JALAHAWI CONSULTING
TRAFFIC + TRANSPORT SPECIALISTS

Aura South
Early Release Area

Transport Assessment Report

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Table of Contents

1. Introduction 1

2. Development Context 3

2.1 Development Site Locality 3

2.2 Active Transport Facilities 6

2.2.1 Cycle Network 7

2.2.2 Primary Walking Network 7

2.3 Public Transport Facilities 9

2.4 Existing Road Network 11

2.4.1 Bells Creek Arterial Road 12

2.4.2 Bruce Highway 12

2.5 Site Access 12

3. Background Traffic Analysis 14

3.1 BCA Existing Traffic Analysis 14

3.1.1 SIDRA Analysis Assumptions 14

3.1.2 2026 Existing Background Traffic 14

3.1.3 Future Year Background Traffic 17

3.2 Traffic Generation Statistics - Baringa Catchment 20

4. Proposed Development – Aura South ERA 24

4.1 Proposed Development - ERA 24

4.2 Road Hierarchy 25

4.3 Active and Public Transport 28

4.3.1 Active Transport 28

4.3.2 Public Transport 30

4.4 Internal Road Network 32

4.4.1 Intersection 1 33

4.4.2 Intersection 2 36

4.4.3 Intersection 3 37

4.4.4 Intersection 4 38

4.4.5 Intersection 5 39

4.4.6 Intersection 6 41

4.4.7 Intersection 7 42

4.4.8 Intersection 8 45

4.4.1 Intersection 9 47

5. Design Year Assessments – External 48

5.1 Development Traffic 49

5.1.1 Traffic Spatial Distribution Assumptions 50
5.1.2 Traffic Generation Assumptions 50
5.1.3 Directional Distribution 51
5.1.4 2032 Design Year Development Traffic Scenarios 51
5.1.5 2033 Design Year Development Traffic Scenarios 52
5.2 2032 Design Traffic Analysis Scenario 52
5.2.1 2032 Design Traffic Scenarios 52
5.2.2 Bells Creek Arterial / Bells Creek Road (Aura South) Roundabout 53
5.2.3 Aura South – ERA Entry Roundabout 57
5.2.4 Summary 58
5.3 2033 Design Traffic Analysis Scenario 59
5.3.1 2033 Design Traffic Scenarios 59
5.3.2 Bells Creek Arterial / Bells Creek Road (Aura South) Roundabout 60
5.3.3 Aura South – ERA Entry Roundabout 62
5.3.4 Summary 63
5.4 2033 Analysis – with Increased Internalisation 64
5.4.1 Bells Creek Arterial / Bells Creek Road (Aura South) Roundabout 65
5.4.2 Aura South – ERA Entry Roundabout 66
5.4.3 Summary 67

5.5 ERA Traffic Impacts on Gagalba 68

5.5.1 Reference Gagalba Precinct Model Inputs 69

5.5.2 Traffic Distribution Assumptions 70

5.5.3 2041 Ultimate Gagalba Precinct with ERA Design Traffic Analysis 70

6. Summary 75

Appendix A – Reconfiguration Plan 78

Appendix B - ERA Context Plan 79

Appendix C - Aura South Active and Public Transport 80

Appendix D - Turning Movement Diagrams 81

Appendix E - SIDRA Movement Summaries 82

Appendix F - Baringa Analysis 83

Appendix G - ERA Transport Plans 84

Appendix H - Internal Catchments 85

Appendix I - State Code Responses 86

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1. Introduction

This report has been prepared on behalf of Stockland Development Pty Limited in support of a Priority Development Area (PDA) development application over land located on Bells Creek Road, Coochin Creek, comprising of Lot 1 on SP332399 and Lot 2 on SP357748 (the site). The application seeks approval for the Early Release Area (ERA) of Stockland's Aura South project, within the Halls Creek PDA.

The development application seeks a PDA Development Permit for:

- Reconfiguring a Lot in accordance with a Plan of Development;
- Operational Works in accordance with a Plan of Development; and
- Material Change of Use in accordance with a Plan of Development.

The declaration of the Halls Creek PDA established the planning framework required to accelerate the delivery of Aura South. As the first neighbourhood within the PDA, the ERA will bring forward 1,051 new homes, including 636 detached housing lots, 338 attached allotments and 2 multiple dwelling sites accommodating about 77 apartments. This crucial housing supply will be supported by local services and infrastructure, nine enterprise and employment lots, a neighbourhood centre, sports and local parks, high-quality open space areas and active transport connections, establishing strong foundations for the new Aura South community.

Together, these elements will create a highly liveable, walkable and connected community which will contribute significantly to the delivery of housing, employment and community infrastructure in the southern growth corridor of the Sunshine Coast. The proposed ERA layout plans in the form of the RaL plans, prepared by Place Design Group, are included in Attachment 4 of the Place Design Group planning report and a plan showing this reconfiguration lot layout is included in **Appendix A**.

This report has been undertaken to assess the potential impact that the proposed development could have on the external road network. The focus of this Traffic Impact Assessment has been on the precinct being referred to as the Early Release Area (ERA) and has included the residential component of the ERA along with the initial stages of the proposed Enterprise Precinct.

As part of our involvement in the project and as documented in this assessment we have worked with the project team to develop an integrated transport system that includes a comprehensive active transport network, a legible and efficient road network and potential bus public transport routes that can provide a high standard of accessibility to non-car-based transport options. Our approach has been to ensure that the ERA is developed in a manner that has created a truly integrated community grounded around walkable

neighbourhoods providing access to home, shopping and recreational needs and to future educational facilities.

Our assessment has considered a range of transport scenarios with the focus on demonstrating that the existing road and transport infrastructure is able to support the delivery of the ERA in a safe and efficient manner, and along with the internal networks being delivered, meets the requirements of the Halls Creek Interim Land Use Plan (Halls Creek ILUP) and the relevant State Codes.

Our assessment has included a comprehensive "first principles" assessment of the BCA roundabout with the intent to demonstrate that this can support the ERA, and provide time for the ongoing assessment and determination of the ultimate transport system required for the broader Halls Creek PDA, without compromising the delivery of the future ultimate transport system.

This report is set out as follows:

Section 2 discusses the development context including the surrounding area, road network and the extent of the existing transport system and traffic arrangements in the vicinity of the proposed development site.

Section 3 identifies the extent of the proposed development, including an assessment of the potential traffic generation associated with the proposed use and the site's internal layout and intersections.

Section 4 discusses the site access arrangements and the impact the proposed development has on the external road network.

Section 5 summarises the key outcomes of the traffic investigations.

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2. Development Context

This section of the report describes the development context and provides a summary of the location of the site and the surrounding transport system. Relevantly however this section of the report also considers the site in the context of the Halls Creek PDA, and the associated ILUP.

2.1 Development Site Locality

The site is located at Bells Creek Road, Coochin Creek, and currently forms part of Lot 1 on SP332399 and Lot 2 on SP357748. The development site is located on the southern side of Bells Creek Arterial Road with the primary access to the land via the southern leg of the existing Bells Creek Road / Bells Creek Arterial Road intersection.

The Early Release Area (ERA), seen in **Figure 2.1.1**, comprises of a large parcel of unoccupied land, southwest of Caloundra's established residential area and adjacent to the existing Aura – Caloundra South master planned residential community. The ERA is shown in the context of the footprint of Aura South (Halls Creek PDA).

The Aura South site is located within the Halls Creek Priority Development Area. Bells Creek Arterial Road acts as the primary road connector for the area, providing access north to Caloundra Road and the broader Caloundra coastal community, and west towards the Bruce Highway.

North of Bells Creek Arterial Road is the existing and under development Aura residential community. Ultimately, Aura will consist of more than 20,000 residential dwellings, supporting 20,000 direct jobs opportunities and provides access to significant number of educational and shopping precincts throughout.

Current vehicular access to the Aura South site is gained through a fourth leg on the Bells Creek Road / Bells Creek Arterial Road intersection, north of the development site. This roundabout provides connection to the internal road network discussed in **Section 4.4** of this report.

The extent of the ERA is also shown below in **Figure 2.1.2** below which demonstrates the extent of this initial stage of the Aura South development in the context of the current PDA boundaries and ILUP. The ERA context plans are also enclosed in **Appendix B** of this report.

Figure 2.1.1 - ERA Site Locality

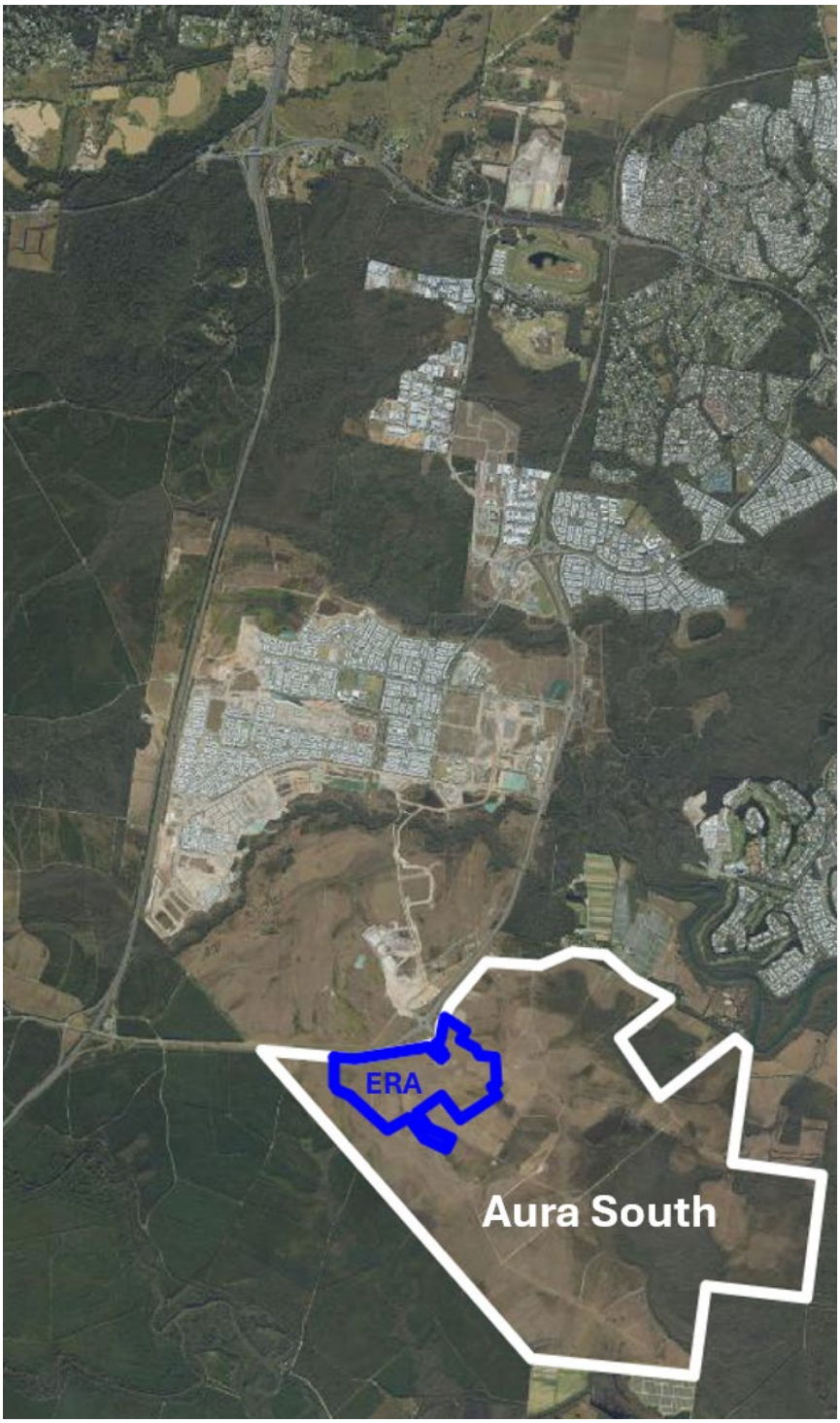
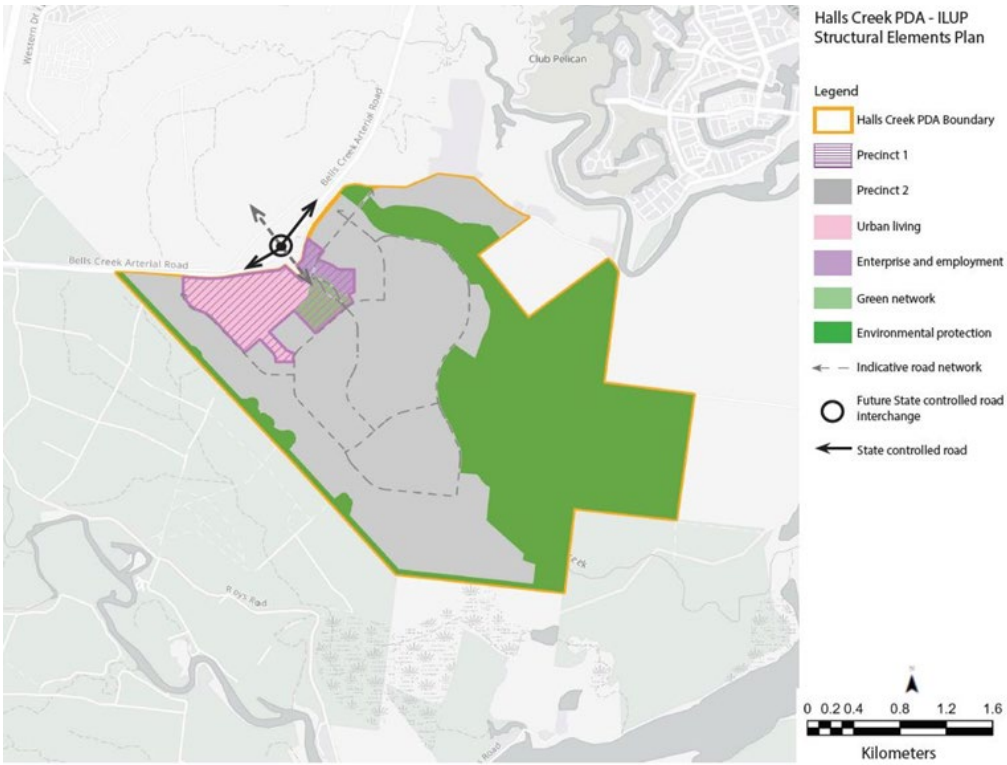


Figure 2.1.2 - ERA - ILUP Context Plan



As shown above, the Halls Creek ILUP includes the identification of the ERA, demonstrating the context of the ERA within the broader PDA whilst also capturing how this will become a logical extension of the Aura community, being continuously delivered to the north, by:

- Integrating seamlessly with the existing transport networks including roads, active transport infrastructure and public transport networks;
- Providing a key arrival point for Aura South that also serves as the southern gateway into Aura;
- Delivers a key cross-BCA corridor 2-Way Separated Cycle Path linkage facilitating direct connectivity to The Wave and Aura Town Centre; and
- Establishing the first stage of the Aura South development that will establish the foundations of a truly integrated land use and transport system for the entire Aura South community.

Relevantly to the transport system serving the Aura South community, the Halls Creek ILUP also seeks the establishes a transport system which:

- creates a highly permeable movement network that improves internal connectivity and links effectively to surrounding areas and key regional destinations,
- ensures movement networks enable safe and efficient transport operations, addressing impacts on the broader transport and traffic system and maintaining the performance of the state-controlled road network,
- delivers safe, accessible and well-connected active and public transport infrastructure, supporting convenient access to public transport stops, pathways and cycling routes, and
- facilitates integrated, legible and connected pedestrian, cycling and public transport networks to promote safe, convenient and direct movement.

The development of the ERA transport system has been responsive to the above transport and connectivity requirements and has ensured that the transport system meets these overall objectives while establishing clear linkages with the balance of the PDA and the existing Aura community.

2.2 Active Transport Facilities

A key objective of both the ILUP and ERA design is the creation of a highly walkable community supported by integrated pedestrian and cycling infrastructure that are integrated with the broader Aura development, leveraging the infrastructure and land uses being delivered as part of that project (including The Wave Railway Station adjacent to the proposed Aura Town Centre).

The ERA proposes:

- Shared pathways and cycle infrastructure throughout the development.
- Connections to schools, parks, community facilities and centres.
- Integration of pathways within open space and environmental corridors.
- Future connections into the broader Aura active transport network and town centre.

Critically the integration of the active transport network with the existing and proposed Aura active transport network has been a core consideration of the planning for the ERA. This includes a commitment to the early planning of enabling infrastructure as part of the establishment of the ERA, through the delivery of the initial stages of the Aura South 2-Way Separated Cycle Path network. Early engagement with the State agencies will also commence to integrate the 2-Way Separated Cycle Path crossing over BCA road to connect to the Gagalba active transport network as demonstrated in the Gagalba connectivity plans included in **Appendix C**.

The proposed transport system within Aura South will deliver balanced and integrated transport and land use outcomes. A critical part of the master planning process, and more specifically the planning process for the ERA, the transport system has been developed in

conjunction with the land use patterns and precinct development to achieve a truly integrated outcome.

This approach has been integrated in the planning of the ERA to deliver the ultimate form and ensure the development of an urban form achieves the principles of a '20-minute City' when fully developed. The indicative Aura South Active Transport Network Plans are included in **Appendix C**.

The proposed active transport facilities include extensive cycle and walking networks as further described below.

2.2.1 Cycle Network

The 2-Way Separated Cycle Path is a high standard network of off-road cycle facilities that will prioritise cyclist movements throughout Aura South. Being the centrepiece of an active transport network providing direct, clear and legible pathways, the proposed 2-Way Separated Cycle Path will link the internal residential precincts with education, retail and commercial land uses throughout Aura South and will facilitate a viable alternate mode of transport to the dedicated business and enterprise precinct within Aura South.

Within the ERA, the 2-Way Separated Cycle Path and cycle network has been integrated along the ultimate entrance road and higher order roads as seen in **Figure 2.1.1** below. Additionally, contraflow bike lanes have been integrated along the higher order roads within the ERA active transport network, further discussed in **Section 4.3** of this report.

As noted above, to be provided as part of the ERA, a dedicated active transport bridge connection over the BCA (initially in the form of a 2-Way Separated Cycle Path and walking path) will provide clear and unrestricted pedestrian and cycle access over Bells Creek Arterial Road and into Aura South.

2.2.2 Primary Walking Network

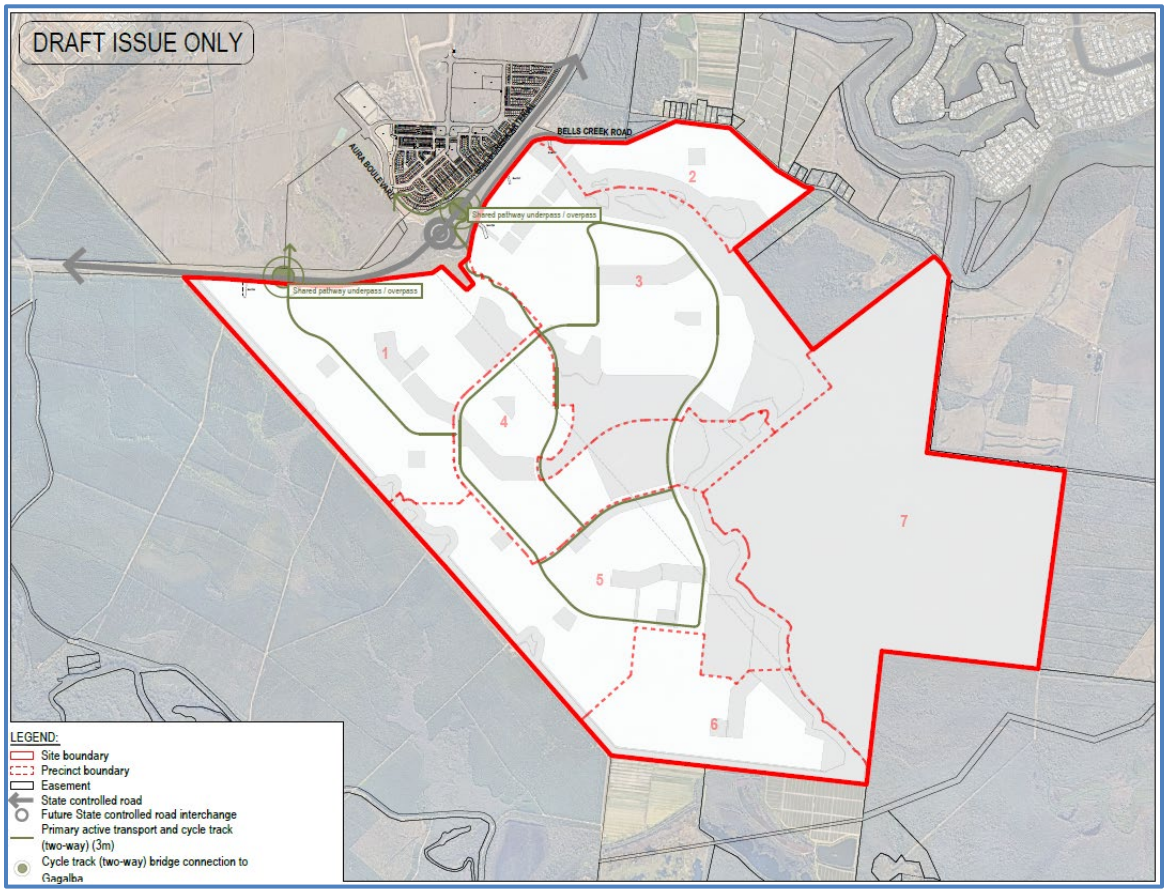
While the 2-Way Separated Cycle Path will be the key structural element around which the active transport network within the PDA will function, the balance of the supporting active transport network will be centred around the creation of the walkable neighbourhood design. This will include the provision of a network of separated cycle paths and shared paths acting as a "feeder network" to the higher order 2-Way Separated Cycle Path network for cyclists using this network of off-road bicycle pathways to meet their travel needs.

This in turn will be supported by a network of off-road active transport facilities comprising shared paths and dedicated pedestrian pathways comprehensively linking residential

neighbourhoods with local services, employment, education and recreational needs. This comprehensive supporting active transport network will be integrated into the road network through the delivery of pathways that form a key element of the cross-sections being delivered. The road network, discussed in further detail below in **Section 4.4** delivers a network of road corridors that will not just provide for vehicular transport, they will integrate pedestrian and cycle facilities into the cross-sections at all levels, linking to the broader active transport network.

The above principles have been actively carried through into the development of the active transport network being delivered as part of the ERA which is further discussed in **Section 4.3** of this report.

Figure 2.1.1 – Aura South Active Transport Network



Externally, as part of the broader Aura transport system, Gagalba also provides an extensive network of footpaths, bike paths and shared paths. The paths provided in Gagalba are appropriate to the hierarchy of roads and the expected level of active travel, ultimately

providing direct connectivity to the Aura Town Centre and to The Wave Railway Station / Transit Hub.

A key factor in the development of the Aura South transport system has been the consideration of how the Aura South active transport network can successfully integrate with the Aura active transport network, to ultimately provide high standard connectivity with the Town Centre and The Wave for Aura South. The delivery of a grade-separated active transport crossing of the BCA is a commitment that will be a key part of the Aura South transport system and will provide a direct priority link between Aura and Aura South. The current expectation on timing of this is piece of transport infrastructure is that this will be delivered in the early phases of the Aura South development.

The 2-Way Separated Cycle Path will continue down high order roads as seen in the Gagalba Active Transport Plans included in **Appendix C**.

2.3 Public Transport Facilities

The public transport system for Aura South will focus on capitalising on the investment being made by the State Government in 'The Wave – Stage 1 & 2' heavy passenger rail system currently in the planning and design phases. 'The Wave' is planned to connect Beerwah to Birtinya, integrating with a metro-style connection to the Sunshine Coast Airport, via key hubs at Mountain Creek and the Maroochydore Central Business District. This, along with an integrated internal bus public transport network and active transport network, will become the centrepiece of the public transport strategy for Aura South.

Conveniently located adjacent to the future Aura Town Centre, The Wave – Stage 1 is understood to include a purpose-built Transit Hub that will provide direct rail linkage between Aura & Aura South and the Sunshine Coast coastal development strip to the east and north and south to Caboolture & Brisbane and activity centres in between.

Exceptional and convenient connectivity between Aura South and the key activity nodes within Aura, being the Aura Town Centre and The Wave transit hub, will be achieved through a road and public transport network with direct and efficient connectivity including via a new western grade separated crossing across the BCA and through the delivery of the 2-Way Separated Cycle Path network described previously. The proposed public transport network will allow seamless integration of Aura South with the above key activity nodes whilst minimising reliance on the state-controlled road network.

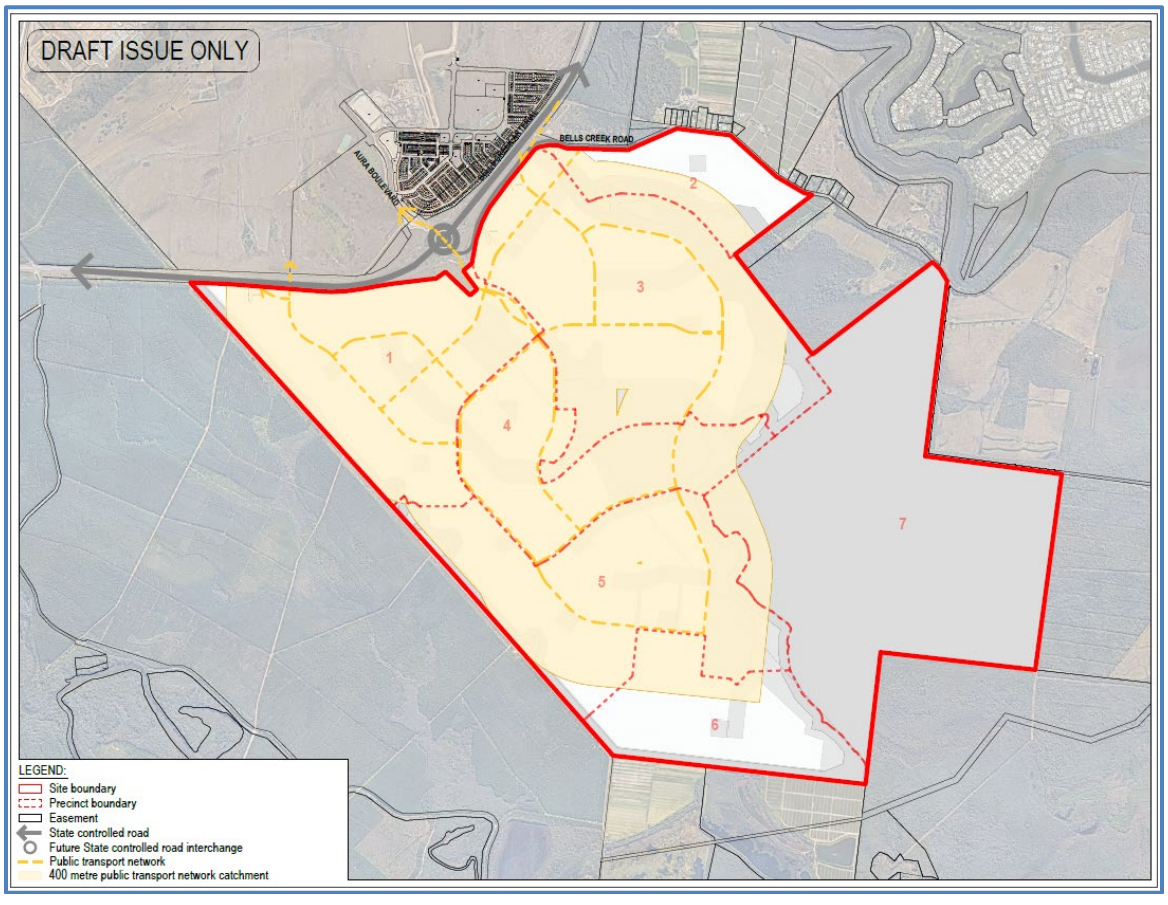
Aura South Public Transport Network Plans are included in **Appendix C**.

The internal road network has been designed so that future bus services can be accommodated from the earliest stages of development including the ERA. The broader

strategy also recognises the opportunity to connect with future regional public transport infrastructure, including the proposed Bells Creek (Aura) station associated with The Wave project.

The public transport network for the ultimate Aura South development can be seen in **Figure 2.3.1** below.

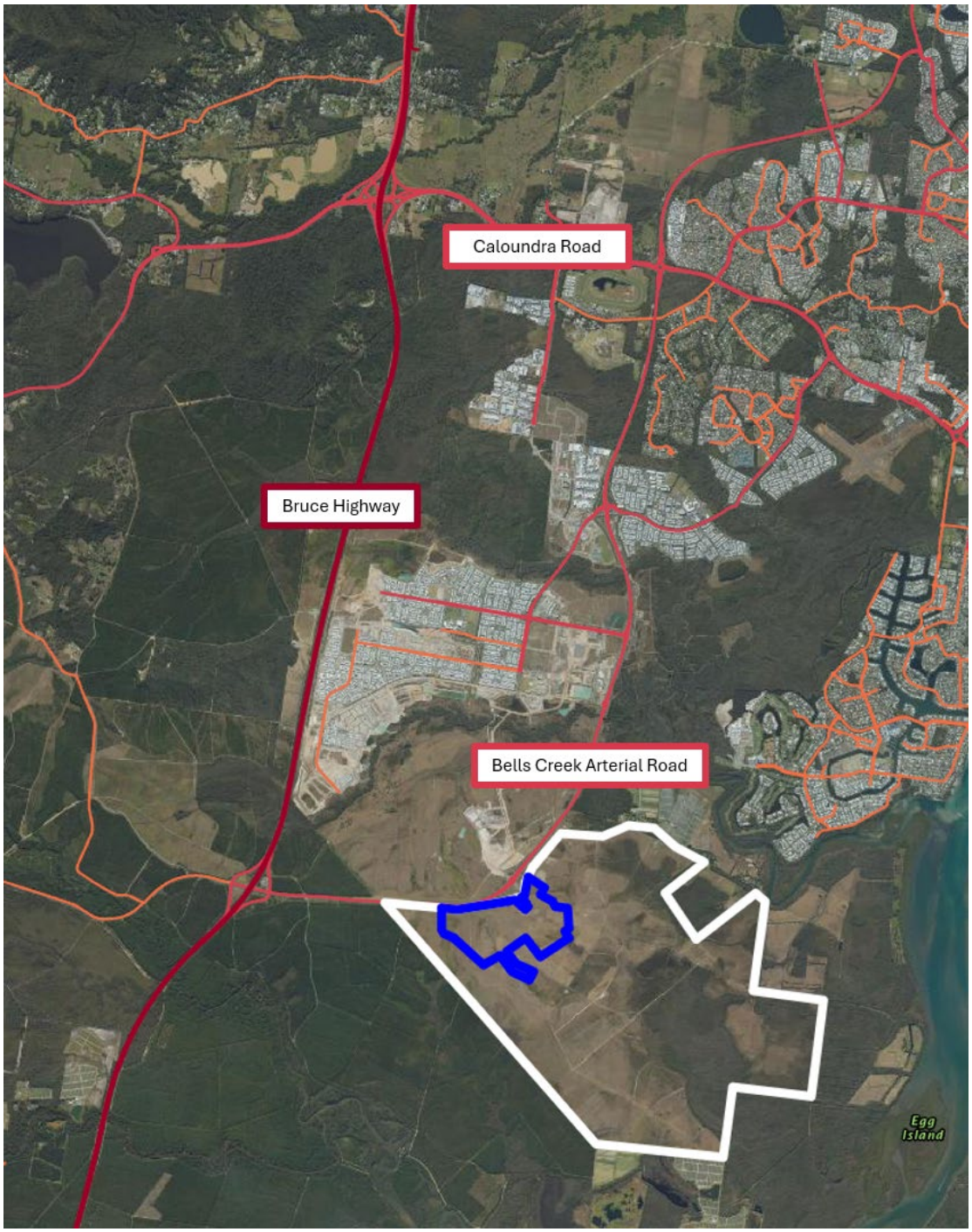
Figure 2.3.1 – Aura South Public Transport Network



The road network within the ERA will provide indented bus stop lanes where appropriate for integrated public transport. The public transport network being delivered as part of the ERA is described further in **Section 4.3** of this report.

2.4 Existing Road Network

Figure 2.3.1 – Existing Road Network



2.4.1 Bells Creek Arterial Road

Bells Creek Arterial Road is a state-controlled road forming the north/north-western boundary of the Halls Creek PDA. It is a two-way single carriageway road with a cross-section generally consisting of 3.5m lanes, 1m median and 3m shoulders on either side.

Bells Creek Arterial Road extends from the Bruce Highway, west of the site to the Bells Creek Arterial Road/Caloundra Road/Caloundra-Mooloolaba Road to the north. Bells Creek Arterial Road provides primary access to the Aura South Early Release Area via the Bells Creek Road Roundabout.

2.4.2 Bruce Highway

The Bruce Highway to the west of the site acts as a key north-south connector road. It is a two-way, 4 lane state-controlled road with 3m shoulders and a 14m median.

The Bruce Highway and Bells Creek Arterial intersect to the west of the site, providing safe and convenient grade separated access to the broader road network.

2.5 Site Access

The ERA will gain all access through the existing Bells Creek Road / Bells Creek Arterial Road roundabout intersection (the BCA Roundabout), an existing 2 circulating lane roundabout. The “southern” leg of the roundabout will serve the Aura South ERA and continue to provide access to the existing rural residential community to the north-east of the broader Aura South land holding.

It is noted that the current proposals will include modification of the Aura South approach to this BCA roundabout such that the primary entry road leads directly into the Aura South development area via a road that is being designed in a manner to deliver a true ‘entry experience’ road into the Halls Creek PDA. The Bells Creek Road alignment, serving the existing rural residential to the north-east of the development will be realigned to create a standard signalised t-intersection as an interim arrangement.

In the short term the form of Bells Creek Road as a two-lane, two-way road will remain unchanged with the analysis contained within this transport assessment focused on the documentation of the analysis undertaken to support this approach.

Figure 2.4.1 – Bells Creek Road / Bells Creek Arterial Road Layout (QLD Globe, 2026)



3. Background Traffic Analysis

3.1 BCA Existing Traffic Analysis

To inform ongoing detailed assessment of the BCA Roundabout for the purposes of the ERA external network traffic analysis, we have collected existing traffic count data and undertaken base case analysis to determine the prevailing operating conditions. It is relevant to note that the side road approaches serve little by way of development activity or existing residential catchment and as such it is expected that the current roundabout would operate with reasonable operating conditions.

For the analysis of the ERA, we note that we have focused solely on the BCA roundabout noted above and a number of internal proposed intersections within Gagalba, and have not extended the assessment further afield. It is relevant to note that the DTMR is current in the process of updating their strategic and mesoscopic transport models relevant to Aura and Aura South and that these will be utilised to inform the assessment of future development of the whole of site PDA and associated infrastructure agreements.

For the purposes of this analysis and the first principles approach taken to the analysis we have used SIDRA intersection analysis software for all relevant assessment scenarios.

3.1.1 SIDRA Analysis Assumptions

The following SIDRA Analysis had the following parameters applied to the SIDRA model for the purpose of assessing the base case:

- A Saturation Flow of 1,950 through car units per hour;
- A Peak Flow Period of 30 minutes, with a conservative Peak Flow Factor of 95%;
- Heavy vehicle percentages estimated from the survey count data;
- Intersection geometry based on measurements of aerial imagery supplemented with on-site measurements; and
- Gap acceptance parameters based on default SIDRA values.

3.1.2 2026 Existing Background Traffic

Vehicle movement survey data was collected at the BCA Roundabout on the 25th of June 2026.

The intersection count data was collected over 24 hours to capture peak periods, commuter traffic and daily traffic volumes. The identified AM and PM peak hours for the intersection were as follows:

- 6:00AM – 7:00AM; and
- 3:00PM – 4:00PM.

The 2026 background traffic movements are represented by the turning movement diagram shown in Figure D1 in **Appendix D**.

SIDRA intersection software has been used to assess the performance of the BCA Roundabout. **Figure 3.1.2.1** shows the existing layout of the intersection which was used in this analysis scenario and **Table 3.1.2.1** shows the summary outputs from the SIDRA intersection model. The detailed movement summary reports from the SIDRA Model are included in **Appendix E** of this report.

Figure 3.1.2.1 – Bells Creek Arterial / Bells Creek Road Roundabout SIDRA Layout

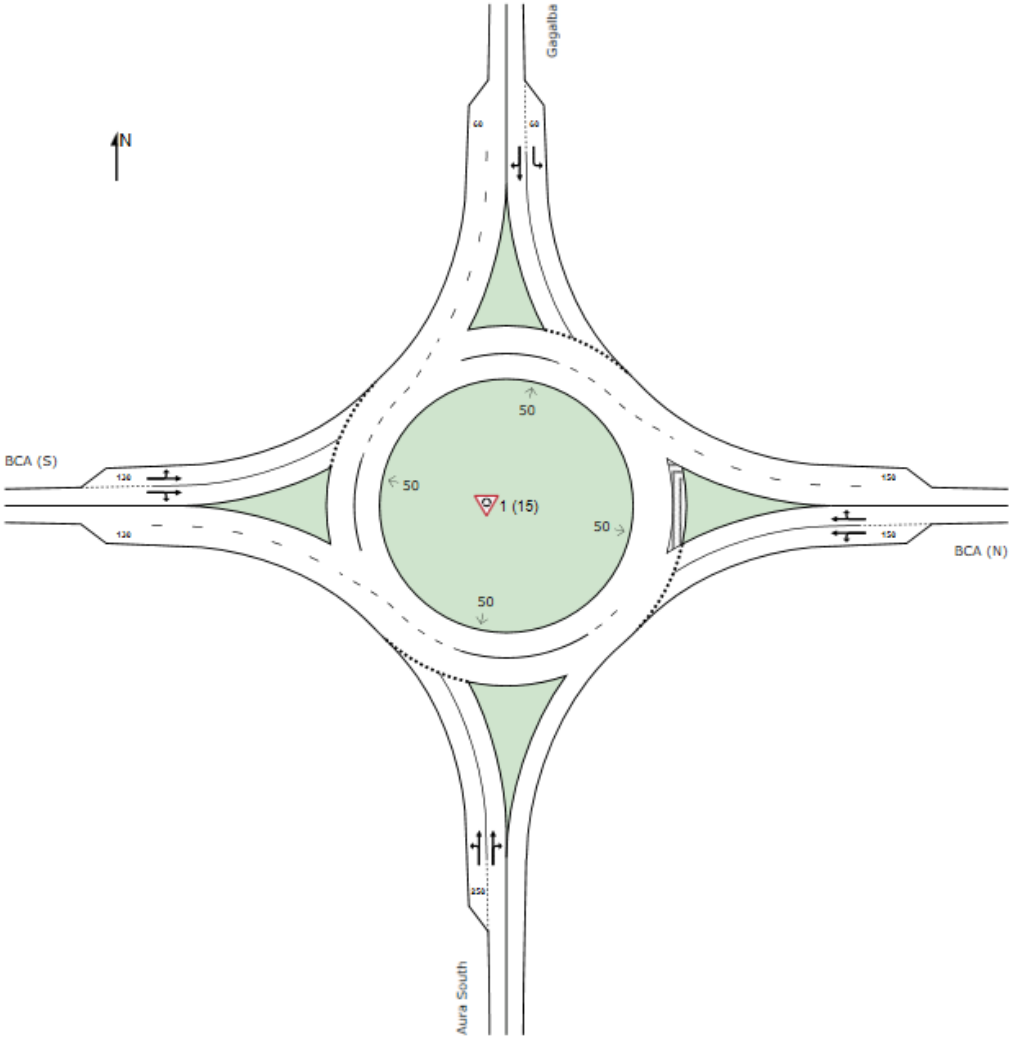


Table 3.1.2.1 – Bells Creek Arterial / Bells Creek Road 2026 Background Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South (South)	Left	0.007	4	LOS A	0.2	0.013	4	LOS A	0.4
	Through	0.011	3	LOS A	0.3	0.015	3	LOS A	0.4
	Right	0.011	11	LOS B	0.3	0.015	11	LOS B	0.4
	Approach	0.011	6	LOS A	0.3	0.015	5	LOS A	0.4
Bells Creek Arterial (East)	Left	0.148	3	LOS A	5.5	0.143	3	LOS A	5.6
	Through	0.150	2	LOS A	5.7	0.146	2	LOS A	5.8
	Right	0.150	10	LOS A	5.7	0.146	10	LOS A	5.8
	Approach	0.150	3	LOS A	5.7	0.146	3	LOS A	5.8
Aura Boulevard (North)	Left	0.023	4	LOS A	0.6	0.019	4	LOS A	0.5
	Through	0.012	4	LOS A	0.3	0.033	3	LOS A	0.8
	Right	0.012	11	LOS B	0.3	0.033	11	LOS B	0.8
	Approach	0.023	4	LOS A	0.6	0.033	7	LOS A	0.8
Bells Creek Arterial (West)	Left	0.192	3	LOS A	6.0	0.159	3	LOS A	5.1
	Through	0.192	2	LOS A	6.0	0.159	2	LOS A	5.1
	Right	0.192	10	LOS A	6.0	0.159	10	LOS A	5.1
	Approach	0.192	3	LOS A	6.0	0.159	3	LOS A	5.1

3.1.3 Future Year Background Traffic

Current planning for the Aura development includes an expectation that Stage 1 of the Aura Town Centre will be completed in 2029 while stage 1 and 2 of 'The Wave' will be completed in 2032. These areas are likely to change traffic patterns at the BCA Rd roundabout.

Based on an indicative forecast residential rollout of approximately 1,000 lots/annum between Aura and Aua South, which is considered the upper limit capacity for this growth corridor, it is forecast that Aura South will have approximately 985 dwellings by the 2032 design year. Furthermore, in 2033, based on the indicative Aura South rollout program it is expected that Aura South will have approximately 1,495 dwellings, reaching and exceeding the proposed number of lots in the Early Release Area of 1,051 dwellings in this design year.

On the basis of the factors above, we have undertaken analysis based on the 2032 and 2033 future years as part of this assessment.

While the DTMR ordinarily would require an assessment of a 10 -year design horizon for direct access intersections, we have taken this approach on the basis of discussions with EDQ and DTMR. It is recognized by all parties that there is ultimately a need for further, detailed transport infrastructure analysis and assessment work to be undertaken and that this is to be underpinned by agreed and up to date transport modelling. The DTMR team has committed to updating their strategic transport model at a regional level that will then inform a more detailed mesoscopic modelling exercise which will be undertaken by the project team with the DTMR.

This detailed modelling exercise will be an integral part of the ongoing assessment of the Aura South transport infrastructure needs which will ultimately inform the development of a specific infrastructure agreement, including the potential need for, and timing of, incremental upgrade of the BCA roundabout.

To estimate future year background traffic in 2032 and 2033, a 2% linear growth rate has been adopted and applied solely to the through movements along the BCA road. This represents the growth on the external Bells Creek Arterial road network for traffic movements between the Bruce Highway and Caloundra.

While it is acknowledged that the Aura Development continues to expand and will contribute to traffic movements through the subject BCA Roundabout, we note that the traffic growth associated with the wider Aura and Aura South developments, including 'internal' trips between Aura South and Aura (including Gagalba and Aura Town Centre) are captured separately within the design scenarios discussed later in **Section 4** of this report. These volumes have been deliberately excluded from the background traffic assessment to establish a baseline for if/when infrastructure upgrades are required on the BCA roundabout from the Aura South development.

The SIDRA Intersection analysis was completed using the layout shown in Figure 3.1.2.1 above and SIDRA modelling assumptions previously identified. Detailed 2032 turning movement diagrams and subsequent SIDRA Movement Summaries can be found in Appendix D, Figure D2 and Appendix E, respectively. The results of the 2032 Background analysis scenario are shown in Table 3.1.3.1 and the results for the 2033 Background analysis scenario are shown in Table 3.1.3.2.

Table 3.1.3.1 – Bells Creek Arterial / Bells Creek Road 2032 Background Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South (South)	Left	0.007	4	LOS A	0	0.014	4	LOS A	0
	Through	0.011	3	LOS A	0	0.016	4	LOS A	0
	Right	0.011	11	LOS B	0	0.016	11	LOS B	0
	Approach	0.011	6	LOS A	0	0.016	5	LOS A	0
Bells Creek Arterial (East)	Left	0.148	3	LOS A	6	0.160	3	LOS A	6
	Through	0.150	2	LOS A	6	0.162	2	LOS A	7
	Right	0.150	10	LOS A	6	0.162	10	LOS A	7
	Approach	0.150	3	LOS A	6	0.162	3	LOS A	7
Aura Boulevard (North)	Left	0.023	4	LOS A	1	0.019	4	LOS A	1
	Through	0.012	4	LOS A	0	0.030	3	LOS A	1
	Right	0.012	11	LOS B	0	0.030	11	LOS B	1
	Approach	0.023	4	LOS A	1	0.030	7	LOS A	1
Bells Creek Arterial (West)	Left	0.192	3	LOS A	6	0.178	3	LOS A	6
	Through	0.192	2	LOS A	6	0.178	2	LOS A	6
	Right	0.192	10	LOS A	6	0.178	10	LOS A	6
	Approach	0.192	3	LOS A	6	0.178	3	LOS A	6

Table 3.1.3.1 – Bells Creek Arterial / Bells Creek Road 2033 Background Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South (South)	Left	0.007	4	LOS A	0	0.014	4	LOS A	0
	Through	0.011	3	LOS A	0	0.016	4	LOS A	0
	Right	0.011	11	LOS B	0	0.016	11	LOS B	0
	Approach	0.011	6	LOS A	0	0.016	5	LOS A	0
Bells Creek Arterial (East)	Left	0.150	3	LOS A	6	0.163	3	LOS A	6
	Through	0.152	2	LOS A	6	0.165	2	LOS A	7
	Right	0.152	10	LOS A	6	0.165	10	LOS A	7
	Approach	0.152	3	LOS A	6	0.165	3	LOS A	7
Aura Boulevard (North)	Left	0.023	4	LOS A	1	0.019	4	LOS A	1
	Through	0.012	4	LOS A	0	0.030	3	LOS A	1
	Right	0.012	11	LOS B	0	0.030	11	LOS B	1
	Approach	0.023	4	LOS A	1	0.030	7	LOS A	1
Bells Creek Arterial (West)	Left	0.195	3	LOS A	6	0.181	3	LOS A	6
	Through	0.195	3	LOS A	6	0.181	2	LOS A	6
	Right	0.195	10	LOS A	6	0.181	10	LOS A	6
	Approach	0.195	3	LOS A	6	0.181	3	LOS A	6

As expected, the existing roundabout operates within all reasonable operational thresholds with high levels of service offered to all users for each of these future year background analysis scenarios.

3.2 Traffic Generation Statistics - Baringa Catchment

The assessment of the ERA in terms of the transport system, along with all the elements of the ERA, has been undertaken in a consultative manner including direct engagement with EDQ and with the Department of Transport and Main Roads (DTMR). In terms of the latter, this engagement process was undertaken to inform, not only the assessment of the ERA itself, but also to inform the broader assessment process for the entire Halls Creek PDA.

From this engagement there were several clear outcomes and expectations including:

- The commitment of the State to work with the project team in the development of a safe and efficient transport system that met the needs of the communities that it serves whilst minimising adverse impacts on the external transport networks;
- The commitment to working collaboratively to achieve an equitable infrastructure delivery strategy;
- The State has, in conjunction with the project team where relevant, committed to the update of their strategic and mesoscopic transport models to be used for the ultimate assessment of the PDA transport network; and
- Relevant to the immediate assessment of the ERA the expectation that, pending updates to their models as noted above, any assessment of the ERA ought to take a traditional "first principles" assessment approach.

Noting that the assessment of the ERA has adopted this first principles approach, a key pillar in this approach is the adoption of appropriate traffic generation statistics. One of the highest order sources within the hierarchy of development trip generation statistics is the establishment of reliable contemporary data, sourced from local land uses of a similar nature. In this regard we note that the suburb of Baringa is an established and somewhat mature catchment within the broader Aura development. Relevantly this is broken into a number two distinct catchments (north and south of Aura Boulevard) and includes comprehensive active transport networks that reflect the intent of the active transport network that will form part of the Aura South ERA.

It is on this basis that we have utilised the southern Baringa catchment to determine appropriate traffic generation statistics for the use in the assessment of the Aura South ERA.

To enable the calculation of the traffic generation statistics, vehicle movement survey data was collected at the Aura Boulevard/McArthur Parade intersection and the Aura Boulevard/Eden Drive intersection on the 23rd of July 2026. The intersection count data was collected over 24 hours to capture peak periods, commuter traffic and daily traffic volumes.

The identified AM and PM peak hours for the intersections were as follows:

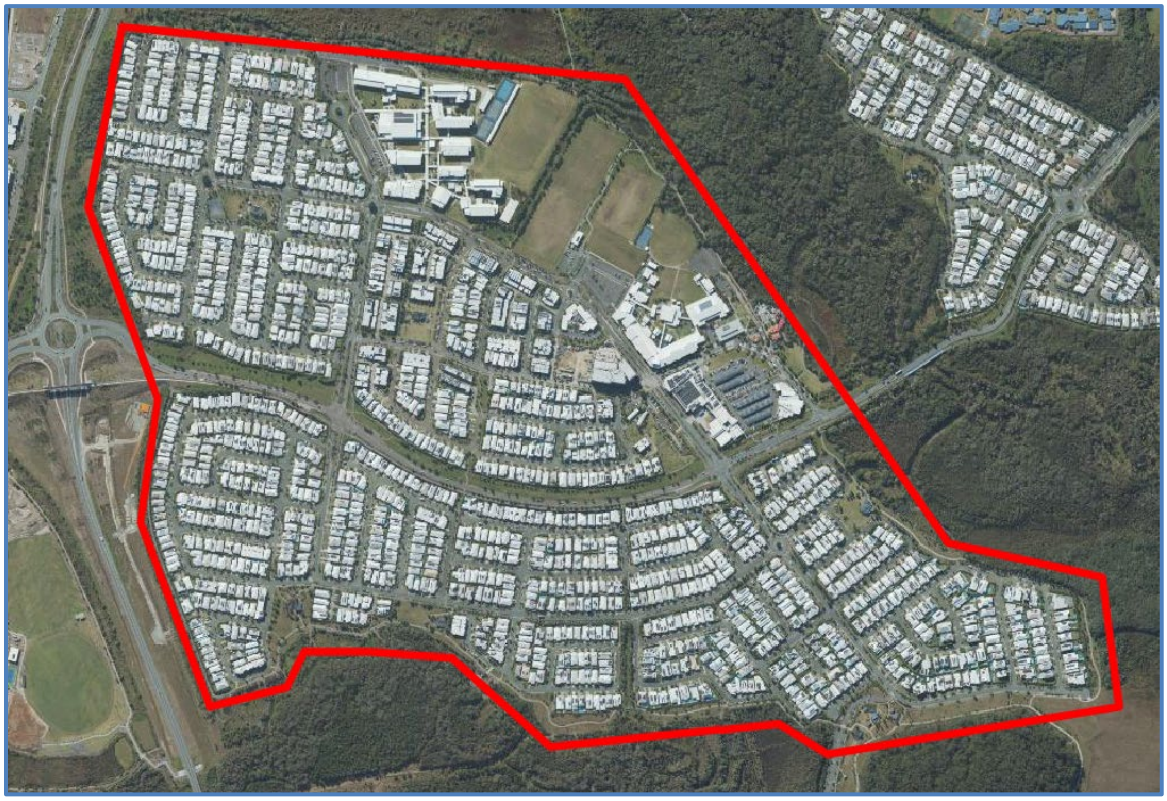
- 7:45Am – 8:45AM; and
- 3:45PM – 4:45PM.

The count data at Baringa was used to estimate the trip generation rates in Aura South ERA. The traffic count data is presented in **Appendix F**.

While the northern precinct within Baringa has a mix of land uses including schools and a retail/commercial precinct, the southern catchment (i.e. south of Aura Boulevard) is residential in nature and presents as a homogeneous catchment.

The trips in/out of the southern residential precinct (890 dwellings) were used as a means of determining a locally based, robust and current traffic generation rate for the residential land uses, with the homogeneous nature of the catchment lending itself to accurate determination of a defined traffic generation rate. The northern precinct comprises of other land uses such as a childcare centre, school and commercial uses that will not accurately depict trip/dwelling generation rates.

Figure 3.3.1 – Baringa Precinct (QLD Globe, 2026)



The following traffic movements, including the in/out splits, were recorded:

Table 3.3.1 – Baringa Southern Precinct Trip Generation

Peak Period	Trips IN	Trips OUT	TOTAL
AM	169 (28%)	426 (72%)	595
PM	355 (60%)	239 (40%)	594

As shown in **Table 3.3.1** above the traffic volumes in the peak periods demonstrate a relatively traditional directional split in the AM and PM Peak periods and remarkably consistent total trip making for this residential catchment. As previously noted, the southern catchment of Baringa has a total of 890 dwellings which allow dwelling trip rates to be determined.

From the data presented above, in both peak periods the trip generation rate was **0.66 trips/dwelling**.

This traffic generation rate has subsequently been used in the assessment of the road network supporting Aura South as documented following in **Section 5.1**.

As part of the traffic data collection, we do note that there are pedestrian movements between Baringa South and Baringa North that were captured within the traffic count data. The total pedestrian movements across Aura Boulevard are as follows:

- AM Peak – 219 total pedestrians
- PM Peak – 85 total pedestrians

Based on the land uses and other infrastructure in the immediate vicinity, these pedestrian movements can be attributed to a range of purposes including;

- Recreational walkers;
- Shopping related walk trips to the Neighbourhood Centre on the northern side of Aura Boulevard
- Work/commuter walk trips to the retail/commercial land uses within the aforementioned Neighbourhood Centre;
- School/day care trips; and
- Walk trips to public transport services operating along Aura Boulevard.

From the data available to us, including the video data it is not possible to reasonably determine the trip purpose for each pedestrian movements and furthermore there appears to be some occurrence of “groups” of pedestrians which may be attributable to one journey purpose outlined above.

In relation to the impact of the pedestrian movements on the traffic generation statistics adopted we note the potential extent of the groupings and also note that as part of the

delivery of the ERA there will be a number of similar relevant land uses that would contribute to similar walk journeys being relevant to the ERA, noting that the ERA includes significant active transport facilities, commercial and retail land uses, a child care centre, sporting fields and recreational parks, provisions for public transport services and will be linked by high standard active transport facilities to Aura and the facilities that it will offer at the time of the delivery of the ERA.

On the basis of the above we are of the view that the extent of the pedestrian movements at the Baringa site is not of such significance that it is likely to materially impact on the traffic generation rates particularly when considered as a potential net difference between this site and the Aura South ERA.

The traffic generation rate as noted above is considered acceptable and appropriate for use in assessing the ERA traffic impacts for the short term.

4. Proposed Development – Aura South ERA

4.1 Proposed Development - ERA

The Early Release Area of Aura South is proposed to deliver 1,051 residential dwellings, a small neighbourhood centre, district sports park and the initial stages of the proposed Enterprise Precinct.

As noted previously, the development application seeks a PDA Development Permit for:

- Reconfiguring a Lot in accordance with a Plan of Development;
- Operational Works in accordance with a Plan of Development; and
- Material Change of Use in accordance with a Plan of Development.

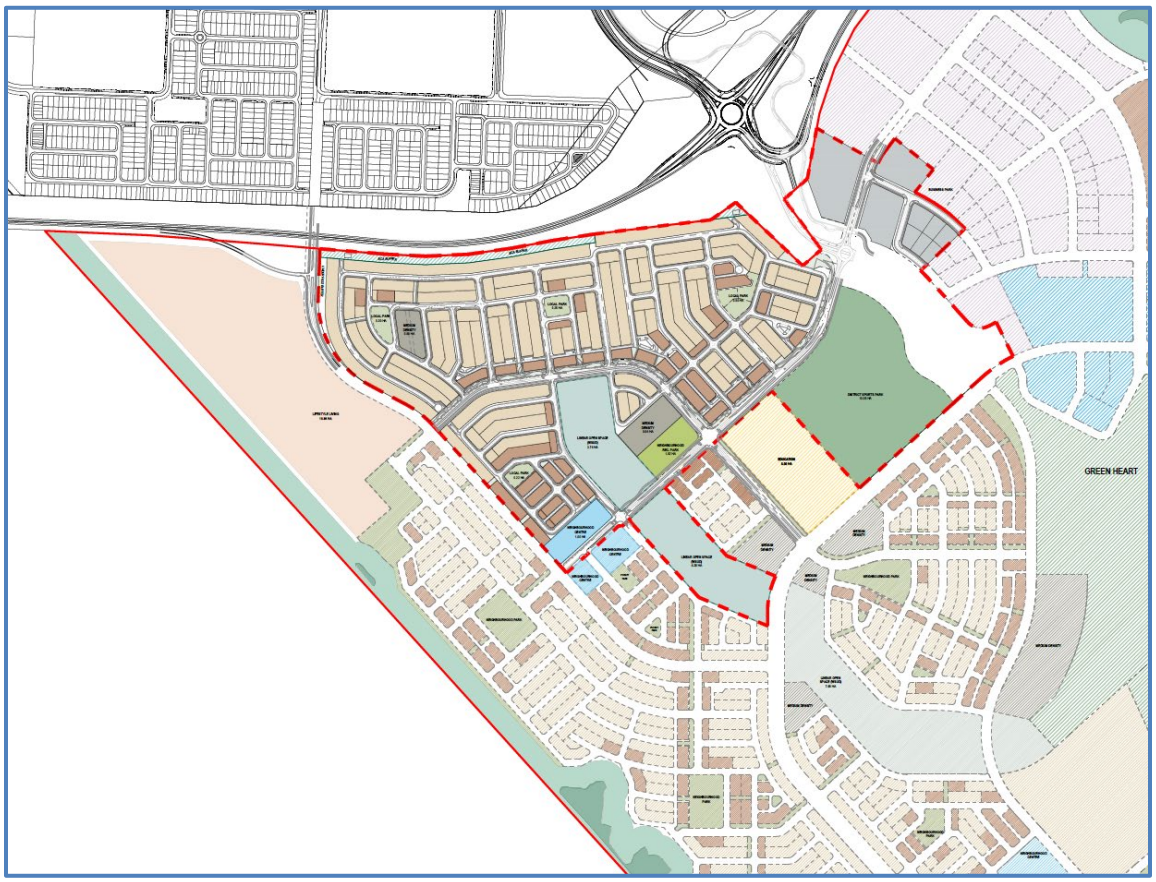
The declaration of the Halls Creek PDA established the planning framework required to accelerate the delivery of Aura South. As the first neighbourhood within the PDA, the ERA will bring forward 1,051 new homes, including 636 detached housing lots, 338 attached allotments and 2 multiple dwelling sites accommodating about 77 apartments.

This crucial housing supply will be supported by local services and infrastructure, 9 enterprise and employment lots, a neighbourhood centre, sports and local parks, high-quality open space areas and active transport connections, establishing strong foundations for the new Aura South community.

The Aura South ERA layout within the broader Aura South surroundings is shown in the ERA Context Plan shown in **Figure 4.1.1** below.

Early Release Area suite of development plans, including the site layout plans, connectivity plan and road hierarchy plan amongst other things are included in **Appendix G**.

Figure 4.1.1 – Early Release Area Context Plan



4.2 Road Hierarchy

The Aura South ERA will consist of a network of higher order roads that provides a convenient, safe and efficient road network with integrated car, bus and active travel options. This high standard road network consists of the primary access road from the BCA roundabout (designated as a Sub-Arterial Road) and two primary spine roads in the form of Neighbourhood Connectors. The road hierarchy is shown in **Figure 4.2.1** below and is included in **Appendix G** with the suite of development plans prepared by Place Design Group on behalf of the project team.

The internal road network of the site will deliver a balanced transport system for the ERA and ultimately the future Aura South development. Additionally, the adopted cross-sections will

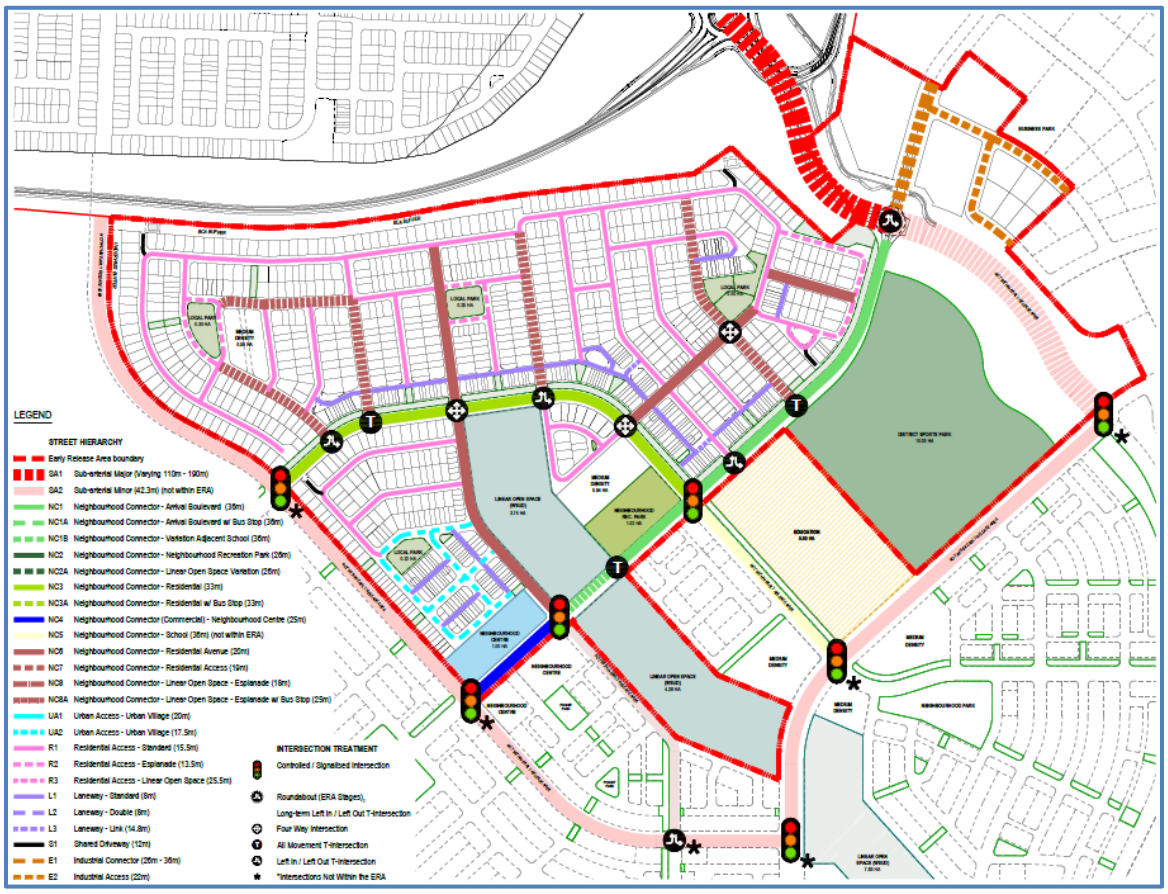
also prioritise the delivery of a network of active transport infrastructure and public transport priority that ensures an integrated transport outcome is delivered.

The formulation of the internal road network has been informed by the desire to create walkable neighbourhood precincts and achieves this through establishment of a pedestrian & shared pathway network delivered as key elements of the road cross-sections. The internal road network has also been responsive to the desire to provide a public transport network that will deliver high standard and highly connected bus public transport options for residents and workers throughout Aura south.

The internal road network will deliver connected neighbourhoods, safe and efficient distribution of traffic and a system that integrates all modes of transport. The street network will deliver consistent driver's experience throughout, with the proposal to utilise similar road cross-sections developed throughout the balance of the Aura South development. The internal roads and streets within the ERA have been designed with future traffic from the Aura South development in mind, where required.

Adopted cross-sections can be seen within **Appendix G** noting that the fundamental principles of the EDQ guidelines have been applied where relevant along with consideration of the key features of the previously adopted cross-sections utilised throughout Aura to deliver a road network that remains relatively consistent with that road network.

Figure 4.2.1 – ERA Road Hierarchy Plan



As shown in **Figure 4.2.1** above and the plans included within **Appendix G**, the ERA consists of higher-order roads including a sub-arterial level road with the primary site entrance road being partially delivered as part of the ERA. While subject to future, more detailed traffic analysis of the balance of the Aura South road network, it is expected that the sub-arterial road network would primarily consist of median divided four lane roads with widening at key intersections throughout. This general cross-section has been adopted for the primary entry road from the BCA.

Within the ERA, the sub-arterial road network will be supported by two primary spine roads that distribute traffic throughout the precinct. These roads are Neighbourhood Connector level roads and are the most significant road within the ERA. They have a general cross-section that is provided within a generous road reserve width and, while the cross-section does vary along their length, this is a deliberate approach to the road network design such that it is responsive to the land uses fronting the road. The general arrangements include:

- Two traffic lanes;
- Parking lanes as appropriate to the land use frontage;

- 3.5m medians to facilitate turning lanes at intersections as required;
- Bus stops on the designated bus routes;
- 3.0m wide 2-way separated cycle path with separate footpath on one side; and
- 3.0m shared path on the opposite side.

These roads are going to deliver a high standard of access for all transport users and modes while delivering this within a landscaped corridor that minimises the harshness of the pavement and concrete.

These Neighbourhood Connector roads are expected to carry higher volumes of traffic to/from/within the surrounding neighbourhoods. While lower order roads such as neighbourhood access roads will support small local traffic volumes.

The Early Release Road Hierarchy Plans and the proposed road cross-sections are included in **Appendix G**. The specifics of the relevant internal intersection treatments as identified in the road hierarchy plan show in **Figure 4.2.1** above are discussed in more detail in **Section 4.4** of this report.

The project team has also delivered a comprehensive set of functional plans that demonstrate the practical implementation of the transport network including the roads, active pathway and public transport networks. These are included in the Aura South ERA - Civil Functional Drawings package prepared by KN Group and submitted to EDQ under separate cover.

These plans have not been included within this report and note that these are available as part of the suite of documents submitted as part of the ERA submissions.

While not specifically shown on the current road hierarchy plans, we note that emergency access provisions can be provided for the ERA in the event of closure of all or part of the BCA roundabout. We confirm that a secondary connection to the BCA road, for use specifically in the case of an emergency event, can be provided at-grade essentially in the same general location as the proposed future grade separated crossing of the BCA road. Noting that the traffic analysis, refer to **Section 5** following, shows the primary BCA roundabout access is adequate and can support the ERA traffic movements, this secondary emergency only access can be reasonably conditioned as part of the ERA development.

4.3 Active and Public Transport

4.3.1 Active Transport

The ERA will deliver an extensive active transport network that provides linkages ultimately to the balance of the Aura South area, the District Centre and Enterprise Precinct.

The active transport network being developed to service the entire Aura South development is extensive and will provide a best practice network serving the community in the form of commuter and leisure-related pathways that provide viable travel options. The formulation of the active transport network for the ERA, by the project team, has been based on the principle that this initial stage of delivery will establish the foundation upon which the success of the entire active transport network will be laid.

As such the proposed active transport network throughout the ERA represents a significant commitment to the delivery of an active transport that will meet all travel needs of residents including work, education, shopping and recreational travel. The network of active transport paths consists of the following key elements:

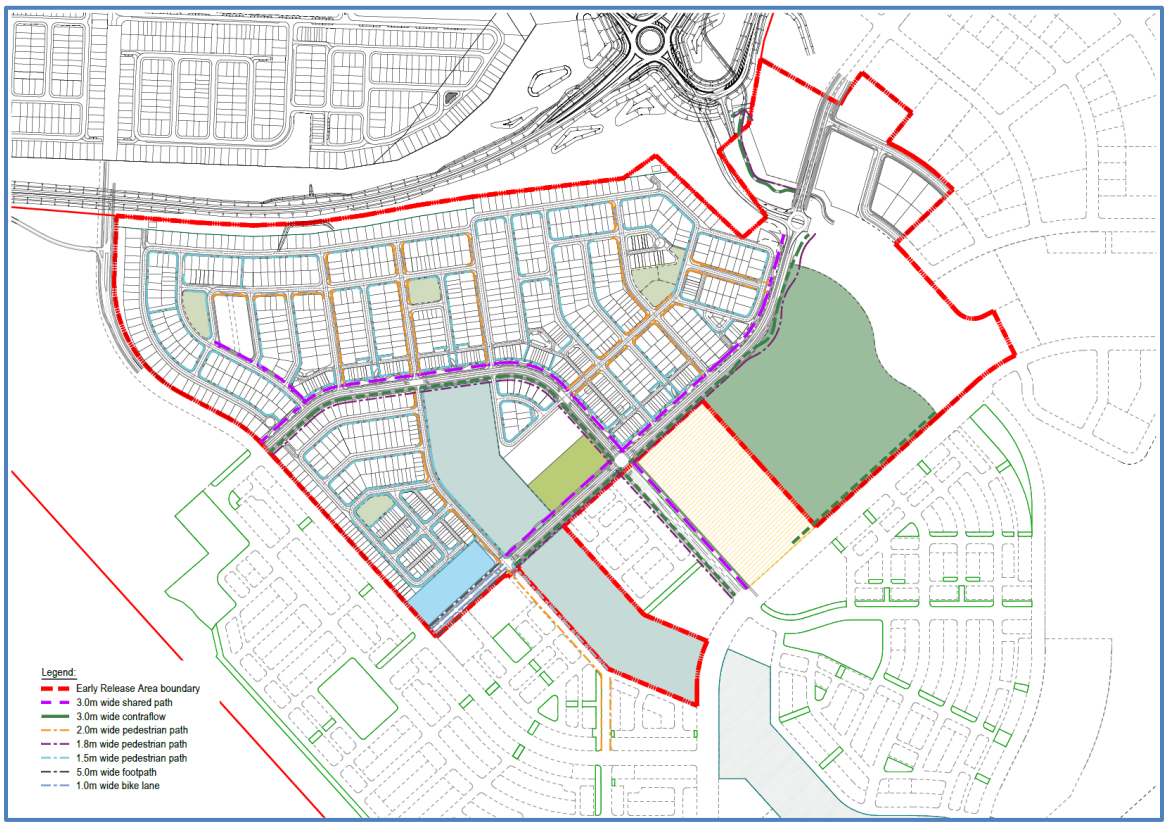
- Dedicated Two-way contraflow 2-Way Separated Cycle Path along the primary entry road;
- 3.0m wide contraflow bike lanes along the Neighbourhood Connector roads;
- 3.0m shared path network; and
- Supporting pedestrian pathway network with varying widths.

Subject to further detailed planning and engagement with the State, it is envisaged that the 2-Way Separated Cycle Path may enter Aura South over the BCA (overpass) and enter a high standard segregated bicycle 2-Way Separated Cycle Path running along the primary access road corridor between the ERA residential area and the Enterprise Precinct. This will link to the north into Gagalba ultimately providing a 2-Way Separated Cycle Path link to the Aura Town Centre and the Aura Railway Station and proposed transit hub centred around The Wave heavy rail corridor being delivered by the State Government.

As seen in **Figure 4.3.1** below, the ERA provides extensive network of footpaths, bike paths and shared paths, providing exceptions connectivity between the residential precincts, the internal park network, the Local Centre (to the west), the District Sports Park (to the east) and Enterprise Precinct (east).

The paths provided in the ERA are appropriate to the hierarchy of roads and the expected level of active travel.

Figure 4.3.1 – ERA Active Transport Connectivity Plan



4.3.2 Public Transport

The ERA will facilitate the potential provision of high standard bus public transport as part of the ERA in the early stages of development. Road network elements have been designed to accommodate safe and efficient movement of buses throughout the road network.

As seen in **Figure 4.3.2** below, a well-defined bus route can be facilitated to and from the BCA, providing for bus transport linkages directly to Aura Town Centre and Aura Railway Station being delivered as part of 'The Wave'.

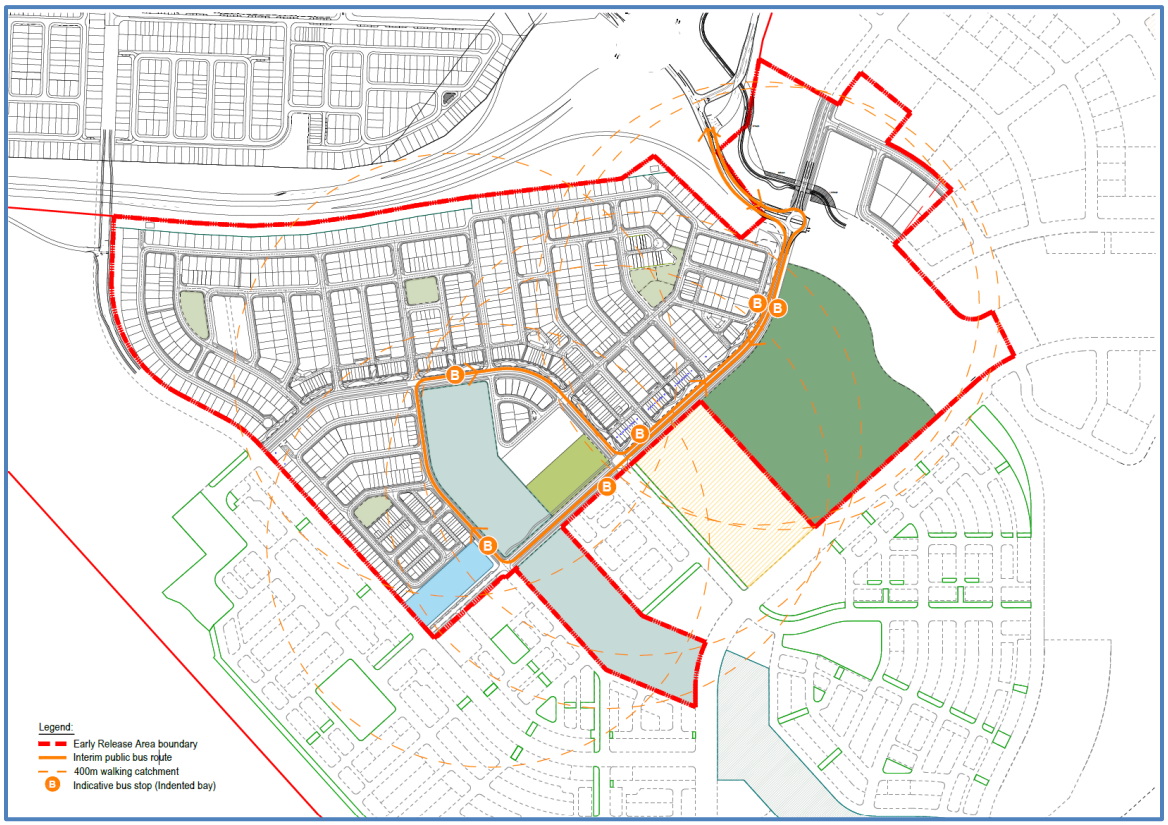
As part of the development of a public transport plan the project team has identified potential locations for bus stops along the corridor, with the strategy being to provide access to bus public transport within walkable catchments for the residents in the ERA. Through this process the majority of the ERA is captured within a 400m radius of a bus stop allowing for easy walk-up access to bus public transport.

It is recognised that the delivery of a bus system is beyond the scope of the development and is outside the remit of Stockland in the delivery of the ERA. To the extent that bus public transport is being facilitated through enabling infrastructure, the proposal is delivering on its objective to provide a balanced transport system across all modes. It is considered that further consideration to the collective delivery of future bus public transport services will require consultation with the State and an appropriate and reasonable approach to the service delivery will need to be developed.

Importantly the proposed bus public transport network has potential to integrate into future routes servicing the whole of Aura South including the future school adjacent to the District Sports Park.

Early Release Area Bus Routes are included in **Appendix G**.

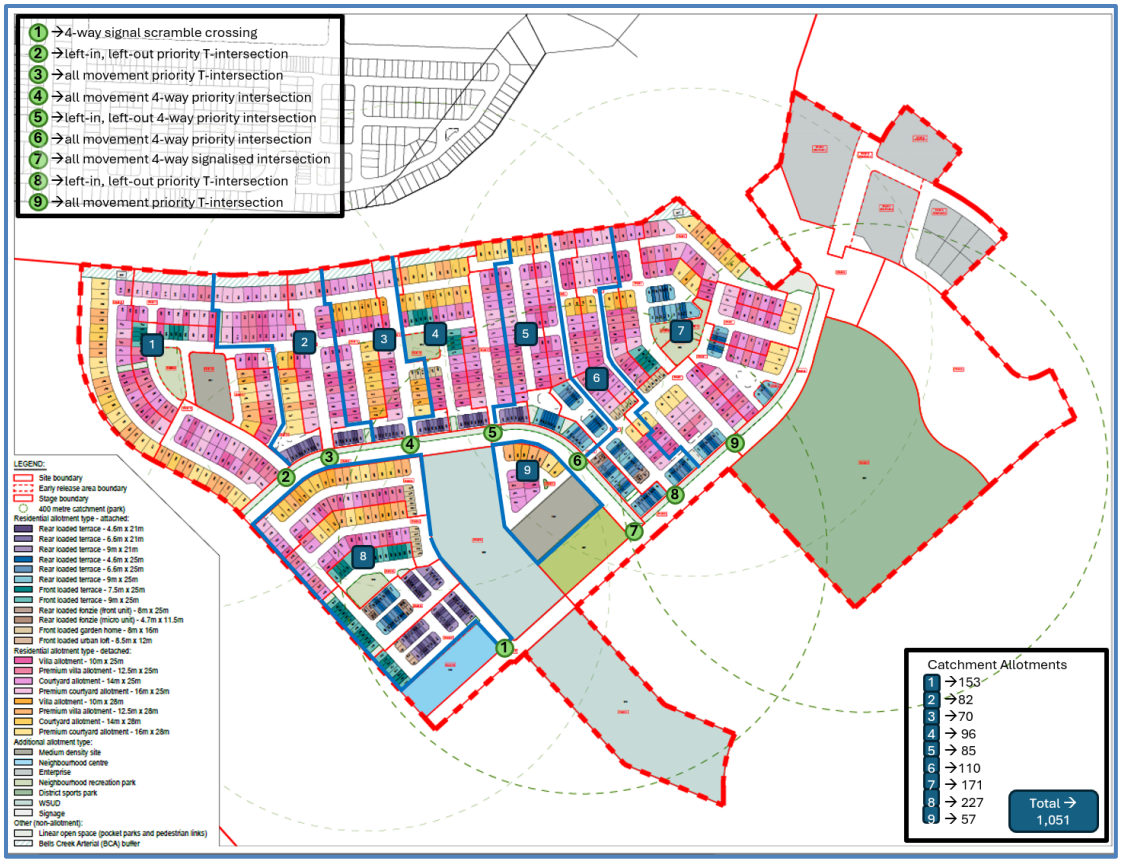
Figure 4.3.2 – ERA Public Transport Plan



4.4 Internal Road Network

The major intersections and street hierarchy in the Early Release Area can be seen in **Figure 4.4.1** below. These intersections are set up in their ultimate alignment with the idea that they will hold all future Aura South traffic and future proof the development.

Figure 4.4.1 – ERA Major Intersections



The intersection spacings along the neighbourhood connector level roads are generally over 100m apart to allow for the provision of safe turning movements at intersections whilst preserving the safe and efficient movement of all users of the internal road network. In isolated locations where the 100m separation is not able to be met, the intersection form has been limited to left in/left out configuration to ensure safe and efficient operation of the road network.

As part of this traffic assessment we have undertaken initial assessments of the internal road network form and function and in doing so have established representative diagrams of the Early Release Area Major Intersections and Catchments which are included in **Appendix H**. As part of this assessment, we have undertaken preliminary catchment analysis to determine estimated peak period traffic movements throughout the internal road network. This has then been used to inform the analysis of these internal intersections throughout the ERA. The intersection form being adopted for each of these intersections has been determined through a combination of the traffic analysis of the turning movements utilising the SIDRA traffic analysis program, and through the consideration of the needs for the development of a safe and efficient road network for all users. Given the relatively low traffic volumes expected throughout the internal road network we note that it is the general safety, efficiency and accessibility/legibility considerations that have been largely the driver for the intersection form adopted for the internal intersections.

This section of the report describes each of the primary intersections along the internal Neighbourhood Collector road network. We have identified the general form of each of these intersections and assessed these at a high level in terms of their expected operational performance.

It is noted that ultimate external connectivity will be such that the level of through traffic infiltration will be minimised. The sub-arterial road network surrounding the ERA will be the primary road network that efficiently distributes traffic to the external road network and to areas outside Aura South. On this basis the level of traffic through the ERA is not expected to be substantially higher than the initial estimates made for the purposes of this analysis.

As previously noted, the project team has also delivered a comprehensive set of functional plans that demonstrate the practical implementation of the transport network including the roads, active pathway and public transport networks. These are included in the Aura South ERA - Civil Functional Drawings package prepared by KN Group and submitted to EDQ under separate covers.

We note that where signalised intersections are proposed as part of the ERA, appropriate active transport signal arrangements are implemented in the analysis, including where relevant protected phases, late starts on opposing vehicle movements and we have not included any staged pedestrian crossings.

4.4.1 Intersection 1

Intersection 1 is a proposed 4-way signal-controlled intersection on the intersection of two neighbourhood connector roads. Although there is not expected to be a high volume of traffic from the side roads making up the north and south approaches, turning lanes are proposed to facilitate safe and efficient movement through this intersection. As shown, it is proposed that this be a highly pedestrianised intersection, given its location immediately adjacent to the proposed mixed use precinct, with the intent being that there is dedicated signalised scramble crossing to enable protected pedestrian movement. There is also a proposed bus

stop on the north-western approach, and this has been accommodated within the road reserve as shown within the Functional Plans prepared by the KN Group on behalf of the project team. Given that this intersection is adjacent to the Neighbourhood Centre it is expected that, with the significant active transport facilities throughout the ERA, this small mixed use/retail precinct will generate significant active transport to and from the site. The expected high volume of pedestrians and cyclists have been accommodated accordingly.

Figure 4.4.2 – Intersection 1 Site Layout

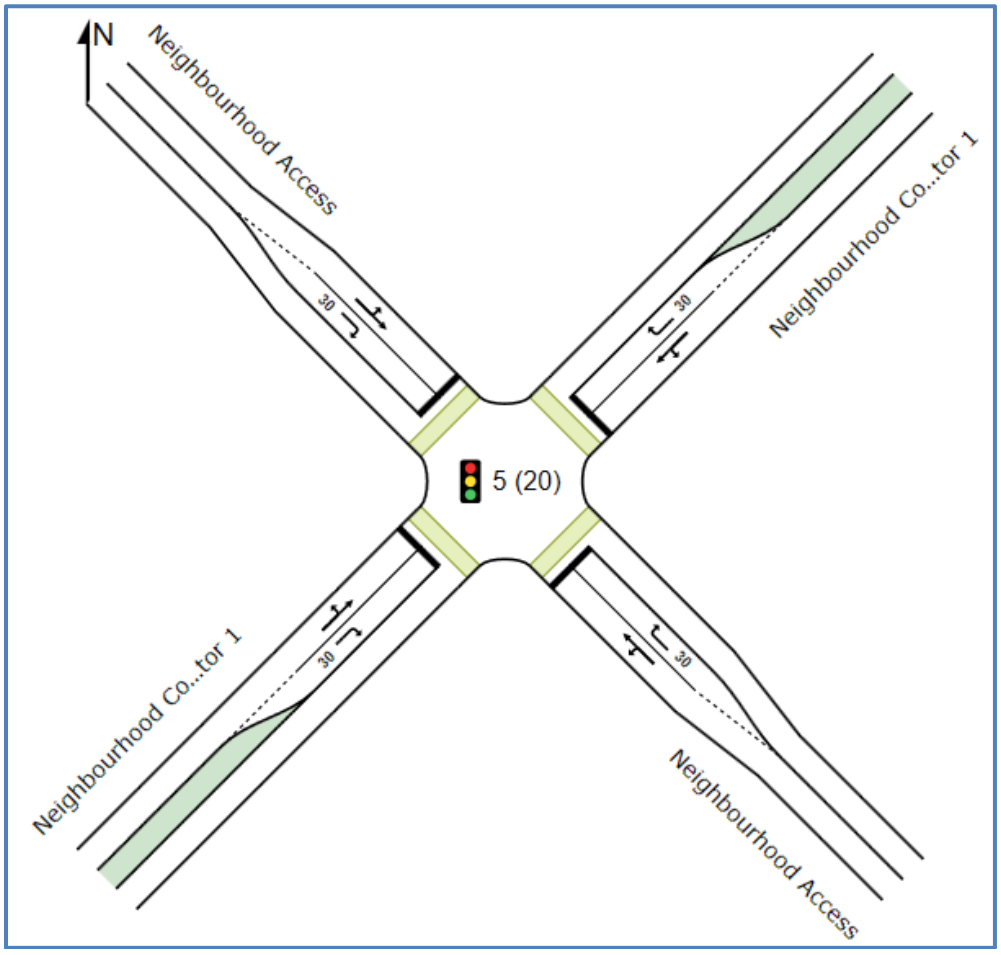


Figure 4.4.3 – Intersection 1 Signal Plan (AM & PM Scenario)



Table 4.4.1 – Intersection 1 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Southeast	Approach	0.096	24	LOS C	2	0.101	25	LOS C	3
Northeast	Approach	0.439	33	LOS C	17	0.623	35	LOS C	38
Northwest	Approach	0.444	30	LOS C	39	0.264	30	LOS C	23
Southwest	Approach	0.436	30	LOS C	16	0.346	30	LOS C	12

4.4.2 Intersection 2

Intersection 2 is a left-in/left-out simple T-intersection. Turning volumes at this intersection are expected to be low, only accommodating local residential traffic in/out of the northern residential catchment area.

Figure 4.4.4 – Intersection 2 Site Layout

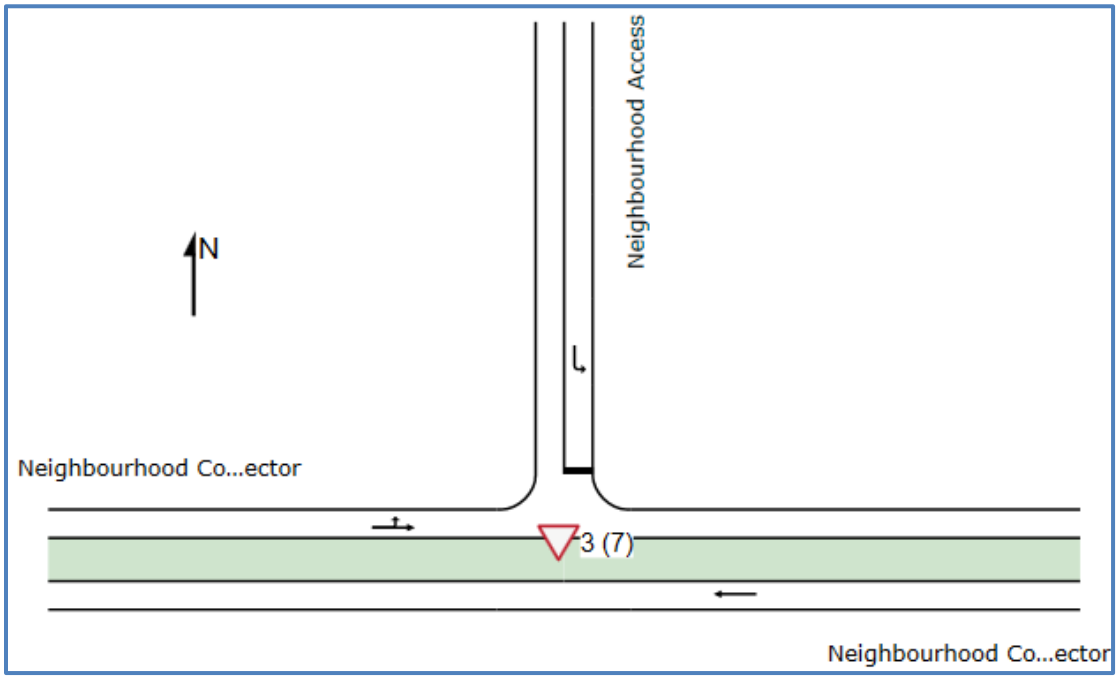


Table 4.4.2 – Intersection 2 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
East	Approach	0.033	0	NA	0	0.056	0	NA	0
North	Approach	0.115	8	LOS A	3	0.061	8	LOS A	2
West	Approach	0.056	1	NA	0	0.040	1	NA	0

4.4.3 Intersection 3

Intersection 3 is a give-way T-intersection, providing a short channelised right turn in the median of the neighbourhood connector road, allowing for safe and efficient right turns.

Figure 4.4.5 - Intersection 3 Site Layout

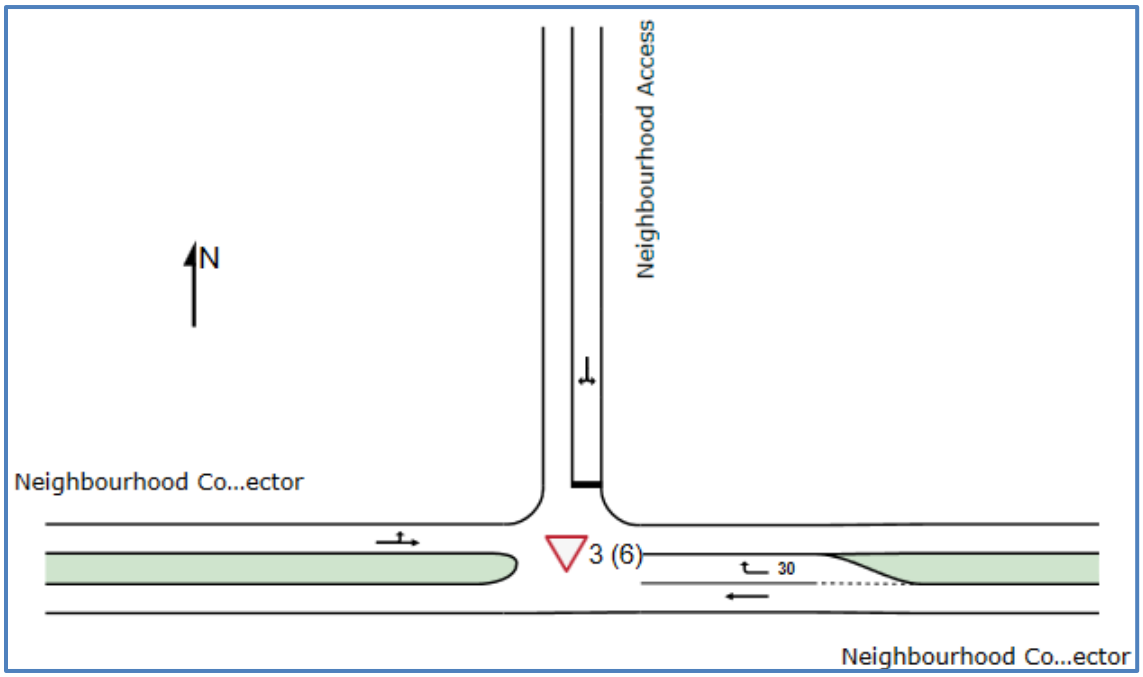


Table 4.4.3 – Intersection 3 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
East	Approach	0.054	3	NA	2	0.106	4	NA	4
North	Approach	0.062	9	LOS A	2	0.039	9	LOS A	1
West	Approach	0.134	0	NA	0	0.083	0	NA	0

4.4.4 Intersection 4

Intersection 4 is a 4-way give-way intersection. The neighbourhood connector road has a median which can provide short right hand turning movements into the neighbourhood connector (residential avenue) roads at the north and south of the intersection. Higher traffic numbers are expected to turn into these larger catchment areas, so the channelised lane ensures safe and efficient turning movements, while minimising the impacts on the through traffic along the neighbourhood connector road.

Figure 4.4.6 - Intersection 4 Site Layout

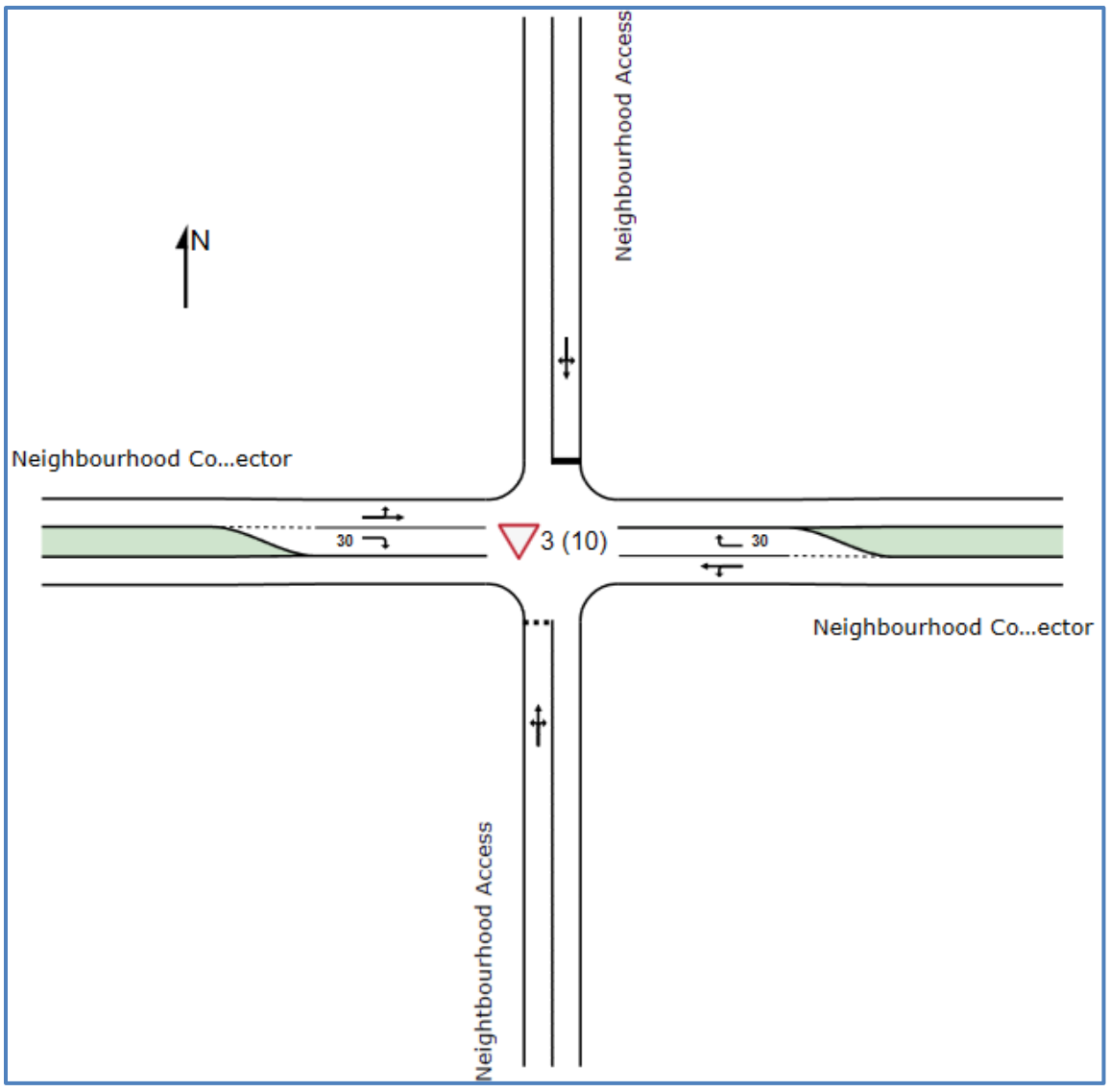


Table 4.4.4 – Intersection 4 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
South	Approach	0.058	10	LOS A	2	0.064	11	LOS B	2
East	Approach	0.079	2	NA	2	0.147	2	NA	3
North	Approach	0.170	11	LOS B	5	0.116	11	LOS B	3
West	Approach	0.160	0	NA	0	0.097	1	NA	0

4.4.5 Intersection 5

Intersection 5 is a 4-way intersection with simple left-in, left-out movements in/out of the minor side roads. Turning volumes at this intersection are expected to be low, only accommodating local residential traffic in/out of the northern and southern residential catchment area.

Figure 4.4.7 – Intersection 5 Site Layout

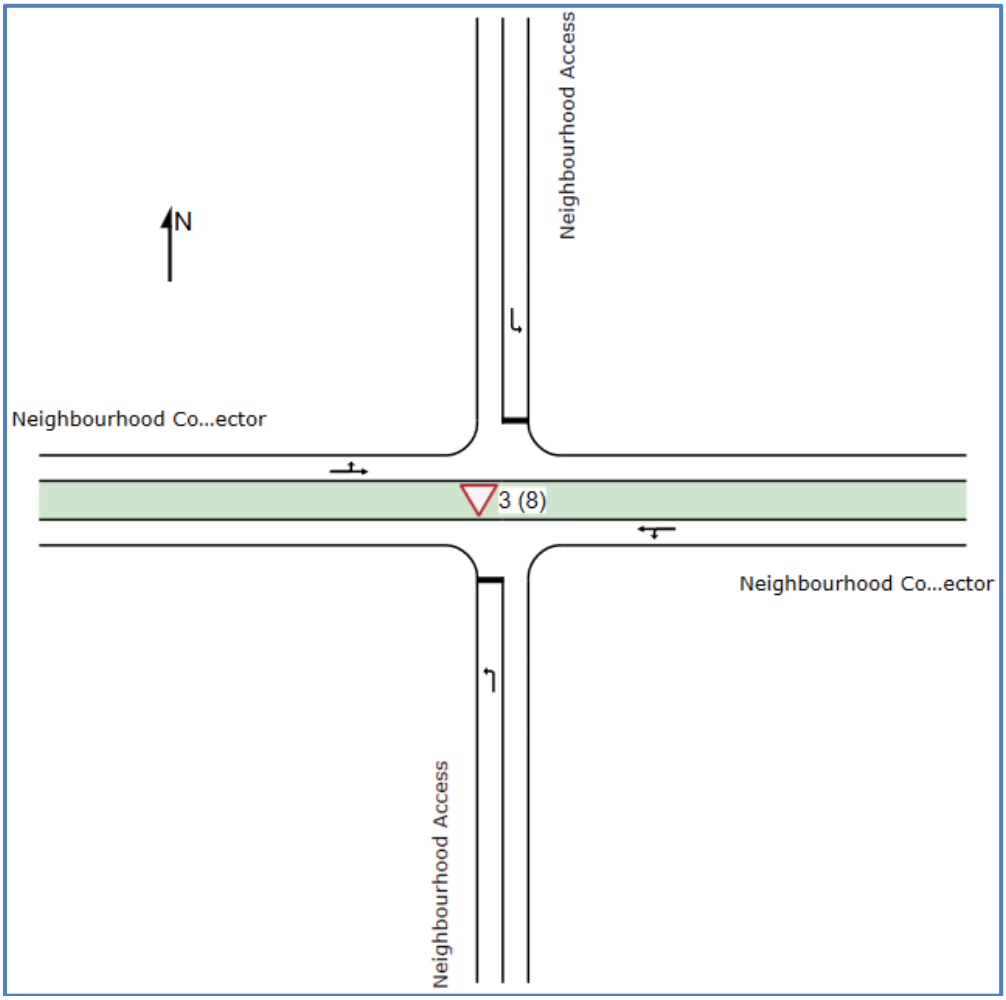


Table 4.4.5 – Intersection 5 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
South	Approach	0.009	9	LOS A	0	0.012	10	LOS A	0
East	Approach	0.115	0	NA	0	0.225	0	NA	0
North	Approach	0.092	10	LOS A	3	0.042	9	LOS A	1
West	Approach	0.212	2	NA	3	0.225	1	NA	1

4.4.6 Intersection 6

Intersection 6 is a stop-controlled 4-way intersection. This connects the neighbourhood connector residential road, travelling northwest, with a neighbourhood access street. There is expected to be low turning movements from the neighbourhood access street as it only carries local residential traffic, therefore a stop-control is appropriate for this intersection despite the higher traffic demand expected on the neighbourhood connector road with the development of Aura South. However, the median allows for a right-hand turning lane that will be provided for turning traffic as to not block through lanes.

Figure 4.4.8 – Intersection 6 Site Layout

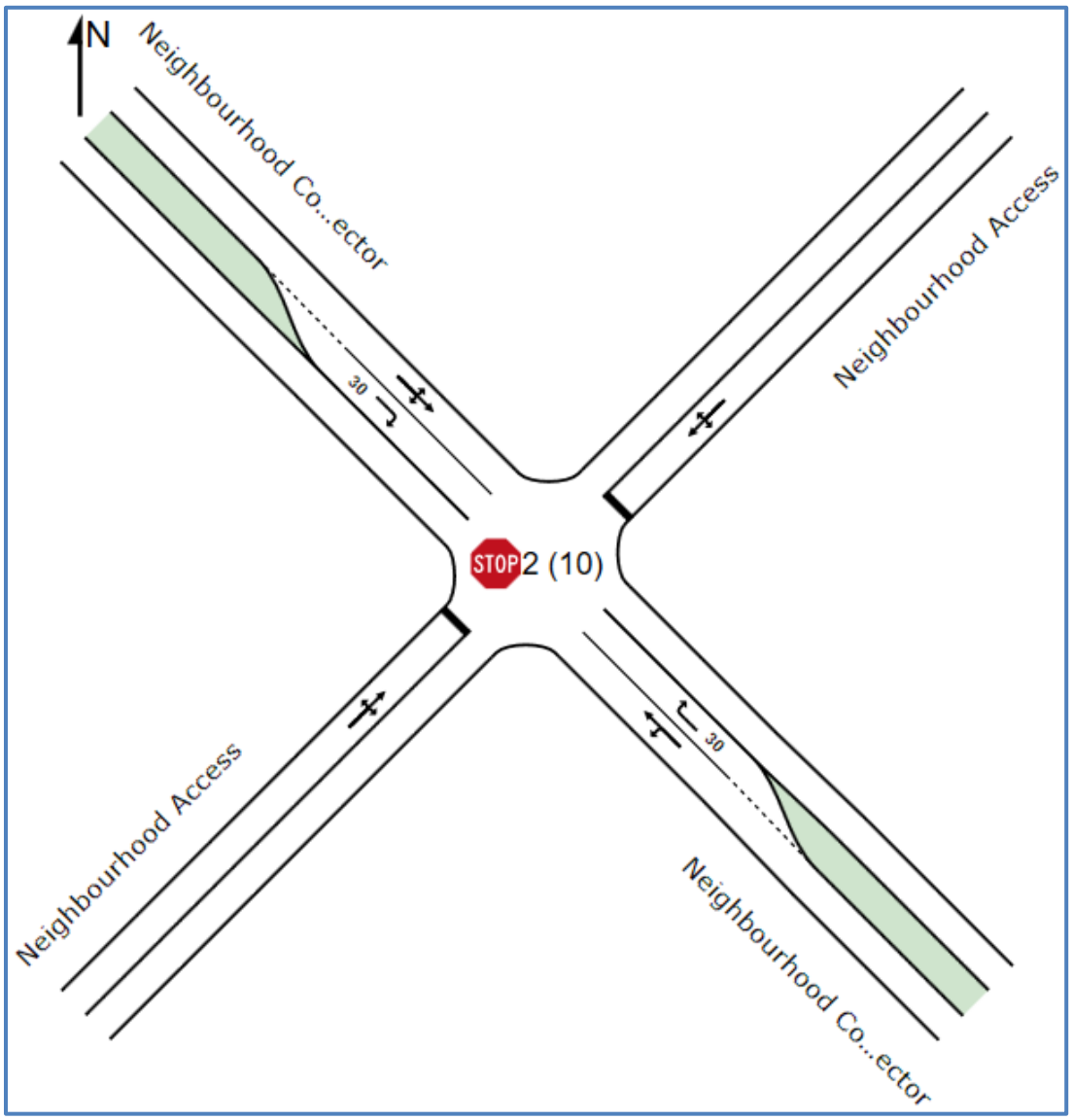


Table 4.4.6 – Intersection 6 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Southeast	Approach	0.117	1	NA	1	0.236	1	NA	2
Northeast	Approach	0.200	14	LOS B	5	0.139	14	LOS B	4
Northwest	Approach	0.256	0	NA	0	0.151	1	NA	0
Southwest	Approach	0.205	22	LOS C	5	0.141	20	LOS C	3

4.4.7 Intersection 7

Signalised intersection 7 is the intersection of the two neighbourhood connector roads. This intersection is likely to facilitate relatively high vehicle volumes due to its proximity to the future school, ultimate site access and neighbourhood centre. Therefore, a signalised intersection is proposed so turning movements can be safely executed and pedestrian crossing opportunities are through signal control to ensure safety. Right hand turning movements are provided in the median of each leg of the intersection, and a combined left-through short turn lane from each of the north approaches as there is expected to be high volumes of departing traffic from the northern suburbs.

This geometry layout considers the future construction of the school, which is outside the ERA boundary but will be located along the northeast and southeast road frontages to intersection 7. Along with signalised pedestrian crossings at all 4 approaches, the below traffic performance assessment has considered the likely traffic generation to and from the school using an indicative enrolment target of 650 students.

Intersection 7 also accommodates for turning and crossing movements for the 2-Way Separated Cycle Path on the residential neighbourhood connector and the neighbourhood connector arrival boulevard along the school frontage providing separate cycle crossing paths, seen in green in **Figure 4.4.9** below. Cycle path crossing phases have also been considered in the signal phase plans as shown in Phase A and Phase D in **Figure 4.4.10** and **Figure 4.4.11** below. These signal plans follow DTMR's *Selection and Design of Cycle Tracks Guideline* (2025) 'early start bicycle phase with concurrent conflicting vehicle turns', wherein cyclists and pedestrians are given a head start before the combined thru-left motor vehicle movements on the adjacent traffic lanes are triggered.

Figure 4.4.9 – Intersection 7 Site Layout

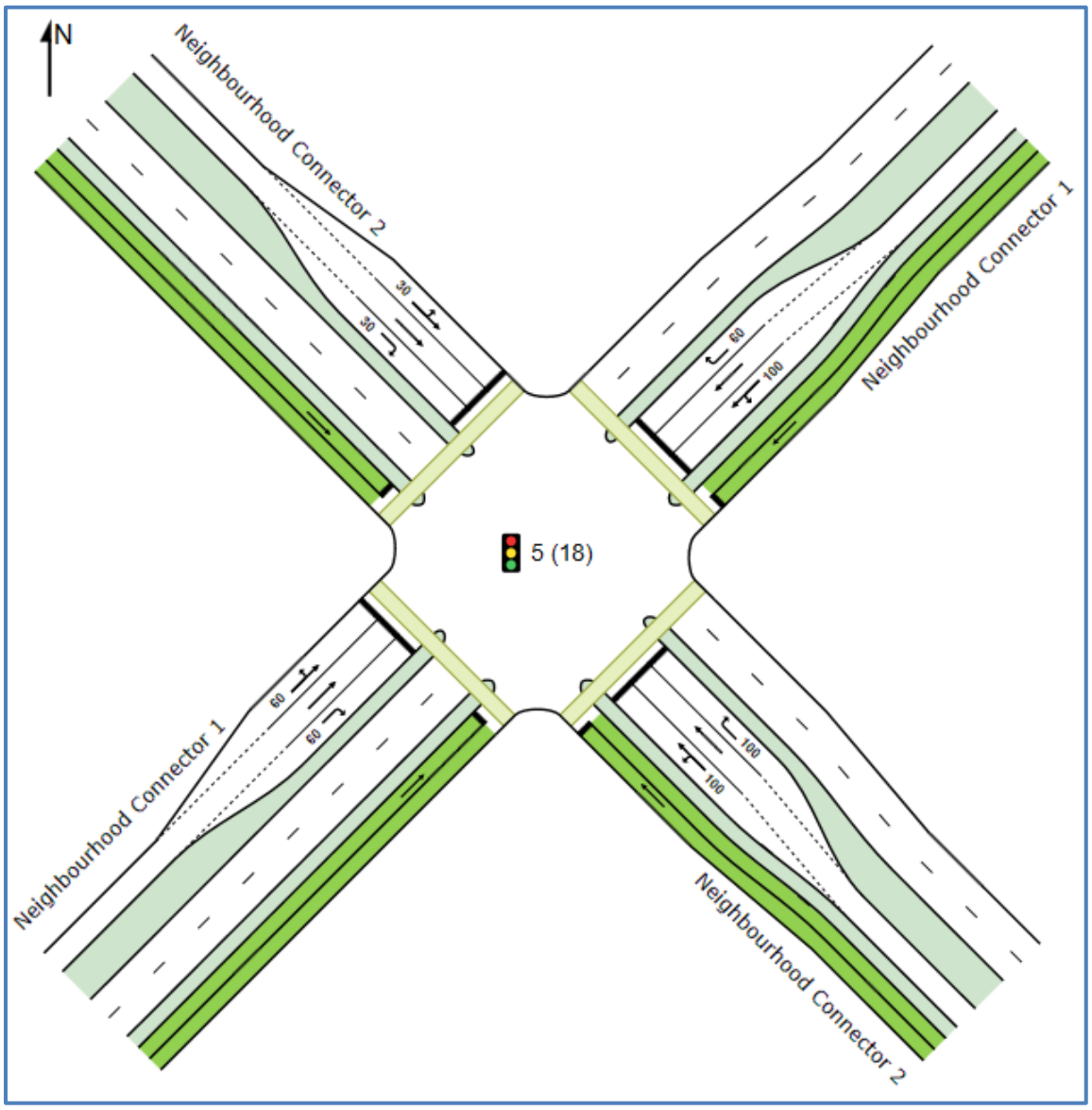


Figure 4.4.10 – Intersection 7 Signal Plan (AM Scenario)

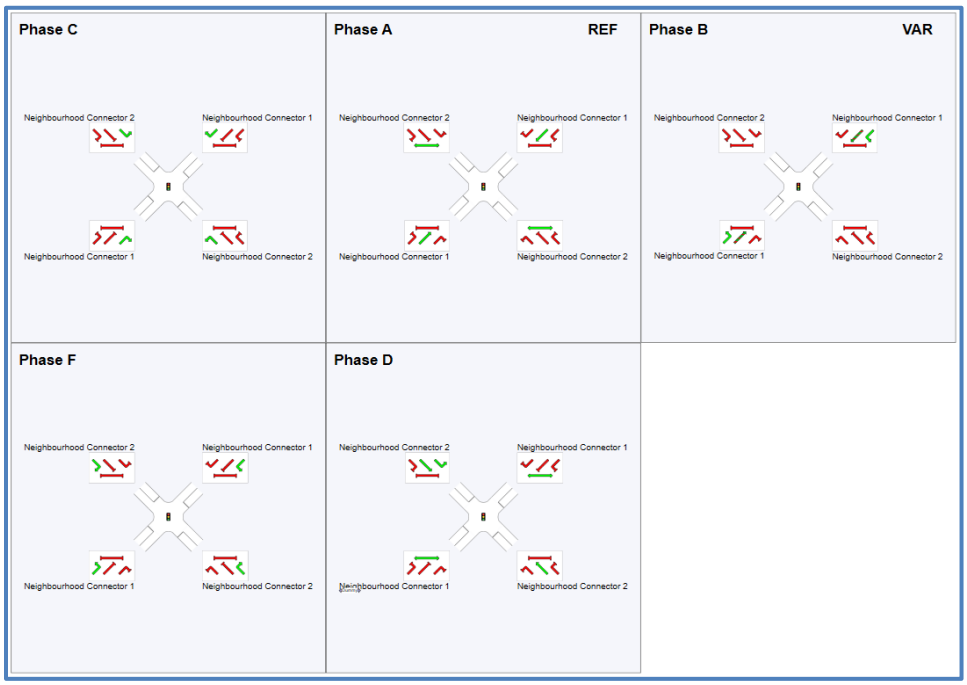


Figure 4.4.11 – Intersection 7 Signal Plan (PM Scenario)

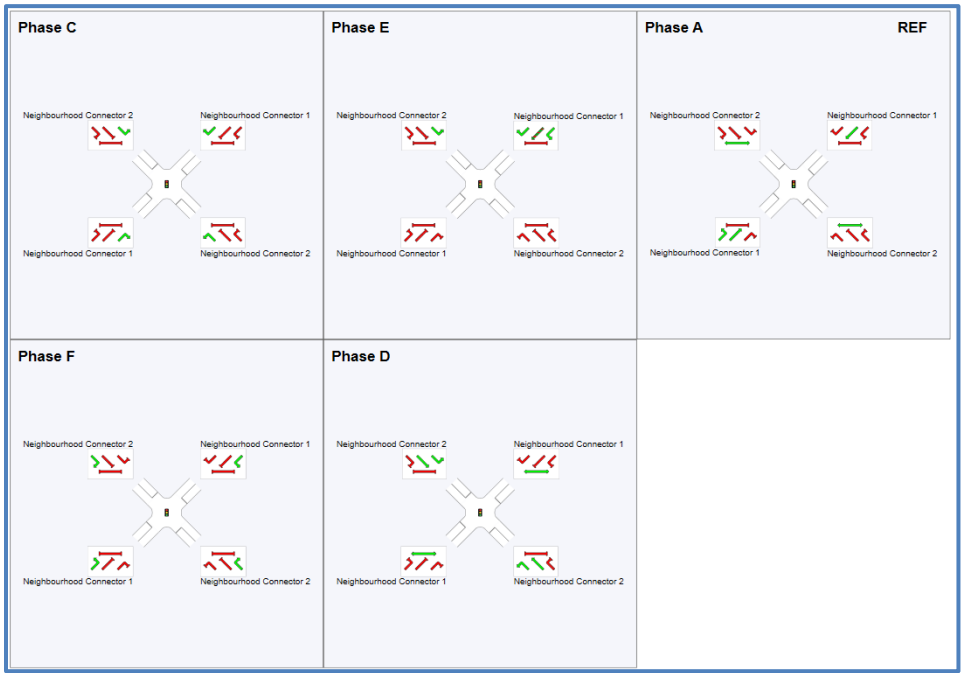


Table 4.4.7 – Intersection 7 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Southeast	Approach	0.386	44	LOS D	26	0.535	63	LOS E	71
Northeast	Approach	0.821	61	LOS E	118	0.883	66	LOS E	279
Northwest	Approach	0.847	59	LOS E	243	0.478	66	LOS E	178
Southwest	Approach	0.373	47	LOS D	55	0.313	60	LOS E	25

4.4.8 Intersection 8

Intersection 8 is a left-in/left-out simple T-intersection. Turning volumes at this intersection are expected to be low, only accommodating local residential traffic in/out of the northern residential catchment area.

Figure 4.4.12 – Intersection 8 Site Layout

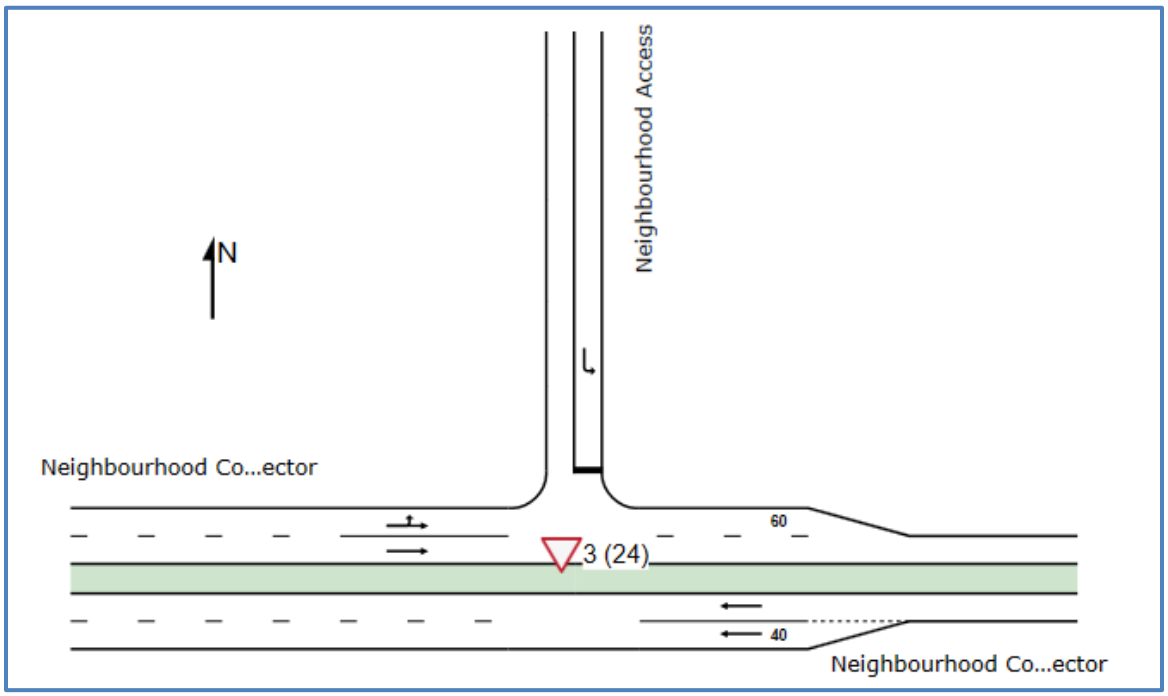


Table 4.4.8 – Intersection 8 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
East	Approach	0.117	0	NA	0	0.215	0	NA	0
North	Approach	0.036	9	LOS A	1	0.018	9	LOS A	0
West	Approach	0.341	0	NA	0	0.214	0	NA	0

4.4.1 Intersection 9

Intersection 9 as marked on the map above is a simple stop-controlled T-intersection, facilitating left-in/left-out/right-in movements into the adjoining neighbourhood connector access road. The neighbourhood connector arrival boulevard road provides a median, allowing for a short channelised right turn into the neighbourhood connector access road.

Figure 4.4.13 – Intersection 9 Site Layout

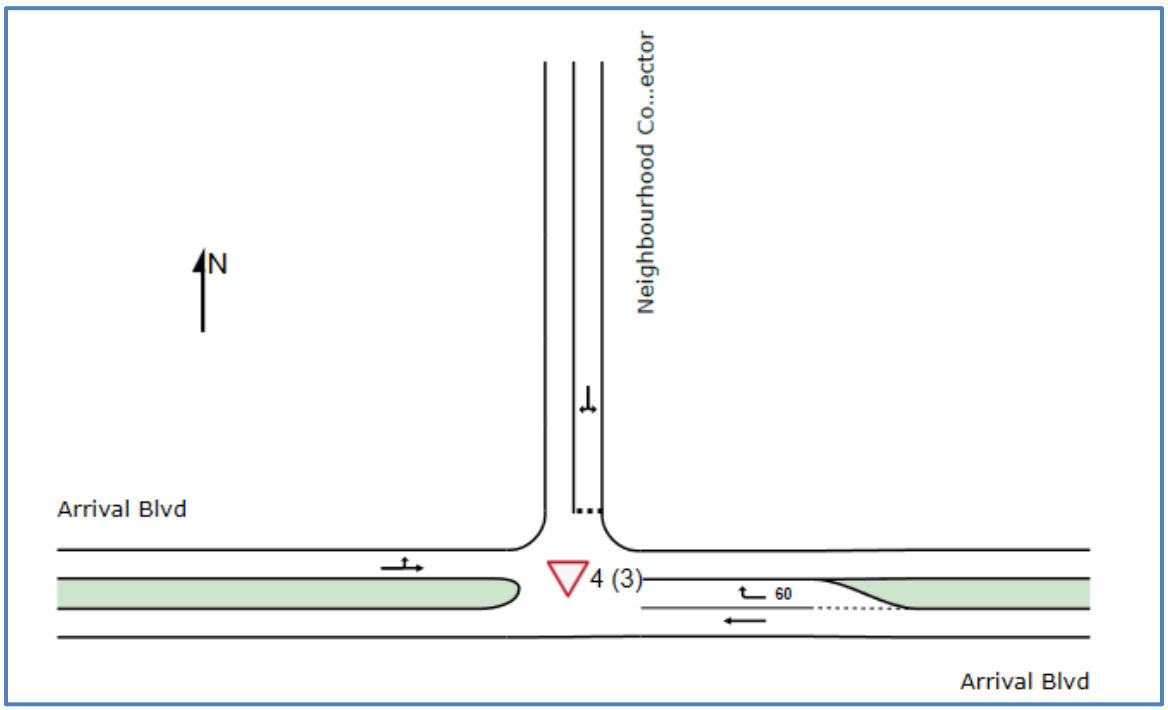


Table 4.4.9 – Intersection 9 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
East	Approach	0.187	1	NA	2	0.382	1	NA	3
North	Approach	0.762	36	LOS E	31	0.702	38	LOS E	26
West	Approach	0.489	0	NA	0	0.328	1	NA	0

5. Design Year Assessments – External

As noted previously, absent the availability of the updated transport model currently under development by DTMR, the assessment of the traffic associated with the ERA has been based on a traditional first principles approach. This has included the following broad tasks:

- Collecting prevailing traffic count data upon which the assessments can be based (ref **Section 3.1** of this report);
- Estimating the traffic generation associated with the development. In this case we have also included growth in the Aura northern precincts and Gagalba as part of the "design" scenarios added to 'growthed' background traffic;
- Developing design traffic volumes for the relevant assessment scenarios; and
- Undertaking an assessment of the external road network based on the design traffic volumes.

To determine the development related traffic estimates there are a number of critical inputs that have been taken into consideration within the assessment, including:

- The extent and timing of residential development within the ERA;
- The extent and timing of commercial development within the ERA;
- The extent and timing of development within the Aura northern precincts; and
- The extent and timing of development within the Gagalba precincts;

To inform the assessment process we have worked with the broader project team to estimate the indicative development rollout sequence and note that, based on the forecast residential rollout of 1000 lots/annum between Aura and Aura South, it is expected that Aura South could have approximately 985 dwelling units by the 2032 design year. Furthermore, in 2033, Aura South will have approximately 1,495 dwellings, reaching and exceeding the proposed number of lots in the Early Release Area of 1,051 dwellings in this design year.

On this basis, we have carried out the traffic assessment for a 2032 and 2033 design year.

AS previously noted, the DTMR guidelines ordinarily would require that a 10-year design assessment be undertaken for direct frontage intersections however we note that there is a clear intent to work with the State in the ongoing assessment of the transport infrastructure required to support the entire Halls Creek PDA via of a future 'whole of site' assessment. The key element of this future transport system assessment and analysis will be the updated regional and mesoscopic models that will inform the development of an ultimate transport network strategy that identifies the ultimate infrastructure requirements along with a delivery strategy.

The intent of this current assessment has been on undertaking a detailed assessment of the existing BCA / Bells Creek Road roundabout to determine the capacity of this existing infrastructure in the context of the ERA for the 2032 and 2033 design years and inform the planning horizons for any future upgrades for the entire Halls Creek PDA.

5.1 Development Traffic

To determine the development traffic for the ERA assessment we note the following indicative land uses and yields, outlined in **Table 5.1.1**, have been adopted.

Table 5.1.1 – Development Yield Table

Development Land Use	2032 Design Year	2033 Design Year
Residential Precincts (number of lots)		
Aura South ERA	985	1,495
Aura Northern Precincts	1,214	1,285
Gagalba	2,498	2,975
Commercial - Aura South ERA Enterprise Precinct (GFA m^2)		
Hardware / Bulky Goods	7,440	7,440
SME Super Lots (Large Format Warehouse)	11,580	11,580
SME Lots (higher trade light industry etc.)	5,723	5,723

Notes.
1. The total residential lots in above design years are cumulative.
2. The commercial areas are estimated GFA only.
3. Hardware/Bulky Goods has been based on an estimated 0.4 plot ratio
4. SME Super lots (Hardware/Bulky Goods) has been based on an estimated 0.6 plot ratio
5. SME Lots have been based on an estimated 0.5 plot ratio

The development related traffic, encompassing all the above development activity, has been estimated using the following broad network assumptions. It is noted that these assumptions have been applied to assist in determining the potential development related traffic movements at the subject BCA / Bells Creek Road roundabout. It is noted that many of these assumptions are highly conservative in nature and are based on a worst-case approach.

This has been a deliberate methodology applied that has been adopted based on the intent of the analysis approach as outlined in **Section 5** above. We have adopted a methodology that will provide suitable rigour to provide all stakeholders such that there is certainty that the results of the assessment would not be exceeded, reinforcing the acceptability of the intent to work collaboratively to determine the ultimate transport infrastructure needs of Aura South.

5.1.1 Traffic Spatial Distribution Assumptions

- All traffic to/from Gagalba Precincts traverses the BCA roundabout;
- All traffic to/from the ERA residential and commercial precincts traverses the BCA roundabout;
- All traffic from the northern precincts to/from the south traverse the BCA roundabout;
- In the 2032 and 3033 initial design traffic scenarios, no allowance was made for internalisation of trips on the basis of;
    - traffic movements to/from Stage 1 Aura Town Centre (2028);
    - traffic to/from 'The Wave' (2032); and
    - traffic utilising the new Central Avenue / Bruce Highway interchange;
- Traffic distributions applied to all land use are based on:
    - 60% to/from the north; and
    - 40% to/from the south.

5.1.2 Traffic Generation Assumptions

The traffic generation rates have been determined from the use of the residential rates collected for the Baringa catchment while the rates for the commercial land uses have been derived from industry sources including the 2024 NSW RMS Guides. The adopted rates are shown in **Table 5.1.2** below.

Table 5.1.2 – Traffic Generation Rates

Development Land Use	2032 Design Year	2033 Design Year
Residential Precincts		
Aura South ERA	0.66	0.66
Aura Northern Precincts	0.66	0.66
Gagalba	0.66	0.66
Commercial - Aura South ERA Enterprise Precinct (GFA m^2)		
Hardware / Bulky Goods	2.5	3.03
SME Super Lots (Large Format Warehouse)	0.26	0.23
SME Lots (higher trade light industry etc.)	2.0	2.0

5.1.3 Directional Distribution

Taking into consideration the development yields and the application of the traffic generation rates outlined in **Table 5.1.2** above, the estimate of traffic movements at the external intersections also required consideration of the in/out splits for the relevant land uses. For the purposes of this first principles assessment, we have applied the following:

Residential Land Uses

- AM Peak - 25% in / 75% out
- PM Peak - 60% in / 40% out

Residential Land Uses

- AM Peak - 25% in / 75% out
- PM Peak - 60% in / 40% out

Utilising all the traffic generation assumptions noted above we have developed estimated turning movement that represent the development only traffic generation. These are represented as Turning Movement Diagrams in **Appendix D**. These are noted below.

5.1.4 2032 Design Year Development Traffic Scenarios

- **Figure D4A**
  - 2032 Development Traffic (residential only)
  - BCA / Aura South Roundabout
- **Figure D4B**
  - 2032 Development Traffic (residential only)
  - ERA Entry Roundabout
- **Figure D6A**
  - 2032 Development Traffic (Full ERA - Residential + Enterprise)
  - BCA / Aura South Roundabout
- **Figure D6B**
  - 2032 Development Traffic (Full ERA - Residential + Enterprise)
  - ERA Entry Roundabout

5.1.5 2033 Design Year Development Traffic Scenarios

- **Figure D8A**
  - 2033 Development Traffic (residential only)
  - BCA / Aura South Roundabout
- **Figure D8B**
  - 2033 Development Traffic (residential only)
  - ERA Entry Roundabout
- **Figure D10A**
  - 2033 Development Traffic (Full ERA - Residential + Enterprise)
  - BCA / Aura South Roundabout
- **Figure D10B**
  - 2033 Development Traffic (Full ERA - Residential + Enterprise)
  - ERA Entry Roundabout

5.2 2032 Design Traffic Analysis Scenario

For the 2032 design traffic analysis scenario we have applied the assumptions noted in **Section 5.1** to develop design traffic turning movement volumes. As previously noted under this 2032 design scenario we have not made any allowances for internalisation of trips around the Town Centre, The Wave and the Central Avenue highway Interchange so we have represented a truly worst-case scenario.

As outlined above, based on a potential development rollout program the expected number of lots achieved in 2032 is in the order of 985 lots with the level of development within the Enterprise Precinct as outlined in **Table 5.1.1** above.

This has translated to the design traffic volumes included in **Appendix D** as noted below.

5.2.1 2032 Design Traffic Scenarios

- **Figure D5A**
  - 2032 Design Traffic (Background + residential only)
  - BCA / Aura South Roundabout
- **Figure D5B**
  - 2032 Design Traffic (Background + residential only)
  - ERA Entry Roundabout
- **Figure D7A**
  - 2032 Design Traffic (Background + Full ERA)
  - BCA / Aura South Roundabout

- **Figure D7B**
  - 2032 Design Traffic (Background + Full ERA)
  - ERA Entry Roundabout

5.2.2 Bells Creek Arterial / Bells Creek Road (Aura South) Roundabout

The analysis of the BCA / Bells Creek Road (Aura South) roundabout is tabulated below with **Table 5.2.1** showing the results of the "residential only" scenario and in **Table 5.2.2** for the "full ERA" development scenario, including the enterprise precinct. The analysis of this intersection has adopted the existing layout as noted in **Figure 5.2.1** below. The SIDRA results in the form of movement summaries are shown in **Appendix E**.

Figure 5.2.1 - BCA Roundabout Site Layout (Existing Layout)

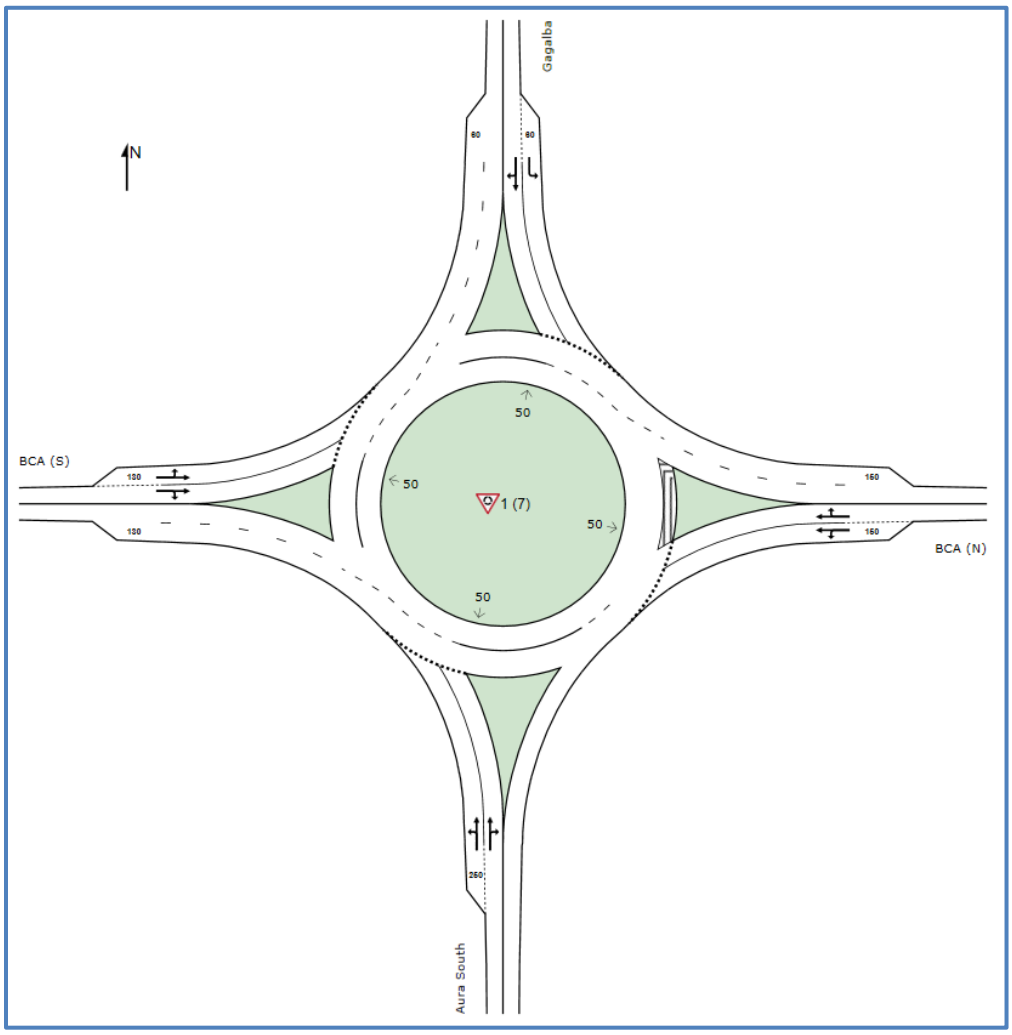


Table 5.2.1 - BCA Roundabout Movement Summary – Residential Only

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South	Left	0.403	12	LOS B	18	0.267	10	LOS B	11
	Through	0.438	9	LOS A	23	0.260	8	LOS A	12

	Right	0.438	18	LOS B	23	0.260	16	LOS B	12
	Approach	0.438	15	LOS B	23	0.267	13	LOS B	12
Bells Creek Arterial (N)	Left	0.489	7	LOS A	29	0.584	7	LOS A	39
	Through	0.496	6	LOS A	33	0.593	6	LOS A	42
	Right	0.496	12	LOS B	33	0.593	12	LOS B	42
	Approach	0.496	8	LOS A	33	0.593	9	LOS A	42
Aura Bvld	Left	0.757	10	LOS B	57	0.477	7	LOS A	24
	Through	0.664	9	LOS A	38	0.472	7	LOS A	21
	Right	0.664	17	LOS B	38	0.472	15	LOS B	21
	Approach	0.757	13	LOS B	57	0.477	10	LOS A	24
Bells Creek Arterial (S)	Left	0.444	6	LOS A	23	0.790	15	LOS B	88
	Through	0.444	7	LOS A	23	0.790	16	LOS B	88
	Right	0.444	13	LOS B	21	0.790	24	LOS C	78
	Approach	0.444	7	LOS A	23	0.790	17	LOS B	88

Table 5.2.2 - BCA Roundabout Movement Summary – Full ERA

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South	Left	0.489	15	LOS B	24	0.404	12	LOS B	18
	Through	0.530	11	LOS B	32	0.442	10	LOS A	24
	Right	0.530	20	LOS C	32	0.442	18	LOS B	24
	Approach	0.530	18	LOS B	32	0.442	15	LOS B	24
Bells Creek Arterial (N)	Left	0.564	9	LOS A	39	0.628	8	LOS A	47
	Through	0.573	8	LOS A	45	0.638	7	LOS A	51
	Right	0.573	14	LOS B	45	0.638	13	LOS B	51
	Approach	0.573	9	LOS A	45	0.638	10	LOS A	51
Aura Bvld	Left	0.794	12	LOS B	66	0.517	8	LOS A	28
	Through	0.724	11	LOS B	45	0.531	9	LOS A	25
	Right	0.724	19	LOS B	45	0.531	16	LOS B	25
	Approach	0.794	15	LOS B	66	0.531	11	LOS B	28
Bells Creek Arterial (S)	Left	0.498	6	LOS A	29	0.907	33	LOS C	167
	Through	0.498	7	LOS A	29	0.907	35	LOS C	167
	Right	0.498	14	LOS B	27	0.907	44	LOS D	140
	Approach	0.498	8	LOS A	29	0.907	36	LOS D	167

The results of the analysis of the residential only scenario for 2032 shows clearly that the level of residential development contemplated for Aura South when combined with the balance areas within Aura can be supported by the existing BCA roundabout.

This demonstrates that the development of the ERA comprising 985 lots and the completion of the first stages of the Enterprise Precinct being delivered as part of the ERA up to the year 2032 can be supported effectively by the existing infrastructure. It is noted that the DOS levels are in the order of 0.9 which shows that the roundabout is approaching practical

capacity however we note that the approach taken to this analysis has been based on highly conservative assumptions in relation to internalisation of trip making as a consequence of key land use and infrastructure initiatives planned to be implemented before 2032.

5.2.3 Aura South – ERA Entry Roundabout

The analysis of the Aura South ERA Entry roundabout has been based on the delivery of a 2-lane roundabout as part of the entry arrival experience which will facilitate access into the ERA residential precinct and to the ERA Enterprise Precinct. This is represented diagrammatically in **Figure 5.2.1** below. The results of this analysis of this roundabout are shown in **Table 5.2.3** for the "full ERA" development scenario, including the enterprise precinct.

The SIDRA results in the form of movement summaries are shown in **Appendix E**.

Figure 5.2.2 - Aura South ERA Entry Intersection Site Layout

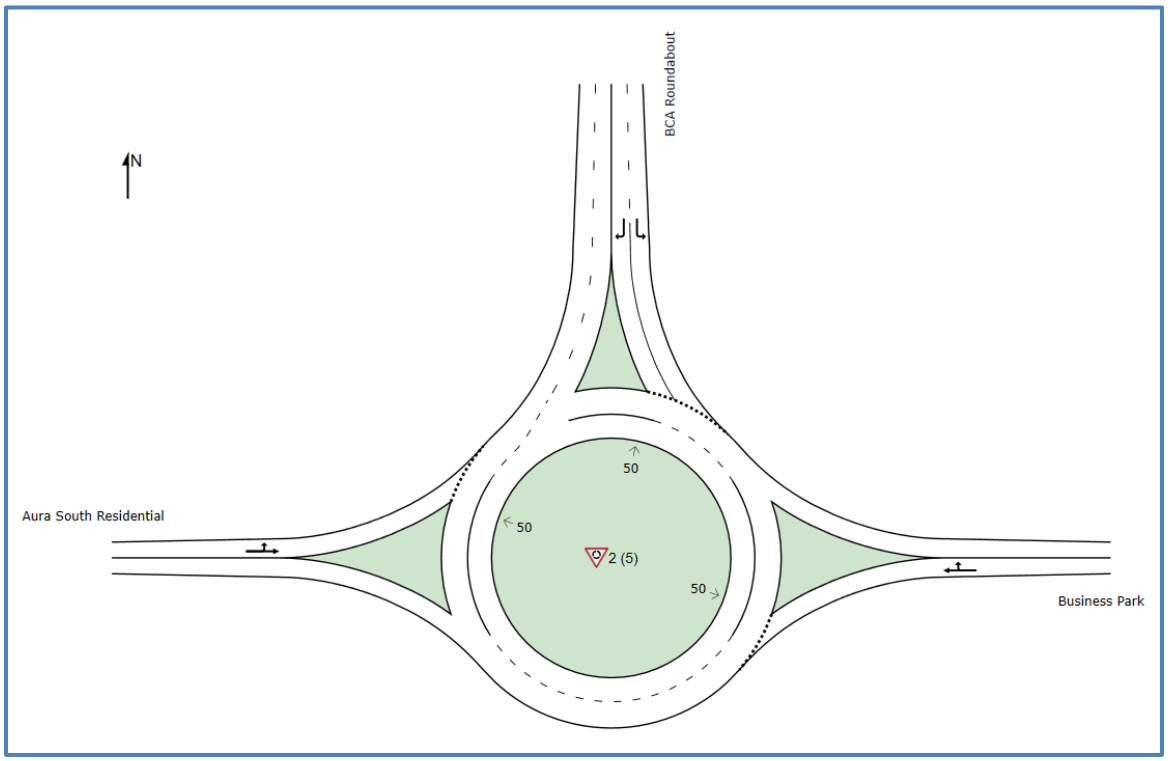


Table 5.2.3 - Aura South ERA Entry Intersection Movement Summary – Full ERA

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Business Park	Through	0.079	3	LOS A	2	0.197	4	LOS A	7
	Right	0.079	10	LOS B	2	0.197	11	LOS B	7
	Approach	0.079	9	LOS A	2	0.197	10	LOS B	7
BCA Roundabout approach	Left	0.120	3	LOS A	4	0.099	3	LOS A	3
	Right	0.118	10	LOS A	4	0.216	10	LOS A	8
	Approach	0.120	6	LOS A	4	0.216	8	LOS A	8
Aura South Residential	Left	0.347	3	LOS A	14	0.231	3	LOS A	8
	Through	0.347	3	LOS A	14	0.231	3	LOS A	8
	Approach	0.347	3	LOS A	14	0.231	3	LOS A	8

The delivery of this very high standard roundabout will offer a safe and efficient traffic outcome that caters for all traffic movements to/from the ERA based on the 2032 design year and the corresponding land uses adopted for that period.

5.2.4 Summary

Based on the assessment above it is clear, in our view, that the existing BCA roundabout has sufficient capacity to cater for the ERA traffic volumes. The results show that the roundabout is approaching practical capacities by this time. We are of the view that this in turn provides comfort that the ERA precincts can be approved and that this would allow sufficient time for the further traffic modelling (by DTMR) to be completed. This would also then allow the project team to continue the detailed assessment of the transport network infrastructure needs to support the entire Aura South development and conclude the necessary infrastructure investigations required to establish the necessary infrastructure rollout program and supporting Infrastructure Agreements.

It is noted that this does include realignment of the Aura South approach to facilitate a direct high standard four lane road leading into the Aura South precincts. The Aura South works would include a realignment of Bells Creek Road and include a signalised intersection at the t-intersection formed as a result of the realignment.

The conceptual arrangements for this entry road and intersection configuration are included in the Aura South ERA - Civil Functional Drawings package prepared by KN Group and submitted to EDQ under separate covers.

5.3 2033 Design Traffic Analysis Scenario

For the 2033 design traffic analysis scenario we have applied the assumptions noted in **Section 5** and **Section 5.1** to develop design traffic turning movement volumes. As previously noted under this initial assessment of the 2033 design scenario we have not made any allowances for internalisation of trips around the Town Centre, The Wave and the Central Avenue highway Interchange so we have represented a truly worst-case scenario.

As outlined above, based on a potential development rollout program the expected number of lots achieved in 2033 is in the order of 1,495 lots with the level of development within the Enterprise Precinct as outlined in **Table 5.1.1** above.

This has translated to the design traffic volumes included in **Appendix D** as noted below.

5.3.1 2033 Design Traffic Scenarios

- **Figure D9A**
  - 2033 Design Traffic (Background + residential only)
  - BCA / Aura South Roundabout
- **Figure D9B**
  - 2033 Design Traffic (Background + residential only)
  - ERA Entry Roundabout
- **Figure D11A**
  - 2033 Design Traffic (Background + Full ERA)
  - BCA / Aura South Roundabout
- **Figure D11B**
  - 2033 Design Traffic (Background + Full ERA)
  - ERA Entry Roundabout

5.3.2 Bells Creek Arterial / Bells Creek Road (Aura South) Roundabout

The analysis of the BCA / Bells Creek Road (Aura South) roundabout is tabulated below with **Table 5.3.1** below showing the results of the "residential only" scenario and in **Table 5.3.2** for the "full ERA" development scenario, including the enterprise precinct. Again, the analysis of this intersection has adopted the existing layout (**Figure 5.2.1**). The SIDRA results in the form of movement summaries are shown in **Appendix E**.

Table 5.3.1 - BCA Roundabout Movement Summary – Residential Only

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South	Left	0.771	32	LOS C	53	0.532	20	LOS C	27
	Through	0.809	30	LOS C	79	0.514	15	LOS B	32
	Right	0.809	40	LOS D	79	0.514	23	LOS C	32
	Approach	0.809	37	LOS D	79	0.532	22	LOS C	32
Bells Creek Arterial (N)	Left	0.632	11	LOS B	50	0.733	11	LOS B	70
	Through	0.643	10	LOS B	60	0.744	10	LOS A	79
	Right	0.643	16	LOS B	60	0.744	16	LOS B	79
	Approach	0.643	12	LOS B	60	0.744	12	LOS B	79
Aura Bvld	Left	1.041	112	LOS F	510	0.573	8	LOS A	33
	Through	0.937	33	LOS C	123	0.562	8	LOS A	28
	Right	0.937	41	LOS D	123	0.562	16	LOS B	28
	Approach	1.041	84	LOS F	510	0.573	11	LOS B	33
Bells Creek Arterial (S)	Left	0.596	10	LOS A	44	1.177	348	LOS F	1,246
	Through	0.596	12	LOS B	44	1.177	349	LOS F	1,246
	Right	0.596	18	LOS B	40	1.177	357	LOS F	958
	Approach	0.596	12	LOS B	44	1.177	350	LOS F	1,246

Table 5.3.2 - BCA Roundabout Movement Summary – Full ERA

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South	Left	0.874	51	LOS E	81	0.729	34	LOS C	46
	Through	0.920	57	LOS E	141	0.769	32	LOS C	67
	Right	0.920	68	LOS E	141	0.769	40	LOS D	67
	Approach	0.920	61	LOS E	141	0.769	37	LOS D	67
Bells Creek Arterial (N)	Left	0.720	15	LOS B	67	0.763	12	LOS B	79
	Through	0.731	14	LOS B	83	0.775	11	LOS B	90
	Right	0.731	19	LOS B	83	0.775	17	LOS B	90
	Approach	0.731	15	LOS B	83	0.775	13	LOS B	90
Aura Bvld	Left	1.111	225	LOS F	908	0.565	8	LOS A	32
	Through	1.039	117	LOS F	353	0.562	9	LOS A	28
	Right	1.039	125	LOS F	353	0.562	16	LOS B	28
	Approach	1.111	185	LOS F	908	0.565	11	LOS B	32
Bells Creek Arterial (S)	Left	0.677	12	LOS B	59	1.367	685	LOS F	2,146
	Through	0.677	15	LOS B	59	1.367	686	LOS F	2,146
	Right	0.677	21	LOS C	52	1.367	694	LOS F	1,617
	Approach	0.677	15	LOS B	59	1.367	687	LOS F	2,146

It is clear from the result of this analysis documented above, that by the 2033 design year with the additional lots delivered in both Aura South (increased to 1,495) and the balance of Aura would result in the existing BCA roundabout failing. The results show that this design year would represent a period were based on the conservative assumptions adopted in this analysis, the implementation of network upgrades would be required. Relevantly we note that the ERA development is proposed to accommodate 1,051 new homes.

Again, we note that the assumptions we have made as part of this assessment have been based on highly conservative analysis results that do not allow for any internalisation of the development traffic associated with both Aura and Aura south, as a result of the Town Centre, The Wave railway station and Central Avenue.

5.3.3 Aura South – ERA Entry Roundabout

As previously noted, the analysis of the Aura South ERA Entry roundabout has been based on the delivery of a 2-lane roundabout as part of the entry arrival experience which will facilitate access into the ERA residential precinct and to the ERA Enterprise Precinct. This is represented diagrammatically in **Figure 5.2.1** above. The results of this analysis of this roundabout for this 2033 design scenario are shown in **Table 5.3.3** for the "full ERA" development scenario, including the enterprise precinct.

The SIDRA results in the form of movement summaries are also shown in **Appendix E**.

From the results in the table below, as was the case for the 2032 design year, it is clear that the delivery of this very high standard roundabout will offer a safe and efficient traffic outcome that caters for all traffic movements to/from the ERA based on the 2033 design year volumes and the corresponding land uses adopted for that period.

The proposed internal road network along the Aura South Entry Road including the Aura South ERA roundabout will deliver an exceptional entry and arrival experience for the Aura South development and would ensure safe and efficient movement of all road users. The form of the entry roundabout would deliver safe and efficient outcomes, delivering excellent levels of service with minimal delays and queues for vehicles entering Aura South.

Table 5.2.2 - Aura South ERA Entry Intersection Movement Summary – Full ERA

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Business Park	Through	0.083	3	LOS A	2	0.223	5	LOS A	8
	Right	0.083	11	LOS B	2	0.223	12	LOS B	8
	Approach	0.083	10	LOS A	2	0.223	12	LOS B	8
BCA Roundabout approach	Left	0.140	3	LOS A	5	0.106	3	LOS A	3
	Right	0.150	10	LOS A	5	0.326	10	LOS A	14
	Approach	0.150	7	LOS A	5	0.326	8	LOS A	14
Aura South Residential	Left	0.514	3	LOS A	26	0.336	3	LOS A	14
	Through	0.514	3	LOS A	26	0.336	4	LOS A	14
	Approach	0.514	5	LOS A	26	0.336	7	LOS A	14

5.3.4 Summary

Based on the assessment above of the 2033 design year it is apparent that the existing BCA roundabout would potentially have insufficient capacity to cater for the traffic volumes associated with the delivery of the 1,495 residential dwellings anticipated in 2033 based on the potential lot rollouts.

While this is well beyond the proposed ERA residential development yield of 1,051 dwellings, as previously identified, it does reinforce the indicative development thresholds. This again highlights that there is a need to progress the detailed assessment of the transport network infrastructure needs to support the entire Aura South development and conclude the necessary infrastructure investigations required to establish the necessary infrastructure rollout program and supporting Infrastructure Agreements.

5.4 2033 Analysis – with Increased Internalisation

As previously highlighted, we note that the analysis above has taken a highly conservative approach in order to demonstrate that the extent of the ERA development area can proceed while the final ultimate road form is determined through further detailed transport modelling being undertaken on Stockland and in conjunction with the Department of Transport and Main Roads. The above analysis makes very conservative assumptions including the overarching assumption that all traffic to/from the development precincts within Aura and Aura South all accessing the BCA during the peak periods with essentially no internal trip making.

Notwithstanding this approach, it is noted that there is an expectation that there will be increased internalisation of trip making between the Aura and Aura South development areas as a result of several infrastructure and land use initiatives. These are expected to include the following:

- traffic movements to/from Stage 1 Aura Town Centre (2028);
- traffic to/from 'The Wave' (2032); and
- traffic utilising the new Central Avenue / Bruce Highway interchange (2029);

This option explores the impacts of estimated redirection of traffic once Stage 1 of Aura's Town Centre (2029) and Stages 1 and 2 of The Wave (2032) are built along with the completion of the Central Avenue / Bruce Highway interchange with new north facing ramps.

This assessment has been based on applying trip reduction factors to the external development traffic to and from the relevant development precincts at Aura and Aura South, and redirecting this traffic between Northern Aura, Gagalba and Aura South as 'internal' trips, noting that the intent is to determine the potential for this to reduce the traffic volumes traversing the BCA / Aura South roundabout. These estimated levels of internalisation are as follows:

- 20% Northern Aura Precincts Internalisation
- 20% Gagalba Precinct Internalisation
- 20% Aura South Internalisation (i.e. redirection of trips to/from the Town Centre and The Wave)

As noted above, we note that the Aura South traffic being considered "internal" is traffic that is travelling to/from Aura Town Centre and The Wave and as such still traverses the BCA roundabout. Relevantly we also note that the existing Aura traffic modelling shows Aura Internalisation rates of a 22% and also shows travel from Aura South to/from Aura of some 27%. As such the assumptions made in this first principles assessment continue to be conservative in the context of the external road network.

In developing the design traffic volumes under these scenarios, we note that for the Northern and Gagalba precincts the effect of the internalisation is that this will simply reduce the total traffic volumes leaving the site and utilising the BCA road.

For the Aura South internalisation however, this would result in traffic continuing to utilise the BCA / Aura South roundabout however this proportion would travel straight through as opposed to traveling to/from the north or south.

The following spatial directional distribution (for Aura South only) used for analysis is:

- To/from north – 48%
- To/from South – 32%
- To/from Gagalba – 20%

The following analysis was completed using the layout shown in **Figure 5.2.1** above and the corresponding turning movement diagram can be found in **Appendix D**, in the figures noted below:

- **Figure D12A**
  - 2033 Design Traffic (Background + Full ERA)
  - 20% Internalisation
  - BCA / Aura South Roundabout
- **Figure D12B**
  - 2033 Design Traffic (Background + Full ERA)
  - 20% internalisation
  - 20% ERA Entry Roundabout

5.4.1 Bells Creek Arterial / Bells Creek Road (Aura South) Roundabout

The analysis of the BCA / Bells Creek Road (Aura South) roundabout is tabulated below with **Table 5.4.1** below showing the results of the "full ERA" development scenario although this scenario includes allowance for the 20% internalisation as described above. Again, the analysis of this intersection has adopted the existing layout.

The SIDRA results in the form of movement summaries are shown in **Appendix E**.

Table 5.4.1 – 2033 BCA Roundabout Movement Summary (20% Internalisation) – Full ERA

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Aura South	Left	0.499	12	LOS B	24	0.444	12	LOS B	21
	Through	0.750	15	LOS B	61	0.617	13	LOS B	41
	Right	0.750	24	LOS C	61	0.617	21	LOS C	41
	Approach	0.750	18	LOS B	61	0.617	16	LOS B	41
Bells Creek Arterial (N)	Left	0.524	7	LOS A	33	0.681	10	LOS B	58
	Through	0.532	6	LOS A	37	0.692	9	LOS A	66
	Right	0.532	13	LOS B	37	0.692	15	LOS B	66
	Approach	0.532	8	LOS A	37	0.692	11	LOS B	66
Aura Bvld	Left	0.664	10	LOS A	43	0.569	10	LOS B	28
	Through	0.688	11	LOS B	40	0.463	7	LOS A	24
	Right	0.688	19	LOS B	40	0.463	14	LOS B	24
	Approach	0.688	13	LOS B	43	0.569	11	LOS B	28
Bells Creek Arterial (S)	Left	0.643	11	LOS B	53	0.993	82	LOS F	347
	Through	0.643	12	LOS B	53	0.993	84	LOS F	347
	Right	0.643	20	LOS B	47	0.993	94	LOS F	276
	Approach	0.643	13	LOS B	53	0.993	86	LOS F	347

5.4.2 Aura South – ERA Entry Roundabout

Again, the analysis of the Aura South ERA Entry roundabout has been based on the delivery of a 2-lane roundabout as part of the entry arrival experience which will facilitate access into

the ERA residential precinct and to the ERA Enterprise Precinct. This is represented diagrammatically in **Figure 5.2.1** above. The results of this analysis of this roundabout for this 2033 design scenario with the 20% internalisation are shown in **Table 5.4.2** below. The SIDRA results in the form of movement summaries are also shown in **Appendix E**.

Note: due to the 'internalisation' factors explained above, the distribution of arrival/turning traffic volumes at this Aura South intersection is identical to the 2033 – Full ERA scenario without the 20% internalisation.

Table 5.4.2 –Aura South ERA Entry Intersection Movement Summary (20% Internalisation)

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
Business Park	Through	0.083	3	LOS A	2	0.223	5	LOS A	8
	Right	0.083	11	LOS B	2	0.223	12	LOS B	8
	Approach	0.083	10	LOS A	2	0.223	12	LOS B	8
BCA Roundabout	Left	0.140	3	LOS A	5	0.106	3	LOS A	3
	Right	0.150	10	LOS A	5	0.326	10	LOS A	14
	Approach	0.150	7	LOS A	5	0.326	8	LOS A	14
Aura South Residential	Left	0.514	3	LOS A	26	0.336	4	LOS A	14
	Through	0.514	3	LOS A	26	0.336	3	LOS A	14
	Approach	0.514	3	LOS A	26	0.336	4	LOS A	14

5.4.3 Summary

The results in the tables above demonstrate that, with what we consider to be reasonable allowances for the "internalisation" of trip making as a result of significant land use and infrastructure initiatives, the roundabout intersection of Bells Creek Arterial Road / Aura South will operate at slightly above the practical capacity of the intersection albeit that this suggest that the traffic will still be theoretically accommodated by the roundabout in its existing form

When considered in conjunction with the results in the previous **Section 5.3**, where no allowances were made for increase internal trip making etc., it is our view that the roundabout in its current form can sustain the traffic associated with the completion of the ERA which contemplates 1,051 dwellings and close to 25,000m^2 of commercial floor area.

The analysis provides certainty that the existing infrastructure is adequate and that this initial stage of the Aura South development can reasonably proceed while the further detailed analysis and assessment required to determine the ultimate infrastructure solution for Aura South, along with its implementation timing, is being conducted. The analysis does highlight that this work does need to progress to ensure the ultimate solutions are established in a timely manner.

5.5 ERA Traffic Impacts on Gagalba

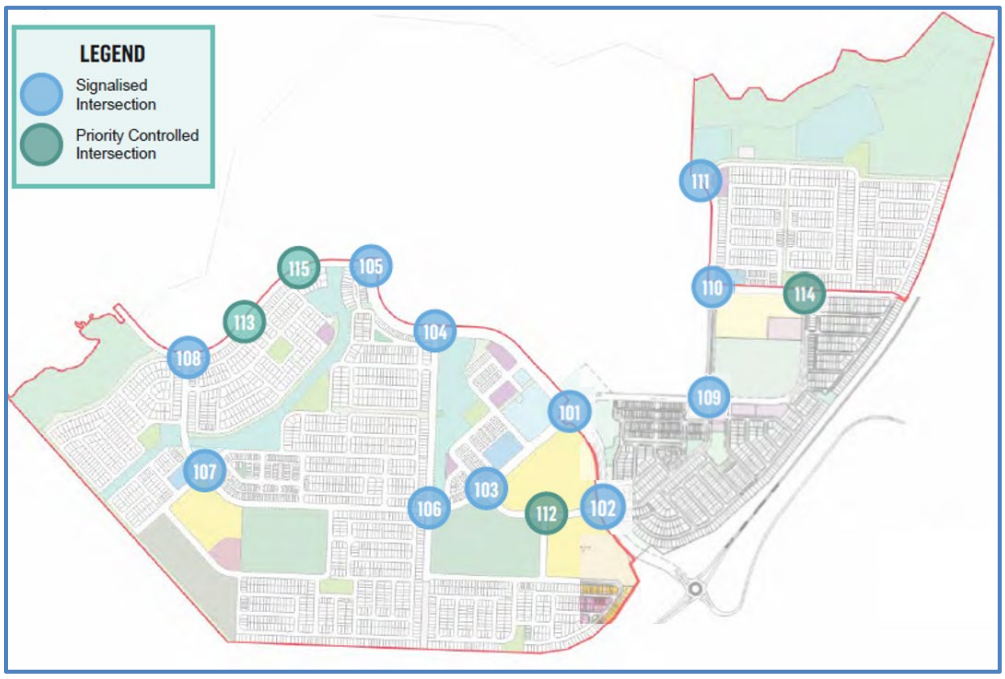
To ensure the cumulative impacts of both the proposed Halls Creek ERA and the ongoing development of the broader Aura Community (Caloundra South PDA) are considered, the extent of the ERA traffic analysis includes the Gagalba Precinct local intersections immediately adjoining the BCA roundabout.

To inform ongoing detailed assessment of the impact the ERA traffic has on the surrounding Gagalba Precinct, we have collected prevailing estimation data for the proposed Gagalba ultimate yields and undertaken intersection capacity analysis of the proposed local road network to determine the prevailing operating conditions with the ERA fully in place. The following intersections adjacent to the BCA roundabout have been assessed:

- Intersection 101
- Intersection 102
- Intersection 103
- Intersection 106

The locality of these intersections is shown in **Figure 5.5.1** below:

Figure 5.5.1 - Gagalba Precincts 17-19 Intersections



Source: Aura Lakes ROL2 (Precincts 17-19) TIA (Urbis, 2026)

5.5.1 Reference Gagalba Precinct Model Inputs

The following information has been sourced from the *Aura Lakes ROL2 (Precincts 17-19) Traffic Impact Assessment Report* prepared by Urbis for Stockland in this ERA traffic analysis:

- Ultimate intersection design layouts including design of traffic lanes, pedestrian crossings and signalised cycle path crossings.
- SIDRA model inputs including signal phase groups, cycle times, and input background traffic volumes (including heavy vehicle percentages) for the Ultimate Gagalba intersections as discussed further below.
- Aura Lakes (Gagalba) development traffic volumes.

This reference report details two modelled development scenario years for the Aura Lakes (Precincts 17-19) development, including an ultimate development horizon year (2041), in which both Stockland and DTMR delivered infrastructure will be complete, and a 'sensitivity' scenario year (2031) with the ultimate Gagalba Precinct traffic generation in place with no TMR external infrastructure upgrades delivered. For the purposes of this assessment, both of these development scenario volumes have been tested with the addition of the Aura South ERA ultimate development traffic volumes.

Note: an older version of SIDRA was used for the original Gagalba Precinct traffic impact assessment (version 10.0.8.241) compared to this assessment, which uses the current version 11.0.3.112.

5.5.2 Traffic Distribution Assumptions

As per **Section 5.4**, 20% of the total ERA peak hour traffic generation will be 'internalised' to and from Aura via the Gagalba Precinct, which is the equivalent of 106 vehicle trips per hour in the AM and PM peak. All of these volumes are assumed to route via the Aura South / Gagalba / BCA roundabout as the only open road connection by the time the Aura South ERA will be fully delivered between 2032 and 2033. These traffic volumes have been equally distributed across the Aura Lakes local road network, linking to the Aura Boulevard spine road.

5.5.3 2041 Ultimate Gagalba Precinct with ERA Design Traffic Analysis

As shown in the following **Table 5.5.1** to **Table 5.5.4**, the Aura South ERA development traffic is not projected to shorten the design life of either of the assessed internal Gagalba precinct intersections. All intersections are shown to perform within acceptable performance metrics for delay (LOS E or better i.e. <80 seconds), DoS <0.9 for signalised intersections and contained 95th percentile back of queue lengths under both 2031 and 2041 design scenarios.

It is clear from this first principles analysis that the addition of the Aura South ERA traffic will have no material impact on the subject Gagalba intersections assuming the 2041 fully developed Gagalba site and clearly this extends to the 2031 assessment scenario which effectively aligns with the completion of the Aura South ERA.

Site layouts, detailed movement summaries and signal phasing summaries of the following intersection analysis is included in **Appendix D**.

Figure 5.5.2 - Intersection 102 Site Layout

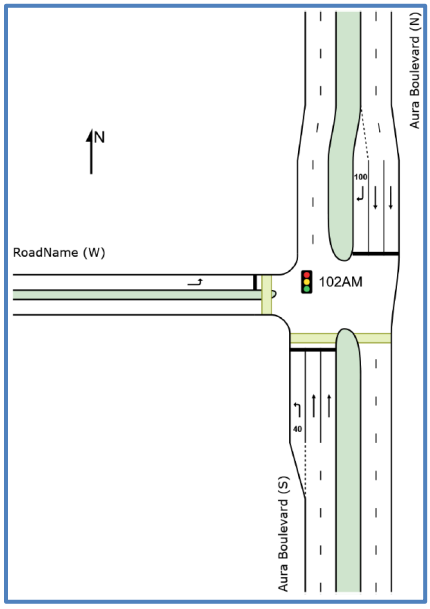


Table 5.5.1 - Intersection 102 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
2031 Design Year									
South	Approach	0.207	10	LOS A	27	0.337	10	LOS A	41
North	Approach	0.346	9	LOS A	49	0.299	10	LOS A	36
West	Approach	0.118	28	LOS C	10	0.107	24	LOS C	8
2041 Design Year									
South	Approach	0.424	9	LOS A	72	0.418	9	LOS A	77
North	Approach	0.449	11	LOS B	78	0.351	9	LOS A	61
West	Approach	0.449	11	LOS B	78	0.418	10	LOS A	77

Figure 5.5.3 - Intersection 103 Site Layout

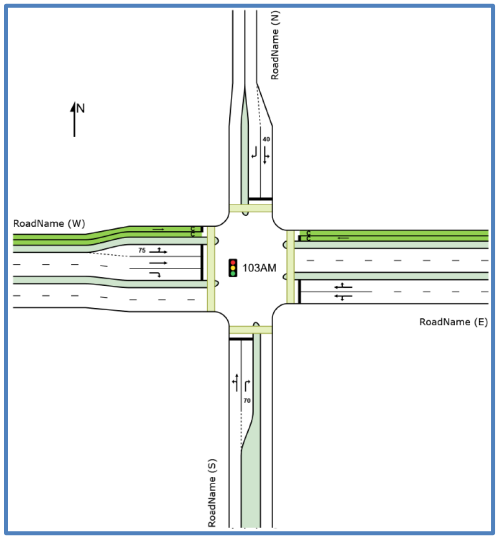


Table 5.5.2 - Intersection 103 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
2031 Design Year									
South	Approach	0.425	32	LOS C	54	0.296	30	LOS C	37
East	Approach	0.741	59	LOS E	50	0.650	63	LOS E	54
North	Approach	0.741	53	LOS D	61	0.650	48	LOS D	54
West	Approach	0.453	40	LOS D	29	0.467	40	LOS D	32
2041 Design Year									
South	Approach	0.818	59	LOS E	69	0.832	55	LOS D	48
East	Approach	0.818	53	LOS D	175	0.832	53	LOS D	103
North	Approach	0.314	50	LOS D	38	0.383	46	LOS D	37
West	Approach	0.550	34	LOS C	55	0.413	33	LOS C	40

Figure 5.5.4 - Intersection 101 Site Layout

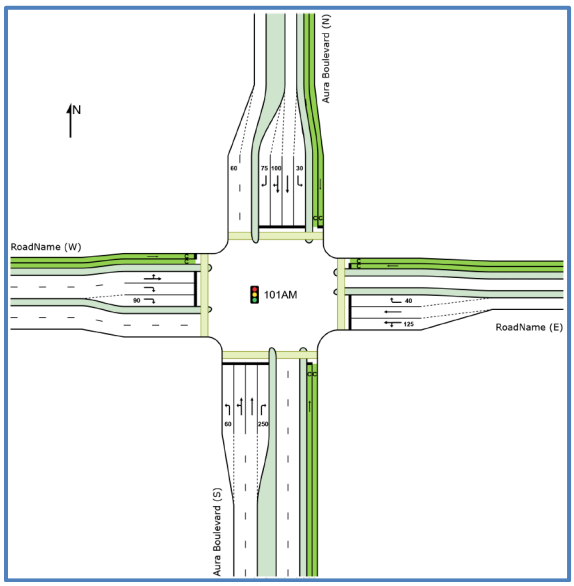


Table 5.5.3 - Intersection 101 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
2031 Design Year									
South	Approach	0.426	26	LOS C	43	0.748	27	LOS C	86
East	Approach	0.875	60	LOS E	123	0.546	52	LOS D	56
North	Approach	0.397	43	LOS D	75	0.387	41	LOS D	73
West	Approach	0.867	58	LOS E	68	0.758	54	LOS D	62
2041 Design Year									
South	Approach	0.611	23	LOS C	98	0.605	22	LOS C	76
East	Approach	0.820	59	LOS E	103	0.564	52	LOS D	61
North	Approach	0.455	40	LOS D	90	0.419	39	LOS D	82
West	Approach	0.807	57	LOS E	70	0.754	56	LOS E	61

Figure 5.5.5 - Intersection 106 Site Layout

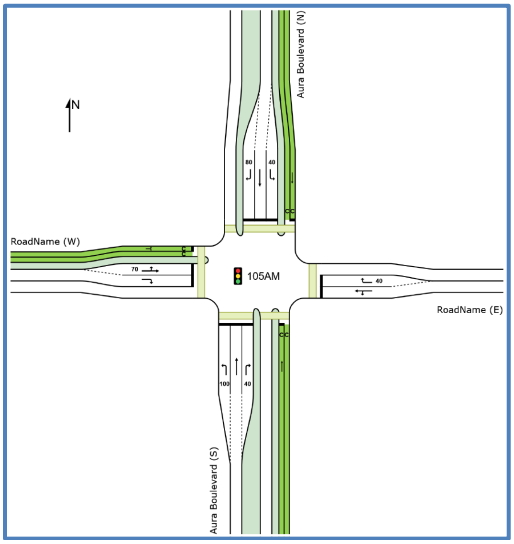


Table 5.5.4 - Intersection 106 Movement Summary

Approach		AM Peak				PM Peak			
		DoS	Avg Delay (s)	LOS	95% Back of Queue (m)	DoS	Avg Delay (s)	LOS	95% Back of Queue (m)
2031 Design Year									
South	Approach	0.618	48	LOS D	50	0.610	54	LOS D	36
East	Approach	0.673	42	LOS D	46	0.600	36	LOS D	55
North	Approach	0.633	48	LOS D	50	0.652	54	LOS D	38
West	Approach	0.637	49	LOS D	39	0.707	54	LOS D	39
2041 Design Year									
South	Approach	0.780	60	LOS E	63	0.750	53	LOS D	55
East	Approach	0.665	36	LOS D	81	0.799	39	LOS D	86
North	Approach	0.799	61	LOS E	64	0.797	54	LOS D	58
West	Approach	0.810	56	LOS E	114	0.827	56	LOS E	57

6. Summary

This report has been prepared on behalf of Stockland Development Pty Limited in support of a Priority Development Area (PDA) development application over land located on Bells Creek Road, Coochin Creek, comprising of Lot 1 on SP332399 and Lot 2 on SP3577480 (the site). The application seeks approval for the Early Release Area (ERA) of Stockland's Aura South project, within the Halls Creek PDA.

The development application seeks a PDA Development Permit for:

- Reconfiguring a Lot in accordance with a Plan of Development;
- Operational Works in accordance with a Plan of Development; and
- Material Change of Use in accordance with a Plan of Development.

The declaration of the Halls Creek PDA established the planning framework required to accelerate the delivery of Aura South. As the first neighbourhood within the PDA, the ERA will bring forward 1,051 new homes, including 636 detached housing lots, 338 attached allotments and two multiple dwelling sites accommodating about 77 apartments. This crucial housing supply will be supported by local services and infrastructure, nine enterprise and employment lots, a neighbourhood centre, sports and local parks, high-quality open space areas and active transport connections, establishing strong foundations for the new Aura South community.

Together, these elements will create a highly liveable, walkable and connected community which will contribute significantly to the delivery of housing, employment and community infrastructure in the southern growth corridor of the Sunshine Coast. The proposed site layout plans in the form of the RaL plans, prepared by Place Design Group are included in Attachment 4 of the planning report prepared by Place Design Group, and a copy of the lot layout is included in **Appendix A**.

The proposal plans have been developed through a collaborative approach and comprehensive team approach including detailed consideration of all relevant factors impacting a development of this scale. A significant component of this work included the establishment of an integrated transport system that was developed as an integral part of the ERA planning and was not a retrofitted transport solution to pre-ordained land use patterns.

External connectivity and integration with the existing development proposals associated with the broader Aura development were also integral to the planning process. Equally, the ability for this ERA proposal to be seamlessly integrated with the balance of the Aura South development planning was an essential ingredient in the ERA planning and assessment.

From a transport perspective, the result is a truly integrated system that is centred around a comprehensive network of active transport infrastructure elements that has clearly met the objective of creating a truly walkable and connected community. The network of 2-way separated cycle paths, shared paths and pedestrian pathways has created a community where recreation, shopping and other services are accessible via a range of travel modes. Connections to the external active transport network are facilitated via a commitment to the delivery of a grade separated 2-way cycle path over Bells Creek Arterial Road (initially catering for cyclists and pedestrians) that will link directly to the Gagalba active transport network ultimately providing a high standard connection directly to the Aura Town Centre and The Wave Railway Station.

The ERA proposal includes a logical and legible road network that has a hierarchy of roads that safely and efficiently distributes traffic through the system. The design of the road network has been formulated to ensure that the entire ERA achieves exceptional standards of residential amenity, not impacted by the unnecessary infiltration of traffic through the local road networks. The ERA road network has also been developed in a manner that will seamlessly integrate with the future stages of Aura South with the higher order road network bounding the ERA being contemplated in the internal network configuration. The network of roads will delivery safe and efficient connectivity while ensuring limited, if any, through traffic routes are established now or facilitated in the future.

This internal road network also facilitates a logical network of bus enabled roads that will accommodate dedicated bus services as and when provided by Translink. The potential future bus routes have been established to provide a bus network that is highly accessible with the vast majority of the residential and employment land within the ERA being within a short walk (notionally 400m) of potential future bus stops. The infrastructure will be delivered to enable the services to be provided by others.

It has been demonstrated that the ERA road network can accommodate buses in the short term with clear routes available linking to the future Stage 1 Town Centre and The Wave railway station via Aura Boulevard and the BCA / Aura South roundabout. The integration of the ERA with the ultimate Aura South road network also ensures the future opportunities for connectivity between the Aura South development and Aura (Gagalba precincts) are not compromised and rather provides future connectivity for the ERA notably this includes the future grade separated western link to Gagalba.

Externally, the ERA does confront some constraints in the short terms in terms of external network connectivity. The existing Bells Creek Arterial Road / Bells Creek Road roundabout, a dual circulating lane roundabout, is essentially the front door to Aura South and this external interface will continue to serve this purpose. The creation of a unique, best practice entry experience in the Aura South development has been a key consideration in the development of the ERA road network with the focus on delivering a solution that is futureproofed and will ultimately serve the entire Aura South community with minimal future disruption.

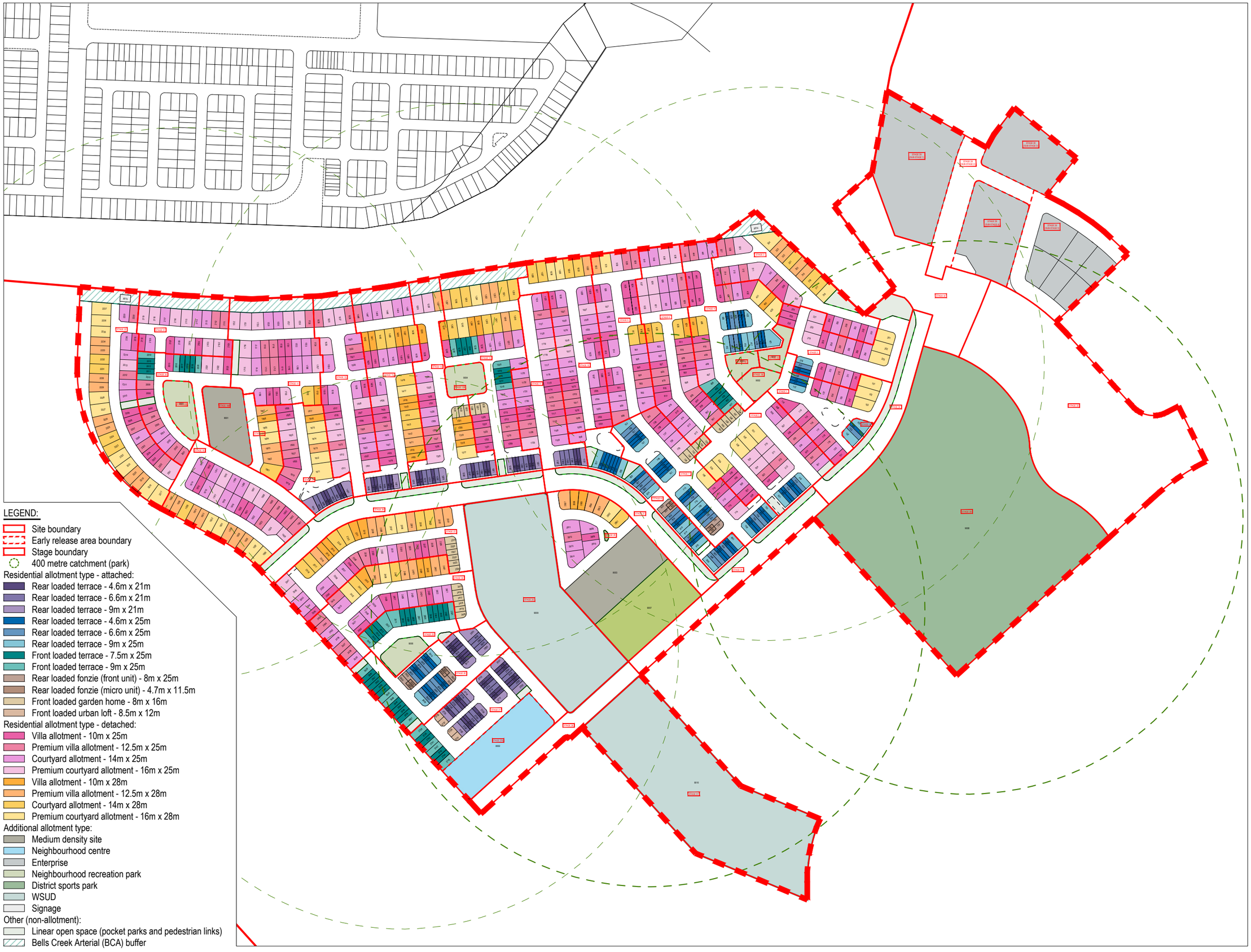
Noting that as part of this assessment there has been high level engagement and consultation with the State with respect to the ultimate infrastructure provisions for Aura South, the analysis presented in this report has focused on determination of the adequacy of the existing road network infrastructure in catering for the ERA traffic in a safe and efficient manner. It is important to recognize that there is ongoing collaboration between the project team and DTMR with respect to the need for updated transport modelling at a level suitable for the robust and reliable assessment of the ultimate infrastructure required to support the level of development intensity contemplated by the Halls Creek PDA and associated ILUP. The DTMR is currently in the process of undertaking comprehensive updates to their strategic level regional model along with the updating of the mesoscopic traffic models, being done in conjunction with the project team.

This parallel tranche of work will allow the determination of the ultimate transport system requirement for BCA road with both the traffic growth on DTMR's BCA and the Aura South traffic growth, including an implementation strategy. While subject to future detailed planning this may include a secondary north-south transport link between Gagalba and Aura South, independent of BCA Road.

As agreed with the State, the traffic analysis carried out as part of this report has been undertaken as a first principles basis based on the requirements of the DTMR's GTIA. As noted however, we have analysed the existing road network in the context of the proposed ERA land uses to determine its ability to support the ERA traffic in a safe and efficient manner. We have not contemplated a broader net-delay assessment noting the discussion above about the ultimate transport system work currently underway.

Our analysis has determined that the existing BCA Road / Bells Creek Road roundabout is adequate to support the ERA development proposal. This will continue to operate in a safe and efficient manner, facilitating an outcome that allows the initial stages of Aura South to commence delivery whilst providing sufficient time to identify and commence delivery of the ultimate transport solutions. The analysis has shown that this can be achieved with no external works, other than realignment/reconfiguration of the Bells Creek Road approach to the roundabout ensuring that the delivery of the ERA in the short term (by 2032/33) will not compromise any future transport network requirements.

Appendix A – Reconfiguration Plan



LEGEND:

- Site boundary
- Early release area boundary
- Stage boundary
- 400 metre catchment (park)

Residential allotment type - attached:

- Rear loaded terrace - 4.6m x 21m
- Rear loaded terrace - 6.6m x 21m
- Rear loaded terrace - 9m x 21m
- Rear loaded terrace - 4.6m x 25m
- Rear loaded terrace - 6.6m x 25m
- Rear loaded terrace - 9m x 25m
- Front loaded terrace - 7.5m x 25m
- Front loaded terrace - 9m x 25m
- Rear loaded fonzie (front unit) - 8m x 25m
- Rear loaded fonzie (micro unit) - 4.7m x 11.5m
- Front loaded garden home - 8m x 16m
- Front loaded urban loft - 8.5m x 12m

Residential allotment type - detached:

- Villa allotment - 10m x 25m
- Premium villa allotment - 12.5m x 25m
- Courtyard allotment - 14m x 25m
- Premium courtyard allotment - 16m x 25m
- Villa allotment - 10m x 28m
- Premium villa allotment - 12.5m x 28m
- Courtyard allotment - 14m x 28m
- Premium courtyard allotment - 16m x 28m

Additional allotment type:

- Medium density site
- Neighbourhood centre
- Enterprise
- Neighbourhood recreation park
- District sports park
- WSUD
- Signage

Other (non-allotment):

- Linear open space (pocket parks and pedestrian links)
- Bells Creek Arterial (BCA) buffer

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PROJECT

AURA SOUTH

CLIENT

Stockland

NOTES

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AERIAL: NEARMAP

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ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	FOR CLIENT REVIEW	NV	NV	27/08/2026
A	PRE	FOR CLIENT REVIEW	NV	NV	04/09/2026
B	PRE	EDQ ISSUE	NV	NV	25/09/2026
C	PRE	FOR COORDINATION	NV	NV	14/10/2026
D	PRE	DRAFT CLIENT ISSUE	NV	NV	23/10/2026
E	PRE	EDQ ISSUE	NV	NV	02/11/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

EARLY RELEASE AREA - PLAN OF SUBDIVISION

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:5,0000 @ A3

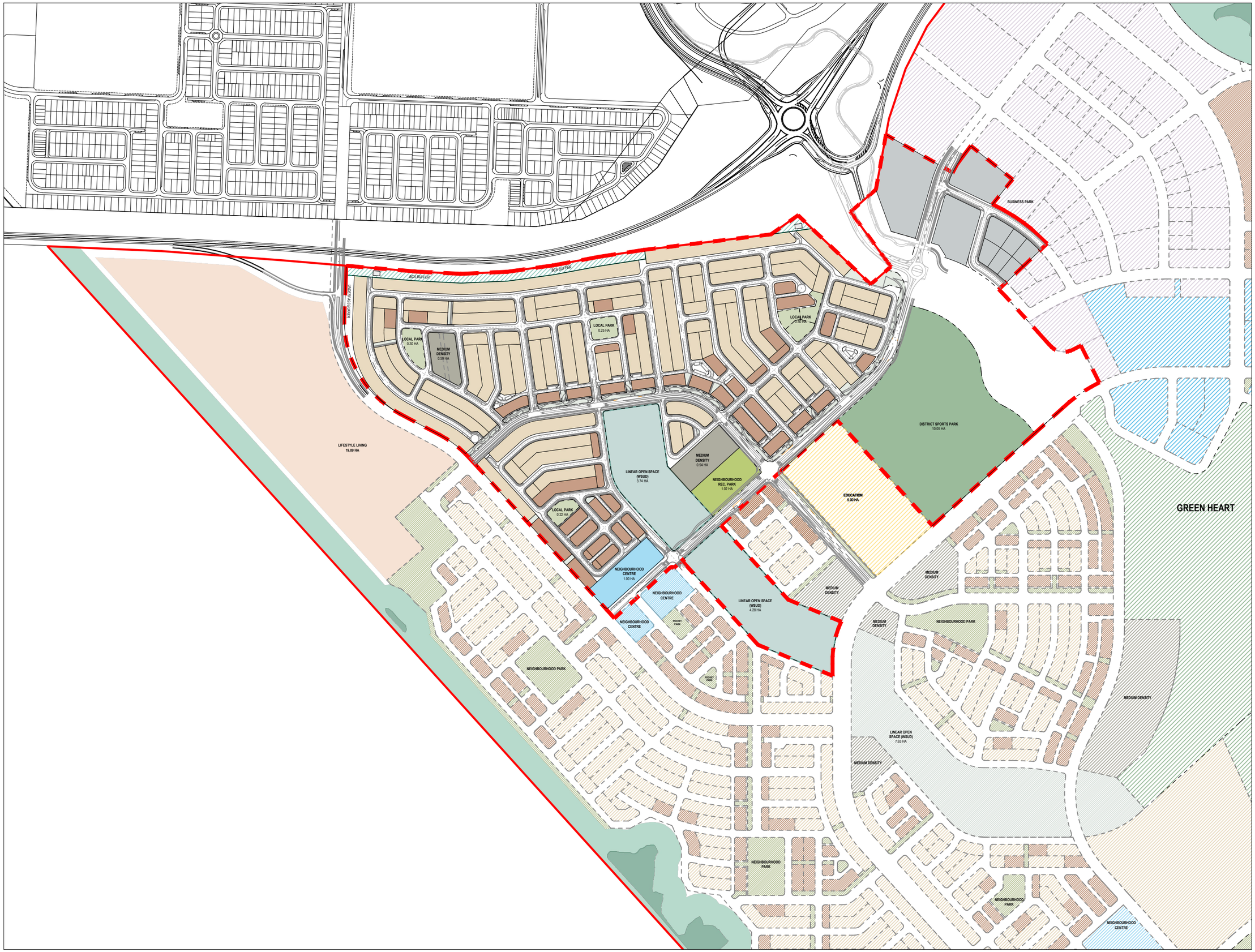
NORTH

0 50 100 150 200

DRAWING NUMBER 240553 - 91

REVISION E

Appendix B - ERA Context Plan



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AERIAL: NEARMAP

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ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	FOR CLIENT REVIEW	NV	NV	31/07/2026
A	PRE	FOR COORDINATION	NV	NV	13/08/2026
B	PRE	FOR COORDINATION	NV	NV	31/08/2026
C	PRE	PRES. COLLATERAL	NV	NV	21/10/2026
D	PRE	FOR COORDINATION	NV	NV	03/11/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

EARLY RELEASE AREA - CONTEXT PLAN

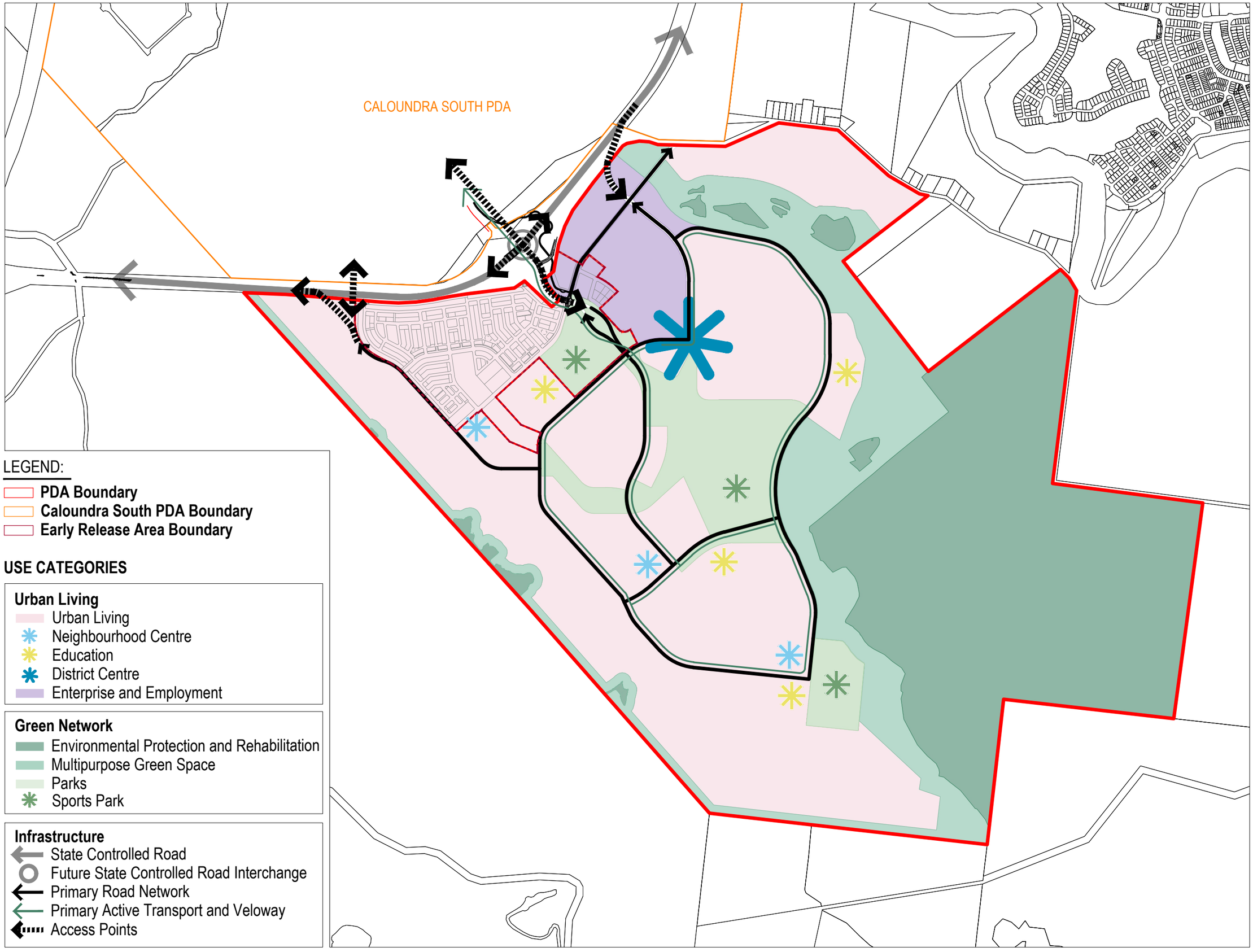
DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:7,500 @ A3

NORTH

0 50 100 200 300

DRAWING NUMBER 240553 - 76

REVISION D



LEGEND:

PDA Boundary
Caloundra South PDA Boundary
Early Release Area Boundary

USE CATEGORIES

Urban Living
- Urban Living
- Neighbourhood Centre
- Education
- District Centre
- Enterprise and Employment

Green Network
- Environmental Protection and Rehabilitation
- Multipurpose Green Space
- Parks
- Sports Park

Infrastructure
- State Controlled Road
- Future State Controlled Road Interchange
- Primary Road Network
- Primary Active Transport and Veloway
- Access Points

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AERIAL: NEARMAP

ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	CONSULTANT ISSUE	NV	NV	24/08/2026
A	PRE	CONSULTANT ISSUE	NV	NV	27/08/2026
B	PRE	FOR COORDINATION	NV	NV	03/11/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

PDA STRUCTURAL ELEMENTS PLAN (WITH ERA)

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:20,000 @ A3

NORTH

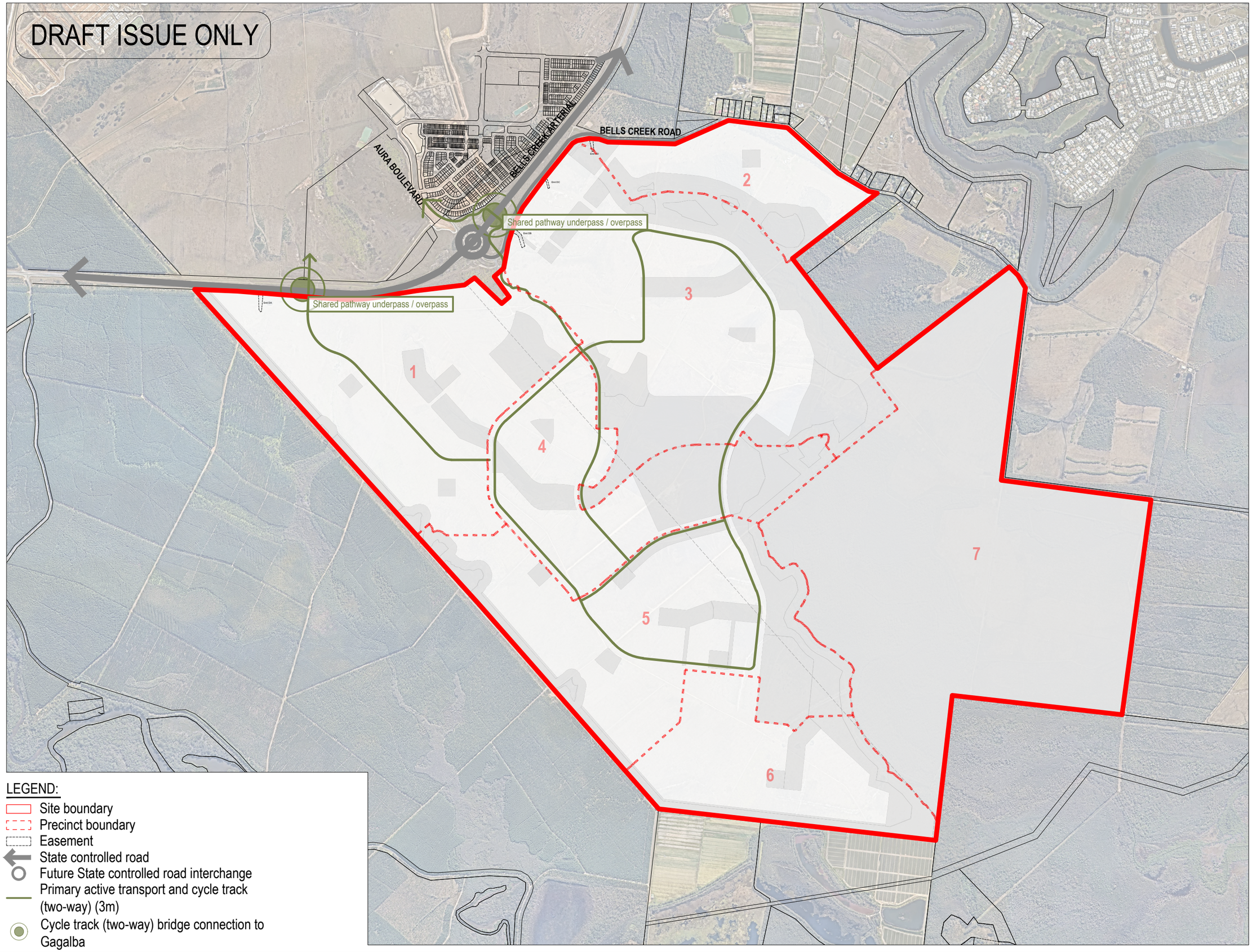
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DRAWING NUMBER 240553 - 77

REVISION B

Appendix C - Aura South Active and Public Transport

DRAFT ISSUE ONLY



LEGEND:

- Site boundary
- Precinct boundary
- Easement
- State controlled road
- Future State controlled road interchange
- Primary active transport and cycle track (two-way) (3m)
- Cycle track (two-way) bridge connection to Gagalba

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ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	DRAFT ISSUE	NV	NV	29/10/2026
A	PRE	DRAFT ISSUE	NV	NV	02/11/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ACTIVE TRANSPORT PLAN

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:20,000 @ A3

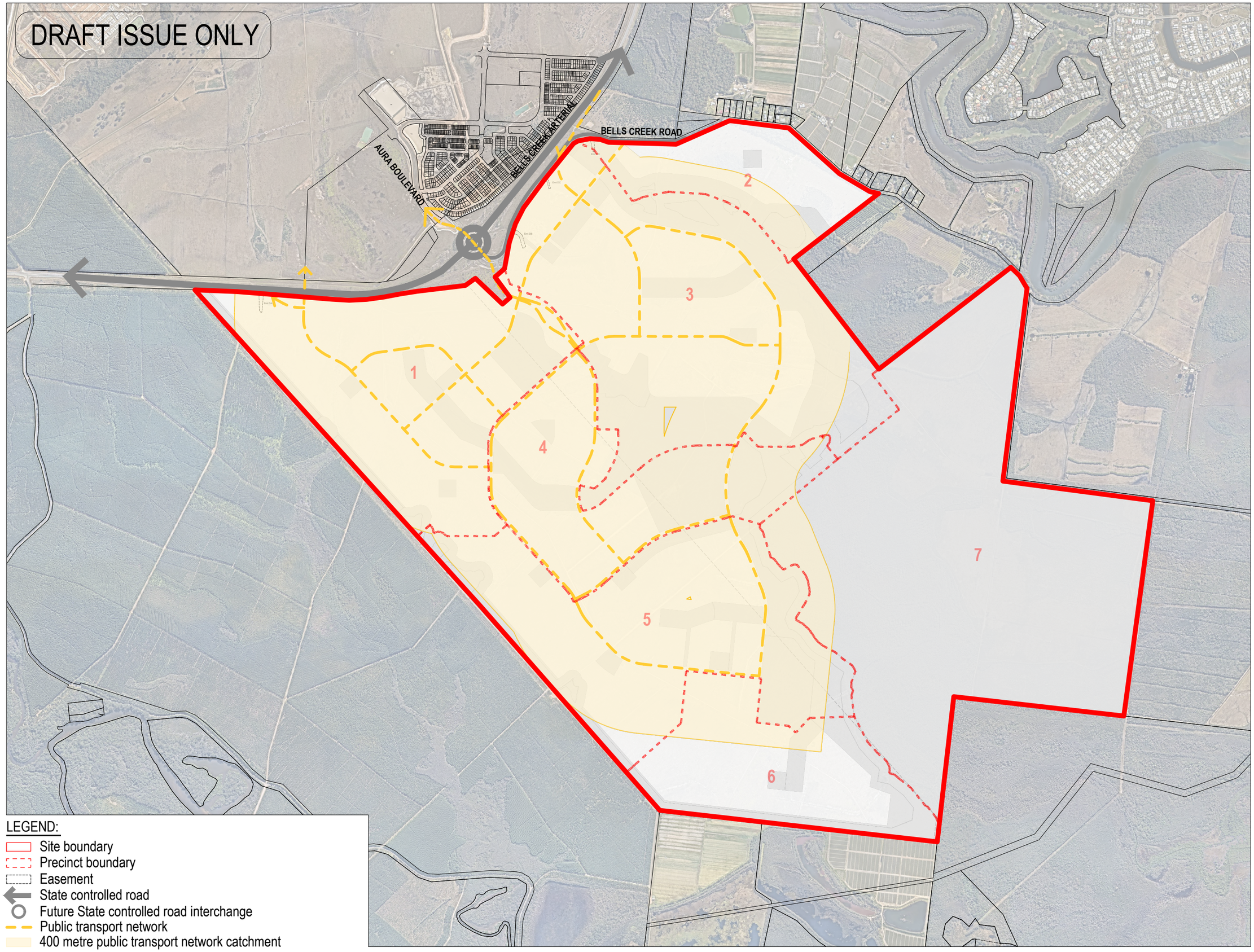
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0 200 400 600 800

DRAWING NUMBER 240553 - 142

REVISION A

DRAFT ISSUE ONLY



LEGEND:

- Site boundary
- Precinct boundary
- Easement
- State controlled road
- Future State controlled road interchange
- Public transport network
- 400 metre public transport network catchment

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AERIAL: NEARMAP

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ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	DRAFT ISSUE	NV	NV	29/10/2026
A	PRE	DRAFT ISSUE	NV	NV	02/11/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

PUBLIC TRANSPORT PLAN

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DOCUMENT : NV
PROJECT : 240553
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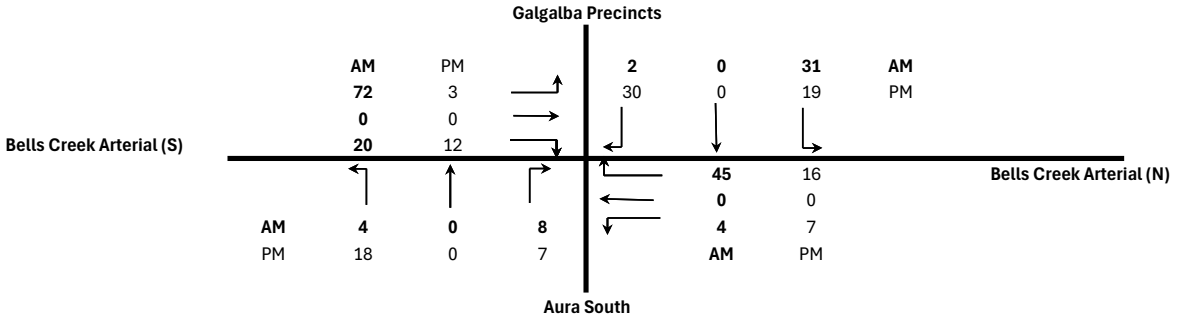
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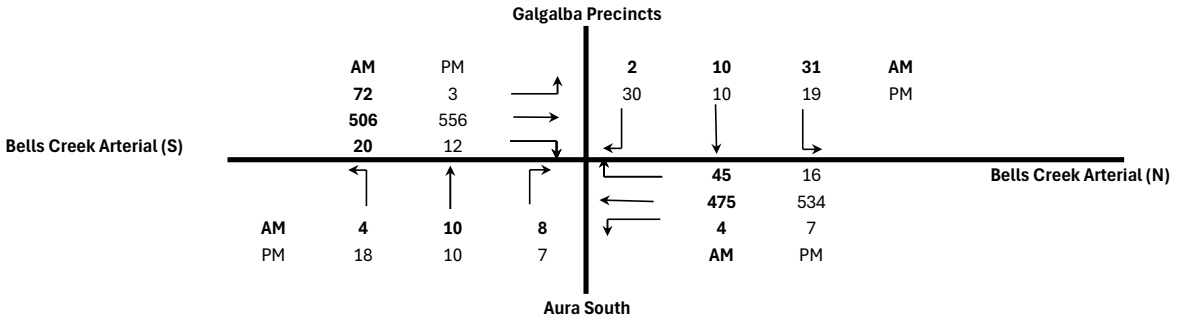
REVISION A

Appendix D - Turning Movement Diagrams



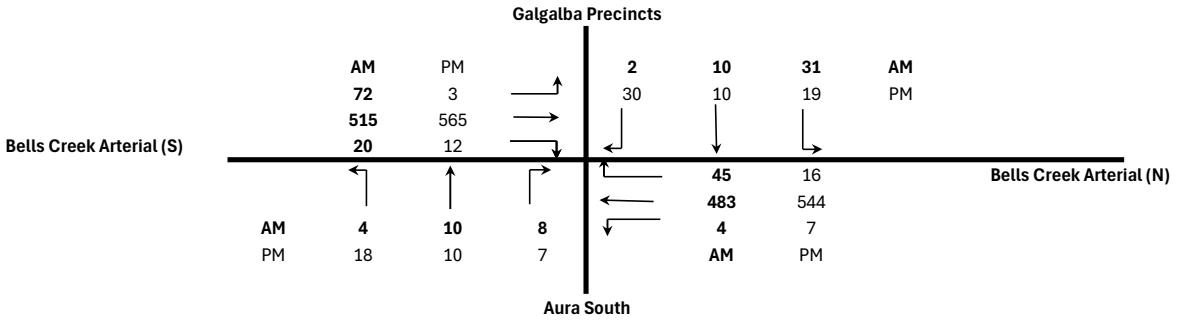
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JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**Background Traffic 2026**

Growth
2%

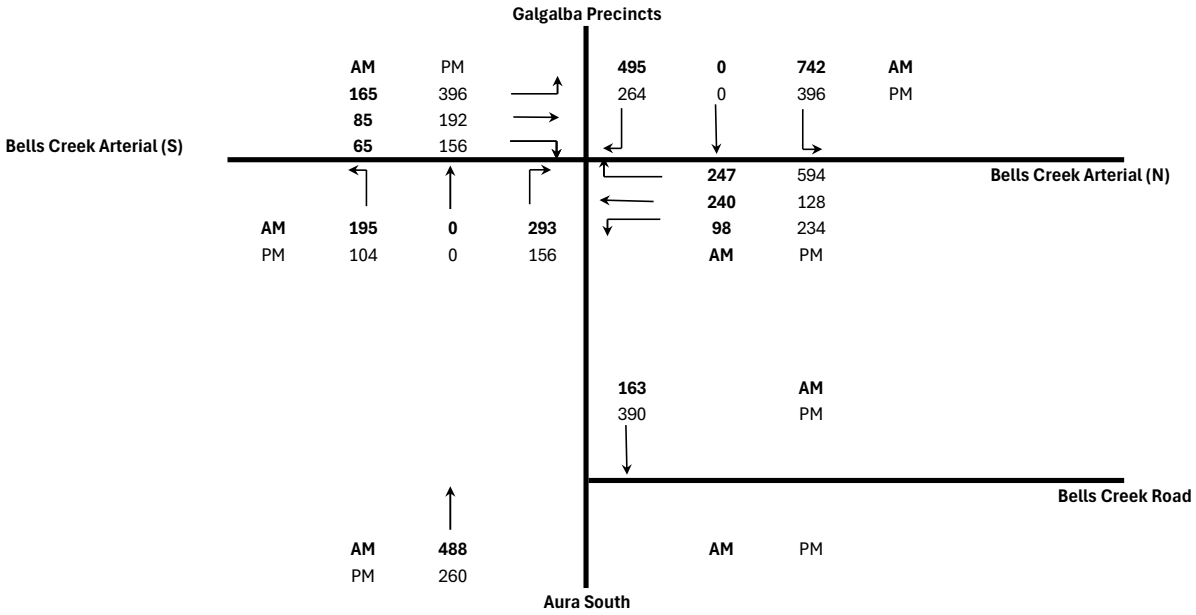


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JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**Background Traffic 2032**

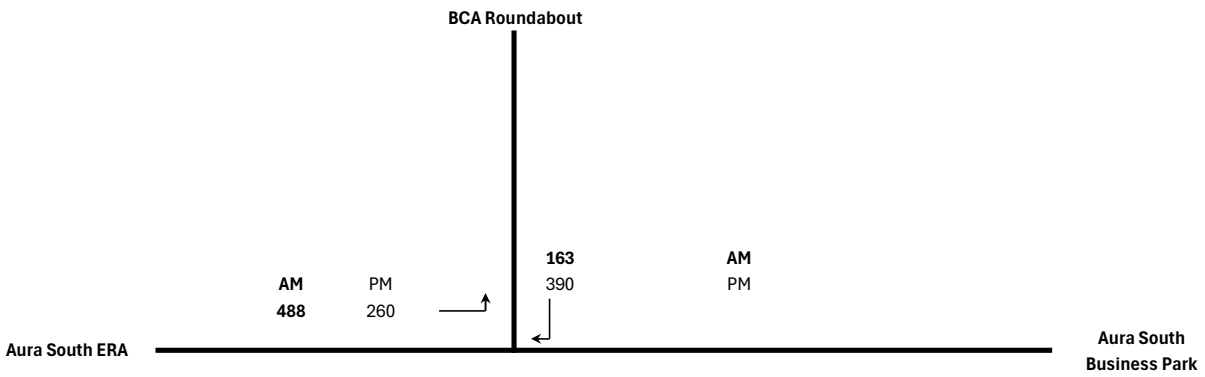
Growth
2%



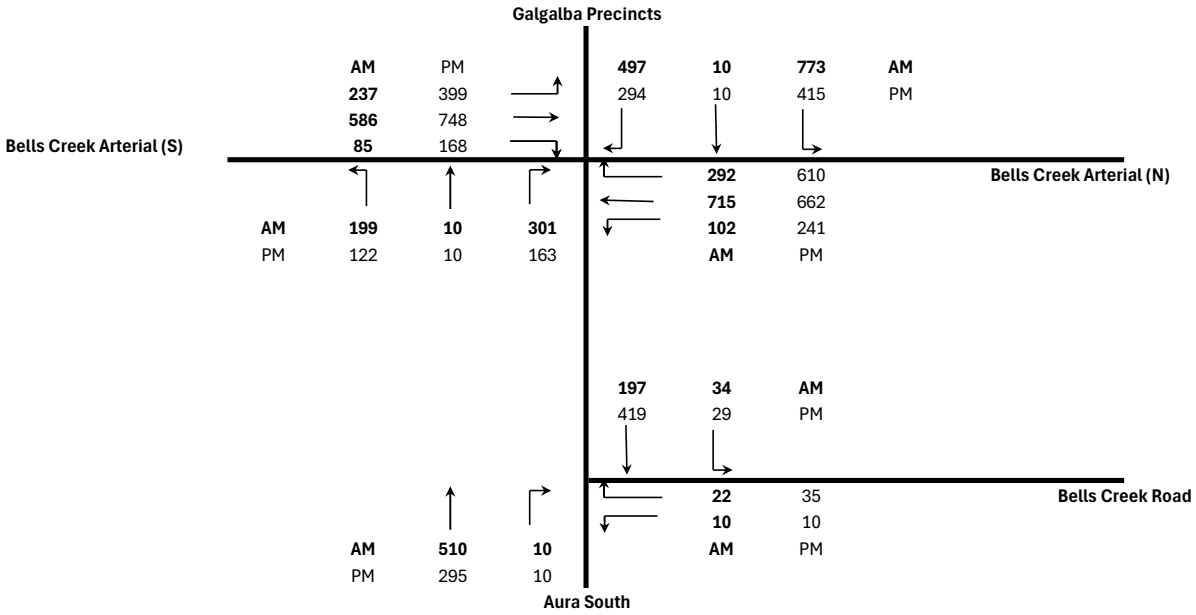
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JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**Background Traffic 2033**



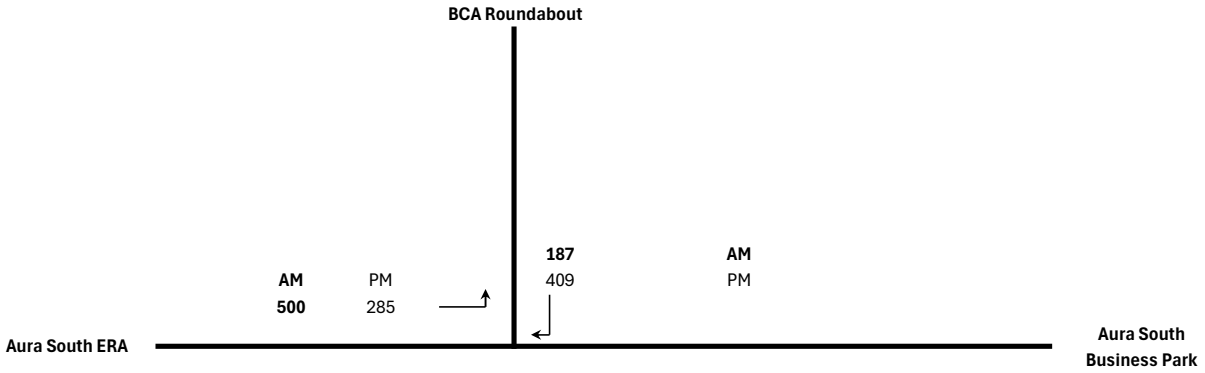
31/08/2026	SEQ-T-26-21	**Figure D4A**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2032 Development Traffic (Residential)**



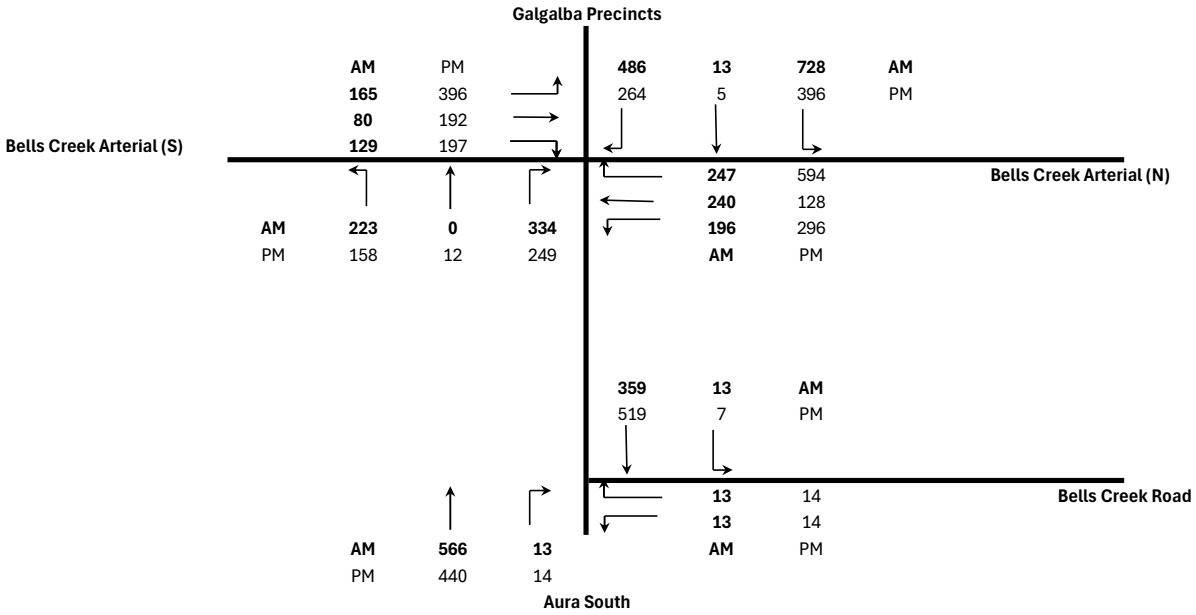
31/08/2026	SEQ-T-26-21	**Figure D4B**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2032 Development Traffic (Residential)**



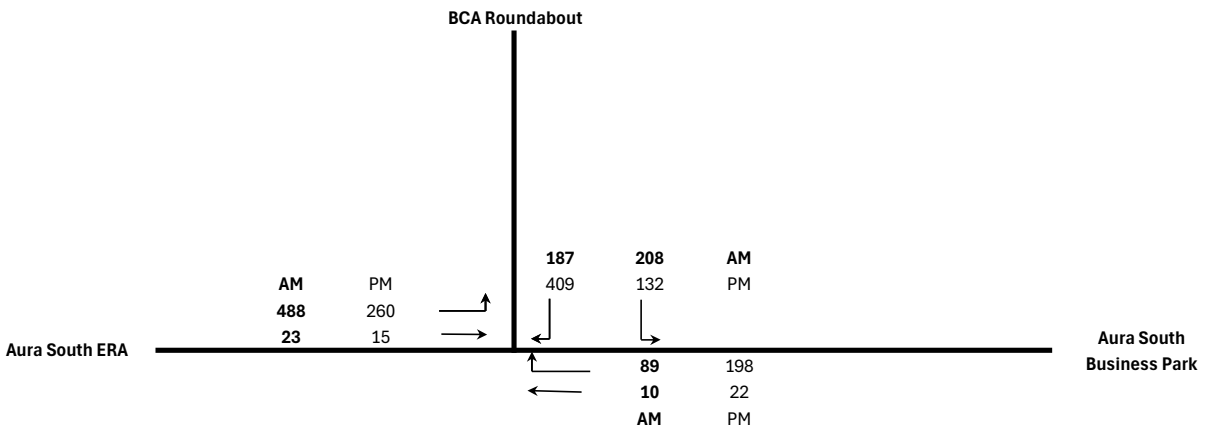
31/08/2026	SEQ-T-26-21	**Figure D5A**
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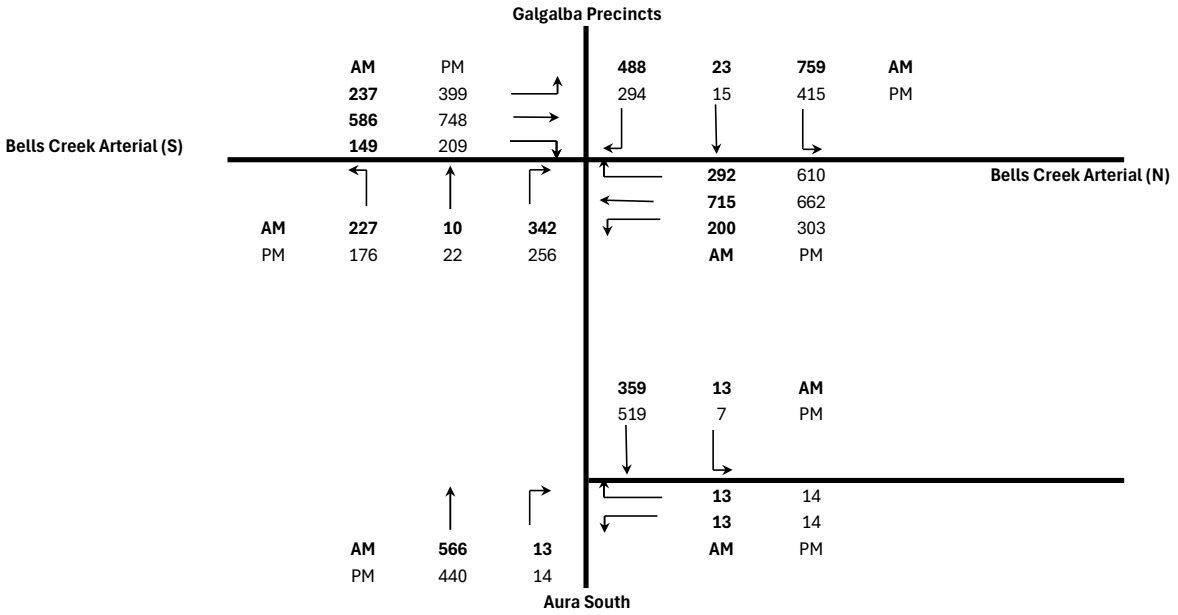
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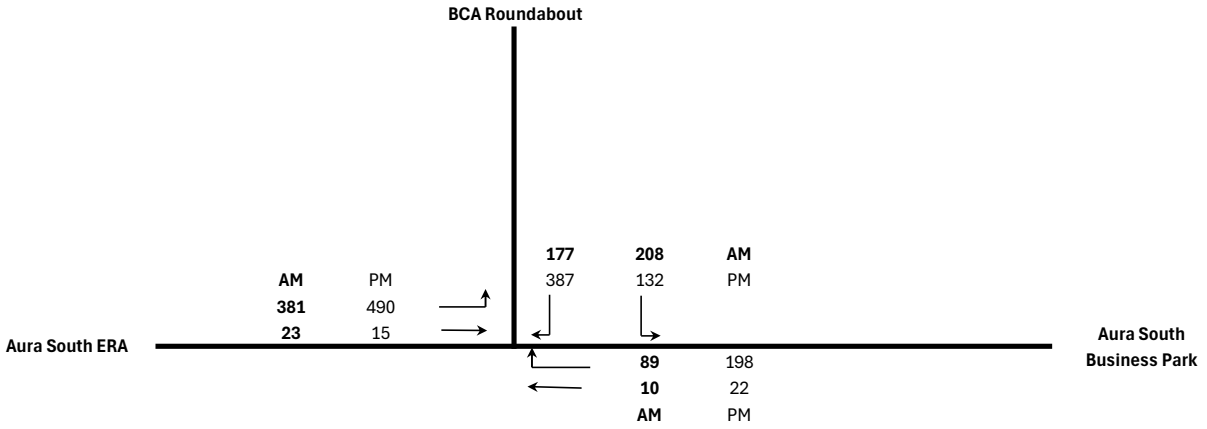
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JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2032 Development Traffic (Full ERA)**



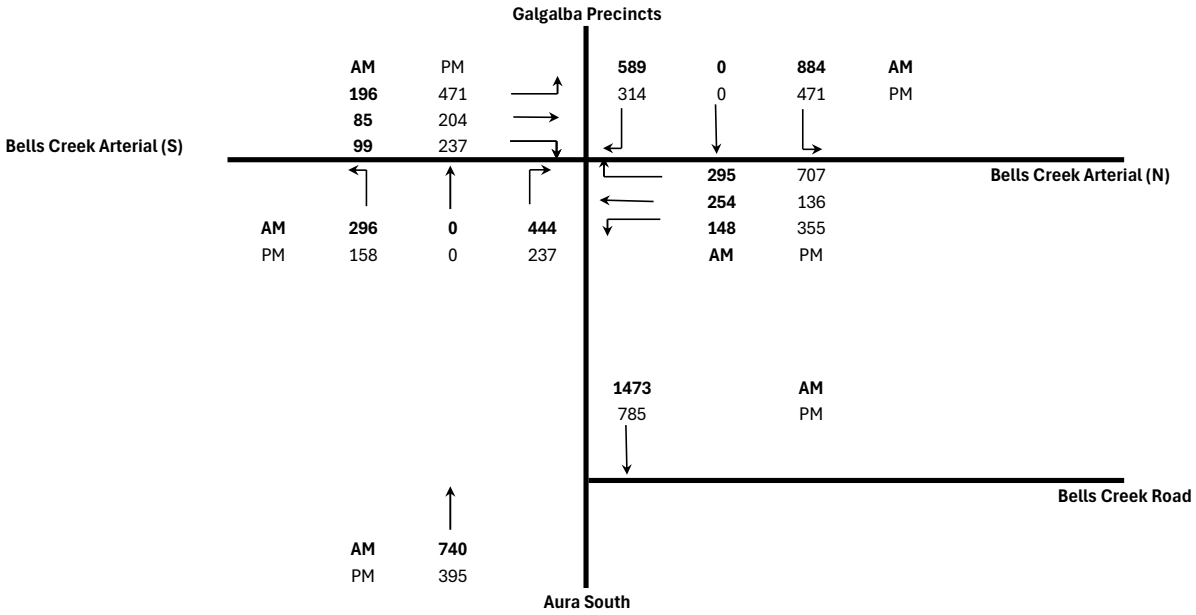
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JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2032 Development Traffic (Full ERA)**



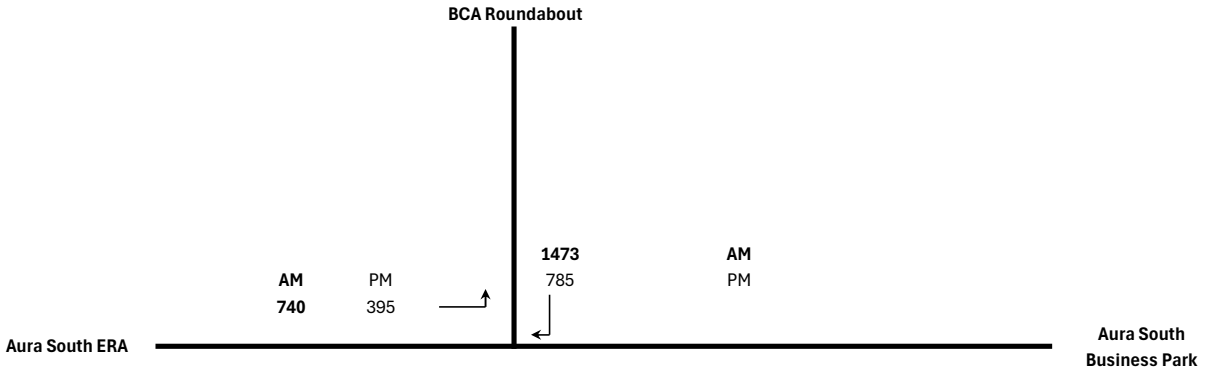
31/08/2026	SEQ-T-26-21	**Figure D7A**
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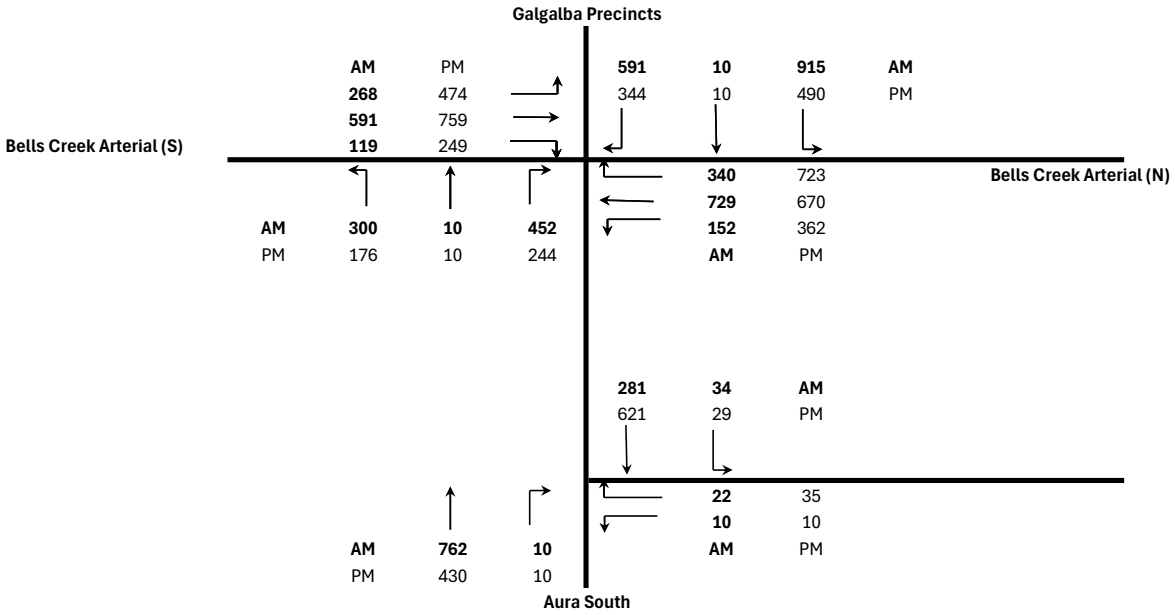
31/08/2026	SEQ-T-26-21	**Figure D7B**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2032 Design Traffic (Background + Full ERA)**



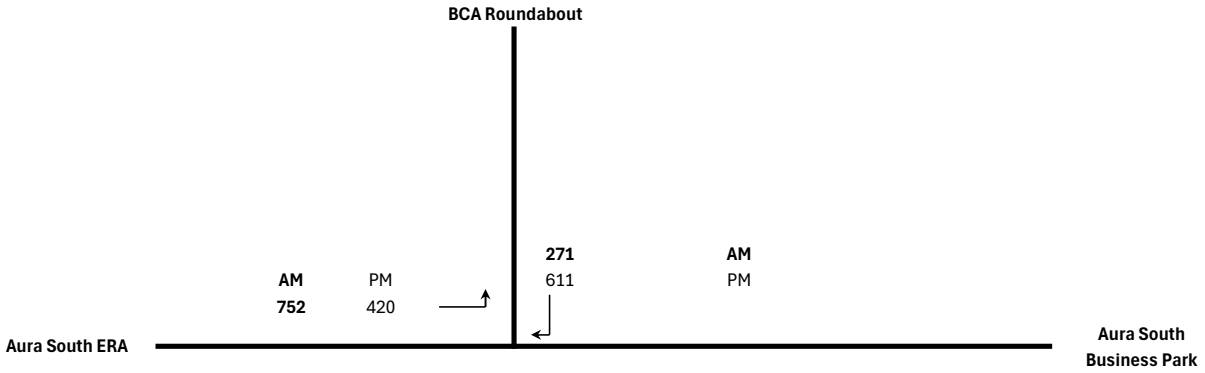
31/08/2026	SEQ-T-26-21	**Figure D8A**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Development Traffic (Residential)**



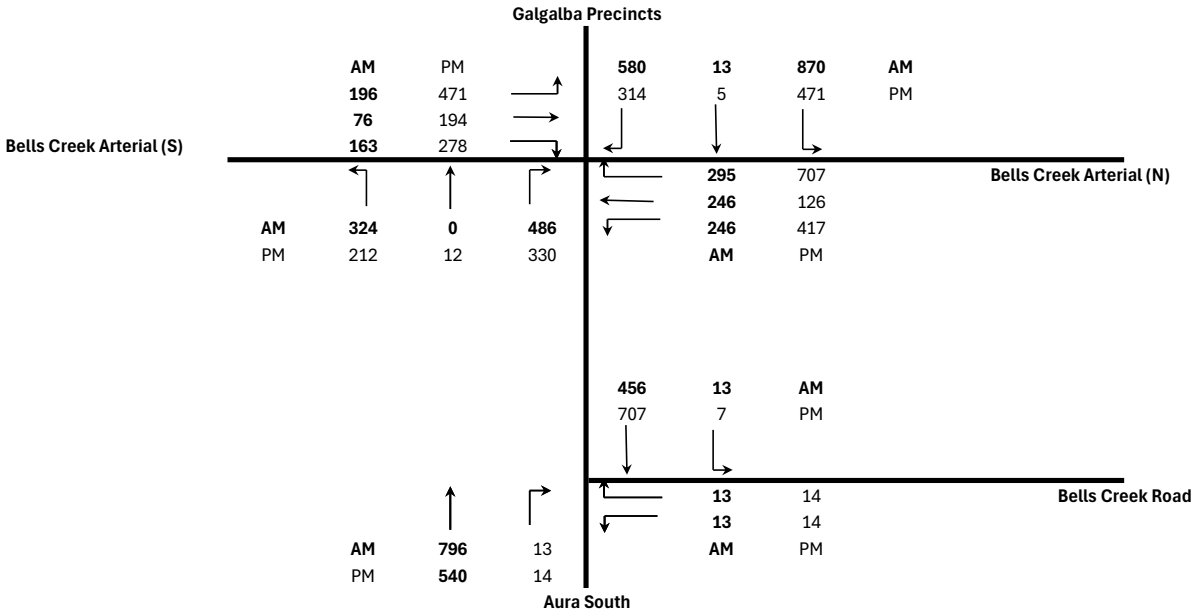
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JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Development Traffic (Residential)**



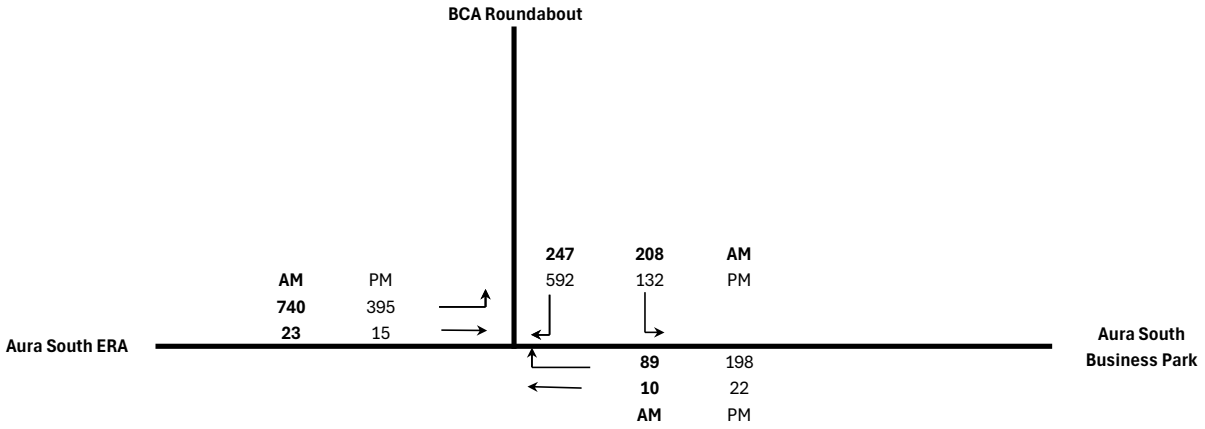
31/08/2026	SEQ-T-26-21	**Figure D9A**
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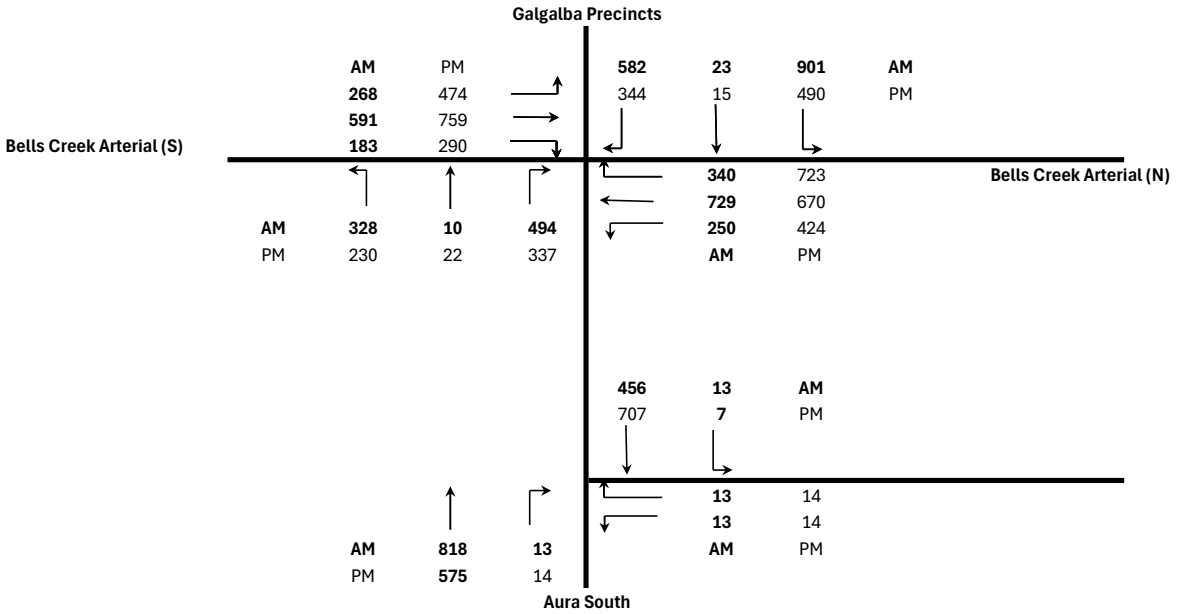
31/08/2026	SEQ-T-26-21	**Figure D9B**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Design Traffic (Background + Residential)**



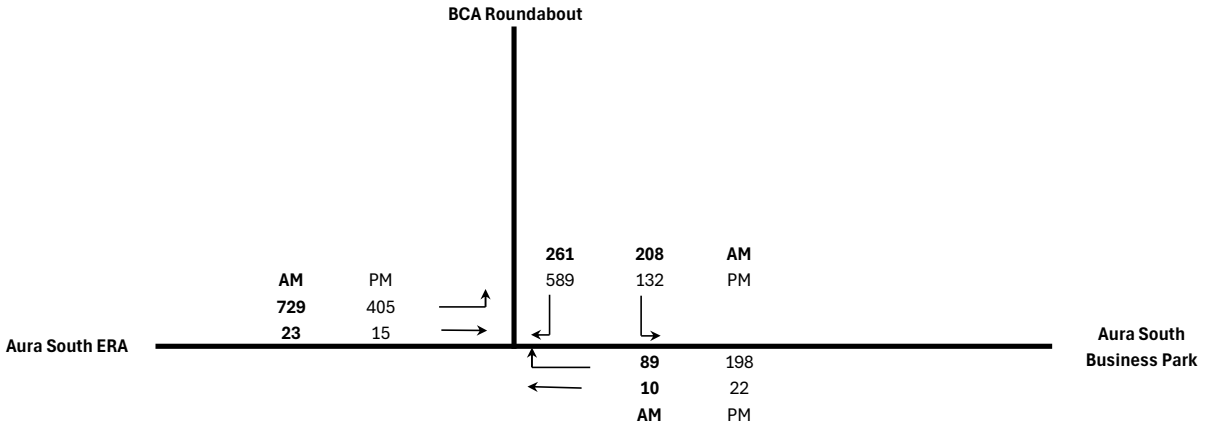
31/08/2026	SEQ-T-26-21	**Figure D10**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Development Traffic (Full ERA)**



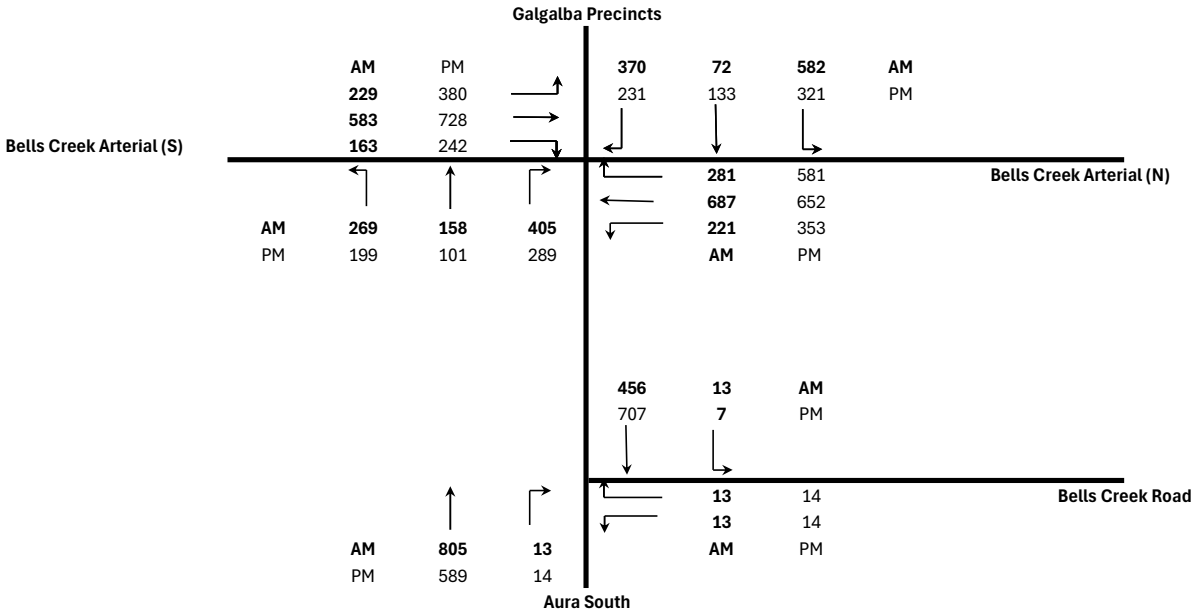
31/08/2026	SEQ-T-26-21	**Figure D10B**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Development Traffic (Full ERA)**



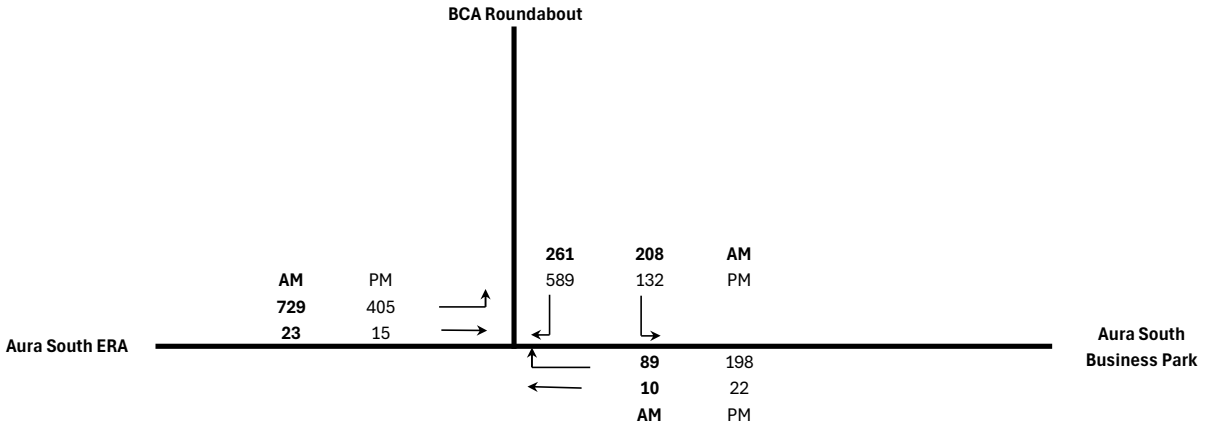
31/08/2026	SEQ-T-26-21	**Figure D11A**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Design Traffic (Background + Full ERA)**



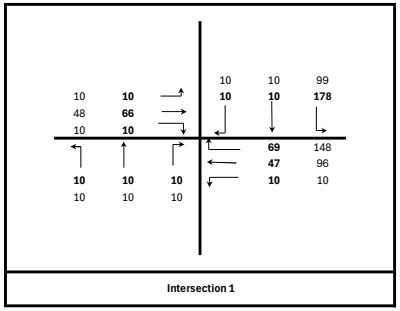
31/08/2026	SEQ-T-26-21	**Figure D11B**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Design Traffic (Background + Full ERA)**



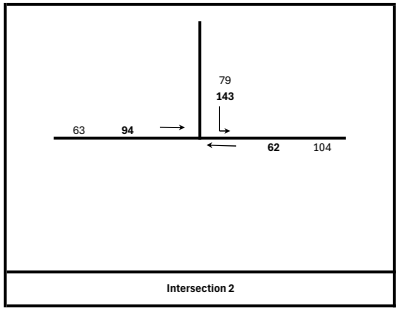
31/08/2026	SEQ-T-26-21	**Figure D12A**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Design Traffic (Background + Full ERA 20% Internalisation)**



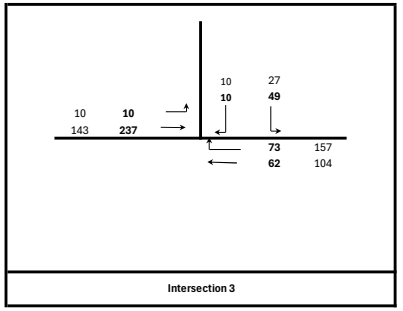
31/08/2026	SEQ-T-26-21	**Figure D12B**
JALAHAWI CONSULTING TRAFFIC + TRANSPORT SPECIALISTS		**2033 Design Traffic (Background + Full ERA 20% Internalisation)**



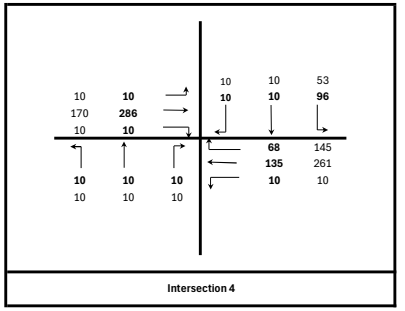
Intersection 1



Intersection 2



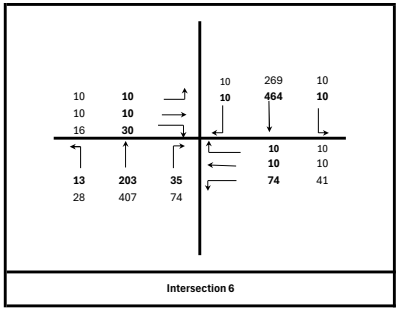
Intersection 3



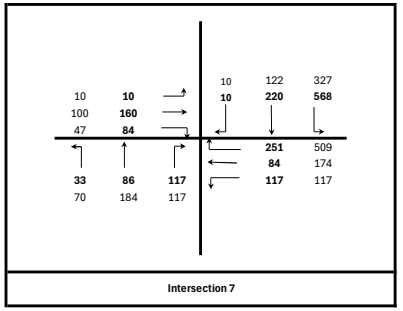
Intersection 4



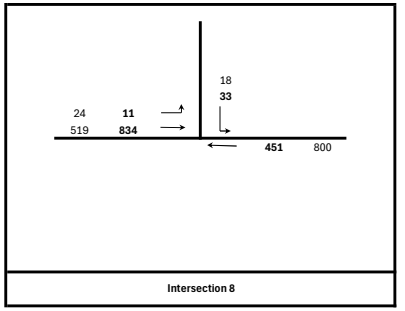
Intersection 5



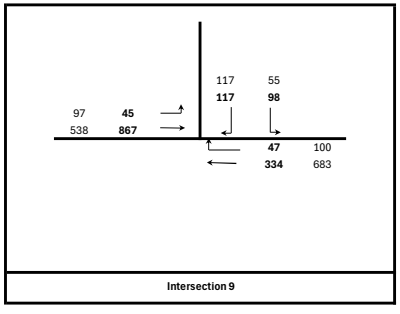
Intersection 6



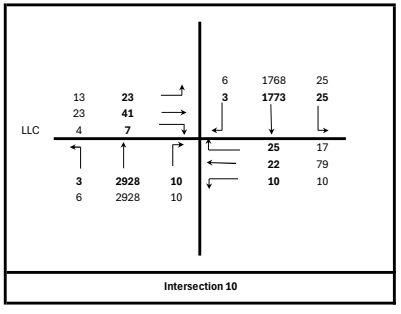
Intersection 7



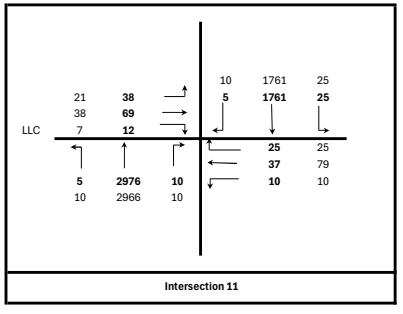
Intersection 8



Intersection 9



Intersection 10



Intersection 11

Legend

AM Peak

PM Peak

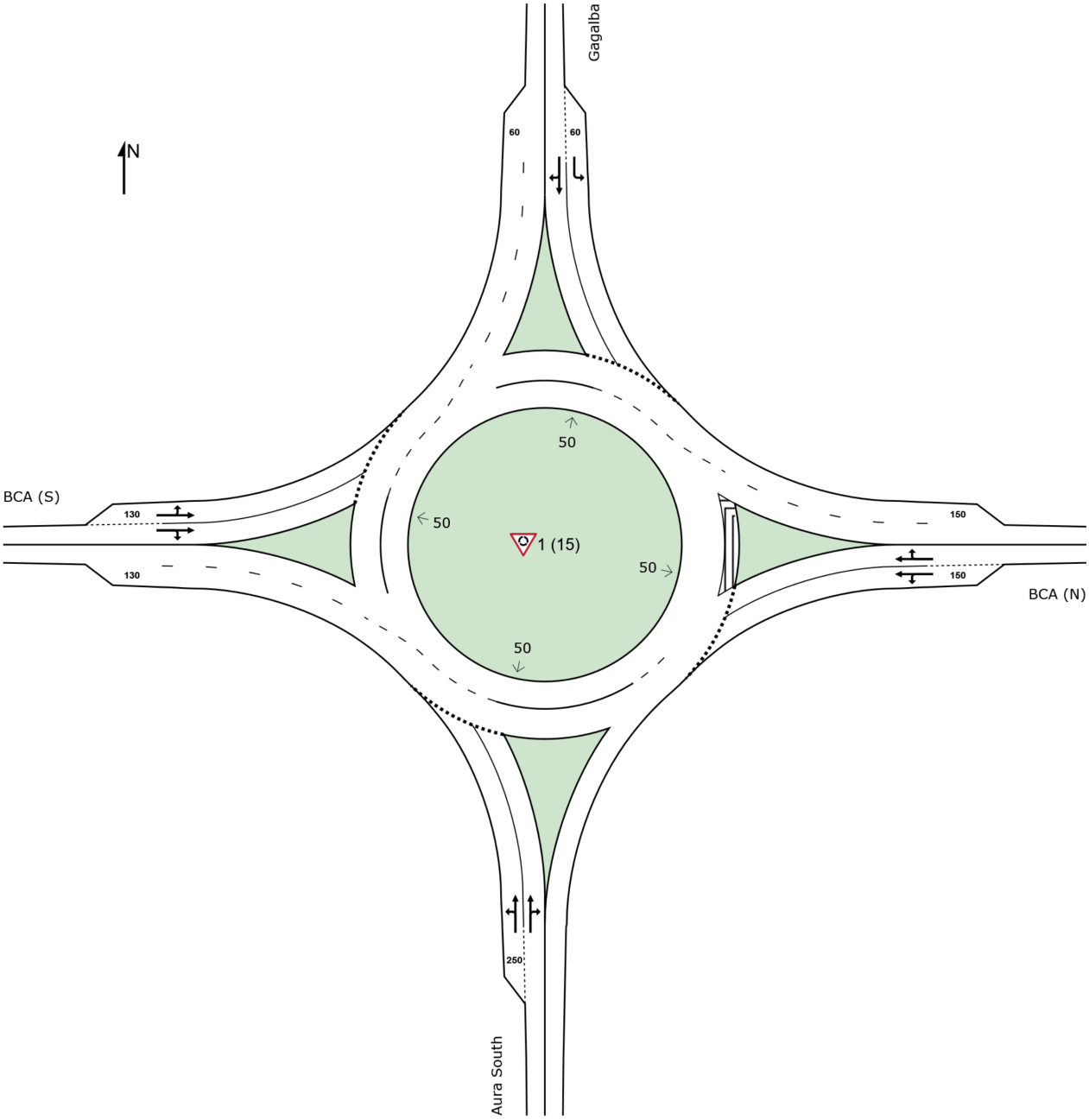
Appendix E - SIDRA Movement Summaries

SITE LAYOUT

Site: [1 (15)] AM BCA (2026 Background Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [1 (15)] AM BCA (2026 Background Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	4	0.0	4	0.0	0.007	4.2	LOS A	0.0	0.2	0.41	0.42	0.41	54.8
2	T1	All MCs	10	0.0	10	0.0	0.011	3.2	LOS A	0.0	0.3	0.39	0.50	0.39	53.7
3	R2	All MCs	8	0.0	8	0.0	0.011	10.5	LOS B	0.0	0.3	0.38	0.53	0.38	52.3
Approach			22	0.0	22	0.0	0.011	6.1	LOS A	0.0	0.3	0.39	0.49	0.39	53.4
East: BCA (N)															
4	L2	All MCs	4	0.0	4	0.0	0.148	2.9	LOS A	0.8	5.5	0.13	0.23	0.13	56.5
5	T1	All MCs	475	0.0	475	0.0	0.150	2.4	LOS A	0.8	5.7	0.12	0.27	0.12	56.5
6	R2	All MCs	45	0.0	45	0.0	0.150	9.7	LOS A	0.8	5.7	0.12	0.31	0.12	55.1
Approach			524	0.0	524	0.0	0.150	3.0	LOS A	0.8	5.7	0.12	0.28	0.12	56.4
North: Gagalba															
7	L2	All MCs	31	0.0	31	0.0	0.023	3.8	LOS A	0.1	0.6	0.39	0.46	0.39	55.0
8	T1	All MCs	10	0.0	10	0.0	0.012	3.6	LOS A	0.0	0.3	0.42	0.45	0.42	54.4
9	R2	All MCs	2	0.0	2	0.0	0.012	11.1	LOS B	0.0	0.3	0.42	0.45	0.42	53.5
Approach			43	0.0	43	0.0	0.023	4.1	LOS A	0.1	0.6	0.40	0.46	0.40	54.8
West: BCA (S)															
10	L2	All MCs	72	0.0	72	0.0	0.192	3.0	LOS A	0.9	6.0	0.15	0.27	0.15	56.3
11	T1	All MCs	506	0.0	506	0.0	0.192	2.4	LOS A	0.9	6.0	0.16	0.28	0.16	56.5
12	R2	All MCs	20	0.0	20	0.0	0.192	9.8	LOS A	0.9	6.0	0.17	0.29	0.17	55.3
Approach			598	0.0	598	0.0	0.192	2.8	LOS A	0.9	6.0	0.16	0.28	0.16	56.4
All Vehicles			1187	0.0	1187	0.0	0.192	3.0	LOS A	0.9	6.0	0.16	0.29	0.16	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

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MOVEMENT SUMMARY

Site: [1 (16)] PM BCA (2026 Background Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	18	0.0	18	0.0	0.013	3.8	LOS A	0.1	0.4	0.39	0.44	0.39	55.0
2	T1	All MCs	10	0.0	10	0.0	0.015	3.4	LOS A	0.1	0.4	0.41	0.52	0.41	53.5
3	R2	All MCs	7	0.0	7	0.0	0.015	10.9	LOS B	0.1	0.4	0.41	0.52	0.41	52.6
Approach			35	0.0	35	0.0	0.015	5.1	LOS A	0.1	0.4	0.40	0.48	0.40	54.1
East: BCA (N)															
4	L2	All MCs	7	0.0	7	0.0	0.143	3.0	LOS A	0.8	5.6	0.19	0.25	0.19	56.2
5	T1	All MCs	477	0.0	477	0.0	0.146	2.4	LOS A	0.8	5.8	0.18	0.26	0.18	56.5
6	R2	All MCs	15	0.0	15	0.0	0.146	9.7	LOS A	0.8	5.8	0.17	0.27	0.17	55.4
Approach			499	0.0	499	0.0	0.146	2.7	LOS A	0.8	5.8	0.18	0.26	0.18	56.4
North: Gagalba															
7	L2	All MCs	19	0.0	19	0.0	0.019	4.2	LOS A	0.1	0.5	0.41	0.47	0.41	54.9
8	T1	All MCs	10	0.0	10	0.0	0.033	3.1	LOS A	0.1	0.8	0.38	0.61	0.38	52.1
9	R2	All MCs	34	0.0	34	0.0	0.033	10.5	LOS B	0.1	0.8	0.38	0.61	0.38	51.2
Approach			63	0.0	63	0.0	0.033	7.4	LOS A	0.1	0.8	0.39	0.57	0.39	52.3
West: BCA (S)															
10	L2	All MCs	3	0.0	3	0.0	0.159	2.9	LOS A	0.7	5.1	0.11	0.23	0.11	56.7
11	T1	All MCs	496	0.0	496	0.0	0.159	2.3	LOS A	0.7	5.1	0.11	0.24	0.11	56.9
12	R2	All MCs	12	0.0	12	0.0	0.159	9.7	LOS A	0.7	5.1	0.11	0.26	0.11	55.7
Approach			511	0.0	511	0.0	0.159	2.5	LOS A	0.7	5.1	0.11	0.24	0.11	56.9
All Vehicles			1108	0.0	1108	0.0	0.159	2.9	LOS A	0.8	5.8	0.16	0.28	0.16	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

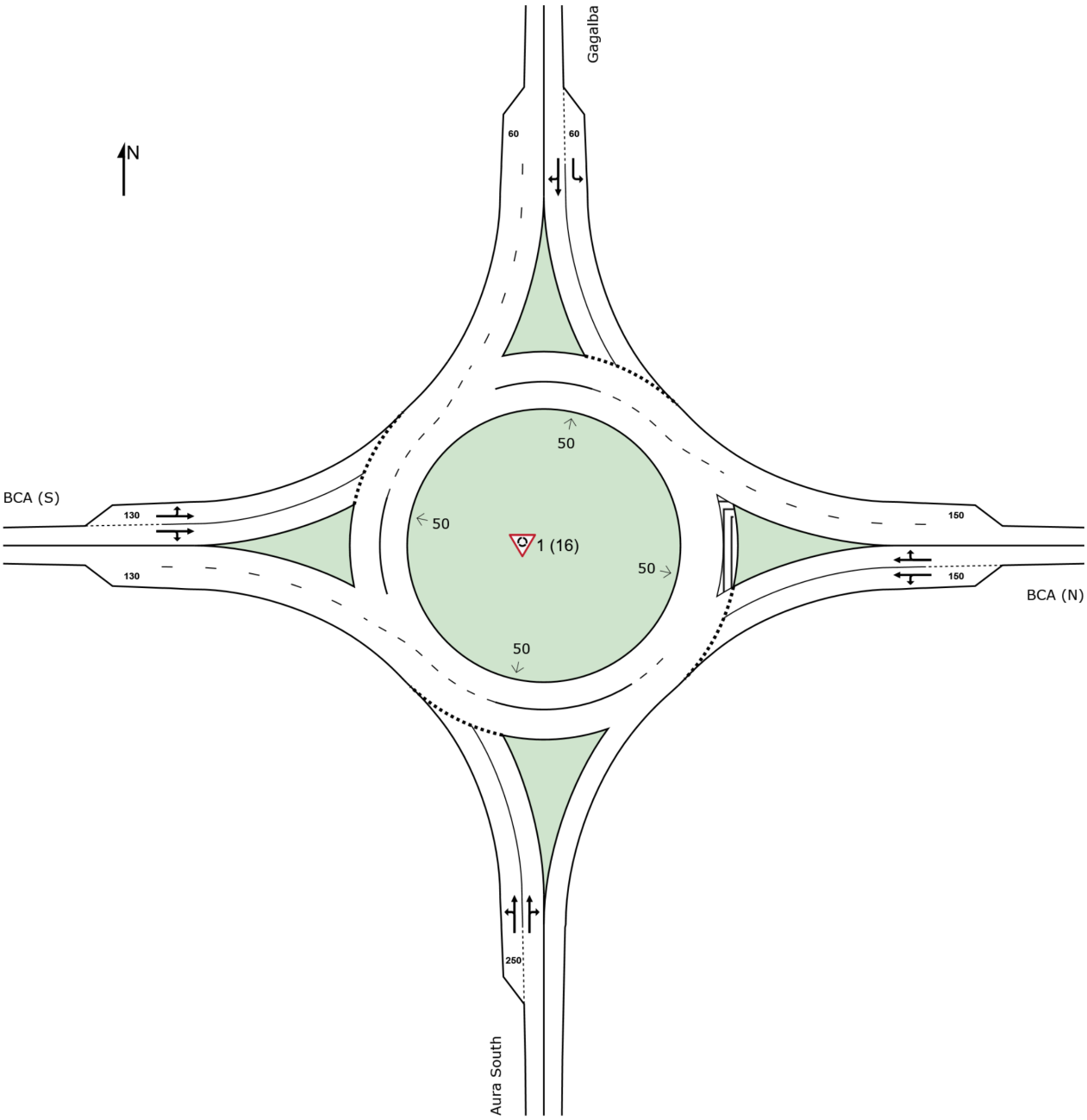
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SITE LAYOUT

Site: [1 (16)] PM BCA (2026 Background Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



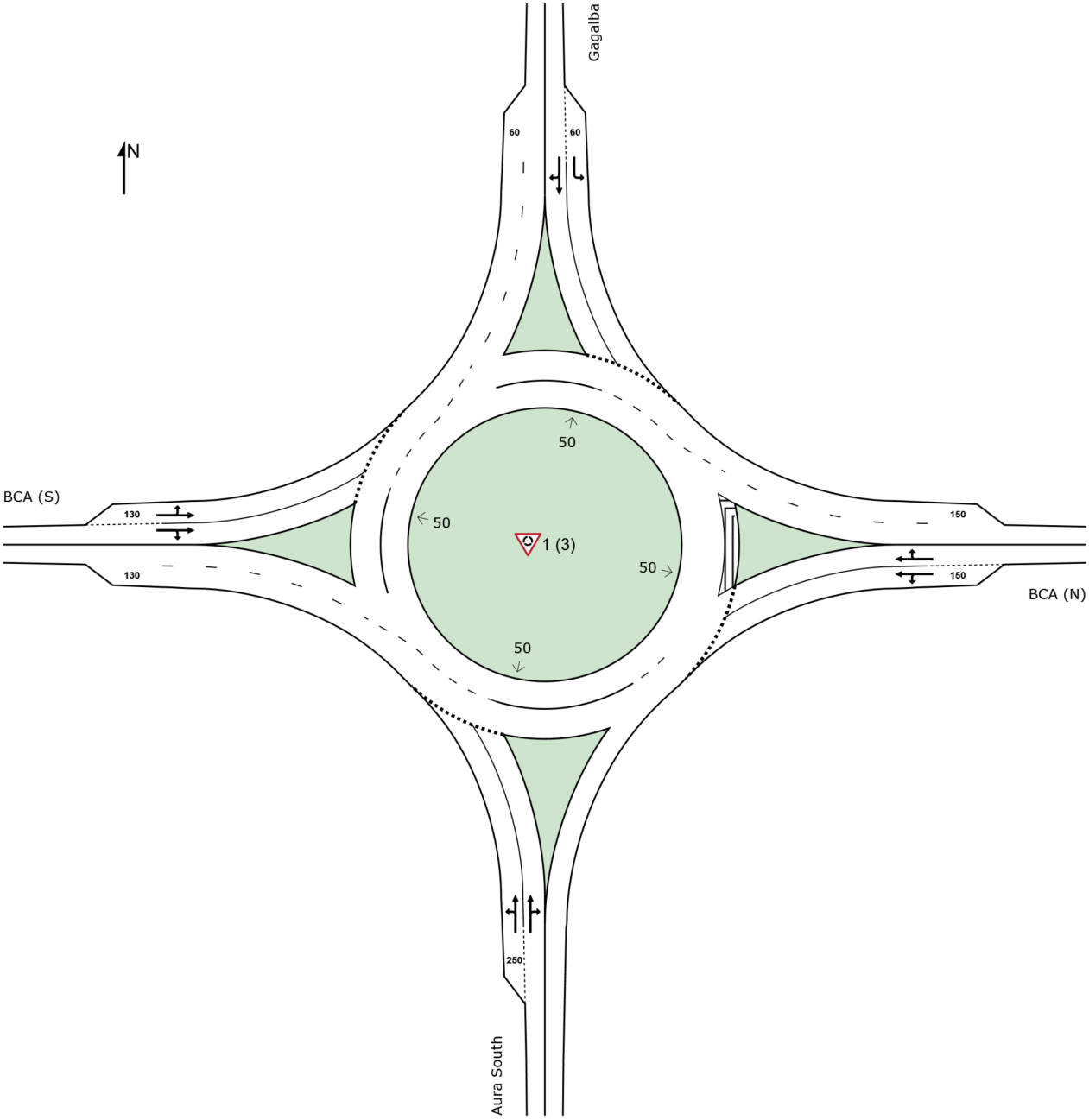
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SITE LAYOUT

Site: [1 (3)] AM BCA (2032 BackgroundTraffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [1 (3)] AM BCA (2032 BackgroundTraffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	4	0.0	4	0.0	0.007	4.2	LOS A	0.0	0.2	0.41	0.42	0.41	54.8
2	T1	All MCs	10	0.0	10	0.0	0.011	3.2	LOS A	0.0	0.3	0.39	0.50	0.39	53.7
3	R2	All MCs	8	0.0	8	0.0	0.011	10.5	LOS B	0.0	0.3	0.38	0.53	0.38	52.3
Approach			22	0.0	22	0.0	0.011	6.1	LOS A	0.0	0.3	0.39	0.49	0.39	53.4
East: BCA (N)															
4	L2	All MCs	4	0.0	4	0.0	0.148	2.9	LOS A	0.8	5.5	0.13	0.23	0.13	56.5
5	T1	All MCs	475	0.0	475	0.0	0.150	2.4	LOS A	0.8	5.7	0.12	0.27	0.12	56.5
6	R2	All MCs	45	0.0	45	0.0	0.150	9.7	LOS A	0.8	5.7	0.12	0.31	0.12	55.1
Approach			524	0.0	524	0.0	0.150	3.0	LOS A	0.8	5.7	0.12	0.28	0.12	56.4
North: Gagalba															
7	L2	All MCs	31	0.0	31	0.0	0.023	3.8	LOS A	0.1	0.6	0.39	0.46	0.39	55.0
8	T1	All MCs	10	0.0	10	0.0	0.012	3.6	LOS A	0.0	0.3	0.42	0.45	0.42	54.4
9	R2	All MCs	2	0.0	2	0.0	0.012	11.1	LOS B	0.0	0.3	0.42	0.45	0.42	53.5
Approach			43	0.0	43	0.0	0.023	4.1	LOS A	0.1	0.6	0.40	0.46	0.40	54.8
West: BCA (S)															
10	L2	All MCs	72	0.0	72	0.0	0.192	3.0	LOS A	0.9	6.0	0.15	0.27	0.15	56.3
11	T1	All MCs	506	0.0	506	0.0	0.192	2.4	LOS A	0.9	6.0	0.16	0.28	0.16	56.5
12	R2	All MCs	20	0.0	20	0.0	0.192	9.8	LOS A	0.9	6.0	0.17	0.29	0.17	55.3
Approach			598	0.0	598	0.0	0.192	2.8	LOS A	0.9	6.0	0.16	0.28	0.16	56.4
All Vehicles			1187	0.0	1187	0.0	0.192	3.0	LOS A	0.9	6.0	0.16	0.29	0.16	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

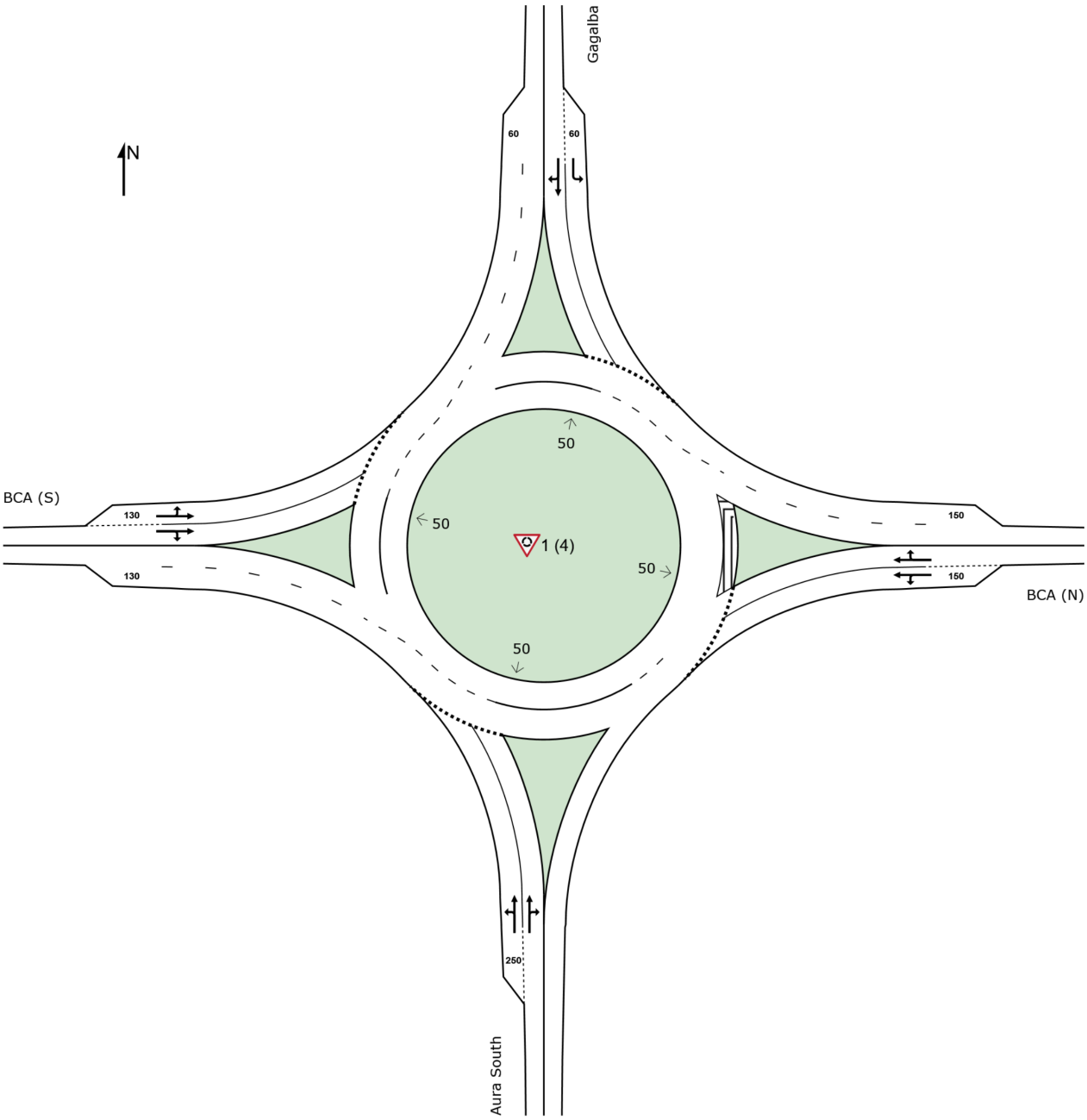
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SITE LAYOUT

Site: [1 (4)] PM BCA (2032 Background Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [1 (4)] PM BCA (2032 Background Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	18	0.0	18	0.0	0.014	3.9	LOS A	0.1	0.4	0.41	0.45	0.41	54.9
2	T1	All MCs	10	0.0	10	0.0	0.016	3.5	LOS A	0.1	0.4	0.43	0.53	0.43	53.5
3	R2	All MCs	7	0.0	7	0.0	0.016	11.0	LOS B	0.1	0.4	0.43	0.53	0.43	52.5
Approach			35	0.0	35	0.0	0.016	5.2	LOS A	0.1	0.4	0.42	0.49	0.42	54.0
East: BCA (N)															
4	L2	All MCs	7	0.0	7	0.0	0.160	3.0	LOS A	0.9	6.3	0.18	0.25	0.18	56.2
5	T1	All MCs	534	0.0	534	0.0	0.162	2.4	LOS A	0.9	6.6	0.17	0.26	0.17	56.5
6	R2	All MCs	16	0.0	16	0.0	0.162	9.7	LOS A	0.9	6.6	0.16	0.27	0.16	55.4
Approach			557	0.0	557	0.0	0.162	2.6	LOS A	0.9	6.6	0.17	0.26	0.17	56.5
North: Gagalba															
7	L2	All MCs	19	0.0	19	0.0	0.019	4.3	LOS A	0.1	0.5	0.43	0.48	0.43	54.8
8	T1	All MCs	10	0.0	10	0.0	0.030	3.2	LOS A	0.1	0.8	0.40	0.61	0.40	52.1
9	R2	All MCs	30	0.0	30	0.0	0.030	10.6	LOS B	0.1	0.8	0.40	0.61	0.40	51.2
Approach			59	0.0	59	0.0	0.030	7.3	LOS A	0.1	0.8	0.41	0.57	0.41	52.4
West: BCA (S)															
10	L2	All MCs	3	0.0	3	0.0	0.178	2.9	LOS A	0.8	5.8	0.11	0.23	0.11	56.6
11	T1	All MCs	556	0.0	556	0.0	0.178	2.4	LOS A	0.8	5.8	0.11	0.24	0.11	56.9
12	R2	All MCs	12	0.0	12	0.0	0.178	9.7	LOS A	0.8	5.8	0.12	0.26	0.12	55.7
Approach			571	0.0	571	0.0	0.178	2.5	LOS A	0.8	5.8	0.11	0.24	0.11	56.9
All Vehicles			1222	0.0	1222	0.0	0.178	2.9	LOS A	0.9	6.6	0.16	0.27	0.16	56.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

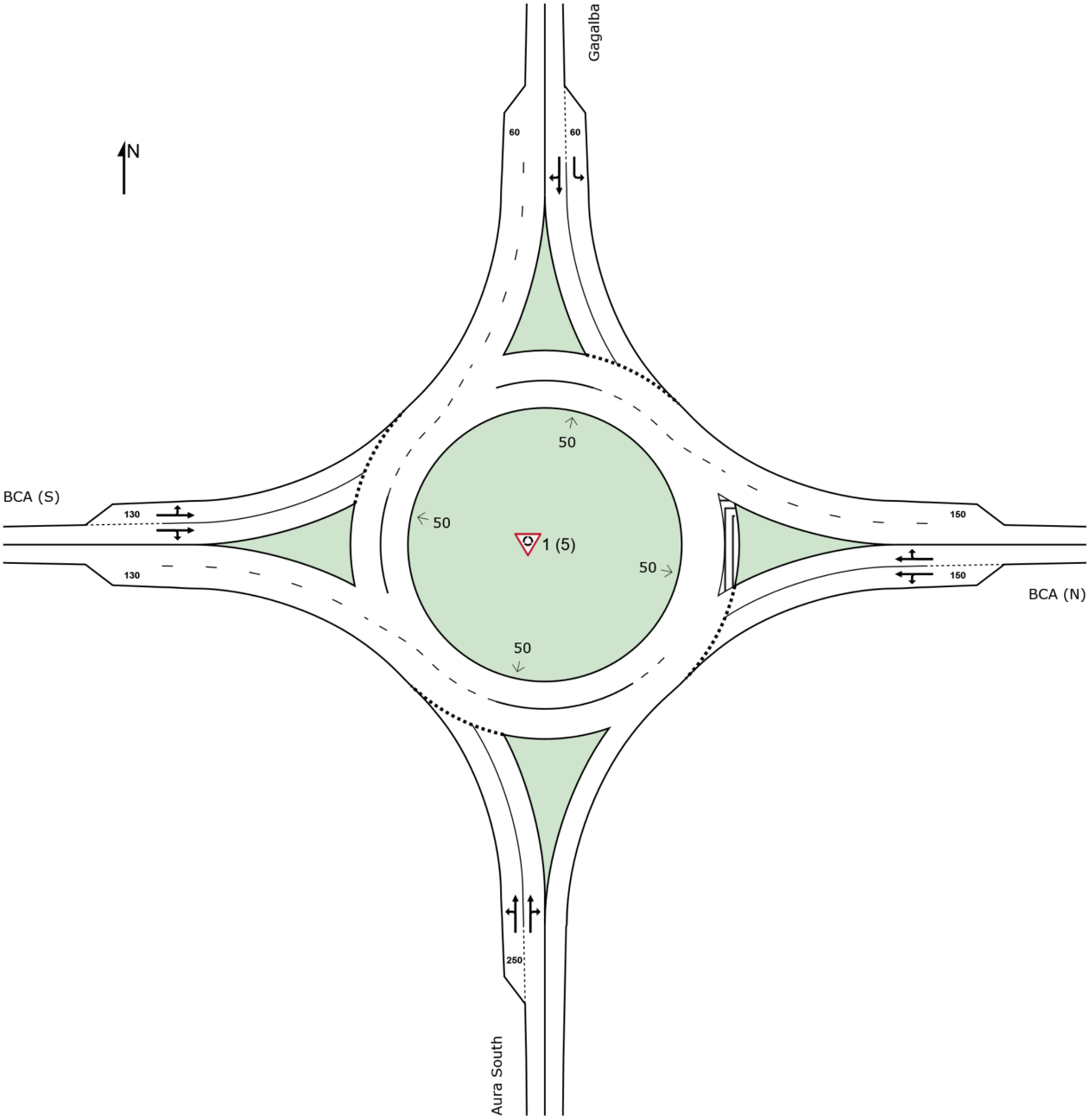
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SITE LAYOUT

Site: [1 (5)] AM BCA (2032 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [1 (5)] AM BCA (2032 Background + Residential Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	199	0.0	199	0.0	0.403	12.0	LOS B	2.5	17.6	0.88	0.89	1.01	50.3
2	T1	All MCs	10	0.0	10	0.0	0.438	8.9	LOS A	3.3	23.2	0.93	0.89	1.06	48.2
3	R2	All MCs	301	0.0	301	0.0	0.438	17.9	LOS B	3.3	23.2	0.93	0.89	1.06	47.5
Approach			510	0.0	510	0.0	0.438	15.4	LOS B	3.3	23.2	0.91	0.89	1.04	48.5
East: BCA (N)															
4	L2	All MCs	102	0.0	102	0.0	0.489	6.7	LOS A	4.2	29.4	0.85	0.68	0.89	52.2
5	T1	All MCs	715	0.0	715	0.0	0.496	6.0	LOS A	4.7	33.0	0.85	0.67	0.87	52.1
6	R2	All MCs	292	0.0	292	0.0	0.496	12.2	LOS B	4.7	33.0	0.85	0.66	0.85	50.8
Approach			1109	0.0	1109	0.0	0.496	7.7	LOS A	4.7	33.0	0.85	0.67	0.86	51.8
North: Gagalba															
7	L2	All MCs	773	0.0	773	0.0	0.757	10.3	LOS B	8.2	57.4	0.90	1.00	1.33	50.4
8	T1	All MCs	10	0.0	10	0.0	0.664	9.1	LOS A	5.4	37.8	0.86	0.97	1.17	47.8
9	R2	All MCs	497	0.0	497	0.0	0.664	16.8	LOS B	5.4	37.8	0.86	0.97	1.17	47.1
Approach			1280	0.0	1280	0.0	0.757	12.8	LOS B	8.2	57.4	0.89	0.99	1.27	49.0
West: BCA (S)															
10	L2	All MCs	237	0.0	237	0.0	0.444	5.6	LOS A	3.2	22.7	0.73	0.61	0.73	53.2
11	T1	All MCs	586	0.0	586	0.0	0.444	6.5	LOS A	3.2	22.7	0.73	0.64	0.75	53.0
12	R2	All MCs	85	0.0	85	0.0	0.444	13.0	LOS B	3.0	21.3	0.74	0.66	0.76	51.6
Approach			908	0.0	908	0.0	0.444	6.9	LOS A	3.2	22.7	0.73	0.63	0.74	52.9
All Vehicles			3807	0.0	3807	0.0	0.757	10.3	LOS B	8.2	57.4	0.84	0.80	0.99	50.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

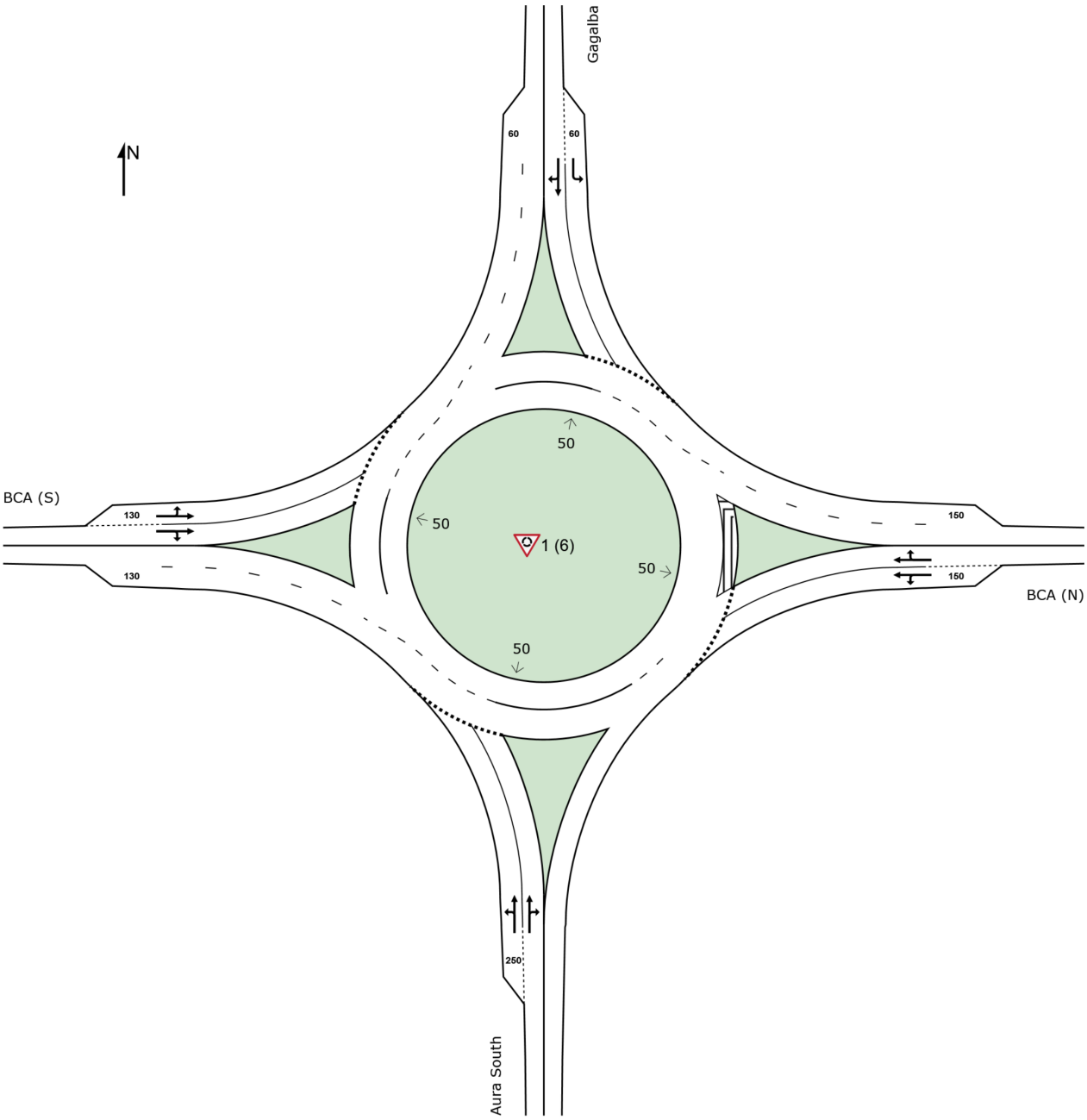
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SITE LAYOUT

Site: [1 (6)] PM BCA (2032 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [1 (6)] PM BCA (2032 Background + Residential Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	122	0.0	122	0.0	0.267	10.1	LOS B	1.5	10.6	0.87	0.84	0.87	51.2
2	T1	All MCs	10	0.0	10	0.0	0.260	7.7	LOS A	1.8	12.3	0.91	0.82	0.91	49.1
3	R2	All MCs	163	0.0	163	0.0	0.260	15.5	LOS B	1.8	12.3	0.91	0.82	0.91	48.3
Approach			295	0.0	295	0.0	0.267	13.0	LOS B	1.8	12.3	0.89	0.83	0.89	49.4
East: BCA (N)															
4	L2	All MCs	241	0.0	241	0.0	0.584	6.7	LOS A	5.6	39.4	0.80	0.67	0.89	52.2
5	T1	All MCs	662	0.0	662	0.0	0.593	5.7	LOS A	5.9	41.6	0.79	0.68	0.86	51.9
6	R2	All MCs	610	0.0	610	0.0	0.593	12.2	LOS B	5.9	41.6	0.78	0.68	0.81	50.1
Approach			1513	0.0	1513	0.0	0.593	8.5	LOS A	5.9	41.6	0.79	0.68	0.84	51.2
North: Gagalba															
7	L2	All MCs	415	0.0	415	0.0	0.477	6.6	LOS A	3.5	24.3	0.86	0.81	0.95	52.6
8	T1	All MCs	10	0.0	10	0.0	0.472	7.0	LOS A	3.0	21.3	0.84	0.89	0.96	48.9
9	R2	All MCs	294	0.0	294	0.0	0.472	14.6	LOS B	3.0	21.3	0.84	0.89	0.96	48.2
Approach			719	0.0	719	0.0	0.477	9.9	LOS A	3.5	24.3	0.85	0.84	0.95	50.5
West: BCA (S)															
10	L2	All MCs	399	0.0	399	0.0	0.790	15.4	LOS B	12.6	88.4	1.00	1.06	1.61	47.3
11	T1	All MCs	748	0.0	748	0.0	0.790	16.2	LOS B	12.6	88.4	1.00	1.08	1.64	46.6
12	R2	All MCs	168	0.0	168	0.0	0.790	24.1	LOS C	11.1	77.5	1.00	1.09	1.66	45.1
Approach			1315	0.0	1315	0.0	0.790	16.9	LOS B	12.6	88.4	1.00	1.08	1.63	46.6
All Vehicles			3842	0.0	3842	0.0	0.790	12.0	LOS B	12.6	88.4	0.88	0.86	1.14	49.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

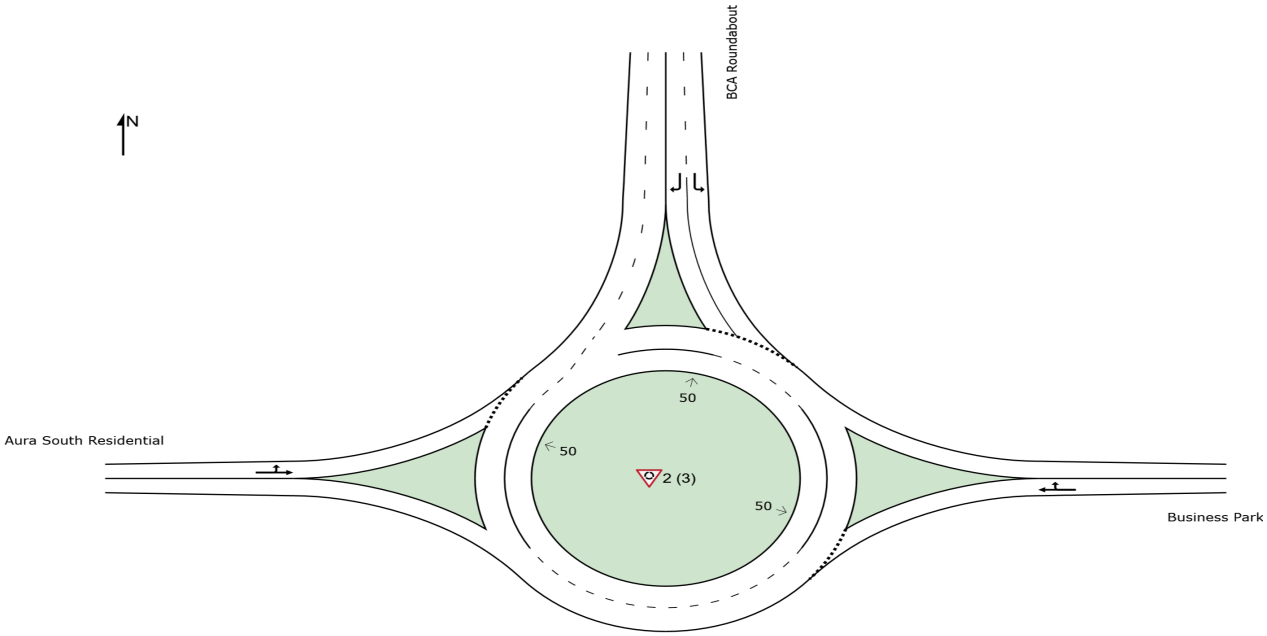
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SITE LAYOUT

Site: [2 (3)] AM Entry Roundabout (2032 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (3)] AM Entry Roundabout (2032 Background + Residential Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	10	0.0	10	0.0	0.016	2.8	LOS A	0.1	0.4	0.26	0.48	0.26	53.8
6	R2	All MCs	10	0.0	10	0.0	0.016	10.1	LOS B	0.1	0.4	0.26	0.48	0.26	52.8
Approach			20	0.0	20	0.0	0.016	6.5	LOS A	0.1	0.4	0.26	0.48	0.26	53.3
North: BCA Roundabout															
7	L2	All MCs	10	0.0	10	0.0	0.009	2.8	LOS A	0.0	0.2	0.05	0.34	0.05	56.4
9	R2	All MCs	187	0.0	187	0.0	0.105	9.6	LOS A	0.4	3.0	0.05	0.61	0.05	51.3
Approach			197	0.0	197	0.0	0.105	9.2	LOS A	0.4	3.0	0.05	0.60	0.05	51.5
West: Aura South Residential															
10	L2	All MCs	500	0.0	500	0.0	0.303	2.7	LOS A	1.7	11.6	0.06	0.32	0.06	56.6
11	T1	All MCs	10	0.0	10	0.0	0.303	2.2	LOS A	1.7	11.6	0.06	0.32	0.06	57.0
Approach			510	0.0	510	0.0	0.303	2.7	LOS A	1.7	11.6	0.06	0.32	0.06	56.6
All Vehicles			727	0.0	727	0.0	0.303	4.5	LOS A	1.7	11.6	0.07	0.40	0.07	55.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

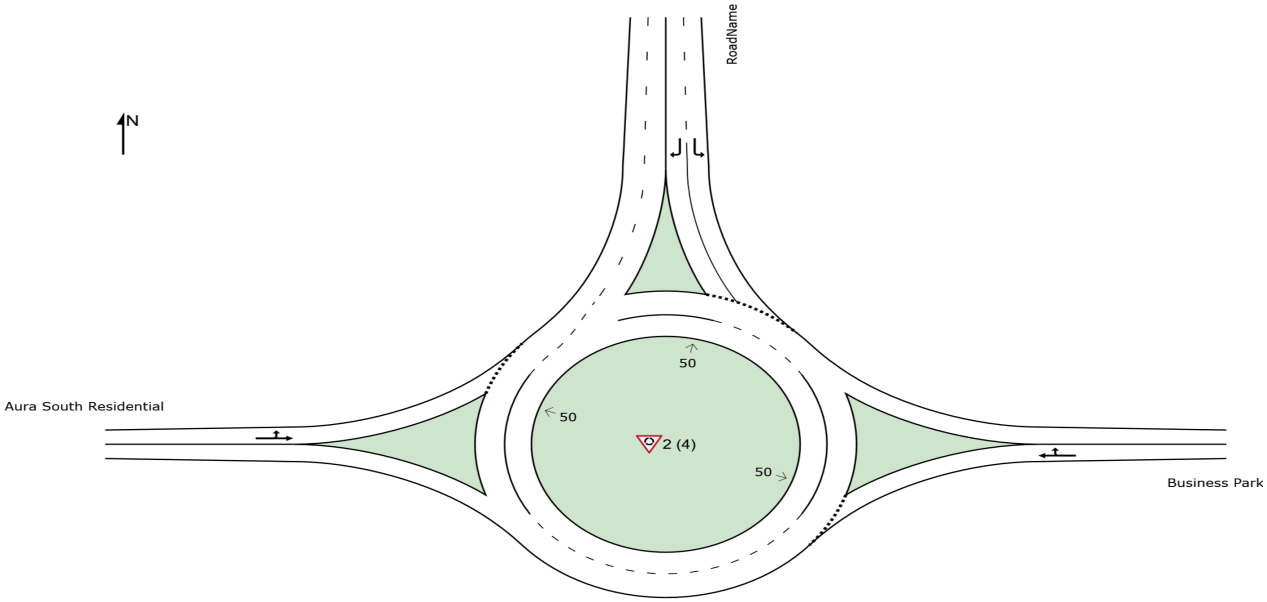
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SITE LAYOUT

Site: [2 (4)] PM Entry Roundabout (2032 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (4)] PM Entry Roundabout (2032 Background + Residential Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	10	0.0	10	0.0	0.018	3.6	LOS A	0.1	0.5	0.41	0.52	0.41	53.2
6	R2	All MCs	10	0.0	10	0.0	0.018	10.9	LOS B	0.1	0.5	0.41	0.52	0.41	52.3
Approach			20	0.0	20	0.0	0.018	7.2	LOS A	0.1	0.5	0.41	0.52	0.41	52.7
North: RoadName															
7	L2	All MCs	10	0.0	10	0.0	0.009	2.8	LOS A	0.0	0.2	0.05	0.34	0.05	56.4
9	R2	All MCs	409	0.0	409	0.0	0.225	9.6	LOS A	1.0	7.1	0.05	0.61	0.05	51.2
Approach			419	0.0	419	0.0	0.225	9.4	LOS A	1.0	7.1	0.05	0.60	0.05	51.3
West: Aura South Residential															
10	L2	All MCs	285	0.0	285	0.0	0.179	2.7	LOS A	0.9	6.3	0.06	0.32	0.06	56.6
11	T1	All MCs	10	0.0	10	0.0	0.179	2.2	LOS A	0.9	6.3	0.06	0.32	0.06	57.0
Approach			295	0.0	295	0.0	0.179	2.7	LOS A	0.9	6.3	0.06	0.32	0.06	56.6
All Vehicles			734	0.0	734	0.0	0.225	6.6	LOS A	1.0	7.1	0.06	0.49	0.06	53.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

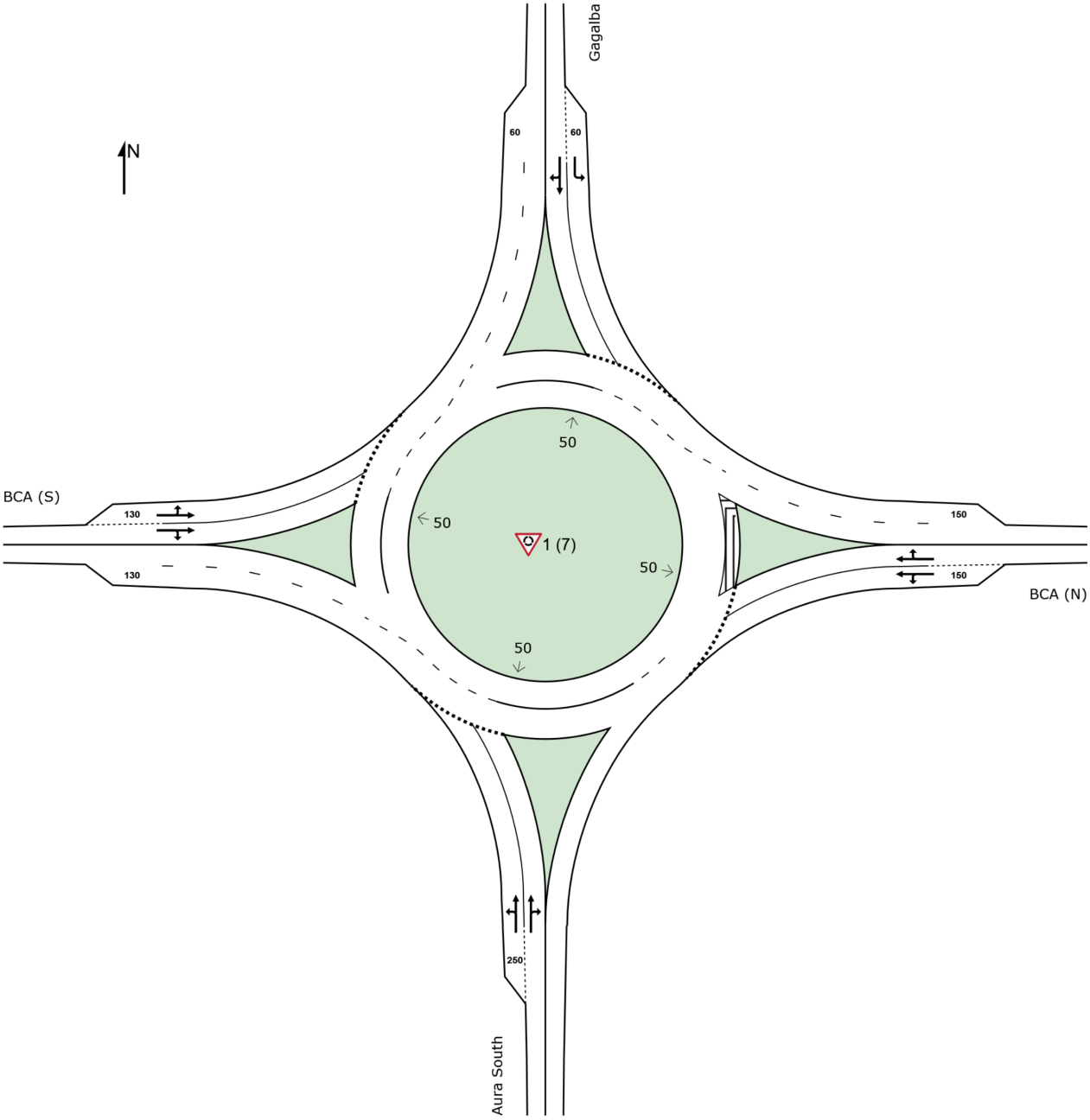
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SITE LAYOUT

Site: [1 (7)] AM BCA (2032 ERA Traffic (w/ Residential + Business Park))

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



MOVEMENT SUMMARY

Site: [1 (7)] AM BCA (2032 ERA Traffic (w/ Residential + Business Park))

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	227	0.0	227	0.0	0.489	14.5	LOS B	3.4	24.0	0.92	0.95	1.16	48.7
2	T1	All MCs	10	0.0	10	0.0	0.530	11.3	LOS B	4.6	32.2	0.98	0.94	1.23	46.8
3	R2	All MCs	342	0.0	342	0.0	0.530	20.4	LOS C	4.6	32.2	0.98	0.94	1.23	46.1
Approach			579	0.0	579	0.0	0.530	18.0	LOS B	4.6	32.2	0.96	0.95	1.20	47.1
East: BCA (N)															
4	L2	All MCs	200	0.0	200	0.0	0.564	8.7	LOS A	5.6	39.3	0.91	0.78	1.06	51.2
5	T1	All MCs	715	0.0	715	0.0	0.573	7.5	LOS A	6.4	44.7	0.92	0.76	1.03	51.1
6	R2	All MCs	292	0.0	292	0.0	0.573	13.7	LOS B	6.4	44.7	0.92	0.74	1.01	50.0
Approach			1207	0.0	1207	0.0	0.573	9.2	LOS A	6.4	44.7	0.92	0.76	1.03	50.9
North: Gagalba															
7	L2	All MCs	759	0.0	759	0.0	0.794	12.2	LOS B	9.4	65.5	0.95	1.08	1.51	49.2
8	T1	All MCs	23	0.0	23	0.0	0.724	11.2	LOS B	6.4	45.1	0.90	1.04	1.35	46.9
9	R2	All MCs	488	0.0	488	0.0	0.724	18.9	LOS B	6.4	45.1	0.90	1.04	1.35	46.2
Approach			1270	0.0	1270	0.0	0.794	14.8	LOS B	9.4	65.5	0.93	1.07	1.45	47.9
West: BCA (S)															
10	L2	All MCs	237	0.0	237	0.0	0.498	6.3	LOS A	4.1	28.7	0.79	0.67	0.84	52.7
11	T1	All MCs	586	0.0	586	0.0	0.498	7.3	LOS A	4.1	28.7	0.79	0.70	0.86	52.2
12	R2	All MCs	149	0.0	149	0.0	0.498	14.0	LOS B	3.9	27.0	0.79	0.74	0.88	50.5
Approach			972	0.0	972	0.0	0.498	8.1	LOS A	4.1	28.7	0.79	0.70	0.86	52.0
All Vehicles			4028	0.0	4028	0.0	0.794	11.9	LOS B	9.4	65.5	0.90	0.87	1.14	49.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

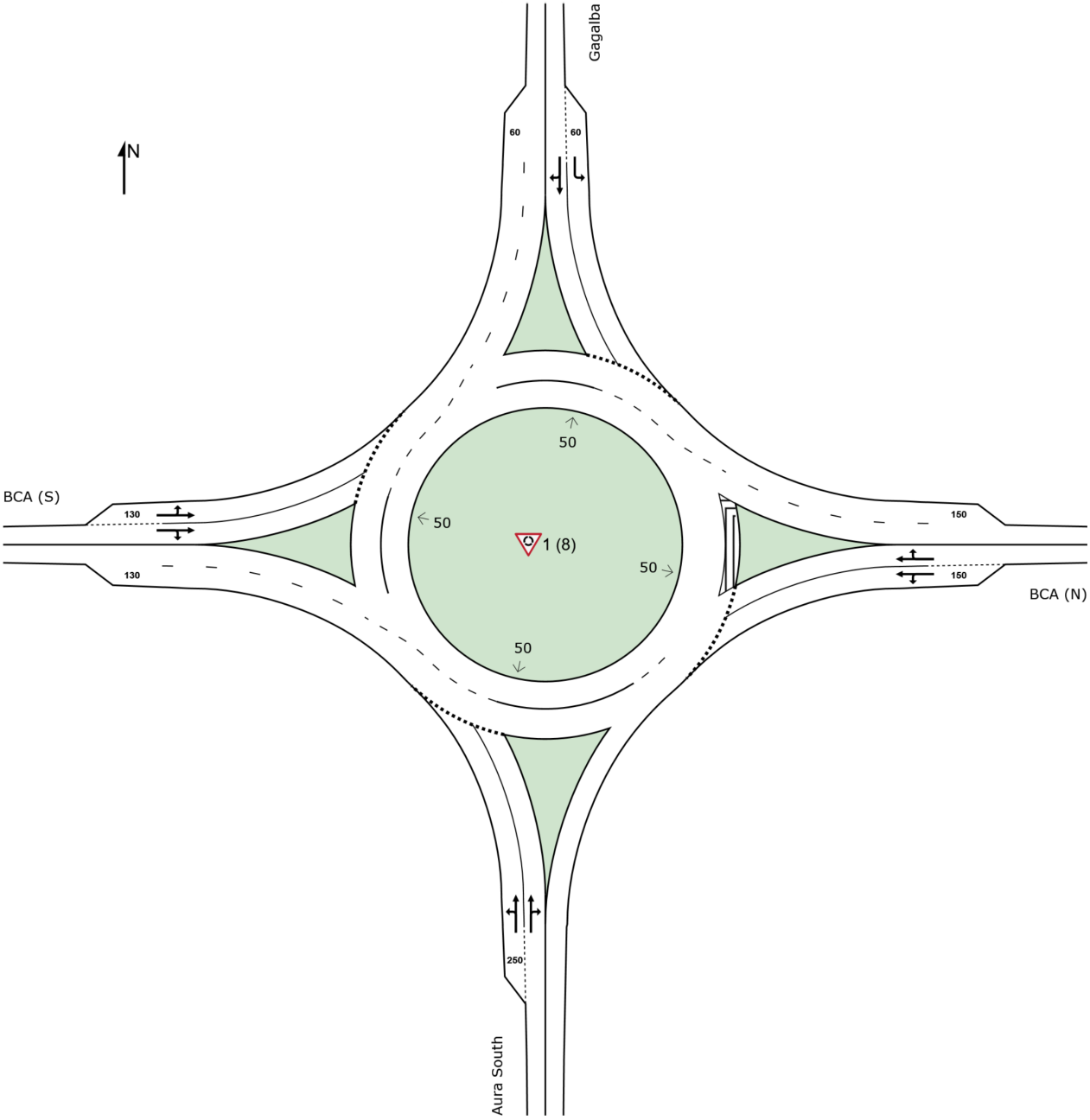
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SITE LAYOUT

Site: [1 (8)] PM BCA (2032 ERA Traffic (w/ Residential + Business Park))

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [1 (8)] PM BCA (2032 ERA Traffic (w/ Residential + Business Park))

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	176	0.0	176	0.0	0.404	12.4	LOS B	2.6	18.2	0.91	0.91	1.04	49.6
2	T1	All MCs	22	0.0	22	0.0	0.442	9.9	LOS A	3.5	24.2	0.97	0.89	1.10	47.8
3	R2	All MCs	256	0.0	256	0.0	0.442	17.8	LOS B	3.5	24.2	0.97	0.89	1.10	47.1
Approach			454	0.0	454	0.0	0.442	15.3	LOS B	3.5	24.2	0.95	0.90	1.08	48.0
East: BCA (N)															
4	L2	All MCs	303	0.0	303	0.0	0.628	7.9	LOS A	6.7	47.1	0.86	0.75	1.01	51.5
5	T1	All MCs	662	0.0	662	0.0	0.638	6.8	LOS A	7.3	51.2	0.84	0.74	0.97	51.2
6	R2	All MCs	610	0.0	610	0.0	0.638	13.2	LOS B	7.3	51.2	0.83	0.74	0.92	49.6
Approach			1575	0.0	1575	0.0	0.638	9.5	LOS A	7.3	51.2	0.84	0.74	0.96	50.6
North: Gagalba															
7	L2	All MCs	415	0.0	415	0.0	0.517	7.8	LOS A	4.0	27.8	0.90	0.86	1.04	52.0
8	T1	All MCs	15	0.0	15	0.0	0.531	8.7	LOS A	3.6	25.3	0.88	0.94	1.07	48.4
9	R2	All MCs	294	0.0	294	0.0	0.531	16.2	LOS B	3.6	25.3	0.88	0.94	1.07	47.6
Approach			724	0.0	724	0.0	0.531	11.2	LOS B	4.0	27.8	0.89	0.89	1.06	50.0
West: BCA (S)															
10	L2	All MCs	399	0.0	399	0.0	0.907	33.2	LOS C	23.9	167.3	1.00	1.51	2.65	39.0
11	T1	All MCs	748	0.0	748	0.0	0.907	34.8	LOS C	23.9	167.3	1.00	1.50	2.66	38.3
12	R2	All MCs	209	0.0	209	0.0	0.907	43.5	LOS D	19.9	139.5	1.00	1.50	2.68	37.1
Approach			1356	0.0	1356	0.0	0.907	35.7	LOS D	23.9	167.3	1.00	1.51	2.66	38.3
All Vehicles			4109	0.0	4109	0.0	0.907	19.1	LOS B	23.9	167.3	0.91	1.04	1.55	45.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

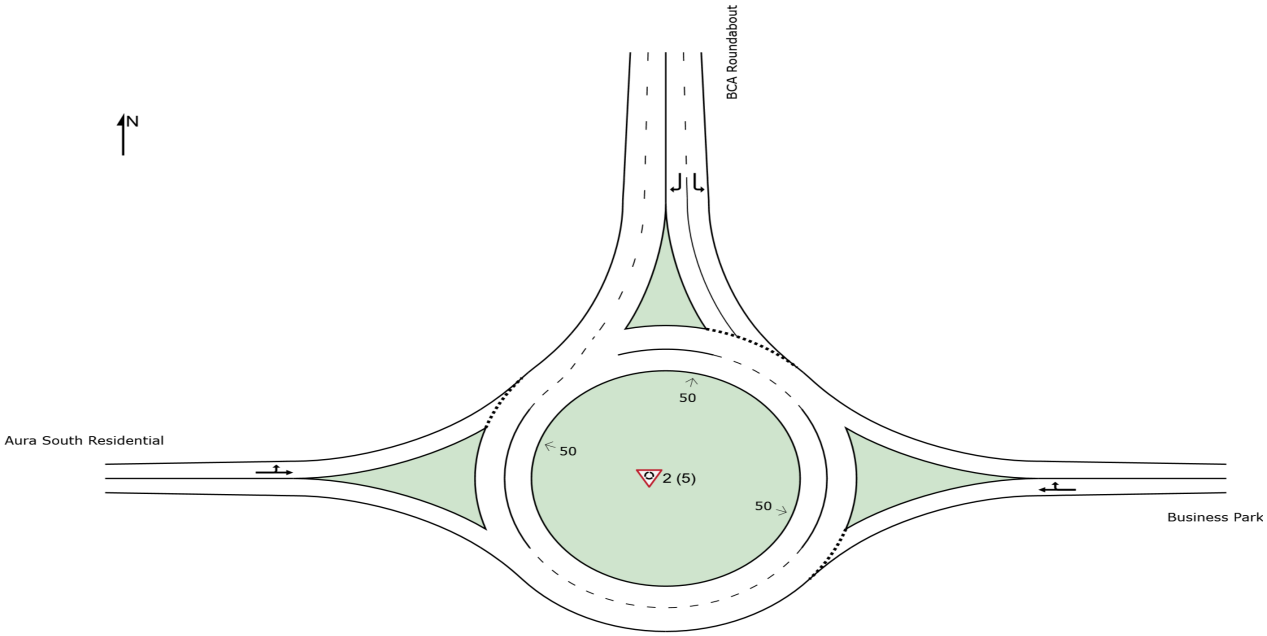
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SITE LAYOUT

Site: [2 (5)] AM Entry Roundabout (2032 ERA Traffic (w/ Residential + Business Park))

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (5)] AM Entry Roundabout (2032 ERA Traffic (w/ Residential + Business Park))

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	10	0.0	10	0.0	0.079	2.8	LOS A	0.3	2.2	0.27	0.59	0.27	51.8
6	R2	All MCs	89	0.0	89	0.0	0.079	10.2	LOS B	0.3	2.2	0.27	0.59	0.27	51.0
Approach			99	0.0	99	0.0	0.079	9.4	LOS A	0.3	2.2	0.27	0.59	0.27	51.0
North: BCA Roundabout															
7	L2	All MCs	208	0.0	208	0.0	0.120	2.9	LOS A	0.5	3.8	0.09	0.34	0.09	56.3
9	R2	All MCs	177	0.0	177	0.0	0.118	9.6	LOS A	0.5	3.7	0.09	0.60	0.09	51.1
Approach			385	0.0	385	0.0	0.120	6.0	LOS A	0.5	3.8	0.09	0.46	0.09	53.7
West: Aura South Residential															
10	L2	All MCs	476	0.0	476	0.0	0.347	3.0	LOS A	2.0	13.8	0.25	0.35	0.25	55.8
11	T1	All MCs	23	0.0	23	0.0	0.347	2.6	LOS A	2.0	13.8	0.25	0.35	0.25	56.1
Approach			499	0.0	499	0.0	0.347	3.0	LOS A	2.0	13.8	0.25	0.35	0.25	55.8
All Vehicles			983	0.0	983	0.0	0.347	4.8	LOS A	2.0	13.8	0.19	0.42	0.19	54.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

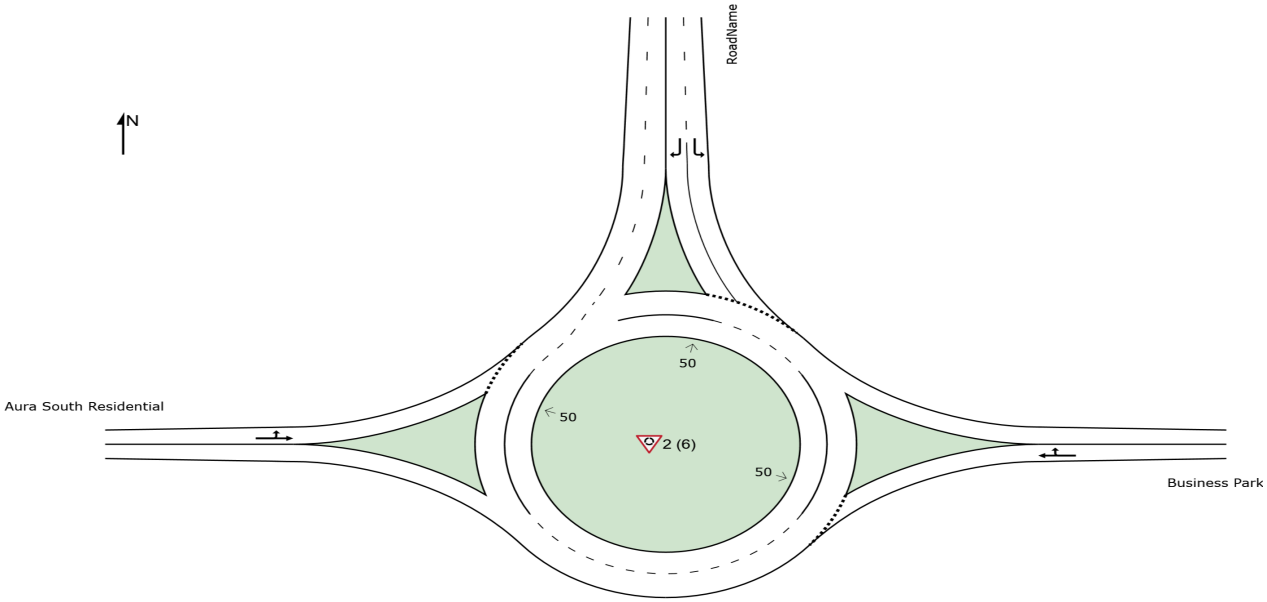
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SITE LAYOUT

Site: [2 (6)] PM Entry Roundabout (2032 ERA Traffic (w/ Residential + Business Park))

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (6)] PM Entry Roundabout (2032 ERA Traffic (w/ Residential + Business Park))

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	22	0.0	22	0.0	0.197	3.8	LOS A	0.9	6.6	0.45	0.64	0.45	51.2
6	R2	All MCs	198	0.0	198	0.0	0.197	11.1	LOS B	0.9	6.6	0.45	0.64	0.45	50.4
Approach			220	0.0	220	0.0	0.197	10.4	LOS B	0.9	6.6	0.45	0.64	0.45	50.4
North: RoadName															
7	L2	All MCs	132	0.0	132	0.0	0.099	2.8	LOS A	0.4	3.1	0.08	0.34	0.08	56.3
9	R2	All MCs	387	0.0	387	0.0	0.216	9.6	LOS A	1.1	7.9	0.08	0.60	0.08	51.2
Approach			519	0.0	519	0.0	0.216	7.9	LOS A	1.1	7.9	0.08	0.53	0.08	52.3
West: Aura South Residential															
10	L2	All MCs	270	0.0	270	0.0	0.231	3.4	LOS A	1.2	8.4	0.36	0.41	0.36	55.3
11	T1	All MCs	15	0.0	15	0.0	0.231	3.0	LOS A	1.2	8.4	0.36	0.41	0.36	55.6
Approach			285	0.0	285	0.0	0.231	3.4	LOS A	1.2	8.4	0.36	0.41	0.36	55.3
All Vehicles			1024	0.0	1024	0.0	0.231	7.2	LOS A	1.2	8.4	0.24	0.52	0.24	52.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

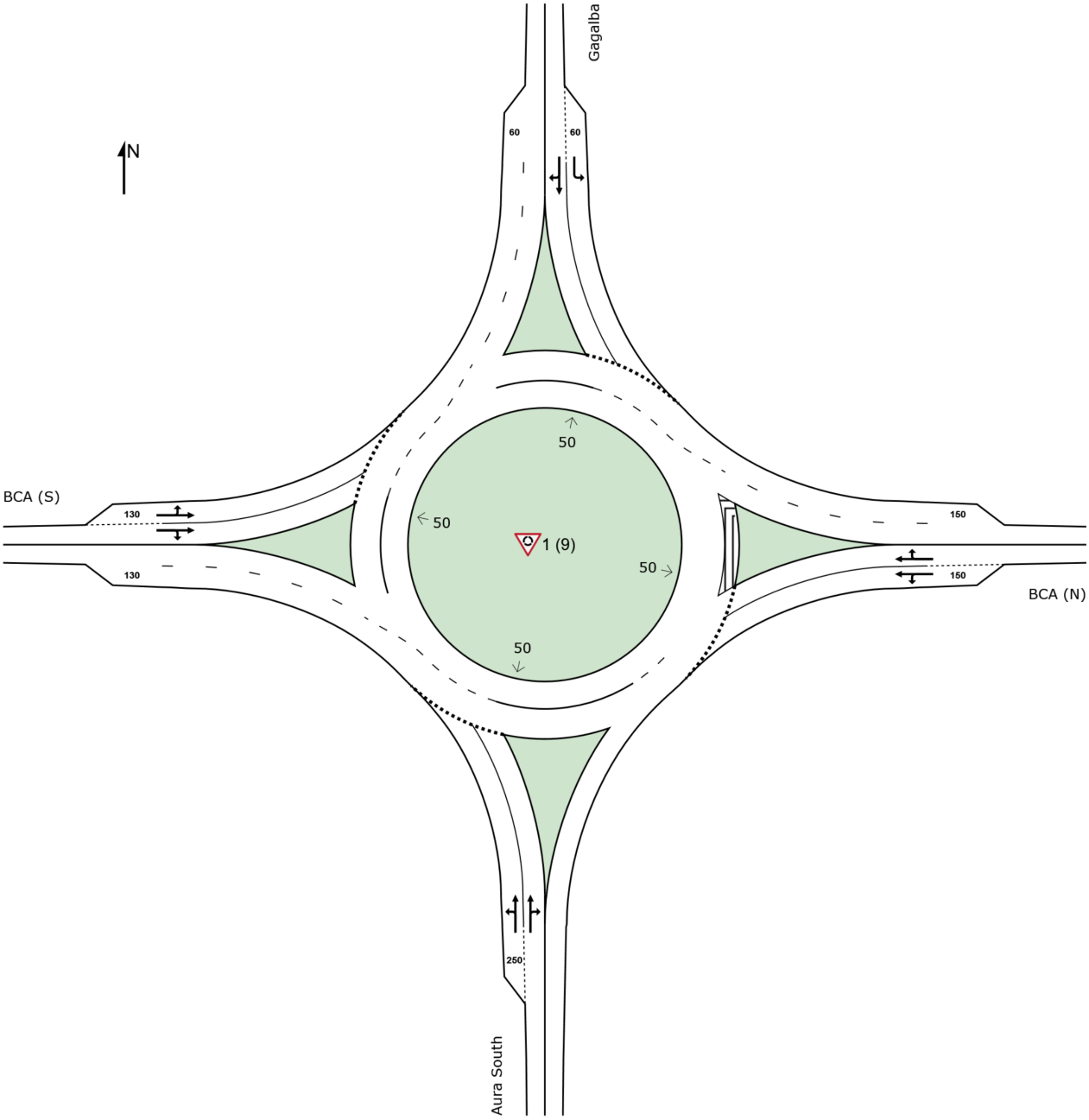
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SITE LAYOUT

Site: [1 (9)] AM BCA (2033 Background Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [1 (9)] AM BCA (2033 Background Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	4	0.0	4	0.0	0.007	4.2	LOS A	0.0	0.2	0.41	0.42	0.41	54.8
2	T1	All MCs	10	0.0	10	0.0	0.011	3.2	LOS A	0.0	0.3	0.39	0.50	0.39	53.7
3	R2	All MCs	8	0.0	8	0.0	0.011	10.5	LOS B	0.0	0.3	0.38	0.53	0.38	52.3
Approach			22	0.0	22	0.0	0.011	6.1	LOS A	0.0	0.3	0.39	0.50	0.39	53.4
East: BCA (N)															
4	L2	All MCs	4	0.0	4	0.0	0.150	2.9	LOS A	0.8	5.6	0.13	0.23	0.13	56.5
5	T1	All MCs	483	0.0	483	0.0	0.152	2.4	LOS A	0.8	5.8	0.12	0.27	0.12	56.5
6	R2	All MCs	45	0.0	45	0.0	0.152	9.7	LOS A	0.8	5.8	0.12	0.31	0.12	55.2
Approach			532	0.0	532	0.0	0.152	3.0	LOS A	0.8	5.8	0.12	0.28	0.12	56.4
North: Gagalba															
7	L2	All MCs	31	0.0	31	0.0	0.023	3.8	LOS A	0.1	0.6	0.39	0.46	0.39	55.0
8	T1	All MCs	10	0.0	10	0.0	0.012	3.6	LOS A	0.0	0.3	0.42	0.46	0.42	54.4
9	R2	All MCs	2	0.0	2	0.0	0.012	11.1	LOS B	0.0	0.3	0.42	0.46	0.42	53.5
Approach			43	0.0	43	0.0	0.023	4.1	LOS A	0.1	0.6	0.40	0.46	0.40	54.8
West: BCA (S)															
10	L2	All MCs	72	0.0	72	0.0	0.195	3.0	LOS A	0.9	6.1	0.15	0.27	0.15	56.3
11	T1	All MCs	515	0.0	515	0.0	0.195	2.5	LOS A	0.9	6.1	0.16	0.28	0.16	56.5
12	R2	All MCs	20	0.0	20	0.0	0.195	9.8	LOS A	0.9	6.1	0.17	0.29	0.17	55.3
Approach			607	0.0	607	0.0	0.195	2.8	LOS A	0.9	6.1	0.16	0.28	0.16	56.4
All Vehicles			1204	0.0	1204	0.0	0.195	3.0	LOS A	0.9	6.1	0.16	0.29	0.16	56.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

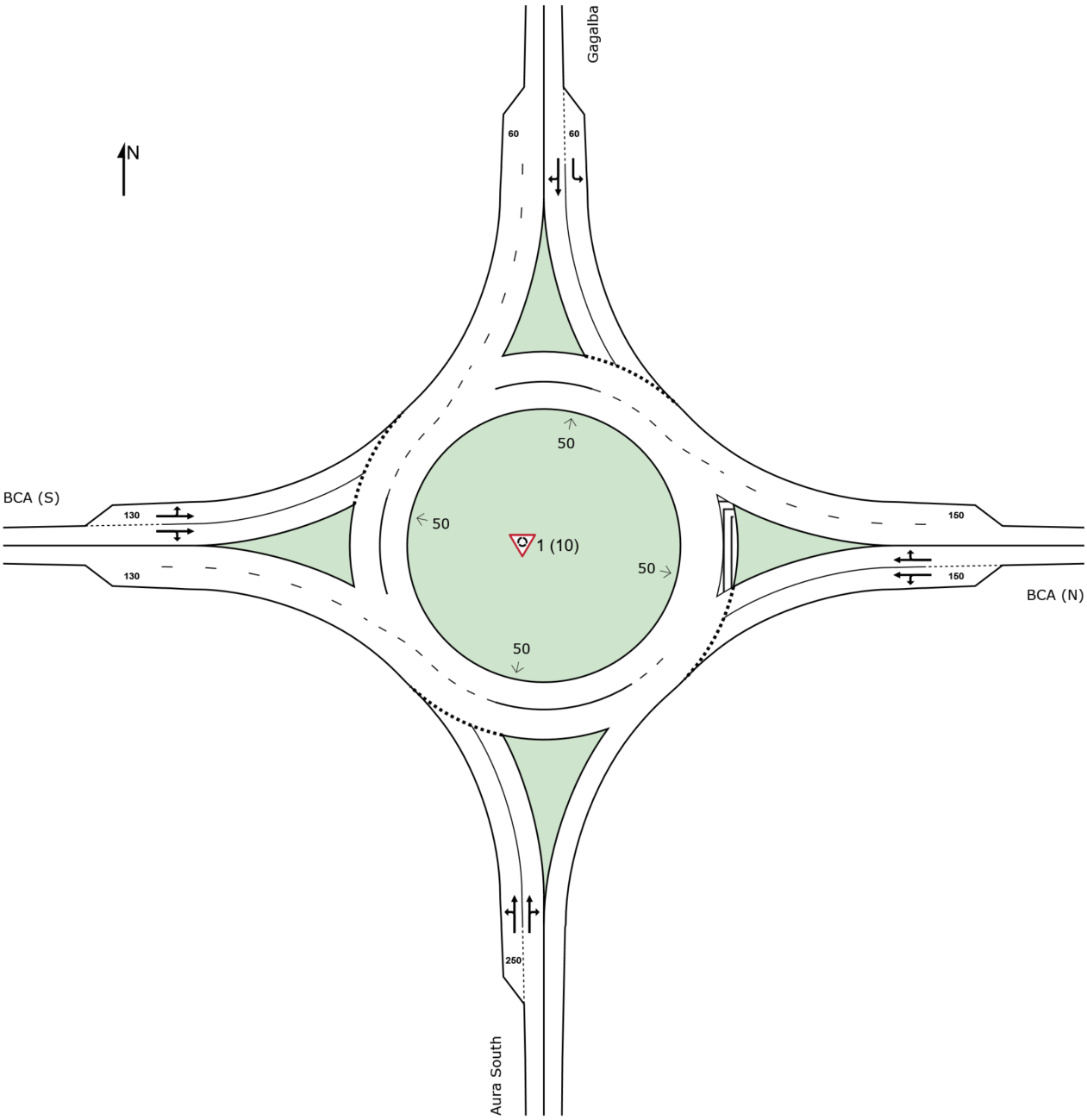
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SITE LAYOUT

Site: [1 (10)] PM BCA (2033 Background Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [1 (10)] PM BCA (2033 Background Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	18	0.0	18	0.0	0.014	3.9	LOS A	0.1	0.4	0.41	0.45	0.41	54.9
2	T1	All MCs	10	0.0	10	0.0	0.016	3.6	LOS A	0.1	0.4	0.43	0.53	0.43	53.4
3	R2	All MCs	7	0.0	7	0.0	0.016	11.0	LOS B	0.1	0.4	0.43	0.53	0.43	52.5
Approach			35	0.0	35	0.0	0.016	5.2	LOS A	0.1	0.4	0.42	0.49	0.42	54.0
East: BCA (N)															
4	L2	All MCs	7	0.0	7	0.0	0.163	3.0	LOS A	0.9	6.4	0.18	0.25	0.18	56.2
5	T1	All MCs	544	0.0	544	0.0	0.165	2.4	LOS A	1.0	6.7	0.17	0.26	0.17	56.5
6	R2	All MCs	16	0.0	16	0.0	0.165	9.7	LOS A	1.0	6.7	0.16	0.27	0.16	55.4
Approach			567	0.0	567	0.0	0.165	2.6	LOS A	1.0	6.7	0.17	0.26	0.17	56.5
North: Gagalba															
7	L2	All MCs	19	0.0	19	0.0	0.019	4.3	LOS A	0.1	0.5	0.43	0.49	0.43	54.8
8	T1	All MCs	10	0.0	10	0.0	0.030	3.2	LOS A	0.1	0.8	0.40	0.61	0.40	52.1
9	R2	All MCs	30	0.0	30	0.0	0.030	10.6	LOS B	0.1	0.8	0.40	0.61	0.40	51.2
Approach			59	0.0	59	0.0	0.030	7.4	LOS A	0.1	0.8	0.41	0.57	0.41	52.4
West: BCA (S)															
10	L2	All MCs	3	0.0	3	0.0	0.181	2.9	LOS A	0.8	5.9	0.11	0.23	0.11	56.6
11	T1	All MCs	565	0.0	565	0.0	0.181	2.4	LOS A	0.8	5.9	0.11	0.24	0.11	56.9
12	R2	All MCs	12	0.0	12	0.0	0.181	9.7	LOS A	0.8	5.9	0.12	0.26	0.12	55.7
Approach			580	0.0	580	0.0	0.181	2.5	LOS A	0.8	5.9	0.11	0.24	0.11	56.9
All Vehicles			1241	0.0	1241	0.0	0.181	2.9	LOS A	1.0	6.7	0.16	0.27	0.16	56.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

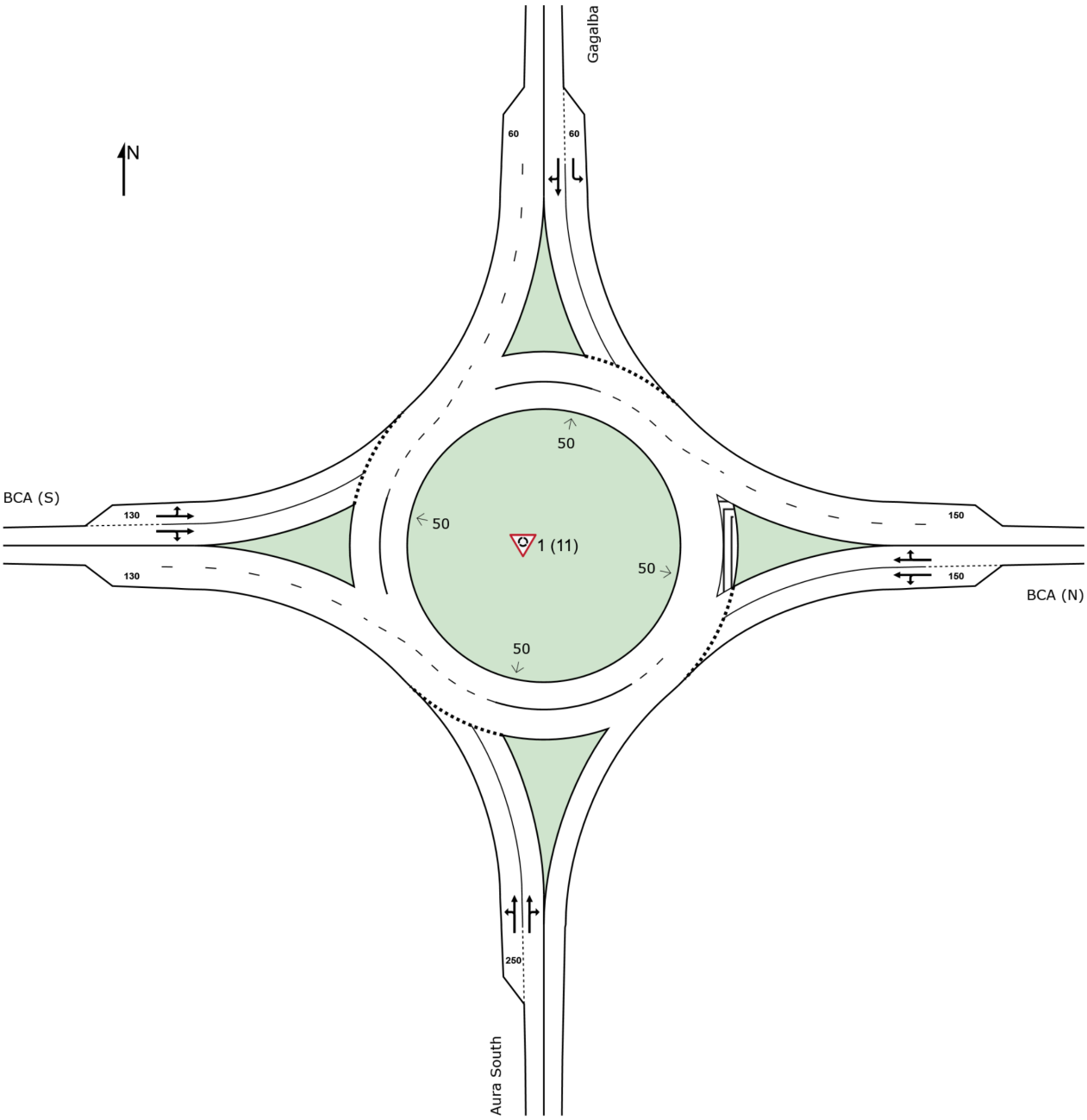
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SITE LAYOUT

Site: [1 (11)] AM BCA (2033 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [1 (11)] AM BCA (2033 Background + Residential Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	300	0.0	300	0.0	0.771	32.2	LOS C	7.6	53.2	1.00	1.22	1.87	39.7
2	T1	All MCs	10	0.0	10	0.0	0.809	29.8	LOS C	11.2	78.6	1.00	1.28	2.10	38.5
3	R2	All MCs	452	0.0	452	0.0	0.809	40.1	LOS D	11.2	78.6	1.00	1.28	2.10	38.1
Approach			762	0.0	762	0.0	0.809	36.9	LOS D	11.2	78.6	1.00	1.26	2.01	38.7
East: BCA (N)															
4	L2	All MCs	152	0.0	152	0.0	0.632	11.0	LOS B	7.2	50.4	1.00	0.88	1.26	49.7
5	T1	All MCs	729	0.0	729	0.0	0.643	10.2	LOS B	8.6	59.9	1.00	0.85	1.23	49.7
6	R2	All MCs	340	0.0	340	0.0	0.643	15.6	LOS B	8.6	59.9	1.00	0.83	1.20	48.7
Approach			1221	0.0	1221	0.0	0.643	11.8	LOS B	8.6	59.9	1.00	0.85	1.22	49.4
North: Gagalba															
7	L2	All MCs	915	0.0	915	0.0	1.041	112.2	LOS F	72.9	510.2	1.00	3.92	8.73	21.4
8	T1	All MCs	10	0.0	10	0.0	0.937	33.2	LOS C	17.6	122.9	1.00	1.63	2.97	37.2
9	R2	All MCs	591	0.0	591	0.0	0.937	41.2	LOS D	17.6	122.9	1.00	1.63	2.97	36.8
Approach			1516	0.0	1516	0.0	1.041	84.0	LOS F	72.9	510.2	1.00	3.01	6.45	25.9
West: BCA (S)															
10	L2	All MCs	268	0.0	268	0.0	0.596	9.6	LOS A	6.3	44.2	0.94	0.84	1.16	50.7
11	T1	All MCs	591	0.0	591	0.0	0.596	12.2	LOS B	6.3	44.2	0.93	0.86	1.17	50.2
12	R2	All MCs	119	0.0	119	0.0	0.596	17.8	LOS B	5.7	39.6	0.92	0.88	1.18	48.6
Approach			978	0.0	978	0.0	0.596	12.2	LOS B	6.3	44.2	0.93	0.86	1.17	50.1
All Vehicles			4477	0.0	4477	0.0	1.041	40.6	LOS D	72.9	510.2	0.98	1.65	3.11	36.6

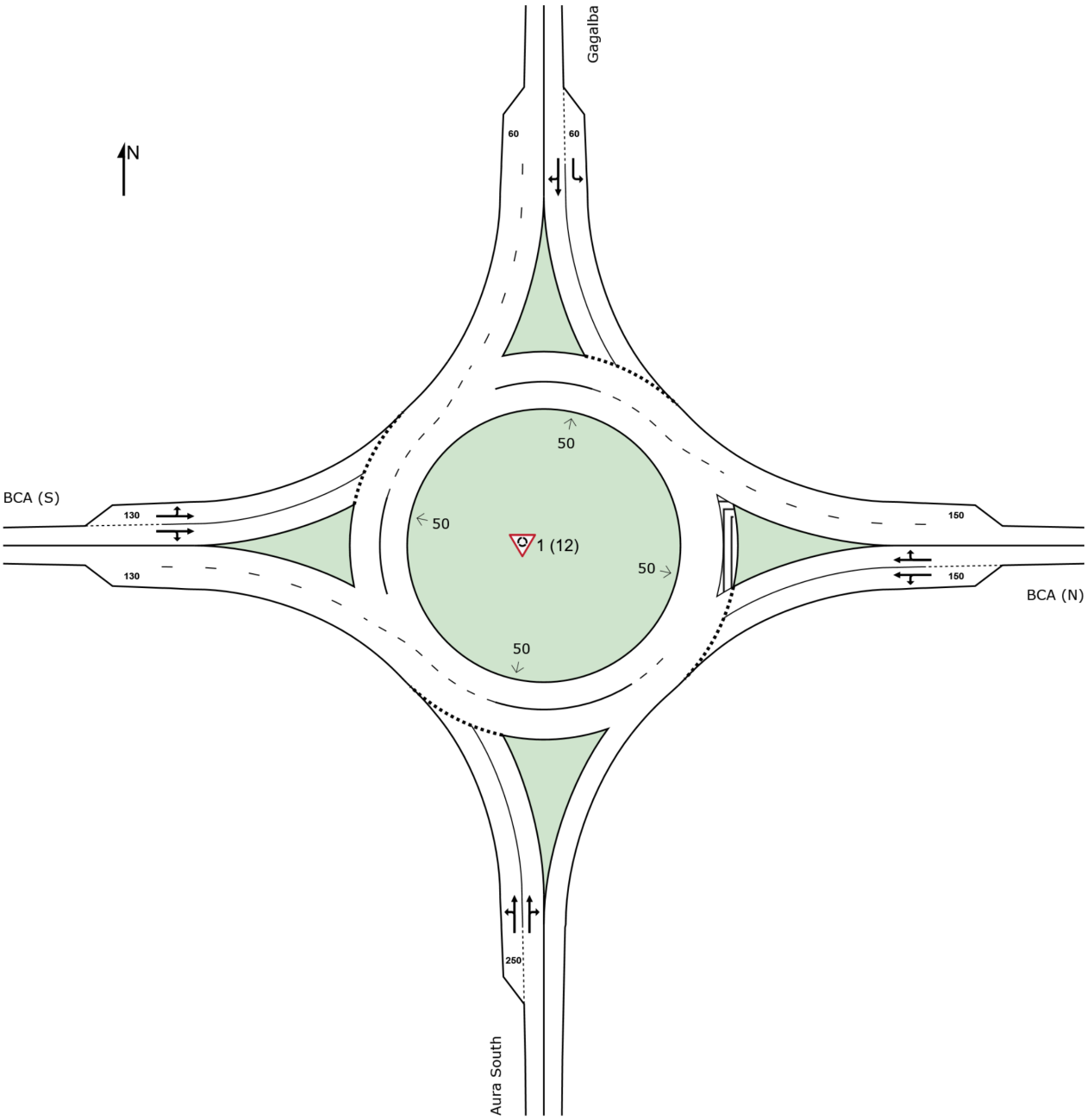
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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: [1 (12)] PM BCA (2033 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [1 (12)] PM BCA (2033 Background + Residential Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	176	0.0	176	0.0	0.532	20.3	LOS C	3.8	26.8	0.98	1.02	1.29	44.9
2	T1	All MCs	10	0.0	10	0.0	0.514	15.2	LOS B	4.5	31.5	1.00	0.95	1.27	44.9
3	R2	All MCs	244	0.0	244	0.0	0.514	23.1	LOS C	4.5	31.5	1.00	0.95	1.27	44.3
Approach			430	0.0	430	0.0	0.532	21.8	LOS C	4.5	31.5	0.99	0.98	1.28	44.5
East: BCA (N)															
4	L2	All MCs	362	0.0	362	0.0	0.733	10.9	LOS B	10.0	69.9	0.95	0.90	1.30	49.6
5	T1	All MCs	670	0.0	670	0.0	0.744	9.6	LOS A	11.3	79.3	0.94	0.89	1.25	49.4
6	R2	All MCs	723	0.0	723	0.0	0.744	15.7	LOS B	11.3	79.3	0.93	0.88	1.19	48.1
Approach			1755	0.0	1755	0.0	0.744	12.4	LOS B	11.3	79.3	0.94	0.89	1.24	48.9
North: Gagalba															
7	L2	All MCs	490	0.0	490	0.0	0.573	7.9	LOS A	4.6	32.5	0.90	0.87	1.08	51.8
8	T1	All MCs	10	0.0	10	0.0	0.562	8.4	LOS A	4.0	27.7	0.87	0.94	1.08	48.2
9	R2	All MCs	344	0.0	344	0.0	0.562	16.0	LOS B	4.0	27.7	0.87	0.94	1.08	47.5
Approach			844	0.0	844	0.0	0.573	11.2	LOS B	4.6	32.5	0.89	0.90	1.08	49.8
West: BCA (S)															
10	L2	All MCs	474	0.0	474	0.0	1.177	347.8	LOS F	178.0	1246.0	1.00	7.04	15.79	9.2
11	T1	All MCs	759	0.0	759	0.0	1.177	349.0	LOS F	178.0	1246.0	1.00	6.56	15.14	9.3
12	R2	All MCs	249	0.0	249	0.0	1.177	357.4	LOS F	136.8	957.9	1.00	6.12	14.53	9.3
Approach			1482	0.0	1482	0.0	1.177	350.0	LOS F	178.0	1246.0	1.00	6.64	15.24	9.2
All Vehicles			4511	0.0	4511	0.0	1.177	124.0	LOS F	178.0	1246.0	0.95	2.79	5.81	20.3

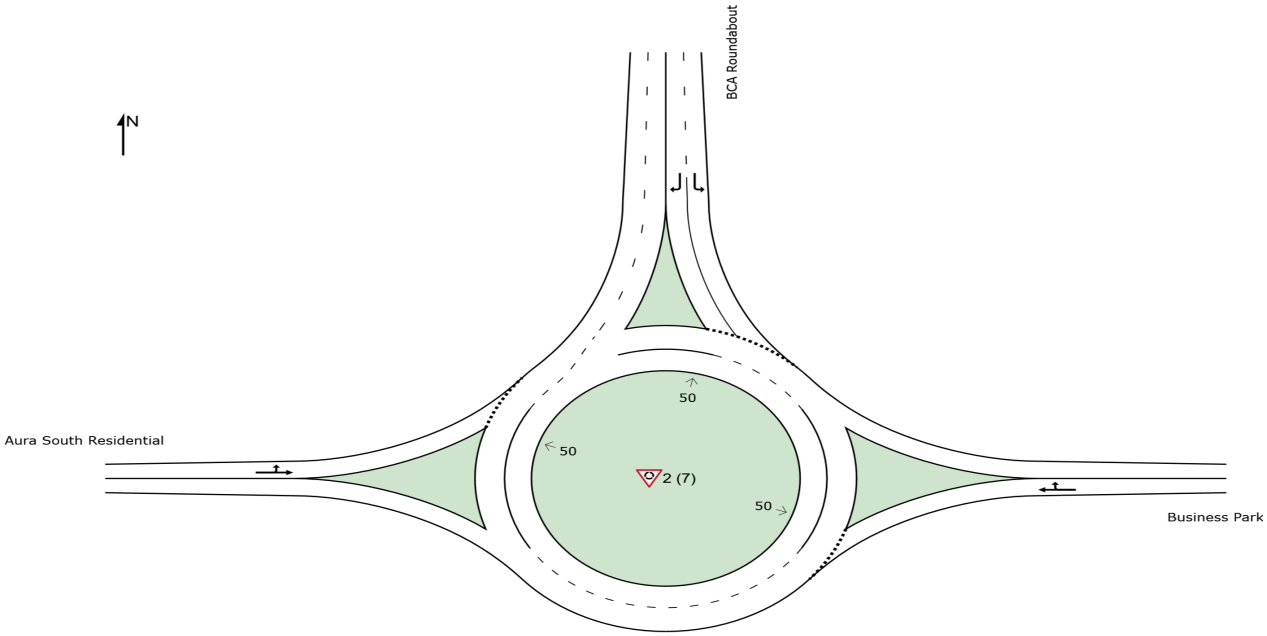
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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: [2 (7)] AM Entry Roundabout (2033 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (7)] AM Entry Roundabout (2033 Background + Residential Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	10	0.0	10	0.0	0.017	3.0	LOS A	0.1	0.5	0.32	0.50	0.32	53.5
6	R2	All MCs	10	0.0	10	0.0	0.017	10.4	LOS B	0.1	0.5	0.32	0.50	0.32	52.6
Approach			20	0.0	20	0.0	0.017	6.7	LOS A	0.1	0.5	0.32	0.50	0.32	53.1
North: BCA Roundabout															
7	L2	All MCs	10	0.0	10	0.0	0.009	2.8	LOS A	0.0	0.2	0.05	0.34	0.05	56.4
9	R2	All MCs	271	0.0	271	0.0	0.151	9.6	LOS A	0.6	4.5	0.05	0.61	0.05	51.3
Approach			281	0.0	281	0.0	0.151	9.3	LOS A	0.6	4.5	0.05	0.60	0.05	51.4
West: Aura South Residential															
10	L2	All MCs	752	0.0	752	0.0	0.447	2.7	LOS A	3.0	21.3	0.08	0.32	0.08	56.5
11	T1	All MCs	10	0.0	10	0.0	0.447	2.2	LOS A	3.0	21.3	0.08	0.32	0.08	56.9
Approach			762	0.0	762	0.0	0.447	2.7	LOS A	3.0	21.3	0.08	0.32	0.08	56.5
All Vehicles			1063	0.0	1063	0.0	0.447	4.5	LOS A	3.0	21.3	0.08	0.40	0.08	54.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

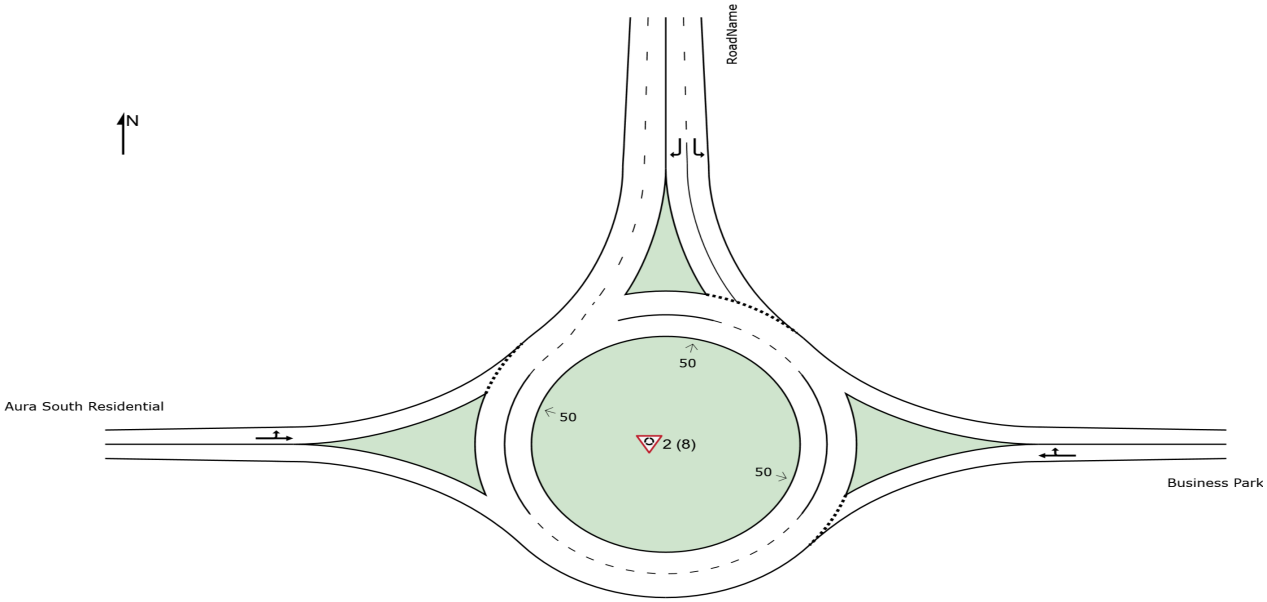
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SITE LAYOUT

Site: [2 (8)] PM Entry Roundabout (2033 Background + Residential Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (8)] PM Entry Roundabout (2033 Background + Residential Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	10	0.0	10	0.0	0.021	4.5	LOS A	0.1	0.7	0.52	0.56	0.52	52.5
6	R2	All MCs	10	0.0	10	0.0	0.021	11.9	LOS B	0.1	0.7	0.52	0.56	0.52	51.7
Approach			20	0.0	20	0.0	0.021	8.2	LOS A	0.1	0.7	0.52	0.56	0.52	52.1
North: RoadName															
7	L2	All MCs	10	0.0	10	0.0	0.009	2.8	LOS A	0.0	0.2	0.05	0.34	0.05	56.4
9	R2	All MCs	611	0.0	611	0.0	0.334	9.6	LOS A	1.7	12.0	0.06	0.61	0.06	51.2
Approach			621	0.0	621	0.0	0.334	9.5	LOS A	1.7	12.0	0.06	0.60	0.06	51.3
West: Aura South Residential															
10	L2	All MCs	420	0.0	420	0.0	0.257	2.7	LOS A	1.5	10.4	0.07	0.32	0.07	56.6
11	T1	All MCs	10	0.0	10	0.0	0.257	2.2	LOS A	1.5	10.4	0.07	0.32	0.07	56.9
Approach			430	0.0	430	0.0	0.257	2.7	LOS A	1.5	10.4	0.07	0.32	0.07	56.6
All Vehicles			1071	0.0	1071	0.0	0.334	6.7	LOS A	1.7	12.0	0.07	0.49	0.07	53.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

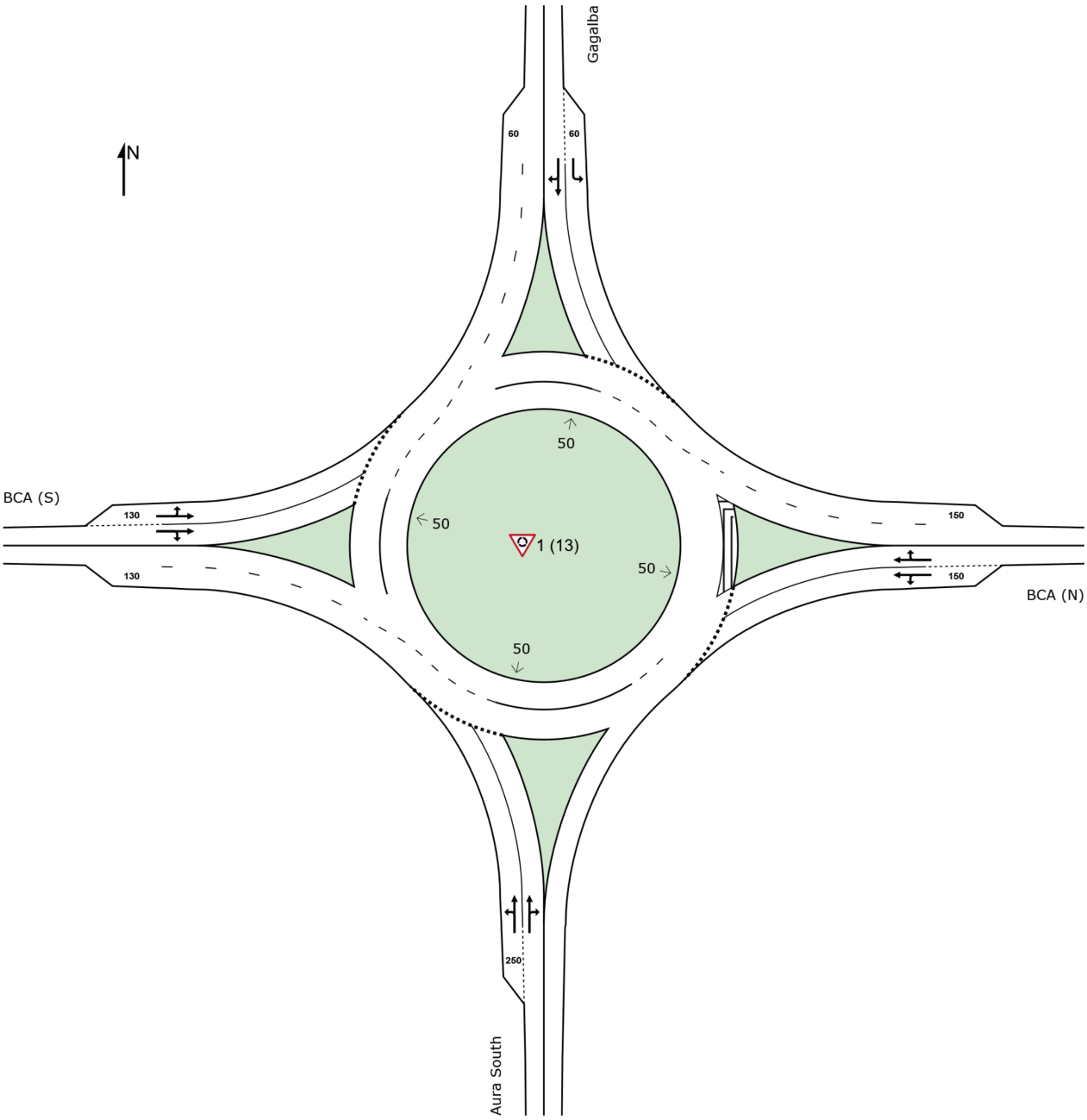
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SITE LAYOUT

Site: [1 (13)] AM BCA (2033 ERA Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [1 (13)] AM BCA (2033 ERA Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	328	0.0	328	0.0	0.874	51.3	LOS E	11.6	80.9	1.00	1.46	2.57	32.9
2	T1	All MCs	10	0.0	10	0.0	0.920	57.4	LOS E	20.1	141.0	1.00	1.74	3.33	30.4
3	R2	All MCs	494	0.0	494	0.0	0.920	67.5	LOS E	20.1	141.0	1.00	1.74	3.33	30.1
Approach			832	0.0	832	0.0	0.920	61.0	LOS E	20.1	141.0	1.00	1.63	3.03	31.1
East: BCA (N)															
4	L2	All MCs	250	0.0	250	0.0	0.720	15.1	LOS B	9.6	67.0	1.00	0.99	1.47	47.6
5	T1	All MCs	729	0.0	729	0.0	0.731	13.7	LOS B	11.9	83.0	1.00	0.96	1.44	47.7
6	R2	All MCs	340	0.0	340	0.0	0.731	19.3	LOS B	11.9	83.0	1.00	0.95	1.42	46.9
Approach			1319	0.0	1319	0.0	0.731	15.4	LOS B	11.9	83.0	1.00	0.96	1.44	47.4
North: Gagalba															
7	L2	All MCs	901	0.0	901	0.0	1.111	224.6	LOS F	129.7	907.7	1.00	6.22	15.03	13.0
8	T1	All MCs	23	0.0	23	0.0	1.039	117.4	LOS F	50.4	352.7	1.00	3.31	7.75	20.9
9	R2	All MCs	582	0.0	582	0.0	1.039	125.2	LOS F	50.4	352.7	1.00	3.31	7.75	20.8
Approach			1506	0.0	1506	0.0	1.111	184.5	LOS F	129.7	907.7	1.00	5.05	12.11	15.4
West: BCA (S)															
10	L2	All MCs	268	0.0	268	0.0	0.677	12.4	LOS B	8.4	59.1	1.00	0.95	1.38	49.1
11	T1	All MCs	591	0.0	591	0.0	0.677	14.7	LOS B	8.4	59.1	0.99	0.96	1.38	48.4
12	R2	All MCs	193	0.0	193	0.0	0.677	20.9	LOS C	7.4	51.8	0.98	0.98	1.39	46.6
Approach			1052	0.0	1052	0.0	0.677	15.2	LOS B	8.4	59.1	0.99	0.96	1.38	48.2
All Vehicles			4709	0.0	4709	0.0	1.111	77.5	LOS F	129.7	907.7	1.00	2.39	5.12	27.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

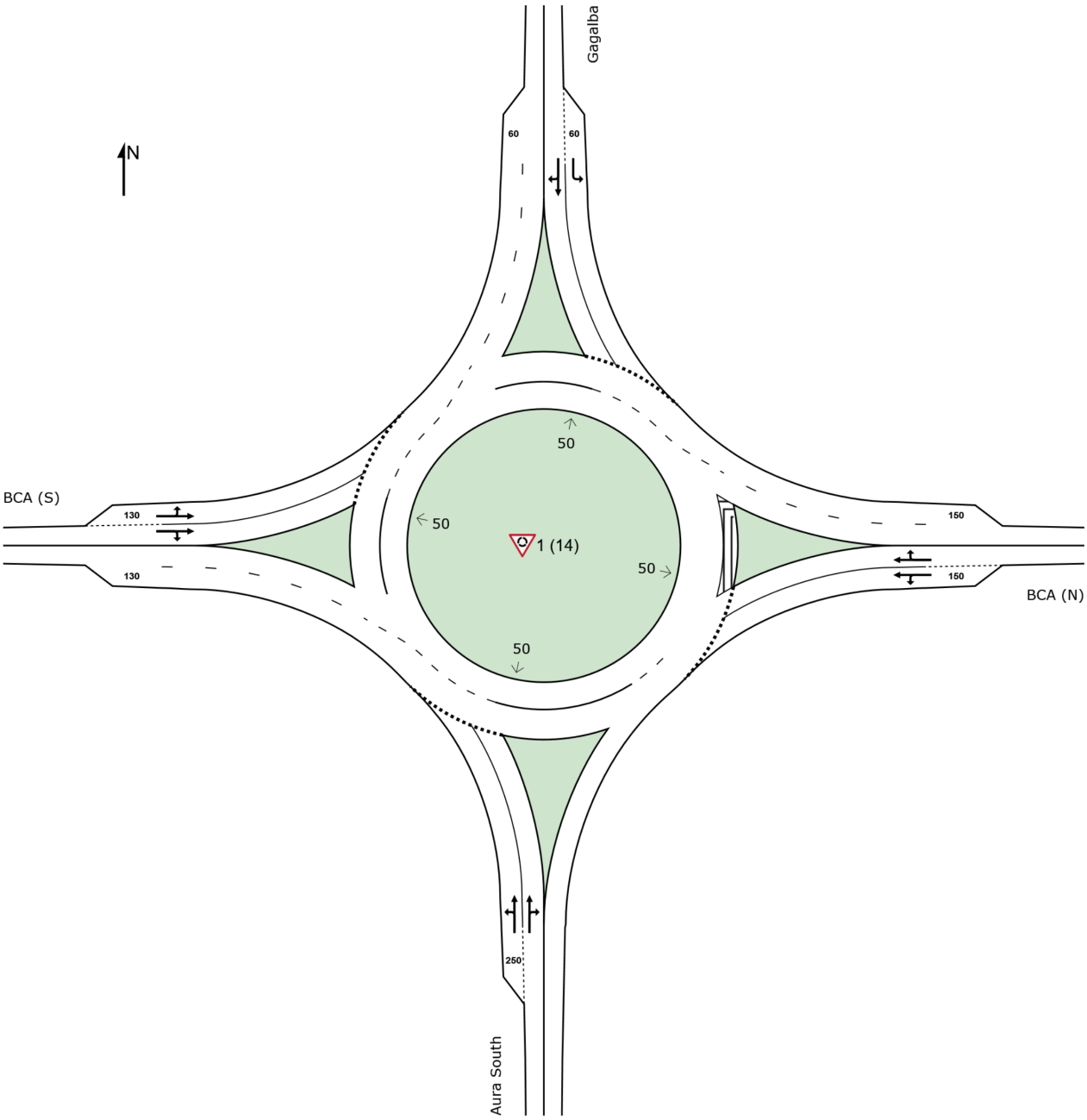
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SITE LAYOUT

Site: [1 (14)] PM BCA (2033 ERA Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [1 (14)] PM BCA (2033 ERA Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	230	0.0	230	0.0	0.729	33.9	LOS C	6.6	45.9	1.00	1.17	1.72	38.6
2	T1	All MCs	22	0.0	22	0.0	0.769	32.3	LOS C	9.6	67.0	1.00	1.20	1.91	37.7
3	R2	All MCs	337	0.0	337	0.0	0.769	40.2	LOS D	9.6	67.0	1.00	1.20	1.91	37.3
Approach			589	0.0	589	0.0	0.769	37.4	LOS D	9.6	67.0	1.00	1.19	1.84	37.8
East: BCA (N)															
4	L2	All MCs	424	0.0	424	0.0	0.763	12.0	LOS B	11.2	78.6	0.98	0.95	1.39	48.9
5	T1	All MCs	670	0.0	670	0.0	0.775	10.6	LOS B	12.8	89.8	0.97	0.94	1.34	48.8
6	R2	All MCs	723	0.0	723	0.0	0.775	16.6	LOS B	12.8	89.8	0.95	0.92	1.28	47.7
Approach			1817	0.0	1817	0.0	0.775	13.3	LOS B	12.8	89.8	0.96	0.93	1.33	48.4
North: Gagalba															
7	L2	All MCs	490	0.0	490	0.0	0.565	8.0	LOS A	4.6	31.9	0.89	0.86	1.07	51.8
8	T1	All MCs	15	0.0	15	0.0	0.562	8.6	LOS A	4.0	27.8	0.87	0.94	1.08	48.3
9	R2	All MCs	344	0.0	344	0.0	0.562	16.2	LOS B	4.0	27.8	0.87	0.94	1.08	47.6
Approach			849	0.0	849	0.0	0.565	11.3	LOS B	4.6	31.9	0.88	0.89	1.08	49.9
West: BCA (S)															
10	L2	All MCs	474	0.0	474	0.0	1.367	684.7	LOS F	306.5	2145.8	1.00	10.39	24.33	5.0
11	T1	All MCs	759	0.0	759	0.0	1.367	685.5	LOS F	306.5	2145.8	1.00	9.65	23.26	5.1
12	R2	All MCs	290	0.0	290	0.0	1.367	693.8	LOS F	230.9	1616.6	1.00	8.84	22.08	5.2
Approach			1523	0.0	1523	0.0	1.367	686.8	LOS F	306.5	2145.8	1.00	9.72	23.37	5.1
All Vehicles			4778	0.0	4778	0.0	1.367	230.6	LOS F	306.5	2145.8	0.96	3.76	8.37	13.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

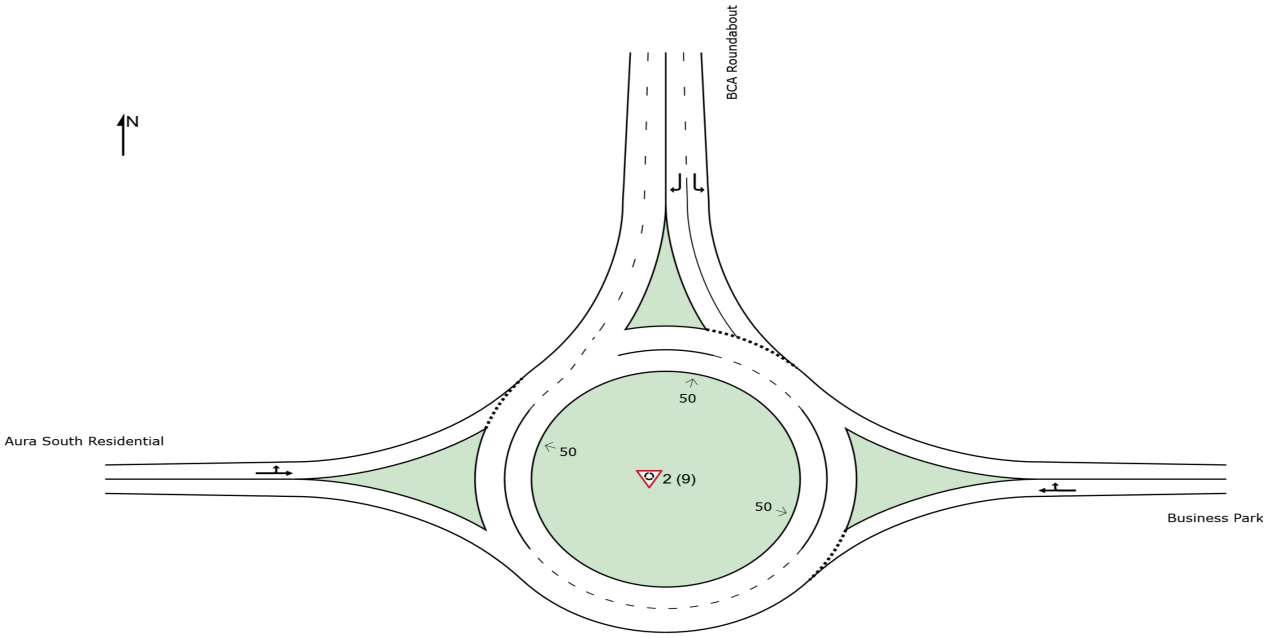
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SITE LAYOUT

Site: [2 (9)] AM Entry Roundabout (2033 ERA Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (9)] AM Entry Roundabout (2033 ERA Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	10	0.0	10	0.0	0.083	3.1	LOS A	0.3	2.4	0.34	0.61	0.34	51.6
6	R2	All MCs	89	0.0	89	0.0	0.083	10.5	LOS B	0.3	2.4	0.34	0.61	0.34	50.7
Approach			99	0.0	99	0.0	0.083	9.7	LOS A	0.3	2.4	0.34	0.61	0.34	50.8
North: BCA Roundabout															
7	L2	All MCs	208	0.0	208	0.0	0.140	2.9	LOS A	0.6	4.5	0.10	0.34	0.10	56.3
9	R2	All MCs	261	0.0	261	0.0	0.150	9.6	LOS A	0.7	5.0	0.09	0.60	0.09	51.1
Approach			469	0.0	469	0.0	0.150	6.6	LOS A	0.7	5.0	0.09	0.48	0.09	53.2
West: Aura South Residential															
10	L2	All MCs	729	0.0	729	0.0	0.514	3.1	LOS A	3.7	26.0	0.31	0.37	0.31	55.5
11	T1	All MCs	23	0.0	23	0.0	0.514	2.7	LOS A	3.7	26.0	0.31	0.37	0.31	55.8
Approach			752	0.0	752	0.0	0.514	3.1	LOS A	3.7	26.0	0.31	0.37	0.31	55.5
All Vehicles			1320	0.0	1320	0.0	0.514	4.8	LOS A	3.7	26.0	0.24	0.43	0.24	54.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

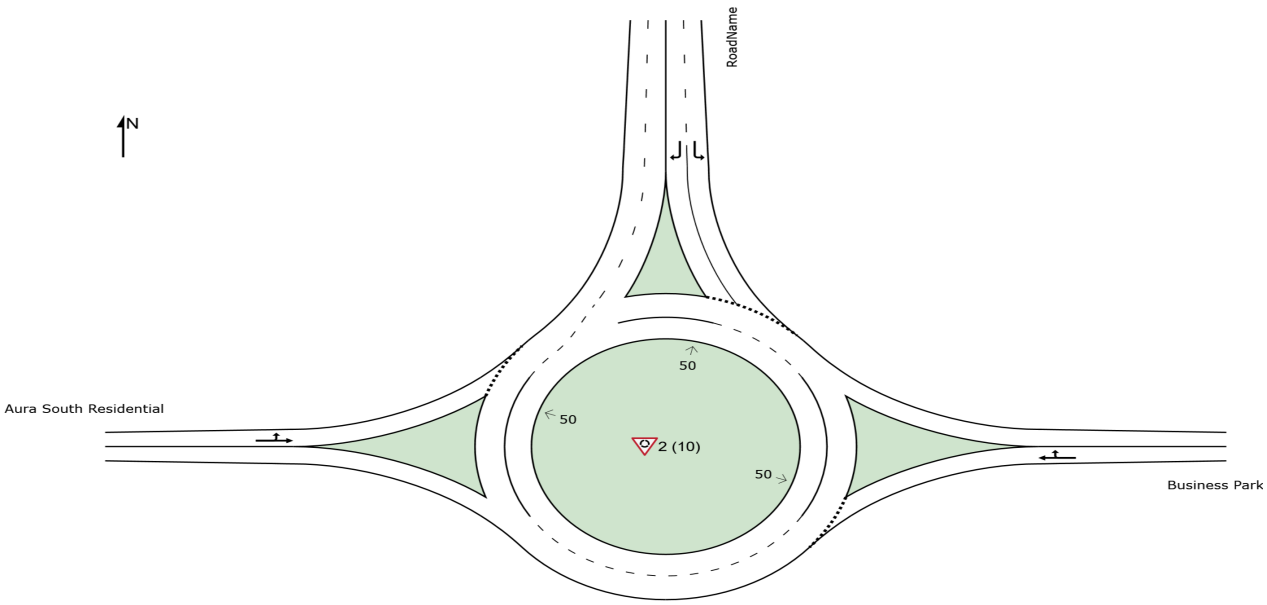
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SITE LAYOUT

Site: [2 (10)] PM Entry Roundabout (2033 ERA Traffic)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (10)] PM Entry Roundabout (2033 ERA Traffic)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	22	0.0	22	0.0	0.223	4.9	LOS A	1.2	8.1	0.57	0.69	0.57	50.8
6	R2	All MCs	198	0.0	198	0.0	0.223	12.3	LOS B	1.2	8.1	0.57	0.69	0.57	49.9
Approach			220	0.0	220	0.0	0.223	11.6	LOS B	1.2	8.1	0.57	0.69	0.57	50.0
North: RoadName															
7	L2	All MCs	132	0.0	132	0.0	0.106	2.9	LOS A	0.5	3.4	0.08	0.34	0.08	56.3
9	R2	All MCs	589	0.0	589	0.0	0.326	9.6	LOS A	2.0	13.8	0.09	0.60	0.09	51.1
Approach			721	0.0	721	0.0	0.326	8.4	LOS A	2.0	13.8	0.09	0.55	0.09	51.9
West: Aura South Residential															
10	L2	All MCs	405	0.0	405	0.0	0.336	3.5	LOS A	2.0	14.0	0.41	0.43	0.41	55.1
11	T1	All MCs	15	0.0	15	0.0	0.336	3.1	LOS A	2.0	14.0	0.41	0.43	0.41	55.4
Approach			420	0.0	420	0.0	0.336	3.5	LOS A	2.0	14.0	0.41	0.43	0.41	55.1
All Vehicles			1361	0.0	1361	0.0	0.336	7.4	LOS A	2.0	14.0	0.26	0.53	0.26	52.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

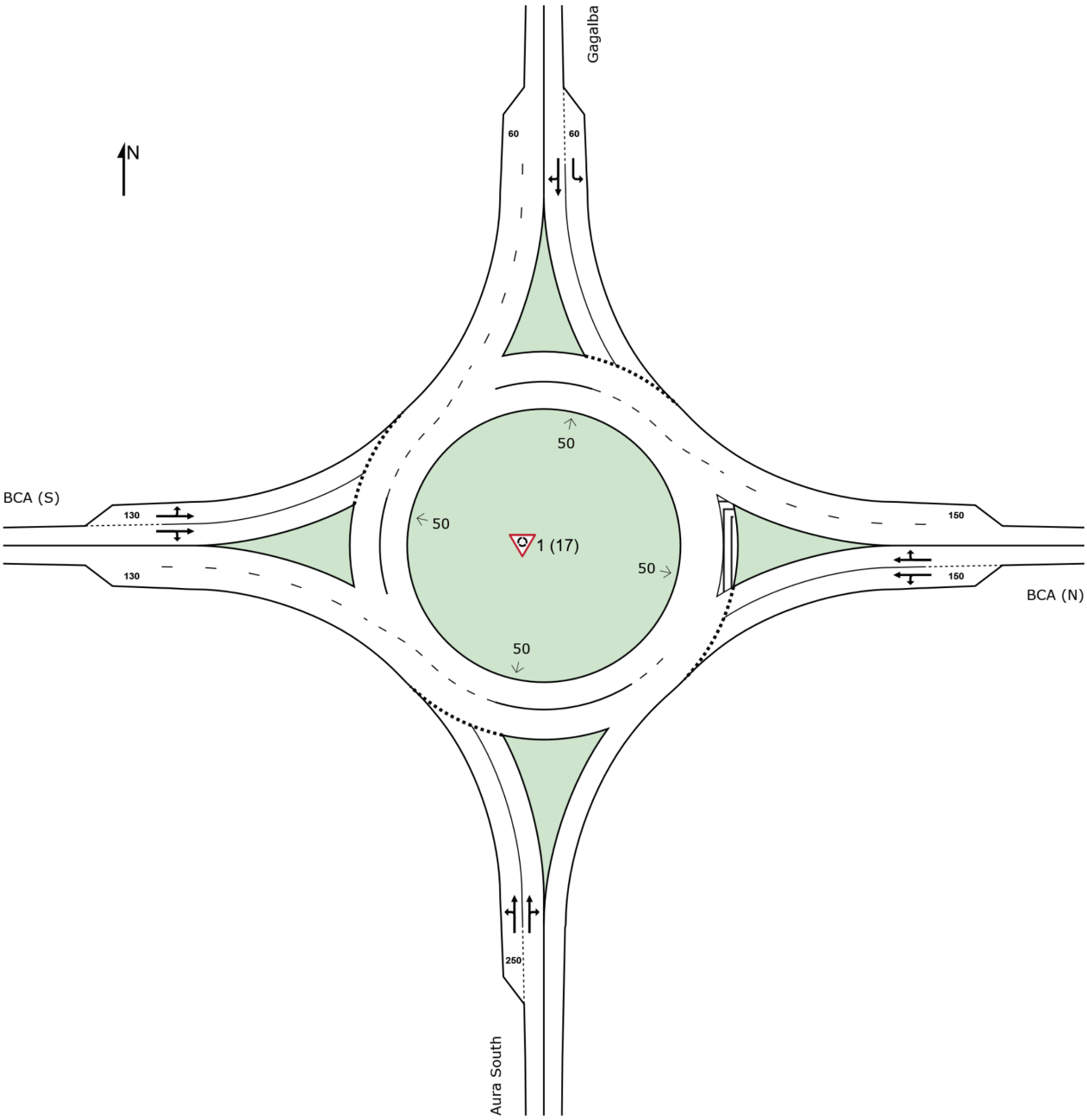
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SITE LAYOUT

Site: [1 (17)] AM BCA (2033 ERA Traffic - 20% Internal)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [1 (17)] AM BCA (2033 ERA Traffic - 20% Internal)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	269	0.0	269	0.0	0.499	12.0	LOS B	3.5	24.3	0.90	0.92	1.11	50.1
2	T1	All MCs	158	0.0	158	0.0	0.750	15.0	LOS B	8.7	61.0	1.00	1.11	1.63	45.5
3	R2	All MCs	405	0.0	405	0.0	0.750	23.5	LOS C	8.7	61.0	1.00	1.11	1.63	44.8
Approach			832	0.0	832	0.0	0.750	18.2	LOS B	8.7	61.0	0.97	1.05	1.46	46.5
East: BCA (N)															
4	L2	All MCs	221	0.0	221	0.0	0.524	7.4	LOS A	4.8	33.3	0.86	0.72	0.94	52.0
5	T1	All MCs	687	0.0	687	0.0	0.532	6.2	LOS A	5.2	36.7	0.86	0.69	0.90	51.9
6	R2	All MCs	281	0.0	281	0.0	0.532	12.6	LOS B	5.2	36.7	0.86	0.68	0.88	50.7
Approach			1189	0.0	1189	0.0	0.532	7.9	LOS A	5.2	36.7	0.86	0.69	0.91	51.6
North: Gagalba															
7	L2	All MCs	582	0.0	582	0.0	0.664	9.8	LOS A	6.1	43.0	0.92	0.95	1.23	50.8
8	T1	All MCs	72	0.0	72	0.0	0.688	11.1	LOS B	5.7	40.2	0.91	1.02	1.30	47.3
9	R2	All MCs	370	0.0	370	0.0	0.688	18.7	LOS B	5.7	40.2	0.91	1.02	1.30	46.6
Approach			1024	0.0	1024	0.0	0.688	13.1	LOS B	6.1	43.0	0.92	0.98	1.26	48.9
West: BCA (S)															
10	L2	All MCs	229	0.0	229	0.0	0.643	11.4	LOS B	7.5	52.8	1.00	0.91	1.30	49.6
11	T1	All MCs	583	0.0	583	0.0	0.643	12.4	LOS B	7.5	52.8	0.99	0.93	1.31	49.0
12	R2	All MCs	163	0.0	163	0.0	0.643	19.8	LOS B	6.6	46.5	0.97	0.94	1.31	47.2
Approach			975	0.0	975	0.0	0.643	13.4	LOS B	7.5	52.8	0.99	0.93	1.31	48.8
All Vehicles			4020	0.0	4020	0.0	0.750	12.7	LOS B	8.7	61.0	0.93	0.90	1.21	49.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

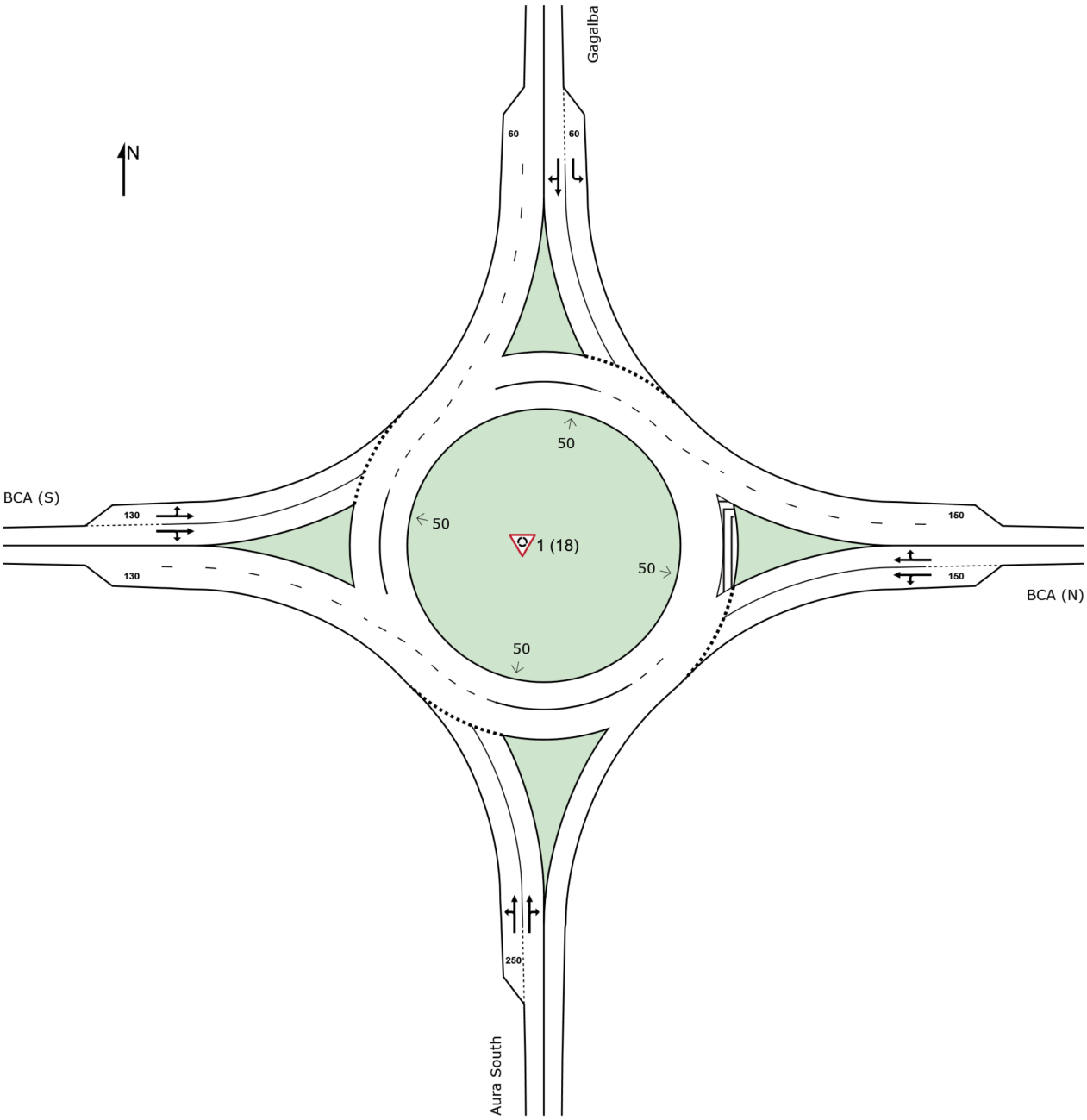
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SITE LAYOUT

Site: [1 (18)] PM BCA (2033 ERA Traffic - 20% Internal)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [1 (18)] PM BCA (2033 ERA Traffic - 20% Internal)
Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Aura South															
1	L2	All MCs	199	0.0	199	0.0	0.444	12.0	LOS B	3.0	20.9	0.93	0.92	1.08	49.8
2	T1	All MCs	101	0.0	101	0.0	0.617	12.8	LOS B	5.9	41.0	1.00	0.99	1.35	46.7
3	R2	All MCs	289	0.0	289	0.0	0.617	20.6	LOS C	5.9	41.0	1.00	0.99	1.35	46.0
Approach			589	0.0	589	0.0	0.617	16.4	LOS B	5.9	41.0	0.97	0.97	1.26	47.3
East: BCA (N)															
4	L2	All MCs	353	0.0	353	0.0	0.681	10.3	LOS B	8.3	58.2	0.93	0.86	1.22	50.2
5	T1	All MCs	652	0.0	652	0.0	0.692	8.8	LOS A	9.5	66.3	0.93	0.85	1.17	50.0
6	R2	All MCs	581	0.0	581	0.0	0.692	15.1	LOS B	9.5	66.3	0.92	0.84	1.13	48.8
Approach			1586	0.0	1586	0.0	0.692	11.4	LOS B	9.5	66.3	0.92	0.85	1.17	49.6
North: Gagalba															
7	L2	All MCs	321	0.0	321	0.0	0.569	10.4	LOS B	4.0	28.0	0.90	0.94	1.13	51.0
8	T1	All MCs	133	0.0	133	0.0	0.463	6.5	LOS A	3.4	23.6	0.89	0.86	0.99	50.3
9	R2	All MCs	231	0.0	231	0.0	0.463	14.0	LOS B	3.4	23.6	0.89	0.86	0.99	49.5
Approach			685	0.0	685	0.0	0.569	10.9	LOS B	4.0	28.0	0.89	0.89	1.06	50.3
West: BCA (S)															
10	L2	All MCs	380	0.0	380	0.0	0.993	82.3	LOS F	49.6	347.1	1.00	2.54	5.17	25.9
11	T1	All MCs	728	0.0	728	0.0	0.993	84.3	LOS F	49.6	347.1	1.00	2.47	5.09	25.6
12	R2	All MCs	242	0.0	242	0.0	0.993	94.0	LOS F	39.4	275.5	1.00	2.38	5.00	25.0
Approach			1350	0.0	1350	0.0	0.993	85.5	LOS F	49.6	347.1	1.00	2.47	5.10	25.6
All Vehicles			4210	0.0	4210	0.0	0.993	35.8	LOS D	49.6	347.1	0.95	1.39	2.42	38.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
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Roundabout 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.

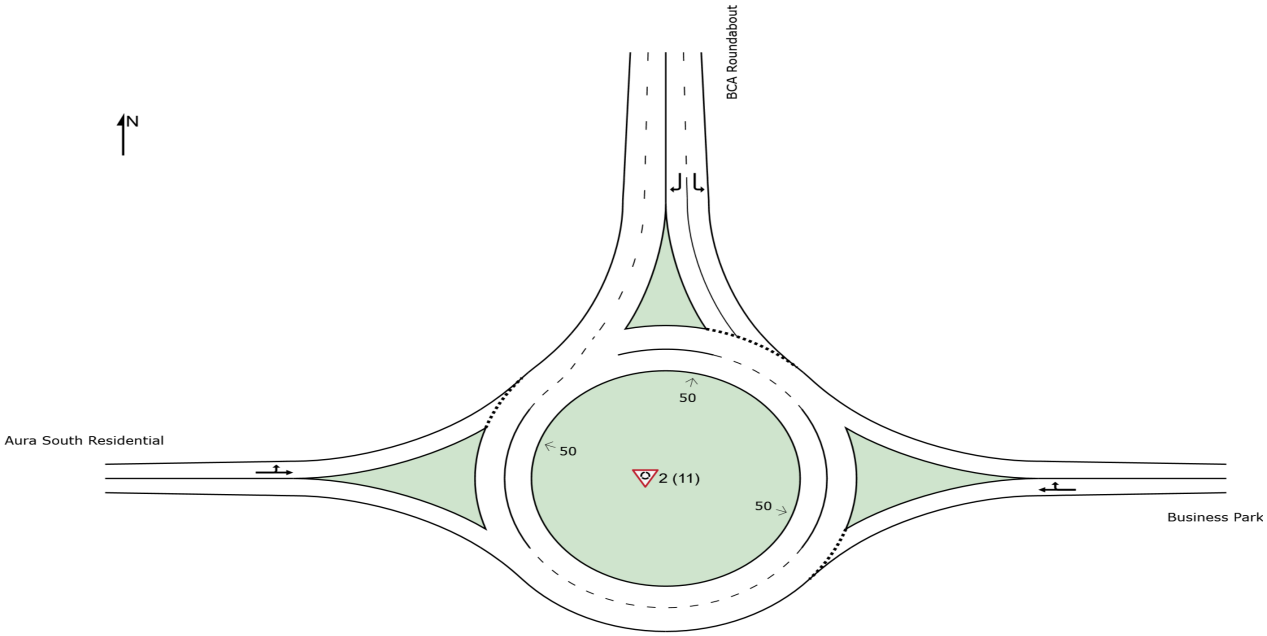
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SITE LAYOUT

Site: [2 (11)] AM Entry Roundabout (2033 ERA Traffic - 20% Internal)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (11)] AM Entry Roundabout (2033 ERA Traffic - 20% Internal)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	10	0.0	10	0.0	0.083	3.1	LOS A	0.3	2.4	0.34	0.61	0.34	51.6
6	R2	All MCs	89	0.0	89	0.0	0.083	10.5	LOS B	0.3	2.4	0.34	0.61	0.34	50.7
Approach			99	0.0	99	0.0	0.083	9.7	LOS A	0.3	2.4	0.34	0.61	0.34	50.8
North: BCA Roundabout															
7	L2	All MCs	208	0.0	208	0.0	0.140	2.9	LOS A	0.6	4.5	0.10	0.34	0.10	56.3
9	R2	All MCs	261	0.0	261	0.0	0.150	9.6	LOS A	0.7	5.0	0.09	0.60	0.09	51.1
Approach			469	0.0	469	0.0	0.150	6.6	LOS A	0.7	5.0	0.09	0.48	0.09	53.2
West: Aura South Residential															
10	L2	All MCs	729	0.0	729	0.0	0.514	3.1	LOS A	3.7	26.0	0.31	0.37	0.31	55.5
11	T1	All MCs	23	0.0	23	0.0	0.514	2.7	LOS A	3.7	26.0	0.31	0.37	0.31	55.8
Approach			752	0.0	752	0.0	0.514	3.1	LOS A	3.7	26.0	0.31	0.37	0.31	55.5
All Vehicles			1320	0.0	1320	0.0	0.514	4.8	LOS A	3.7	26.0	0.24	0.43	0.24	54.2

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

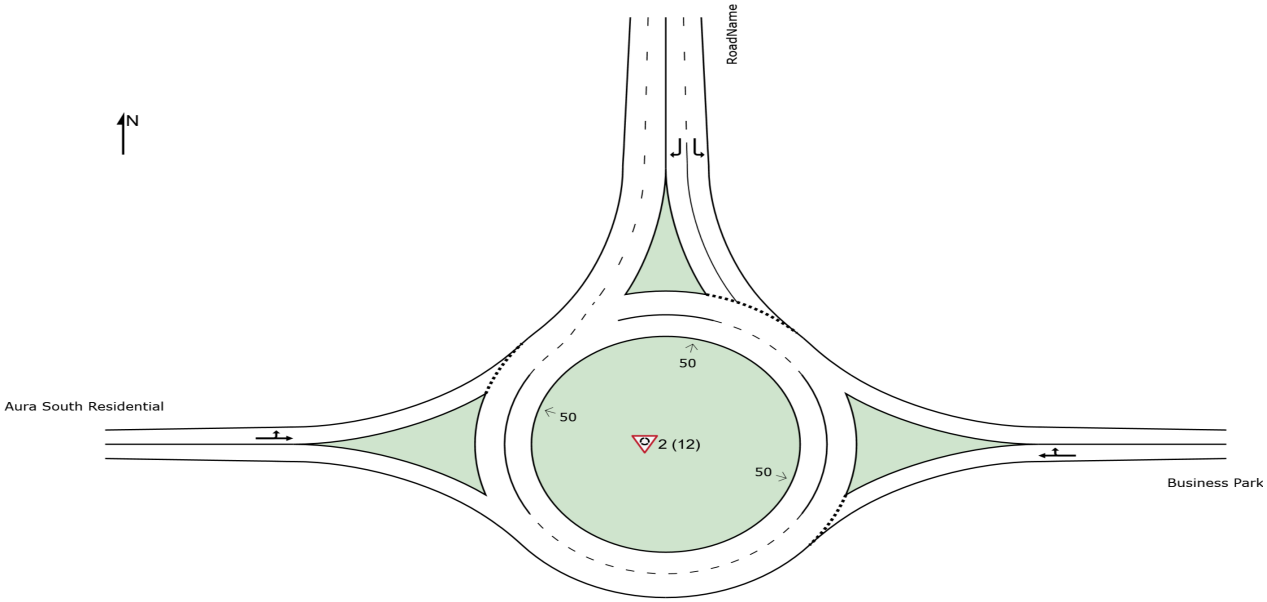
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SITE LAYOUT

Site: [2 (12)] PM Entry Roundabout (2033 ERA Traffic - 20% Internal)

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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Organisation: Jalahawi Consulting Pty Ltd | Licence: NETWORK / CLOUD | Created: Monday, 31 August 2026 10:39:20 AM
Project: Z:\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\SIDRA\BCA Roundabout with ERA Enterprise Park \With Business Bark Scenarios.sipx

MOVEMENT SUMMARY

Site: [2 (12)] PM Entry Roundabout (2033 ERA Traffic - 20% Internal)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Roundabout
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Business Park															
5	T1	All MCs	22	0.0	22	0.0	0.223	4.9	LOS A	1.2	8.1	0.57	0.69	0.57	50.8
6	R2	All MCs	198	0.0	198	0.0	0.223	12.3	LOS B	1.2	8.1	0.57	0.69	0.57	49.9
Approach			220	0.0	220	0.0	0.223	11.6	LOS B	1.2	8.1	0.57	0.69	0.57	50.0
North: RoadName															
7	L2	All MCs	132	0.0	132	0.0	0.106	2.9	LOS A	0.5	3.4	0.08	0.34	0.08	56.3
9	R2	All MCs	589	0.0	589	0.0	0.326	9.6	LOS A	2.0	13.8	0.09	0.60	0.09	51.1
Approach			721	0.0	721	0.0	0.326	8.4	LOS A	2.0	13.8	0.09	0.55	0.09	51.9
West: Aura South Residential															
10	L2	All MCs	405	0.0	405	0.0	0.336	3.5	LOS A	2.0	14.0	0.41	0.43	0.41	55.1
11	T1	All MCs	15	0.0	15	0.0	0.336	3.1	LOS A	2.0	14.0	0.41	0.43	0.41	55.4
Approach			420	0.0	420	0.0	0.336	3.5	LOS A	2.0	14.0	0.41	0.43	0.41	55.1
All Vehicles			1361	0.0	1361	0.0	0.336	7.4	LOS A	2.0	14.0	0.26	0.53	0.26	52.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (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.

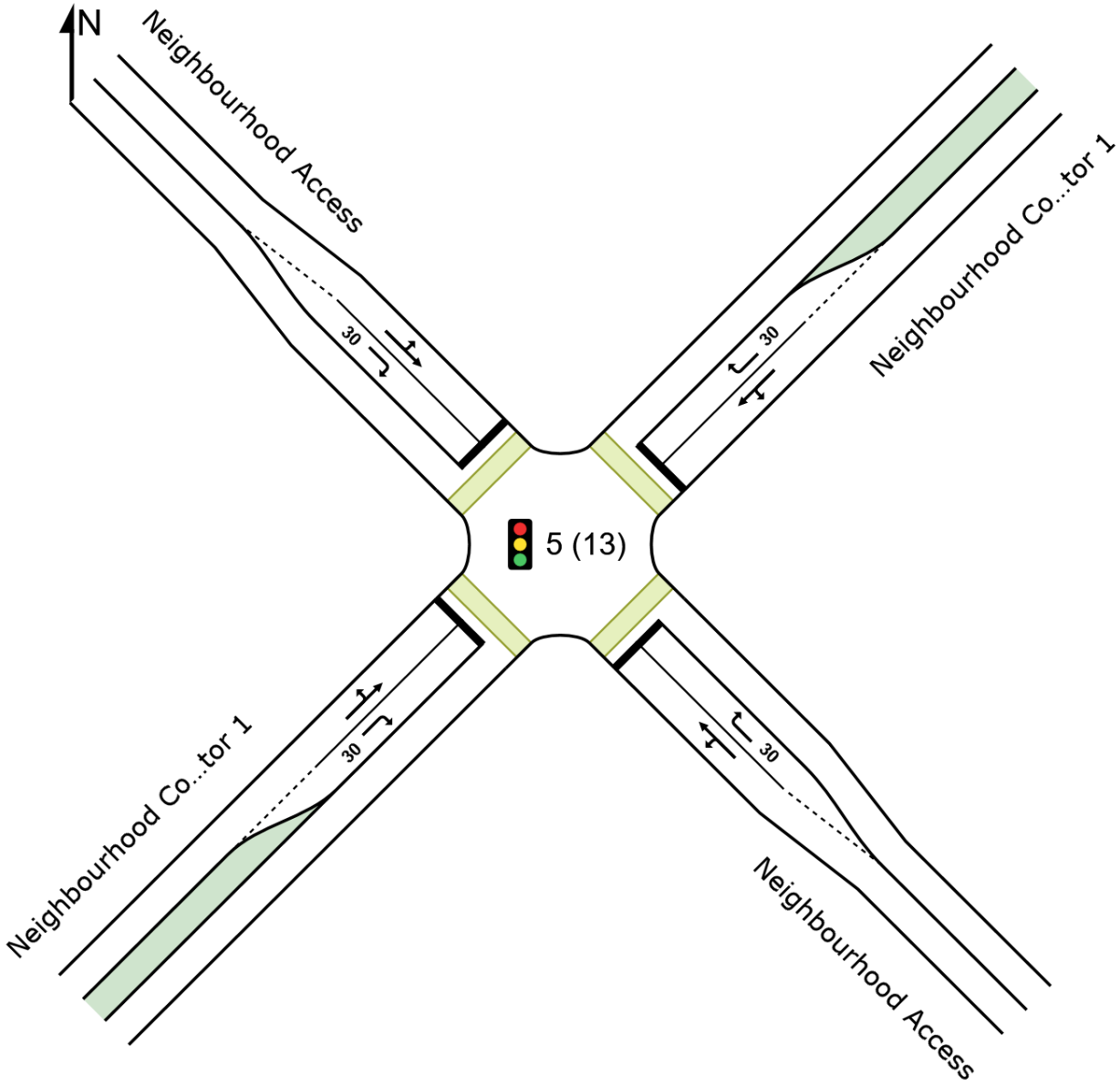
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SITE LAYOUT

Site: [5 (13)] AM Intersection 1 (ERA Internal Development Traffic + Background Traffic)

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [5 (13)] AM Intersection 1 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 66.4 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Neighbourhood Access															
21	L2	All MCs	11	0.0	11	0.0	0.096	14.1	LOS B	0.3	2.3	0.92	0.67	0.92	45.1
22	T1	All MCs	11	0.0	11	0.0	0.096	21.0	LOS C	0.3	2.3	0.92	0.67	0.92	46.6
23	R2	All MCs	11	0.0	11	0.0	0.064	36.9	LOS D	0.3	2.3	0.94	0.67	0.94	36.3
Approach			32	0.0	32	0.0	0.096	24.0	LOS C	0.3	2.3	0.93	0.67	0.93	42.1
NorthEast: Neighbourhood Connector 1															
24	L2	All MCs	11	0.0	11	0.0	*0.322	17.6	LOS B	1.5	10.8	0.97	0.78	0.97	41.2
25	T1	All MCs	49	0.0	49	0.0	0.322	26.8	LOS C	1.5	10.8	0.97	0.78	0.97	42.4
26	R2	All MCs	73	0.0	73	0.0	*0.439	38.8	LOS D	2.4	16.9	0.99	0.76	0.99	35.6
Approach			133	0.0	133	0.0	0.439	32.7	LOS C	2.4	16.9	0.98	0.77	0.98	38.3
NorthWest: Neighbourhood Access															
27	L2	All MCs	187	0.0	187	0.0	0.444	28.7	LOS C	5.6	39.4	0.90	0.79	0.90	39.4
28	T1	All MCs	11	0.0	11	0.0	*0.444	36.1	LOS D	5.6	39.4	0.90	0.79	0.90	40.6
29	R2	All MCs	11	0.0	11	0.0	0.064	36.9	LOS D	0.3	2.3	0.94	0.67	0.94	36.3
Approach			208	0.0	208	0.0	0.444	29.5	LOS C	5.6	39.4	0.90	0.79	0.90	39.3
SouthWest: Neighbourhood Connector 1															
30	L2	All MCs	11	0.0	11	0.0	0.436	19.4	LOS B	2.3	16.4	0.98	0.83	0.98	39.3
31	T1	All MCs	69	0.0	69	0.0	*0.436	30.8	LOS C	2.3	16.4	0.98	0.83	0.98	40.5
32	R2	All MCs	11	0.0	11	0.0	0.064	36.9	LOS D	0.3	2.3	0.94	0.67	0.94	36.3
Approach			91	0.0	91	0.0	0.436	30.2	LOS C	2.3	16.4	0.98	0.81	0.98	39.8
All Vehicles			463	0.0	463	0.0	0.444	30.2	LOS C	5.6	39.4	0.94	0.78	0.94	39.3

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. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

SouthEast: Neighbourhood Access												
P5	Full	60	63	27.5	LOS C	0.1	0.1	0.91	0.91	181.4	200.0	1.10
NorthEast: Neighbourhood Connector 1												
P6	Full	60	63	27.5	LOS C	0.1	0.1	0.91	0.91	181.4	200.0	1.10
NorthWest: Neighbourhood Access												
P7	Full	50	53	27.5	LOS C	0.1	0.1	0.91	0.91	181.4	200.0	1.10
SouthWest: Neighbourhood Connector 1												
P8	Full	60	63	27.5	LOS C	0.1	0.1	0.91	0.91	181.4	200.0	1.10
All Pedestrians		230	242	27.5	LOS C	0.1	0.1	0.91	0.91	181.4	200.0	1.10

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.

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PHASING SUMMARY

Site: [5 (13)] AM Intersection 1 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 66.4 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: 1 | Local Volumes

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Scramble
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase B

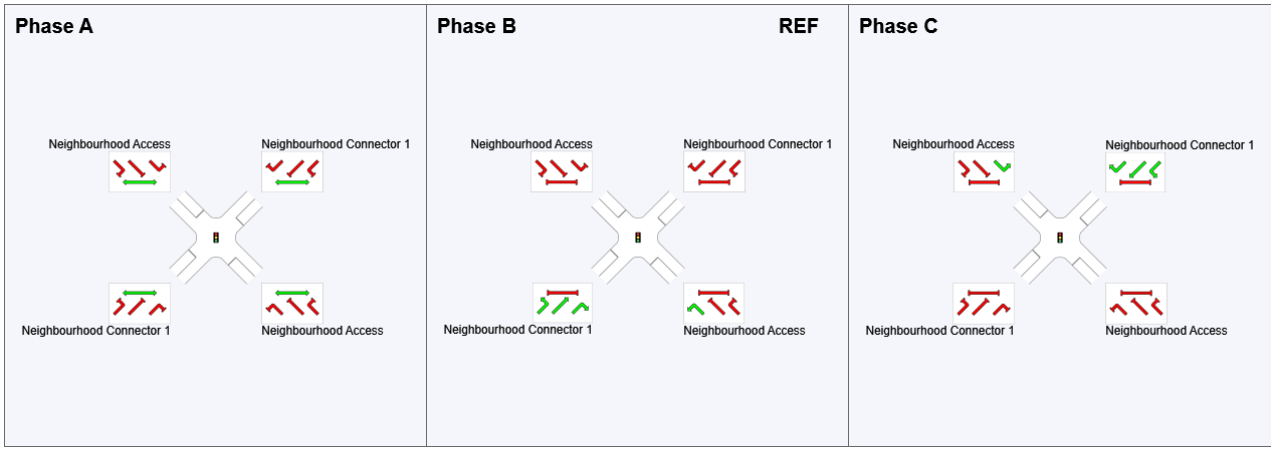
Phase Timing Summary

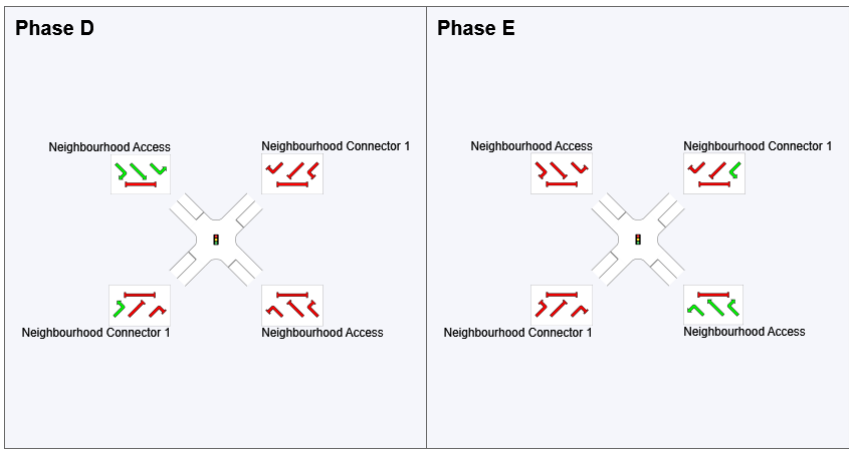
Phase	A	B	C	D	E
Phase Change Time (sec)	47.9	0.0	11.9	23.9	35.9
Green Time (sec)	12.5	6.0	6.0	6.0	6.0
Phase Time (sec)	18.4	12.0	12.0	12.0	12.0
Phase Split	28%	18%	18%	18%	18%
Phase Frequency (%)	98.4[3]	100.0	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

3 Phase Frequency has been estimated from actuated movement movement probabilities.

Output Phase Sequence





REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

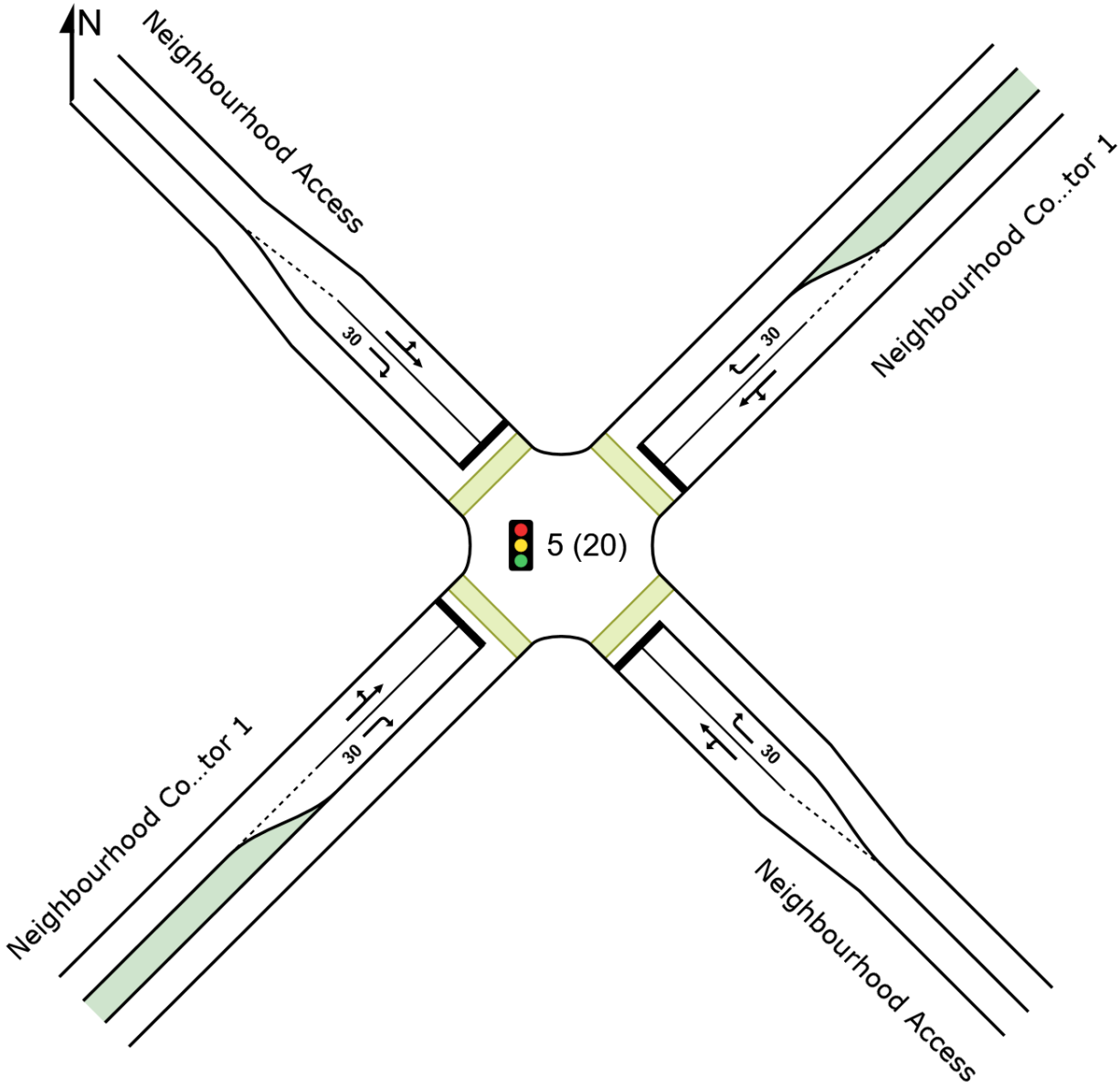
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SITE LAYOUT

Site: [5 (20)] PM Intersection 1 (ERA Internal Development Traffic + Background Traffic)

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [5 (20)] PM Intersection 1 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Neighbourhood Access															
21	L2	All MCs	11	0.0	11	0.0	0.101	15.0	LOS B	0.4	2.6	0.93	0.67	0.93	44.4
22	T1	All MCs	11	0.0	11	0.0	0.101	22.4	LOS C	0.4	2.6	0.93	0.67	0.93	45.9
23	R2	All MCs	11	0.0	11	0.0	0.067	39.0	LOS D	0.3	2.4	0.95	0.67	0.95	35.6
Approach			32	0.0	32	0.0	0.101	25.4	LOS C	0.4	2.6	0.93	0.67	0.93	41.4
NorthEast: Neighbourhood Connector 1															
24	L2	All MCs	11	0.0	11	0.0	*0.412	19.4	LOS B	3.5	24.2	0.96	0.86	0.96	39.2
25	T1	All MCs	101	0.0	101	0.0	0.412	30.7	LOS C	3.5	24.2	0.96	0.86	0.96	40.3
26	R2	All MCs	156	0.0	156	0.0	*0.623	38.5	LOS D	5.4	37.7	0.99	0.82	1.05	35.7
Approach			267	0.0	267	0.0	0.623	34.8	LOS C	5.4	37.7	0.98	0.84	1.01	37.5
NorthWest: Neighbourhood Access															
27	L2	All MCs	104	0.0	104	0.0	0.264	28.2	LOS C	3.3	23.0	0.86	0.76	0.86	39.4
28	T1	All MCs	11	0.0	11	0.0	0.264	39.6	LOS D	3.3	23.0	0.86	0.76	0.86	40.5
29	R2	All MCs	11	0.0	11	0.0	0.067	39.0	LOS D	0.3	2.4	0.95	0.67	0.95	35.6
Approach			125	0.0	125	0.0	0.264	30.1	LOS C	3.3	23.0	0.87	0.75	0.87	39.1
SouthWest: Neighbourhood Connector 1															
30	L2	All MCs	11	0.0	11	0.0	*0.346	18.7	LOS B	1.7	11.9	0.98	0.79	0.98	39.9
31	T1	All MCs	51	0.0	51	0.0	*0.346	30.0	LOS C	1.7	11.9	0.98	0.79	0.98	41.1
32	R2	All MCs	11	0.0	11	0.0	0.067	39.0	LOS D	0.3	2.4	0.95	0.67	0.95	35.6
Approach			72	0.0	72	0.0	0.346	29.6	LOS C	1.7	11.9	0.97	0.78	0.97	40.0
All Vehicles			496	0.0	496	0.0	0.623	32.3	LOS C	5.4	37.7	0.94	0.80	0.96	38.5

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. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

SouthEast: Neighbourhood Access												
P5	Full	60	63	29.3	LOS C	0.1	0.1	0.92	0.92	183.2	200.0	1.09
NorthEast: Neighbourhood Connector 1												
P6	Full	60	63	29.3	LOS C	0.1	0.1	0.92	0.92	183.2	200.0	1.09
NorthWest: Neighbourhood Access												
P7	Full	50	53	29.3	LOS C	0.1	0.1	0.92	0.92	183.2	200.0	1.09
SouthWest: Neighbourhood Connector 1												
P8	Full	60	63	29.3	LOS C	0.1	0.1	0.92	0.92	183.2	200.0	1.09
All Pedestrians		230	242	29.3	LOS C	0.1	0.1	0.92	0.92	183.2	200.0	1.09

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.

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PHASING SUMMARY

Site: [5 (20)] PM Intersection 1 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: 1 | Local Volumes

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Scramble
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E
Reference Phase: Phase B

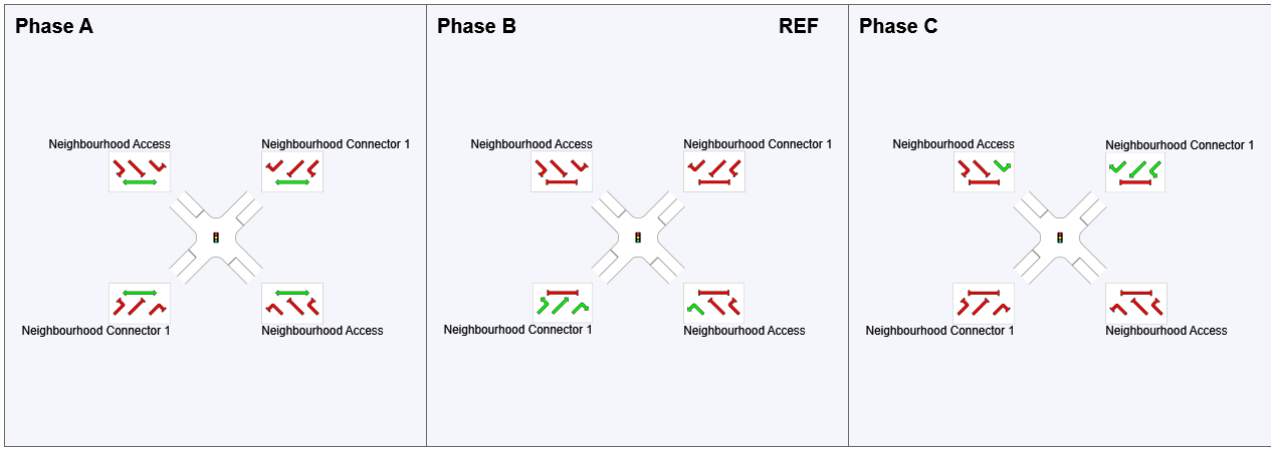
Phase Timing Summary

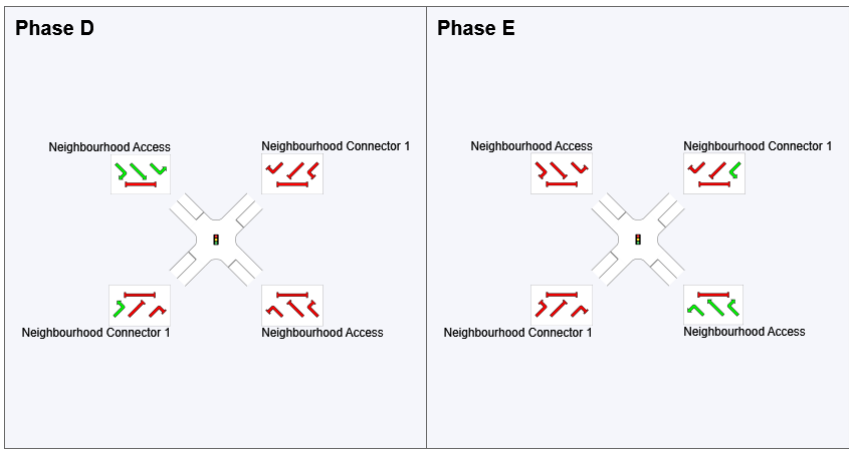
Phase	A	B	C	D	E
Phase Change Time (sec)	51.5	0.0	11.9	27.5	39.5
Green Time (sec)	12.5	6.0	9.6	6.0	6.0
Phase Time (sec)	18.4	12.0	15.6	12.0	12.0
Phase Split	26%	17%	22%	17%	17%
Phase Frequency (%)	98.7[3]	100.0	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

3 Phase Frequency has been estimated from actuated movement movement probabilities.

Output Phase Sequence





REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

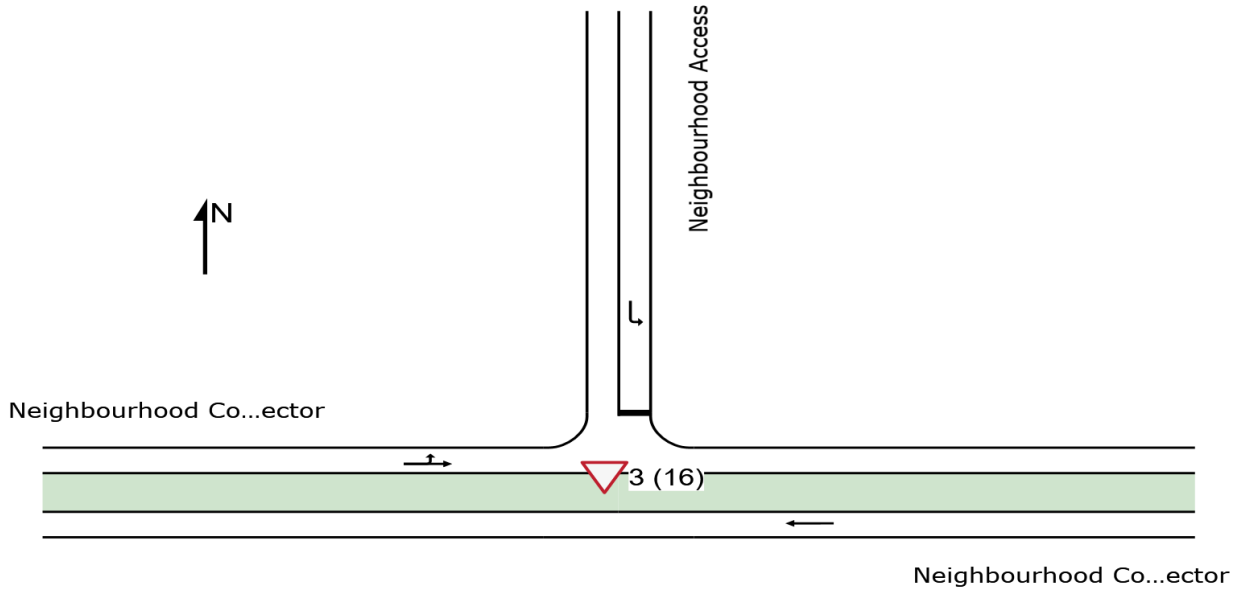
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SITE LAYOUT

Site: [3 (16)] AM Intersection 2 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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



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Project: C:\Users\User\SynologyDrive\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\Internal Intersection (New Layout Plan)\Internal ERA Intersection Analysis.sipx

MOVEMENT SUMMARY

Site: [3 (16)] AM Intersection 2 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Neighbourhood Connector															
5	T1	All MCs	65	0.0	65	0.0	0.033	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			65	0.0	65	0.0	0.033	0.0	NA	0.0	0.0	0.00	0.00	0.00	60.0
North: Neighbourhood Access															
7	L2	All MCs	151	0.0	151	0.0	0.115	8.4	LOS A	0.5	3.4	0.21	0.88	0.21	51.1
Approach			151	0.0	151	0.0	0.115	8.4	LOS A	0.5	3.4	0.21	0.88	0.21	51.1
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.056	5.6	LOS A	0.0	0.0	0.00	0.06	0.00	57.0
11	T1	All MCs	99	0.0	99	0.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.5
Approach			109	0.0	109	0.0	0.056	0.5	NA	0.0	0.0	0.00	0.06	0.00	59.2
All Vehicles			325	0.0	325	0.0	0.115	4.1	NA	0.5	3.4	0.10	0.43	0.10	55.3

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.
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.

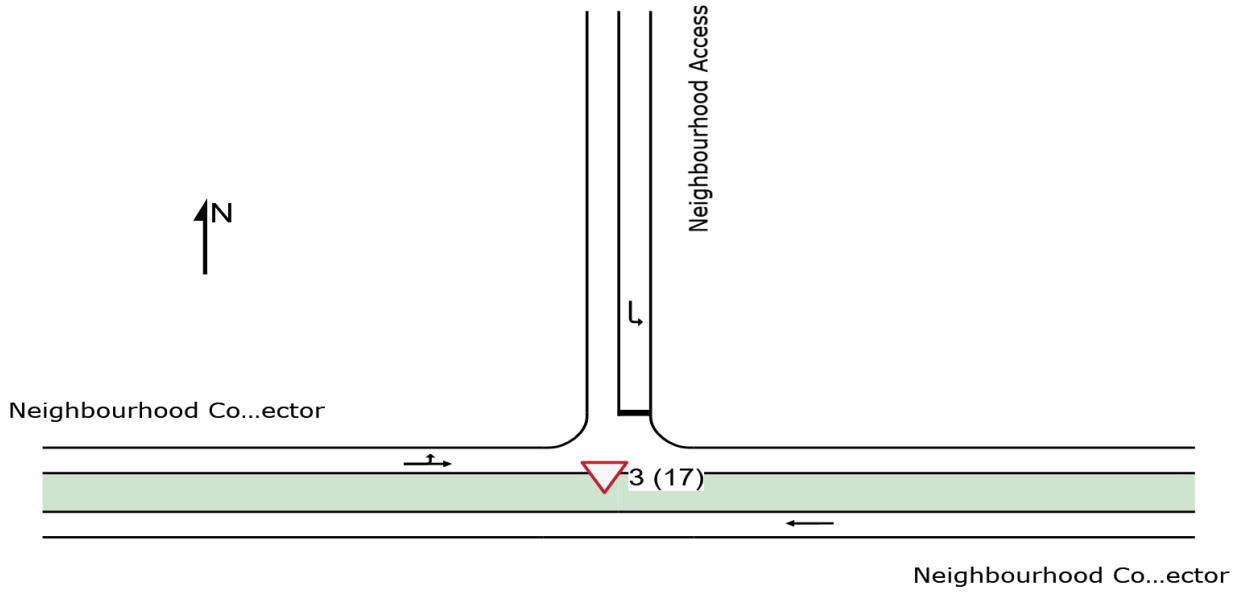
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SITE LAYOUT

Site: [3 (17)] PM Intersection 2 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [3 (17)] PM Intersection 2 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Neighbourhood Connector															
5	T1	All MCs	109	0.0	109	0.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			109	0.0	109	0.0	0.056	0.0	NA	0.0	0.0	0.00	0.00	0.00	60.0
North: Neighbourhood Access															
7	L2	All MCs	83	0.0	83	0.0	0.061	8.3	LOS A	0.2	1.7	0.16	0.90	0.16	51.1
Approach			83	0.0	83	0.0	0.061	8.3	LOS A	0.2	1.7	0.16	0.90	0.16	51.1
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.040	5.5	LOS A	0.0	0.0	0.00	0.08	0.00	56.8
11	T1	All MCs	66	0.0	66	0.0	0.040	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	59.2
Approach			77	0.0	77	0.0	0.040	0.8	NA	0.0	0.0	0.00	0.08	0.00	58.9
All Vehicles			269	0.0	269	0.0	0.061	2.8	NA	0.2	1.7	0.05	0.30	0.05	56.6

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.
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.

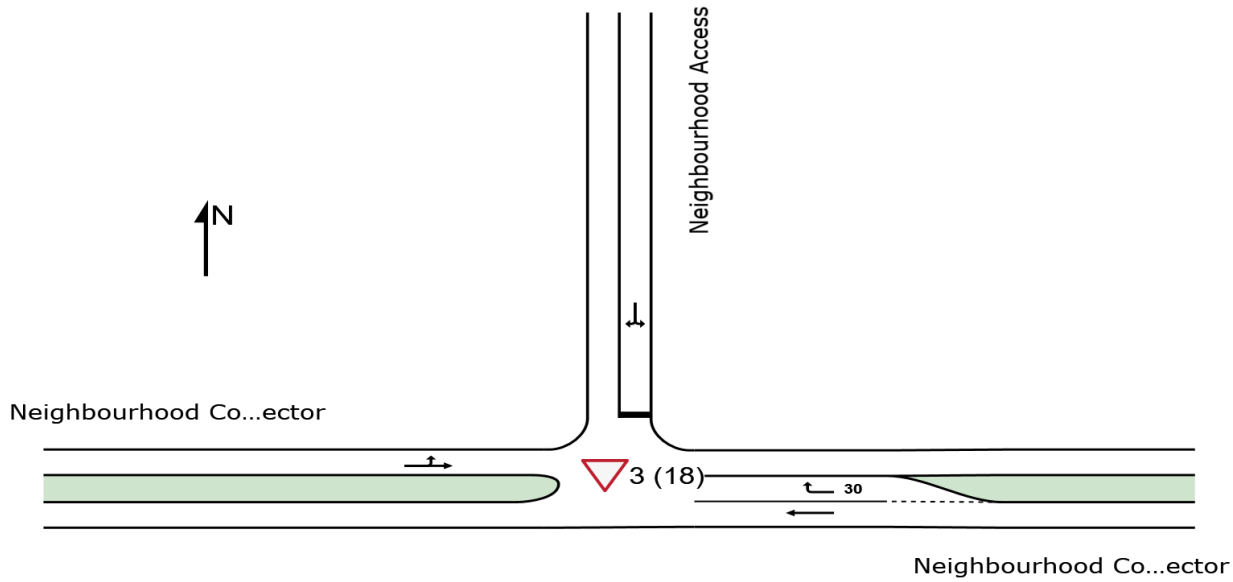
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SITE LAYOUT

Site: [3 (18)] AM Intersection 3 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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Project: C:\Users\User\SynologyDrive\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\Internal Intersection (New Layout Plan)\Internal ERA Intersection Analysis.sipx

MOVEMENT SUMMARY

Site: [3 (18)] AM Intersection 3 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Neighbourhood Connector															
5	T1	All MCs	65	0.0	65	0.0	0.033	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
6	R2	All MCs	77	0.0	77	0.0	0.054	6.3	LOS A	0.2	1.7	0.35	0.59	0.35	51.7
Approach			142	0.0	142	0.0	0.054	3.4	NA	0.2	1.7	0.19	0.32	0.19	55.2
North: Neighbourhood Access															
7	L2	All MCs	52	0.0	52	0.0	0.062	9.0	LOS A	0.2	1.7	0.37	0.86	0.37	50.7
9	R2	All MCs	11	0.0	11	0.0	0.062	10.9	LOS B	0.2	1.7	0.37	0.86	0.37	50.6
Approach			62	0.0	62	0.0	0.062	9.4	LOS A	0.2	1.7	0.37	0.86	0.37	50.6
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.134	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
11	T1	All MCs	249	0.0	249	0.0	0.134	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach			260	0.0	260	0.0	0.134	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.6
All Vehicles			464	0.0	464	0.0	0.134	2.4	NA	0.2	1.7	0.11	0.23	0.11	56.9

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.
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.

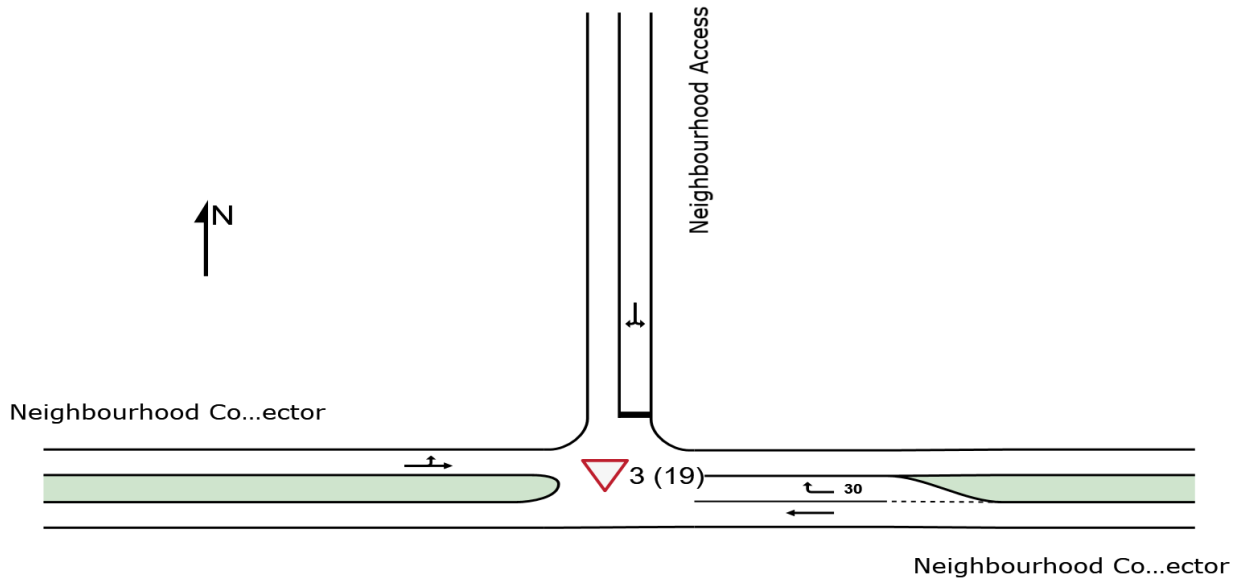
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SITE LAYOUT

Site: [3 (19)] PM Intersection 3 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [3 (19)] PM Intersection 3 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Neighbourhood Connector															
5	T1	All MCs	109	0.0	109	0.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
6	R2	All MCs	165	0.0	165	0.0	0.106	6.0	LOS A	0.5	3.5	0.28	0.57	0.28	51.9
Approach			275	0.0	275	0.0	0.106	3.6	NA	0.5	3.5	0.17	0.34	0.17	54.8
North: Neighbourhood Access															
7	L2	All MCs	28	0.0	28	0.0	0.039	8.6	LOS A	0.2	1.1	0.32	0.85	0.32	50.7
9	R2	All MCs	11	0.0	11	0.0	0.039	11.1	LOS B	0.2	1.1	0.32	0.85	0.32	50.6
Approach			39	0.0	39	0.0	0.039	9.2	LOS A	0.2	1.1	0.32	0.85	0.32	50.6
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.083	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
11	T1	All MCs	151	0.0	151	0.0	0.083	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach			161	0.0	161	0.0	0.083	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
All Vehicles			475	0.0	475	0.0	0.106	3.0	NA	0.5	3.5	0.12	0.28	0.12	55.9

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.
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.

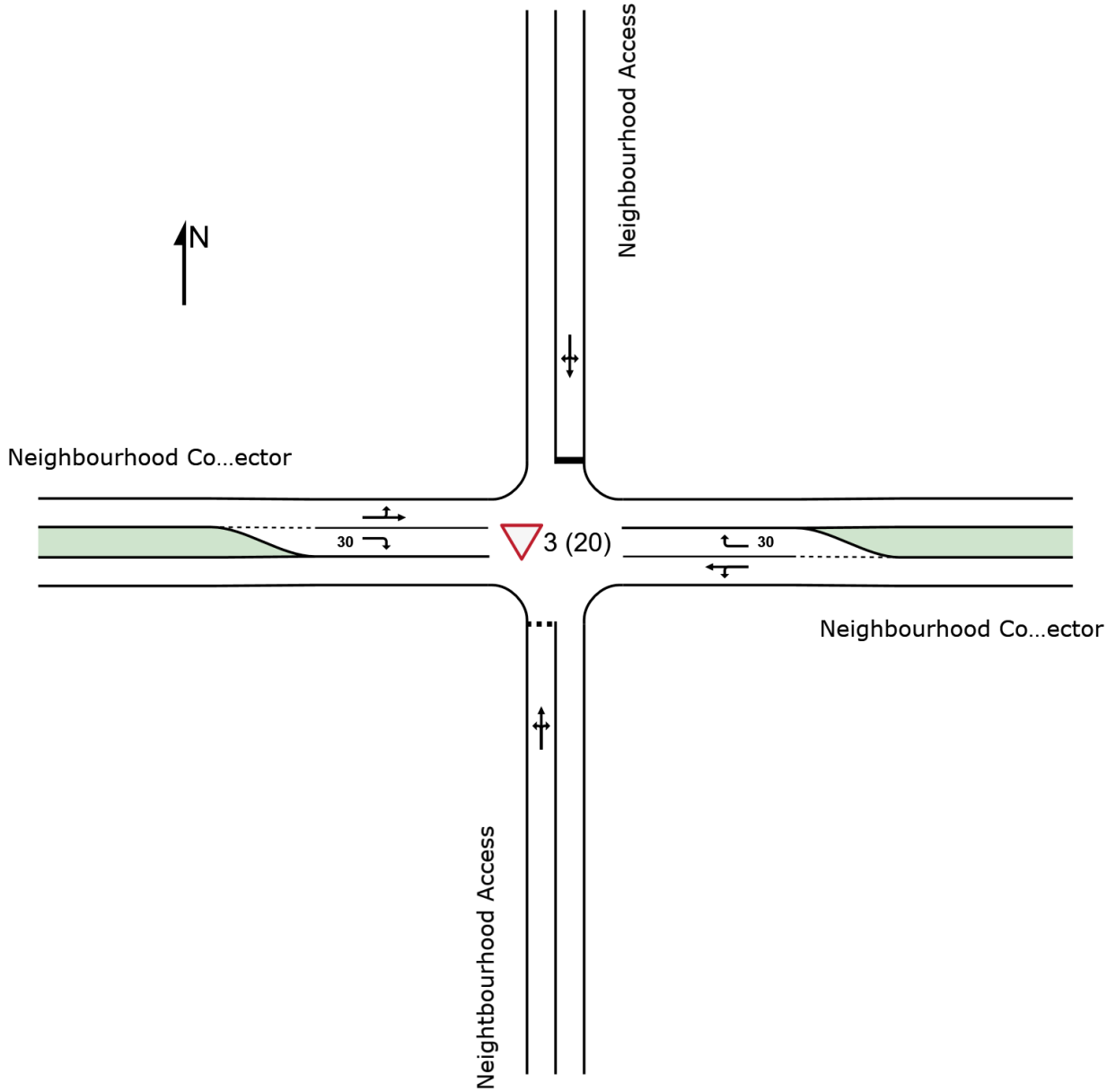
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SITE LAYOUT

Site: [3 (20)] AM Intersection 4 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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Project: C:\Users\User\SynologyDrive\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\Internal Intersection (New Layout Plan)\Internal ERA Intersection Analysis.sipx

MOVEMENT SUMMARY

Site: [3 (20)] AM Intersection 4 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Neightbourhood Access															
1	L2	All MCs	11	0.0	11	0.0	0.058	6.1	LOS A	0.2	1.5	0.51	0.61	0.51	49.9
2	T1	All MCs	11	0.0	11	0.0	0.058	9.5	LOS A	0.2	1.5	0.51	0.61	0.51	50.3
3	R2	All MCs	11	0.0	11	0.0	0.058	13.6	LOS B	0.2	1.5	0.51	0.61	0.51	49.8
Approach			32	0.0	32	0.0	0.058	9.7	LOS A	0.2	1.5	0.51	0.61	0.51	50.0
East: Neighbourhood Connector															
4	L2	All MCs	11	0.0	11	0.0	0.079	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
5	T1	All MCs	142	0.0	142	0.0	0.079	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
6	R2	All MCs	72	0.0	72	0.0	0.053	6.5	LOS A	0.2	1.6	0.39	0.60	0.39	51.6
Approach			224	0.0	224	0.0	0.079	2.3	NA	0.2	1.6	0.12	0.22	0.12	56.7
North: Neighbourhood Access															
7	L2	All MCs	101	0.0	101	0.0	0.170	9.8	LOS A	0.7	4.6	0.47	0.90	0.47	49.8
8	T1	All MCs	11	0.0	11	0.0	0.170	14.7	LOS B	0.7	4.6	0.47	0.90	0.47	49.8
9	R2	All MCs	11	0.0	11	0.0	0.170	16.4	LOS C	0.7	4.6	0.47	0.90	0.47	49.7
Approach			122	0.0	122	0.0	0.170	10.8	LOS B	0.7	4.6	0.47	0.90	0.47	49.8
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.160	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.3
11	T1	All MCs	301	0.0	301	0.0	0.160	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
12	R2	All MCs	11	0.0	11	0.0	0.007	5.9	LOS A	0.0	0.2	0.25	0.54	0.25	52.0
Approach			322	0.0	322	0.0	0.160	0.4	NA	0.0	0.2	0.01	0.04	0.01	59.4
All Vehicles			700	0.0	700	0.0	0.170	3.3	NA	0.7	4.6	0.15	0.27	0.15	56.1

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.
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.

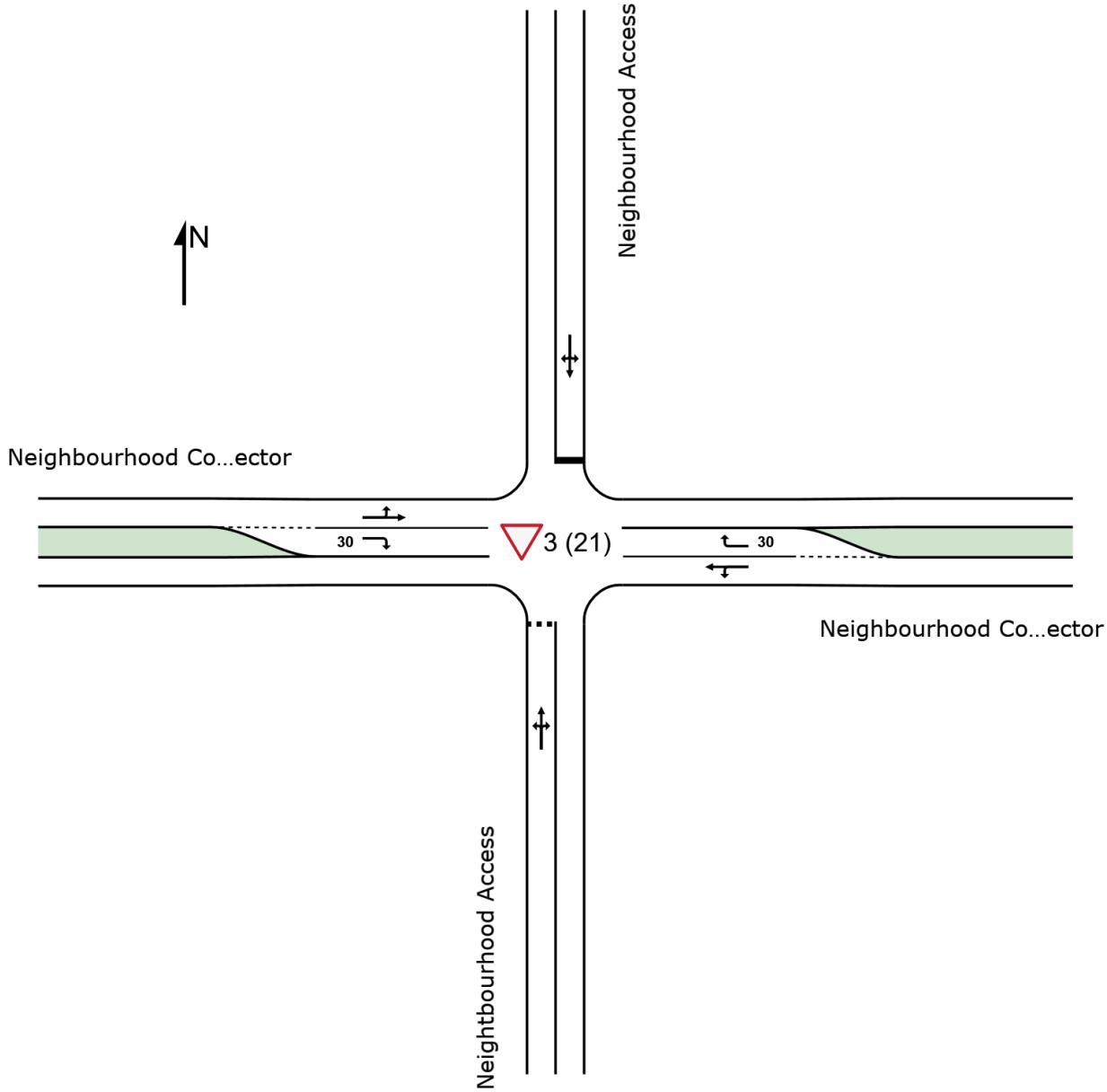
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SITE LAYOUT

Site: [3 (21)] PM Intersection 4 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [3 (21)] PM Intersection 4 (ERA Internal Development Traffic + Background Traffic)

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New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Neightbourhood Access															
1	L2	All MCs	11	0.0	11	0.0	0.064	6.7	LOS A	0.2	1.6	0.57	0.68	0.57	49.3
2	T1	All MCs	11	0.0	11	0.0	0.064	10.7	LOS B	0.2	1.6	0.57	0.68	0.57	49.7
3	R2	All MCs	11	0.0	11	0.0	0.064	14.4	LOS B	0.2	1.6	0.57	0.68	0.57	49.2
Approach			32	0.0	32	0.0	0.064	10.6	LOS B	0.2	1.6	0.57	0.68	0.57	49.4
East: Neighbourhood Connector															
4	L2	All MCs	11	0.0	11	0.0	0.147	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.3
5	T1	All MCs	275	0.0	275	0.0	0.147	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
6	R2	All MCs	153	0.0	153	0.0	0.100	6.1	LOS A	0.5	3.3	0.31	0.58	0.31	51.8
Approach			438	0.0	438	0.0	0.147	2.3	NA	0.5	3.3	0.11	0.22	0.11	56.7
North: Neighbourhood Access															
7	L2	All MCs	56	0.0	56	0.0	0.116	8.9	LOS A	0.4	3.1	0.43	0.85	0.43	49.5
8	T1	All MCs	11	0.0	11	0.0	0.116	16.0	LOS C	0.4	3.1	0.43	0.85	0.43	49.5
9	R2	All MCs	11	0.0	11	0.0	0.116	18.1	LOS C	0.4	3.1	0.43	0.85	0.43	49.4
Approach			77	0.0	77	0.0	0.116	11.2	LOS B	0.4	3.1	0.43	0.85	0.43	49.5
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.097	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	57.2
11	T1	All MCs	179	0.0	179	0.0	0.097	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.7
12	R2	All MCs	11	0.0	11	0.0	0.008	6.3	LOS A	0.0	0.2	0.36	0.56	0.36	51.7
Approach			200	0.0	200	0.0	0.097	0.6	NA	0.0	0.2	0.02	0.06	0.02	59.0
All Vehicles			746	0.0	746	0.0	0.147	3.1	NA	0.5	3.3	0.14	0.26	0.14	56.1

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.
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.

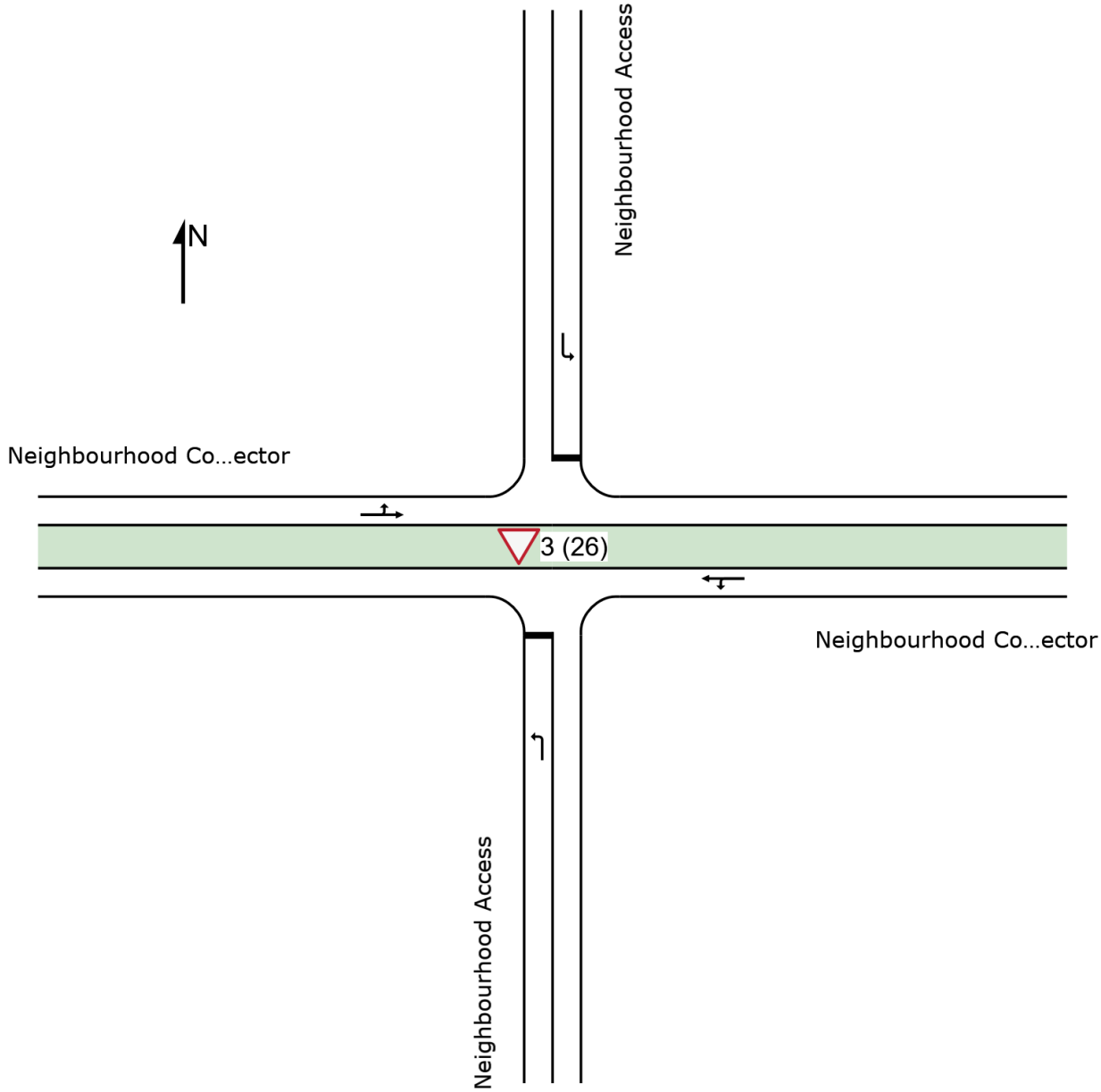
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SITE LAYOUT

Site: [3 (26)] AM Intersection 5 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [3 (26)] AM Intersection 5 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Neighbourhood Access															
1	L2	All MCs	11	0.0	11	0.0	0.009	8.8	LOS A	0.0	0.2	0.31	0.84	0.31	51.0
Approach			11	0.0	11	0.0	0.009	8.8	LOS A	0.0	0.2	0.31	0.84	0.31	51.0
East: Neighbourhood Connector															
4	L2	All MCs	11	0.0	11	0.0	0.115	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	57.2
5	T1	All MCs	214	0.0	214	0.0	0.115	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.7
Approach			224	0.0	224	0.0	0.115	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.6
North: Neighbourhood Access															
7	L2	All MCs	86	0.0	86	0.0	0.092	10.0	LOS A	0.4	2.5	0.46	0.89	0.46	50.4
Approach			86	0.0	86	0.0	0.092	10.0	LOS A	0.4	2.5	0.46	0.89	0.46	50.4
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.212	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.3
11	T1	All MCs	402	0.0	402	0.0	0.212	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach			413	0.0	413	0.0	0.212	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.7
All Vehicles			734	0.0	734	0.0	0.212	1.5	NA	0.4	2.5	0.06	0.13	0.06	58.2

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.
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.

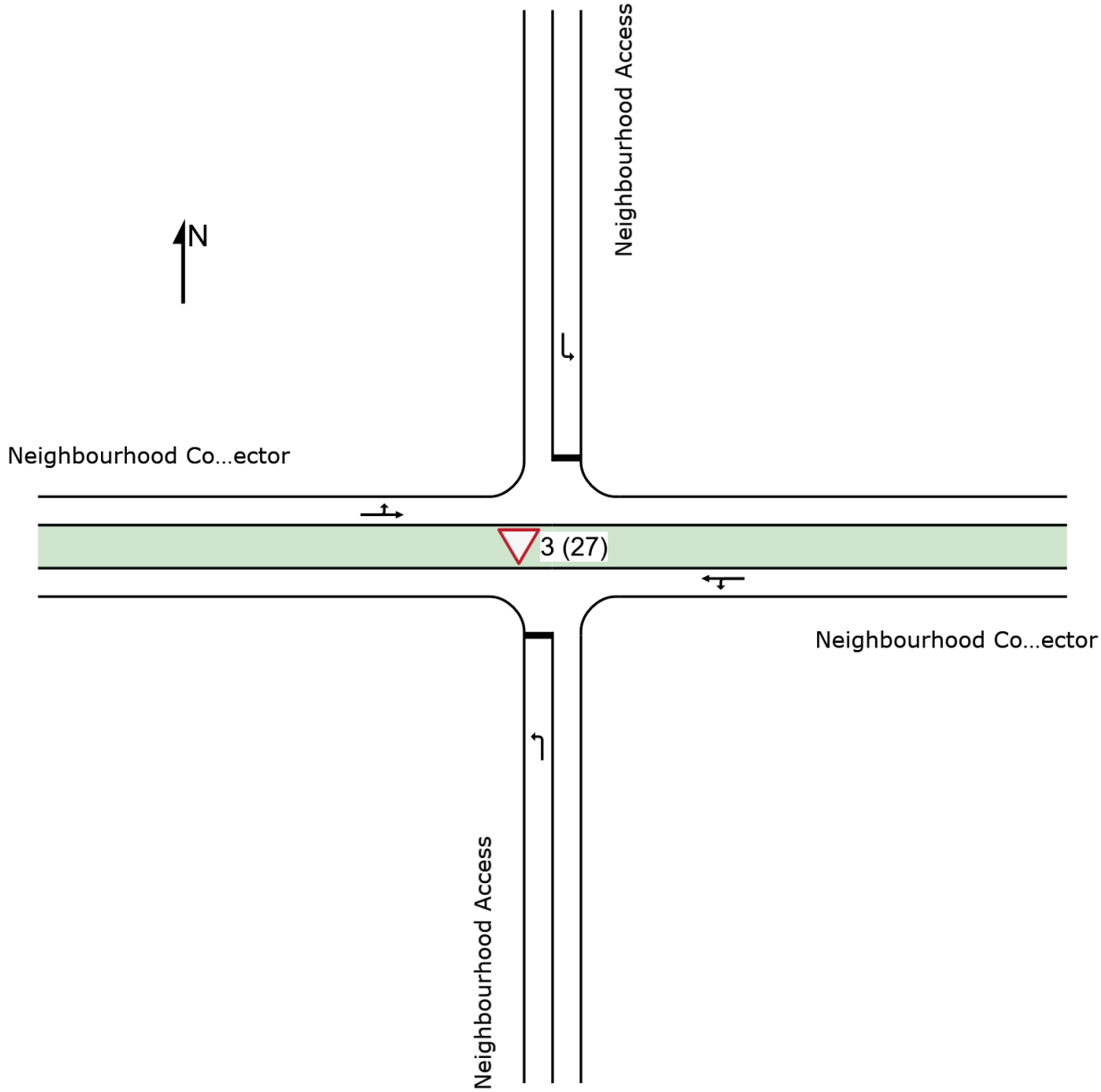
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SITE LAYOUT

Site: [3 (27)] PM Intersection 5 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [3 (27)] PM Intersection 5 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Neighbourhood Access															
1	L2	All MCs	11	0.0	11	0.0	0.012	9.9	LOS A	0.0	0.3	0.45	0.83	0.45	50.4
Approach			11	0.0	11	0.0	0.012	9.9	LOS A	0.0	0.3	0.45	0.83	0.45	50.4
East: Neighbourhood Connector															
4	L2	All MCs	11	0.0	11	0.0	0.225	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.3
5	T1	All MCs	428	0.0	428	0.0	0.225	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach			439	0.0	439	0.0	0.225	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
North: Neighbourhood Access															
7	L2	All MCs	47	0.0	47	0.0	0.042	9.0	LOS A	0.2	1.1	0.33	0.86	0.33	50.9
Approach			47	0.0	47	0.0	0.042	9.0	LOS A	0.2	1.1	0.33	0.86	0.33	50.9
West: Neighbourhood Connector															
10	L2	All MCs	11	0.0	11	0.0	0.127	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	57.2
11	T1	All MCs	236	0.0	236	0.0	0.127	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.7
Approach			246	0.0	246	0.0	0.127	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.6
All Vehicles			743	0.0	743	0.0	0.225	0.9	NA	0.2	1.1	0.03	0.08	0.03	58.9

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.
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.

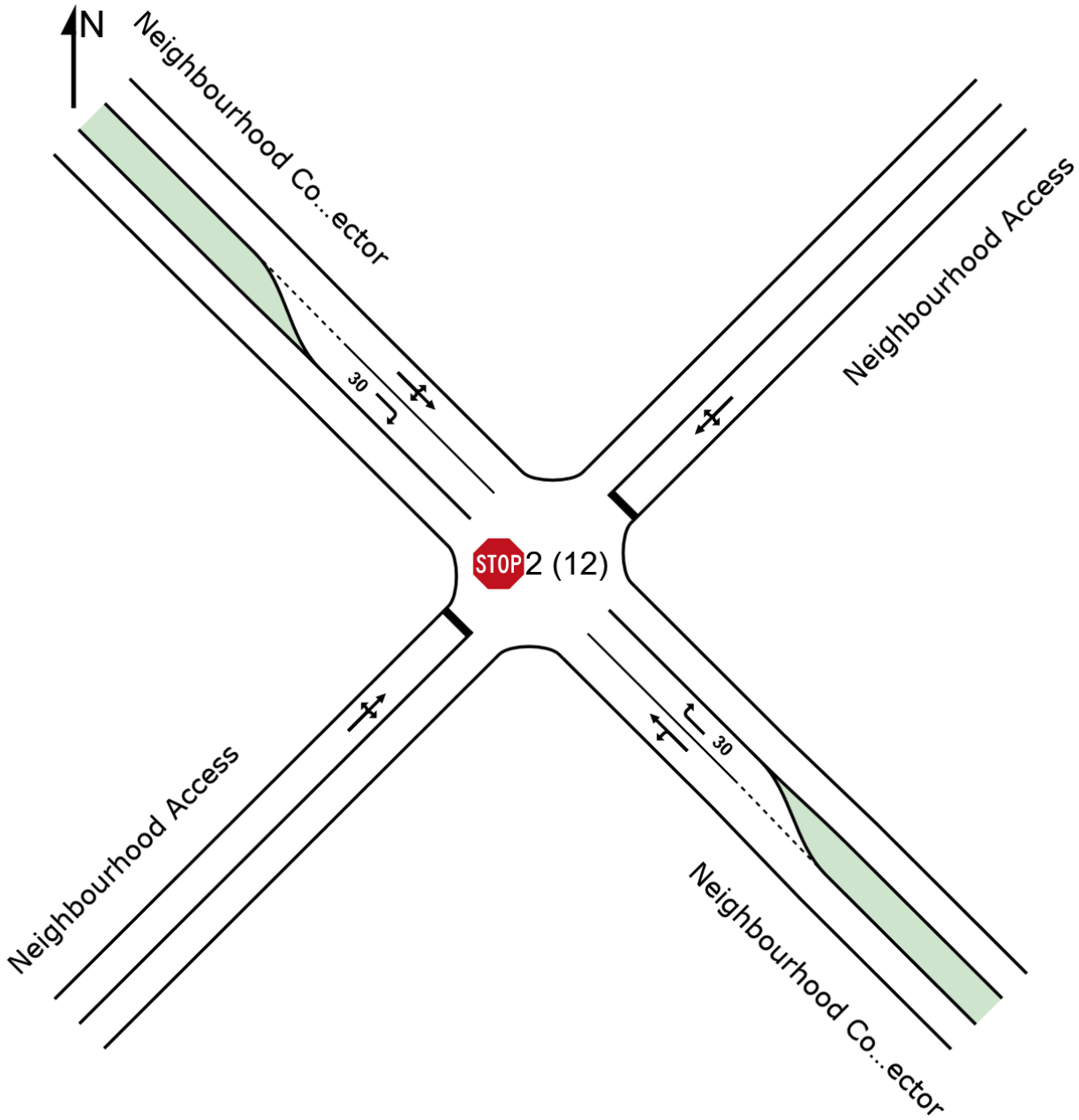
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SITE LAYOUT

Site: [2 (12)] AM Intersection 6 (ERA Internal Development Traffic + Background Traffic)

New Site
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [2 (12)] AM Intersection 6 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Neighbourhood Connector															
21	L2	All MCs	14	0.0	14	0.0	0.117	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
22	T1	All MCs	214	0.0	214	0.0	0.117	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
23	R2	All MCs	37	0.0	37	0.0	0.034	7.3	LOS A	0.1	1.0	0.50	0.64	0.50	51.3
Approach			264	0.0	264	0.0	0.117	1.3	NA	0.1	1.0	0.07	0.12	0.07	58.2
NorthEast: Neighbourhood Access															
24	L2	All MCs	78	0.0	78	0.0	0.200	11.5	LOS B	0.7	5.1	0.60	0.96	0.60	48.0
25	T1	All MCs	11	0.0	11	0.0	0.200	20.6	LOS C	0.7	5.1	0.60	0.96	0.60	48.0
26	R2	All MCs	11	0.0	11	0.0	0.200	23.9	LOS C	0.7	5.1	0.60	0.96	0.60	47.9
Approach			99	0.0	99	0.0	0.200	13.8	LOS B	0.7	5.1	0.60	0.96	0.60	48.0
NorthWest: Neighbourhood Connector															
27	L2	All MCs	11	0.0	11	0.0	0.256	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.3
28	T1	All MCs	488	0.0	488	0.0	0.256	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.7
29	R2	All MCs	11	0.0	11	0.0	0.007	6.1	LOS A	0.0	0.2	0.32	0.55	0.32	51.8
Approach			509	0.0	509	0.0	0.256	0.3	NA	0.0	0.2	0.01	0.02	0.01	59.5
SouthWest: Neighbourhood Access															
30	L2	All MCs	11	0.0	11	0.0	0.205	9.4	LOS A	0.7	5.2	0.72	0.94	0.75	43.6
31	T1	All MCs	11	0.0	11	0.0	0.205	20.3	LOS C	0.7	5.2	0.72	0.94	0.75	43.6
32	R2	All MCs	32	0.0	32	0.0	0.205	26.2	LOS D	0.7	5.2	0.72	0.94	0.75	43.5
Approach			53	0.0	53	0.0	0.205	21.6	LOS C	0.7	5.2	0.72	0.94	0.75	43.6
All Vehicles			925	0.0	925	0.0	0.256	3.3	NA	0.7	5.2	0.13	0.20	0.13	56.5

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.
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.

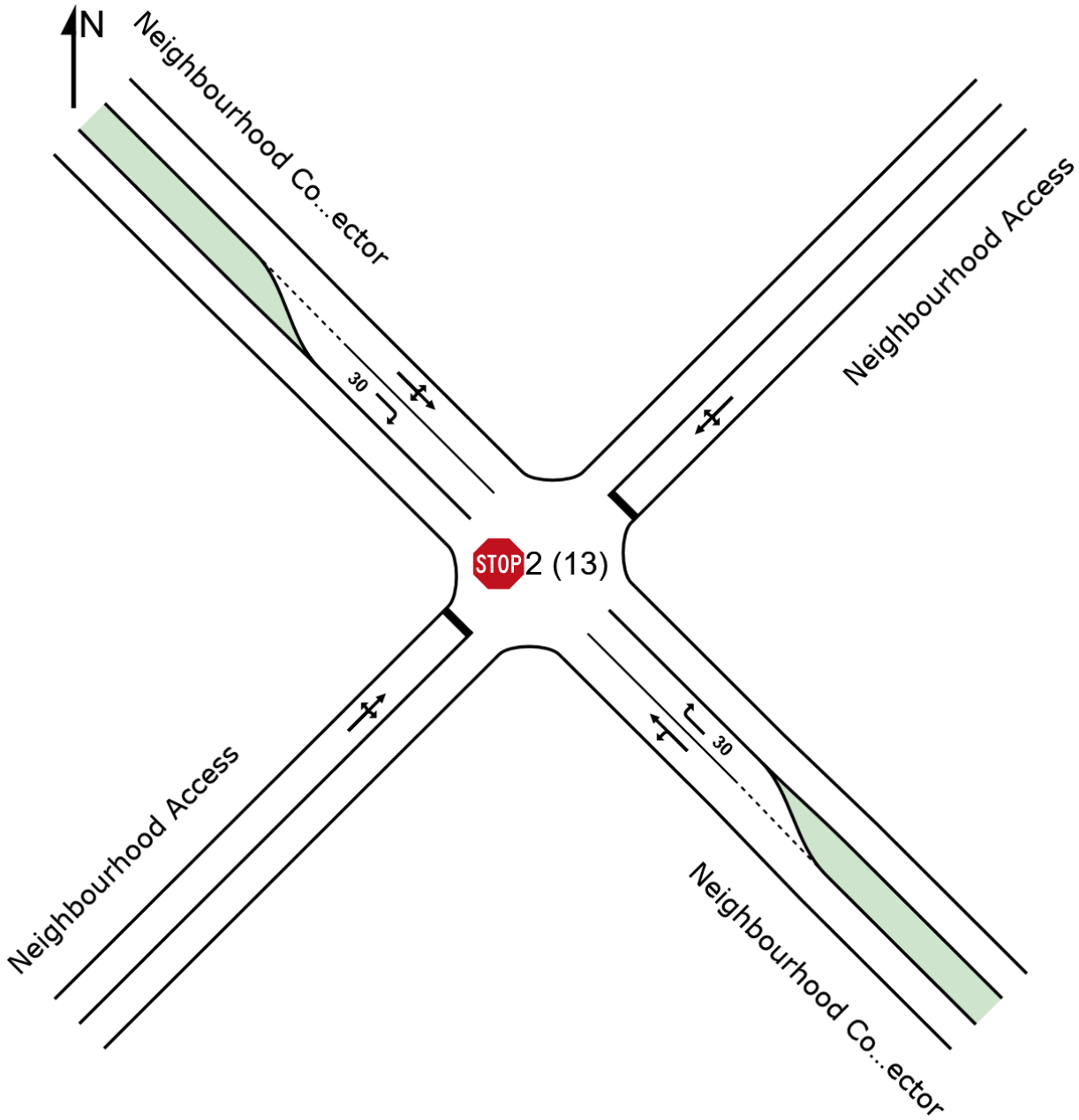
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SITE LAYOUT

Site: [2 (13)] PM Intersection 6 (ERA Internal Development Traffic + Background Traffic)

New Site
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [2 (13)] PM Intersection 6 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Stop (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Neighbourhood Connector															
21	L2	All MCs	29	0.0	29	0.0	0.236	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
22	T1	All MCs	428	0.0	428	0.0	0.236	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
23	R2	All MCs	78	0.0	78	0.0	0.057	6.4	LOS A	0.2	1.7	0.38	0.60	0.38	51.6
Approach			536	0.0	536	0.0	0.236	1.3	NA	0.2	1.7	0.06	0.12	0.06	58.1
NorthEast: Neighbourhood Access															
24	L2	All MCs	43	0.0	43	0.0	0.139	9.6	LOS A	0.5	3.5	0.59	0.87	0.59	47.8
25	T1	All MCs	11	0.0	11	0.0	0.139	21.9	LOS C	0.5	3.5	0.59	0.87	0.59	47.8
26	R2	All MCs	11	0.0	11	0.0	0.139	24.8	LOS C	0.5	3.5	0.59	0.87	0.59	47.7
Approach			64	0.0	64	0.0	0.139	14.1	LOS B	0.5	3.5	0.59	0.87	0.59	47.8
NorthWest: Neighbourhood Connector															
27	L2	All MCs	11	0.0	11	0.0	0.151	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.3
28	T1	All MCs	283	0.0	283	0.0	0.151	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
29	R2	All MCs	11	0.0	11	0.0	0.009	7.0	LOS A	0.0	0.3	0.47	0.59	0.47	51.4
Approach			304	0.0	304	0.0	0.151	0.5	NA	0.0	0.3	0.02	0.04	0.02	59.3
SouthWest: Neighbourhood Access															
30	L2	All MCs	11	0.0	11	0.0	0.141	10.6	LOS B	0.5	3.4	0.73	0.96	0.73	44.4
31	T1	All MCs	11	0.0	11	0.0	0.141	20.9	LOS C	0.5	3.4	0.73	0.96	0.73	44.4
32	R2	All MCs	17	0.0	17	0.0	0.141	25.9	LOS D	0.5	3.4	0.73	0.96	0.73	44.3
Approach			38	0.0	38	0.0	0.141	20.3	LOS C	0.5	3.4	0.73	0.96	0.73	44.3
All Vehicles			942	0.0	942	0.0	0.236	2.7	NA	0.5	3.5	0.11	0.18	0.11	56.9

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.
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.

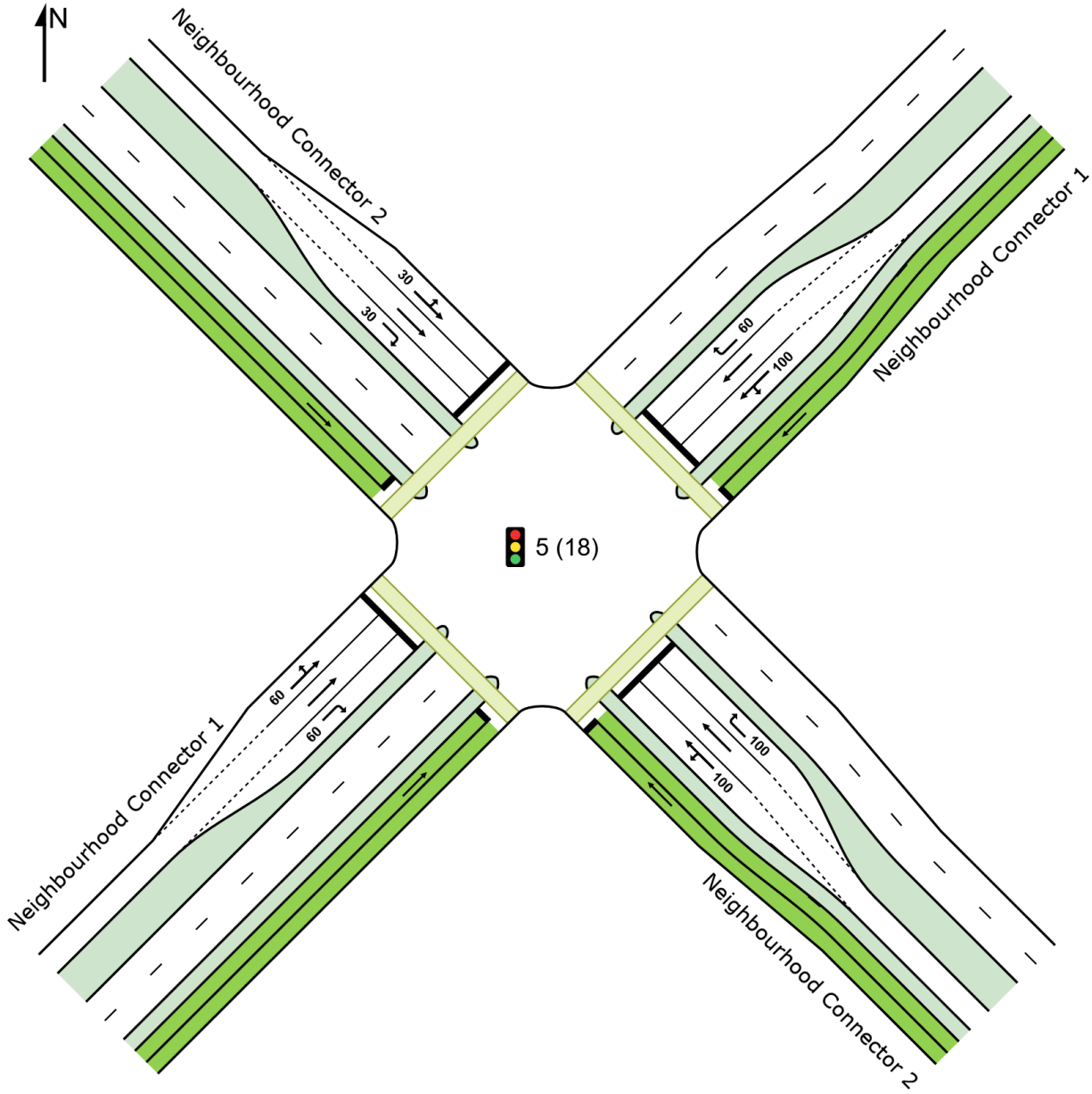
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SITE LAYOUT

Site: [5 (18)] AM Intersection 7 with contraflow bikepath (ERA Internal Development Traffic + Background Traffic)

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated
Site Scenario: 1 | Local Volumes

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



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Project: C:\Users\User\SynologyDrive\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\Internal Intersection (New Layout Plan)\Internal ERA Intersection Analysis.sipx

MOVEMENT SUMMARY

Site: [5 (18)] AM Intersection 7 with contraflow bikepath (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Neighbourhood Connector 2															
21	L2	All MCs	35	0.0	35	0.0	0.137	64.0	LOS E	2.0	14.0	1.00	0.92	1.00	29.9
22	T1	All MCs	107	0.0	107	0.0	0.137	28.6	LOS C	3.7	25.8	0.73	0.59	0.73	39.0
23	R2	All MCs	36	0.0	36	0.0	0.386	69.2	LOS E	2.2	15.2	1.00	0.73	1.00	27.8
Approach			178	0.0	178	0.0	0.386	43.7	LOS D	3.7	25.8	0.84	0.68	0.84	34.2
NorthEast: Neighbourhood Connector 1															
24	L2	All MCs	93	0.0	93	0.0	0.799	72.5	LOS E	5.9	41.5	1.00	0.88	1.26	26.9
25	T1	All MCs	94	0.0	94	0.0	0.210	42.8	LOS D	4.3	29.8	0.86	0.67	0.86	34.7
26	R2	All MCs	276	0.0	276	0.0	0.821	63.5	LOS E	16.9	118.3	1.00	0.92	1.15	29.4
Approach			462	0.0	462	0.0	0.821	61.1	LOS E	16.9	118.3	0.97	0.86	1.11	29.5
NorthWest: Neighbourhood Connector 2															
27	L2	All MCs	628	0.0	628	0.0	* 0.847	56.2	LOS E	34.8	243.4	0.93	0.91	1.01	35.8
28	T1	All MCs	268	0.0	268	0.0	0.820	65.4	LOS E	16.3	114.0	0.97	0.93	1.14	33.4
29	R2	All MCs	11	0.0	11	0.0	0.113	77.5	LOS E	0.6	4.3	0.98	0.67	0.98	28.2
Approach			907	0.0	907	0.0	0.847	59.2	LOS E	34.8	243.4	0.94	0.91	1.05	29.9
SouthWest: Neighbourhood Connector 1															
30	L2	All MCs	11	0.0	11	0.0	* 0.373	72.4	LOS E	1.3	8.8	1.00	0.69	1.00	29.9
31	T1	All MCs	174	0.0	174	0.0	0.373	43.5	LOS D	7.9	55.3	0.90	0.72	0.90	34.3
32	R2	All MCs	88	0.0	88	0.0	0.261	51.1	LOS D	4.5	31.3	0.90	0.76	0.90	32.2
Approach			273	0.0	273	0.0	0.373	47.1	LOS D	7.9	55.3	0.91	0.74	0.91	33.4
All Vehicles			1820	0.0	1820	0.0	0.847	56.3	LOS E	34.8	243.4	0.93	0.85	1.02	30.7

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)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped	Dist]	Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed

	ped/h	ped/h	sec		ped	m			sec	m	m/sec
SouthEast: Neighbourhood Connector 2											
P5 Full	60	63	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
NorthEast: Neighbourhood Connector 1											
P6 Full	60	63	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
NorthWest: Neighbourhood Connector 2											
P7 Full	60	63	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
SouthWest: Neighbourhood Connector 1											
P8 Full	60	63	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96
All Pedestrians	240	253	54.3	LOS E	0.2	0.2	0.95	0.95	208.1	200.0	0.96

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.

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PHASING SUMMARY

Site: [5 (18)] AM Intersection 7 with contraflow bikepath (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Site Scenario: 1 | Local Volumes

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Protected Signals 4 phase
Input Phase Sequence: C, A, B*, F, D
Output Phase Sequence: C, A, B*, F, D
Reference Phase: Phase A
(* Variable Phase)

Phase Timing Summary

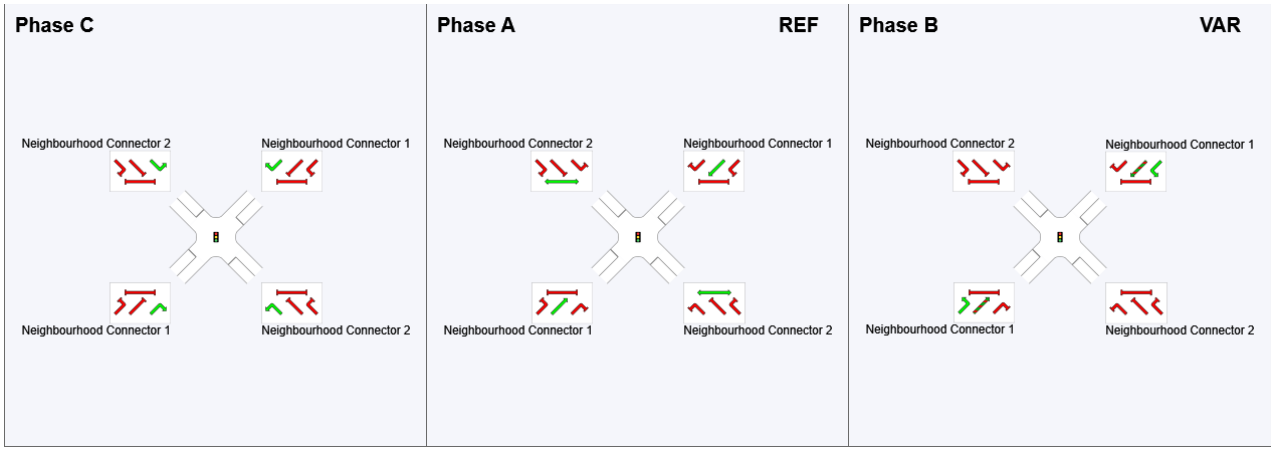
Phase	C	A	B	F	D
Phase Change Time (sec)	91.7	0.0	30.5	31.9	44.0
Green Time (sec)	22.3	24.5	***	6.1	42.3
Phase Time (sec)	28.3	30.5	1.4	11.5	48.3
Phase Split	24%	25%	1%	10%	40%
Phase Frequency (%)	100.0	100.0	100.0	90.0 [4]	100.0

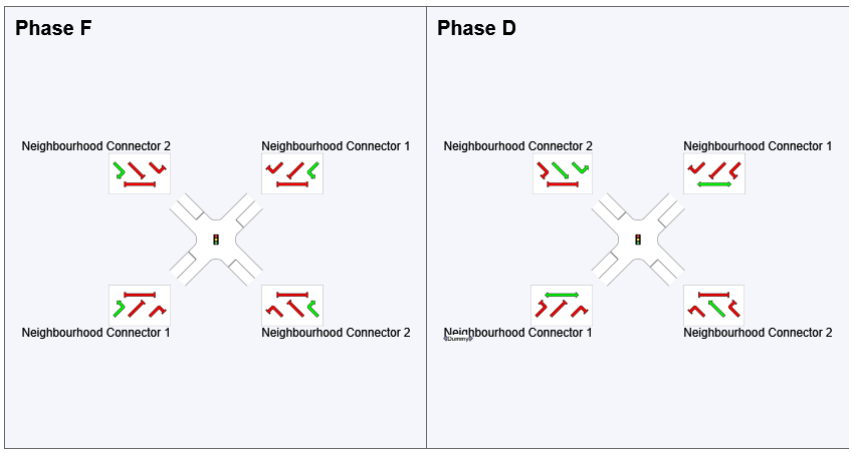
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

*** No green time has been calculated for this phase because the next phase starts during its intergreen time. This occurs with overlap phasing where there is no single movement connecting this phase to the next, or where the only such movement is a dummy movement with zero minimum green time specified. If a green time is required for this phase, specify a dummy movement with a non-zero minimum green time.

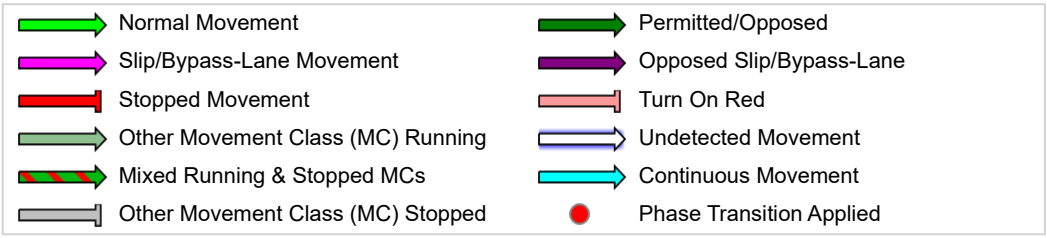
4 Phase Frequency specified by the user (phase times not specified).

Output Phase Sequence





REF: Reference Phase
VAR: Variable Phase



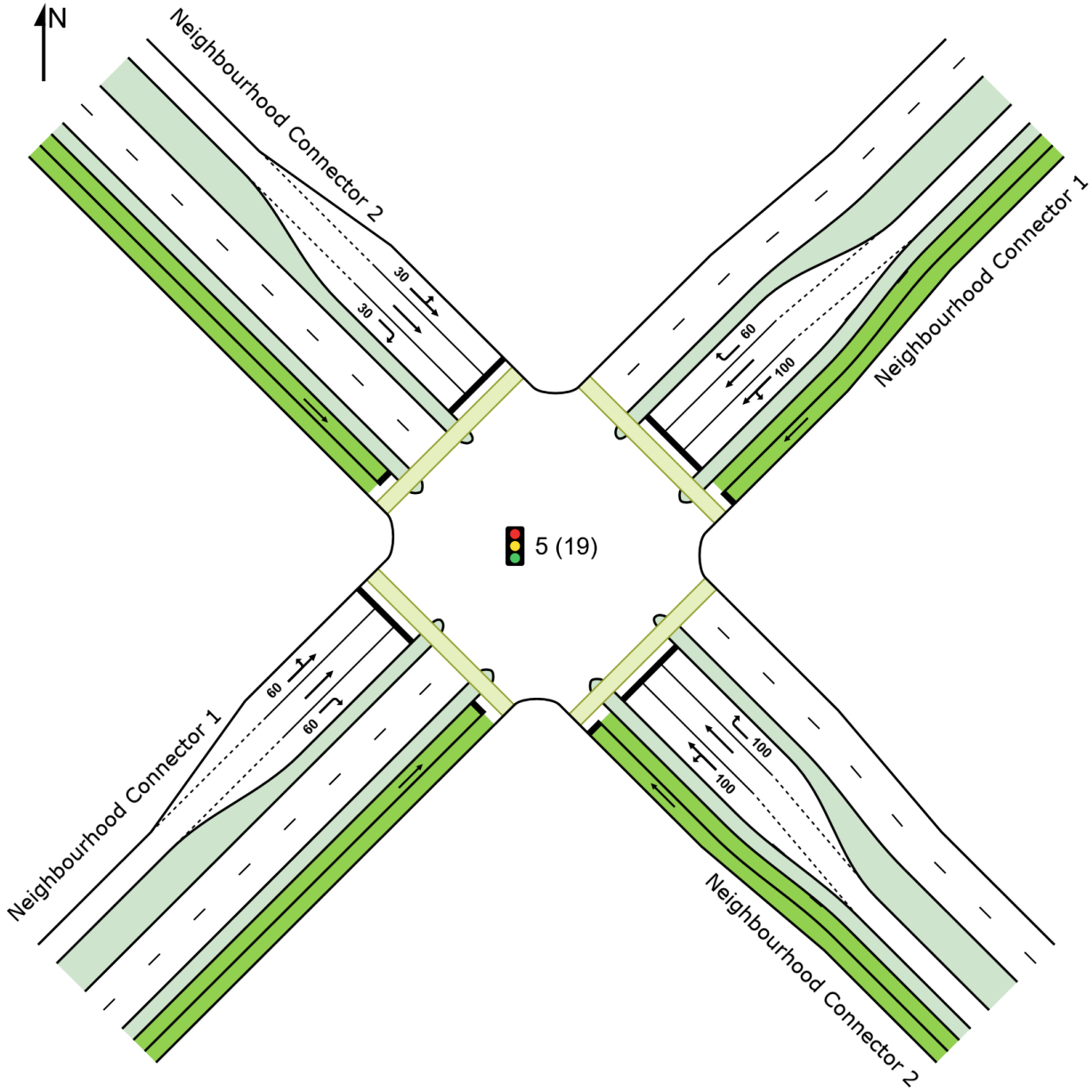
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SITE LAYOUT

Site: [5 (19)] PM Intersection 7 with contraflow bikepath (ERA Internal Development Traffic + Background Traffic)

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [5 (19)] PM Intersection 7 with contraflow bikepath (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Neighbourhood Connector 2															
21	L2	All MCs	74	0.0	74	0.0	0.473	61.0	LOS E	8.3	58.0	0.97	0.79	0.97	28.9
22	T1	All MCs	224	0.0	224	0.0	0.473	58.6	LOS E	10.1	70.5	0.95	0.77	0.95	30.6
23	R2	All MCs	77	0.0	77	0.0	0.535	75.3	LOS E	5.3	36.9	1.00	0.77	1.00	26.6
Approach			375	0.0	375	0.0	0.535	62.5	LOS E	10.1	70.5	0.96	0.77	0.96	29.3
NorthEast: Neighbourhood Connector 1															
24	L2	All MCs	52	0.0	52	0.0	0.155	23.7	LOS C	2.4	16.9	0.78	0.69	0.78	42.4
25	T1	All MCs	188	0.0	188	0.0	0.155	38.6	LOS D	5.5	38.2	0.63	0.53	0.63	43.3
26	R2	All MCs	561	0.0	561	0.0	0.883	79.5	LOS E	39.9	279.3	1.00	0.96	1.12	30.4
Approach			801	0.0	801	0.0	0.883	66.3	LOS E	39.9	279.3	0.90	0.84	0.98	28.4
NorthWest: Neighbourhood Connector 2															
27	L2	All MCs	361	0.0	361	0.0	* 0.478	57.7	LOS E	25.4	177.8	1.00	0.87	1.00	30.3
28	T1	All MCs	152	0.0	152	0.0	0.478	83.4	LOS F	25.4	177.8	0.96	0.78	0.96	30.6
29	R2	All MCs	11	0.0	11	0.0	0.073	79.4	LOS E	0.7	4.8	0.95	0.68	0.95	27.3
Approach			523	0.0	523	0.0	0.478	65.6	LOS E	25.4	177.8	0.99	0.84	0.99	28.4
SouthWest: Neighbourhood Connector 1															
30	L2	All MCs	11	0.0	11	0.0	* 0.180	54.6	LOS D	3.2	22.5	0.91	0.70	0.91	30.5
31	T1	All MCs	111	0.0	111	0.0	0.180	54.4	LOS D	3.6	25.2	0.89	0.69	0.89	31.1
32	R2	All MCs	49	0.0	49	0.0	0.313	72.4	LOS E	3.3	23.0	0.98	0.75	0.98	27.2
Approach			171	0.0	171	0.0	0.313	59.7	LOS E	3.6	25.2	0.92	0.70	0.92	29.8
All Vehicles			1869	0.0	1869	0.0	0.883	64.7	LOS E	39.9	279.3	0.94	0.81	0.97	28.7

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)

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. Qued	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec

SouthEast: Neighbourhood Connector 2												
P5	Full	60	63	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
NorthEast: Neighbourhood Connector 1												
P6	Full	60	63	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
NorthWest: Neighbourhood Connector 2												
P7	Full	60	63	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
SouthWest: Neighbourhood Connector 1												
P8	Full	60	63	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
All Pedestrians		240	253	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	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.

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PHASING SUMMARY

Site: [5 (19)] PM Intersection 7 with contraflow bikepath (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140.0 seconds (Site Optimum Cycle Time - Minimum Delay)
Site Scenario: 1 | Local Volumes

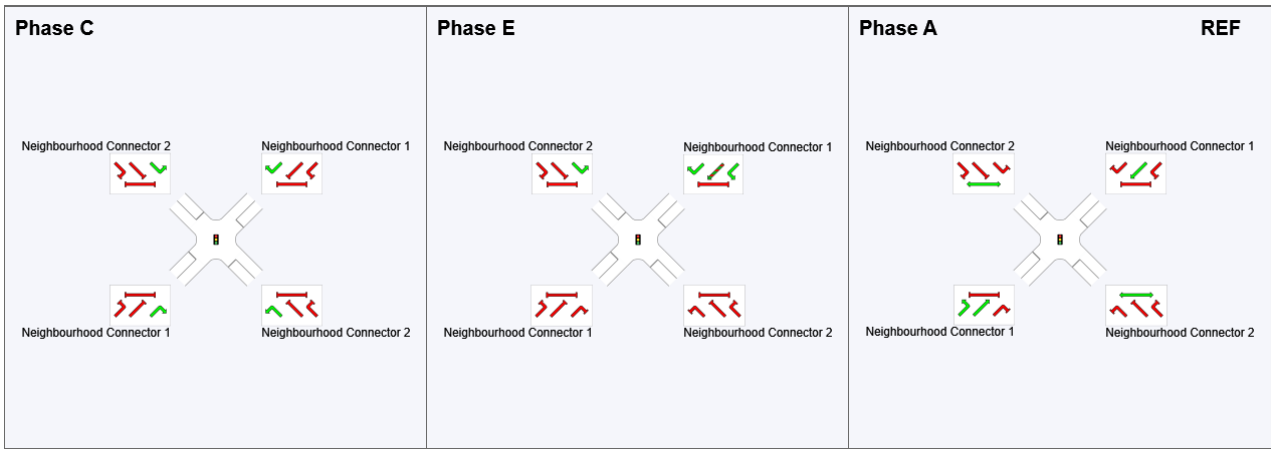
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Protected Signals 4 phase rotated
Input Phase Sequence: C, E, A, F, D
Output Phase Sequence: C, E, A, F, D
Reference Phase: Phase A

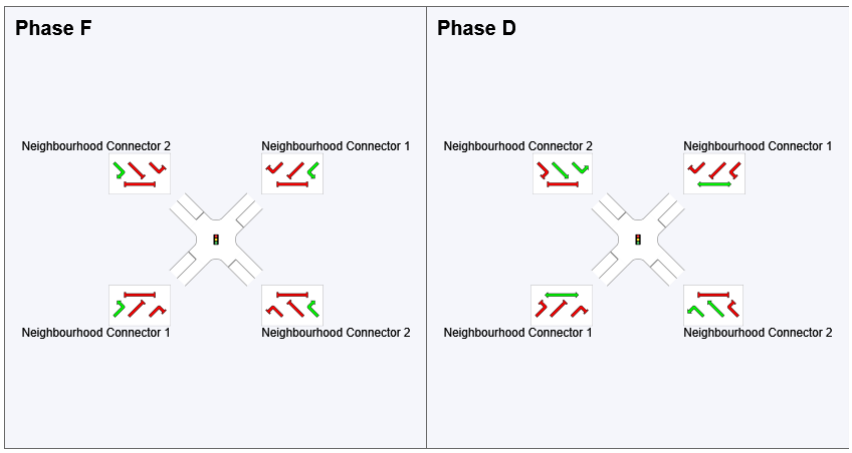
Phase Timing Summary

Phase	C	E	A	F	D
Phase Change Time (sec)	78.3	96.5	0.0	30.7	47.7
Green Time (sec)	12.1	37.5	24.7	11.0	24.7
Phase Time (sec)	18.1	43.5	30.7	17.0	30.7
Phase Split	13%	31%	22%	12%	22%
Phase Frequency (%)	100.0	100.0	100.0	100.0	100.0

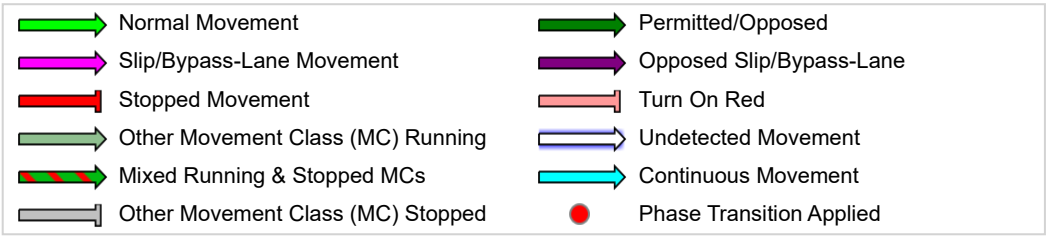
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence





REF: Reference Phase
VAR: Variable Phase



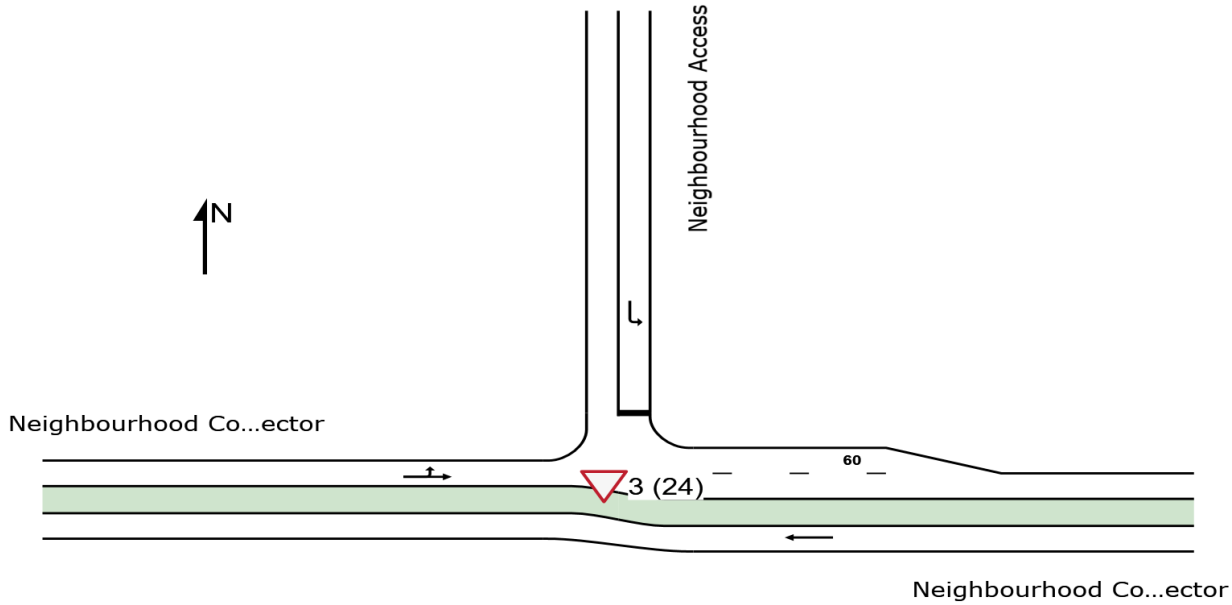
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SITE LAYOUT

Site: [3 (24)] AM Intersection 8 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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



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MOVEMENT SUMMARY

Site: [3 (24)] AM Intersection 8 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Neighbourhood Connector															
5	T1	All MCs	457	0.0	457	0.0	0.234	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			457	0.0	457	0.0	0.234	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
North: Neighbourhood Access															
7	L2	All MCs	35	0.0	35	0.0	0.081	15.3	LOS C	0.3	1.9	0.72	0.97	0.72	47.3
Approach			35	0.0	35	0.0	0.081	15.3	LOS C	0.3	1.9	0.72	0.97	0.72	47.3
West: Neighbourhood Connector															
10	L2	All MCs	9	0.0	9	0.0	0.457	5.7	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	881	0.0	881	0.0	0.457	0.2	LOS A	0.0	0.0	0.00	0.01	0.00	59.6
Approach			891	0.0	891	0.0	0.457	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.6
All Vehicles			1382	0.0	1382	0.0	0.457	0.6	NA	0.3	1.9	0.02	0.03	0.02	59.3

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.
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.

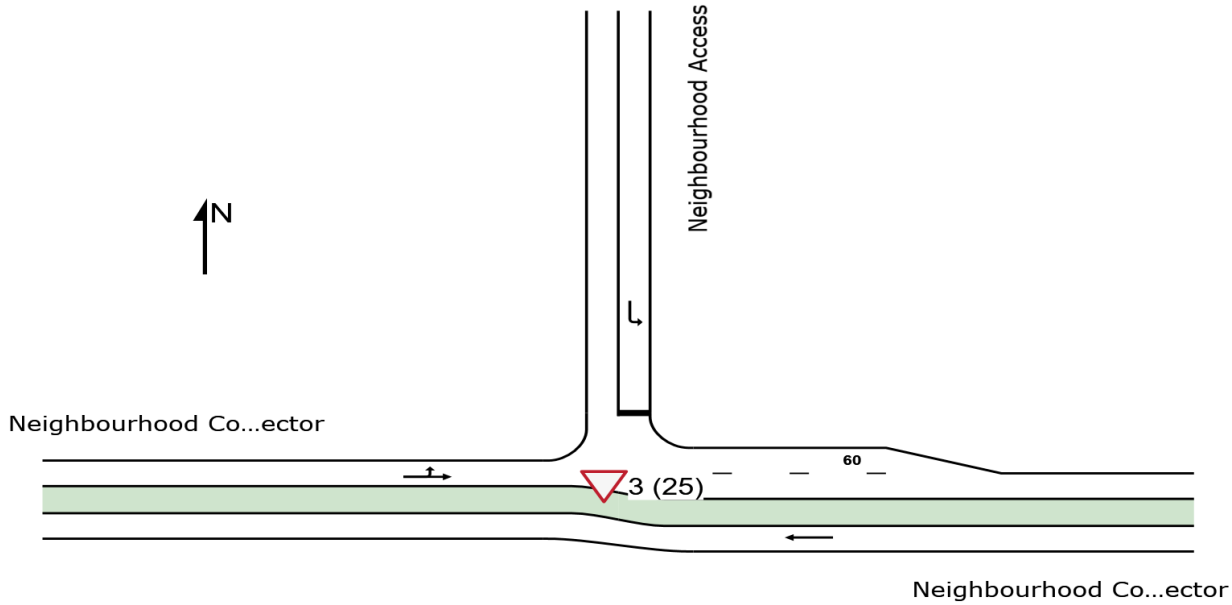
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SITE LAYOUT

Site: [3 (25)] PM Intersection 8 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [3 (25)] PM Intersection 8 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Neighbourhood Connector															
5	T1	All MCs	837	0.0	837	0.0	0.429	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			837	0.0	837	0.0	0.429	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.7
North: Neighbourhood Access															
7	L2	All MCs	19	0.0	19	0.0	0.024	10.8	LOS B	0.1	0.6	0.51	0.86	0.51	49.9
Approach			19	0.0	19	0.0	0.024	10.8	LOS B	0.1	0.6	0.51	0.86	0.51	49.9
West: Neighbourhood Connector															
10	L2	All MCs	19	0.0	19	0.0	0.287	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
11	T1	All MCs	540	0.0	540	0.0	0.287	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach			559	0.0	559	0.0	0.287	0.3	NA	0.0	0.0	0.00	0.02	0.00	59.6
All Vehicles			1415	0.0	1415	0.0	0.429	0.3	NA	0.1	0.6	0.01	0.02	0.01	59.5

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.
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.

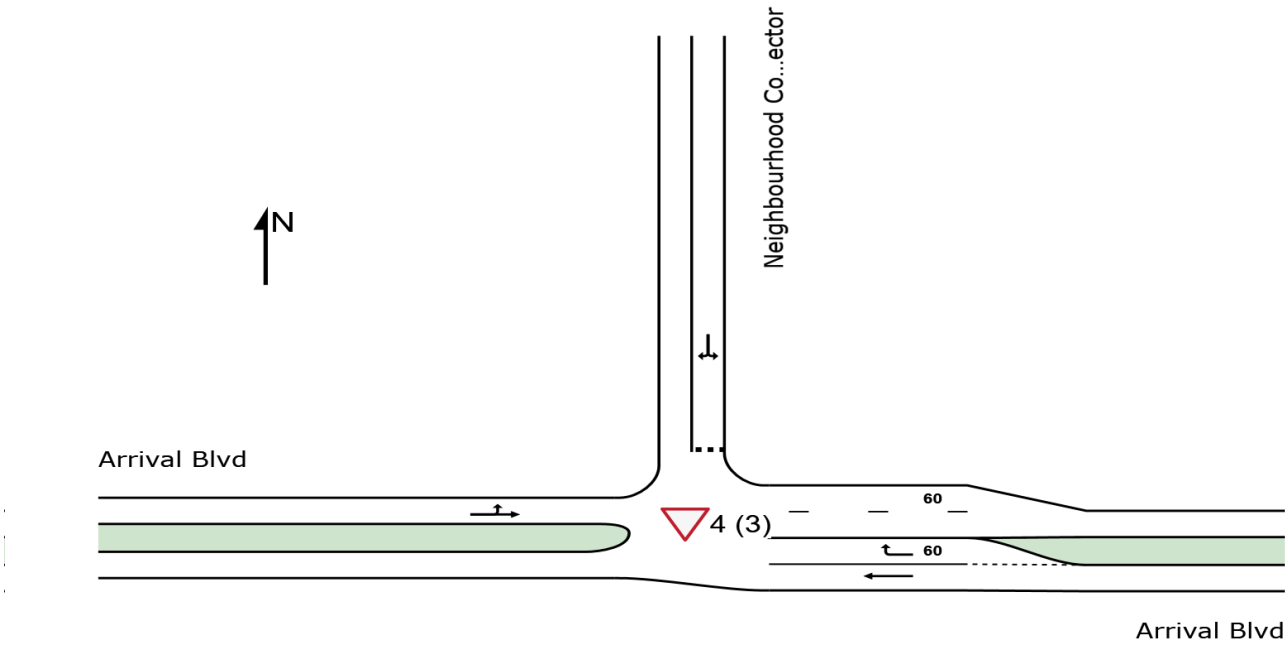
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SITE LAYOUT

Site: [4 (3)] AM Intersection 9 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [4 (3)] AM Intersection 9 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Arrival Blvd															
5	T1	All MCs	364	0.0	364	0.0	0.187	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	49	0.0	49	0.0	0.087	11.5	LOS B	0.3	2.3	0.70	0.81	0.70	48.6
Approach			414	0.0	414	0.0	0.187	1.4	NA	0.3	2.3	0.08	0.10	0.08	58.3
North: Neighbourhood Connector															
7	L2	All MCs	103	0.0	103	0.0	0.762	26.2	LOS D	4.5	31.2	0.94	1.27	2.02	36.7
9	R2	All MCs	93	0.0	93	0.0	0.762	47.2	LOS E	4.5	31.2	0.94	1.27	2.02	36.6
Approach			196	0.0	196	0.0	0.762	36.1	LOS E	4.5	31.2	0.94	1.27	2.02	36.6
West: Arrival Blvd															
10	L2	All MCs	36	0.0	36	0.0	0.489	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	57.0
11	T1	All MCs	916	0.0	916	0.0	0.489	0.2	LOS A	0.0	0.0	0.00	0.02	0.00	59.4
Approach			952	0.0	952	0.0	0.489	0.4	NA	0.0	0.0	0.00	0.02	0.00	59.3
All Vehicles			1561	0.0	1561	0.0	0.762	5.1	NA	4.5	31.2	0.14	0.20	0.28	54.8

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.
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.

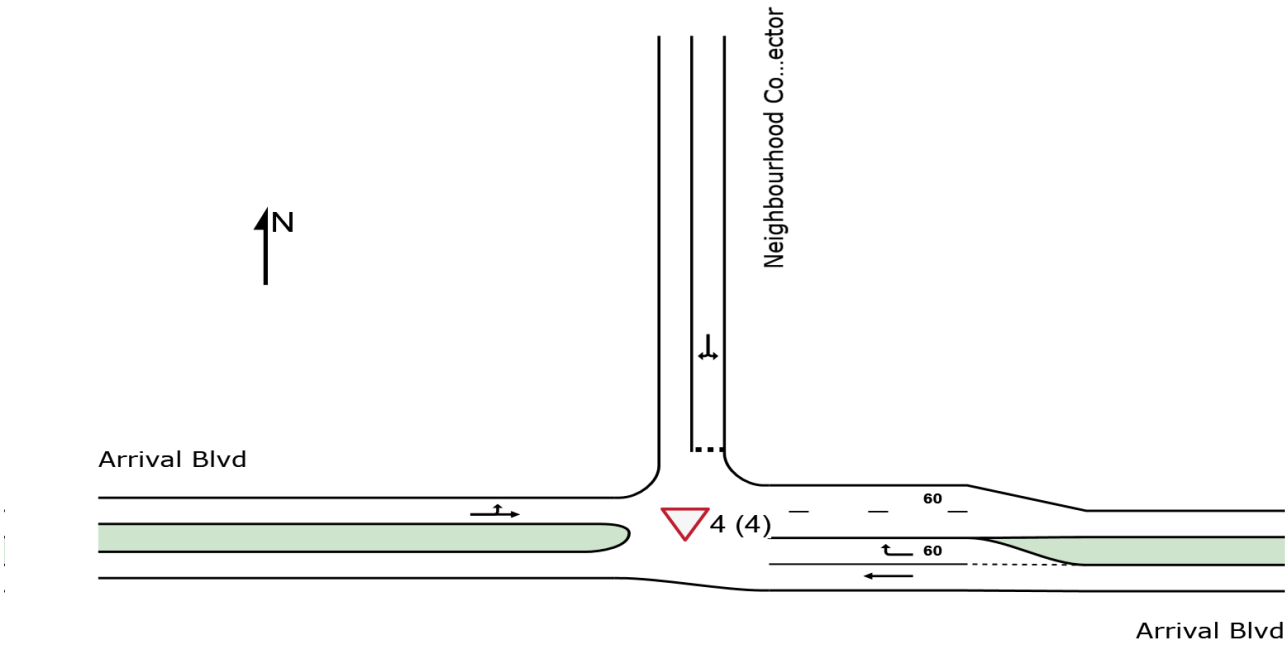
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SITE LAYOUT

Site: [4 (4)] PM Intersection 9 (ERA Internal Development Traffic + Background Traffic)

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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MOVEMENT SUMMARY

Site: [4 (4)] PM Intersection 9 (ERA Internal Development Traffic + Background Traffic)

Output produced by SIDRA INTERSECTION Version: 11.0.3.112

New Site
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
East: Arrival Blvd															
5	T1	All MCs	744	0.0	744	0.0	0.382	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	105	0.0	105	0.0	0.113	8.4	LOS A	0.5	3.4	0.58	0.72	0.58	50.7
Approach			849	0.0	849	0.0	0.382	1.2	NA	0.5	3.4	0.07	0.09	0.07	58.5
North: Neighbourhood Connector															
7	L2	All MCs	58	0.0	58	0.0	0.702	20.6	LOS C	3.7	26.0	0.93	1.22	1.78	36.1
9	R2	All MCs	93	0.0	93	0.0	0.702	48.2	LOS E	3.7	26.0	0.93	1.22	1.78	36.1
Approach			151	0.0	151	0.0	0.702	37.6	LOS E	3.7	26.0	0.93	1.22	1.78	36.1
West: Arrival Blvd															
10	L2	All MCs	77	0.0	77	0.0	0.328	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.7
11	T1	All MCs	559	0.0	559	0.0	0.328	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	59.2
Approach			636	0.0	636	0.0	0.328	0.8	NA	0.0	0.0	0.00	0.07	0.00	58.8
All Vehicles			1636	0.0	1636	0.0	0.702	4.4	NA	3.7	26.0	0.12	0.19	0.20	55.4

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.
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.

SIDRA INTERSECTION 11 | Copyright © 2000-2026 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: Jalahawi Consulting Pty Ltd | Licence: NETWORK / CLOUD | Processed: Wednesday, 28 October 2026 12:30:23 PM
Project: C:\Users\User\SynologyDrive\Jalahawi Project Files\SEQ-T-26-021\2. Analysis\Early Release Area - Traffic\Internal Intersection (New Layout Plan)\Internal ERA Intersection Analysis.sipx

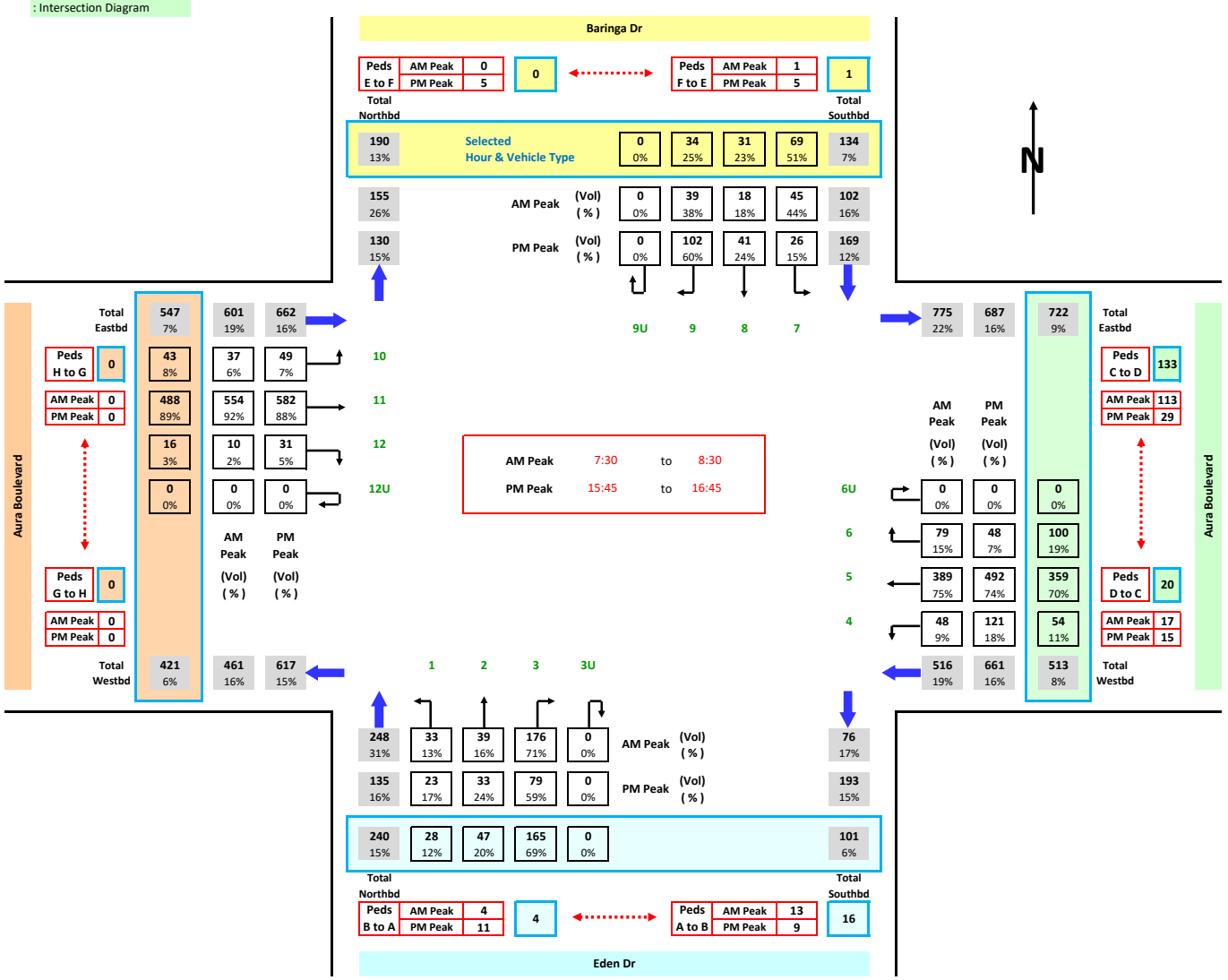
Appendix F - Baringa Analysis

Job No. : AUQLD16248
Client : Jalahawi
Suburb : Aura Boulevard
Location : 2. Eden Dr / Aura Boulevard / Baringa Dr

Day/Date : Thursday, 23 July 2026
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram

Hour Starting	Vehicle Type
7:45	All Vehicles

MATRIX Traffic and Transport Data

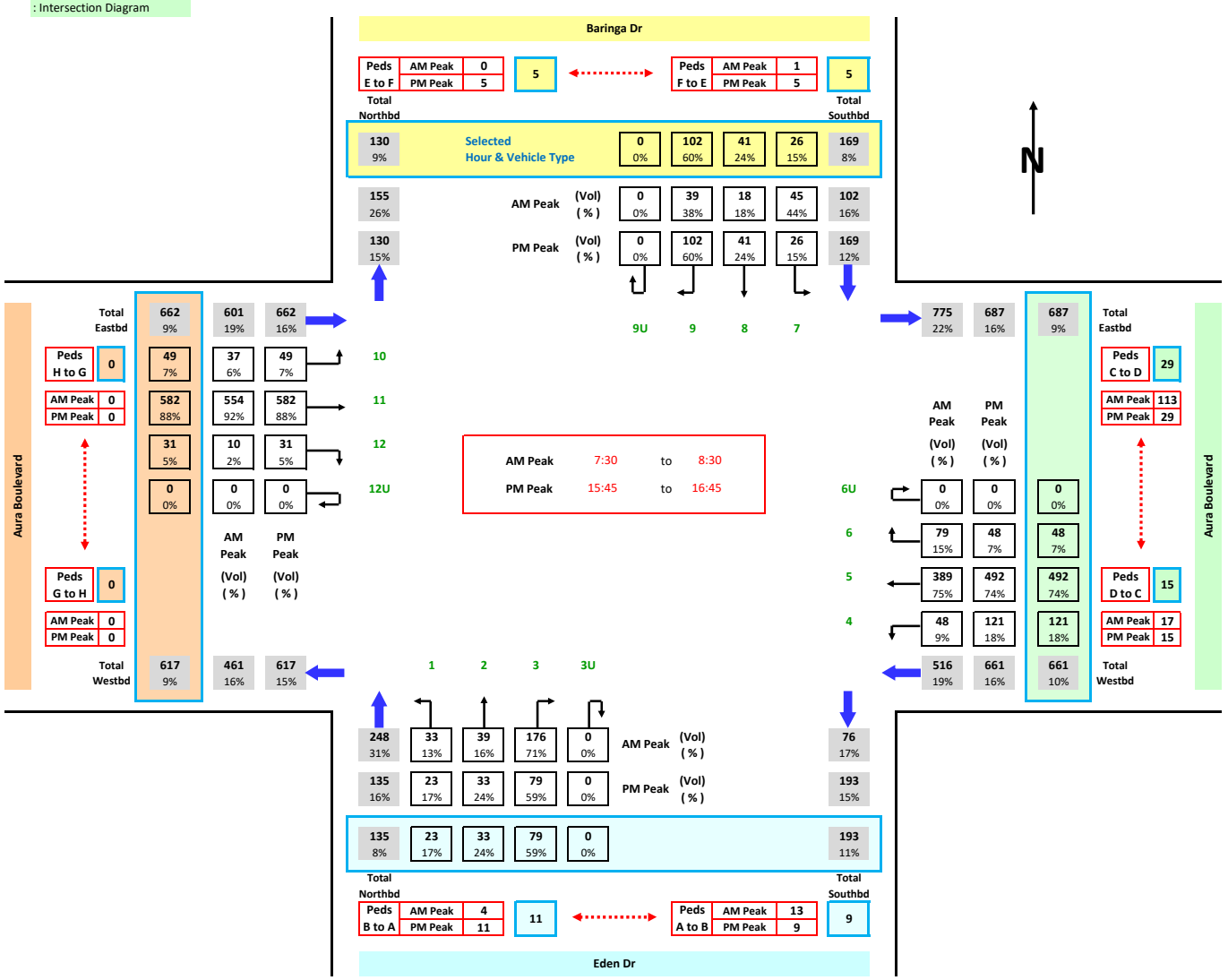


Job No. : AUQLD16248
Client : Jalahawi
Suburb : Aura Boulevard
Location : 2. Eden Dr / Aura Boulevard / Baringa Dr

Day/Date : Thursday, 23 July 2026
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram

Hour Starting	Vehicle Type
15:45	All Vehicles

MATRIX Traffic and Transport Data

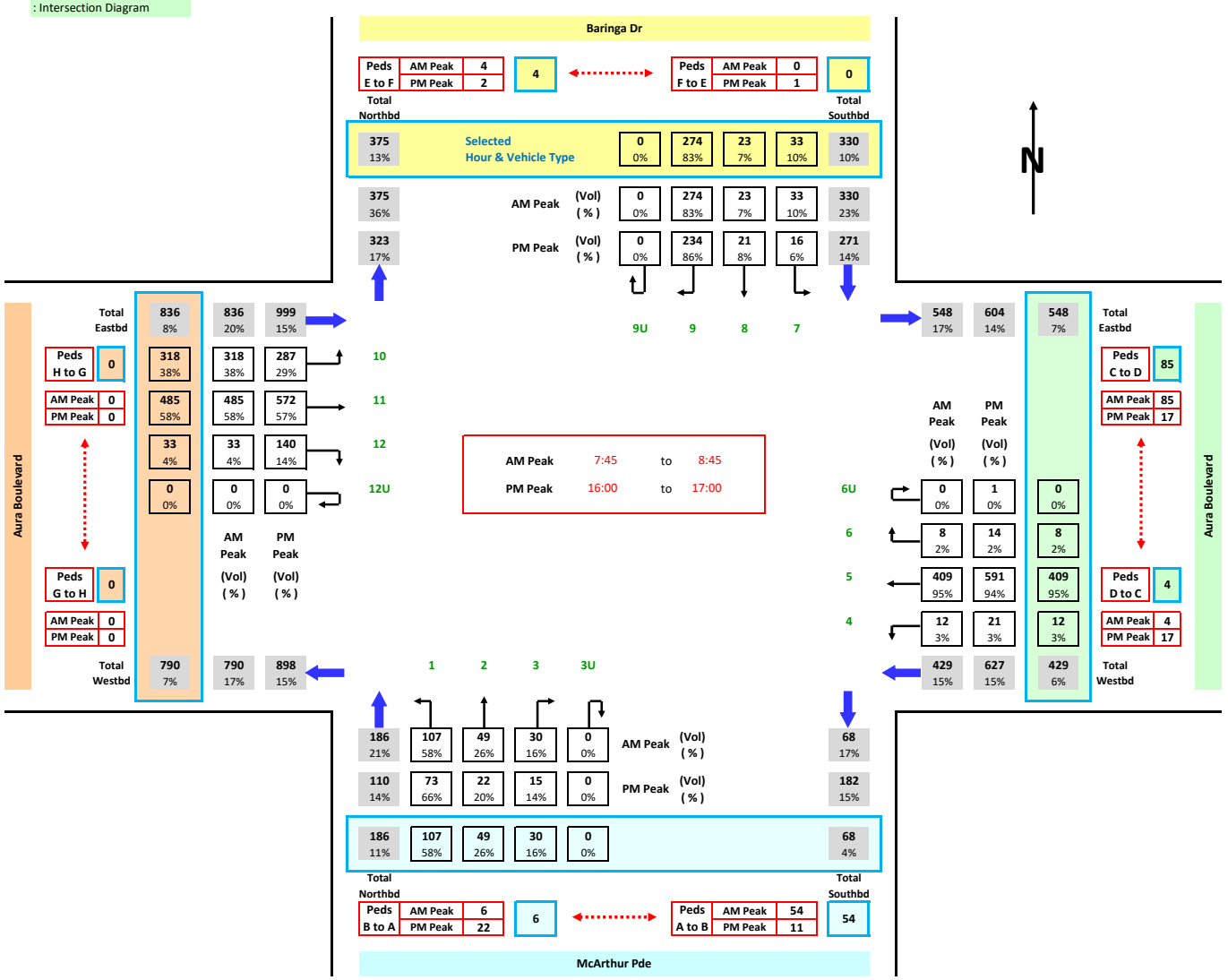


Job No. : AUQLD16248
Client : Jalahawi
Suburb : Aura Boulevard
Location : 1. McArthur Pde / Aura Boulevard / Baringa Dr

Day/Date : Thursday, 23 July 2026
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram

Hour Starting	Vehicle Type
7:45	All Vehicles

MATRIX Traffic and Transport Data

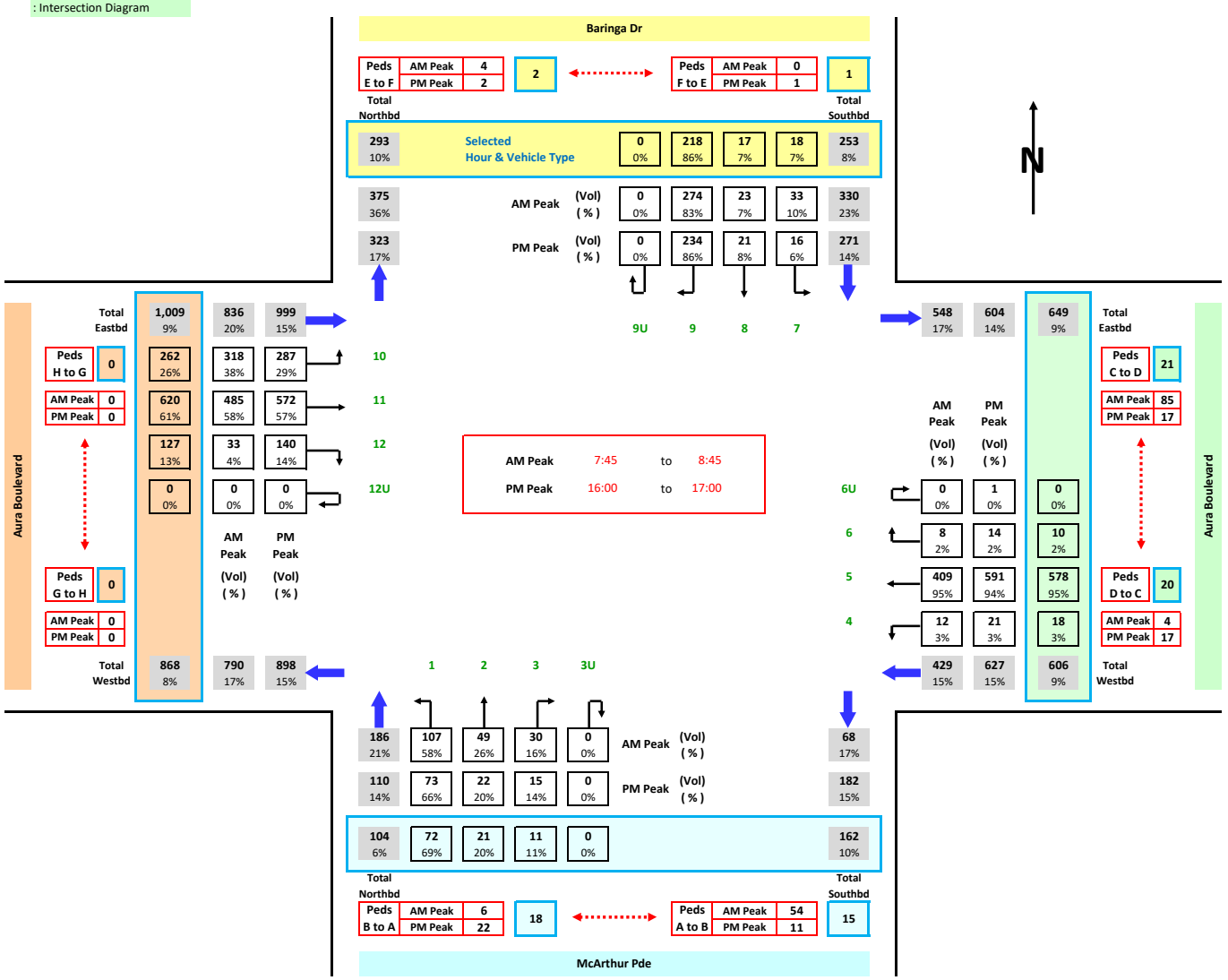


Job No. : AUQLD16248
Client : Jalahawi
Suburb : Aura Boulevard
Location : 1. McArthur Pde / Aura Boulevard / Baringa Dr

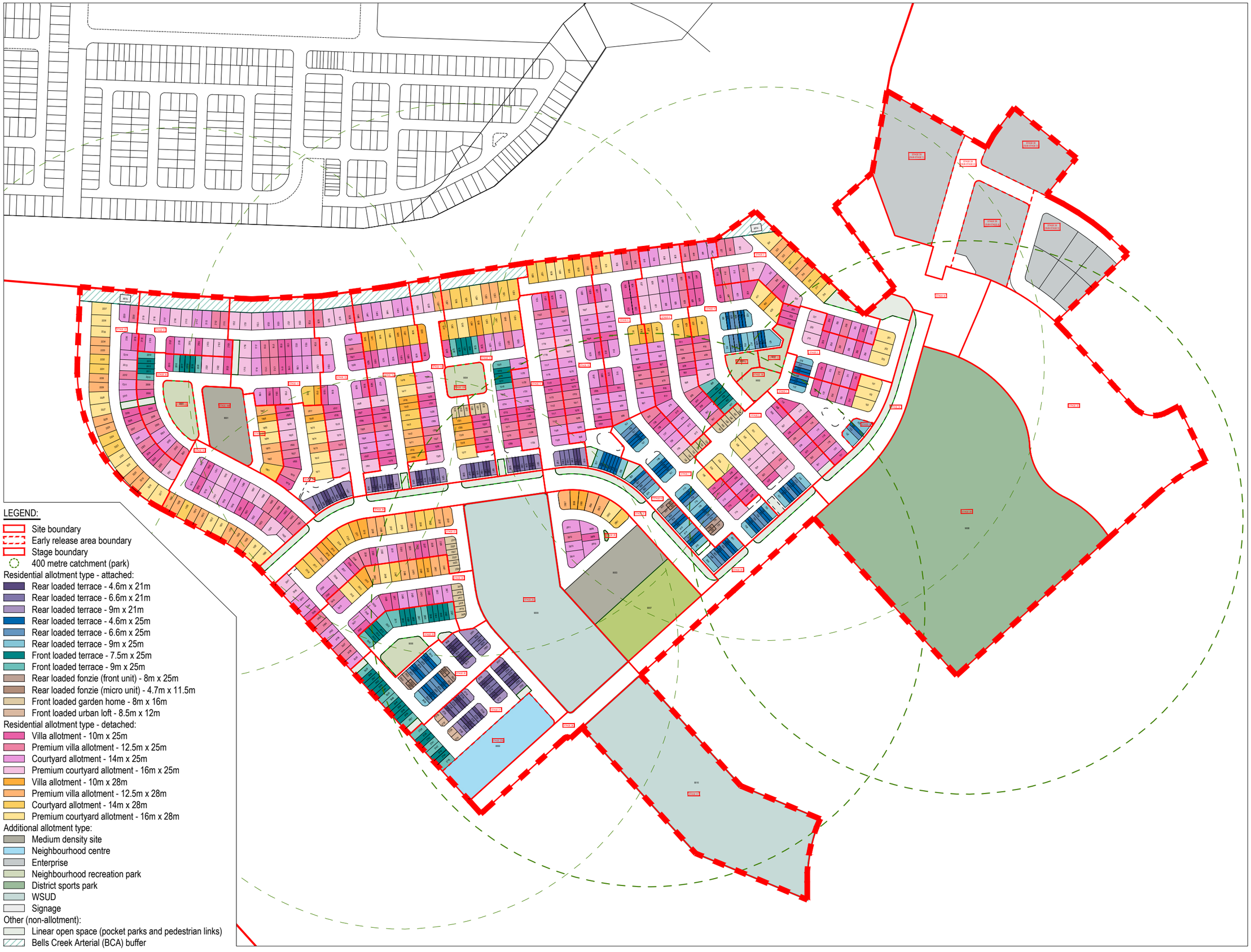
Day/Date : Thursday, 23 July 2026
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram

Hour Starting	Vehicle Type
15:45	All Vehicles

MATRIX Traffic and Transport Data



Appendix G - ERA Transport Plans



LEGEND:

- Site boundary
- Early release area boundary
- Stage boundary
- 400 metre catchment (park)

Residential allotment type - attached:

- Rear loaded terrace - 4.6m x 21m
- Rear loaded terrace - 6.6m x 21m
- Rear loaded terrace - 9m x 21m
- Rear loaded terrace - 4.6m x 25m
- Rear loaded terrace - 6.6m x 25m
- Rear loaded terrace - 9m x 25m
- Front loaded terrace - 7.5m x 25m
- Front loaded terrace - 9m x 25m
- Rear loaded fonzie (front unit) - 8m x 25m
- Rear loaded fonzie (micro unit) - 4.7m x 11.5m
- Front loaded garden home - 8m x 16m
- Front loaded urban loft - 8.5m x 12m

Residential allotment type - detached:

- Villa allotment - 10m x 25m
- Premium villa allotment - 12.5m x 25m
- Courtyard allotment - 14m x 25m
- Premium courtyard allotment - 16m x 25m
- Villa allotment - 10m x 28m
- Premium villa allotment - 12.5m x 28m
- Courtyard allotment - 14m x 28m
- Premium courtyard allotment - 16m x 28m

Additional allotment type:

- Medium density site
- Neighbourhood centre
- Enterprise
- Neighbourhood recreation park
- District sports park
- WSUD
- Signage

Other (non-allotment):

- Linear open space (pocket parks and pedestrian links)
- Bells Creek Arterial (BCA) buffer

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PROJECT

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CLIENT

Stockland

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AERIAL: NEARMAP

DRAFT

ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
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A	PRE	FOR CLIENT REVIEW	NV	NV	04/09/2026
B	PRE	EDQ ISSUE	NV	NV	25/09/2026
C	PRE	FOR COORDINATION	NV	NV	14/10/2026
D	PRE	DRAFT CLIENT ISSUE	NV	NV	23/10/2026
E	PRE	EDQ ISSUE	NV	NV	02/11/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

EARLY RELEASE AREA - PLAN OF SUBDIVISION

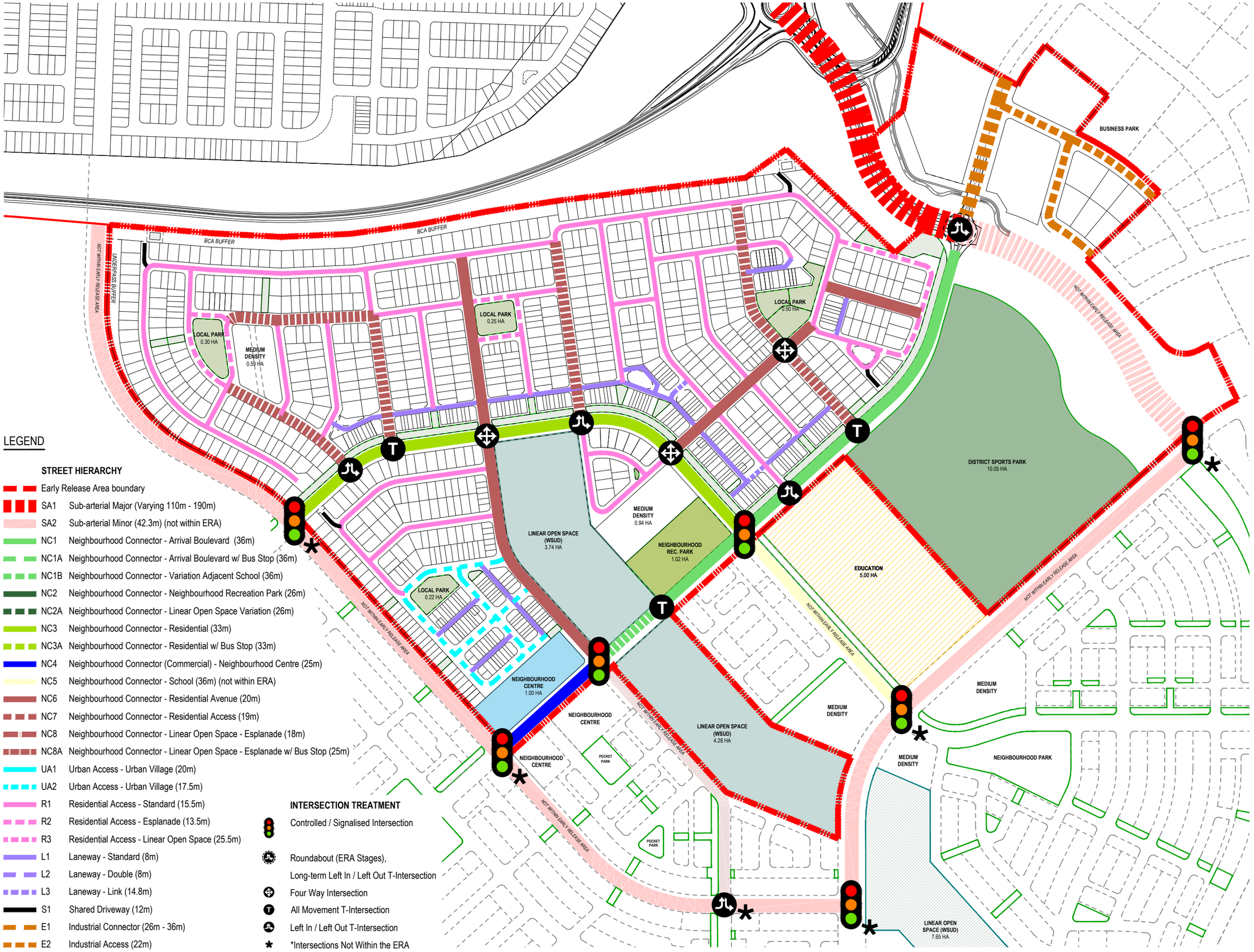
DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:5,0000 @ A3

NORTH

0 50 100 150 200

DRAWING NUMBER 240553 - 91

REVISION E



LEGEND

STREET HIERARCHY

- Early Release Area boundary
- SA1 Sub-arterial Major (Varying 110m - 190m)
- SA2 Sub-arterial Minor (42.3m) (not within ERA)
- NC1 Neighbourhood Connector - Arrival Boulevard (36m)
- NC1A Neighbourhood Connector - Arrival Boulevard w/ Bus Stop (36m)
- NC1B Neighbourhood Connector - Variation Adjacent School (36m)
- NC2 Neighbourhood Connector - Neighbourhood Recreation Park (26m)
- NC2A Neighbourhood Connector - Linear Open Space Variation (26m)
- NC3 Neighbourhood Connector - Residential (33m)
- NC3A Neighbourhood Connector - Residential w/ Bus Stop (33m)
- NC4 Neighbourhood Connector (Commercial) - Neighbourhood Centre (25m)
- NC5 Neighbourhood Connector - School (36m) (not within ERA)
- NC6 Neighbourhood Connector - Residential Avenue (20m)
- NC7 Neighbourhood Connector - Residential Access (19m)
- NC8 Neighbourhood Connector - Linear Open Space - Esplanade (18m)
- NC8A Neighbourhood Connector - Linear Open Space - Esplanade w/ Bus Stop (25m)
- UA1 Urban Access - Urban Village (20m)
- UA2 Urban Access - Urban Village (17.5m)
- R1 Residential Access - Standard (15.5m)
- R2 Residential Access - Esplanade (13.5m)
- R3 Residential Access - Linear Open Space (25.5m)
- L1 Laneway - Standard (8m)
- L2 Laneway - Double (8m)
- L3 Laneway - Link (14.8m)
- S1 Shared Driveway (12m)
- E1 Industrial Connector (26m - 36m)
- E2 Industrial Access (22m)

INTERSECTION TREATMENT

- Controlled / Signalised Intersection
- Roundabout (ERA Stages),
  Long-term Left In / Left Out T-Intersection
- Four Way Intersection
- All Movement T-Intersection
- Left In / Left Out T-Intersection
- *Intersections Not Within the ERA

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AERIAL: NEARMAP

DRAFT

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A	PRE	INTERSECTIONS UPDATE	NV	TD	04/08/2026
B	PRE	FOR COORDINATION	NV	NV	13/08/2026
C	PRE	FOR COORDINATION	JM	NV	31/08/2026
D	PRE	FOR COORDINATION	NV	NV	28/09/2026
E	PRE	FOR COORDINATION	NV	NV	21/10/2026
F	PRE	FOR COORDINATION	NV	NV	01/11/2026
G	PRE	INTERSECTION 1 UPDATE	NV	NV	03/11/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

EARLY RELEASE AREA - ROAD HIERARCHY PLAN

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:5,000 @ A3

NORTH

0 50 100 150 200

DRAWING NUMBER 240553 - 52

REVISION G

Legend:

- Early Release Area boundary
- 3.0m wide shared path
- 3.0m wide contraflow
- 2.0m wide pedestrian path
- 1.8m wide pedestrian path
- 1.5m wide pedestrian path
- 5.0m wide footpath
- 1.0m wide bike lane

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AERIAL: NEARMAP

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ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
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A	PRE	FOR COORDINATION	JM	NV	31/08/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

EARLY RELEASE AREA - CONNECTIVITY PLAN

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:5,000 @ A3

NORTH

0 50 100 150 200

DRAWING NUMBER 240553 - 78

REVISION A



Legend:

- Early Release Area boundary
- Interim public bus route
- 400m walking catchment
- B Indicative bus stop (Indented bay)

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B	PRE	FOR COORDINATION	JM	NV	31/08/2026
C	PRE	FOR COORDINATION	NV	NV	29/10/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

EARLY RELEASE AREA - PUBLIC TRANSPORT PLAN (INTERIM)

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:5,0000 @ A3

NORTH

0 50 100 150 200

DRAWING NUMBER 240553 - 79

REVISION C

SA1 - SUB-ARTERIAL MAJOR (VARIES)

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B	PRE	FOR COORDINATION	JM	NV	13/08/2026
C	PRE	FOR COORDINATION	JM	NV	27/08/2026
D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

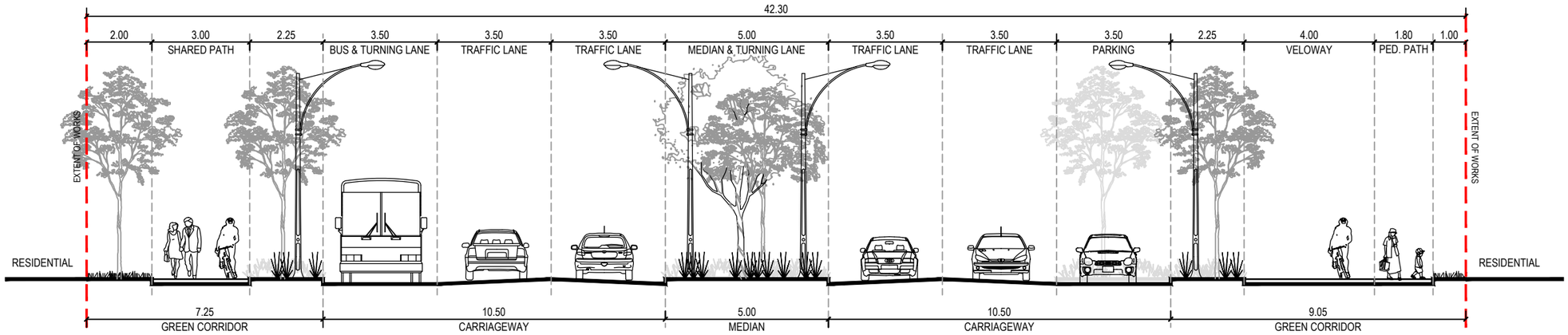
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - SA1 - SUB-ARTERIAL MAJOR

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 54
REVISION D



SA2 - SUB-ARTERIAL MINOR (42.30m)

NOTES:

1. NOT PART OF ERA
2. CONSISTENT WITH AURA PRECINCT 17-19 POD - SUB-ARTERIAL 3A

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C	PRE	FOR COORDINATION	JM	NV	27/08/2026
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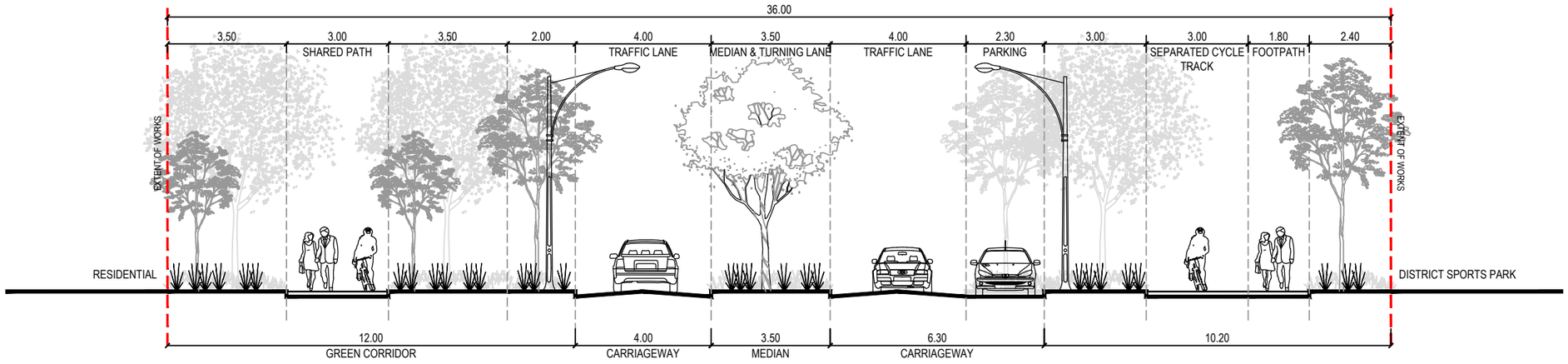
DRAWING TITLE

ROAD CROSS SECTIONS - SA2 - SUB-ARTERIAL MINOR

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 55

REVISION D



NC1 - NEIGHBOURHOOD CONNECTOR - ARRIVAL BOULEVARD (36.0m)

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PROJECT

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ADJOINING CADASTRE: QSPATIAL
AERIAL: NEARMAP

DRAFT

ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	DRAFT	JM	TD	28/07/2026
A	PRE	DRAFT	JM	NV	05/08/2026
B	PRE	FOR COORDINATION	JM	NV	13/08/2026
C	PRE	FOR COORDINATION	JM	NV	27/08/2026
D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

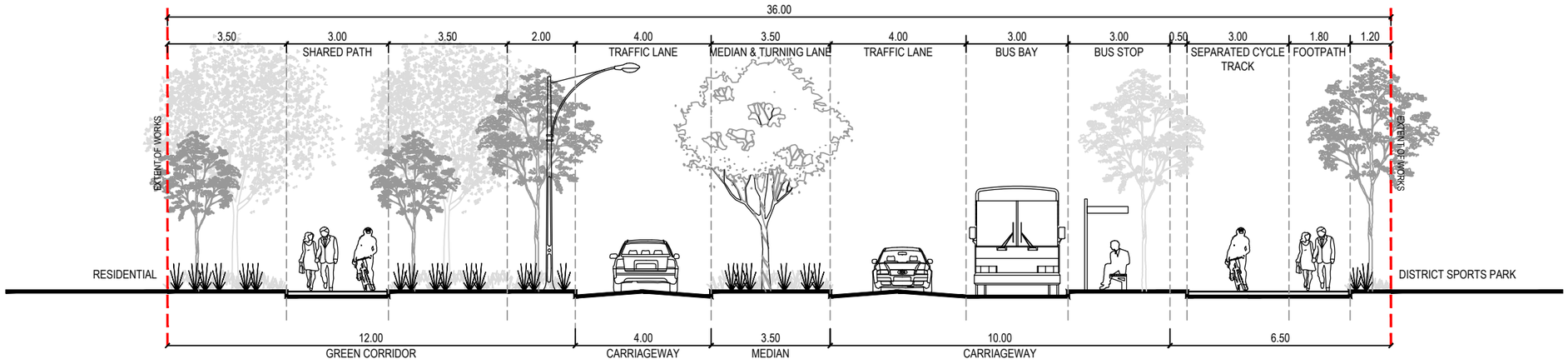
DRAWING TITLE

ROAD CROSS SECTIONS - NC1 - NEIGHBOURHOOD CONNECTOR - ARRIVAL BOULEVARD

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 56

REVISION D



NC1A - NEIGHBOURHOOD CONNECTOR - ARRIVAL BOULEVARD WITH BUS STOP (36.0m)

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PROJECT

AURA SOUTH

CLIENT

Stockland

NOTES

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ADJOINING CADASTRE: QSPATIAL
AERIAL: NEARMAP

DRAFT

ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	FOR COORDINATION	JM	NV	27/08/2026
A	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

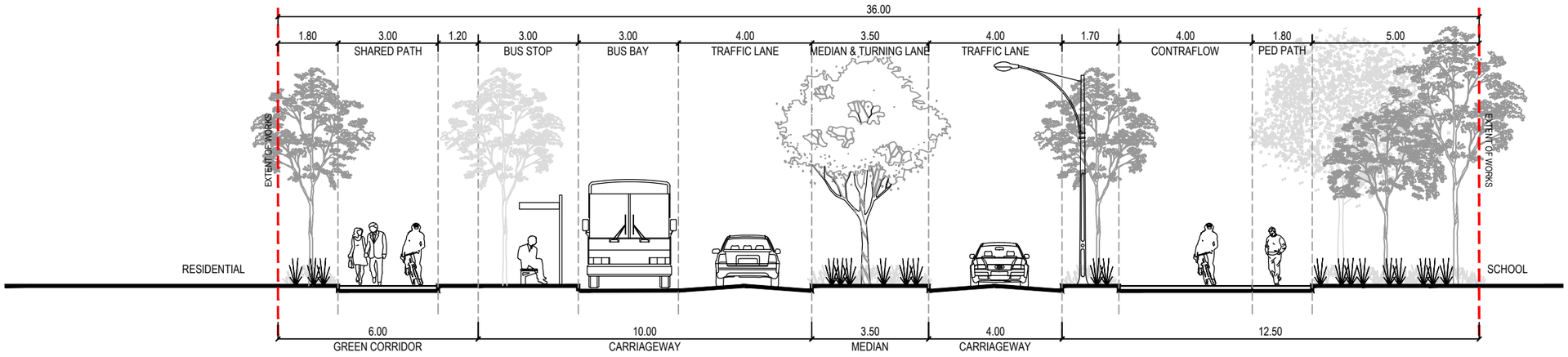
DRAWING TITLE

ROAD CROSS SECTIONS - NC1A - NEIGHBOURHOOD CONNECTOR - ARRIVAL BOULEVARD WITH BUS STOP

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 57

REVISION A



NC1B - NEIGHBOURHOOD CONNECTOR - VARIATION ADJACENT SCHOOL (36.0m)

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AERIAL: NEARMAP

DRAFT

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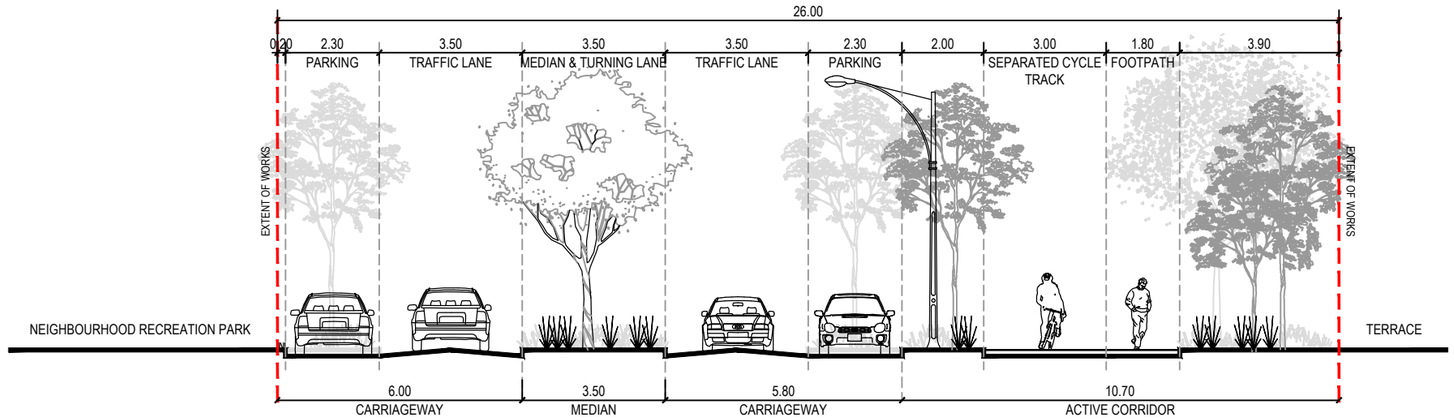
DRAWING TITLE

ROAD CROSS SECTIONS - NC2 - NEIGHBOURHOOD CONNECTOR - VARIATION ADJACENT SCHOOL

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER
240553 - 58

REVISION
A



NC2 - NEIGHBOURHOOD CONNECTOR - NEIGHBOURHOOD RECREATION PARK (26.0m)

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AERIAL: NEARMAP

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D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

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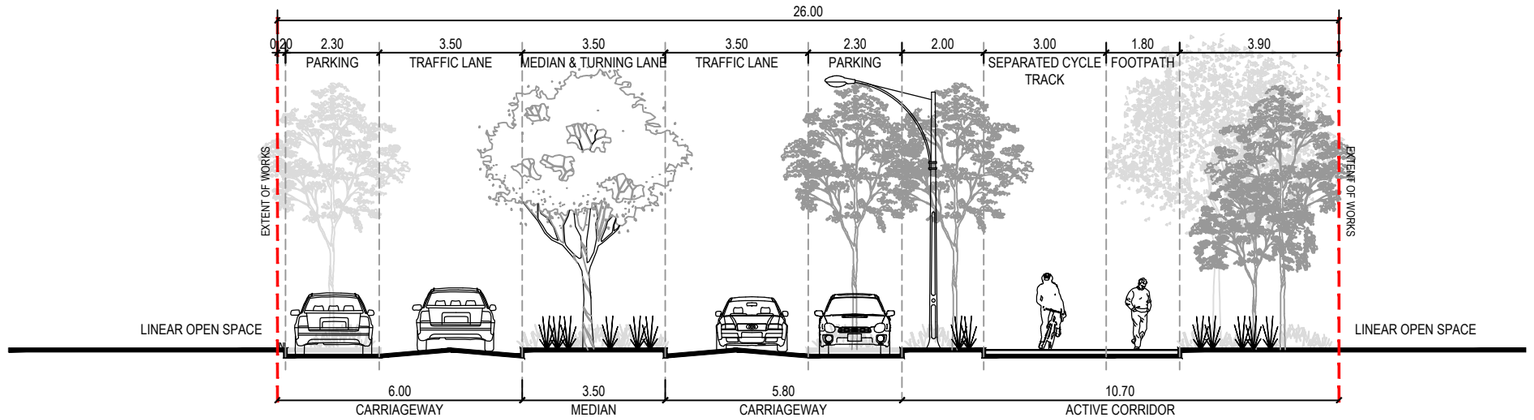
DRAWING TITLE

ROAD CROSS SECTIONS - NC2 - NEIGHBOURHOOD CONNECTOR - NEIGHBOURHOOD RECREATION PARK

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 59

REVISION D



NC2A - NEIGHBOURHOOD CONNECTOR - LINEAR OPEN SPACE VARIATION (26.0m)

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PROJECT

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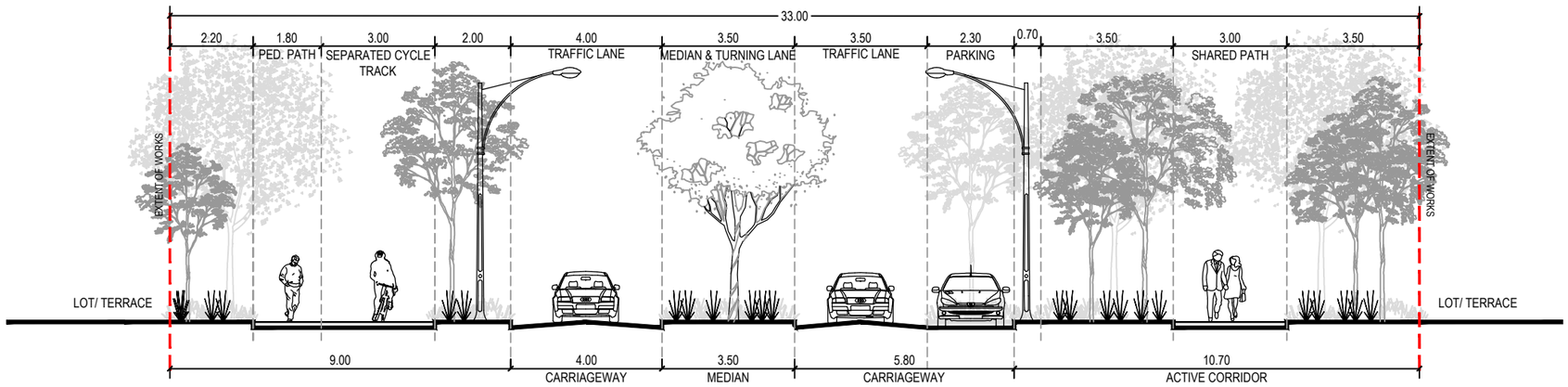
DRAWING TITLE

ROAD CROSS SECTIONS - NC2A - NEIGHBOURHOOD CONNECTOR - LINEAR OPEN SPACE VARIATION

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 60

REVISION D



NC3 - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL (33.0m)

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PROJECT

AURA SOUTH

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AERIAL: NEARMAP

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ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	FOR DISCUSSION	NV	TD	02/10/2026
A	PRE	FOR DISCUSSION	NV	TD	08/10/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

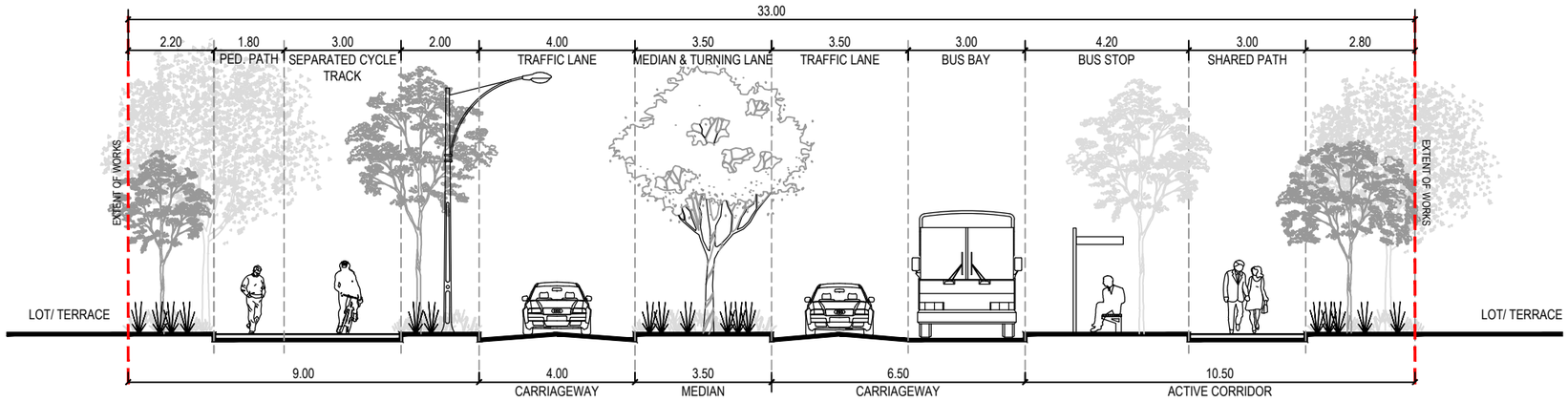
DRAWING TITLE

ROAD CROSS SECTIONS - NC3 - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL (OPTION)

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 126

REVISION A



NC3A - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL WITH BUS STOP (33.0m)

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PROJECT

AURA SOUTH

CLIENT

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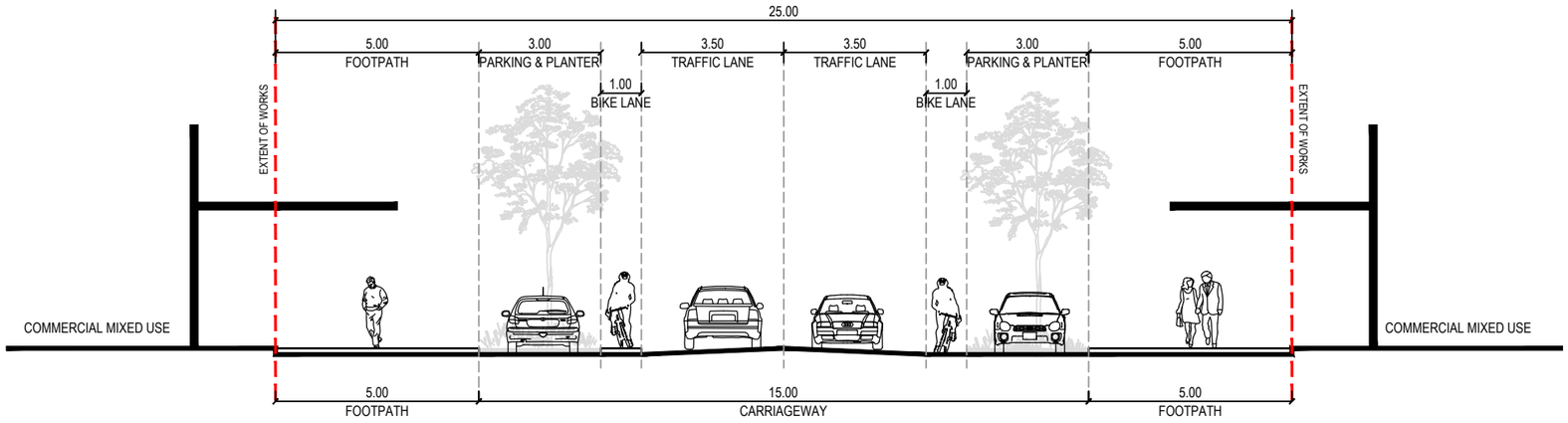
DRAWING TITLE

ROAD CROSS SECTIONS - NC3A - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL WITH BUS STOP (OPTION)

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 127

REVISION A



NC4A - NEIGHBOURHOOD CONNECTOR (COMMERCIAL) - NEIGHBOURHOOD CENTRE (25.0m)

NOTE:

1. CONSISTENT WITH EDQ GUIDELINE 06 - CENTRE ACCESS STREET

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ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	DRAFT	JM	TD	28/07/2026
A	PRE	DRAFT	JM	NV	05/08/2026
B	PRE	FOR COORDINATION	JM	NV	13/08/2026
C	PRE	FOR COORDINATION	JM	NV	27/08/2026
D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

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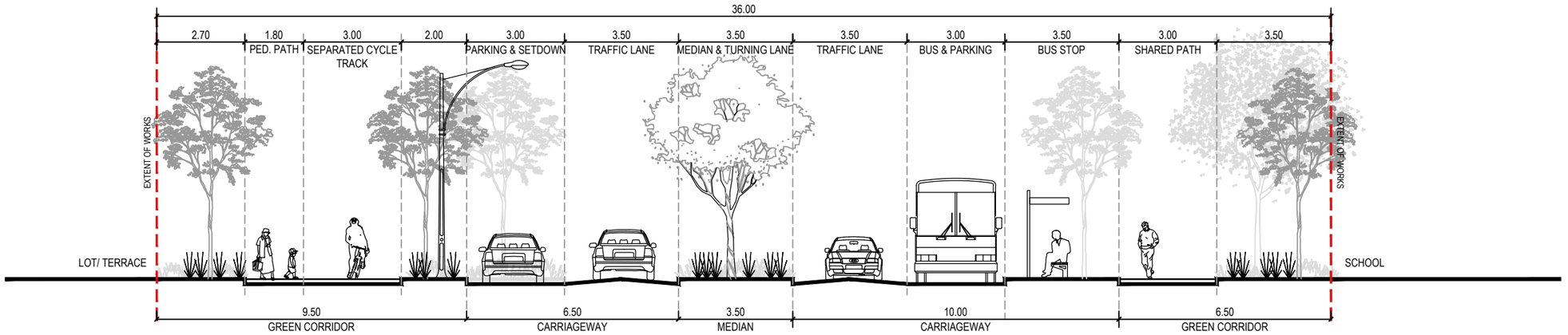
DRAWING TITLE

ROAD CROSS SECTIONS - NC4A - NEIGHBOURHOOD CONNECTOR - NEIGHBOURHOOD CENTRE

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 63

REVISION D



NC5 - NEIGHBOURHOOD CONNECTOR - SCHOOL (36.0m)

NOTE:
1. NOT WITHIN ERA

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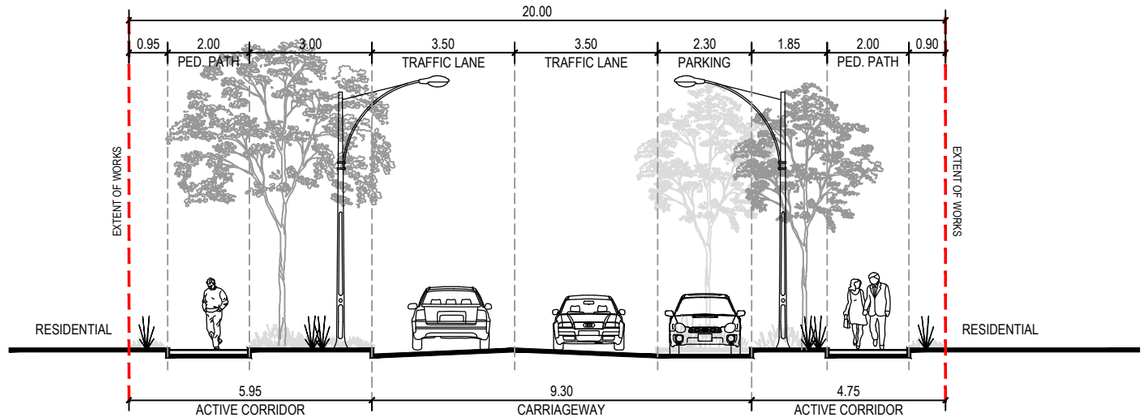
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - NC5 - NEIGHBOURHOOD CONNECTOR - SCHOOL

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 66
REVISION D



NC6 - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL AVENUE (20.0m)

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D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

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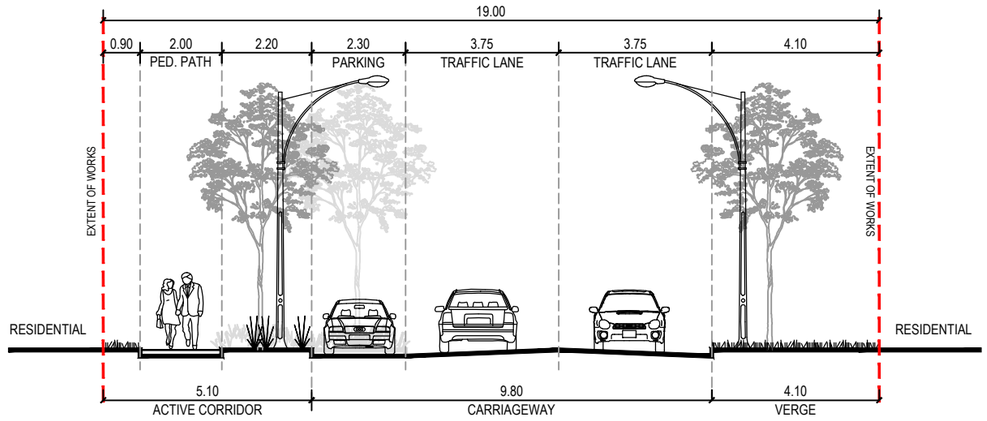
DRAWING TITLE

ROAD CROSS SECTIONS - NC6 - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL AVENUE

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 67

REVISION D



NC7 - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL ACCESS (19.0m)

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D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

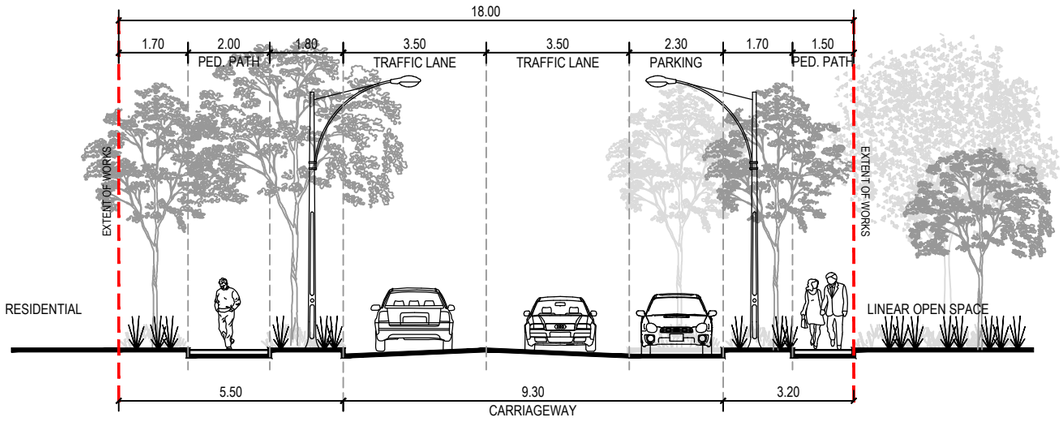
DRAWING TITLE

ROAD CROSS SECTIONS - NC7 - NEIGHBOURHOOD CONNECTOR - RESIDENTIAL ACCESS

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 68

REVISION D



NC8 - NEIGHBOURHOOD CONNECTOR - LINEAR OPEN SPACE - ESPLANADE (18.0m)

NOTE:

1. ASSUMES BICYCLE PATH IS INTEGRATED WITHIN LINEAR OPEN SPACE

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PROJECT

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ADJOINING CADASTRE: QSPATIAL
AERIAL: NEARMAP

DRAFT

ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	DRAFT	JM	TD	28/07/2026
A	PRE	DRAFT	JM	NV	05/08/2026
B	PRE	FOR COORDINATION	JM	NV	13/08/2026
C	PRE	FOR COORDINATION	JM	NV	27/08/2026
D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

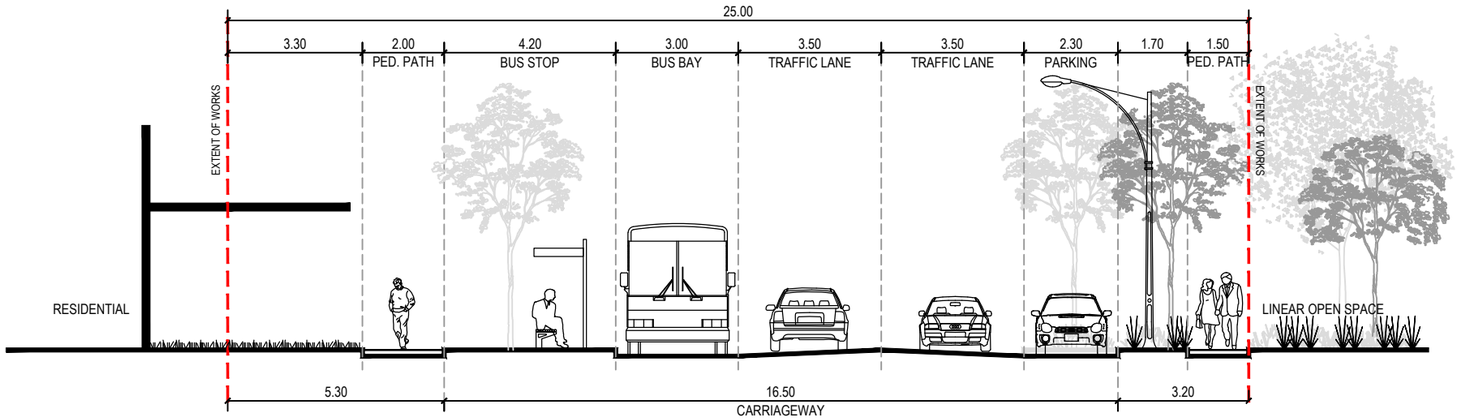
DRAWING TITLE

ROAD CROSS SECTIONS - NC8 - NEIGHBOURHOOD CONNECTOR - LINEAR OPEN SPACE - ESPLANADE

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 69

REVISION D



NC8A - NEIGHBOURHOOD CONNECTOR - LINEAR OPEN SPACE - ESPLANADE WITH BUS STOP (25.0m)

NOTE:

1. ASSUMES BICYCLE PATH IS INTEGRATED WITHIN LINEAR OPEN SPACE

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PROJECT

AURA SOUTH

CLIENT

Stockland

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AERIAL: NEARMAP

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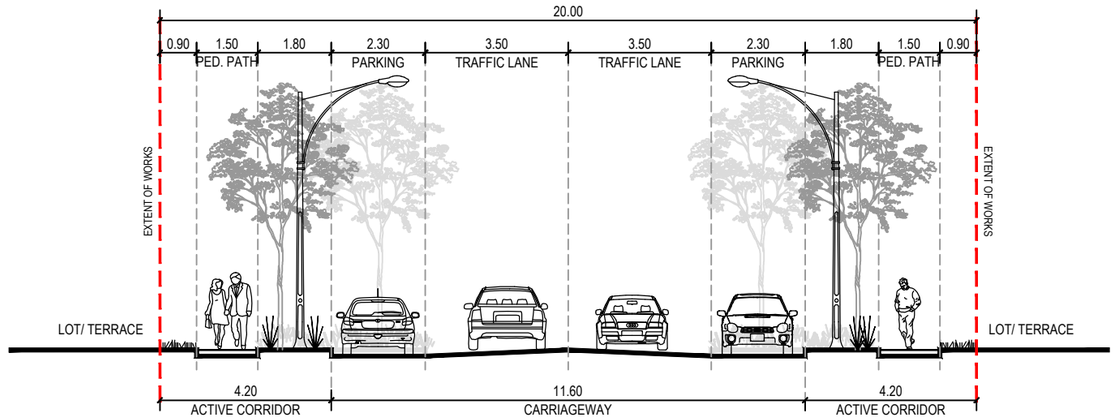
DRAWING TITLE

ROAD CROSS SECTIONS - NC8A - NEIGHBOURHOOD CONNECTOR - LINEAR OPEN SPACE - ESPLANADE WITH BUS STOP

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 70

REVISION A



UA1 - URBAN ACCESS - URBAN VILLAGE (20.0m)

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PROJECT

AURA SOUTH

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AERIAL: NEARMAP

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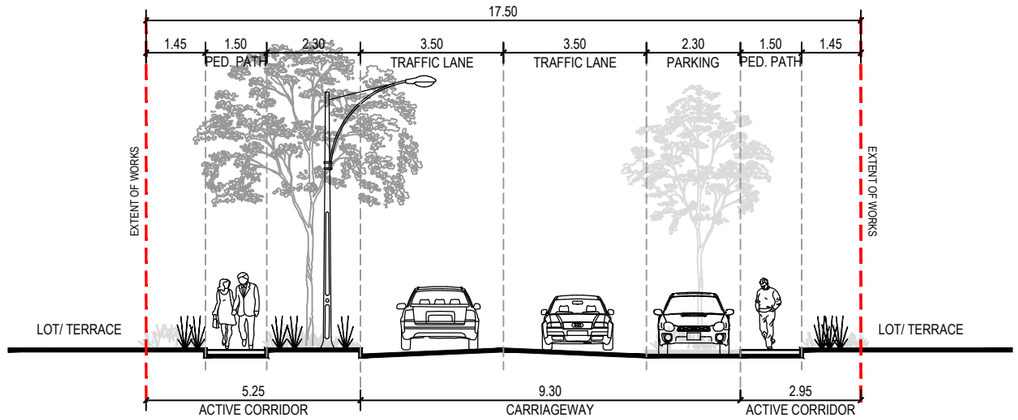
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - UA1 - URBAN ACCESS - URBAN VILLAGE

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 71
REVISION D



UA2 - URBAN ACCESS - URBAN VILLAGE (17.5m)

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PROJECT

AURA SOUTH

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AERIAL: NEARMAP

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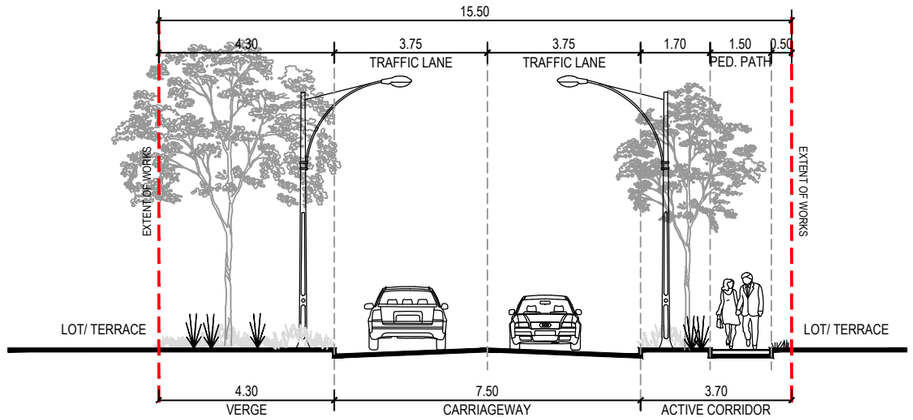
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - UA2 - URBAN ACCESS - URBAN VILLAGE

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 72
REVISION D



R1- RESIDENTIAL ACCESS - STANDARD (15.5m)

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PROJECT

AURA SOUTH

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AERIAL: NEARMAP

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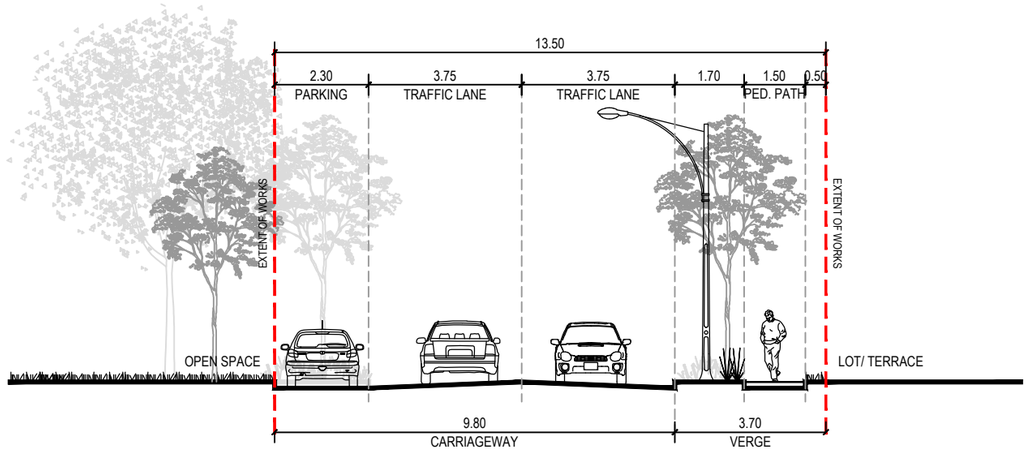
DRAWING TITLE

ROAD CROSS SECTIONS - RS1- RESIDENTIAL ACCESS - STANDARD

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 73

REVISION D



R2 - RESIDENTIAL ACCESS - ESPLANADE (13.5m)

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PROJECT

AURA SOUTH

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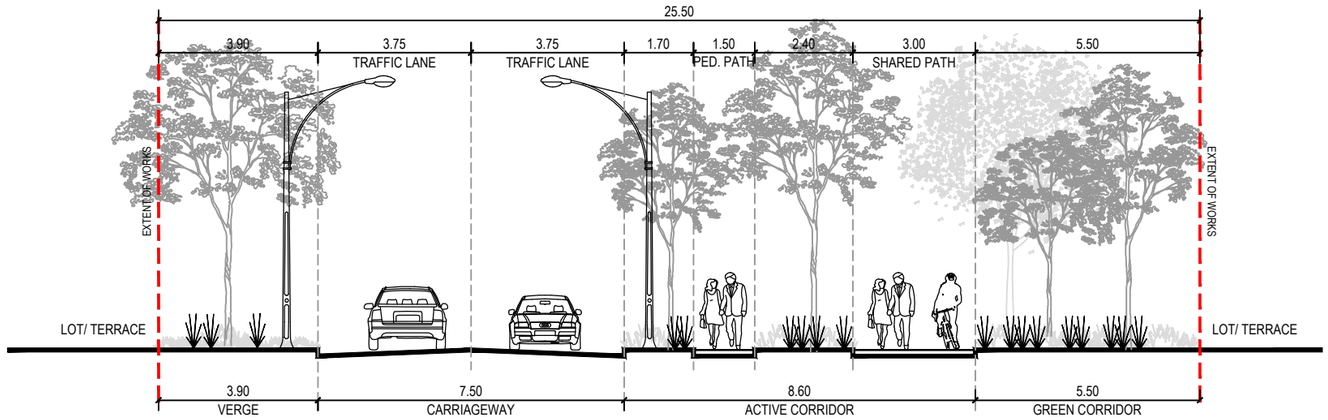
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - R2 - RESIDENTIAL ACCESS - ESPLANADE

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 74
REVISION D



R3 - RESIDENTIAL ACCESS - LINEAR OPEN SPACE (25.5m)

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PROJECT

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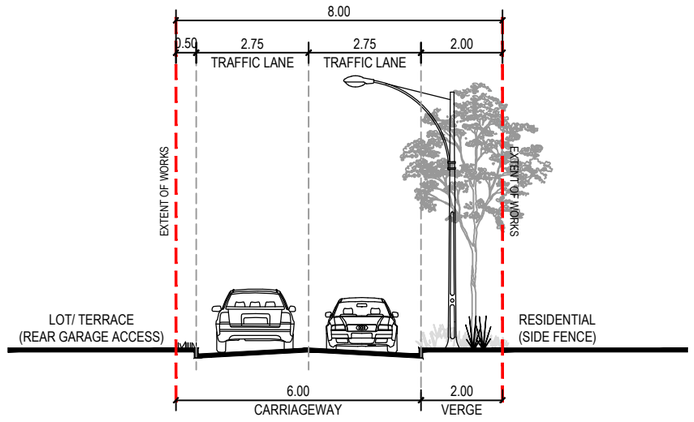
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - R3 - RESIDENTIAL ACCESS - LINEAR OPEN SPACE

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 75
REVISION D



L1 - LANEWAY - STANDARD (SINGLE LOADED) (8.00m)

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PROJECT

AURA SOUTH

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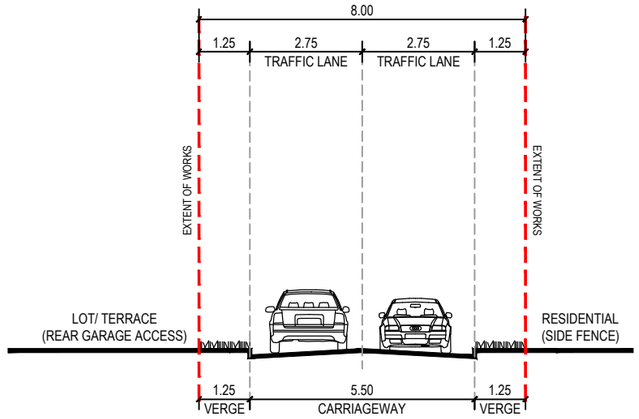
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - L1 - LANEWAY - STANDARD SINGLE LOADED

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 76
REVISION D



L2 - LANEWAY - STANDARD (DOUBLE LOADED) (8.00m)

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PROJECT

AURA SOUTH

CLIENT

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DRAFT

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D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

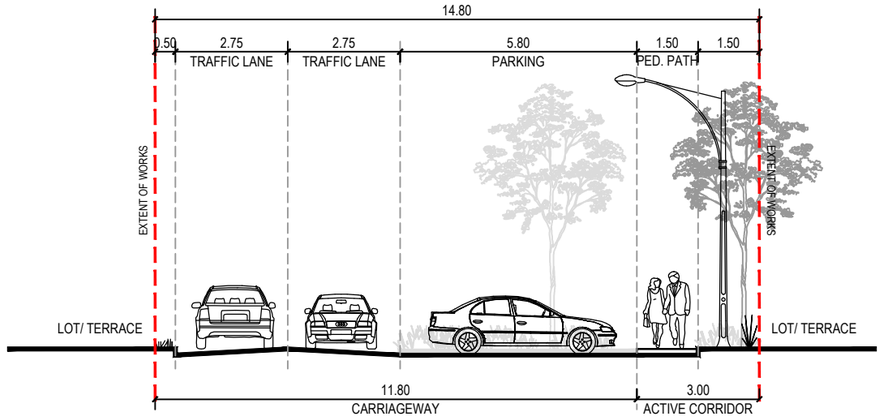
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - L2 - LANEWAY - STANDARD DOUBLE LOADED

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 77
REVISION D



L3 - LANEWAY LINK (14.8m)

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PROJECT

AURA SOUTH

CLIENT

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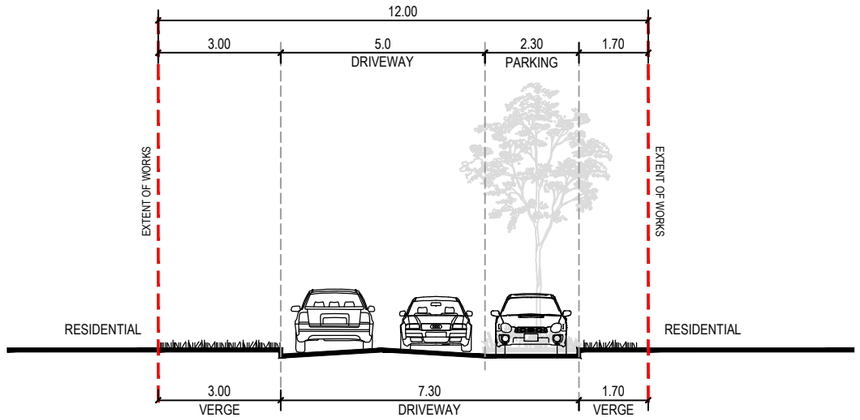
PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS - L3 - LANEWAY LINK

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER 240553 - 78
REVISION D



S1 - SHARED DRIVEWAY (12m)

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PROJECT

AURA SOUTH

CLIENT

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DRAFT

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B	PRE	FOR COORDINATION	JM	NV	13/08/2026
C	PRE	FOR COORDINATION	JM	NV	27/08/2026
D	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

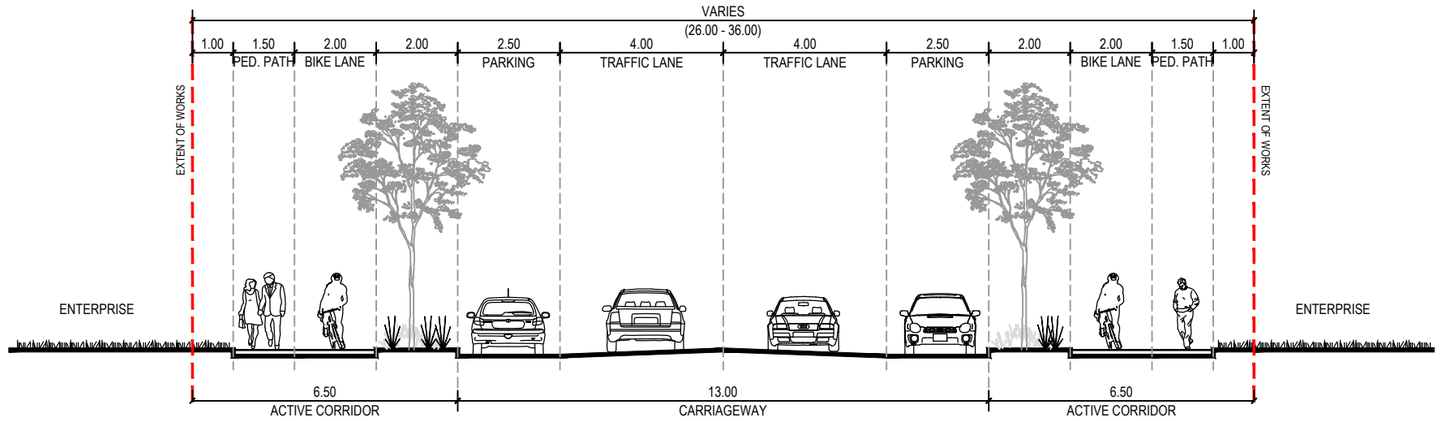
DRAWING TITLE

ROAD CROSS SECTIONS -
S1 - SHARED DRIVEWAY

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER
240553 - 79

REVISION
D



E1 - INDUSTRIAL CONNECTOR (26.0m)

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PROJECT

AURA SOUTH

CLIENT

Stockland

NOTES

ALL LOT NUMBER AND DIMENSIONS (INCLUDING AREAS) ARE APPROXIMATE ONLY AND SUBJECT TO FURTHER DESIGN DEVELOPMENT.

ALL DIMENSIONS HAVE BEEN ROUNDED TO THE NEAREST 1.0 METRE AND ALL AREAS HAVE BEEN ROUNDED TO THE NEAREST SQUARE METRE.

THE BOUNDARIES ON THIS PLAN SHOULD NOT BE USED FOR THE FINAL DESIGN AND ARE SUBJECT TO FINAL DETAILED DESIGN BY ENGINEERS.

INFORMATION ON THIS PLAN ARE FROM THE FOLLOWING SOURCES:

SITE BOUNDARIES: URBIS
ADJOINING CADASTRE: QSPATIAL
AERIAL: NEARMAP

DRAFT

ISSUE	CODE	ISSUE DESCRIPTION	BY	CHK	DATE
-	PRE	FOR COORDINATION	JM	NV	27/08/2026
A	PRE	VELOWAY TERMINOLOGY UPDATE	NV	NV	25/09/2026

PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

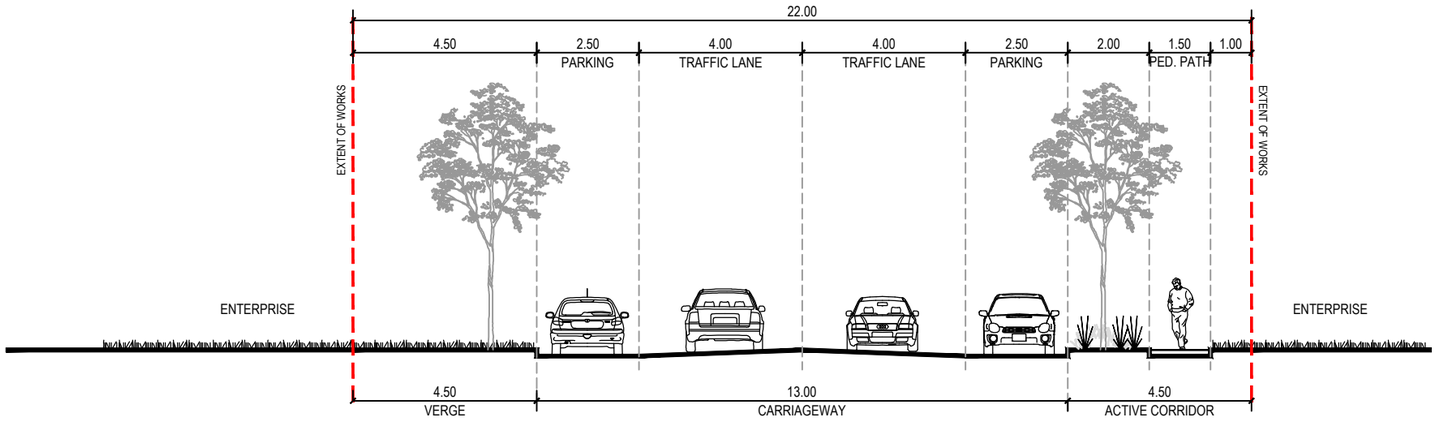
DRAWING TITLE

ROAD CROSS SECTIONS -
E1 - INDUSTRIAL CONNECTOR

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER
240553 - 80

REVISION
A



E2 - INDUSTRIAL ACCESS (22.0m)

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PROJECT

AURA SOUTH

CLIENT

Stockland

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PRE - Preliminary | CA - Council Approval | T - Tender | CON - Construction

DRAWING TITLE

ROAD CROSS SECTIONS -
E2 - INDUSTRIAL ACCESS

DESIGN : TD
DOCUMENT : NV
PROJECT : 240553
1:150 @ A3

DRAWING NUMBER
240553 - 81

REVISION
A

Appendix H - Internal Catchments


LEGEND:
Site boundary
Early release area boundary
Stage boundary
400 metre catchment (park)
Residential allotment type - attached:
Rear loaded terrace - 4.6m x 21m
Rear loaded terrace - 6.6m x 21m
Rear loaded terrace - 9m x 21m
Rear loaded terrace - 4.6m x 25m
Rear loaded terrace - 6.6m x 25m
Rear loaded terrace - 9m x 25m
Front loaded terrace - 7.5m x 25m
Front loaded terrace - 9m x 25m
Rear loaded fonzie (front unit) - 8m x 25m
Rear loaded fonzie (micro unit) - 4.7m x 11.5m
Front loaded garden home - 8m x 16m
Front loaded urban loft - 8.5m x 12m
Residential allotment type - detached:
Villa allotment - 10m x 25m
Premium villa allotment - 12.5m x 25m
Courtyard allotment - 14m x 25m
Premium courtyard allotment - 16m x 25m
Villa allotment - 10m x 28m
Premium villa allotment - 12.5m x 28m
Courtyard allotment - 14m x 28m
Premium courtyard allotment - 16m x 28m
Additional allotment type:
Medium density site
Neighbourhood centre
Enterprise
Neighbourhood recreation park
District sports park
WSUD
Signage
Other (non-allotment):
Linear open space (pocket parks and pedestrian links)
Bells Creek Arterial (BCA) buffer
Catchment Allotments
1 →153
2 →82
3 →70
4 → 96
5 → 85
6 →110
7 → 110
8 →61
9 → 181
10 → 103
Total → 1051

Appendix I - State Code Responses

State code 1: Development in a State-controlled road environment

State Development Assessment Provisions guideline - State Code 1: Development in a State-controlled road environment. This guideline provides direction on how to address State Code 1.

Table 1.1 Development in general

Performance outcomes	Acceptable outcomes	Response
Buildings, structures, infrastructure, services and utilities		
PO1 The location of the development does not create a safety hazard for users of the **State-controlled road.**	**AO1.1** Development is not located in a **State-controlled road**. AND **AO1.2** Development can be maintained without requiring access to a **State-controlled road**.	Complies with PO The supporting traffic and civil documentation demonstrate how the development will not result in a safety hazard for users of the State-controlled road
PO2 The design and construction of the development does not adversely impact the **structural integrity** or physical condition of the **State-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**By others**
PO3 The location of the development does not obstruct **road transport infrastructure** or adversely impact the operating performance of the **State-controlled road**.	No acceptable outcome is prescribed.	Complies with PO The supporting transport assessment demonstrates how the State-controlled road is able to support the traffic associated with the proposal.
PO4 The location, placement, design and operation of advertising devices, visible from	No acceptable outcome is prescribed.	N/A

Performance outcomes	Acceptable outcomes	Response
the **State-controlled road**, do not create a safety hazard for users of the **State-controlled road**.		
PO5 The design and construction of buildings and **structures** does not create a safety hazard by distracting users of the **State-controlled road**.	**AO5.1** Facades of buildings and **structures** fronting the **State-controlled road** are made of non-reflective materials. AND **AO5.2** Facades of buildings and **structures** do not direct or reflect point light sources into the face of oncoming traffic on the **State-controlled road**. AND **AO5.3** External lighting of buildings and **structures** is not directed into the face of oncoming traffic on the **State-controlled road**. AND **AO5.4** External lighting of buildings and **structures** does not involve flashing or laser lights.	N/A
PO6 Road, pedestrian and bikeway bridges over a **State-controlled road** are designed and constructed to prevent projectiles from being thrown onto the **State-controlled road**.	**AO6.1** Road, pedestrian and bikeway bridges over the **State-controlled road** include throw protection screens in accordance with section 4.11 of the Design Criteria for Bridges and Other Structures Manual, Department of Transport and Main Roads, 2020.	Complies with PO The proposed 2-way separated cycle path overpass can be conditioned and appropriately designed to meet this PO.
Landscaping		

Performance outcomes	Acceptable outcomes	Response
PO7 The location of landscaping does not create a safety hazard for users of the **State-controlled road**.	**AO7.1** Landscaping is not located in a **State-controlled road**. AND **AO7.2** Landscaping can be maintained without requiring access to a **State-controlled road**. AND **AO7.3** Landscaping does not block or obscure the sight lines for vehicular access to a **State-controlled road**.	**By others**
Stormwater and overland flow		
PO8 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of the **State-controlled road**.	No acceptable outcome is prescribed.	**By others**
PO9 Stormwater run-off or overland flow from the development site does not result in a material worsening of the operating performance of the **State-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**By others**
PO10 Stormwater run-off or overland flow from the development site does not adversely impact the **structural integrity** or physical condition of the **State-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**By others**
PO11 Development ensures that stormwater is lawfully discharged.	**AO11.1** Development does not create any new points of discharge to a **State-controlled road.** AND	**By others**

Performance outcomes	Acceptable outcomes	Response
	AO11.2 Development does not concentrate flows to a **State-controlled road**. AND **AO11.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO11.4** Development does not worsen the condition of an existing **lawful point of discharge** to the **State-controlled road**.	
Flooding		
PO12 Development does not result in a material worsening of flooding impacts within a **State-controlled road**.	**AO12.1** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (within +/- 10mm) to existing flood levels within a **State-controlled road**. AND **AO12.2** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to existing peak velocities within a **State-controlled road**. AND **AO12.3** For all flood events up to 1% **annual exceedance probability**, development results in negligible impacts (up to a 10% increase) to	**By others**

Performance outcomes	Acceptable outcomes	Response
	existing time of submergence of a **State-controlled road**.	
Drainage Infrastructure		
PO13 Drainage infrastructure does not create a safety hazard for users in the **State-controlled road**.	**AO13.1** Drainage infrastructure is wholly contained within the development site, except at the **lawful point of discharge**. AND **AO13.2** Drainage infrastructure can be maintained without requiring access to a **State-controlled road**.	**By others**
PO14 Drainage infrastructure associated with, or within, a **State-controlled road** is constructed, and designed to ensure the **structural integrity** and physical condition of existing drainage infrastructure and the surrounding drainage network.	No acceptable outcome is prescribed.	**By others**

Table 1.2 Vehicular access, road layout and local roads

Performance outcomes	Acceptable outcomes	Response
Vehicular access to a State-controlled road or within 100 metres of a State-controlled road intersection		
PO15 The location, design and operation of a **new or changed access** to a **State-controlled road** does not compromise the safety of users of the **State-controlled road**.	No acceptable outcome is prescribed.	Complies with PO The supporting transport assessment demonstrates how the State-controlled road is able to support the traffic associated with the proposal.
PO16 The location, design and operation of a **new or changed access** does not adversely impact the **functional requirements** of the **State-controlled road**.	No acceptable outcome is prescribed.	Complies with PO The supporting transport assessment demonstrates how the State-controlled road is able to support the traffic associated with the proposal.

Performance outcomes	Acceptable outcomes	Response
PO17 The location, design and operation of a **new or changed access** is consistent with the **future intent** of the **State-controlled road**.	No acceptable outcome is prescribed.	Complies with PO It is noted that the development proponent and the State are working collaboratively to determine the ultimate infrastructure form on Bells Creek Arterial Road to support the Halls Creek PDA, including to the extent necessary potential grade separation. The current proposal does not compromise this future intent
PO18 New or changed access is consistent with the access for the relevant **limited access road policy**: 1. **LAR 1** where direct access is prohibited; or 2. **LAR 2** where access may be permitted, subject to assessment.	No acceptable outcome is prescribed.	N/A
PO19 New or changed access to a **local road** within 100 metres of an intersection with a **State-controlled road** does not compromise the safety of users of the **State-controlled road**.	No acceptable outcome is prescribed.	Complies with PO The supporting transport assessment demonstrates how the State-controlled road is able to support the traffic associated with the proposal in a safe and efficient manner
PO20 New or changed access to a **local road** within 100 metres of an intersection with a **State-controlled road** does not adversely impact on the operating performance of the intersection.	No acceptable outcome is prescribed.	Complies with PO The supporting transport assessment demonstrates how the stat- controlled road is able to support the traffic associated with the proposal and ensure safe and efficient operation of the State-controlled road network. The existing Bells Creek Arterial roundabout can sustain the growth in traffic as a consequence of the current proposal. Relevant to this performance outcome is the response to PO17 above which must be

Performance outcomes	Acceptable outcomes	Response
		considered in any assessment of the compliance with this PO20.
Public passenger transport and active transport		
PO21 Development does not compromise the safety of users of **public passenger transport infrastructure**, **public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO
PO22 Development maintains the ability for people to access **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO
PO23 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO
PO24 Development does not adversely impact the **structural integrity** or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO

Table 1.3 Network impacts

Performance outcomes	Acceptable outcomes	Response
PO25 Development does not compromise the safety of users of the **State-controlled road** network.	No acceptable outcome is prescribed.	Complies with PO A detailed transport assessment has been undertaken demonstrating the adequacy of the existing State-controlled road network. The development traffic would not result in any material adverse safety impacts on the State-controlled road network.

Performance outcomes	Acceptable outcomes	Response
		Relevant to this performance outcome is the response to PO17 above which must be considered in any assessment of the compliance with this PO25.
PO26 Development ensures **no net worsening** of the operating performance of the **State-controlled road** network.	No acceptable outcome is prescribed.	***Alternate Solution*** The supporting transport assessment demonstrates how the State-controlled road is able to support the traffic associated with the proposal and ensure safe and efficient operation of the State-controlled road network. The existing Bells Creek Arterial roundabout can sustain the growth in traffic as a consequence of the current proposal. Relevant to this performance outcome is the response to PO17 above which must be considered in any assessment of the compliance with this PO26. The ultimate infrastructure solution for the Halls Creek PDA is currently under development including current detailed transport modelling being undertaken by the DTMR. The current development will increase delays on the road network locally however this needs to be considered in the context of the PDA declaration and the ultimate transport network that is being determined in collaborative environment.
PO27 Traffic movements are not directed onto a **State-controlled road** where they can be accommodated on the **local road** network.	No acceptable outcome is prescribed.	Complies with PO

Performance outcomes	Acceptable outcomes	Response
PO28 Development involving haulage exceeding 10,000 tonnes per year does not adversely impact the pavement of a **State-controlled road**.	No acceptable outcome is prescribed.	N/A
PO29 Development does not impede delivery of **planned upgrades** of **State-controlled roads**.	No acceptable outcome is prescribed.	Complies with PO It is noted that the development proponent and the State are working collaboratively to determine the ultimate infrastructure form on Bells Creek Arterial Road to support the Halls Creek PDA, including to the extent necessary potential grade separation. The current proposal does not compromise this future intent
PO30 Development does not impede delivery of **corridor improvements** located entirely within the **State-controlled road corridor**.	No acceptable outcome is prescribed.	Complies with PO It is noted that the development proponent and the State are working collaboratively to determine the ultimate infrastructure form on Bells Creek Arterial Road to support the Halls Creek PDA, including to the extent necessary potential grade separation. The current proposal does not compromise this future intent

Table 1.4 Filling, excavation, building foundations and retaining structures

Performance outcomes	Acceptable outcomes	Response
PO31 Development does not create a safety hazard for users of the **State-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**By others**
PO32 Development does not adversely impact the operating performance of the **State-controlled road**.	No acceptable outcome is prescribed.	**By others**
PO33 Development does not undermine, damage or cause subsidence of a **State-controlled road**.	No acceptable outcome is prescribed.	**By others**

Performance outcomes	Acceptable outcomes	Response
PO34 Development does not cause ground water disturbance in a **State-controlled road**.	No acceptable outcome is prescribed.	**By others**
PO35 Excavation, boring, piling, blasting and fill compaction do not adversely impact the physical condition or **structural integrity** of a **State-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	**By others**
PO36 Filling and excavation associated with the construction of **new or changed access** do not compromise the operation or capacity of existing drainage infrastructure for a **State-controlled road.**	No acceptable outcome is prescribed.	**By others**

Table 1.5 Environmental emissions

Statutory note: Where a **State-controlled road** is co-located in the same transport corridor as a railway, the development should instead comply with Environmental emissions in State code 2: Development in a railway environment.

Performance outcomes	Acceptable outcomes	Response
Reconfiguring a lot		
Involving the creation of 5 or fewer new residential lots adjacent to a State-controlled road or type 1 multi-modal corridor		
PO37 Development minimises free field noise intrusion from a **State-controlled road.**	**AO37.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;	**By others**

Performance outcomes	Acceptable outcomes	Response
	b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO37.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. OR **AO37.3** Development provides a **solid gap-free fence** or other **solid gap-free structure** along the full extent of the boundary closest to the **State-controlled road**.	
Involving the creation of 6 or more new residential lots adjacent to a State-controlled road or type 1 multi-modal corridor		
PO38 Reconfiguring a lot minimises free field noise intrusion from a **State-controlled road.**	**AO38.1** Development provides noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013;	**By others**

Performance outcomes	Acceptable outcomes	Response
	b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO38.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
Material change of use (accommodation activity)		
Ground floor level requirements adjacent to a State-controlled road or type 1 multi-modal corridor		
PO39 Development minimises noise intrusion from a **State-controlled road** in **private open space**.	**AO39.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for **private open space** at the ground floor level; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	**By others**

Performance outcomes	Acceptable outcomes	Response
	c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO39.2** Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for **private open space** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
PO40 Development (excluding a **relevant residential building** or **relocated building)** minimises noise intrusion from a **State-controlled road** in **habitable rooms** at the facade.	**AO40.1** Development (excluding a **relevant residential building** or **relocated building**) provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms**; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR	**By others**

Performance outcomes	Acceptable outcomes	Response
	AO40.2 Development (excluding a **relevant residential building** or **relocated building**) achieves the maximum building façade acoustic level in reference table 1 (item 1.1) for **habitable rooms** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
PO41 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**By others**
Above ground floor level requirements (accommodation activity) adjacent to a State-controlled road or type 1 multi-modal corridor		
PO42 Balconies, podiums, and roof decks include: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums, and roof decks.	No acceptable outcome is provided.	**By others**
PO43 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided.	**By others**
Material change of use (other uses)		
Ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a State-controlled road or type 1 multi-modal corridor		
PO44 Development: 1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum free field acoustic level in reference table 2 (item	No acceptable outcome is provided.	**By others**

Performance outcomes	Acceptable outcomes	Response
2.3) for all **outdoor education areas** and **outdoor play areas**; b. in accordance with: i. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 2. achieves the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO45 Development involving a **childcare centre** or **educational establishment**: 1. provides a noise barrier or earth mound that is designed, sited and constructed: 2. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); 3. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic	No acceptable outcome is provided.	**By others**

Performance outcomes	Acceptable outcomes	Response
Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 4. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO46 Development involving: 1. **indoor education areas** and **indoor play areas**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** achieves the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is provided.	**By others**
Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a State-controlled road or type 1 multi-modal corridor		
PO47 Development involving a **childcare centre** or **educational establishment** which have balconies, podiums or elevated **outdoor play areas** predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from a **State-controlled road** are provided with: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia);	No acceptable outcome is provided.	**By others**

Performance outcomes	Acceptable outcomes	Response
2. highly acoustically absorbent material treatment for the total area of the soffit above balconies or elevated **outdoor play areas**.		
PO48 Development including: 1. **indoor education areas** and **indoor play areas** in a **childcare centre** or **educational establishment**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is provided.	**By others**
Air, light and vibration		
PO49 Private open space, **outdoor education areas** and **outdoor play areas** are protected from air quality impacts from a **State-controlled road**.	**AO49.1** Each dwelling or unit has access to a **private open space** which is shielded from a **State-controlled road** by a building, **solid gap-free fence**, or other **solid gap-free structure**. OR **AO49.2** Each **outdoor education area** and **outdoor play area** is shielded from a **State-controlled road** by a building, **solid gap-free fence,** or other **solid gap-free structure**.	**By others**

Performance outcomes	Acceptable outcomes	Response
PO50 Patient care areas within **hospitals** are protected from vibration impacts from a **State-controlled road** or **type 1 multi-modal corridor**.	**AO50.1 Hospitals** are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of $0.1m/s^{1.75}$. AND **AO50.2 Hospitals** are designed and constructed to ensure vibration in the ward of a **patient care area** does not exceed a vibration dose value of $0.4m/s^{1.75}$.	**By others**
PO51 Development is designed and sited to ensure light from infrastructure within, and from users of, a **State-controlled road** or **type 1 multi-modal corridor**, does not: 1. intrude into buildings during night hours (10pm to 6am); 2. create unreasonable disturbance during evening hours (6pm to 10pm).	No acceptable outcomes are prescribed.	**By others**

Table 1.6: Development in a future State-controlled road environment

Performance outcomes	Acceptable outcomes	Response
PO52 Development does not impede delivery of a **future State-controlled road**.	**AO52.1** Development is not located in a **future State-controlled road**. OR ALL OF THE FOLLOWING APPLY: **AO52.2** Development does not involve filling and excavation of, or material changes to, a **future State-controlled road**.	N/A

Performance outcomes	Acceptable outcomes	Response
	AND **AO52.3** The intensification of lots does not occur within a **future State-controlled road**. AND **AO52.4** Development does not result in the landlocking of parcels once a **future State-controlled road** is delivered.	
PO53 The location and design of **new or changed access** does not create a safety hazard for users of a **future State-controlled road**.	**AO53.1** Development does not include **new or changed access** to a **future State-controlled road**.	N/A
PO54 Filling, excavation, building foundations and **retaining structures** do not undermine, damage or cause subsidence of a **future State-controlled road**.	No acceptable outcome is prescribed.	N/A
PO55 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a **future State-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	N/A
PO56 Development ensures that stormwater is lawfully discharged.	**AO56.1** Development does not create any new points of discharge to a **future State-controlled road**. AND **AO56.2** Development does not concentrate flows to a **future State-controlled road**. AND	N/A

Performance outcomes	Acceptable outcomes	Response
	AO56.3 Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO56.4** Development does not worsen the condition of an existing **lawful point of discharge** to the **future State-controlled road**.	

State code 6: Protection of state transport networks

Table 6.2 Development in general

Performance outcomes	Acceptable outcomes	Response
Network impacts		
PO1 Development does not compromise the safety of users of the **state-controlled road** network.	No acceptable outcome is prescribed.	Complies with PO A detailed transport assessment has been undertaken demonstrating the adequacy of the existing State-controlled road network. The development traffic would not result in any material adverse safety impacts on the State-controlled road network. Relevant to this performance outcome is the response to PO17 above which must be considered in any assessment of the compliance with this PO25.
PO2 Development does not adversely impact the structural integrity or physical condition of a **state-controlled road** or **road transport infrastructure**.	No acceptable outcome is prescribed.	
PO3 Development ensures **no net worsening** of the operating performance the **state-controlled road** network.	No acceptable outcome is prescribed.	***Alternate Solution*** The supporting transport assessment demonstrates how the State-controlled road is able to support the traffic associated with the proposal and ensure safe and efficient operation of the State-controlled road network. The existing Bells Creek Arterial roundabout can

Performance outcomes	Acceptable outcomes	Response
		sustain the growth in traffic as a consequence of the current proposal. Relevant to this performance outcome is the response to PO17 above which must be considered in any assessment of the compliance with this PO26. The ultimate infrastructure solution for the Halls Creek PDA is currently under development including current detailed transport modelling being undertaken by the DTMR. The current development will increase delays on the road network locally however this needs to be considered in the context of the PDA declaration and the ultimate transport network that is being determined in collaborative environment.
PO4 Traffic movements are not directed onto a **state-controlled road** where they can be accommodated on the **local road** network.	No acceptable outcome is prescribed.	Complies with PO
PO5 Development involving haulage exceeding 10,000 tonnes per year does not damage the pavement of a **state-controlled road**.	No acceptable outcome is prescribed.	N/A
PO6 Development does not require a new **railway** level crossing.	No acceptable outcome is prescribed.	Complies with PO
PO7 Development does not adversely impact the operating performance of an existing **railway crossing**.	No acceptable outcome is prescribed.	N/A
PO8 Development does not adversely impact on the safety of an existing **railway crossing**.	No acceptable outcome is prescribed.	N/A

Performance outcomes	Acceptable outcomes	Response
PO9 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a **railway crossing**.	No acceptable outcome is prescribed.	N/A
PO10 Development does not create a safety hazard within the **railway corridor**.	No acceptable outcome is prescribed.	N/A
PO11 Development does not adversely impact the operating performance of the **railway corridor**.	No acceptable outcome is prescribed.	N/A
PO12 Development does not interfere with or obstruct the **railway transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	N/A
PO13 Development does not adversely impact the structural integrity or physical condition of a **railway corridor** or **rail transport infrastructure**.	No acceptable outcome is prescribed.	N/A
Stormwater and overland flow		
PO14 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard for users of a **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**By Others**
PO15 Stormwater run-off or overland flow from the development site does not result in a material worsening of operating performance of a **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**By Others**
PO16 Stormwater run-off or overland flow from the development site does not interfere with the structural integrity or physical condition of the **state transport corridor** or **state transport infrastructure**.	No acceptable outcome is prescribed.	**By Others**
PO17 Development associated with a **state-controlled road** or **road transport infrastructure** ensures that stormwater is lawfully discharged.	**AO17.1** Development does not create any new points of discharge to a **state transport corridor** or **state transport infrastructure**. AND	**By Others**

Performance outcomes	Acceptable outcomes	Response
	AO17.2 Development does not concentrate flows to a **state transport corridor**. AND **AO17.3** Stormwater run-off is discharged to a **lawful point of discharge**. AND **AO17.4** Development does not worsen the condition of an existing **lawful point of discharge** to a **state transport corridor** or **state transport infrastructure**.	
Flooding		
PO18 Development does not result in a material worsening of flooding impacts within a **state transport corridor** or **state transport infrastructure**	*For a **state-controlled road** or **road transport infrastructure**, all of the following apply:* **AO18.1** For all flood events up to 1% **annual exceedance probability**, development ensures there are negligible impacts (within +/- 10mm) to existing flood levels within a **state transport corridor**. AND **AO18.2** For all flood events up to 1% **annual exceedance probability**, development ensures there are negligible impacts (up to a 10% increase) to existing peak velocities within a **state transport corridor**. AND	**By Others**

Performance outcomes	Acceptable outcomes	Response
	AO18.3 For all flood events up to 1% annual exceedance probability, development ensures there are negligible impacts (up to a 10% increase) to existing time of submergence of a **state transport corridor**. *No acceptable outcome is prescribed for a **railway corridor** or **rail transport infrastructure**.*	
Drainage infrastructure		
PO19 Drainage infrastructure does not create a safety hazard in a **state transport corridor**.	*For a **state-controlled road** environment, both of the following apply:* **AO19.1** Drainage infrastructure associated with, or in a **state-controlled road** is wholly contained within the development site, except at the **lawful point of discharge**. AND **AO19.2** Drainage infrastructure can be maintained without requiring access to a **state transport corridor**. *For a **railway** environment both of the following apply:* **AO19.3** Drainage infrastructure associated with a **railway corridor** or **rail transport infrastructure** is wholly contained within the development site. AND	**By Others**

Performance outcomes	Acceptable outcomes	Response
	AO19.4 Drainage infrastructure can be maintained without requiring access to a **state transport corridor**.	
PO20 Drainage infrastructure associated with, or in a **state-controlled road** or **road transport infrastructure** is constructed and designed to ensure the structural integrity and physical condition of existing drainage infrastructure and the surrounding drainage network is maintained.	No acceptable outcome is prescribed.	**By Others**
Planned upgrades		
PO21 Development does not impede delivery of **planned upgrades** of **state transport infrastructure**.	No acceptable outcome is prescribed.	

Table 6.3 Public passenger transport infrastructure and active transport

Performance outcomes	Acceptable outcomes	Response
PO22 Development does not damage or interfere with **public passenger transport infrastructure**, **active transport infrastructure** or **public passenger services**.	No acceptable outcome is prescribed.	N/A
PO23 Development does not compromise the safety of **public passenger transport infrastructure**, **public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	N/A
PO24 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	N/A
PO25 Development does not adversely impact the structural integrity or physical condition of **public**	No acceptable outcome is prescribed.	N/A

Performance outcomes	Acceptable outcomes	Response
passenger transport infrastructure and **active transport infrastructure**.		
PO26 Upgraded or new **public passenger transport infrastructure** and **active transport infrastructure** is provided to accommodate the demand for **public passenger transport** and **active transport** generated by the development.	No acceptable outcome is prescribed.	N/A
PO27 Development is designed to ensure the location of **public passenger transport infrastructure** prioritises and enables efficient **public passenger services**.	No acceptable outcome is prescribed.	N/A
PO28 Development enables the provision or extension of **public passenger services**, **public passenger transport infrastructure** and **active transport infrastructure** to the development and avoids creating indirect or inefficient routes for **public passenger services**.	No acceptable outcome is prescribed.	Complies with PO The transport assessment undertaken in support of the current proposal demonstrates how the internal road network has specifically been configured to adequately cater for internal bus routes, noting that the timing of services provision is outside the control of the development as these are provided under the current licensing agreements with Translink. The internal road network has been designed to accommodate a 14m bus and bus stop locations and bus top infrastructure is also proposed. The transport assessment also demonstrates how this can be integrated with bus services that will be provided within AURA.
PO29 New or modified road networks are designed to enable development to be serviced by **public passenger services**.	**AO29.1** Roads catering for buses are arterial or **sub-arterial roads**, collector or their equivalent. AND **AO29.2** Roads intended to accommodate buses are designed and constructed in accordance with:	Complies with PO The transport assessment undertaken in support of the current proposal demonstrates how the internal road network has specifically been configured to adequately cater for internal bus routes, noting that the timing of services provision is outside the control

Performance outcomes	Acceptable outcomes	Response
	1. Road Planning and Design Manual, 2nd Edition, Volume 3 – Guide to Road Design; Department of Transport and Main Roads; 2. Supplement to Austroads Guide to Road Design (Parts 3, 4-4C and 6), Department of Transport and Main Roads; 3. Austroads Guide to Road Design (Parts 3, 4-4C and 6); 4. Austroads Design Vehicles and Turning Path Templates; 5. Queensland Manual of Uniform Traffic Control Devices, Part 13: Local Area Traffic Management and AS 1742.13-2009 Manual of Uniform Traffic Control Devices – Local Area Traffic Management; AND **AO29.3** Traffic calming devices are not installed on roads used for buses in accordance with section 2.3.2 Bus Route Infrastructure, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	of the development as these are provided under the current licensing agreements with Translink. The internal road network has been designed to accommodate a 14m bus and bus stop locations and bus top infrastructure is also proposed.
PO30 Development provides safe, direct and convenient access to existing and future **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO The transport assessment undertaken in support of the current proposal demonstrates how the internal road network has specifically been configured to adequately cater for internal bus routes, noting that the timing of services provision is outside the control of the development as these are provided under the current licensing agreements with Translink. The internal road network has been designed to accommodate a 14m bus and bus stop locations and bus top infrastructure is also proposed.

Performance outcomes	Acceptable outcomes	Response
		The layout and identified future bus routes clearly supports high standards of walk up access to these bus routes / stops.
PO31 On-site vehicular circulation ensures the safety of both **public passenger transport services** and pedestrians.	No acceptable outcome is prescribed.	Complies with PO The transport assessment undertaken in support of the current proposal demonstrates how the internal road network has specifically been configured to adequately cater for internal bus routes, noting that the timing of services provision is outside the control of the development as these are provided under the current licensing agreements with Translink. The internal road network has been designed to accommodate a 14m bus and bus stop locations and bus top infrastructure is also proposed.
PO32 Taxi facilities are provided to accommodate the demand generated by the development.	No acceptable outcome is prescribed.	N/A
PO33 Facilities are provided to accommodate the demand generated by the development for community transport services, courtesy transport services, and **booked hire services** other than taxis.	No acceptable outcome is prescribed.	N/A

Performance outcomes	Acceptable outcomes	Response
PO34 Taxi facilities are located and designed to provide convenient, safe and equitable access for passengers.	**AO34.1** A **taxi facility** is provided parallel to the kerb and adjacent to the main entrance. AND **AO34.2 Taxi facilities** are designed in accordance with: 1. AS2890.5–1993 Parking facilities – on-street parking and AS1428.1–2009 Design for access and mobility – general requirements for access – new building work; 2. AS1742.11–1999 Parking controls – manual of uniform traffic control devices 3. AS/NZS 2890.6–2009 Parking facilities –off street parking for people with disabilities; 4. Disability standards for accessible public 5. transport 2002 made under section 31(1) of the Disability Discrimination Act 1992; 6. AS/NZS 1158.3.1 – Lighting for roads and public spaces, Part 3.1: Pedestrian area (category P) lighting – Performance and design requirements; 7. Chapter 7 Taxi Facilities, Public Transport Infrastructure Manual, Department of Transport and Main Roads, 2015.	N/A
PO35 Educational establishments are designed to ensure the safe and efficient operation of **public passenger services**, pedestrian and cyclist access and **active transport infrastructure**.	**AO35.1** Educational establishments are designed in accordance with the provisions of the Planning for Safe Transport Infrastructure at Schools, Department of Transport and Main Roads, 2011.	N/A