with minimal impacts on the proposed verge if required.

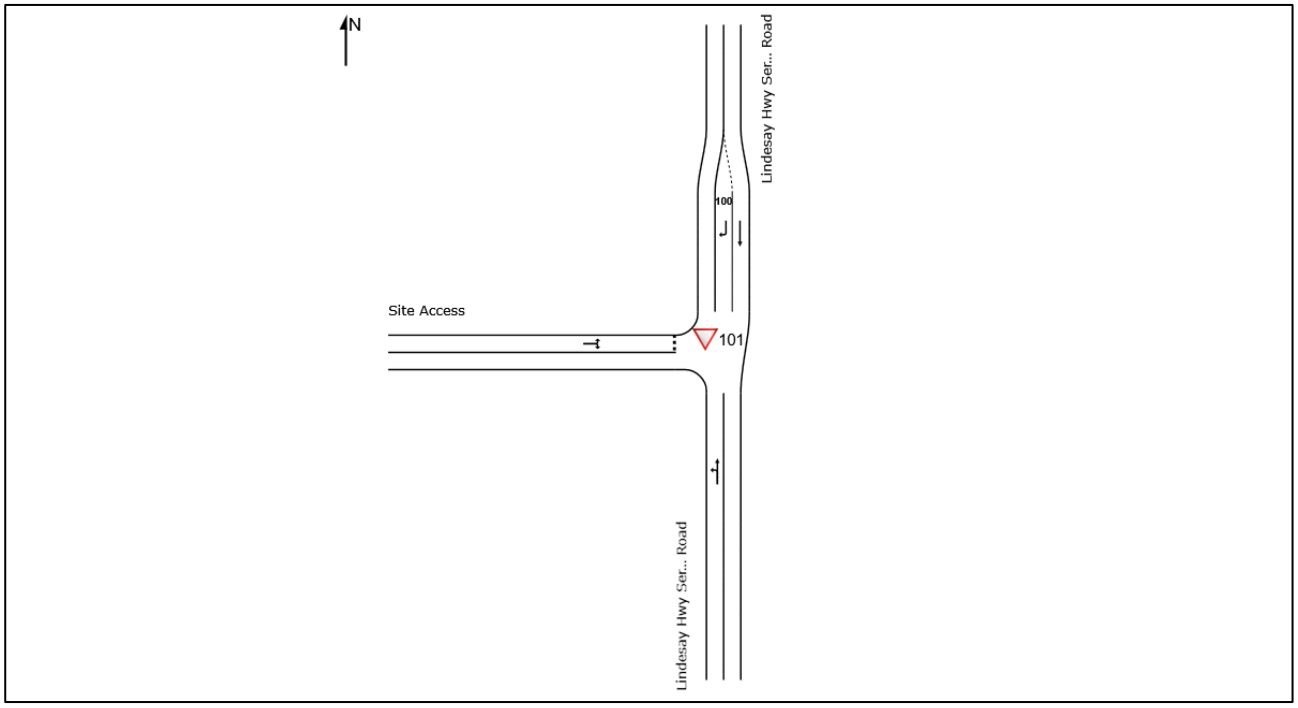
Table 5.8: Turn Warrants Results: Access 4

Year	Peak Hour	Direction	Q_M	Q_R	Required	Provided
2036 (Stage 2+10-years)	AM	Right	146	585	CHR	CHR
	PM		146	334	CHR(s)	CHR
2039 (Stage 3+10-years)	AM		146	507	CHR	CHR
	PM		146	290	CHR(s)	CHR

Based on the above, the access intersection will require a channelised right (CHR) turn treatment designed in accordance with Austroads: Guide to Road Design.

5.4.5 Access 4 SIDRA Assessment

Figure 5.2 illustrates the modelled geometry of the Access 4.



Source: SIDRA 9

Figure 5.4: SIDRA Geometry: Access 4

Table 5.1 summarises the SIDRA results for Access 4. Detailed SIDRA outputs have been included at **Appendix C**.

Table 5.9: SIDRA Results: Access 4

Year	Peak	Scenario	Volume (vph)	Degree of Saturation	Critical Delay (s)	Level of Service	95th Percentile Queue (m)
2026 (Stage 2)	AM	With Development	884	0.40	6	A	25
	PM		883	0.38	7	A	21
2029 (Stage 3)	AM		766	0.35	7	A	20
	PM		767	0.33	7	A	16
2036 (Stage 2+10-years)	AM		1,036	0.44	28	B	27
	PM		1,035	0.41	18	B	22
2039 (Stage 3+10-years)	AM		918	0.38	22	B	22
	PM		919	0.36	15	B	18

In summary, the study intersection operates within typically adopted performance thresholds (DOS <0.8) during all relevant design horizons and as such is considered suitable to support the development. Furthermore, in all scenarios, 95th percentile queuing does not exceed the provided channelised lane, ensuring reduced likelihood of any overflow impacting through lanes.

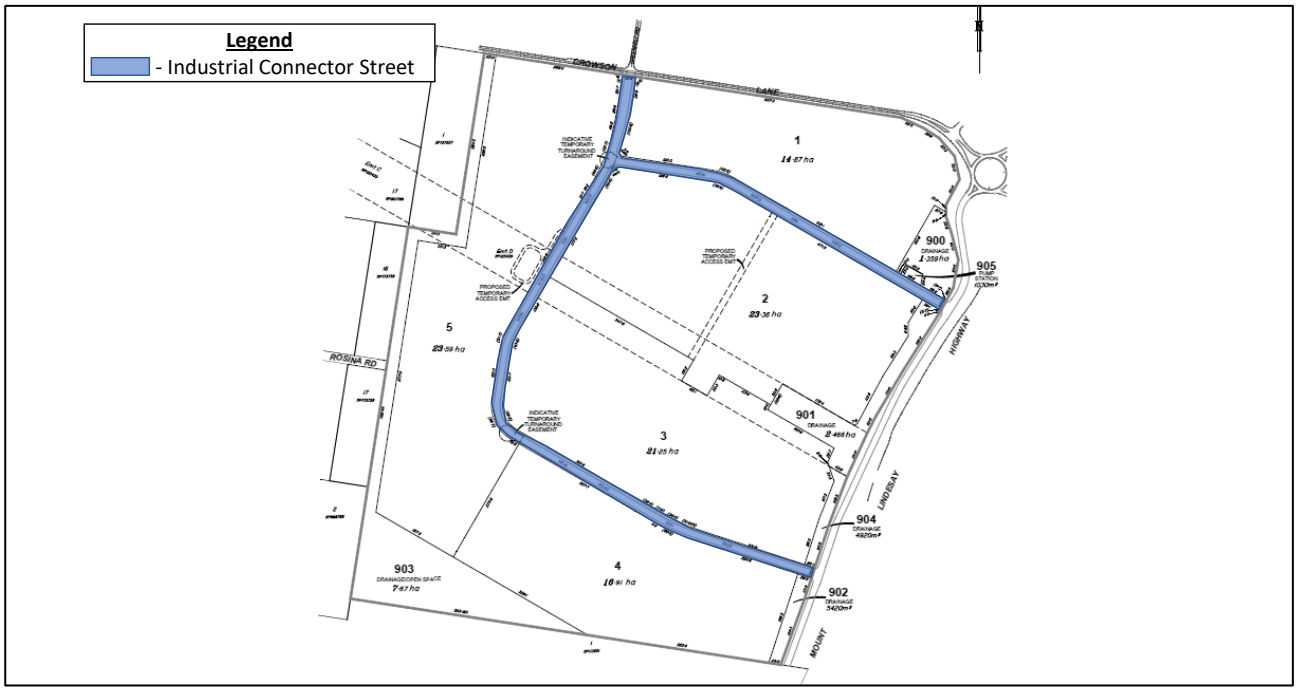
6. SITE LAYOUT REVIEW

6.1 Road Hierarchy

The proposed subdivision includes the following road types:

- Industrial Connector (IC, 23m)

Figure 6.1 below illustrates the proposed road hierarchy for the subdivision.



Source: Wolter Consulting Group

Figure 6.1: Road Hierarchya

Based on the proposed yields the provision of the IC road hierarchy is expected to be suitable to accommodate the proposed traffic demands.

6.2 Road Cross Sections

Table 6.1 provides a summary of the relevant internal road cross sections.

Table 6.1: Road Cross Sections

Hierarchy	Road Reserve	Pavement Width	Verge Width	Footpaths
Industrial Connector	23m	13m	1 x 4.5 & 1 x 5.5m	1 x 1.8m path & 1 x 2.5m shared path

It is understood that the applicant has proposed these road cross sections following pre-lodgement discussions with EDQ, where they were generally supported. The pavement widths are generally in accordance with the previous approval (DEV2018/961) and EDQ's requirements. Therefore, the proposed road cross sections are expected to be suitable to accommodate B-double movements, in accordance with the previous PDA approval.

6.3 Internal Road Volumes

Table 6.2 provides a summary of our review of the internal road traffic volumes against the EDQ's requirements

Table 6.2: Road Cross Sections

Hierarchy	Permittable Traffic Volumes	Proposed Traffic Volumes
Industrial Connector	<7,500vpd	Maximum 7,280vpd

In summary, the proposed development is expected to generate a total of 20,800vpd, which are divided across three (3) access intersections as follows:

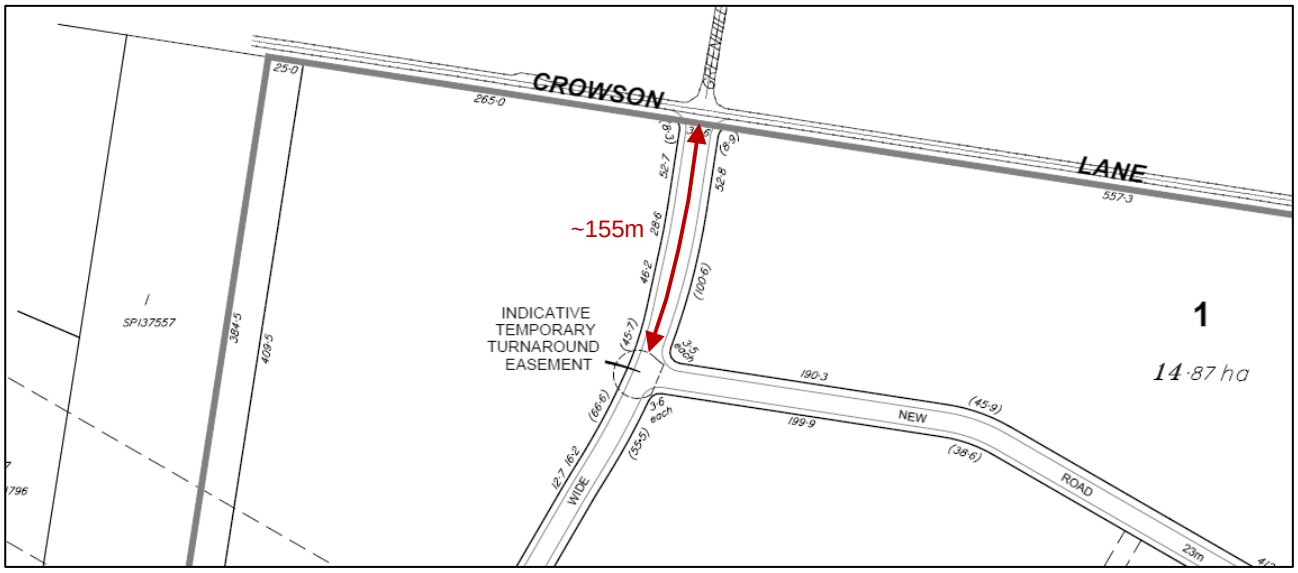
- **Access Intersection 1:** 30% (or 6,240vpd)
- **Access Intersection 3:** 35% (or 7,280vpd)
- **Access Intersection 4:** 35% (or 7,280vpd).

These traffic volumes would only be present at the very entrance to the site, as each development is expected to remove traffic from the internal road network when entering / servicing a particular lot. Resulting in traffic volumes progressively decreasing the further the road network expands into the site.

In summary, the proposed road hierarchy are generally in accordance with the previously approved development and EDQ's requirements.

6.4 Intersection Spacing

Figure 6.2 below illustrates the proposed intersection spacing.



Source: Wolter Consulting Group

Figure 6.2: Internal Intersection Spacing

Table 6.3 provides a summary of the internal intersection spacing.

Table 6.3: Road Cross Sections

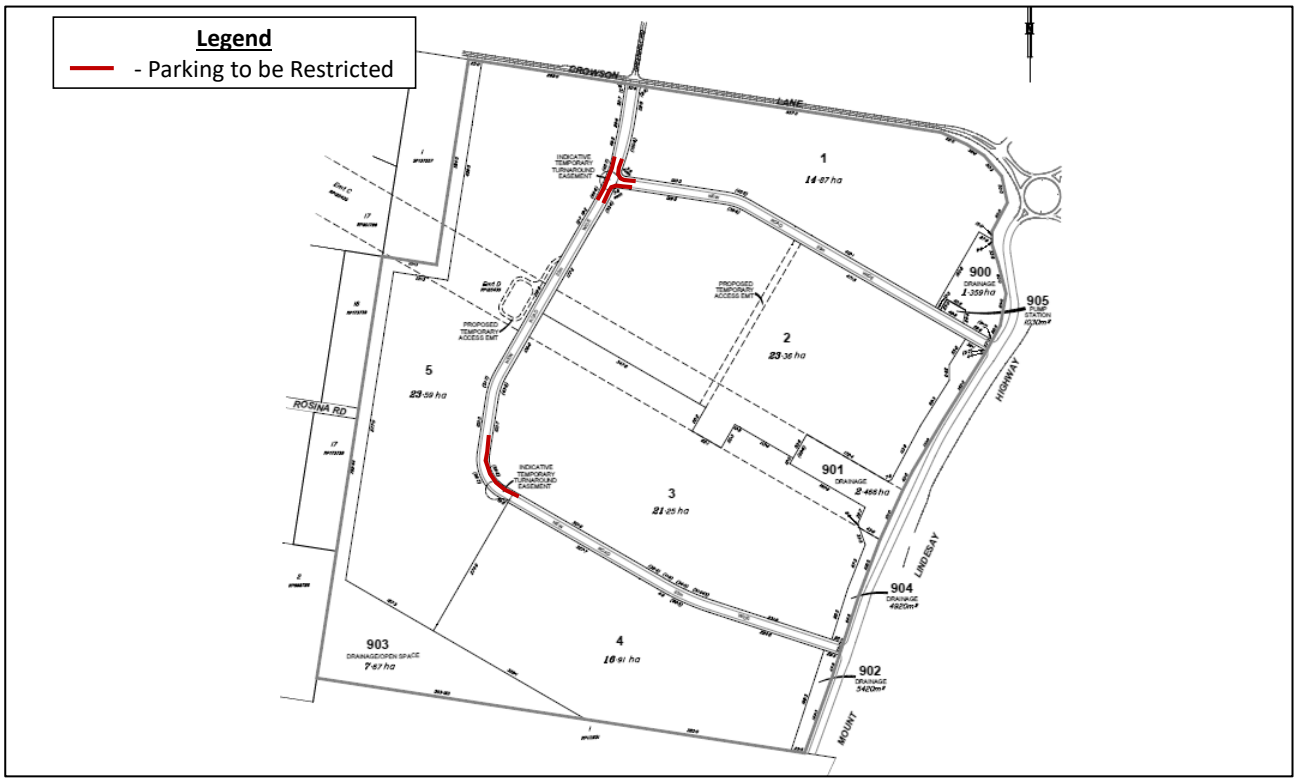
Hierarchy	Requirement	Minimum Provision	Compliant
Industrial Connector	150m	~155m	Yes

In summary, the proposed internal intersection spacing complies with EDQ's requirements.

6.5 Internal Servicing

All industrial collector roads have been designed to accommodate a B-double as the maximum design vehicle.

To allow for the proposed design vehicles, kerbside parking will need to be restricted at most intersections / bends in accordance with Figure 6.3.



Source: Wolter Consulting Group

Figure 6.3: Parking Restrictions

Swept path diagrams have been prepared which confirm that the proposed cross sections are sufficient to accommodate independent movements for a design vehicle up to a 26m B-double.

A copy of the service vehicle swept path diagrams are included at **Appendix D**.

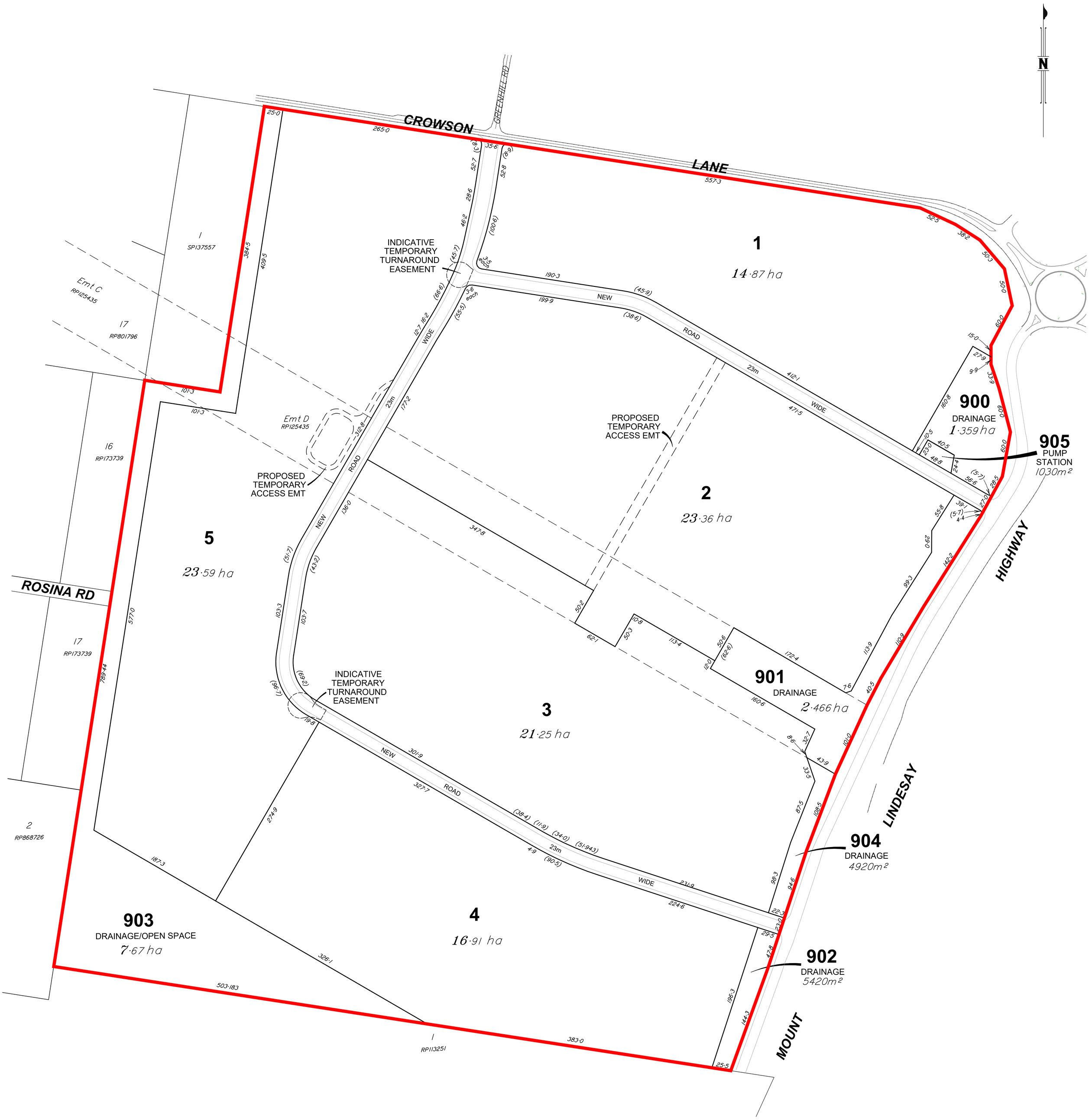
7. SUMMARY

In summary:

- CH Hydrangea Pty Ltd is seeking to undertake a Reconfiguration of Lot (ROL) application to subdivide four (4) industrial lots into five (5) industrial lots
- The development yields, access, traffic generation and traffic distribution are generally consistent with the previous approval over the site and as such, no external traffic impact analysis has been undertaken
- SIDRA intersection analysis has been undertaken at each of the proposed access intersections and has confirmed that each of the proposed access intersections are sufficiently designed to accommodate the ultimate and all interim stage design scenarios
- All internal road corridors, road hierarchies, intersections, and servicing provisions are generally consistent with EDQ's requirements or designed in accordance with the previous development approval
- Swept path diagrams confirm that the design service vehicle can adequately service the development

Based on the findings of this report, we are of the opinion that the proposed amendment application will not result in significantly different traffic impacts compared to the previous PDA approval. Therefore, there are no traffic engineering related matters to preclude approval of this development application.

Appendix A: Development Plans



Notes

1. Any licence, express or implied, to use this document for any purpose whatsoever is restricted to the terms of the agreement or implied agreement between Wolter Consulting Group and the instructing party.

2. Design subject to local authority approval & detailed engineering requirements , areas and dimensions are approximate only and are subject to survey. Therefore this drawing is not to be used for engineering design.

3. Cadastral data supplied by others and is approximate only.

4. Indicative road horizontal design, subject to biopods and engineering review.

5. This note is an integral part of this plan. This plan may not be reproduced without this notation being included.

Legend

Site Boundary

Stage Boundary

Table of Development

Gross area of subject land	117.9 ha
Area of proposed park, drainage and open space (Including pump station)	12.6 ha
Area of new road	5.32 ha
Length of new road	2299m
Net area of subject land (Excluding park & open space)	99.98 ha
Number of proposed lots	11
Number of existing lots	1

WOLTER consulting group

Planning Urban Design Landscape Environment Surveying

Scale 1:2500 @ A1 – Lengths are in metres.

20 0 20 40 60 80 100 120 140 160 180 200 220

Plan of Reconfiguration

4499-4651 Mount Lindesay Highway

Description Lot 39 on SP258739

Local Authority Logan City

CLIENT
Charter Hall Group

DRAWING NO. 22-0007P/01-02

VERSION E

DATE DRAWN 14-08-2023

SHEET NO. 1 of 1

KB

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3. Cadastral data supplied by others and is approximate only.

4. Earthworks for Sewer Rising Main and full service road will be completed with Stage 1.

5. Indicative road horizontal design, subject to biopods and engineering review.

6. This note is an integral part of this plan. This plan may not be reproduced without this notation being included.

Legend

- Site Boundary
- Stage Boundary
- Stage 1
- Indicative Temporary Turnaround - Stage 1
- Stage 2
- Indicative Temporary Turnaround - Stage 2
- Stage 3
- RM — Sewer Rising Main

WOLTER consulting group

Planning Urban Design Landscape Environment Surveying

Scale 1:2500 @ A1 - Lengths are in metres.

20 0 20 40 60 80 100 120 140 160 180 200 220

Staging Sketch Plan

4499-4651 Mount Lindesay Highway

Description
Local Authority

Lot 39 on SP258739
Logan City

CLIENT
Charter Hall Group

DRAWING NO. 22-0007P/01-03

VERSION E

DATE DRAWN 14-08-2023

SHEET NO. 1 of 1

KB

Appendix B: Design Traffic Volumes

FUTURE DEVELOPMENT TRAFFIC GENERATION

Table 1. Adopted Trip Generation Rates

Land Use	AM Peak	PM Peak	Unit	Source
Future Development	0.4	0.4	Trips/ 100sqm GFA	DEV2018/961

Table 2. Adopted Directional Distribution

Land Use	AM Peak		PM Peak	
	Inbound	Outbound	Inbound	Outbound
Future Development	50%	50%	50%	50%

Table 3. Yields

Land Use	Yield (sqm)
Future Development	910,000

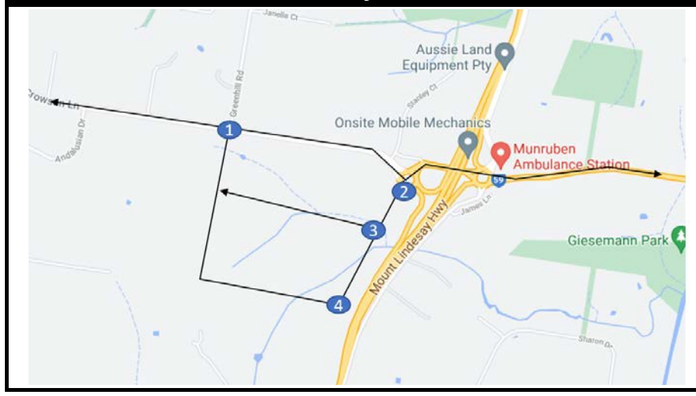
Table 4. Total Expansion Traffic Volumes

Land Use	Plot Ratio	AM			PM		
		Inbound	Outbound	Total	Inbound	Outbound	Total
Future Development	40%	728	728	1,456	728	728	1,456
Total		**728**	**728**	**1,456**	**728**	**728**	**1,456**

Table 5. External Traffic Distribution

Direction	%
To / from north on Service Road	10%
To / from east, west, or south	90%

Locality Plan



Details

Intersection	#2	#1,3,4&5
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2024	2024
Design Year	2034	2034
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

Job Number:	P5708
Prepared By:	ME
Reviewed By:	FJ
Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean I

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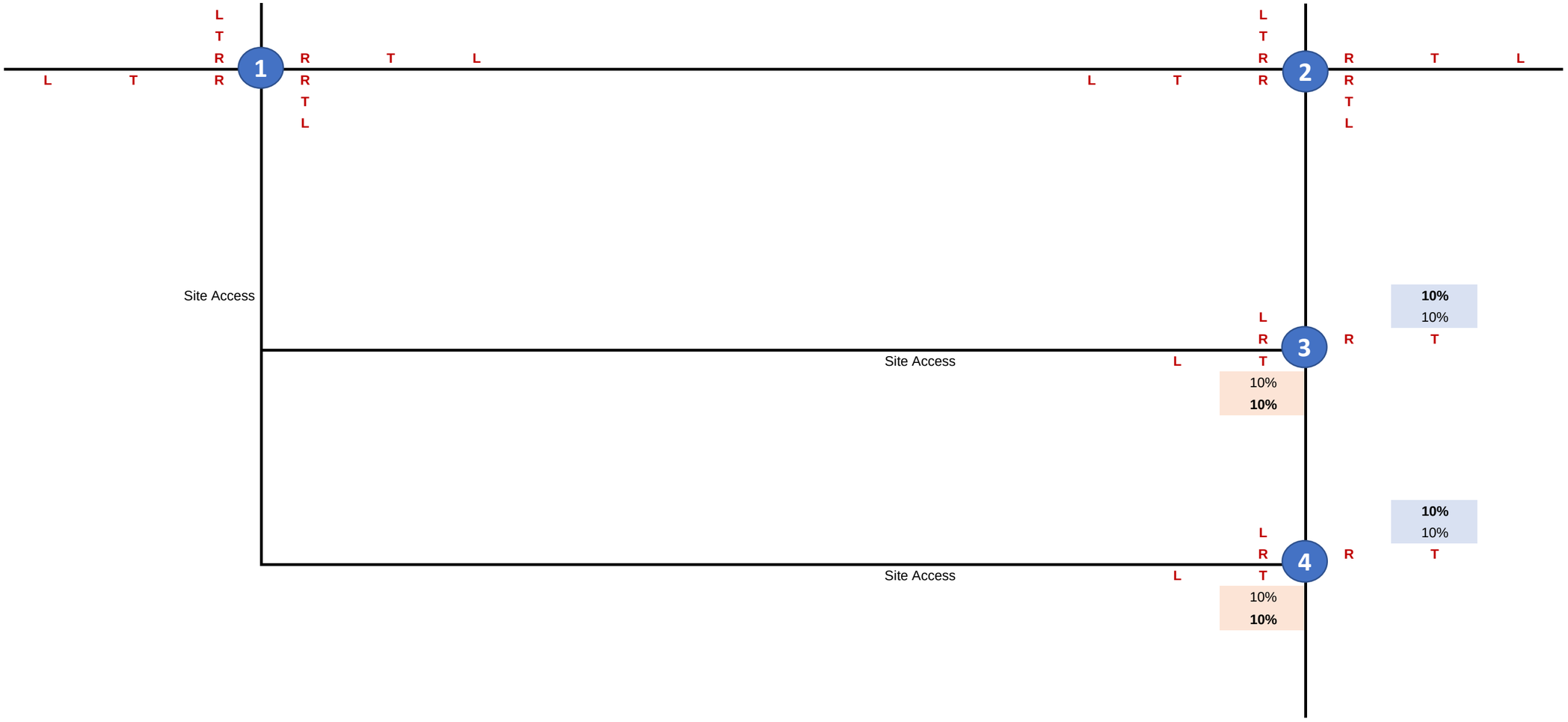
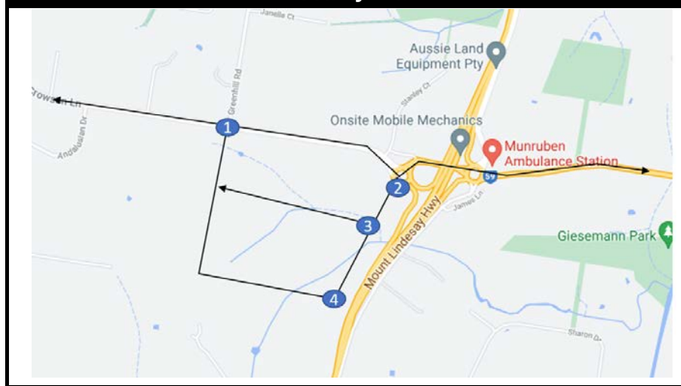
FUTURE DEVELOPMENT DISTRIBUTION



Locality Plan



Details

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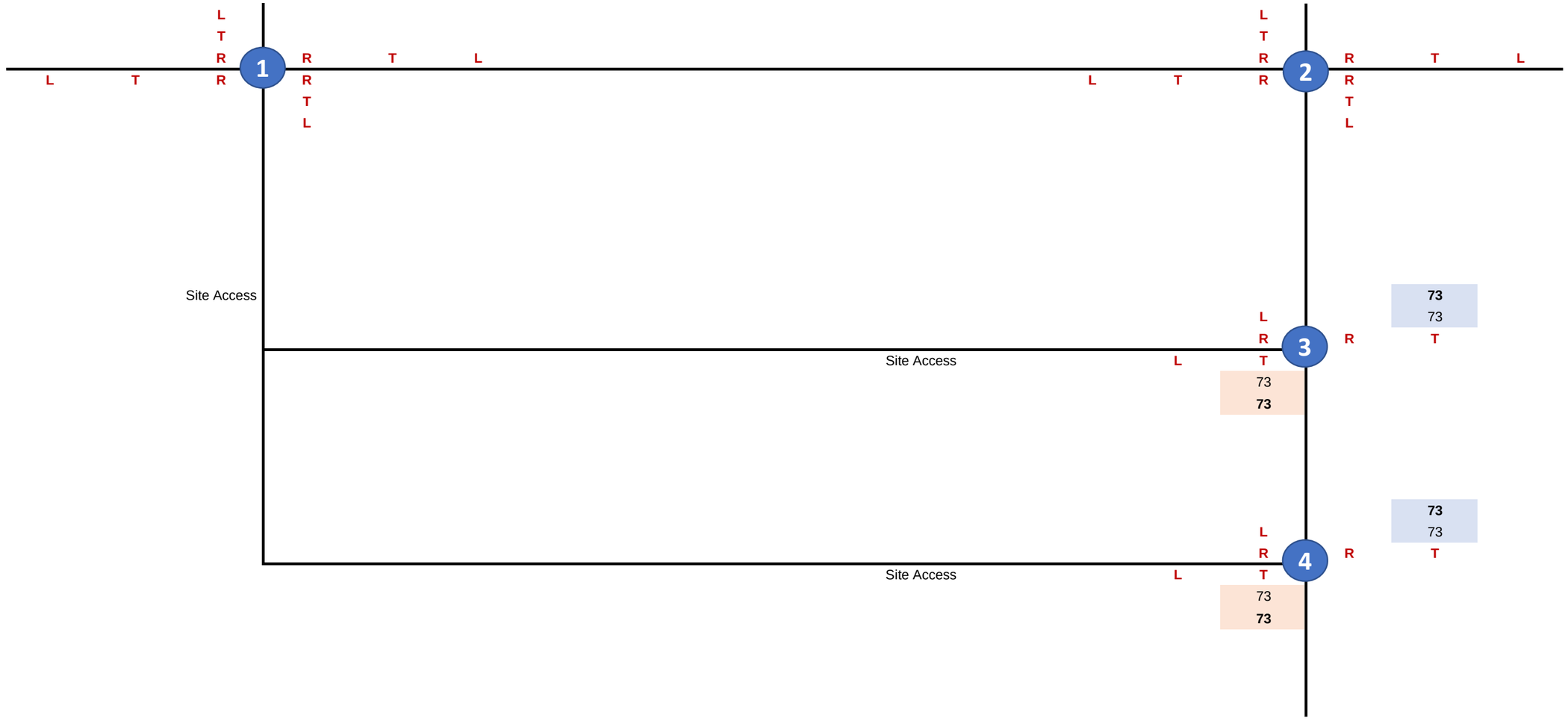
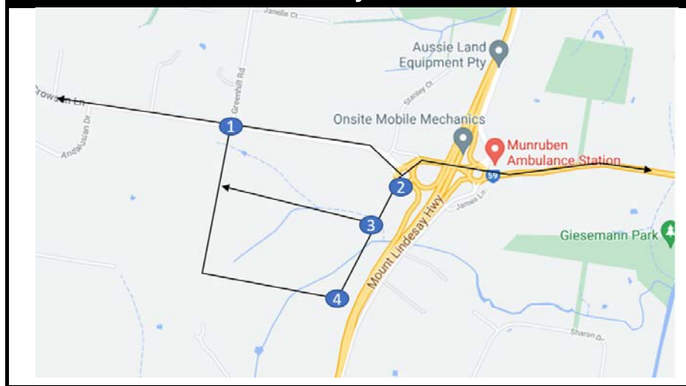
DEVELOPMENT VOLUMES



Locality Plan



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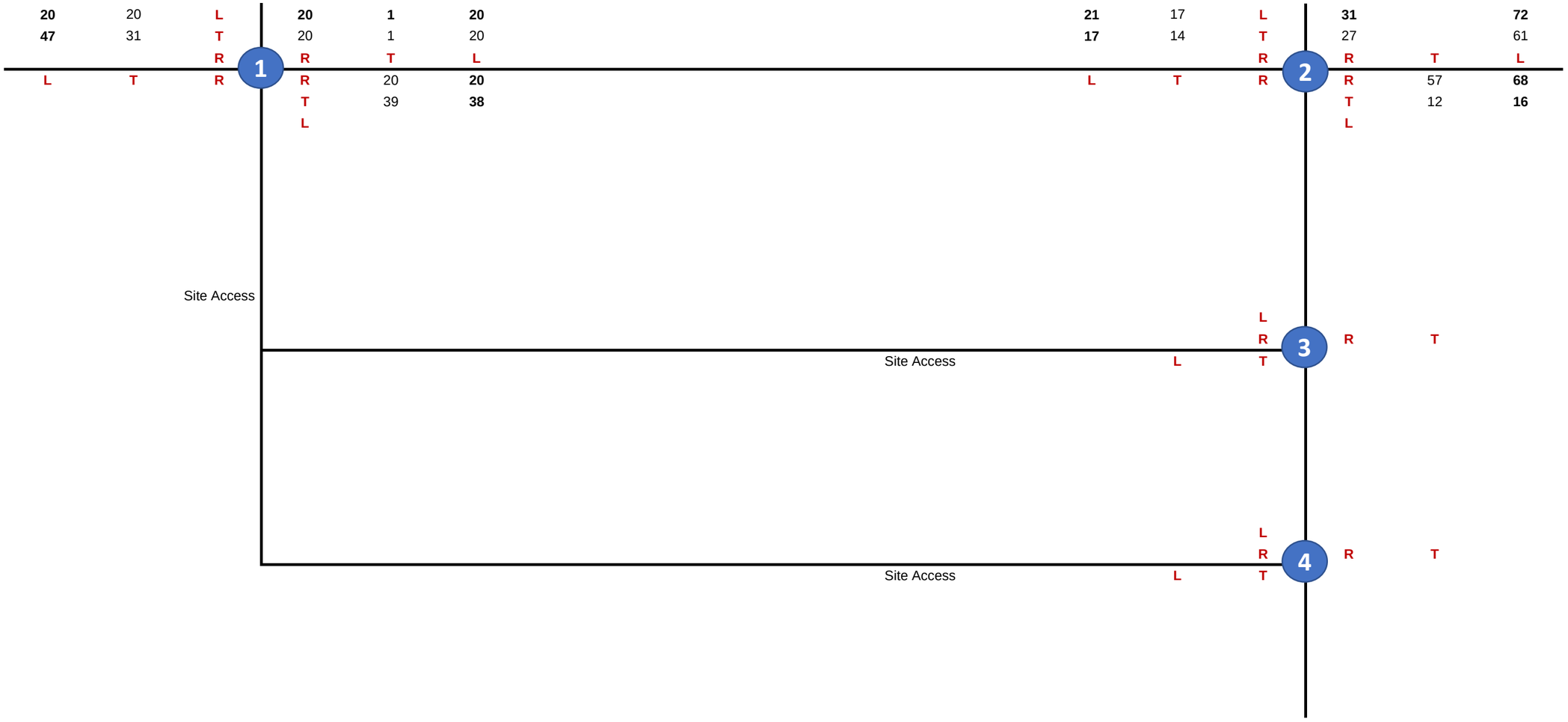
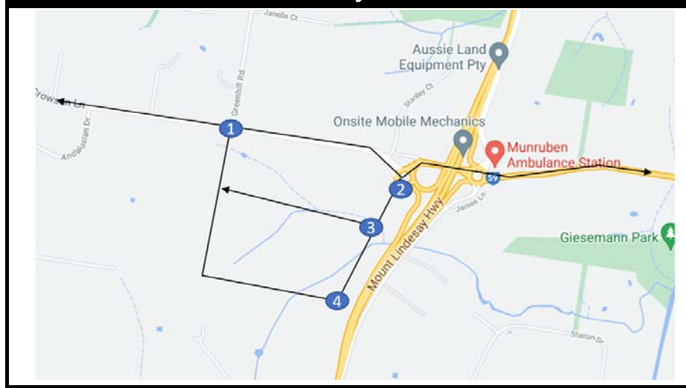
BG VOLUMES

Survey (2016)



Locality Plan



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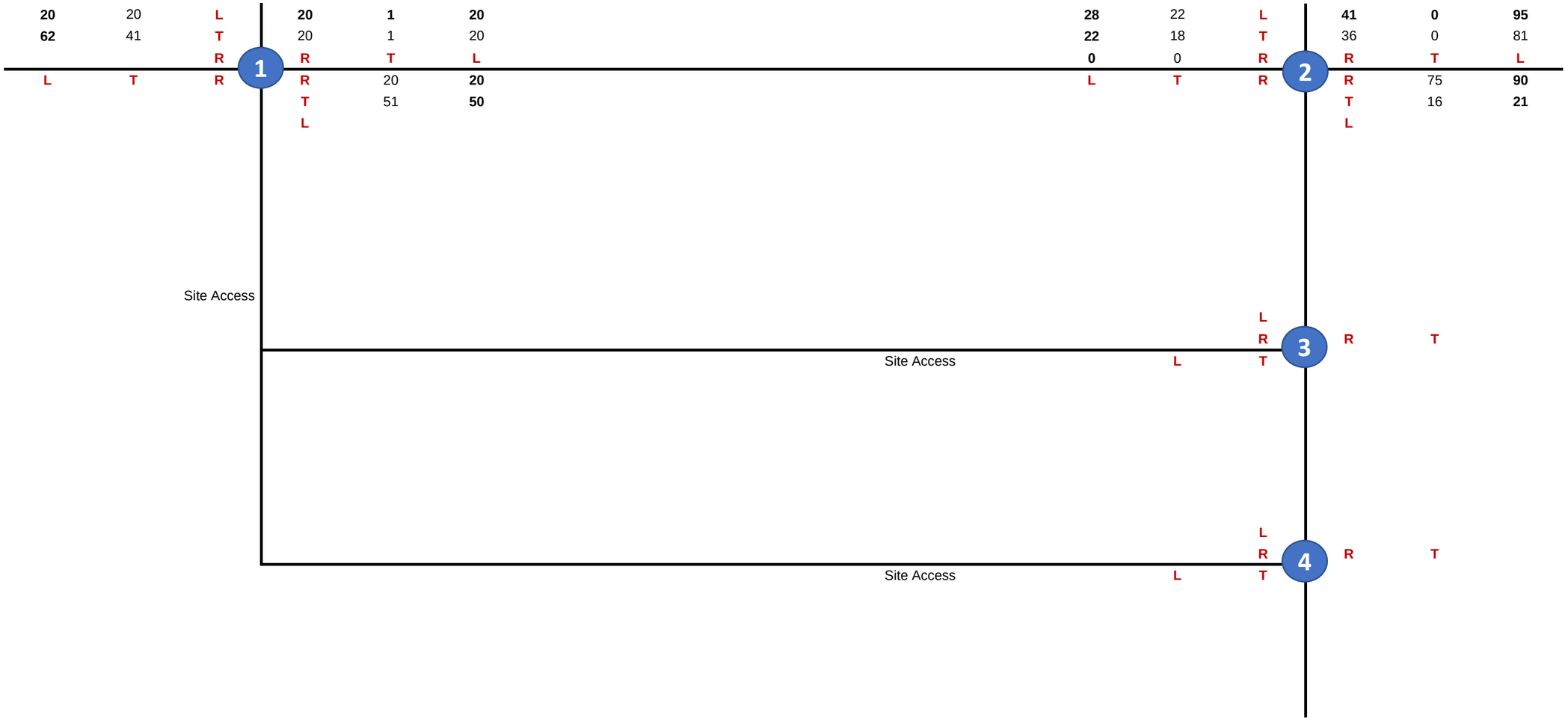
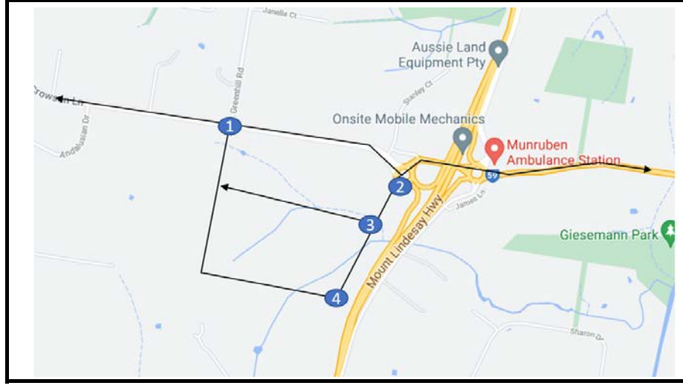
BACKGROUND VOLUMES

2024



Locality Plan



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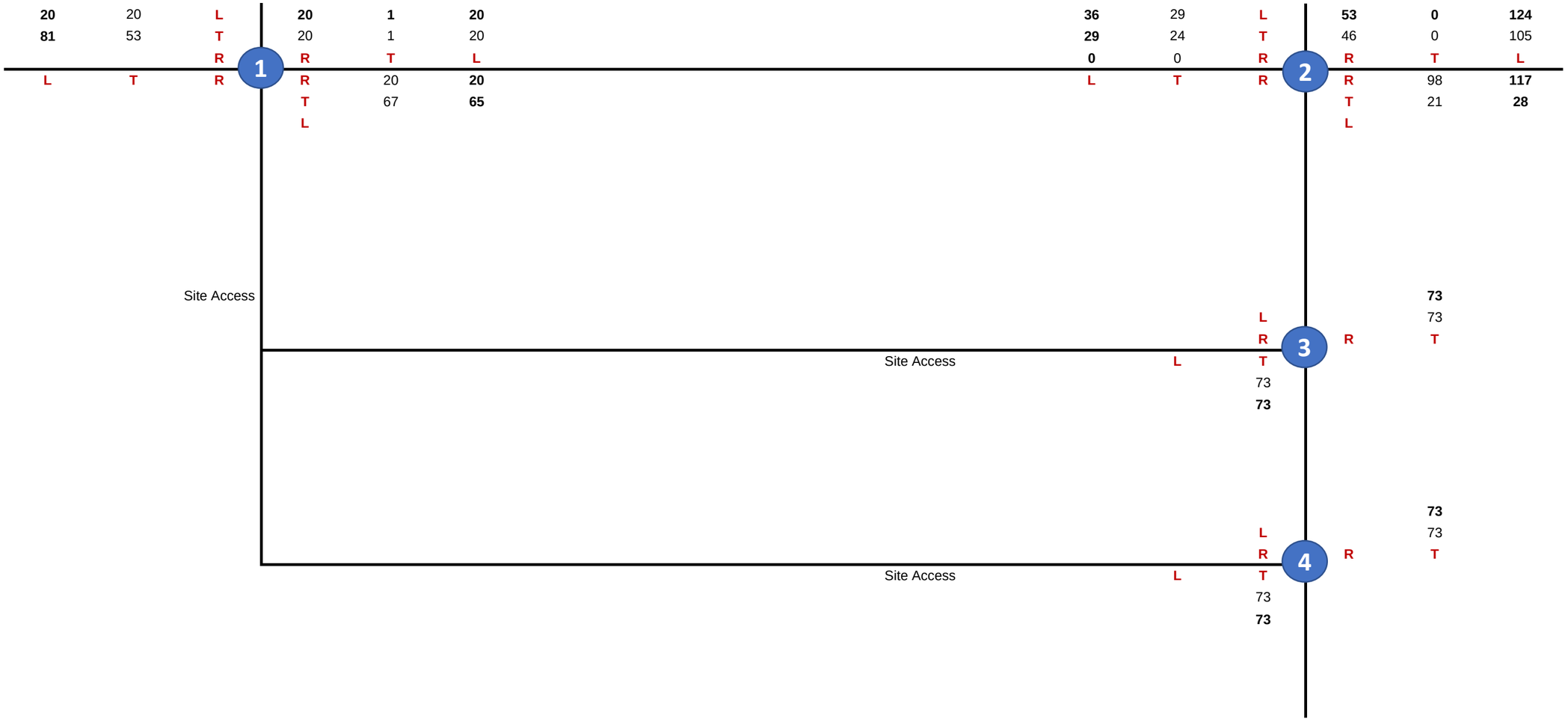
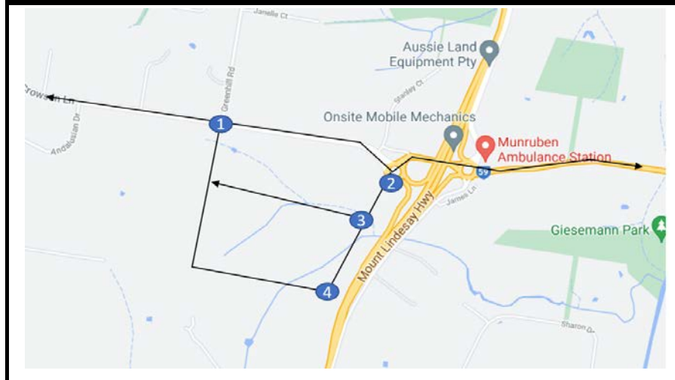
TOTAL BACKGROUND VOLUMES

2034 + FUTURE DEVELOPMENT GENERATION



Locality Plan



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DEVELOPMENT TRAFFIC GENERATION

Table 1. Adopted Trip Generation Rates

Land Use	AM Peak	PM Peak	Unit	Source
Industrial	0.4	0.4	Trips/ 100sqm GFA	DEV2018/961

Table 2. Adopted Directional Distribution

Land Use	AM Peak		PM Peak	
	Inbound	Outbound	Inbound	Outbound
Industrial	70%	30%	40%	60%

Table 3. Yields

Stage	Yield (sqm)
1	186,017
2	208,817
3	125,167
Total	520,000

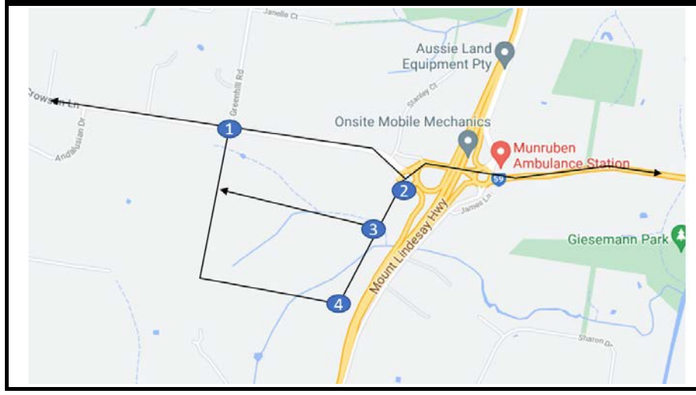
Table 4. Total Expansion Traffic Volumes

Land Use	AM			PM		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1	521	223	744	298	446	744
2	585	251	835	334	501	835
3	350	150	501	200	300	501
Total	**1,456**	**624**	**2,080**	**832**	**1,248**	**2,080**

Table 5. External Traffic Distribution

Direction	%
To / from north on Mt Lindesay	65%
To / from south on Mt Lindesay	10%
To / from east on Chambers Flat	10%
To / from west on Crowson	15%

Locality Plan



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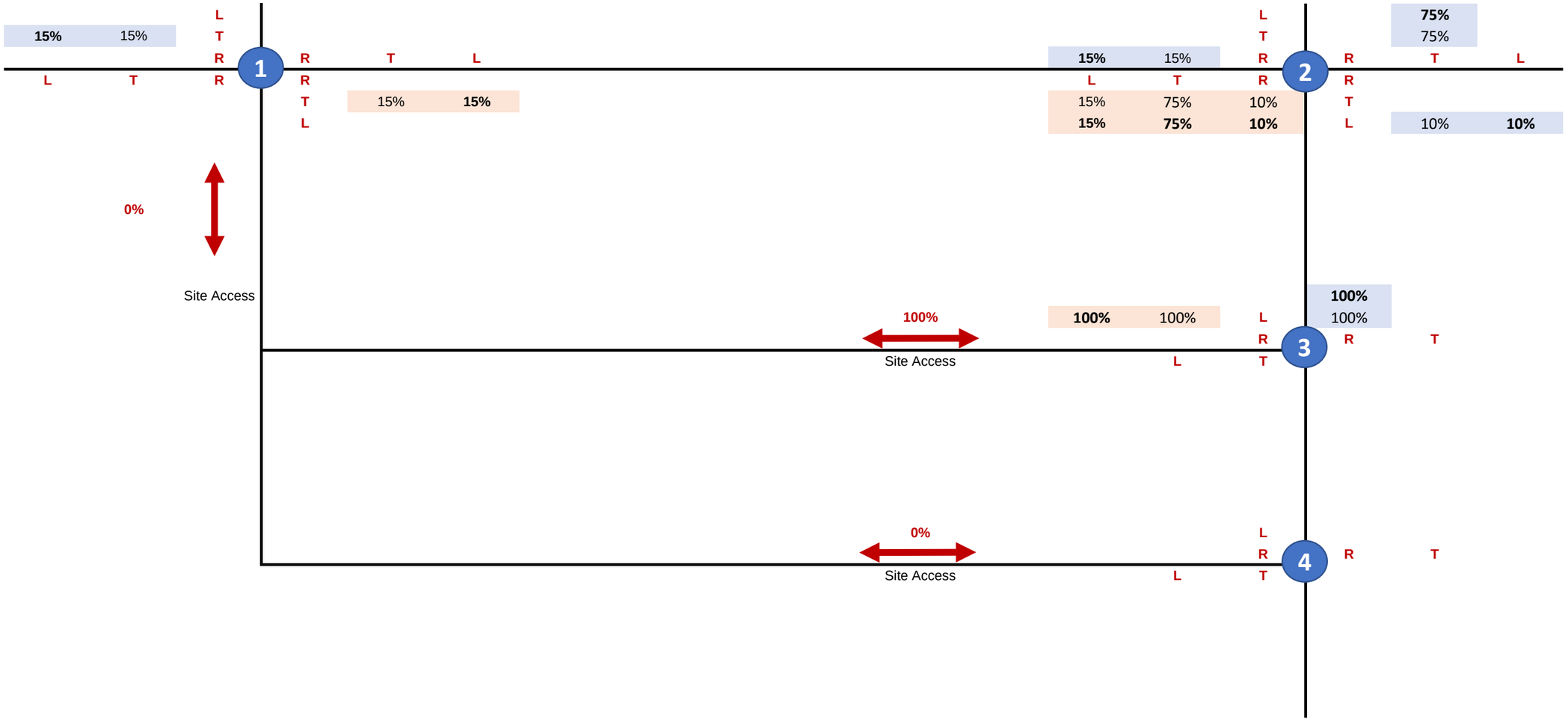
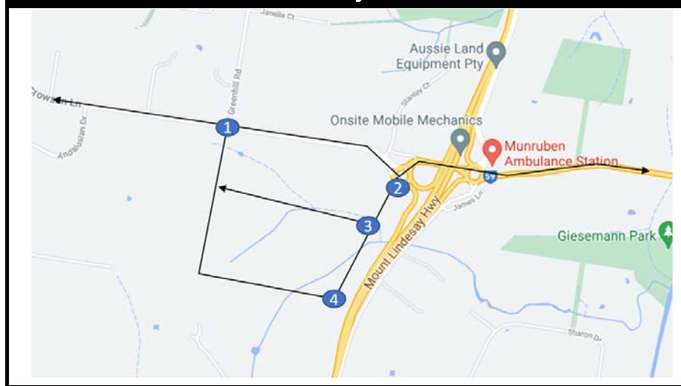
STAGE 1 DEVELOPMENT DISTRIBUTION



Locality Plan



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File Path:	P:\P5708 North Maclean

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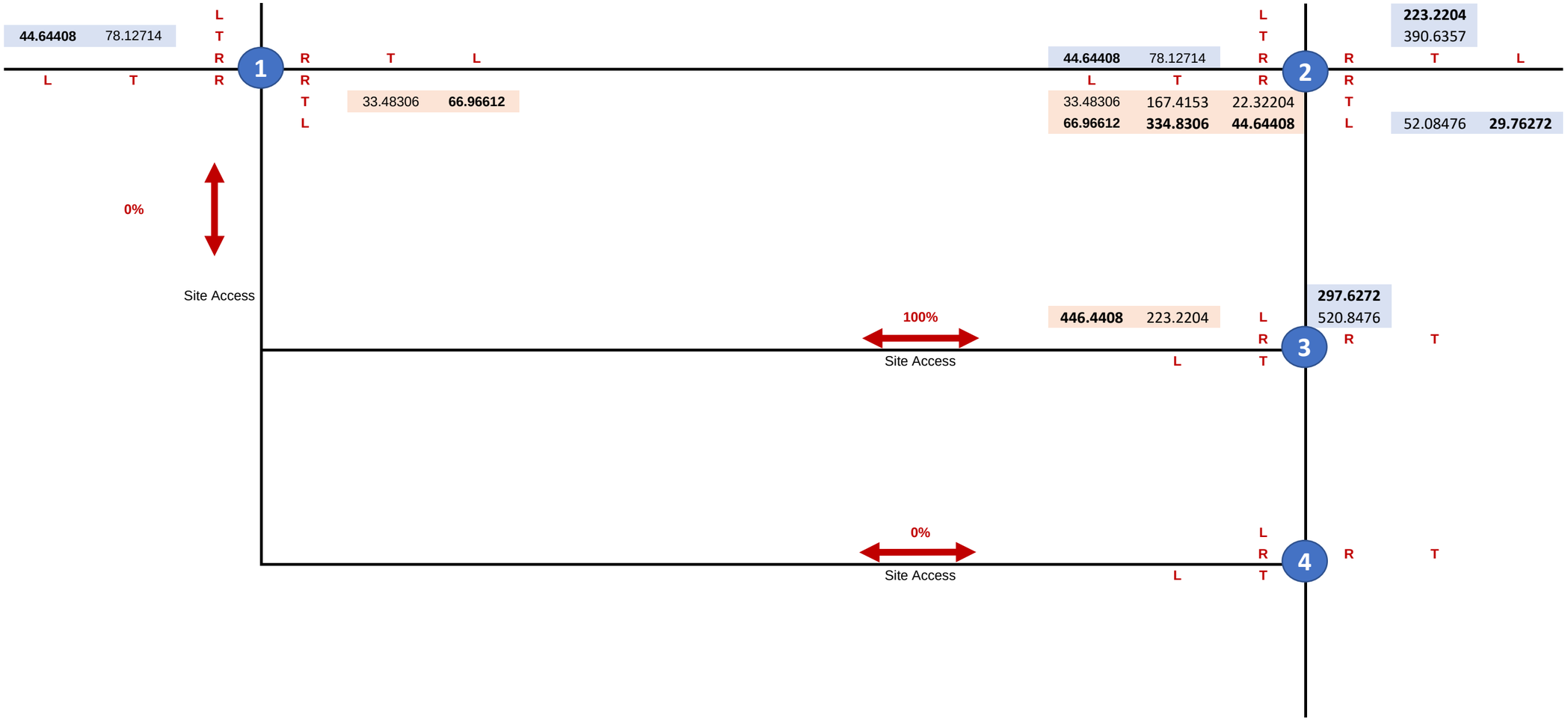
STAGE 1 DEVELOPMENT VOLUMES



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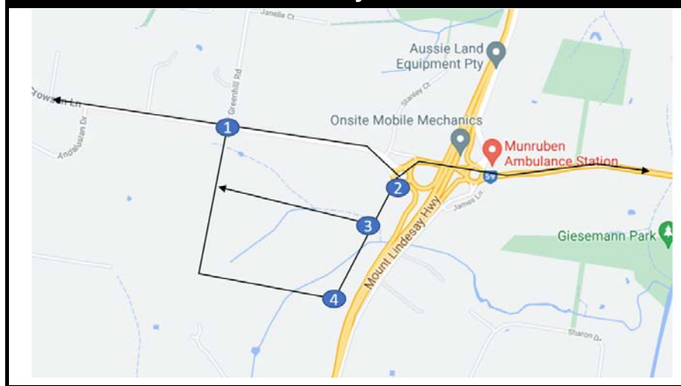

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Base Year	2024	2024
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Legend

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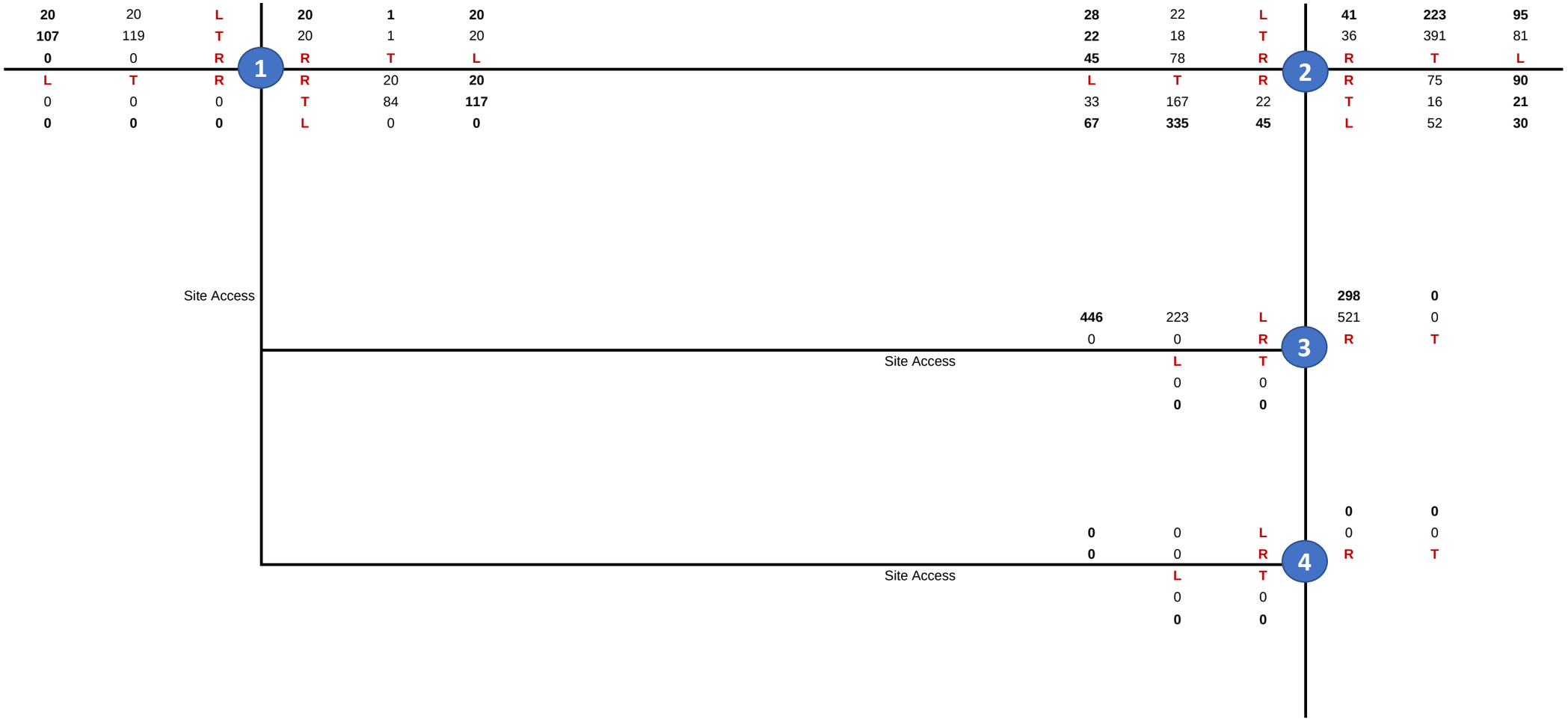
Reviewed By:	FJ
Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean

STAGE 1 DESIGN VOLUMES

2024



Locality Plan

Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2024	2024
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Legend

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Document Control

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Reviewed By:	FJ
Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean

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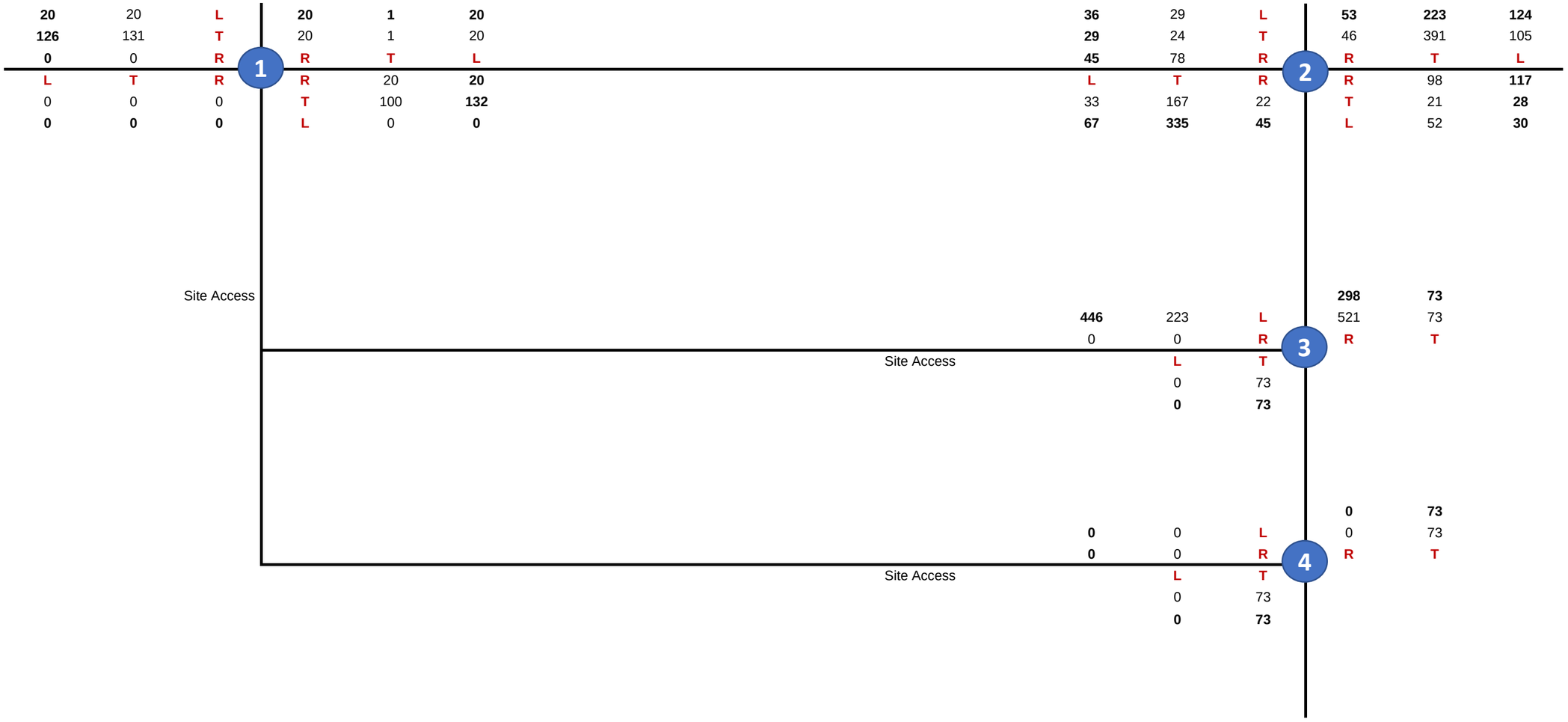
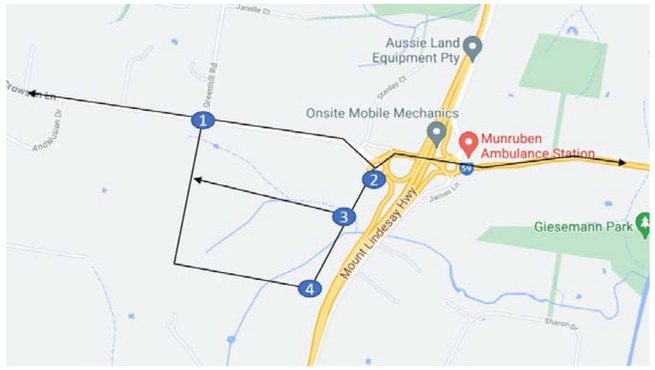
STAGE 1 DESIGN VOLUMES

2034



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2024	2024
Design Year	2034	2034
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

Job Number:	P5708
Prepared By:	ME
Reviewed By:	FJ
Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean

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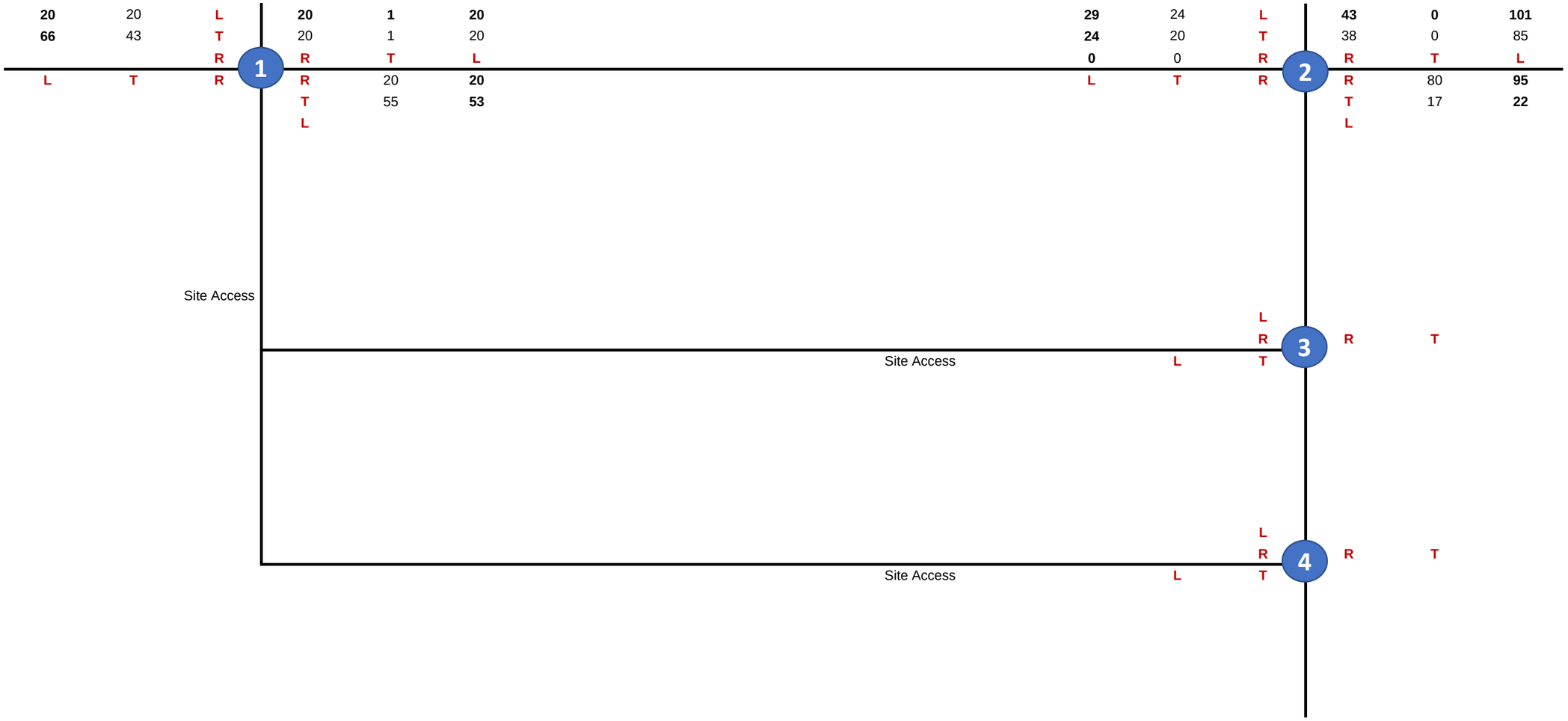
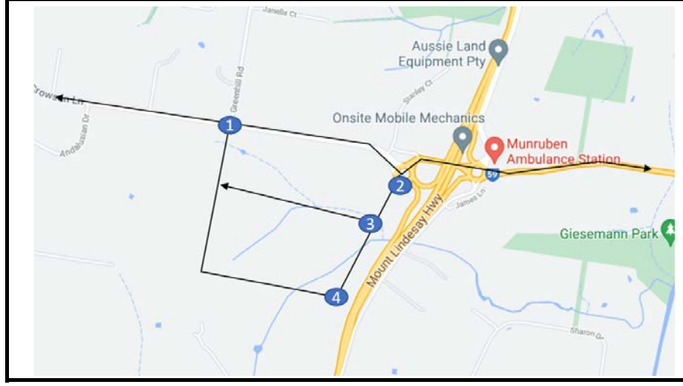
BACKGROUND VOLUMES

2026



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2026	2026
Design Year	2036	2036
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

Job Number:	P5708
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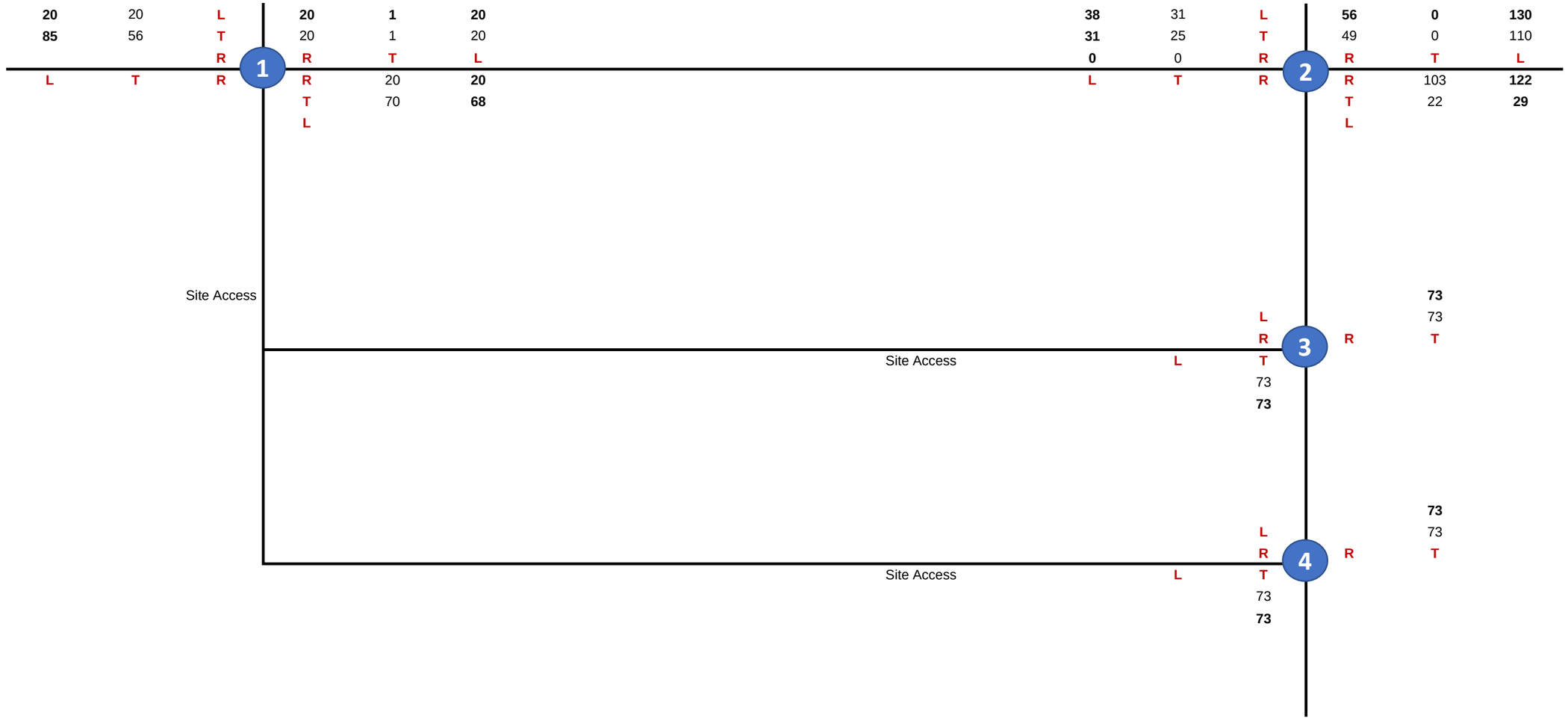
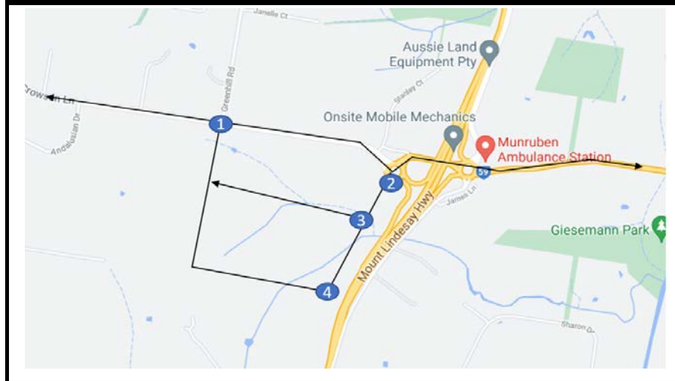
TOTAL BACKGROUND VOLUMES

2036 + FUTURE DEVELOPMENT GENERATION



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2026	2026
Design Year	2036	2036
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

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File Path:	P:\P5708 North Maclean

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DEVELOPMENT TRAFFIC GENERATION

Table 1. Adopted Trip Generation Rates

Land Use	AM Peak	PM Peak	Unit	Source
Industrial	0.4	0.4	Trips/ 100sqm GFA	DEV2018/961

Table 2. Adopted Directional Distribution

Land Use	AM Peak		PM Peak	
	Inbound	Outbound	Inbound	Outbound
Industrial	70%	30%	40%	60%

Table 3. Yields

Stage	Yield (sqm)
1	186,017
2	208,817
3	125,167
Total	520,001

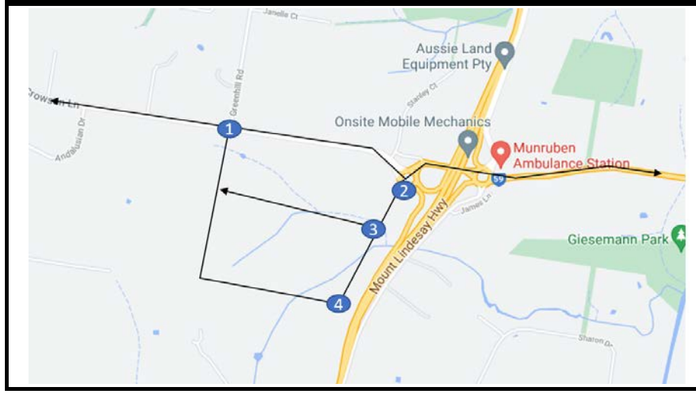
Table 4. Total Expansion Traffic Volumes

Land Use	AM			PM		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1	521	223	744	298	446	744
2	585	251	835	334	501	835
3						
Total	**1,106**	**474**	**1,579**	**632**	**948**	**1,579**

Table 5. External Traffic Distribution

Direction	%
To / from north on Mt Lindesay	65%
To / from south on Mt Lindesay	10%
To / from east on Chambers Flat	10%
To / from west on Crowson	15%

Locality Plan



Details

Intersection	#2	#1,3,4&5
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2026	2026
Design Year	2036	2036
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

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File Path:	P:\P5708 North Maclean I

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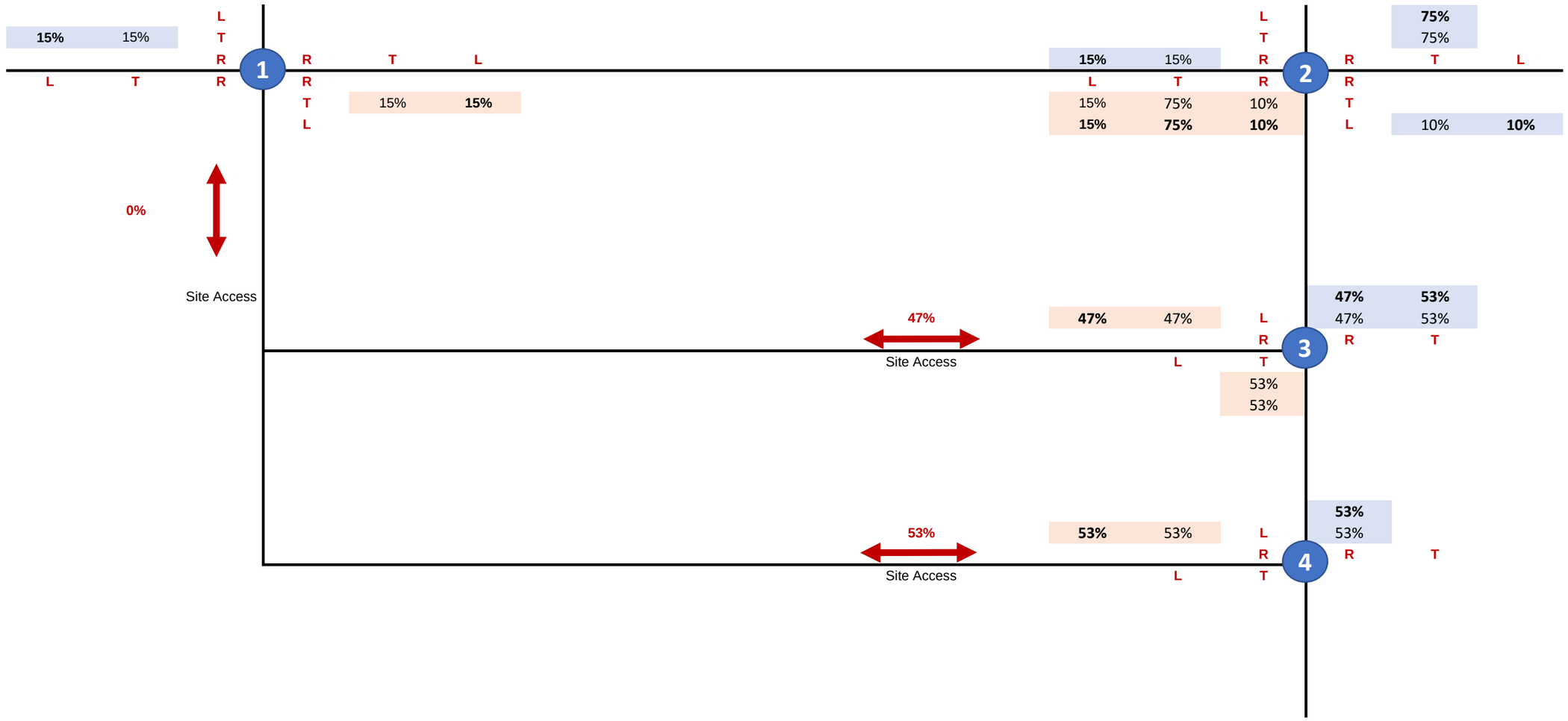
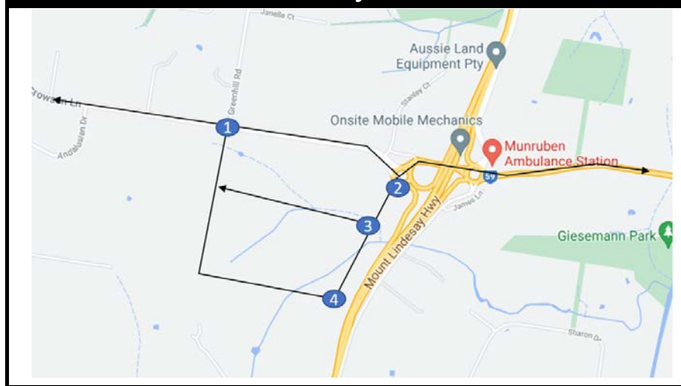
STAGE 2 DEVELOPMENT DISTRIBUTION



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2026	2026
Design Year	2036	2036
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

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Reviewed Date:	31/07/2023
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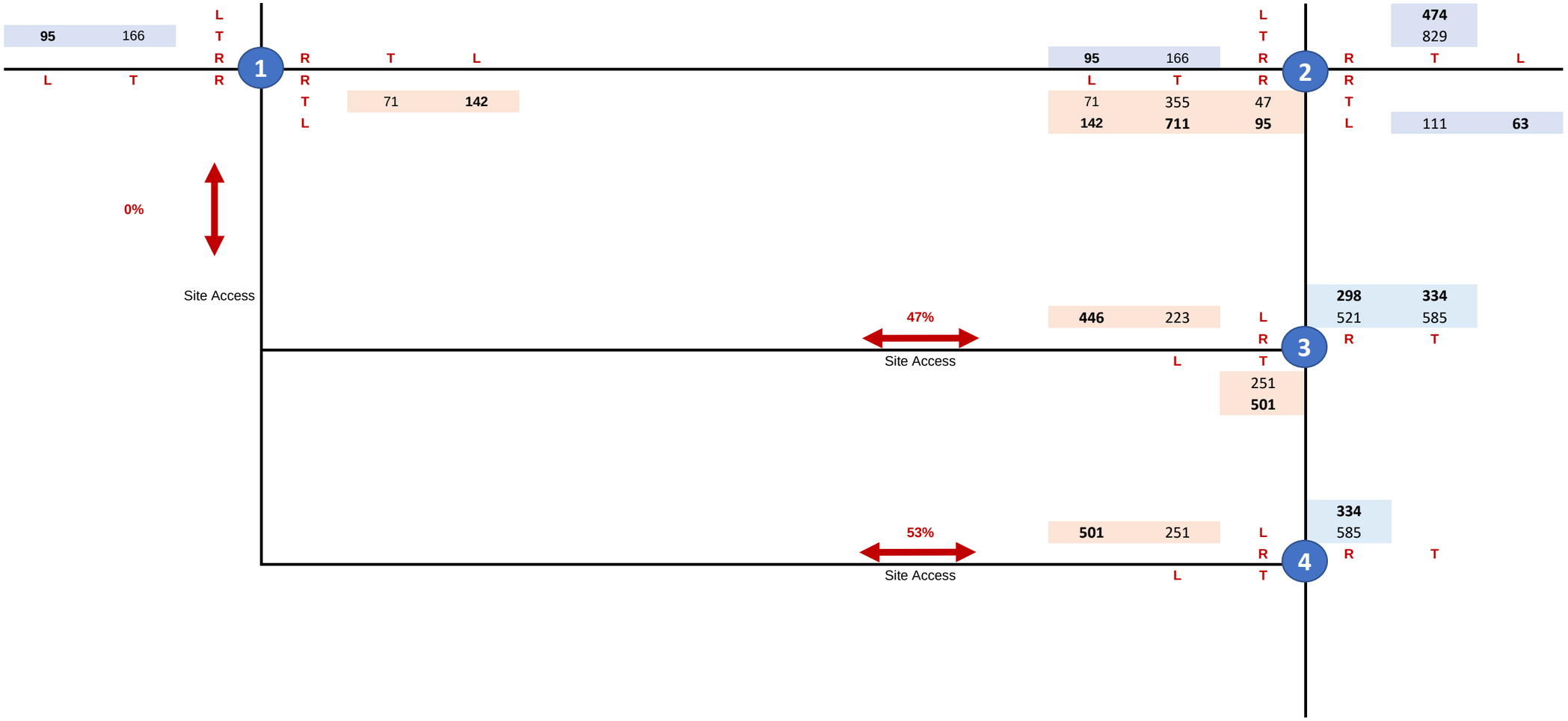
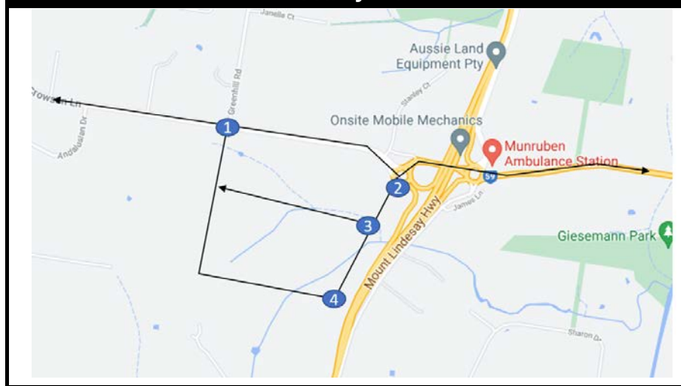
STAGE 2 DEVELOPMENT VOLUMES



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2026	2026
Design Year	2036	2036
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

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Reviewed Date:	31/07/2023
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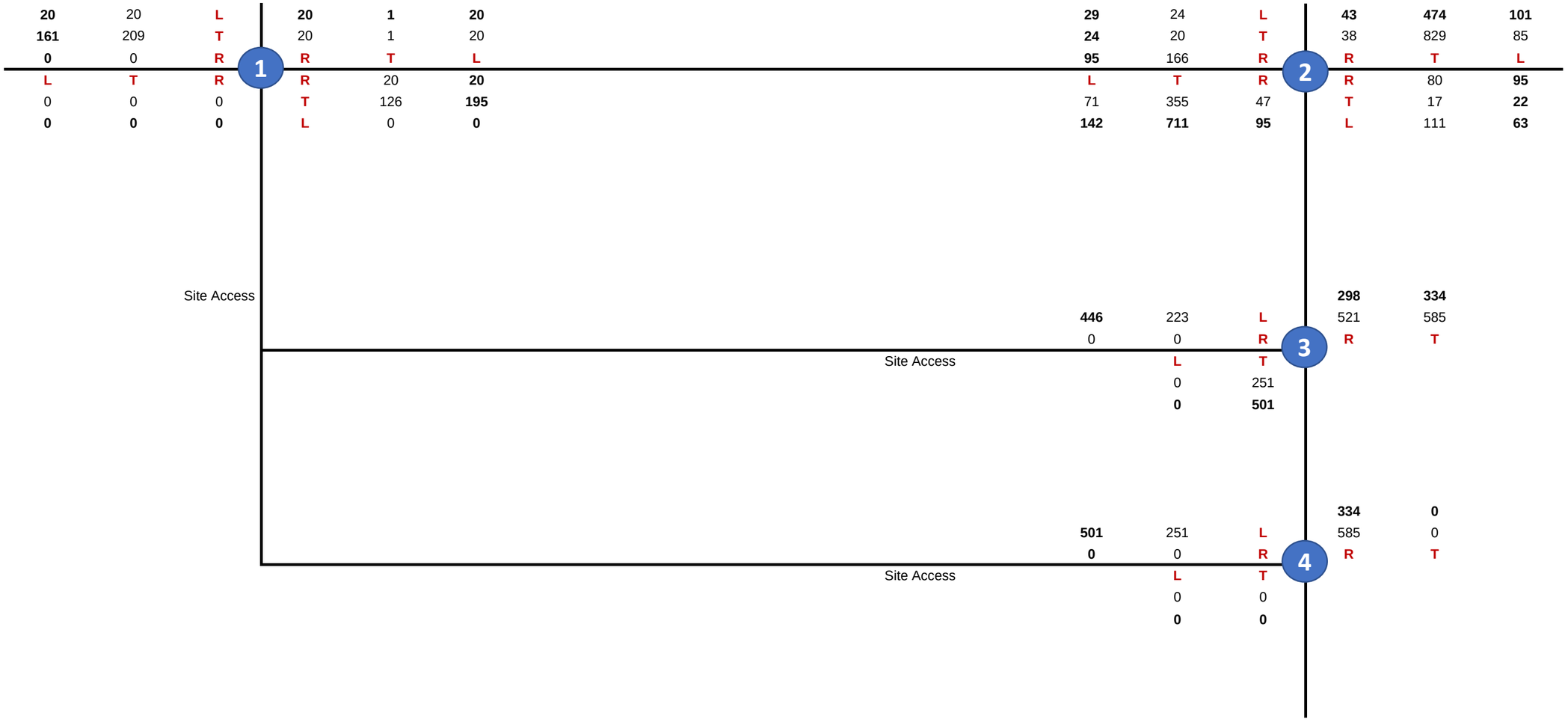
STAGE 2 DESIGN VOLUMES

2026



Locality Plan

Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2026	2026
Design Year	2036	2036
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

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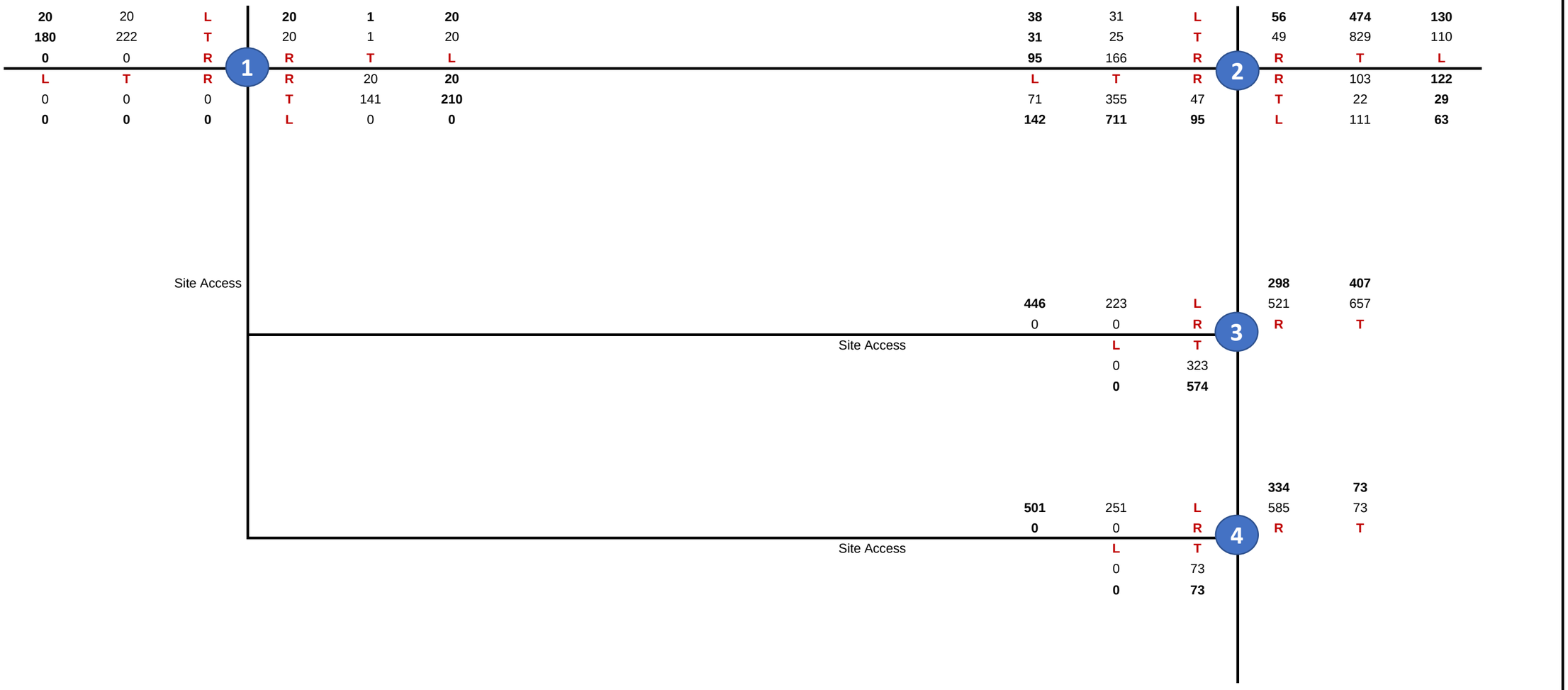
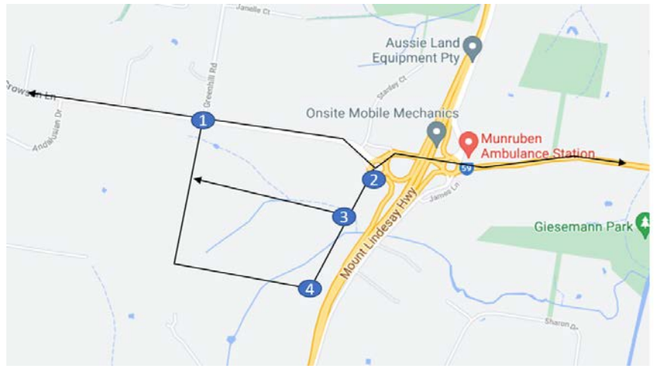
STAGE 2 DESIGN VOLUMES

2036



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2026	2026
Design Year	2036	2036
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
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Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean

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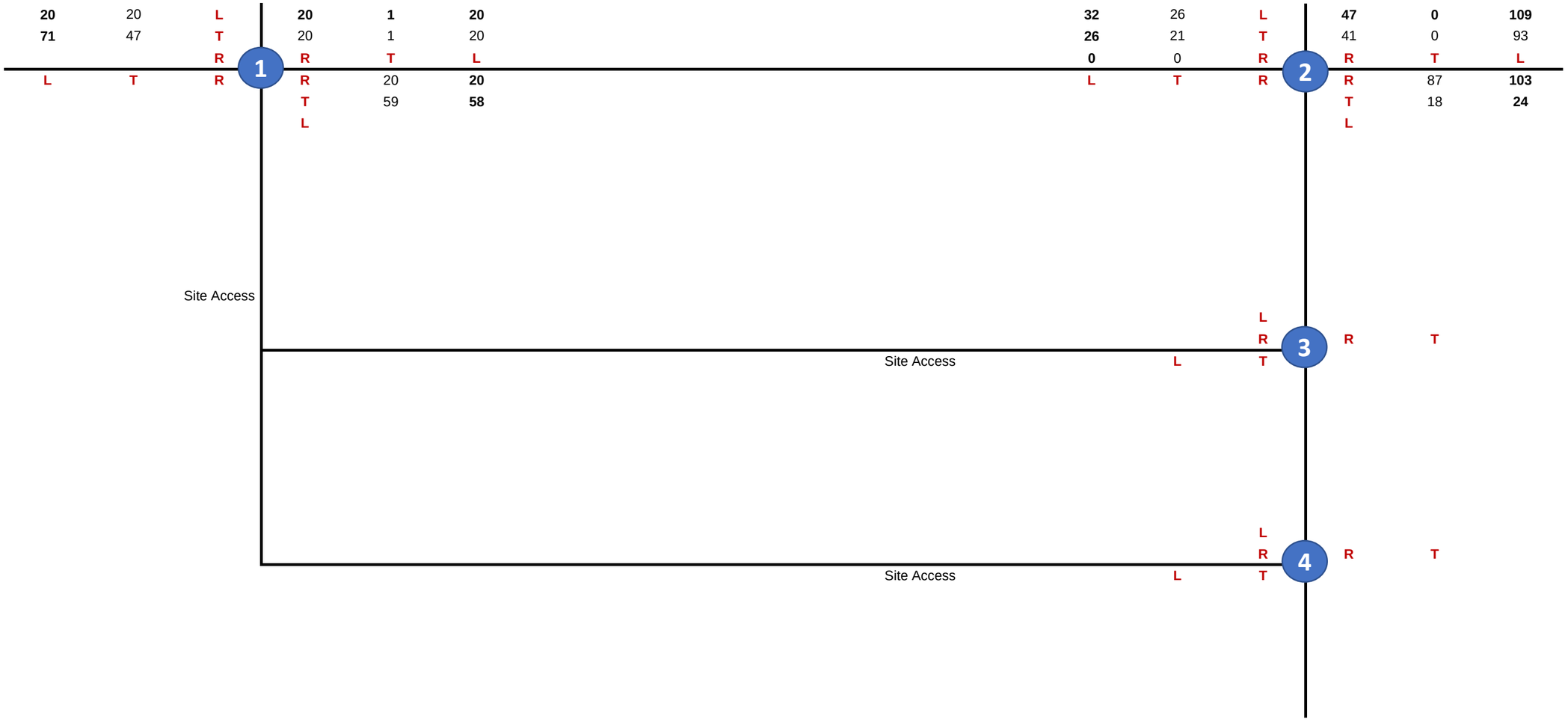
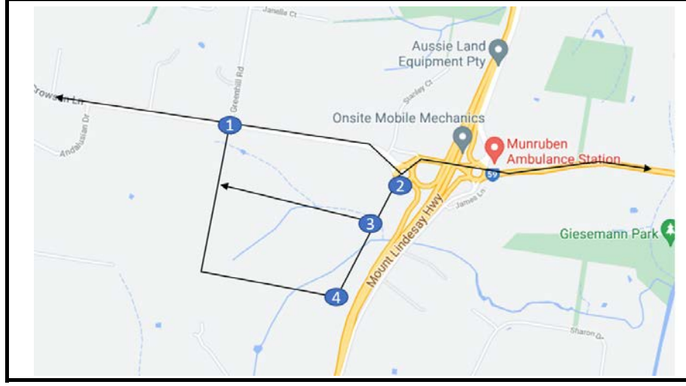
BACKGROUND VOLUMES

2029



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
Design Year	2039	2039
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

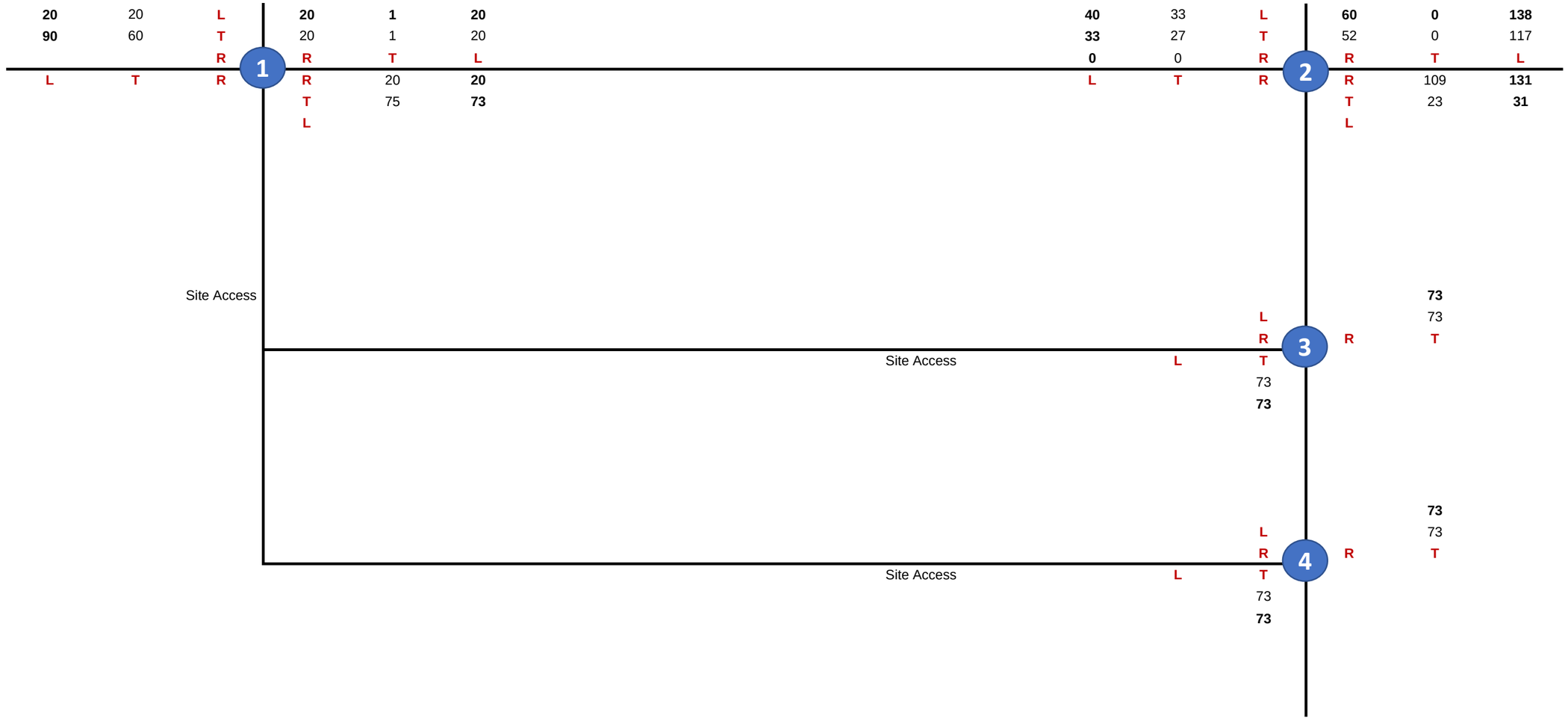
##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

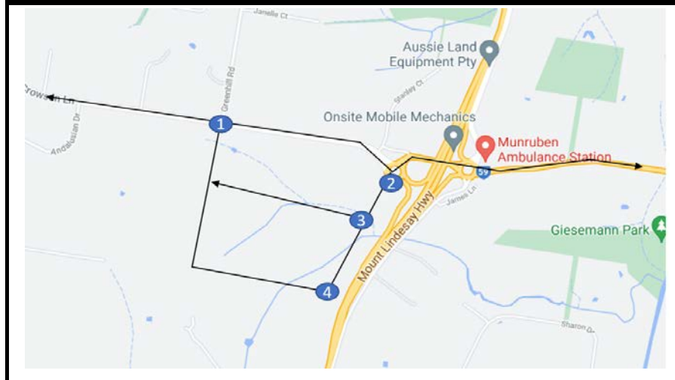
Job Number:	P5708
Prepared By:	ME
Reviewed By:	FJ
Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean

TOTAL BACKGROUND VOLUMES

2039 + FUTURE DEVELOPMENT GENERATION



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
Design Year	2039	2039
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
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Document Control

Job Number:	P5708
Prepared By:	ME
Reviewed By:	FJ
Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean

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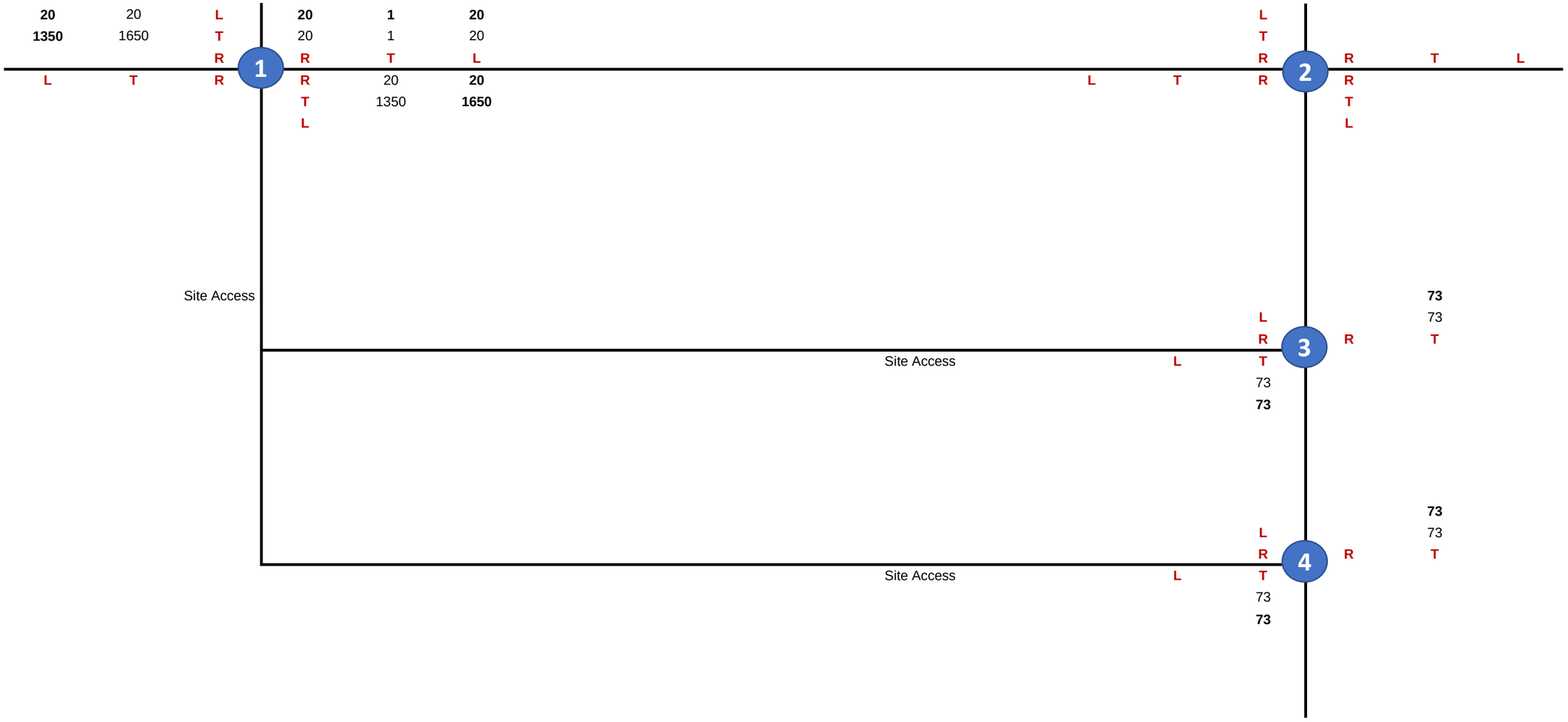
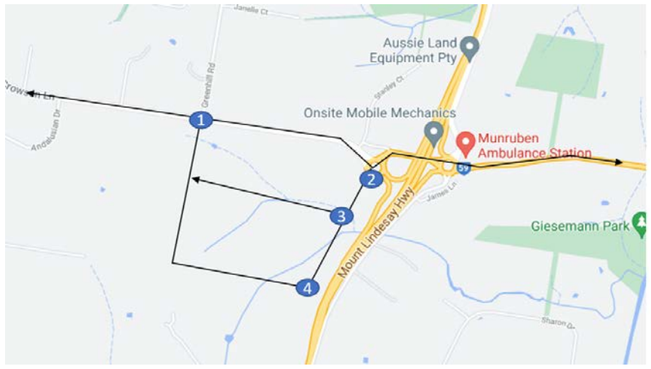
TOTAL BACKGROUND VOLUMES

2041 + FUTURE DEVELOPMENT GENERATION



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
Design Year	2039	2039
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
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Document Control

Job Number:	P5708
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Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
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File Path:	P:\P5708 North Maclean

DEVELOPMENT TRAFFIC GENERATION

Table 1. Adopted Trip Generation Rates

Land Use	AM Peak	PM Peak	Unit	Source
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Table 2. Adopted Directional Distribution

Land Use	AM Peak		PM Peak	
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Stage	Yield (sqm)
1	186,017
2	208,817
3	125,167
Total	520,001

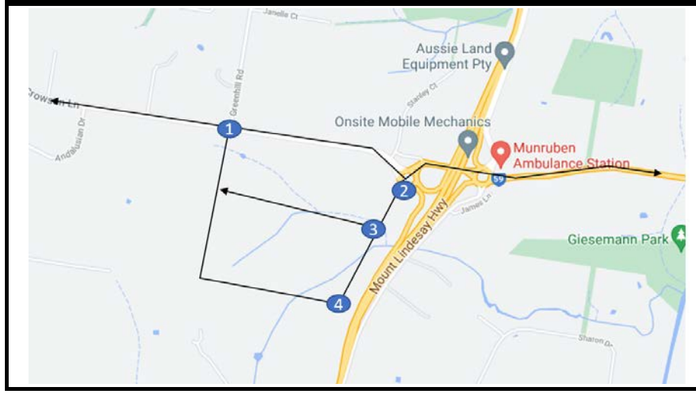
Table 4. Total Expansion Traffic Volumes

Land Use	AM			PM		
	Inbound	Outbound	Total	Inbound	Outbound	Total
1	521	223	744	298	446	744
2	585	251	835	334	501	835
3	350	150	501	200	300	501
Total	**1,456**	**624**	**2,080**	**832**	**1,248**	**2,080**

Table 5. External Traffic Distribution

Direction	%
To / from north on Mt Lindesay	65%
To / from south on Mt Lindesay	10%
To / from east on Chambers Flat	10%
To / from west on Crowson	15%

Locality Plan



Details

Intersection	#2	#1,3,4&5
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
Design Year	2039	2039
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

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File Path:	P:\P5708 North Maclean I

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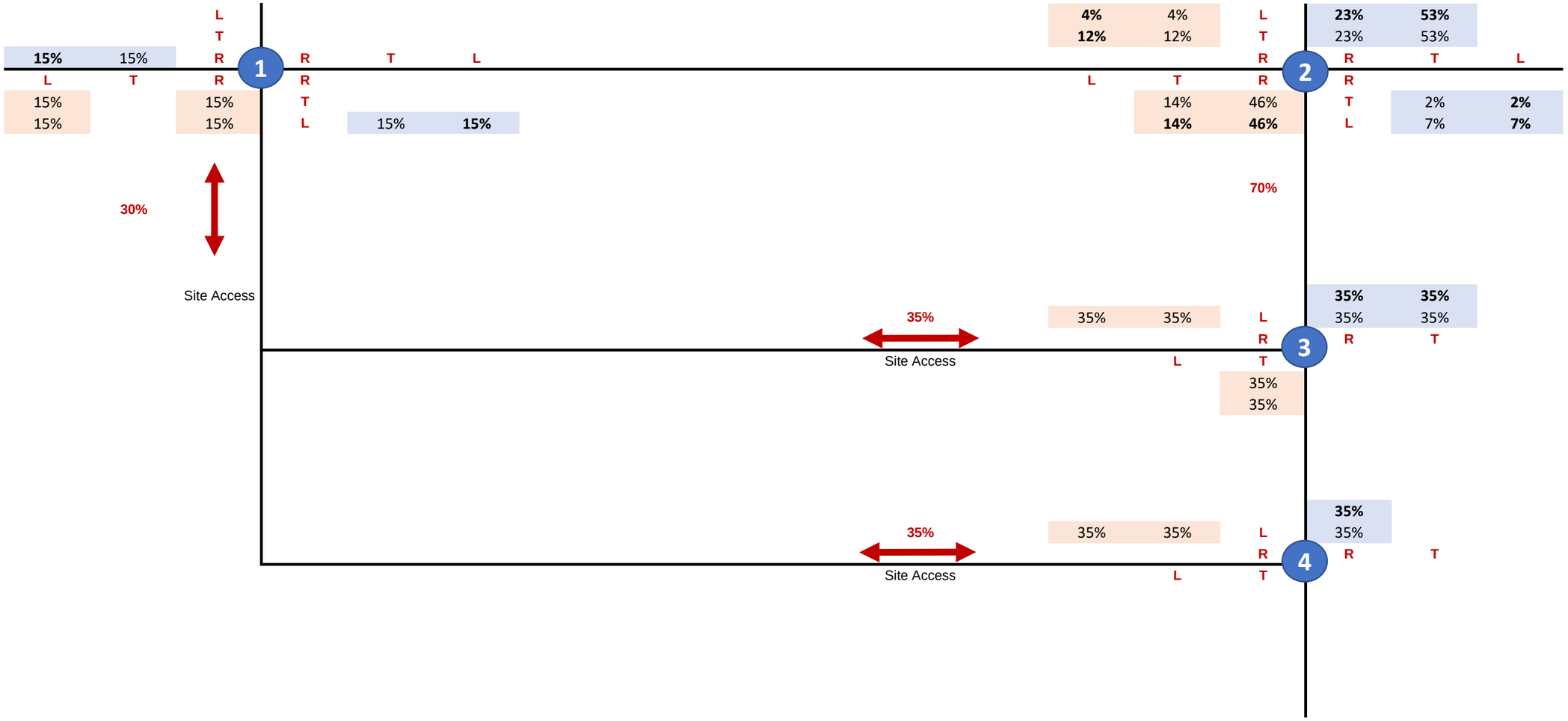
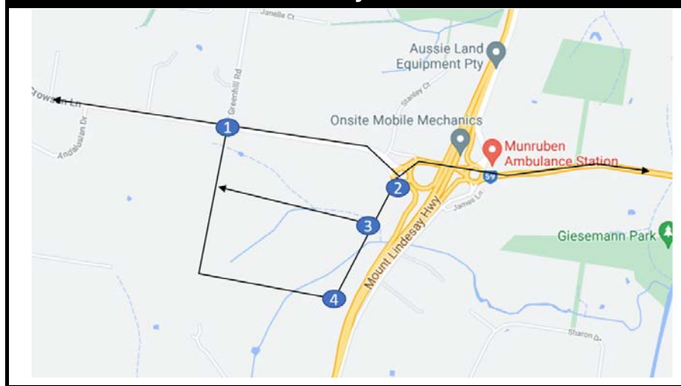
STAGE 3 DEVELOPMENT DISTRIBUTION



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
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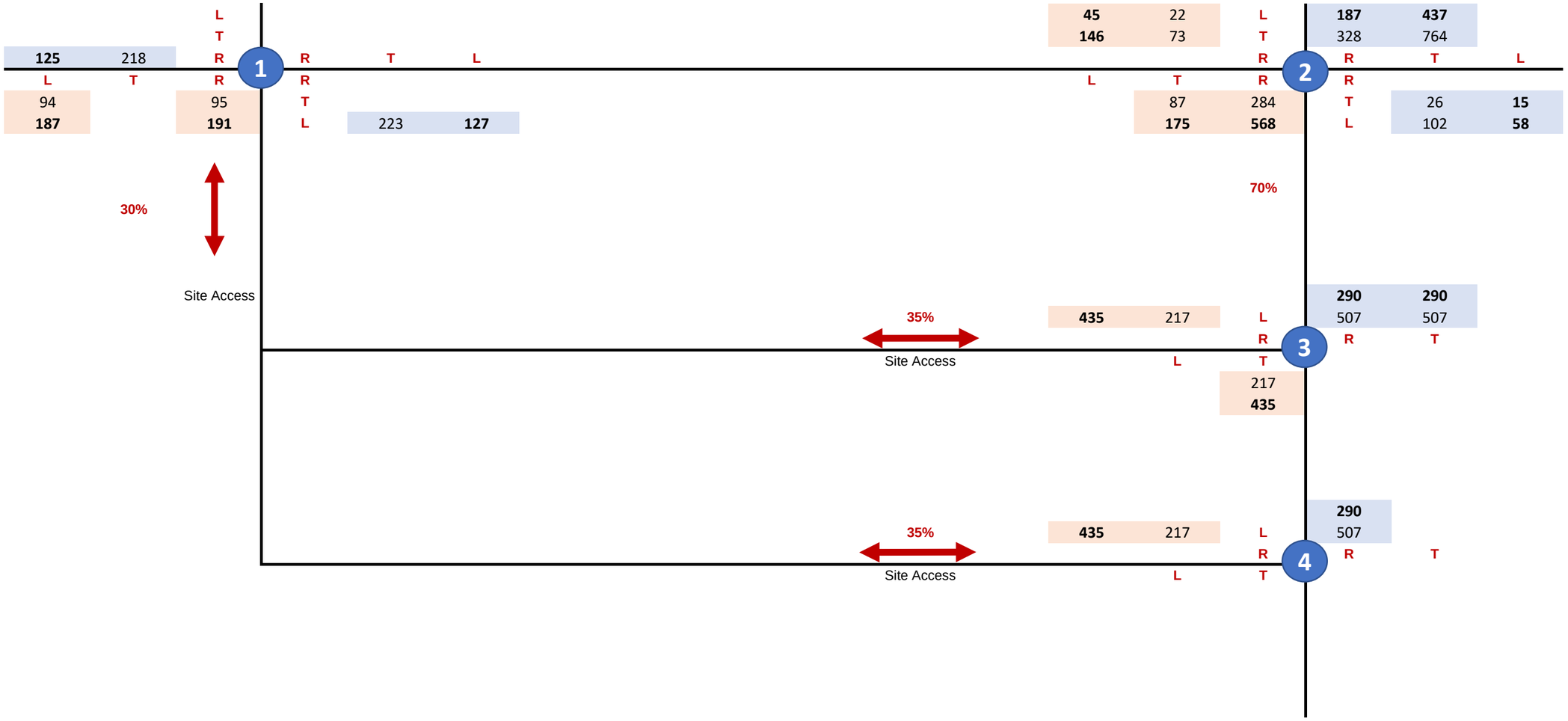
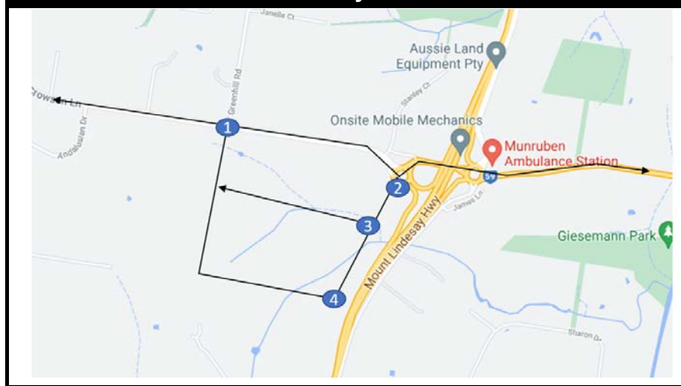
STAGE 3 DEVELOPMENT DISTRIBUTION



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
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Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

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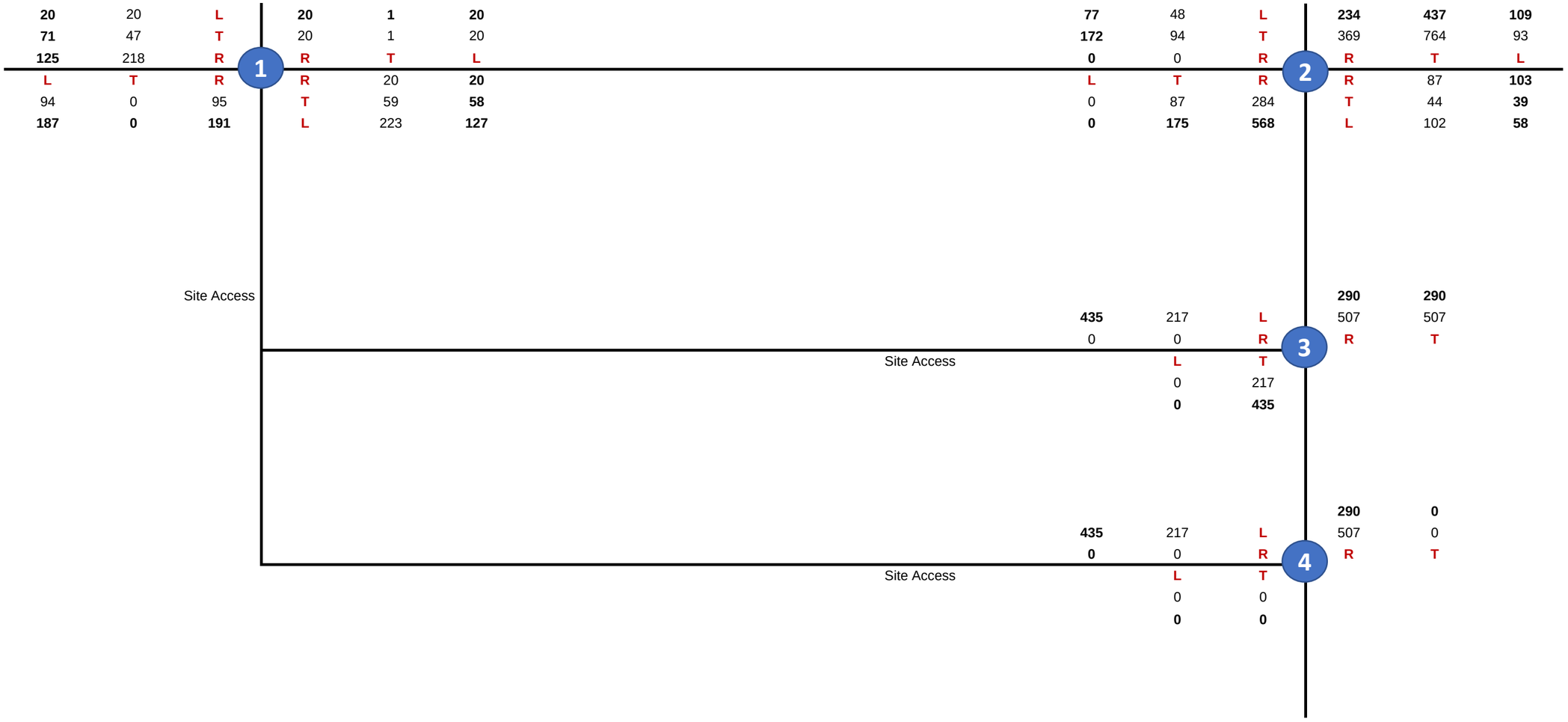
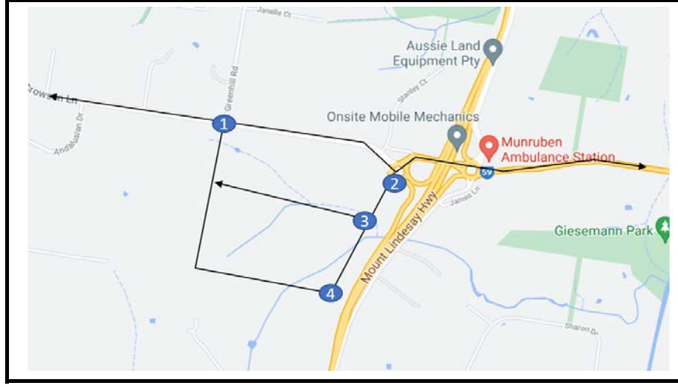
STAGE 3 DESIGN VOLUMES

2029



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
Design Year	2039	2039
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
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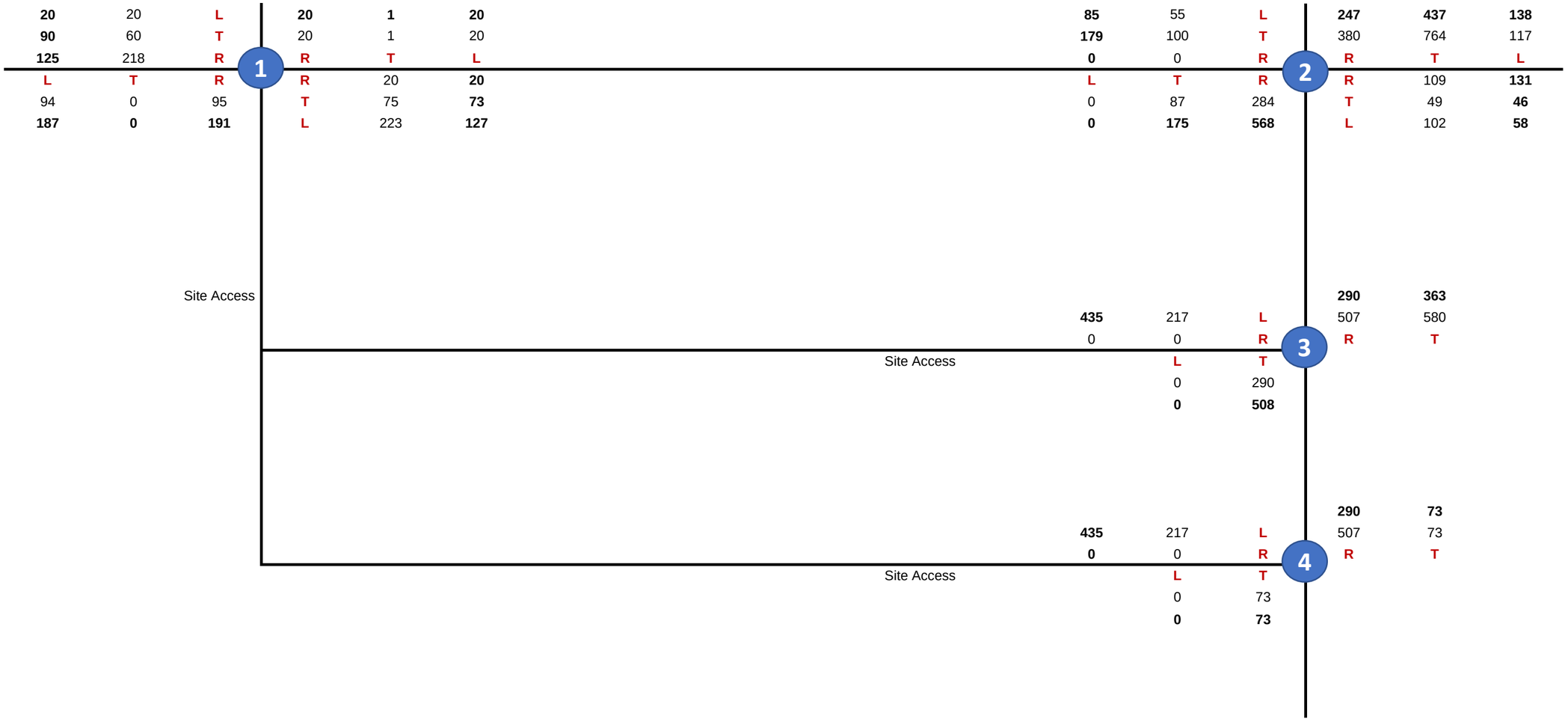
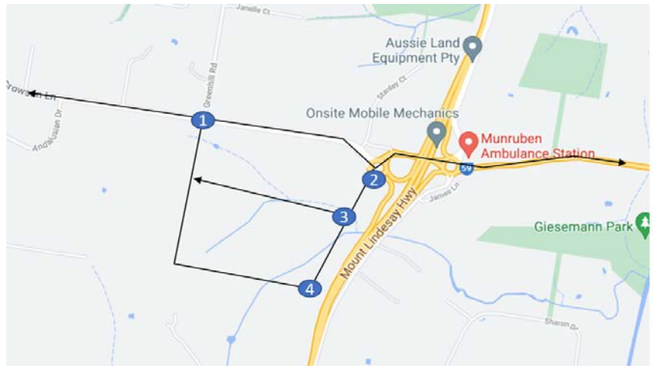
STAGE 3 DESIGN VOLUMES

2039



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
Design Year	2039	2039
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

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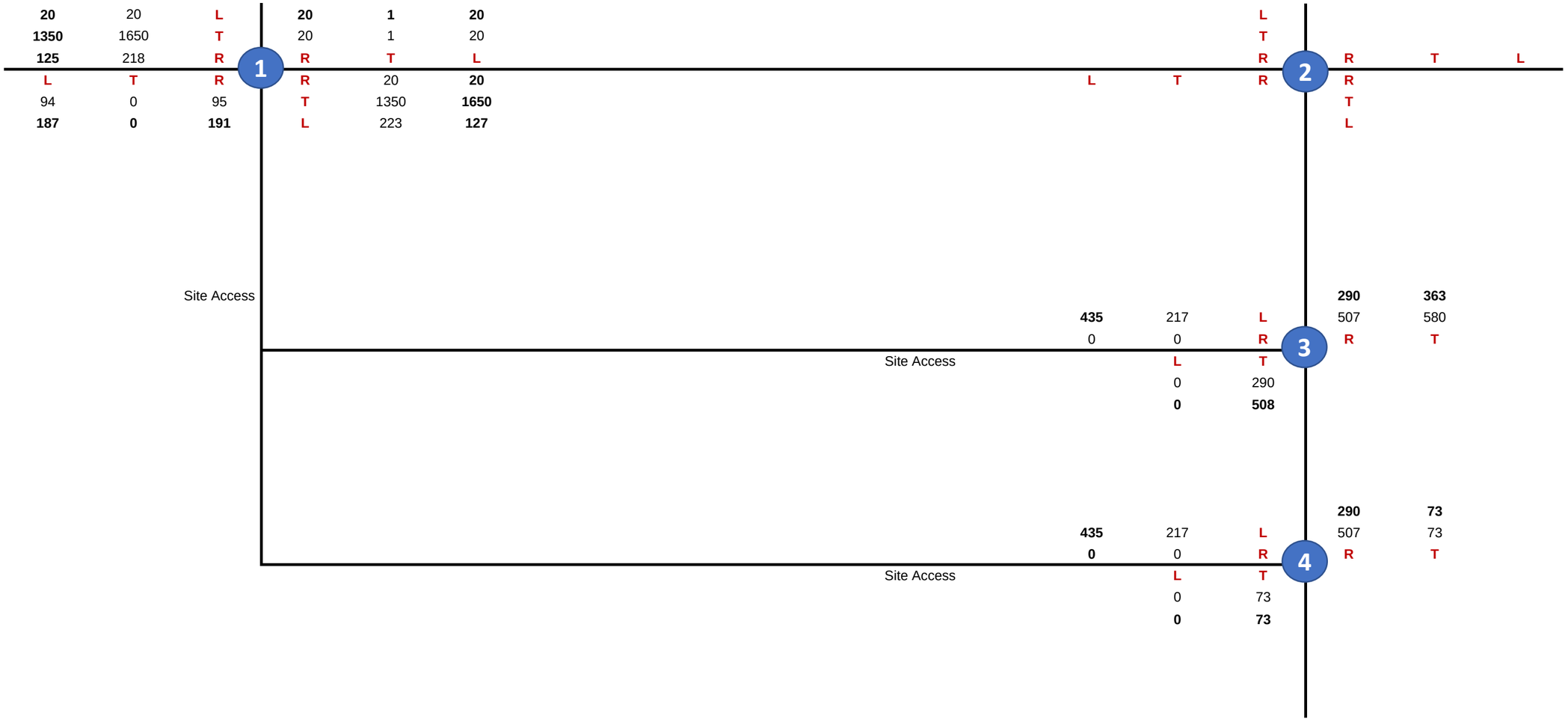
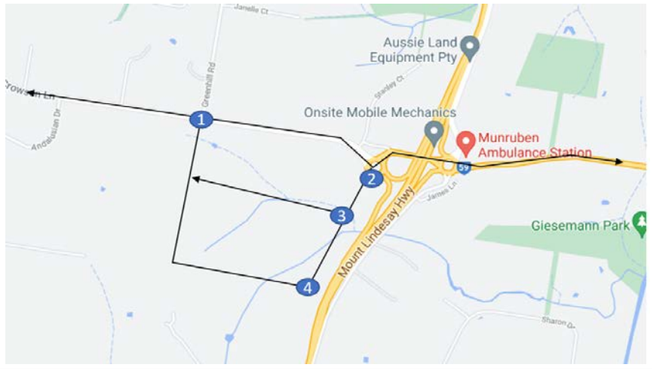
STAGE 3 DESIGN VOLUMES

2041



Locality Plan



Details

Intersection	#2	#1,3 &4
Survey Date	Nov-16	NA
Survey Year	2016	NA
Base Year	2029	2029
Design Year	2039	2039
Ultimate Year	2041	2041
Growth Factor	4.0%	4.0%

Legend

##	AM Peak Period	L	Left Turn Movement
(##)	PM Peak Period	T	Through Movement
1	Intersection ID	R	Right Turn Movement

Document Control

Job Number:	P5708
Prepared By:	ME
Reviewed By:	FJ
Job Name:	North Maclean Industrial Estate TES
Prepared Date:	31/07/2023
Reviewed Date:	31/07/2023
File Path:	P:\P5708 North Maclean

Appendix C: SIDRA Outputs

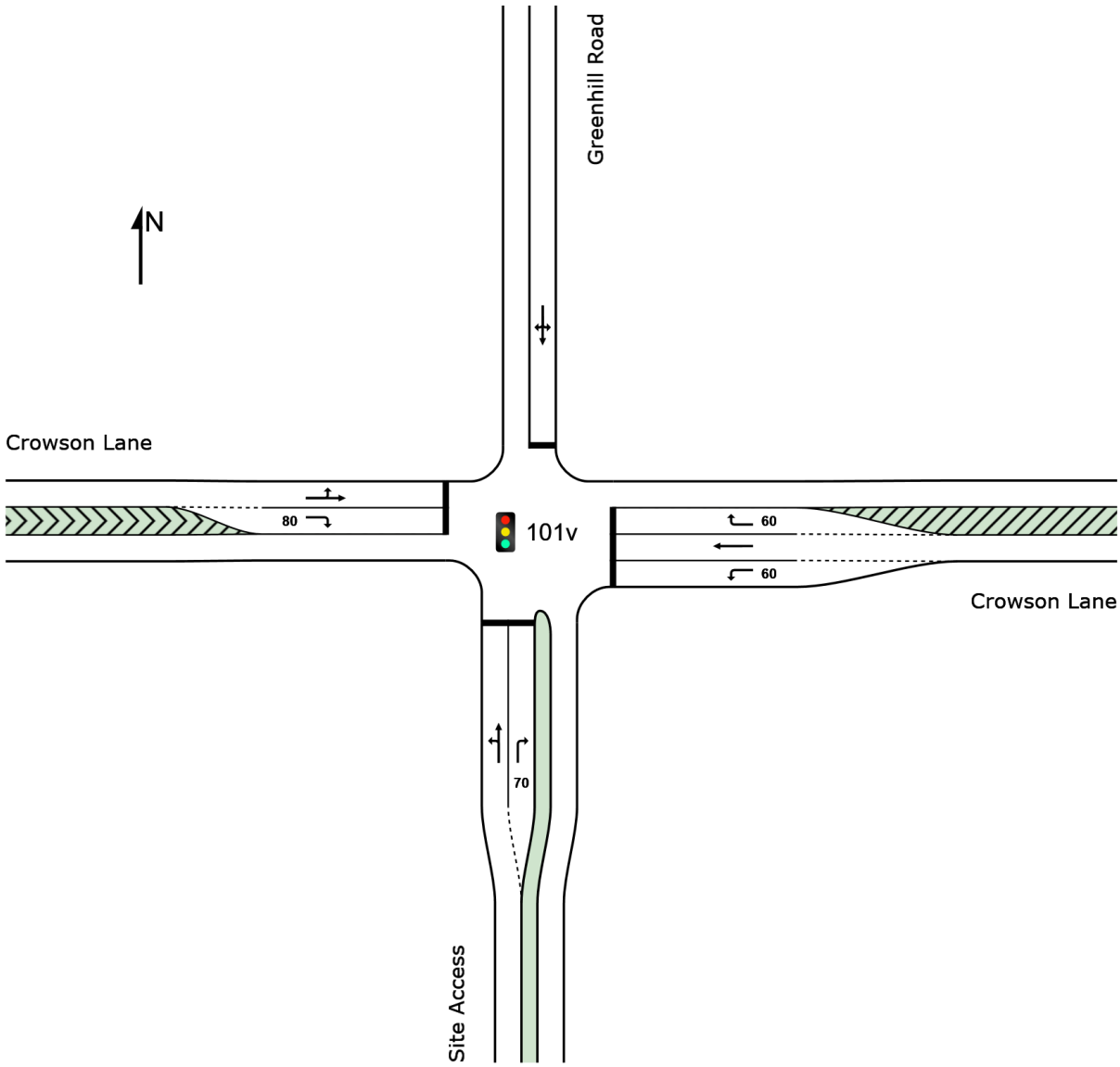
SITE LAYOUT

Site: 101v [2029 AM - BG+DEV - Interim - 2 Lanes (Site Folder: General)]

- P5708
- North Maclean Industrial Estate
- Prepared By: FJ

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

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



Organisation: BITZIOS CONSULTING | Licence: PLUS / FLOATING | Created: Monday, 31 July 2023 8:53:20 AM
Project: P:\P5708 North Maclean Industrial Estate TES\Technical\Models\SIDRA\005_TIA V1\Stage 3\Access 1\P5708.001M_Access 1 - 0.4.sip9

MOVEMENT SUMMARY

Site: 101v [2029 AM - BG+DEV - Interim - 2 Lanes (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

- P5708
- North Maclean Industrial Estate
- Prepared By: FJ

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access															
1	L2	All MCs	99	33.0	99	33.0	0.775	45.9	LOS D	3.9	34.9	1.00	0.93	1.35	32.5
2	T1	All MCs	1	33.0	1	33.0	* 0.775	40.0	LOS D	3.9	34.9	1.00	0.93	1.35	34.4
3	R2	All MCs	100	33.0	100	33.0	0.776	45.9	LOS D	3.9	34.9	1.00	0.93	1.35	32.5
Approach			200	33.0	200	33.0	0.776	45.9	LOS D	3.9	34.9	1.00	0.93	1.35	32.5
East: Crowson Lane															
4	L2	All MCs	235	33.0	235	33.0	* 0.781	27.1	LOS C	5.1	46.2	1.00	0.89	1.22	43.5
5	T1	All MCs	62	10.0	62	10.0	0.170	13.4	LOS B	1.0	7.6	0.86	0.65	0.86	61.8
6	R2	All MCs	21	10.0	21	10.0	0.121	39.5	LOS D	0.7	5.3	0.94	0.70	0.94	37.9
Approach			318	27.0	318	27.0	0.781	25.2	LOS C	5.1	46.2	0.97	0.83	1.13	45.7
North: Greenhill Road															
7	L2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
8	T1	All MCs	1	10.0	1	10.0	* 0.290	34.9	LOS C	1.5	11.3	0.97	0.73	0.97	36.1
9	R2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
Approach			43	10.0	43	10.0	0.290	40.4	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
West: Crowson Lane															
10	L2	All MCs	21	10.0	21	10.0	0.102	22.0	LOS C	1.5	11.7	0.67	0.59	0.67	49.9
11	T1	All MCs	49	10.0	49	10.0	0.102	14.8	LOS B	1.5	11.7	0.67	0.59	0.67	58.4
12	R2	All MCs	229	33.0	229	33.0	* 0.763	40.6	LOS D	8.3	74.9	1.00	0.90	1.19	37.4
Approach			300	27.6	300	27.6	0.763	35.0	LOS D	8.3	74.9	0.92	0.82	1.07	40.5
All Vehicles			861	27.7	861	27.7	0.781	34.2	LOS C	8.3	74.9	0.96	0.85	1.15	39.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101v [2029 PM - BG+DEV - Interim - 2 lanes (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

- P5708
- North Maclean Industrial Estate
- Prepared By: FJ

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access															
1	L2	All MCs	197	33.0	197	33.0	0.709	38.0	LOS D	7.0	62.7	0.99	0.88	1.12	34.9
2	T1	All MCs	1	33.0	1	33.0	0.709	32.1	LOS C	7.0	62.7	0.99	0.88	1.12	37.1
3	R2	All MCs	201	33.0	201	33.0	*0.720	38.4	LOS D	7.1	64.1	0.99	0.89	1.14	34.9
Approach			399	33.0	399	33.0	0.720	38.2	LOS D	7.1	64.1	0.99	0.88	1.13	34.9
East: Crowson Lane															
4	L2	All MCs	134	33.0	134	33.0	*0.519	24.6	LOS C	2.9	26.5	0.95	0.79	0.95	44.8
5	T1	All MCs	61	10.0	61	10.0	0.195	15.6	LOS B	1.2	9.4	0.89	0.67	0.89	59.7
6	R2	All MCs	21	10.0	21	10.0	0.142	40.9	LOS D	0.7	5.4	0.96	0.70	0.96	37.4
Approach			216	24.2	216	24.2	0.519	23.6	LOS C	2.9	26.5	0.94	0.74	0.94	47.2
North: Greenhill Road															
7	L2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
8	T1	All MCs	1	10.0	1	10.0	*0.290	34.9	LOS C	1.5	11.3	0.97	0.73	0.97	36.1
9	R2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
Approach			43	10.0	43	10.0	0.290	40.4	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
West: Crowson Lane															
10	L2	All MCs	21	10.0	21	10.0	0.177	26.9	LOS C	2.5	18.6	0.78	0.65	0.78	47.1
11	T1	All MCs	75	10.0	75	10.0	0.177	19.8	LOS B	2.5	18.6	0.78	0.65	0.78	54.6
12	R2	All MCs	132	33.0	132	33.0	*0.681	42.6	LOS D	4.8	42.7	1.00	0.85	1.15	36.7
Approach			227	23.3	227	23.3	0.681	33.6	LOS C	4.8	42.7	0.91	0.76	0.99	42.1
All Vehicles			885	27.3	885	27.3	0.720	33.6	LOS C	7.1	64.1	0.95	0.81	1.04	39.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101v [2039 AM - BG+DEV - Interim - 2 lanes (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

- P5708
- North Maclean Industrial Estate
- Prepared By: FJ

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access															
1	L2	All MCs	99	33.0	99	33.0	0.775	45.9	LOS D	3.9	34.9	1.00	0.93	1.35	32.5
2	T1	All MCs	1	33.0	1	33.0	* 0.775	40.0	LOS D	3.9	34.9	1.00	0.93	1.35	34.4
3	R2	All MCs	100	33.0	100	33.0	0.776	45.9	LOS D	3.9	34.9	1.00	0.93	1.35	32.5
Approach			200	33.0	200	33.0	0.776	45.9	LOS D	3.9	34.9	1.00	0.93	1.35	32.5
East: Crowson Lane															
4	L2	All MCs	235	33.0	235	33.0	* 0.781	27.1	LOS C	5.1	46.2	1.00	0.89	1.22	43.5
5	T1	All MCs	79	10.0	79	10.0	0.216	13.6	LOS B	1.3	9.8	0.87	0.67	0.87	61.7
6	R2	All MCs	21	10.0	21	10.0	0.121	39.5	LOS D	0.7	5.3	0.94	0.70	0.94	37.9
Approach			335	26.1	335	26.1	0.781	24.7	LOS C	5.1	46.2	0.97	0.83	1.12	46.3
North: Greenhill Road															
7	L2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
8	T1	All MCs	1	10.0	1	10.0	* 0.290	34.9	LOS C	1.5	11.3	0.97	0.73	0.97	36.1
9	R2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
Approach			43	10.0	43	10.0	0.290	40.4	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
West: Crowson Lane															
10	L2	All MCs	21	10.0	21	10.0	0.121	22.1	LOS C	1.9	14.1	0.68	0.59	0.68	50.0
11	T1	All MCs	63	10.0	63	10.0	0.121	15.0	LOS B	1.9	14.1	0.68	0.59	0.68	58.6
12	R2	All MCs	229	33.0	229	33.0	* 0.763	40.6	LOS D	8.3	74.9	1.00	0.90	1.19	37.4
Approach			314	26.8	314	26.8	0.763	34.2	LOS C	8.3	74.9	0.91	0.81	1.05	41.1
All Vehicles			892	27.1	892	27.1	0.781	33.5	LOS C	8.3	74.9	0.95	0.84	1.14	40.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101v [2039 PM - BG+DEV - Interim - 2 lanes (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

- P5708
- North Maclean Industrial Estate
- Prepared By: FJ

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access															
1	L2	All MCs	197	33.0	197	33.0	0.709	38.0	LOS D	7.0	62.7	0.99	0.88	1.12	34.9
2	T1	All MCs	1	33.0	1	33.0	0.709	32.1	LOS C	7.0	62.7	0.99	0.88	1.12	37.1
3	R2	All MCs	201	33.0	201	33.0	*0.720	38.4	LOS D	7.1	64.1	0.99	0.89	1.14	34.9
Approach			399	33.0	399	33.0	0.720	38.2	LOS D	7.1	64.1	0.99	0.88	1.13	34.9
East: Crowson Lane															
4	L2	All MCs	134	33.0	134	33.0	*0.519	24.6	LOS C	2.9	26.5	0.95	0.79	0.95	44.8
5	T1	All MCs	77	10.0	77	10.0	0.245	15.7	LOS B	1.6	11.9	0.90	0.69	0.90	59.5
6	R2	All MCs	21	10.0	21	10.0	0.142	40.9	LOS D	0.7	5.4	0.96	0.70	0.96	37.4
Approach			232	23.3	232	23.3	0.519	23.1	LOS C	2.9	26.5	0.94	0.74	0.94	47.9
North: Greenhill Road															
7	L2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
8	T1	All MCs	1	10.0	1	10.0	*0.290	34.9	LOS C	1.5	11.3	0.97	0.73	0.97	36.1
9	R2	All MCs	21	10.0	21	10.0	0.290	40.5	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
Approach			43	10.0	43	10.0	0.290	40.4	LOS D	1.5	11.3	0.97	0.73	0.97	36.3
West: Crowson Lane															
10	L2	All MCs	21	10.0	21	10.0	0.213	27.2	LOS C	3.0	22.8	0.79	0.65	0.79	47.1
11	T1	All MCs	95	10.0	95	10.0	0.213	20.0	LOS C	3.0	22.8	0.79	0.65	0.79	54.6
12	R2	All MCs	132	33.0	132	33.0	*0.681	42.6	LOS D	4.8	42.7	1.00	0.85	1.15	36.7
Approach			247	22.2	247	22.2	0.681	32.6	LOS C	4.8	42.7	0.90	0.76	0.98	42.9
All Vehicles			921	26.6	921	26.6	0.720	33.0	LOS C	7.1	64.1	0.95	0.81	1.03	39.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

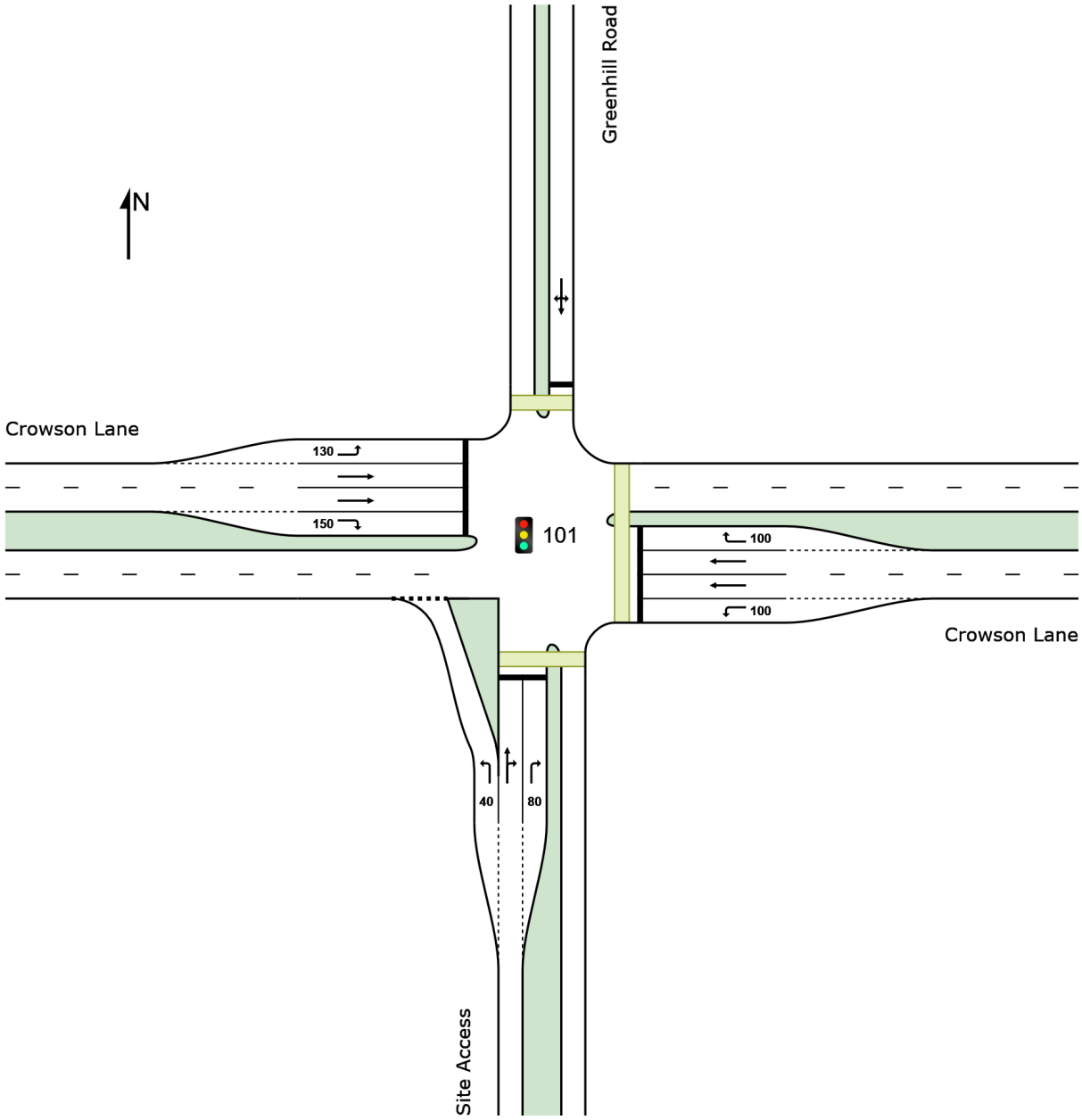
SITE LAYOUT

Site: 101 [2041 AM - BG+DEV - Ultimate (Site Folder: General)]

- P5708
- North Maclean Industrial Subdivision
- Prepared By: FJ

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

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



Organisation: BITZIOS CONSULTING | Licence: PLUS / FLOATING | Created: Monday, 31 July 2023 8:53:27 AM
Project: P:\P5708 North Maclean Industrial Estate TES\Technical\Models\SIDRA\005_TIA V1\Stage 3\Access 1\P5708.001M_Access 1 - 0.4.sip9

MOVEMENT SUMMARY

Site: 101 [2041 AM - BG+DEV - Ultimate (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

- P5708
- North Maclean Industrial Subdivision
- Prepared By: FJ

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access															
1	L2	All MCs	99	33.0	99	33.0	0.173	19.9	LOS B	3.0	27.3	0.53	0.69	0.53	42.5
2	T1	All MCs	1	33.0	1	33.0	* 0.784	81.1	LOS F	3.8	34.5	1.00	0.88	1.29	24.9
3	R2	All MCs	100	33.0	100	33.0	0.784	87.1	LOS F	3.8	34.5	1.00	0.88	1.29	24.0
Approach			200	33.0	200	33.0	0.784	53.8	LOS D	3.8	34.5	0.77	0.78	0.91	30.6
East: Crowson Lane															
4	L2	All MCs	235	33.0	235	33.0	0.308	38.2	LOS D	9.2	82.9	0.62	0.77	0.62	42.5
5	T1	All MCs	1421	10.0	1421	10.0	* 0.819	42.4	LOS D	43.0	326.6	0.91	0.84	0.92	47.7
6	R2	All MCs	21	10.0	21	10.0	0.283	95.2	LOS F	1.5	11.3	1.00	0.71	1.00	26.5
Approach			1677	13.2	1677	13.2	0.819	42.4	LOS D	43.0	326.6	0.87	0.83	0.88	46.5
North: Greenhill Road															
7	L2	All MCs	21	10.0	21	10.0	0.300	73.3	LOS E	2.9	21.8	0.98	0.74	0.98	27.6
8	T1	All MCs	1	10.0	1	10.0	* 0.300	66.6	LOS E	2.9	21.8	0.98	0.74	0.98	27.4
9	R2	All MCs	21	10.0	21	10.0	0.300	72.3	LOS E	2.9	21.8	0.98	0.74	0.98	27.6
Approach			43	10.0	43	10.0	0.300	72.6	LOS E	2.9	21.8	0.98	0.74	0.98	27.6
West: Crowson Lane															
10	L2	All MCs	21	10.0	21	10.0	0.019	19.9	LOS B	0.5	3.7	0.37	0.67	0.37	50.5
11	T1	All MCs	1737	10.0	1737	10.0	0.734	19.3	LOS B	38.9	295.4	0.72	0.66	0.72	58.6
12	R2	All MCs	229	33.0	229	33.0	* 0.822	75.4	LOS E	16.5	147.8	1.00	0.92	1.15	28.1
Approach			1987	12.7	1987	12.7	0.822	25.8	LOS C	38.9	295.4	0.75	0.69	0.77	52.0
All Vehicles			3907	13.9	3907	13.9	0.822	34.9	LOS C	43.0	326.6	0.80	0.75	0.82	47.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Site Access												

P1	Full	10	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0	0.92
East: Crowson Lane												
P2	Full	10	11	64.2	LOS F	0.0	0.0	0.96	0.96	218.0	200.0	0.92
North: Greenhill Road												
P3	Full	15	16	64.2	LOS F	0.1	0.1	0.96	0.96	218.0	200.0	0.92
All Pedestrians		35	37	64.2	LOS F	0.1	0.1	0.96	0.96	218.0	200.0	0.92

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

MOVEMENT SUMMARY

Site: 101 [2041 PM - BG+DEV - Ultimate (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

- P5708
- North Maclean Industrial Subdivision
- Prepared By: FJ

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Site Access															
1	L2	All MCs	197	33.0	197	33.0	0.431	33.1	LOS C	9.1	81.4	0.71	0.77	0.71	38.0
2	T1	All MCs	1	33.0	1	33.0	* 0.840	86.5	LOS F	8.1	73.0	1.00	0.94	1.27	24.5
3	R2	All MCs	201	33.0	201	33.0	0.840	91.0	LOS F	8.1	73.0	1.00	0.94	1.27	23.6
Approach			399	33.0	399	33.0	0.840	62.4	LOS E	9.1	81.4	0.86	0.86	1.00	29.0
East: Crowson Lane															
4	L2	All MCs	134	33.0	134	33.0	0.153	36.2	LOS D	4.4	39.6	0.49	0.73	0.49	45.8
5	T1	All MCs	1737	10.0	1737	10.0	* 0.866	44.8	LOS D	56.1	426.5	0.92	0.86	0.94	48.1
6	R2	All MCs	21	10.0	21	10.0	0.304	103.2	LOS F	1.6	12.2	1.00	0.71	1.00	25.4
Approach			1892	11.6	1892	11.6	0.866	44.9	LOS D	56.1	426.5	0.89	0.85	0.91	47.5
North: Greenhill Road															
7	L2	All MCs	21	10.0	21	10.0	0.311	78.2	LOS E	3.1	23.5	0.98	0.74	0.98	26.5
8	T1	All MCs	1	10.0	1	10.0	* 0.311	72.6	LOS E	3.1	23.5	0.98	0.74	0.98	26.4
9	R2	All MCs	21	10.0	21	10.0	0.311	78.3	LOS E	3.1	23.5	0.98	0.74	0.98	26.5
Approach			43	10.0	43	10.0	0.311	78.1	LOS E	3.1	23.5	0.98	0.74	0.98	26.5
West: Crowson Lane															
10	L2	All MCs	21	10.0	21	10.0	0.019	17.6	LOS B	0.5	4.1	0.38	0.67	0.38	49.7
11	T1	All MCs	1421	10.0	1421	10.0	0.607	16.9	LOS B	29.9	227.4	0.64	0.59	0.64	58.6
12	R2	All MCs	132	33.0	132	33.0	* 0.875	92.4	LOS F	10.8	96.7	1.00	0.95	1.30	24.6
Approach			1574	11.9	1574	11.9	0.875	23.2	LOS C	29.9	227.4	0.67	0.62	0.69	52.4
All Vehicles			3907	13.9	3907	13.9	0.875	38.3	LOS D	56.1	426.5	0.80	0.76	0.83	45.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Site Access												

P1	Full	10	11	69.2	LOS F	0.0	0.0	0.96	0.96	223.0	200.0	0.90
East: Crowson Lane												
P2	Full	10	11	69.2	LOS F	0.0	0.0	0.96	0.96	223.0	200.0	0.90
North: Greenhill Road												
P3	Full	10	11	69.2	LOS F	0.0	0.0	0.96	0.96	223.0	200.0	0.90
All Pedestrians		30	32	69.2	LOS F	0.0	0.0	0.96	0.96	223.0	200.0	0.90

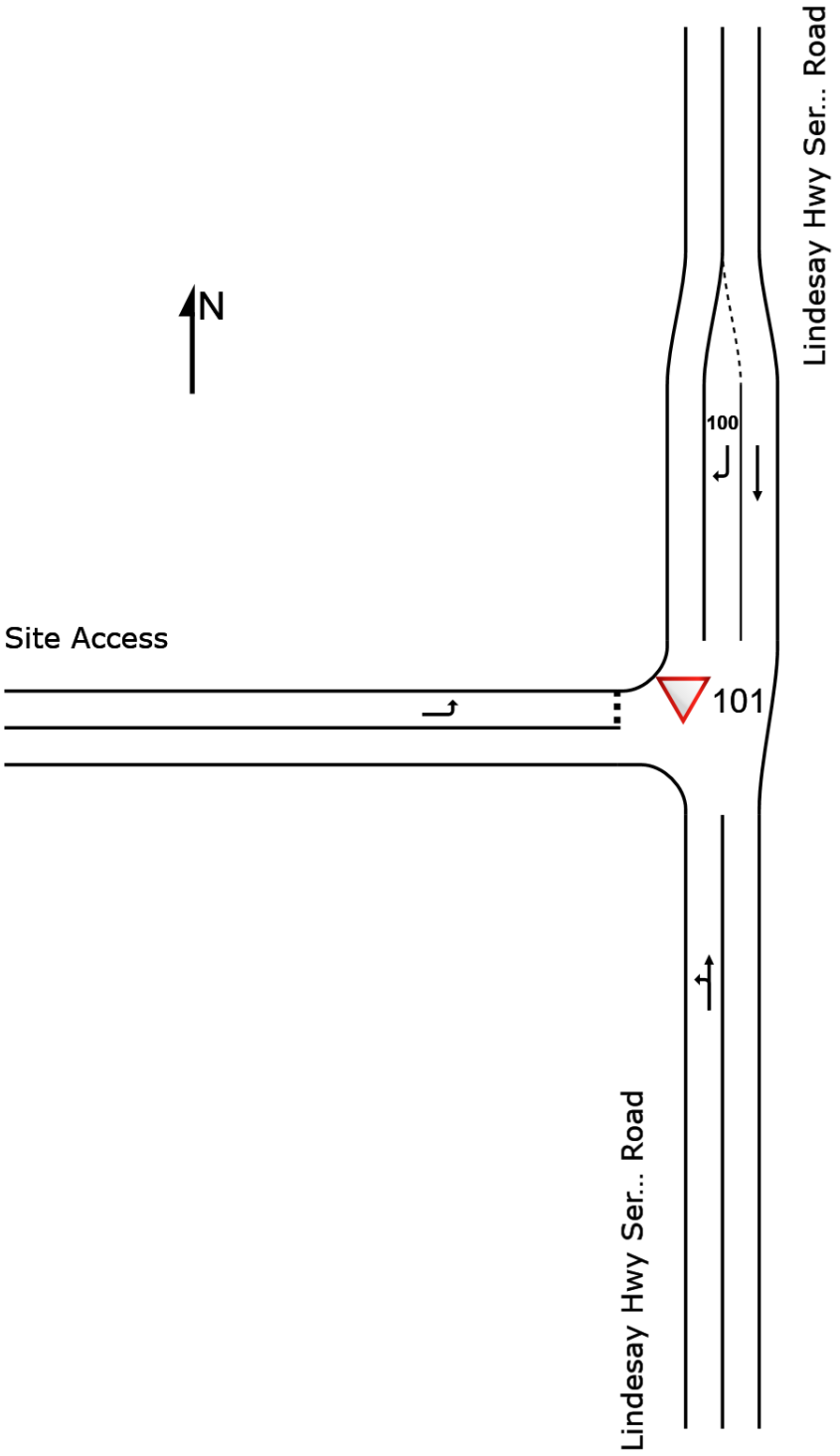
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 101 [2024 AM BG + DEV (Site Folder: General)]

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [2024 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.001	5.9	LOS A	0.0	0.0	0.00	0.29	0.00	53.6
2	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			2	33.0	2	33.0	0.001	3.0	NA	0.0	0.0	0.00	0.29	0.00	55.4
North: Lindesay Hwy Service Road															
8	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	548	33.0	548	33.0	0.356	5.9	LOS A	2.3	20.9	0.03	0.59	0.03	51.1
Approach			549	33.0	549	33.0	0.356	5.8	NA	2.3	20.9	0.03	0.59	0.03	51.1
West: Site Access															
10	L2	All MCs	235	33.0	235	33.0	0.167	5.9	LOS A	0.8	6.9	0.02	0.56	0.02	51.5
Approach			235	33.0	235	33.0	0.167	5.9	LOS A	0.8	6.9	0.02	0.56	0.02	51.5
All Vehicles			786	33.0	786	33.0	0.356	5.9	NA	2.3	20.9	0.03	0.58	0.03	51.3

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2024 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.001	5.9	LOS A	0.0	0.0	0.00	0.29	0.00	53.6
2	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			2	33.0	2	33.0	0.001	3.0	NA	0.0	0.0	0.00	0.29	0.00	55.4
North: Lindesay Hwy Service Road															
8	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	314	33.0	314	33.0	0.204	5.9	LOS A	1.1	10.0	0.03	0.59	0.03	51.1
Approach			315	33.0	315	33.0	0.204	5.8	NA	1.1	10.0	0.03	0.59	0.03	51.2
West: Site Access															
10	L2	All MCs	469	33.0	469	33.0	0.335	5.9	LOS A	1.9	16.9	0.02	0.56	0.02	51.5
Approach			469	33.0	469	33.0	0.335	5.9	LOS A	1.9	16.9	0.02	0.56	0.02	51.5
All Vehicles			786	33.0	786	33.0	0.335	5.9	NA	1.9	16.9	0.02	0.57	0.02	51.4

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2034 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.049	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
2	T1	All MCs	77	33.0	77	33.0	0.049	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			78	33.0	78	33.0	0.049	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	77	33.0	77	33.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	548	33.0	548	33.0	0.390	6.4	LOS A	2.5	22.5	0.29	0.56	0.29	50.5
Approach			625	33.0	625	33.0	0.390	5.6	NA	2.5	22.5	0.26	0.49	0.26	51.5
West: Site Access															
10	L2	All MCs	235	33.0	235	33.0	0.183	6.4	LOS A	0.8	7.5	0.22	0.55	0.22	50.9
Approach			235	33.0	235	33.0	0.183	6.4	LOS A	0.8	7.5	0.22	0.55	0.22	50.9
All Vehicles			938	33.0	938	33.0	0.390	5.4	NA	2.5	22.5	0.23	0.47	0.23	51.9

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2034 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.049	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
2	T1	All MCs	77	33.0	77	33.0	0.049	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			78	33.0	78	33.0	0.049	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	77	33.0	77	33.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	314	33.0	314	33.0	0.223	6.3	LOS A	1.2	10.7	0.25	0.57	0.25	50.6
Approach			391	33.0	391	33.0	0.223	5.1	NA	1.2	10.7	0.20	0.45	0.20	52.2
West: Site Access															
10	L2	All MCs	469	33.0	469	33.0	0.366	6.5	LOS A	2.0	18.3	0.27	0.54	0.27	50.8
Approach			469	33.0	469	33.0	0.366	6.5	LOS A	2.0	18.3	0.27	0.54	0.27	50.8
All Vehicles			938	33.0	938	33.0	0.366	5.4	NA	2.0	18.3	0.22	0.46	0.22	52.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

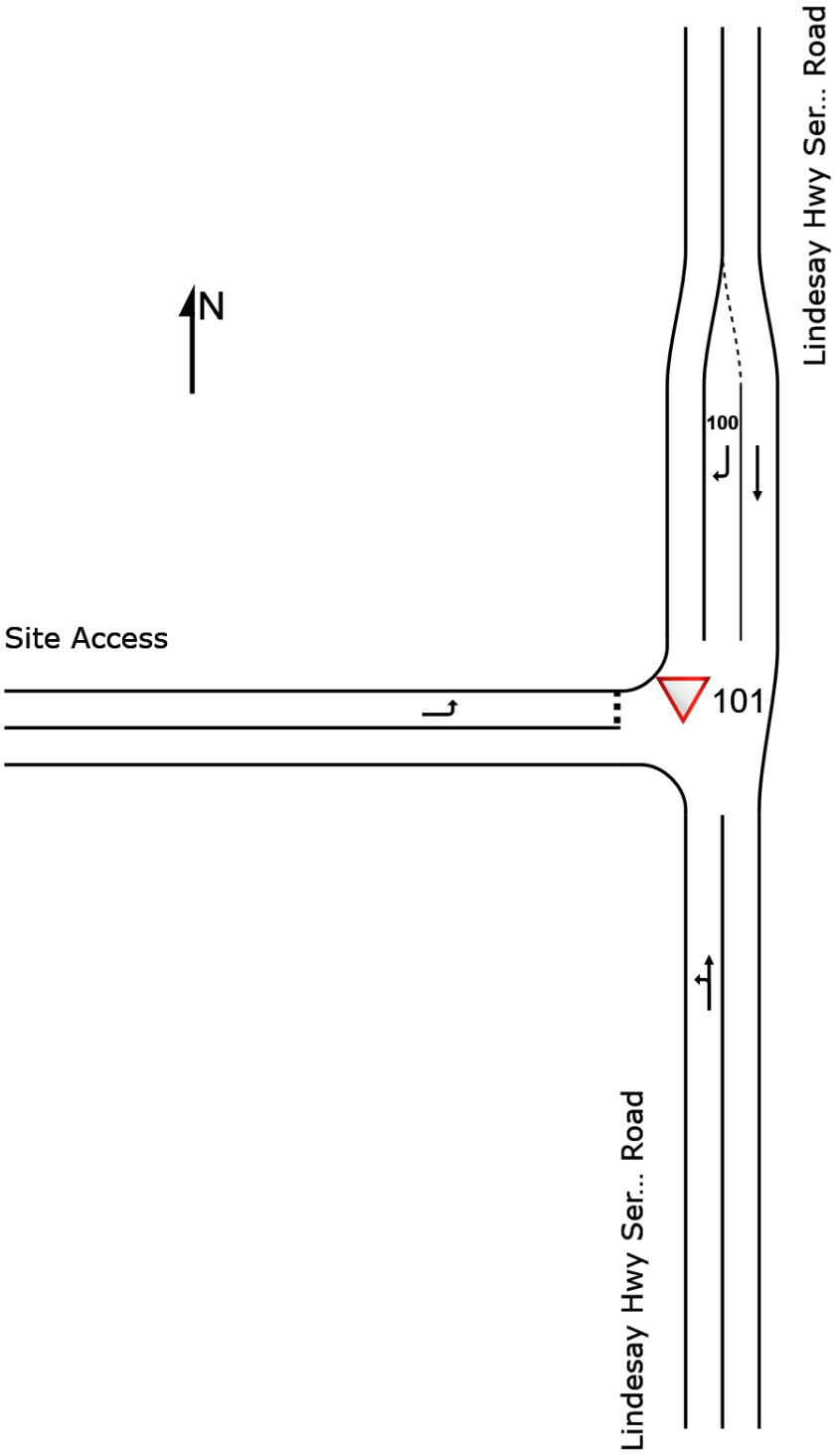
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [2026 AM BG + DEV (Site Folder: General)]

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [2026 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.165	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.8
2	T1	All MCs	264	33.0	264	33.0	0.165	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			265	33.0	265	33.0	0.165	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
North: Lindesay Hwy Service Road															
8	T1	All MCs	616	33.0	616	33.0	0.384	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
9	R2	All MCs	548	33.0	548	33.0	0.507	9.3	LOS A	4.4	39.6	0.59	0.76	0.78	48.9
Approach			1164	33.0	1164	33.0	0.507	4.4	NA	4.4	39.6	0.28	0.36	0.37	54.1
West: Site Access															
10	L2	All MCs	235	33.0	235	33.0	0.236	7.8	LOS A	1.0	9.2	0.45	0.65	0.45	50.2
Approach			235	33.0	235	33.0	0.236	7.8	LOS A	1.0	9.2	0.45	0.65	0.45	50.2
All Vehicles			1664	33.0	1664	33.0	0.507	4.2	NA	4.4	39.6	0.26	0.34	0.32	54.3

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2026 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.329	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.7
2	T1	All MCs	527	33.0	527	33.0	0.329	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			528	33.0	528	33.0	0.329	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
North: Lindesay Hwy Service Road															
8	T1	All MCs	352	33.0	352	33.0	0.219	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	All MCs	314	33.0	314	33.0	0.468	13.0	LOS A	2.8	25.5	0.71	0.99	1.06	46.6
Approach			665	33.0	665	33.0	0.468	6.1	NA	2.8	25.5	0.33	0.47	0.50	52.7
West: Site Access															
10	L2	All MCs	469	33.0	469	33.0	0.752	17.9	LOS B	6.9	61.8	0.82	1.32	1.93	44.1
Approach			469	33.0	469	33.0	0.752	17.9	LOS B	6.9	61.8	0.82	1.32	1.93	44.1
All Vehicles			1663	33.0	1663	33.0	0.752	7.6	NA	6.9	61.8	0.37	0.56	0.74	51.8

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2036 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.212	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.8
2	T1	All MCs	340	33.0	340	33.0	0.212	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			341	33.0	341	33.0	0.212	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	692	33.0	692	33.0	0.431	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
9	R2	All MCs	548	33.0	548	33.0	0.573	11.1	LOS A	5.4	48.3	0.68	0.90	1.06	47.7
Approach			1240	33.0	1240	33.0	0.573	5.0	NA	5.4	48.3	0.30	0.40	0.47	53.7
West: Site Access															
10	L2	All MCs	235	33.0	235	33.0	0.266	8.5	LOS A	1.1	10.2	0.52	0.71	0.52	49.7
Approach			235	33.0	235	33.0	0.266	8.5	LOS A	1.1	10.2	0.52	0.71	0.52	49.7
All Vehicles			1816	33.0	1816	33.0	0.573	4.5	NA	5.4	48.3	0.27	0.36	0.39	54.2

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2036 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.377	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.7
2	T1	All MCs	604	33.0	604	33.0	0.377	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			605	33.0	605	33.0	0.377	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.7
North: Lindesay Hwy Service Road															
8	T1	All MCs	428	33.0	428	33.0	0.267	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	All MCs	314	33.0	314	33.0	0.556	15.9	LOS B	3.5	31.1	0.78	1.10	1.32	44.9
Approach			742	33.0	742	33.0	0.556	6.8	NA	3.5	31.1	0.33	0.47	0.56	52.4
West: Site Access															
10	L2	All MCs	469	33.0	469	33.0	0.890	28.8	LOS C	11.0	98.6	0.93	1.78	3.33	39.0
Approach			469	33.0	469	33.0	0.890	28.8	LOS C	11.0	98.6	0.93	1.78	3.33	39.0
All Vehicles			1817	33.0	1817	33.0	0.890	10.3	NA	11.0	98.6	0.37	0.65	1.09	50.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

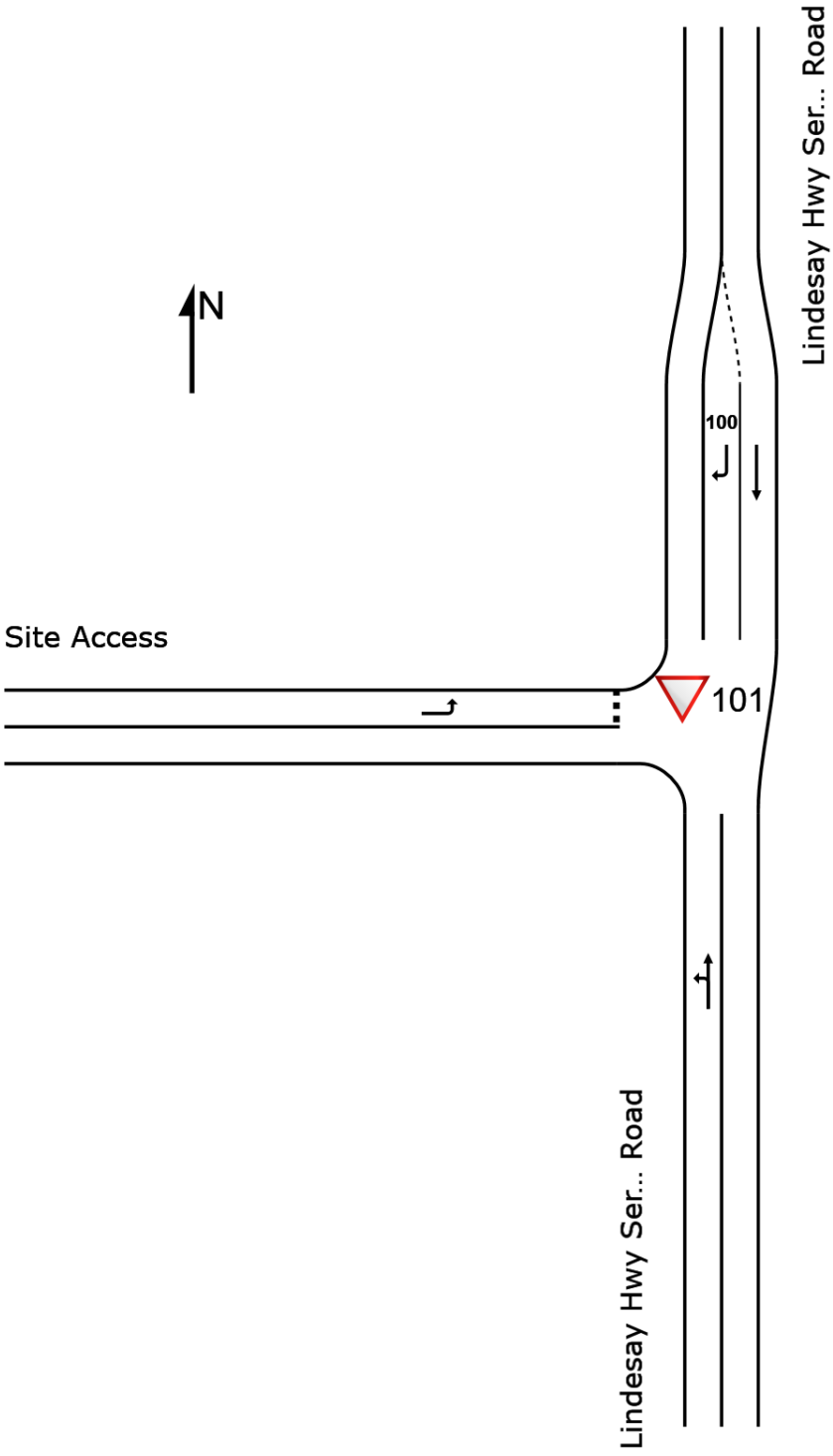
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [2029 AM BG + DEV - No Right (Site Folder: General)]

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [2029 AM BG + DEV - No Right (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.143	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.8
2	T1	All MCs	228	33.0	228	33.0	0.143	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			229	33.0	229	33.0	0.143	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
North: Lindesay Hwy Service Road															
8	T1	All MCs	534	33.0	534	33.0	0.332	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	All MCs	534	33.0	534	33.0	0.468	8.4	LOS A	3.7	33.1	0.54	0.70	0.64	49.4
Approach			1067	33.0	1067	33.0	0.468	4.3	NA	3.7	33.1	0.27	0.35	0.32	54.1
West: Site Access															
10	L2	All MCs	228	33.0	228	33.0	0.218	7.4	LOS A	1.0	8.6	0.41	0.63	0.41	50.4
Approach			228	33.0	228	33.0	0.218	7.4	LOS A	1.0	8.6	0.41	0.63	0.41	50.4
All Vehicles			1525	33.0	1525	33.0	0.468	4.1	NA	3.7	33.1	0.25	0.34	0.29	54.3

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2029 PM BG + DEV - No Right (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.286	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.7
2	T1	All MCs	458	33.0	458	33.0	0.286	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			459	33.0	459	33.0	0.286	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	305	33.0	305	33.0	0.190	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	All MCs	305	33.0	305	33.0	0.395	11.0	LOS A	2.3	20.7	0.66	0.88	0.86	47.8
Approach			611	33.0	611	33.0	0.395	5.5	NA	2.3	20.7	0.33	0.44	0.43	53.1
West: Site Access															
10	L2	All MCs	458	33.0	458	33.0	0.638	13.9	LOS A	5.1	46.2	0.73	1.10	1.36	46.4
Approach			458	33.0	458	33.0	0.638	13.9	LOS A	5.1	46.2	0.73	1.10	1.36	46.4
All Vehicles			1527	33.0	1527	33.0	0.638	6.4	NA	5.1	46.2	0.35	0.51	0.58	52.6

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2039 AM BG + DEV - No Right (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.191	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.8
2	T1	All MCs	305	33.0	305	33.0	0.191	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			306	33.0	306	33.0	0.191	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
North: Lindesay Hwy Service Road															
8	T1	All MCs	611	33.0	611	33.0	0.380	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
9	R2	All MCs	534	33.0	534	33.0	0.527	10.0	LOS A	4.6	41.7	0.63	0.83	0.90	48.4
Approach			1144	33.0	1144	33.0	0.527	4.8	NA	4.6	41.7	0.30	0.39	0.42	53.8
West: Site Access															
10	L2	All MCs	228	33.0	228	33.0	0.245	8.1	LOS A	1.0	9.4	0.48	0.68	0.48	50.0
Approach			228	33.0	228	33.0	0.245	8.1	LOS A	1.0	9.4	0.48	0.68	0.48	50.0
All Vehicles			1679	33.0	1679	33.0	0.527	4.4	NA	4.6	41.7	0.27	0.36	0.35	54.2

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2039 PM BG + DEV - No Right (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.334	6.0	LOS A	0.0	0.0	0.00	0.00	0.00	55.7
2	T1	All MCs	535	33.0	535	33.0	0.334	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			536	33.0	536	33.0	0.334	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
North: Lindesay Hwy Service Road															
8	T1	All MCs	382	33.0	382	33.0	0.238	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	All MCs	305	33.0	305	33.0	0.462	13.0	LOS A	2.8	24.8	0.71	0.99	1.05	46.5
Approach			687	33.0	687	33.0	0.462	5.8	NA	2.8	24.8	0.31	0.44	0.47	53.1
West: Site Access															
10	L2	All MCs	458	33.0	458	33.0	0.744	17.9	LOS B	6.6	59.4	0.82	1.31	1.90	44.1
Approach			458	33.0	458	33.0	0.744	17.9	LOS B	6.6	59.4	0.82	1.31	1.90	44.1
All Vehicles			1681	33.0	1681	33.0	0.744	7.3	NA	6.6	59.4	0.35	0.54	0.71	52.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

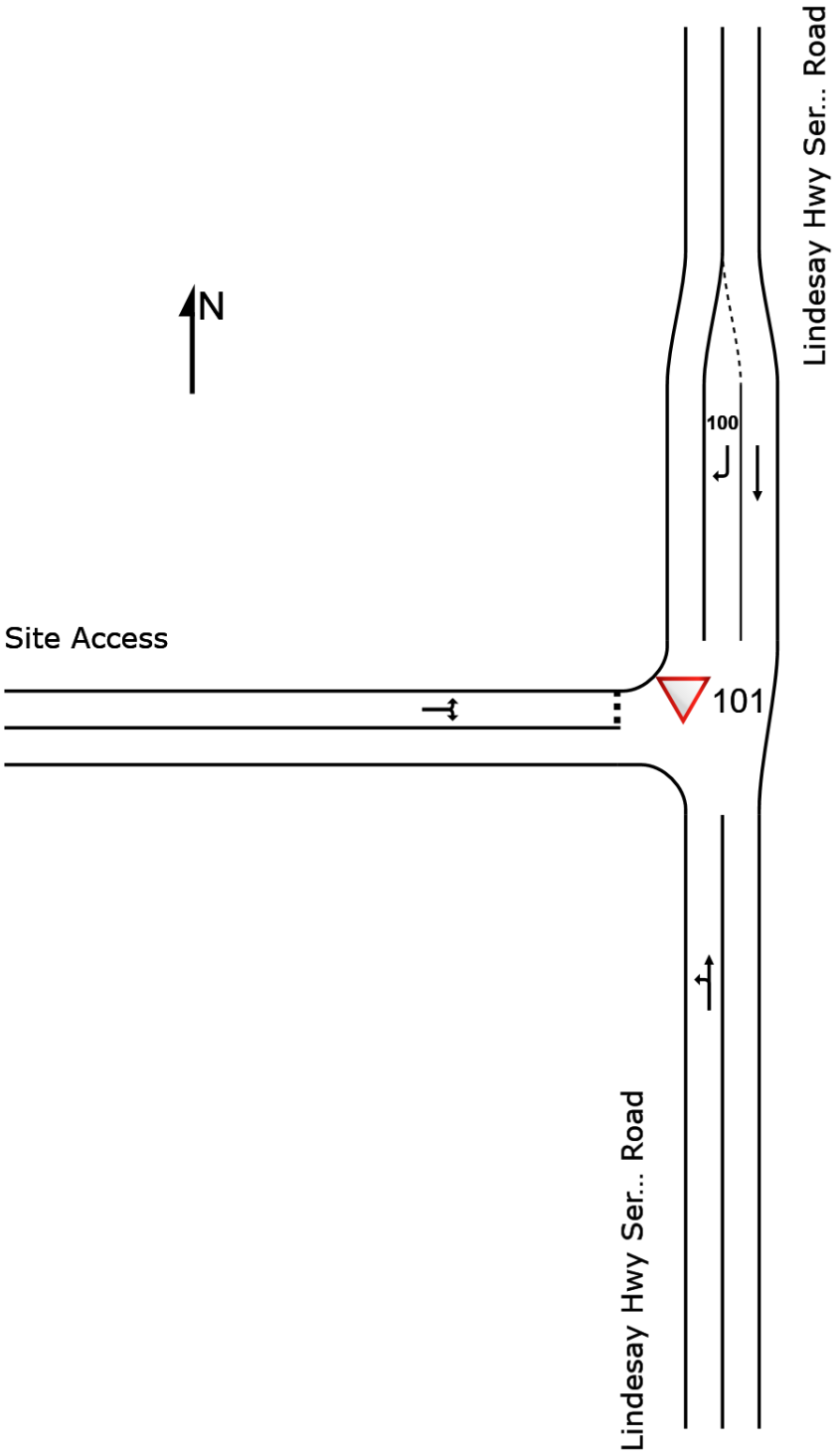
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [2026 AM BG + DEV (Site Folder: General)]

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [2026 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.001	5.9	LOS A	0.0	0.0	0.00	0.29	0.00	53.6
2	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			2	33.0	2	33.0	0.001	3.0	NA	0.0	0.0	0.00	0.29	0.00	55.4
North: Lindesay Hwy Service Road															
8	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	616	33.0	616	33.0	0.400	5.9	LOS A	2.8	24.9	0.04	0.59	0.04	51.1
Approach			617	33.0	617	33.0	0.400	5.8	NA	2.8	24.9	0.04	0.59	0.04	51.1
West: Site Access															
10	L2	All MCs	264	33.0	264	33.0	0.192	5.9	LOS A	0.9	8.2	0.02	0.56	0.02	51.5
12	R2	All MCs	1	33.0	1	33.0	0.192	6.7	LOS A	0.9	8.2	0.02	0.56	0.02	51.1
Approach			265	33.0	265	33.0	0.192	5.9	LOS A	0.9	8.2	0.02	0.56	0.02	51.5
All Vehicles			884	33.0	884	33.0	0.400	5.9	NA	2.8	24.9	0.03	0.58	0.03	51.3

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2026 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.001	5.9	LOS A	0.0	0.0	0.00	0.29	0.00	53.6
2	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			2	33.0	2	33.0	0.001	3.0	NA	0.0	0.0	0.00	0.29	0.00	55.4
North: Lindesay Hwy Service Road															
8	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	352	33.0	352	33.0	0.228	5.9	LOS A	1.3	11.5	0.03	0.59	0.03	51.1
Approach			353	33.0	353	33.0	0.228	5.8	NA	1.3	11.5	0.03	0.59	0.03	51.2
West: Site Access															
10	L2	All MCs	527	33.0	527	33.0	0.378	5.9	LOS A	2.3	20.3	0.02	0.56	0.02	51.5
12	R2	All MCs	1	33.0	1	33.0	0.378	6.9	LOS A	2.3	20.3	0.02	0.56	0.02	51.1
Approach			528	33.0	528	33.0	0.378	5.9	LOS A	2.3	20.3	0.02	0.56	0.02	51.5
All Vehicles			883	33.0	883	33.0	0.378	5.9	NA	2.3	20.3	0.02	0.57	0.02	51.4

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2036 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.049	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
2	T1	All MCs	77	33.0	77	33.0	0.049	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			78	33.0	78	33.0	0.049	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	77	33.0	77	33.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	616	33.0	616	33.0	0.438	6.5	LOS A	3.0	26.8	0.31	0.56	0.31	50.4
Approach			693	33.0	693	33.0	0.438	5.8	NA	3.0	26.8	0.28	0.50	0.28	51.3
West: Site Access															
10	L2	All MCs	264	33.0	264	33.0	0.211	6.4	LOS A	1.0	8.8	0.23	0.55	0.23	50.9
12	R2	All MCs	1	33.0	1	33.0	0.211	27.5	LOS B	1.0	8.8	0.23	0.55	0.23	50.5
Approach			265	33.0	265	33.0	0.211	6.5	LOS A	1.0	8.8	0.23	0.55	0.23	50.9
All Vehicles			1036	33.0	1036	33.0	0.438	5.5	NA	3.0	26.8	0.24	0.47	0.24	51.8

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2036 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.049	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
2	T1	All MCs	77	33.0	77	33.0	0.049	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			78	33.0	78	33.0	0.049	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	77	33.0	77	33.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	352	33.0	352	33.0	0.250	6.3	LOS A	1.4	12.3	0.25	0.57	0.25	50.6
Approach			428	33.0	428	33.0	0.250	5.2	NA	1.4	12.3	0.21	0.46	0.21	52.0
West: Site Access															
10	L2	All MCs	527	33.0	527	33.0	0.414	6.5	LOS A	2.4	21.9	0.28	0.54	0.28	50.7
12	R2	All MCs	1	33.0	1	33.0	0.414	17.5	LOS B	2.4	21.9	0.28	0.54	0.28	50.4
Approach			528	33.0	528	33.0	0.414	6.5	LOS A	2.4	21.9	0.28	0.54	0.28	50.7
All Vehicles			1035	33.0	1035	33.0	0.414	5.5	NA	2.4	21.9	0.23	0.47	0.23	51.9

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

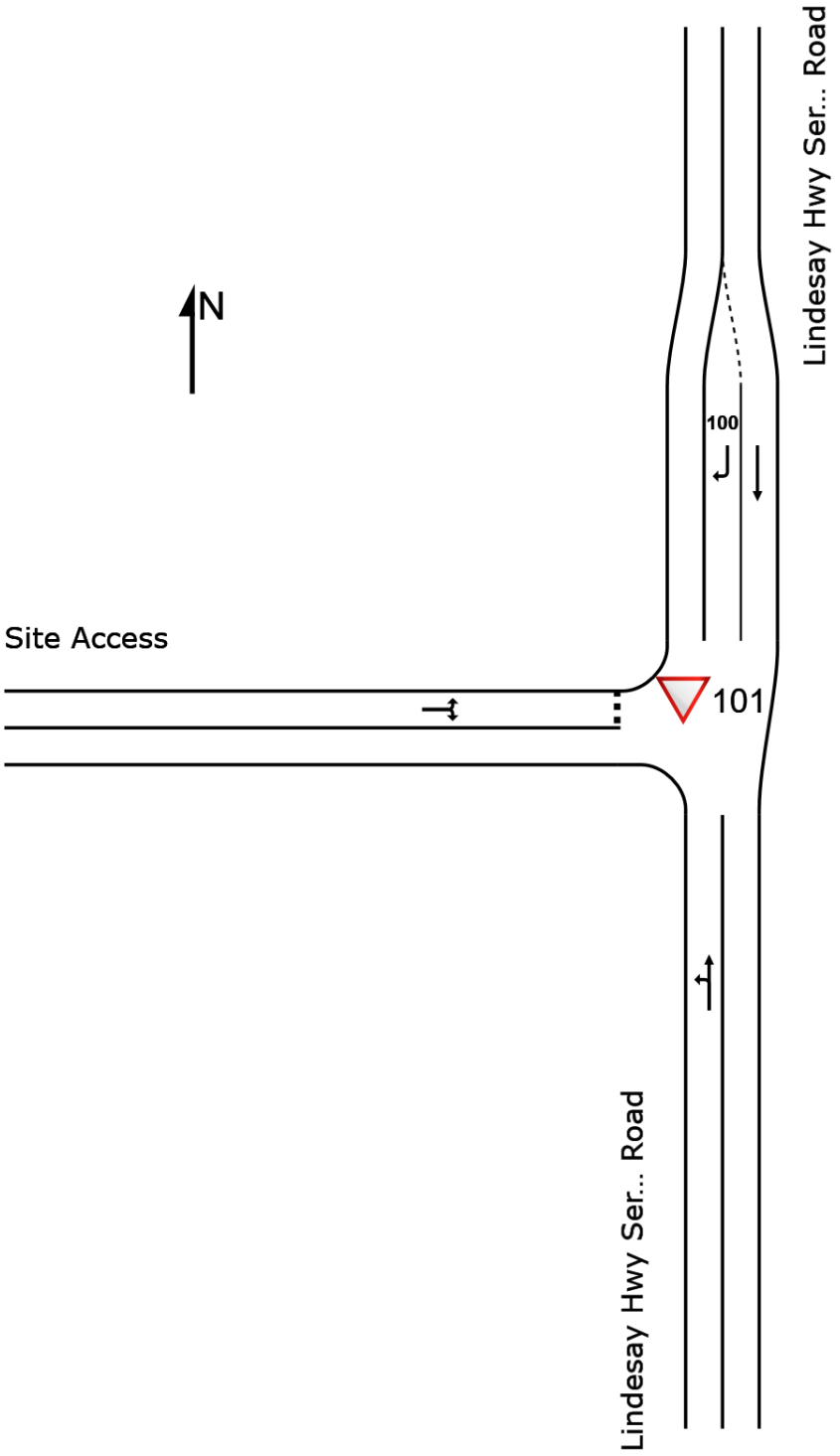
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [2029 AM BG + DEV (Site Folder: General)]

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

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



MOVEMENT SUMMARY

Site: 101 [2029 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.001	5.9	LOS A	0.0	0.0	0.00	0.29	0.00	53.6
2	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			2	33.0	2	33.0	0.001	3.0	NA	0.0	0.0	0.00	0.29	0.00	55.4
North: Lindesay Hwy Service Road															
8	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	534	33.0	534	33.0	0.346	5.9	LOS A	2.2	20.1	0.03	0.59	0.03	51.1
Approach			535	33.0	535	33.0	0.346	5.8	NA	2.2	20.1	0.03	0.59	0.03	51.1
West: Site Access															
10	L2	All MCs	228	33.0	228	33.0	0.166	5.9	LOS A	0.8	6.8	0.02	0.56	0.02	51.5
12	R2	All MCs	1	33.0	1	33.0	0.166	6.5	LOS A	0.8	6.8	0.02	0.56	0.02	51.1
Approach			229	33.0	229	33.0	0.166	5.9	LOS A	0.8	6.8	0.02	0.56	0.02	51.5
All Vehicles			766	33.0	766	33.0	0.346	5.9	NA	2.2	20.1	0.03	0.58	0.03	51.3

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2029 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.001	5.9	LOS A	0.0	0.0	0.00	0.29	0.00	53.6
2	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach			2	33.0	2	33.0	0.001	3.0	NA	0.0	0.0	0.00	0.29	0.00	55.4
North: Lindesay Hwy Service Road															
8	T1	All MCs	1	33.0	1	33.0	0.001	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	305	33.0	305	33.0	0.198	5.9	LOS A	1.1	9.6	0.03	0.59	0.03	51.1
Approach			306	33.0	306	33.0	0.198	5.8	NA	1.1	9.6	0.03	0.59	0.03	51.2
West: Site Access															
10	L2	All MCs	458	33.0	458	33.0	0.328	5.9	LOS A	1.8	16.4	0.02	0.56	0.02	51.5
12	R2	All MCs	1	33.0	1	33.0	0.328	6.7	LOS A	1.8	16.4	0.02	0.56	0.02	51.1
Approach			459	33.0	459	33.0	0.328	5.9	LOS A	1.8	16.4	0.02	0.56	0.02	51.5
All Vehicles			767	33.0	767	33.0	0.328	5.9	NA	1.8	16.4	0.02	0.57	0.02	51.4

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2039 AM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.049	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
2	T1	All MCs	77	33.0	77	33.0	0.049	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			78	33.0	78	33.0	0.049	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	77	33.0	77	33.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	534	33.0	534	33.0	0.380	6.4	LOS A	2.4	21.6	0.29	0.56	0.29	50.5
Approach			611	33.0	611	33.0	0.380	5.6	NA	2.4	21.6	0.25	0.49	0.25	51.5
West: Site Access															
10	L2	All MCs	228	33.0	228	33.0	0.182	6.4	LOS A	0.8	7.4	0.22	0.55	0.22	50.9
12	R2	All MCs	1	33.0	1	33.0	0.182	21.6	LOS B	0.8	7.4	0.22	0.55	0.22	50.5
Approach			229	33.0	229	33.0	0.182	6.4	LOS A	0.8	7.4	0.22	0.55	0.22	50.9
All Vehicles			918	33.0	918	33.0	0.380	5.4	NA	2.4	21.6	0.22	0.46	0.22	52.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2039 PM BG + DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

P5708
North Maclean Industrial Estate
Prepared by FJ & ME
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lindesay Hwy Service Road															
1	L2	All MCs	1	33.0	1	33.0	0.049	5.9	LOS A	0.0	0.0	0.00	0.01	0.00	55.8
2	T1	All MCs	77	33.0	77	33.0	0.049	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			78	33.0	78	33.0	0.049	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
North: Lindesay Hwy Service Road															
8	T1	All MCs	77	33.0	77	33.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
9	R2	All MCs	305	33.0	305	33.0	0.217	6.3	LOS A	1.2	10.4	0.24	0.57	0.24	50.6
Approach			382	33.0	382	33.0	0.217	5.0	NA	1.2	10.4	0.19	0.45	0.19	52.2
West: Site Access															
10	L2	All MCs	458	33.0	458	33.0	0.359	6.5	LOS A	2.0	17.8	0.27	0.54	0.27	50.8
12	R2	All MCs	1	33.0	1	33.0	0.359	15.0	LOS B	2.0	17.8	0.27	0.54	0.27	50.4
Approach			459	33.0	459	33.0	0.359	6.5	LOS A	2.0	17.8	0.27	0.54	0.27	50.8
All Vehicles			919	33.0	919	33.0	0.359	5.4	NA	2.0	17.8	0.21	0.46	0.21	52.0

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

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

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Appendix D: Swept Path Diagrams

LEGEND

—— - RESTRICT PARKING

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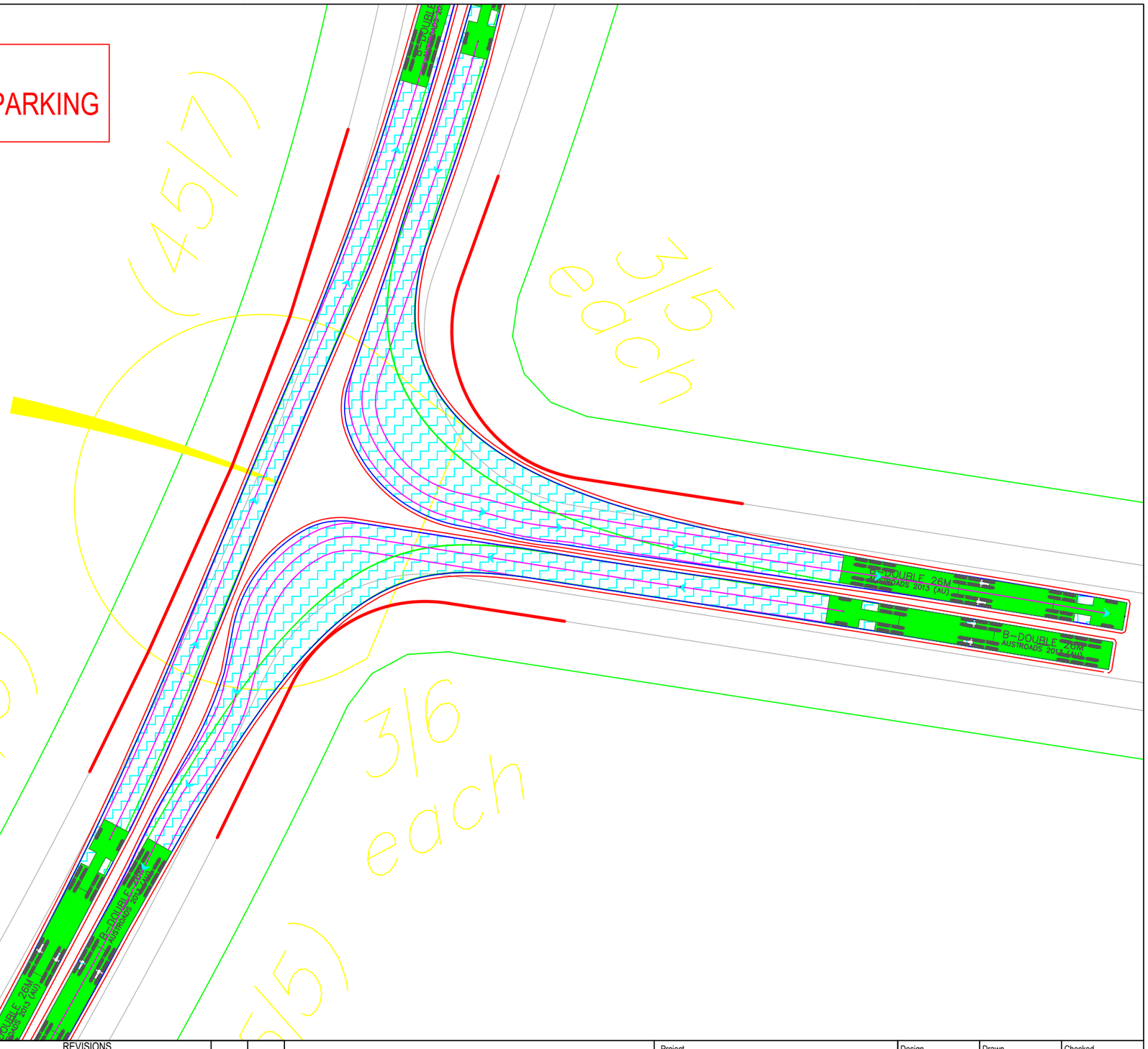

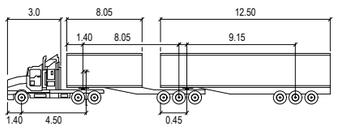

B-DOUBLE (26.0m)

meters

Tractor Width	: 2.5	Lock to Lock Time	: 6.0
Trailer Width	: 2.5	Steering Angle	: 23.4
Tractor Track	: 2.5	Articulating Angle	: 70.0
Trailer Track	: 2.5		

DESIGN VEHICLE

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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	SWEPT PATHS FOR TIA	M.E	14.08.2023

Scale @ A3 0 4 8 12 16 20 1:400

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date

Project: NORTH MACLEAN INDUSTRIAL TIA

Title: B-DOUBLE SWEPT PATHS #1

Design	Drawn	Checked
M.E	M.E	M.D

CONCEPT ONLY

Date: 14.08.2023

Project Number	Sheet Number	Issue
P5708	1	001

LEGEND

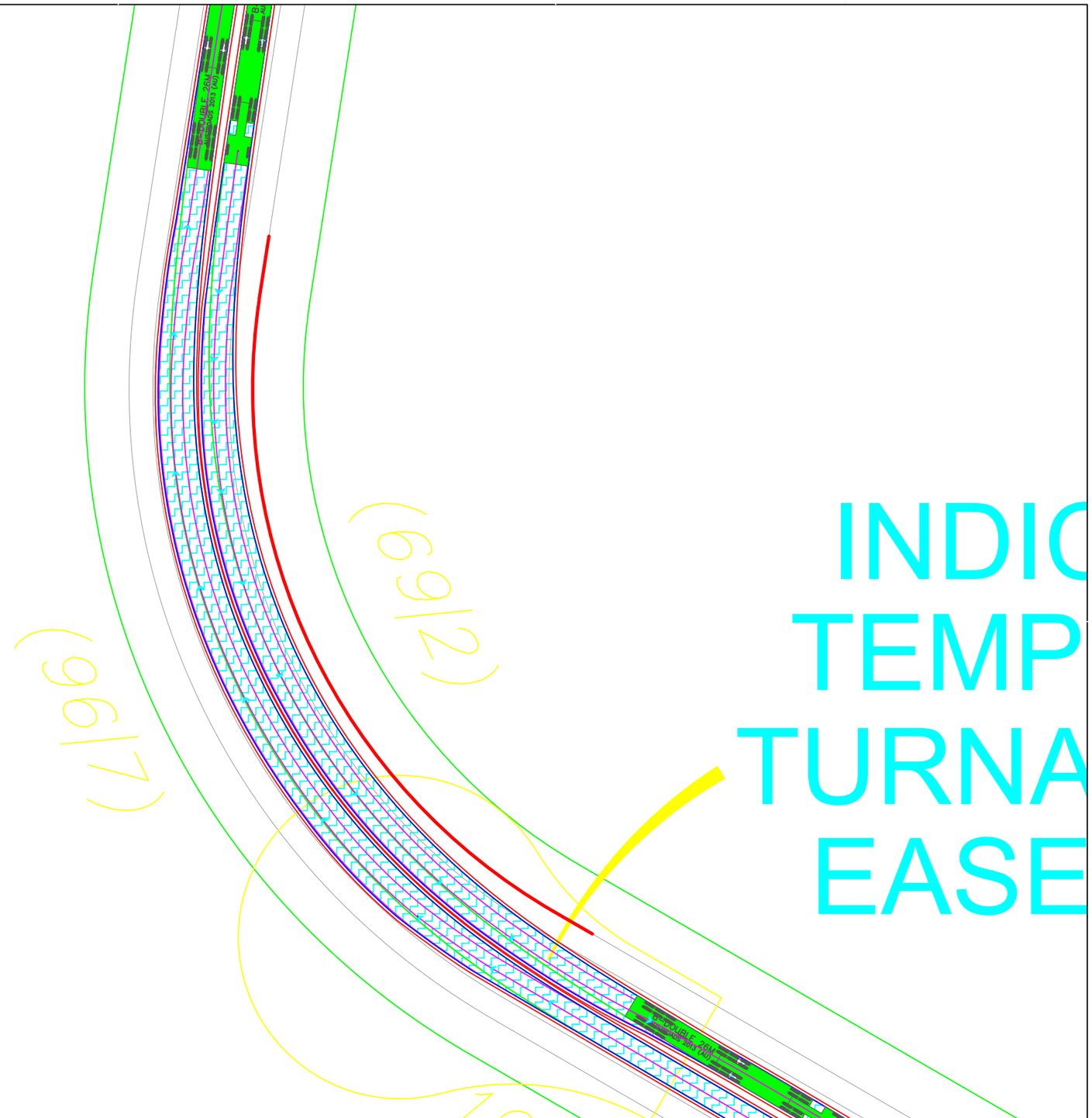
—— - RESTRICT PARKING

B-DOUBLE (26.0m)

meters

Tractor Width	: 2.5	Lock to Lock Time	: 6.0
Trailer Width	: 2.5	Steering Angle	: 23.4
Tractor Track	: 2.5	Articulating Angle	: 70.0
Trailer Track	: 2.5		

DESIGN VEHICLE



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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	SWEPT PATHS FOR TIA	M.E	14.08.2023

Scale @ A3 0 5 10 15 20 25 1:500

ENGINEERING CERTIFICATION (RPEQ)

Name	Signature	No.	Date

Project: NORTH MACLEAN INDUSTRIAL TIA

Title: B-DOUBLE SWEPT PATHS #2

Design	Drawn	Checked
M.E	M.E	M.D

CONCEPT ONLY

Date: 14.08.2023

Project Number	Sheet Number	Issue
P5708	2	001