Flagstone City Context Area 3 South

Traffic & Transport Assessment

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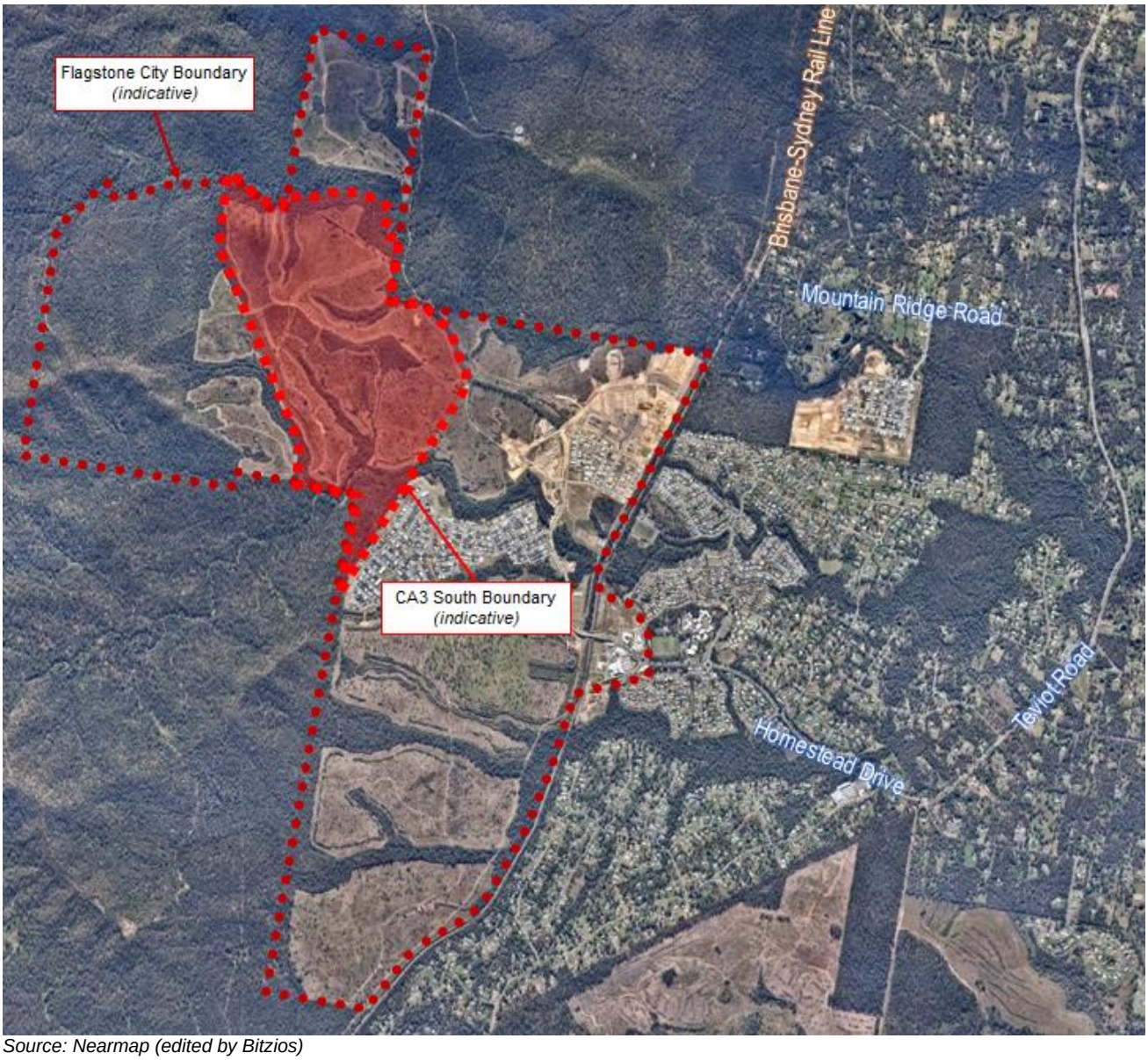
1. INTRODUCTION

1.1 Background

Bitzios Consulting has been engaged by PEET Flagstone City Pty Ltd (PEET) to undertake a traffic assessment for the proposed Context Area 3 South (CA3 South) within Flagstone City. The location of the subject site with respect to the Flagstone City boundary is illustrated in Figure 1.1.



Source: Nearmap (edited by Bitzios)

Figure 1.1: Site Location

This report documents the proposed transport network and its integration with the surrounding network and future planning in the region. It includes an assessment of key intersections and identifies the necessary alternative transport provisions to suitably service the development, aligning with existing Context Area Plans and the soon to be endorsed Movement Network Infrastructure Master Plan (Movement IMP).

1.2 Scope of Assessment

The purpose of this assessment is to provide an overview and analysis of traffic and transport related elements of the subject site with the following scope of assessment:

- A review of the development's context with relation to transport planning within Flagstone City, the Greater Flagstone PDA and overarching transport planning in the South Logan area
- A review of the proposed development against relevant planning to date
- Detailing previous strategic modelling and current microsimulation modelling undertaken used to identify and evaluate appropriate road layout and road cross-sections within the subject site
- Source traffic volumes from the microsimulation modelling to assess key road links and intersections within the subject site
- Review alternate transport provisions throughout the site, including consideration of public and active transport facilities and connections.

1.3 Reference Material

The following planning documents have been considered as a part of this assessment including (but not limited to):

- The Flagstone City Movement Infrastructure Master Plan (IMP) (*pending endorsement*)
- The Greater Flagstone PDA Development Scheme
- The superseded *Infrastructure Charging Offset Plan* (ICOP) and mapping
- The *Development Charges and Offset Plan* (DCOP) and mapping
- The approved Context Area Plans
- Relevant Economic Development Queensland (EDQ) Guidelines and Practice Notes.

2. SITE LOCATION & PLANNING CONTEXT

2.1 Context Plan Area

Flagstone City consists of five (5) overarching Context Plan areas. The subject site forms a large portion of the developable land within CA3, with the CA3 Plan endorsed 31 May 2023. The location of the subject site with respect to the endorsed CA3 plan is illustrated in Figure 2.1.

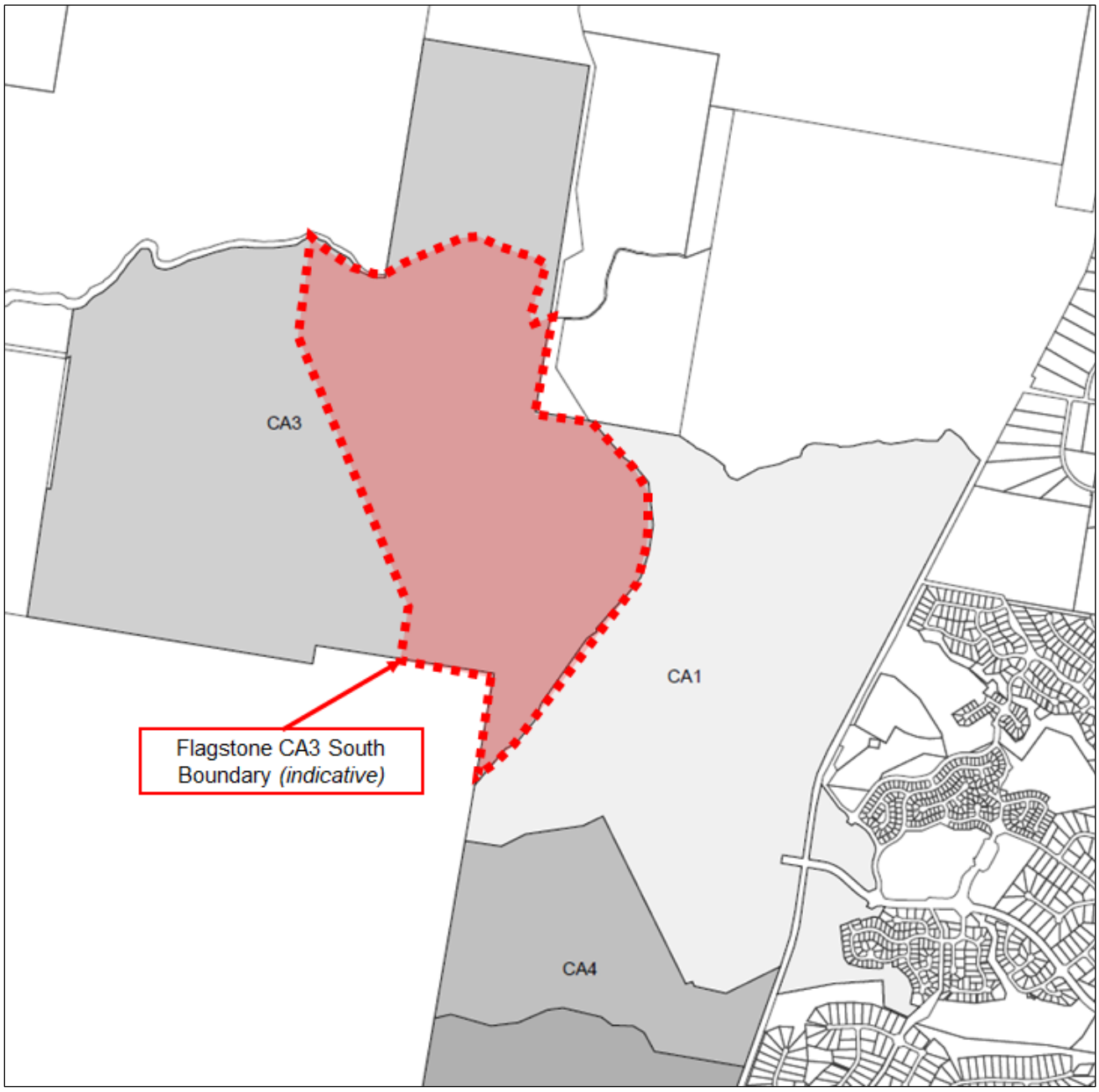


Figure 2.1: Subject Site and Surrounding Context Areas

2.2 Greater Flagstone Priority Development Area (PDA)

2.2.1 Overview

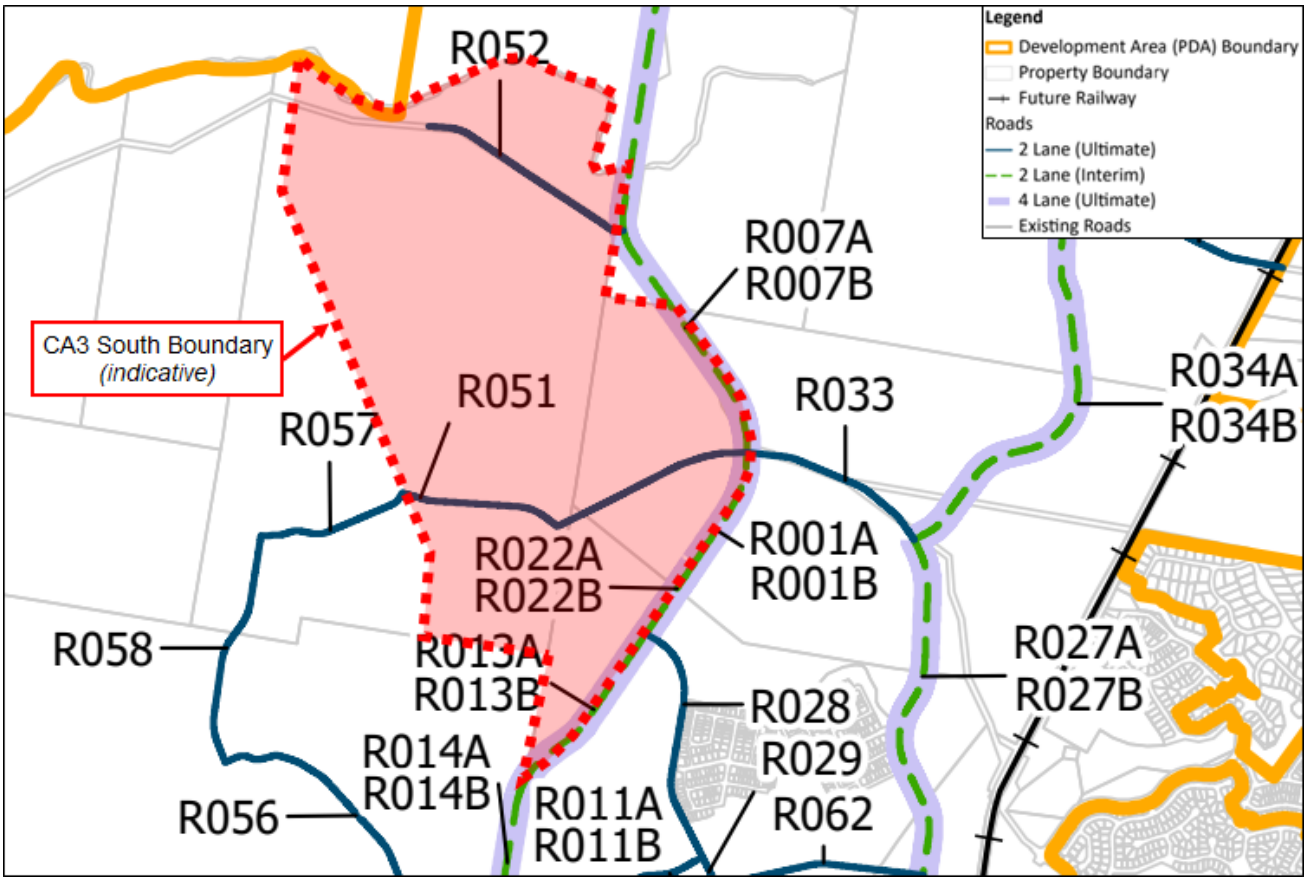
The Greater Flagstone PDA was declared on the 8th October 2010 and is located west of Jimboomba within the southern part of Council's LGA. Key PDA information is as follows:

- The PDA is made up of three (3) separate land areas totalling 7,188ha
- It is projected to experience significant growth in employment and industry
- It is estimated to accommodate approximately 51,500 dwellings & 138,000 residents.

The larger PDA land area is bordered by the Brisbane-Sydney rail line (which is predominately a freight line at present) located east of the subject site, while the Mount Lindesay Highway is located further to the east. The proposed Town Centre Masterplan forms a key portion of the PDA employment area.

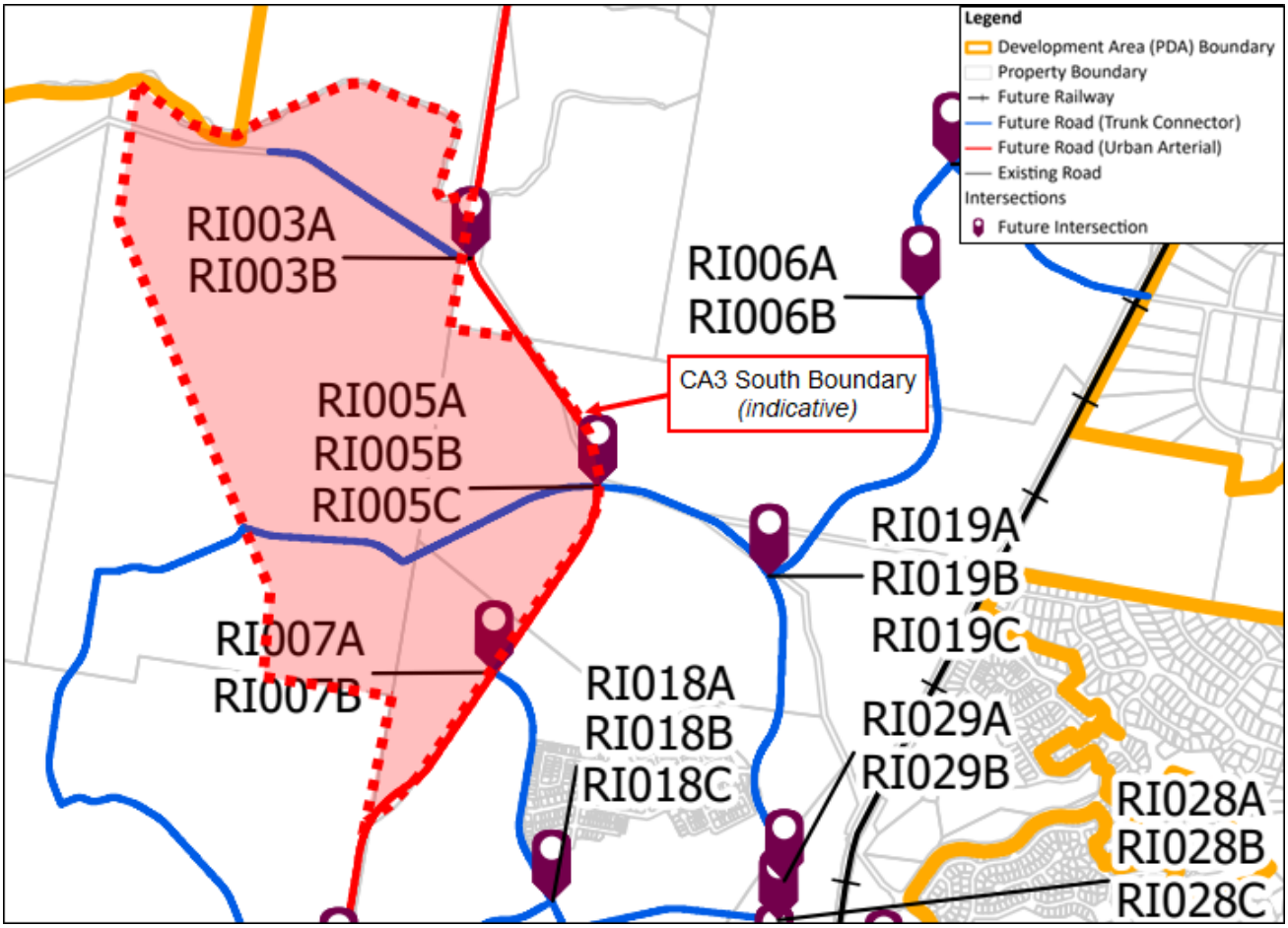
2.2.2 Greater Flagstone Development Charges and Offset Plan (DCOP)

To ensure infrastructure delivery and funding is suitably allocated, EDQ developed the Greater Flagstone PDA Development Charges and Offset Plan (DCOP) effective July 2022. This document provides guidance to trunk infrastructure planning through the PDA. Planned trunk transport infrastructure in the vicinity of the subject site is illustrated in Figure 2.2 and Figure 2.3 for the trunk roads (Map 3) and trunk intersections (Map 4).



Source: EDQ DCOP Map 3 (edited by Bitzios)

Figure 2.2: DCOP Transport (Roads) Trunk Infrastructure



Source: EDQ DCOP Map 4 (edited by Bitzios)

Figure 2.3: DCOP Transport (Intersections) Trunk Infrastructure

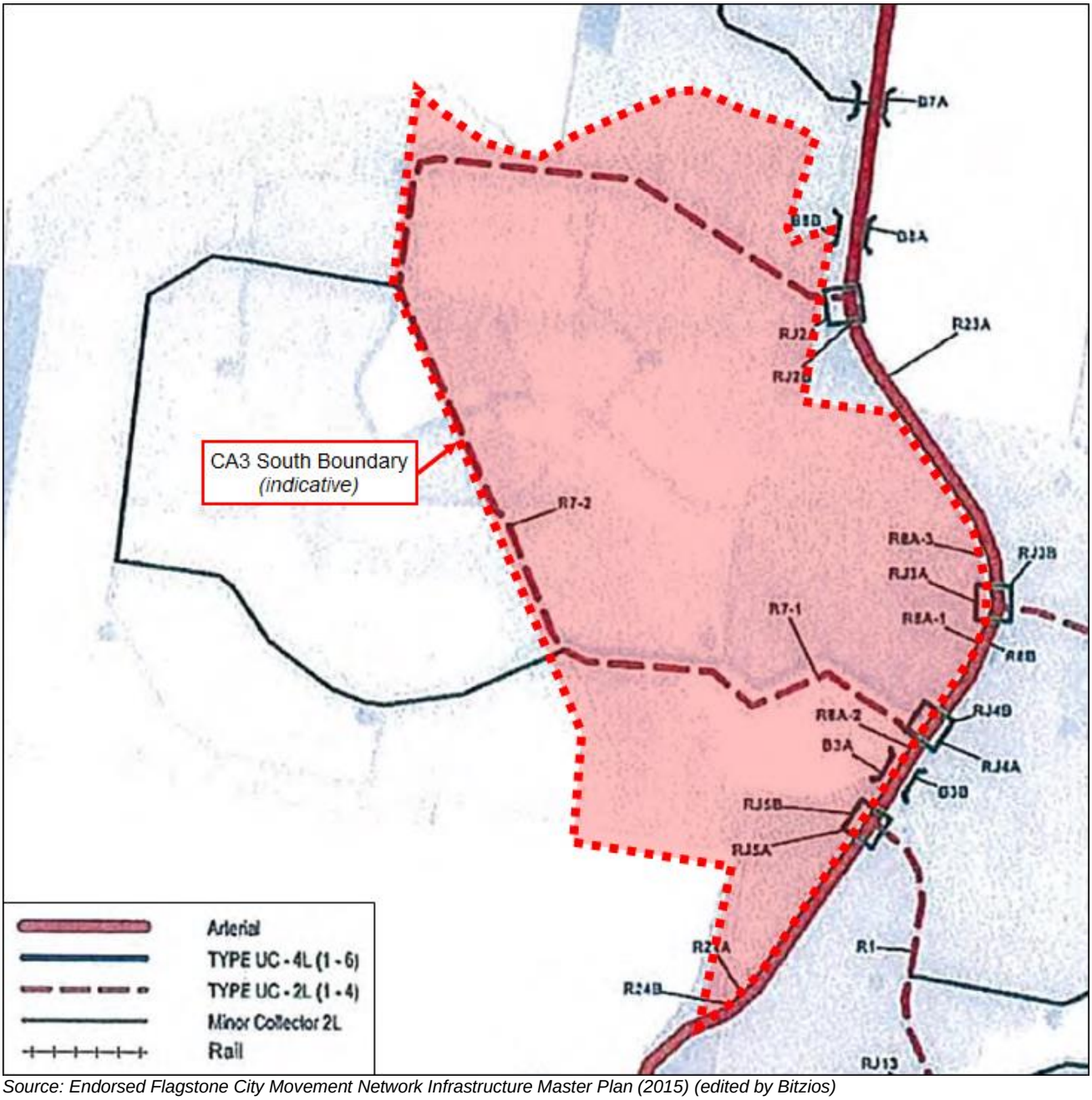
2.2.3 Movement Infrastructure Master Plan (IMP)

The Flagstone City endorsed Movement IMP (circa. 2015) was considered when developing the transport infrastructure requirements of the subject site. It is noted that an updated Movement IMP is currently going through an application / review process with EDQ which is expected to be endorsed in the near future to better align with more recent planning and development that has occurred to date.

For context, the endorsed Movement IMP identifies:

- The ultimate four-lane configuration of New Beith Road adjacent CA3
- The two-lane trunk collector encircling the majority of the CA3 South area
- Key signalised intersections at the CA3 connections to New Beith Road.

The road network from the endorsed Movement IMP (2015), relative to the CA3 South site area is illustrated in Figure 2.4.



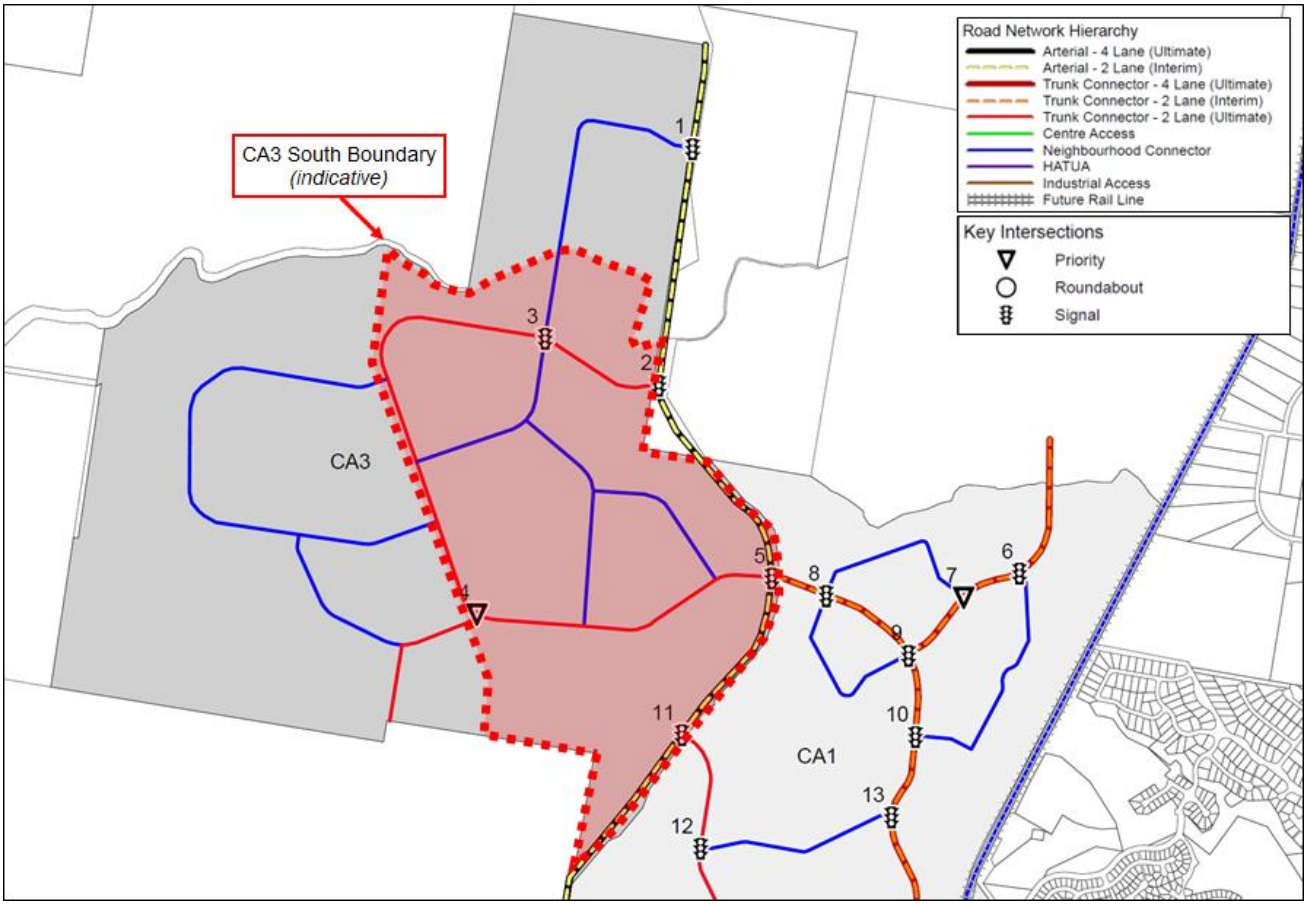
Source: Endorsed Flagstone City Movement Network Infrastructure Master Plan (2015) (edited by Bitzios)

Figure 2.4: Endorsed Movement IMP

Similarly, the current (soon to be endorsed) Movement IMP also identifies:

- The ultimate four-lane configuration of New Beith Road adjacent CA3
- A two-lane trunk connector encircling the majority of the CA3 South area
- Key signalised intersections at the CA3 connections to New Beith Road.

As demonstrated, the current Movement IMP (2023) algins with the endorsed Movement IMP (2015) as well as the relevant DCOP planning over the site. The road network from the current Movement IMP (2023), relative to the CA3 South site area is illustrated in Figure 2.5.



Source: Flagstone City Movement Network Infrastructure Master Plan (2023) (edited by Bitzios)

Figure 2.5: Endorsed Movement IMP

As shown above (and in **Attachment A**), the proposed CA3 South road network generally aligns with the endorsed Movement IMP and current Movement IMP road network. The key difference between the endorsed (2015) and current (2023) Movement IMPs is that the southernmost connection from CA3 to New Beith Road is now proposed to form a 4-way intersection with Flagstonian Drive.

This change directly aligns with the current DCOP planning and improves intersection spacing on the New Beith Road arterial. Testing of the ultimate 4-way intersection form is detailed further in this report.

3. DEVELOPMENT DETAILS

3.1 Proposed Development

The proposed CA3 South development area is comprised of a variety of land uses, including:

- Low-Density Residential (1,635 dwellings)
- Medium-Density Residential (~100 dwellings)
- A District Centre
- Neighbourhood / Local Centres
- A State Primary School
- Child Care Centres
- A Community Centre
- Local, District and Regional Parklands
- An Ambulance Station.

The CA3 South plan prepared by RPS is provided at **Appendix A** and includes the relevant lot / dwelling estimates.

3.2 Road Hierarchy Overview

The proposed road hierarchy within the CA3 South area generally aligns with approvals and planning to date, and EDQ's Guideline No. 6 – Street and Movement Network.

Typical cross-section parameters for each of the proposed hierarchies are detailed in Table 3.1.

Table 3.1: Typical Road Cross-Section Parameters

Road Hierarchy	Reserve	Pavement	Lanes	Parking	Bus	Footpath	Dedicated Cycle	Trunk
Trunk Connector (4-Lane)	32.0m	19.0m	4	No	Yes	1.5m (both sides)	3.0m cycle track (2-way)	Yes
Trunk Connector (2-Lane)	23.7m	11.8m	2	Yes	Yes	1.5m (both sides)	3.0m cycle track (2-way)	Yes
Neighbourhood Connector	20.2m	11.2m	2	On-Street	Yes	1.5m (both sides)	No	No
Neighbourhood Access	16.5m	7.5m	2	On-Street	No	1.5m (one side)	No	No
Neighbourhood Lane	6.5m	5.5m	2	No	No	No	No	No
Esplanade Road	14.5m	8.3m	2	Yes (one-side)	No	1.5m (one side)	No	No

The proposed road network hierarchies are illustrated in Figure 3.1 for key roads i.e. connector and trunk roads, with illustrations of the proposed cross-sections provided at **Appendix B**.

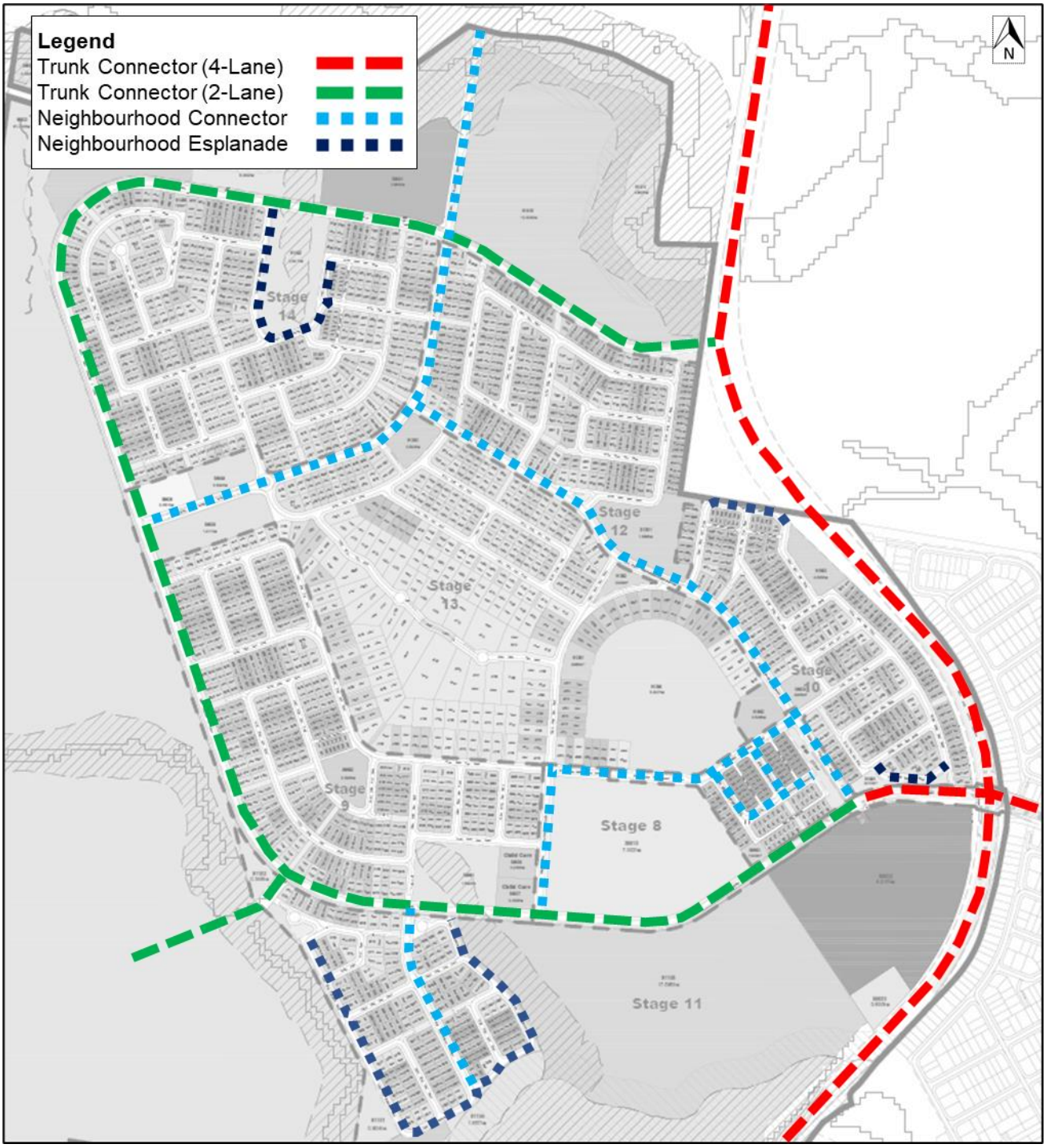


Figure 3.1: Proposed Road Network Hierarchies

As detailed above, the road cross-sections are consistent with the relevant Movement IMP, with the exception of the Esplanade Road which is shown in Figure 3.2.

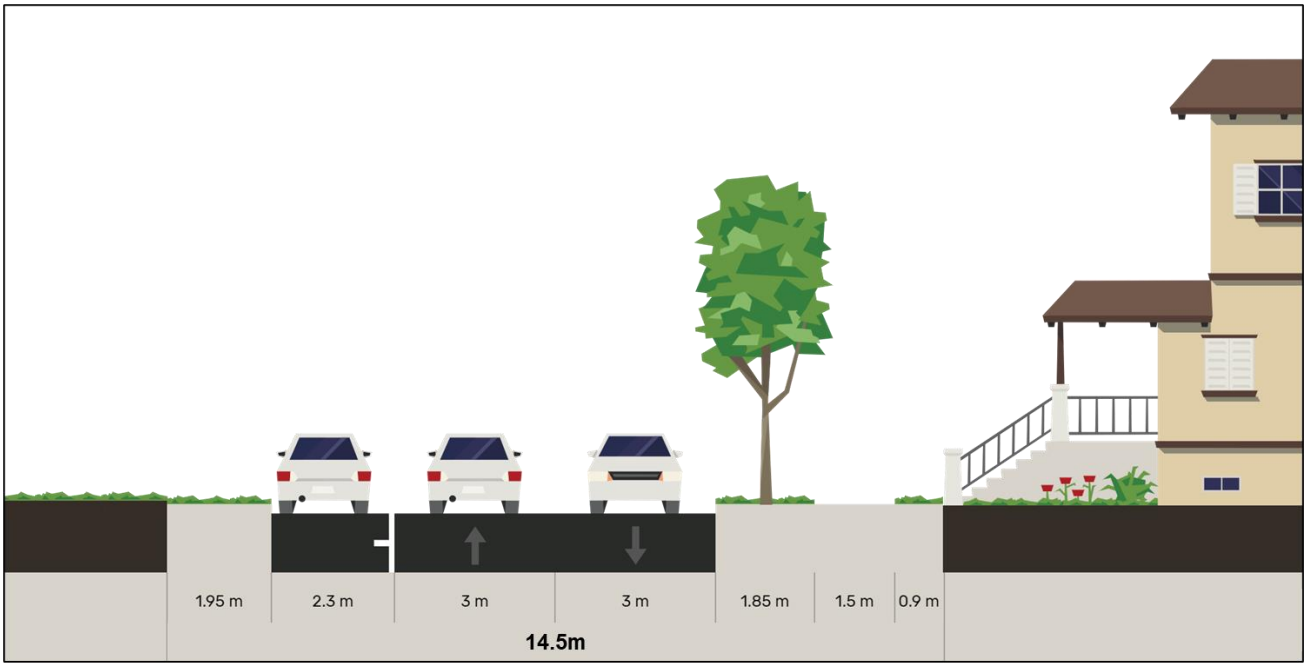


Figure 3.2: Esplanade Road Cross-Section

As shown, the proposed esplanade road is generally in accordance with the EDQ Guideline No. 6, Neighbourhood Access Street (6m). The only difference from the standard cross-section is the proposed verge width on the side of the road fronting adjacent parkland. As this verge is proposed only adjacent parkland and is not required to cater for pathways, this reduced verge width is not considered to result in any adverse impacts to amenity or active transport connectivity.

3.3 Cross Section with Bus Stops

Provision of bus facilities is detailed in Section 5.1, with bus stops proposed on Neighbourhood Connector and 2-lane Trunk Connector roads within the site area.

Typical Trunk Connector and Neighbourhood Connector cross-sections at bus stop locations are shown in Figure 3.3 and Figure 3.4.

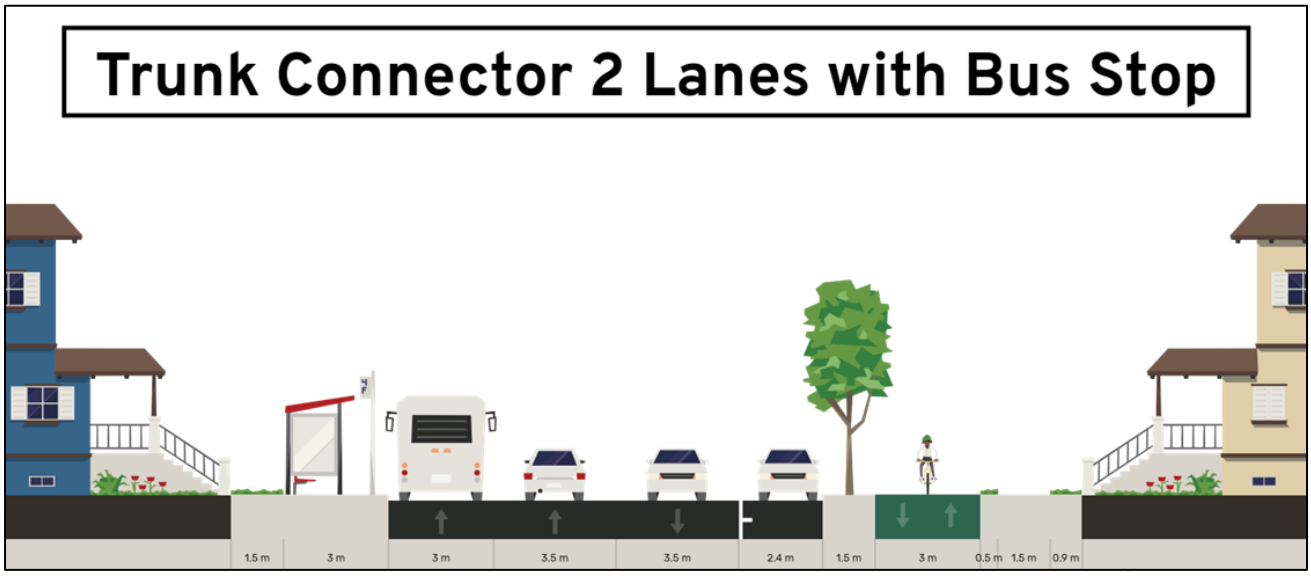


Figure 3.3: Trunk Connector with Bus Stop Cross-Section

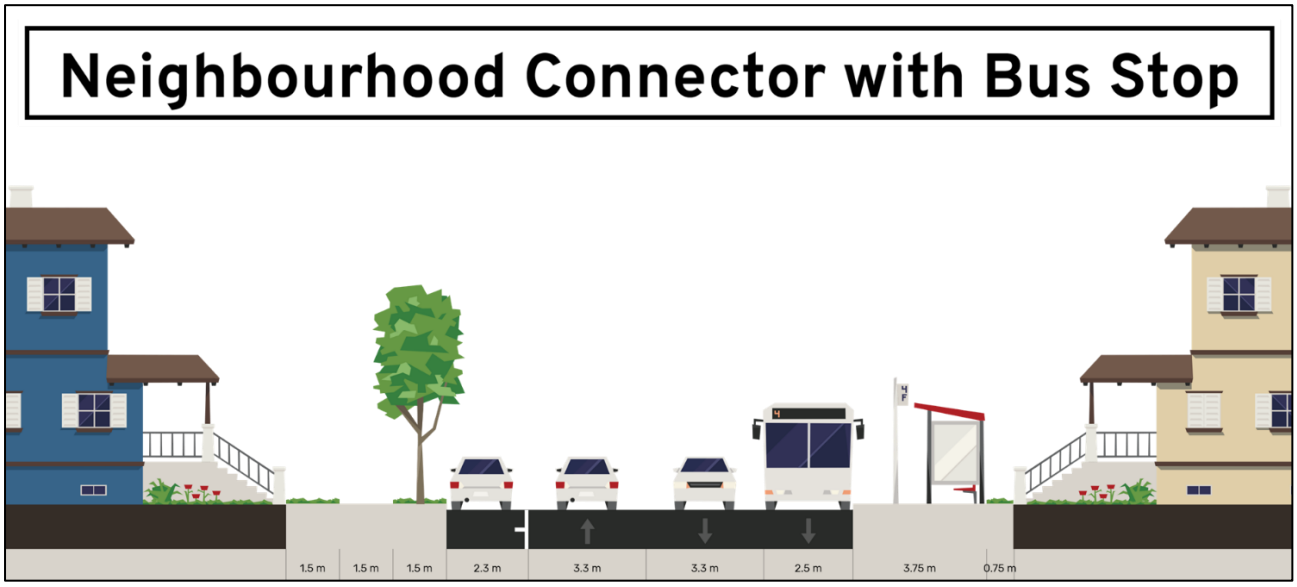


Figure 3.4: Neighbourhood Connector with Bus Stop Cross-Section

3.4 Intersections

Key principles for the proposed intersection forms and their locations were as follows:

- Intersections with four-lane roads shall be signalised or otherwise restricted to left-in / left-out
- Roundabouts shall be minimised however are considered appropriate at four-way intersections, where servicing a primary component of residential land uses
- Intersection spacings shall generally comply with those specified in EDQ's Guideline No. 6 for the relevant hierarchy.

Forecast performance of key intersections is assessed in Section 4.3.

3.5 Access Considerations

Determination of access locations has not yet been undertaken throughout the subject site and should be the subject of further applications for specific developments. That said, the proposed road network and land use arrangements have considered future access locations at a high level such as, loading / servicing requirements, car parking access, direct lot access etc.

As such, a base set of principles shall be adhered to when determining access locations through future applications and shall be provided in accordance with the following general requirements:

- Property accesses shall be provided on a property's lower order frontage road where practical
- Direct property access should be minimised on Trunk Connector roads where traffic volumes >10,000 veh/d or posted speeds >60km/h
- Property accesses shall be clear of prohibited access locations, in particular:
  - Be located clear of nearby intersections as per AS2890.1
  - Be located outside of the functional area of an intersection to avoid queuing impacts
  - Be provided perpendicular to the road unless designed as a one-way access for ease of manoeuvring
- Vehicle crossover design and separation of vehicle crossovers shall be as per the relevant requirements of IPWEAQ Standard Drawings RS-049, RS-050 and RS-051 and Logan City Council requirements.

As mentioned, detailed access design shall be undertaken with each future development application and apply the above general principles to ensure there is no adverse impact to the surrounding road network and that safety is not compromised.

4. TRAFFIC ASSESSMENT

4.1 Strategic Modelling

4.1.1 Overview

Veitch Lister Consulting Pty Ltd (VLC) were previously engaged to produce strategic models of the Flagstone PDA including PEET's development area. Strategic models were developed within VLC's Zenith model of Southeast Queensland with a cordon of the study area taken from the Greater Flagstone Strategic Traffic Model (GFSTM) to provide data relevant to PEET land to inform microsimulation (Aimsun) modelling.

A review of this model cordon was undertaken in comparison to the more recently developed South Logan Strategic Traffic Model (SLSTM) with similar strategic modelling outputs noted within the Flagstone PDA between the GFSTM and SLSTM models. As such, despite updated planning within the South Logan region, key Flagstone City strategic model outcomes remain relevant for the purpose of Aimsun modelling, detailed further below.

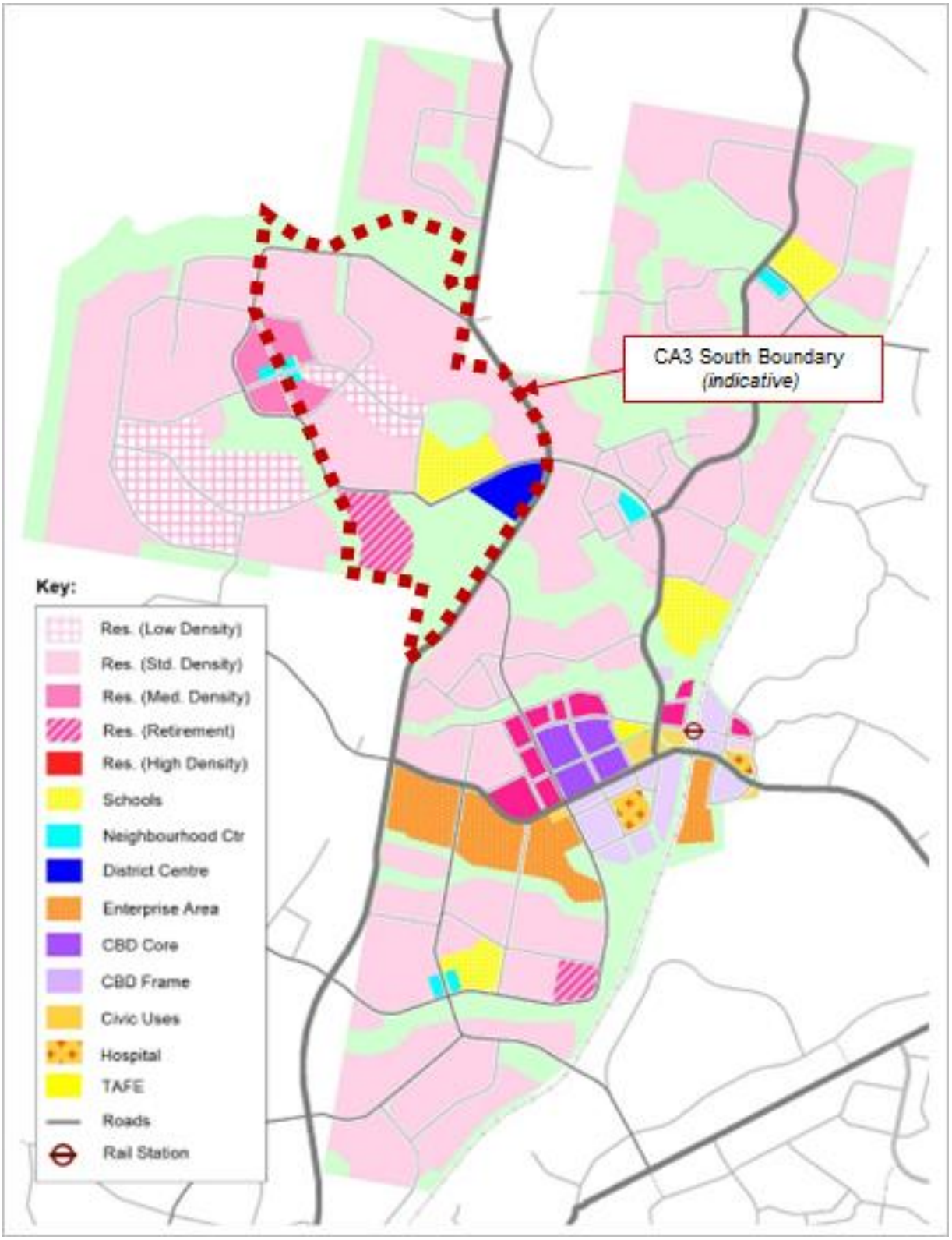
The details of the strategic modelling methodology and outcomes is documented in VLC's Cordon Modelling report for PEET (May 2019).

4.1.2 Land Use Plan

The land use patterns assumed in VLC's Flagstone City strategic model for the Ultimate (2066) development scenario are shown overleaf in Figure 4.1.

The development of this land use plan within the VLC model was done in such a way using single use zones such that land parcels are capable of being relocated throughout the development area (and within the model's origin-destination (OD) demand matrix) to account for changes in planning and land use proposals.

Regardless, Figure 4.1 is representative of the VLC modelling completed on behalf of PEET.



Source: VLC Cordon Modelling of PEET's Flagstone City – Final Report

Figure 4.1: 2066 Flagstone City Land Use Plan

4.2 Microsimulation Modelling

4.2.1 Overview

A 2066 microsimulation model of the Flagstone City area was prepared by Bitzios using Aimsun Next 22.0.1 traffic modelling software. This model was prepared to evaluate route choice and provide detailed insight into vehicle trip movements within Flagstone City. This facilitates analysis of road link and intersection performance at a higher level of detail than possible with strategic modelling undertaken. This model was developed as a part of the update of the Movement Network IMP currently under review, and further refined for subsequent applications within Flagstone City.

The Flagstone City road network as modelled in Aimsun is illustrated in Figure 4.2.

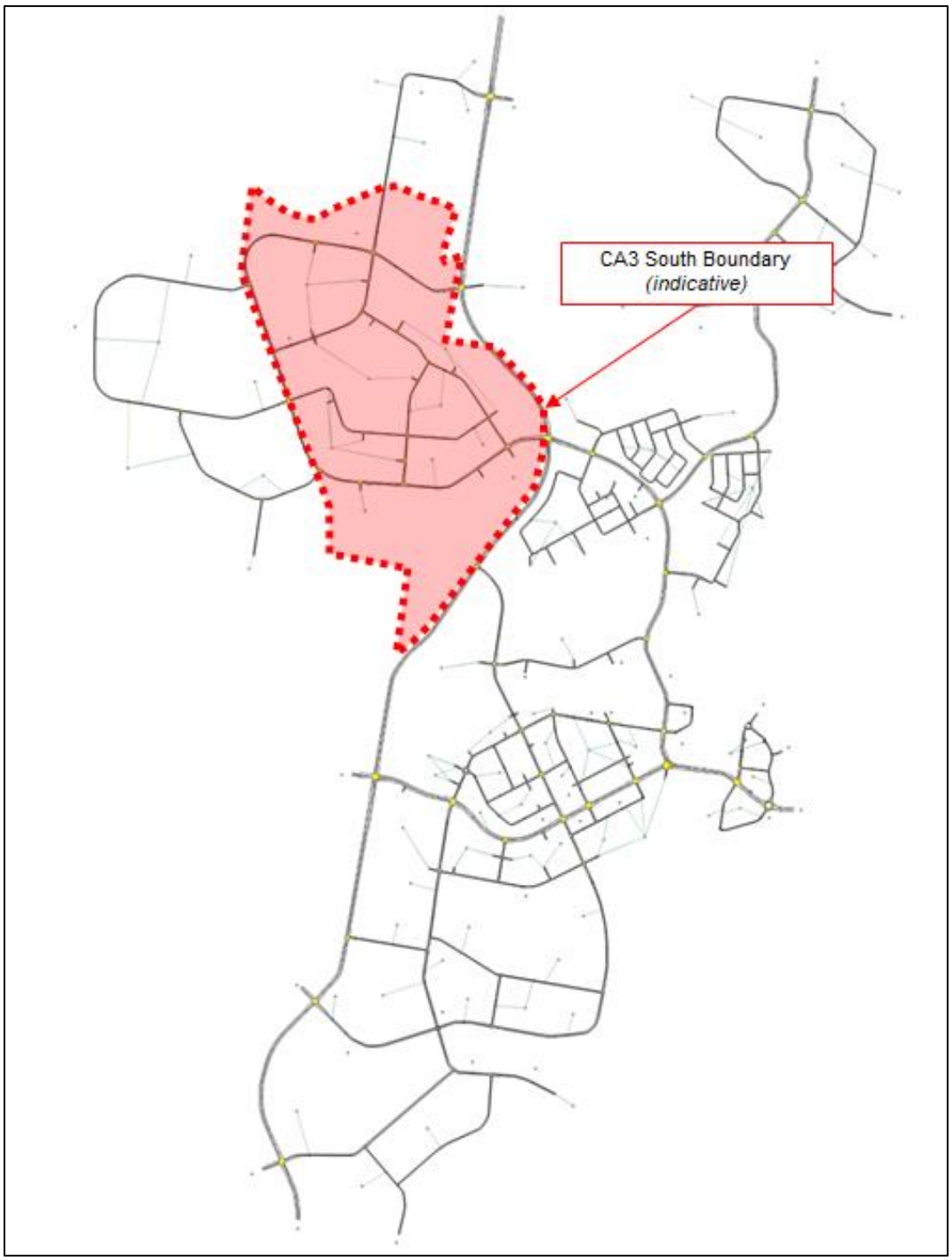


Figure 4.2: Flagstone City Microsimulation (Aimsun) Model Network

4.2.2 Model Time Periods & Profiling

The strategic model cordon provided 2-hour AM and PM peak traffic volumes. In the ultimate (2066) model year, these volumes are multiplied by a factor of 0.53 to determine peak hour traffic volumes, as per the average of VLC's SEQ strategic model.

Given the study area of the model is predominantly greenfield, network peak hours are unknown. As such, AM and PM peak hours are arbitrarily assumed as follows:

- AM Peak: 07:30 – 08:30
- PM Peak: 16:30 – 17:30

The model also includes a 30-minute 'warm-up' and 'cool-down' period for each peak.

4.2.3 Zone System & Traffic Generation

The zone system for the microsimulation model was generally adopted as per the VLC strategic modelling with OD matrices of the study area taken from the cordon of the strategic model. This approach was taken to ensure as close to zone equivalence as possible with the VLC modelling. In the ultimate scenario (2066), 115 centroids are present within the cordon model, including 14 connections to external road links and neighbouring development areas, as per the cordon 'cut' from the strategic modelling.

With further development progression, significant changes in areas of the Flagstone City Structure Plan have occurred since the VLC cordon matrices were developed. To account for modified land uses and the updated scale of development expected in some stages, OD matrices for input into the microsimulation model have been updated accordingly as detailed in the Movement IMP traffic modelling report (*P2300.002R Flagstone City_IMP Traffic Modelling Report, 01/11/2023*).

With the development of the proposed CA3, model zones within CA3 have been further refined to reflect the additional detail reflected in the plan. Subsequent scaling of OD demands for zones are outlined in Table 4.1, based on dwelling numbers for residential zones and developable area for non-residential zones.

Table 4.1: Aimsun Model 2066 OD Demand Updates

Zone ID	Land Use	VLC Cordon Model		CA3 South Plan		Zone Scaling
		Model Area (ha)	Dwellings	Zone Area (ha)	Dwellings	
3942	Local Centre	1.66	-	2.496	-	150.4%
3946	Low Density Residential	12.75	765	-	153	20%
3947	School	7	-	7	-	100%
3948	Low Density Residential	4.8	29	-	225	775.9%
3949	Low Density Residential	5.67	33	-	36	109.1%
3953	Low Density Residential	3.07	77	-	67	87%
3954	Medium Density Residential	5.35	134	-	100	74.6%
3955	Low Density Residential	23.17	280	-	397	141.8%
3956	Low Density Residential	21.64	259	-	312	120.5%
3957	Low Density Residential	40	573	-	447	77.7%
3958	District Centre	7.6	-	8.015	-	105.5%

The relevant zones are shown graphically in Figure 4.3.

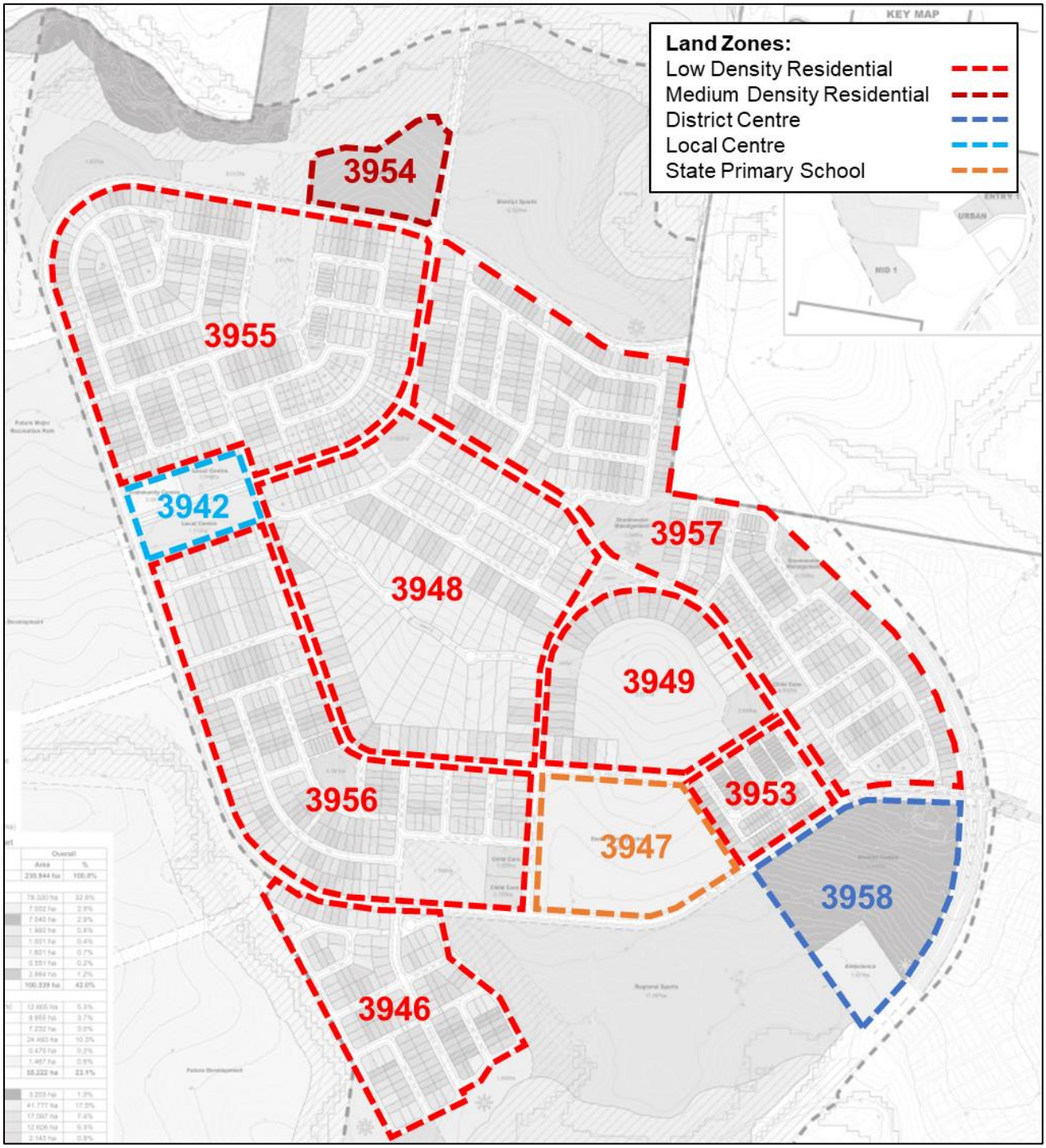


Figure 4.3: Town Centre Zone ID's & Uses

4.2.4 Microsimulation Model Output Overview

Link densities and link delays during the peak hours within the modelled CA3 South area are illustrated in Figure 4.4 to Figure 4.7.

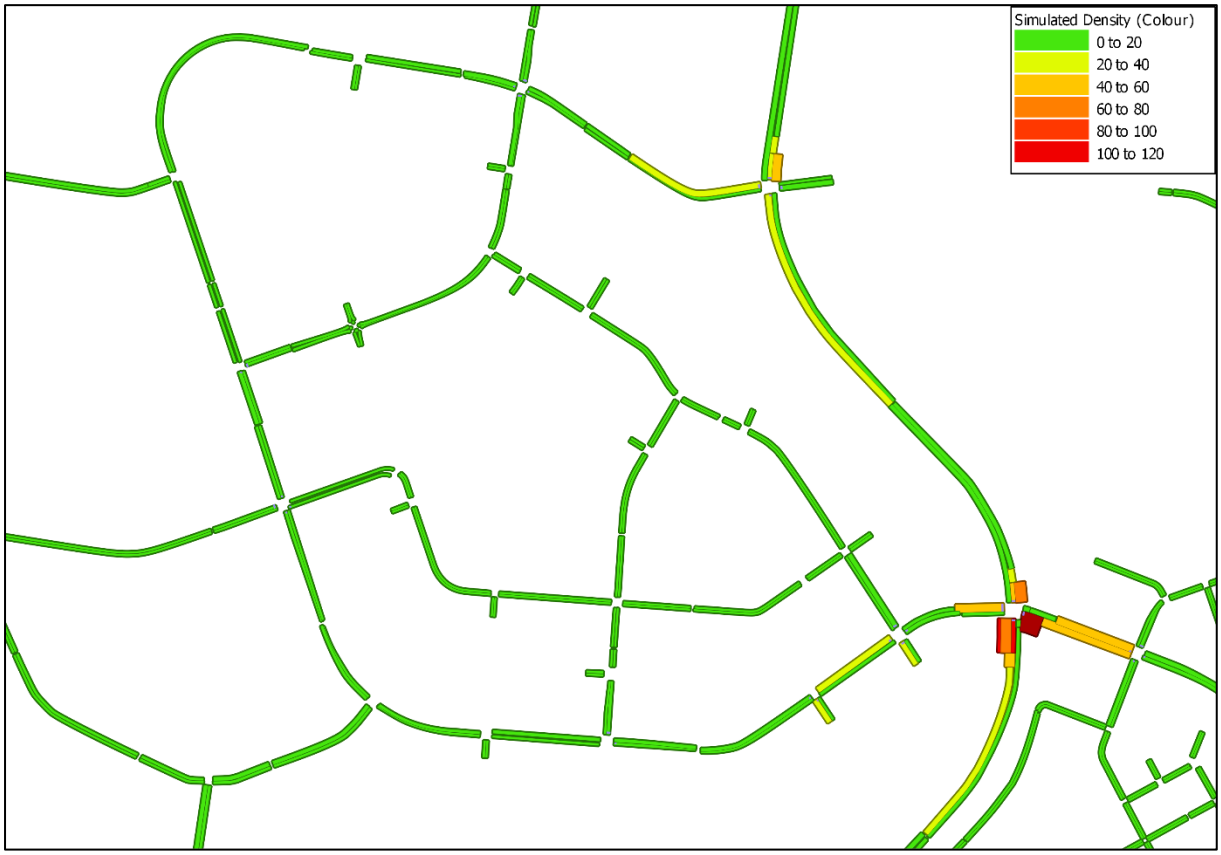


Figure 4.4: AM Peak Link Density

Figure 4.5: PM Peak Link Density

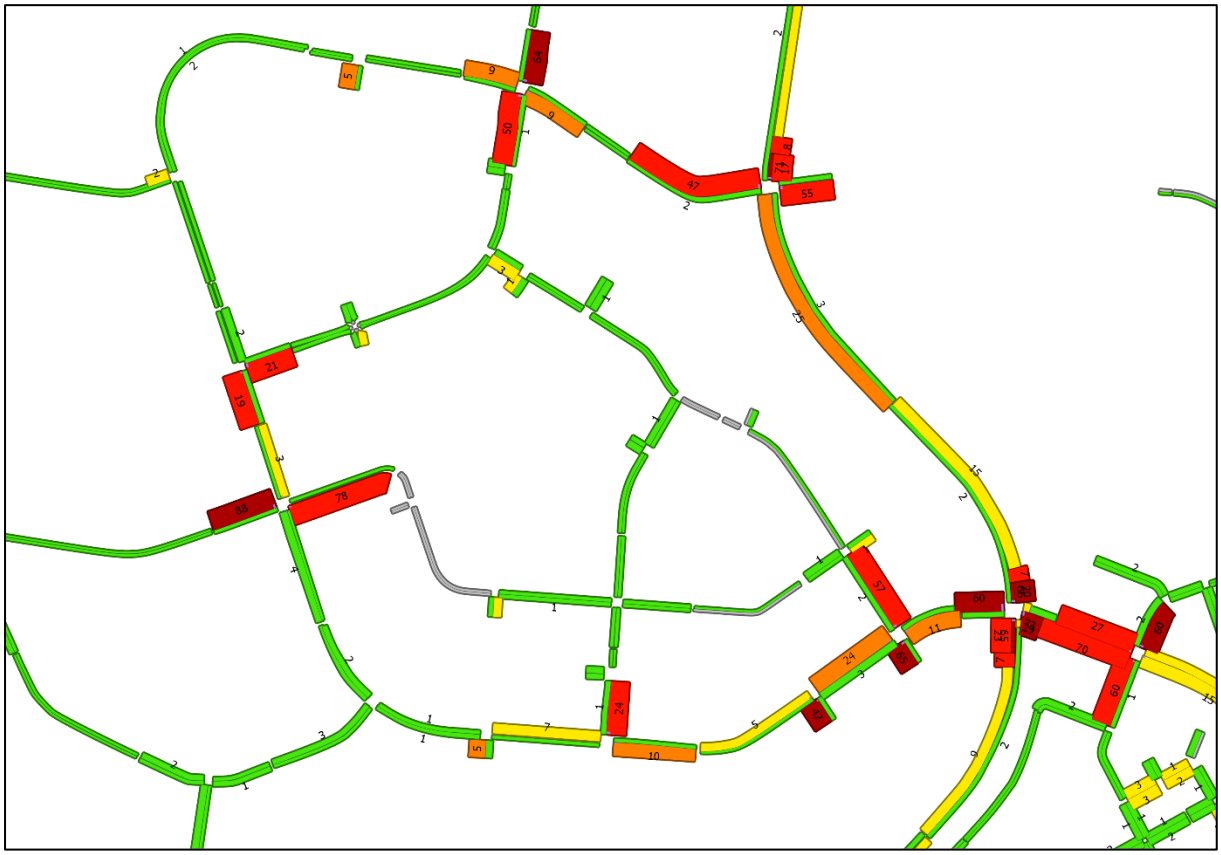


Figure 4.6: Microsimulation Link Delays - AM Peak

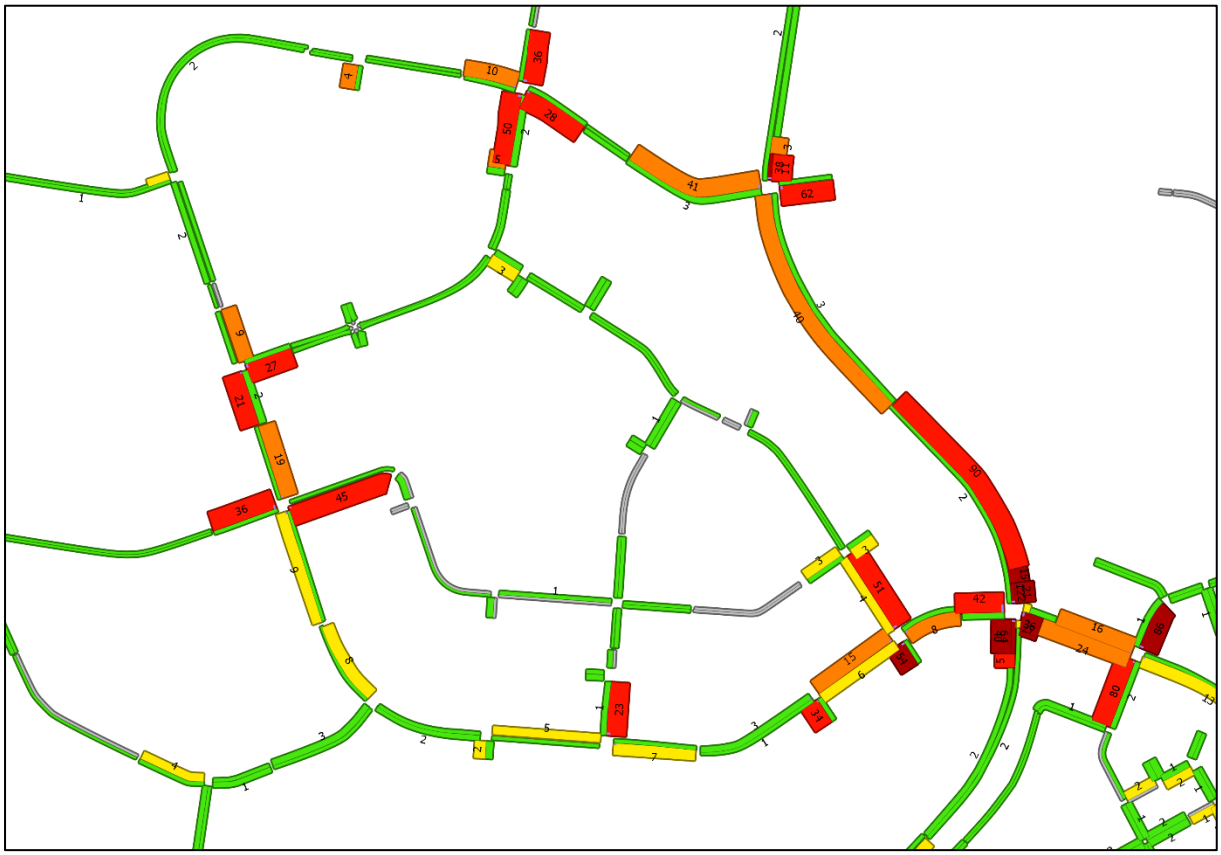


Figure 4.7: Microsimulation Link Delays - PM Peak

As shown, link delays largely occur through key signalised intersections as delays are inherent with a signalised intersection given all vehicles are required to stop at some point. That said, based on the delay results, links are typically expected to be within acceptable performance limits. These signalised intersection delays are typical in an urban environment and considering the forecast growth to the ultimate 2066 design year. Regardless, further assessment of these intersections is detailed further below

4.3 Intersection Assessment

4.3.1 Overview

The key intersections assessed comprise of future trunk intersections identified in the updated Movement IMP as well as additional signalised intersections within the CA3 South area itself. The intersections assessed and their relevant ID are shown in Figure 4.8.

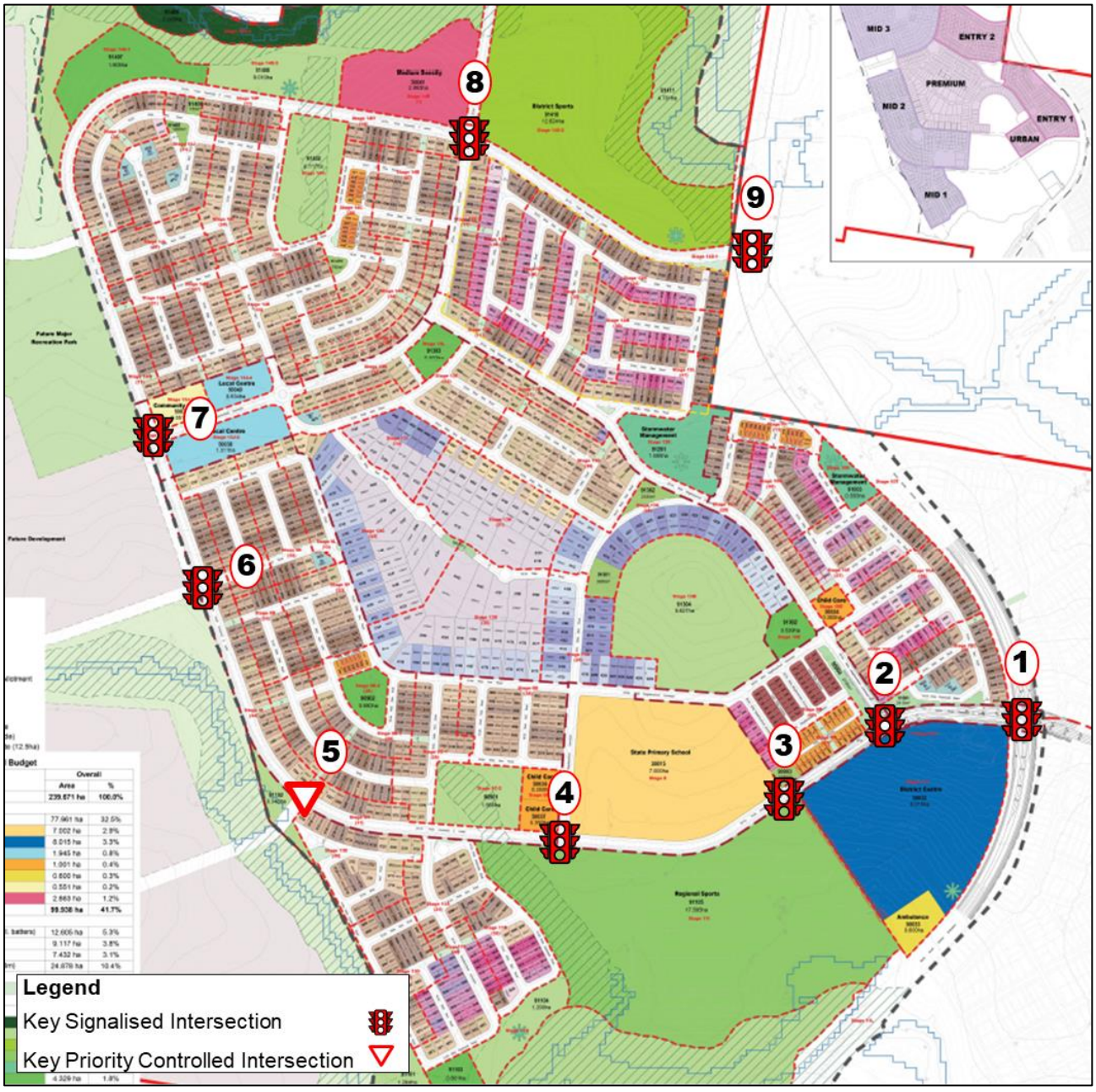


Figure 4.8: Key Intersections

4.3.2 Intersection Forms and Footprints

Key intersection layouts were transferred into SIDRA Intersection (v9.1) based on the Aimsun model layouts and assessed using peak flows extracted from the Aimsun models. This was to gain an indication of critical peak performance at the intersection level.

The resultant intersection forms and layouts are indicative only and subject to change based on further detailed assessment associated with future stages of development. Importantly, ultimate intersection forms are based on 2066 planning (42 years into the future) which may be subject to change over time.

NOTE: turn pocket lengths indicated on SIDRA layouts are indicative only and subject to design to accommodate queuing, deceleration and operational factors.

4.3.3 Intersection Assessment Summary

A summary of the SIDRA intersection results for the key intersections identified is outlined in Table 4.2. Detailed SIDRA outputs are provided in **Appendix C**.

Table 4.2: SIDRA Intersection Results Summary

Intersection ID	DOS (v/c)		Avg. Delay (s)		LOS	
	AM	PM	AM	PM	AM	PM
1	0.89	1.06	44	110	D	F
2	0.82	0.87	29	35	C	D
3	0.64	0.73	10	11	A	B
4	0.54	0.44	8	6	A	A
5	0.48	0.21	6	5	A	A
6	0.33	0.43	9	16	A	B
7	0.14	0.20	7	9	A	A
8	0.71	0.62	23	22	C	C
9	0.89	0.90	52	52	D	D

As shown, with forecast ultimate (2066) traffic volumes, intersections are expected to generally operate within acceptable performance limits in the AM and PM peak hours. The New Beith Road / Flagstonian Drive intersection is forecast to exceed typical performance thresholds in the PM peak only. However, due to the aspirational nature and long-term uncertainty associated with forecasting vehicle and pedestrian volumes for such a long design horizon (i.e. 42-years into the future), it is unclear if these forecasts will ever be met.

Further to this, a key component of the New Beith Road / Flagstonian Drive intersection performance is the impact of fully protected pedestrian movements on the efficiency of the signals noting the long pedestrian crossing distances. Above results adopt SIDRA default pedestrian crossing volumes of 50 pedestrians per hour on each crossing. As such, a sensitivity test was undertaken to test the comparative performance of the intersection if pedestrian volumes were reduced, thereby reducing green time for the pedestrian phase and improving signal efficiency. The east-west pedestrian crossing on the southern approach of the New Beith Road / Flagstonian Drive intersection was determined as critical to intersection performance. Table 4.3 below demonstrates that the intersection would operate within acceptable performance limits if these east-west pedestrian volumes were reduced to 20 per hour.

Table 4.3: Intersection 1 Sensitivity Test SIDRA Results Summary

Intersection ID	DOS (v/c)		Avg. Delay (s)		LOS	
	AM	PM	AM	PM	AM	PM
1	0.87	0.99	39	84	D	F

Based on the above, and the aspirational and somewhat uncertain nature of the 42-year design horizon, the intersection configuration and performance is considered acceptable.

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5. ALTERNATIVE TRANSPORT PROVISIONS

5.1 Public Transport

Regional and local bus routes are proposed throughout Context Area 3 generally in accordance with the current Movement IMP and the Context Area plan. Exact bus stop locations through the masterplan area are subject to consultation with TMR / TransLink and may be determined as a part of further applications for specific stages of the CA3 South. Regardless, indicative locations of bus stop pairs within the CA3 site area are shown in Figure 5.1 demonstrating a high level of expected public transport coverage within the town centre.

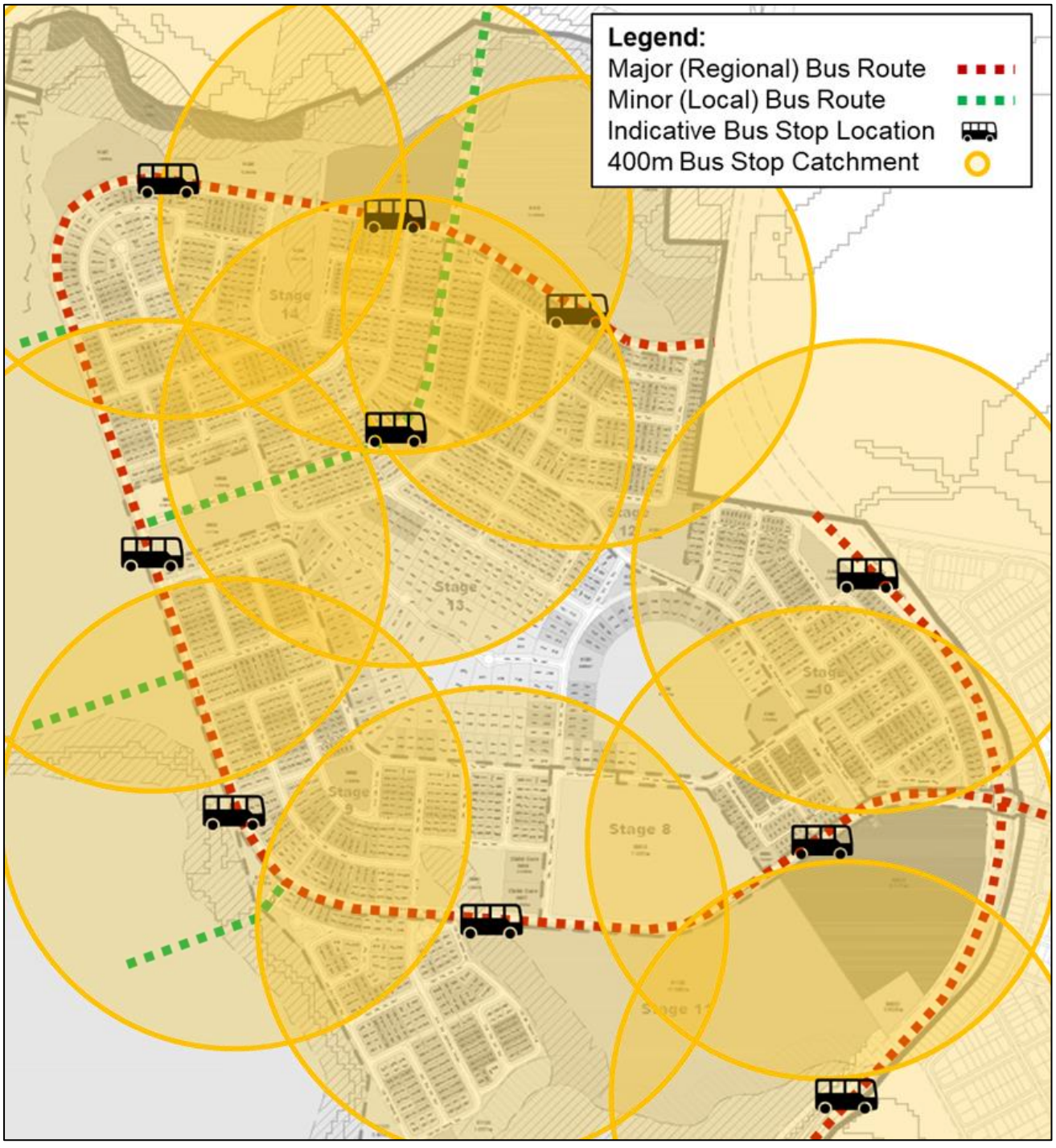


Figure 5.1: Indicative Public Transport Coverage

Where possible, bus stops are located close to signalised intersections to allow road crossings to take place via the signalised crossing(s). Where midblock stops are proposed, these are generally co-located with green space / 'pedestrian linkages' to the nearby residential catchment. This affords residents / passengers with more direct connection points from the stop infrastructure / bus service.

As shown, the majority of the proposed development area is located within reasonable walking distance of a future public transport route / stop, with only a small portion of the lowest density, slope-affected Lots outside of the 400m walking radius. Consistent with public transport requirements of the Flagstone Development Scheme, the indicative bus stop locations identified will result in more than 95% of residential dwellings to be located within walking distance of a bus stop.

Note that bus stop types shall be subject to future applications and detailed design and be in accordance with TransLink's *Public Transport Infrastructure Manual (PTIM)*.

5.2 Active Transport Provisions

5.2.1 Overview

Pedestrian and cycle infrastructure will be provided throughout the masterplan area both within the road reserve and outside the road reserve through park linkages and private / shared pedestrian zones.

Major active transport links with separated cycle tracks and pedestrian paths within the road reserve are proposed within:

- New Beith Road (North-south adjacent the CA3 South area)
- 2-lane trunk roads (encircling the majority of the CA3 South area)
- The Regional Sport Park (through the parklands).

Shared paths shall also be provided on the frontage of the state primary school site. Parks, open space and pedestrian linkages are also proposed throughout the site area, with a large number of linkages between residential lots to provide direct pedestrian access between local neighbourhoods and the wider active (and public) transport network.

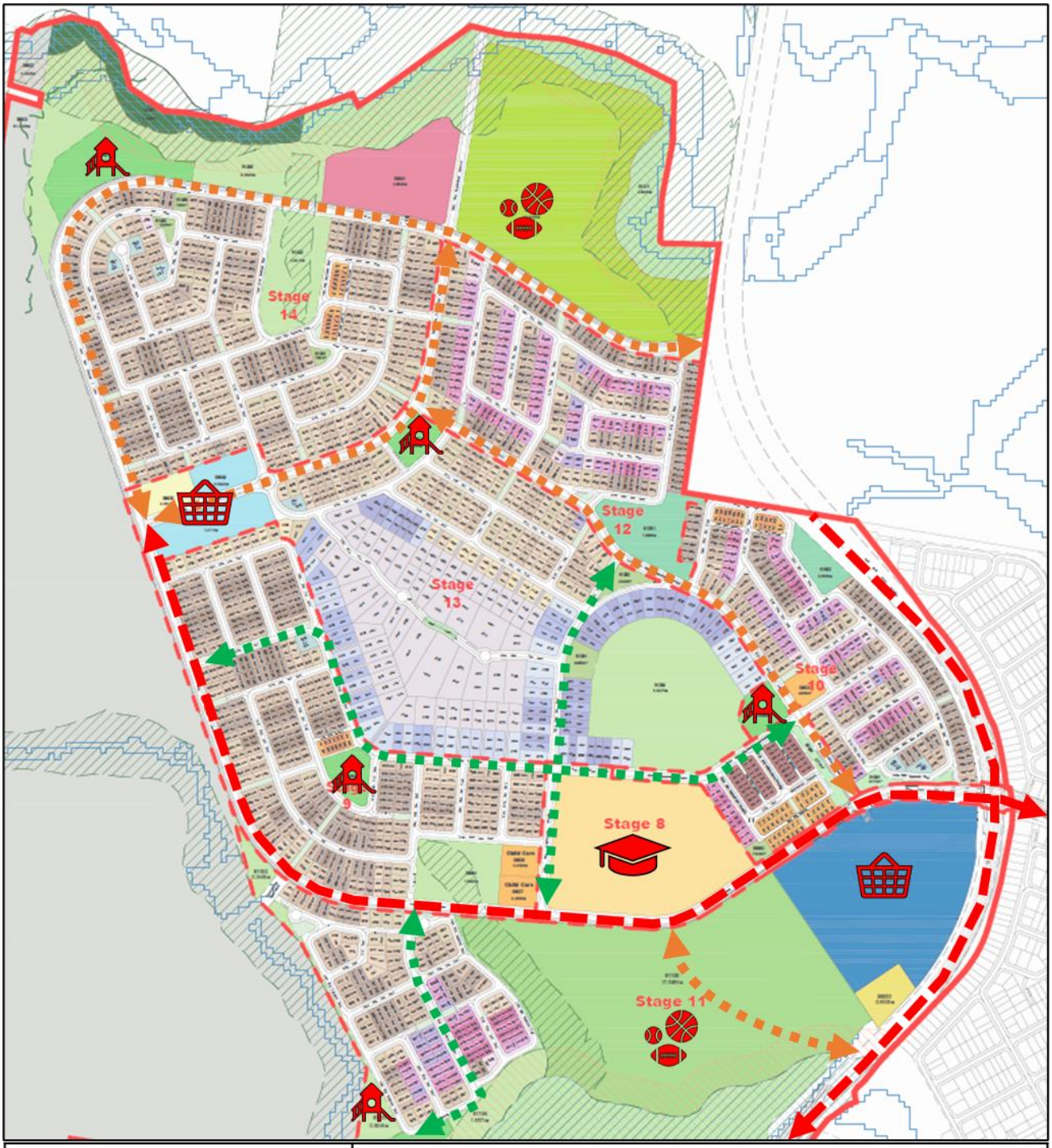
5.2.2 Active Transport Strategy Development

An active transport strategy was developed for the site area to deliver a hierarchy of active transport provisions. The strategy is based on:

- Key active transport attractors
- Relevant user types
- Key active transport desire line routes.

Key active transport attractors consist of the major land uses including retail/commercial centres, schools, and various types of parklands. These land uses are expected to attract a substantial active transport demand from the residential lots throughout the site area

The key attractors and key pedestrian desire line routes through the site area are depicted in Figure 5.2 and provided in **Appendix D**.



Desire Line Routes		Key Attractors			
Major	◄ ▬ ►	Retail / Dining		Sports Parks	
Medium	◄ ▪▪▪ ►	State School		Local Parks	
Low	◄ ▪▪▪ ►				

Figure 5.2: Key Attractors and Active Transport Desire Line Routes

Based on the above attractors and desire line routes, an active transport route hierarchy was developed to specify a set of criteria and relevant infrastructure based on route classification.

The overarching hierarchy classification considers three levels, being:

- Major
- Medium
- Low.

The hierarchy does not suggest any lower level of importance or quality of infrastructure, rather defines the type of trip attractors/generators and user types that are most likely to use the prevailing facility, and therefore assist in the determination of an appropriate facility/infrastructure type.

For example:

a Major classification applies to routes / infrastructure that service multiple trip attractors such as connections between schools, parklands and major retail centres. This hierarchy may warrant a wider treatment due to a higher volume of active transport users.

a Low classification applies to routes / infrastructure that primarily service the immediate catchment, are not expected to service a large number of user types and warrant pathway treatments within the road reserve e.g. 1.5m footpath(s).

The route hierarchy criteria are summarised in Table 5.1.

Table 5.1: Criteria to Determine Route Hierarchy

Classification	Criteria	Infrastructure
Major	Provides connections: ▪ Within or between key centres ▪ To schools, shopping centres, transit hubs/stops ▪ Along major, higher volume transport routes	Includes: ▪ Separated cycleways ▪ Shared paths outside road reserve ▪ Shared paths ≥3m inside road reserve both sides of road
Medium	Provides connections: ▪ Within and between residential areas ▪ To major active transport routes ▪ To open space / parks ▪ To public transport stops	Includes: ▪ Shared path inside road reserve one side ▪ Shared paths ≤3m inside road reserve both sides of road ▪ Pathways outside road reserve (open space)
Low	Provides connections: ▪ Within immediate catchment (400m) ▪ On lower order, lower volume transport routes	Includes: ▪ Pathways inside road reserve one side (e.g. 1.5m footpath)

The key active transport linkages throughout the site area were therefore developed adopting the strategy of key attractors, key desire line routes and the criteria outlined in the route hierarchy classification. The key active transport linkages and route hierarchy is shown in Figure 5.3 and provided in **Appendix D**.

As shown, the proposed key active transport linkages are considered to provide a high-level of service and accessibility for the CA3 South site and provide connectivity to surrounding services and properties. The proposed connections also generally align with the active transport components of the current Movement IMP.

Further, the DCOP identifies an off-road shared path through the Regional Sport Park and along the southern extent of the CA3 area. While not specifically identified on the plan included at **Appendix A**, the proposal does not preclude part provision of this path, and this off-road shared path is recommended to form part of any future approvals relating to the sports park.

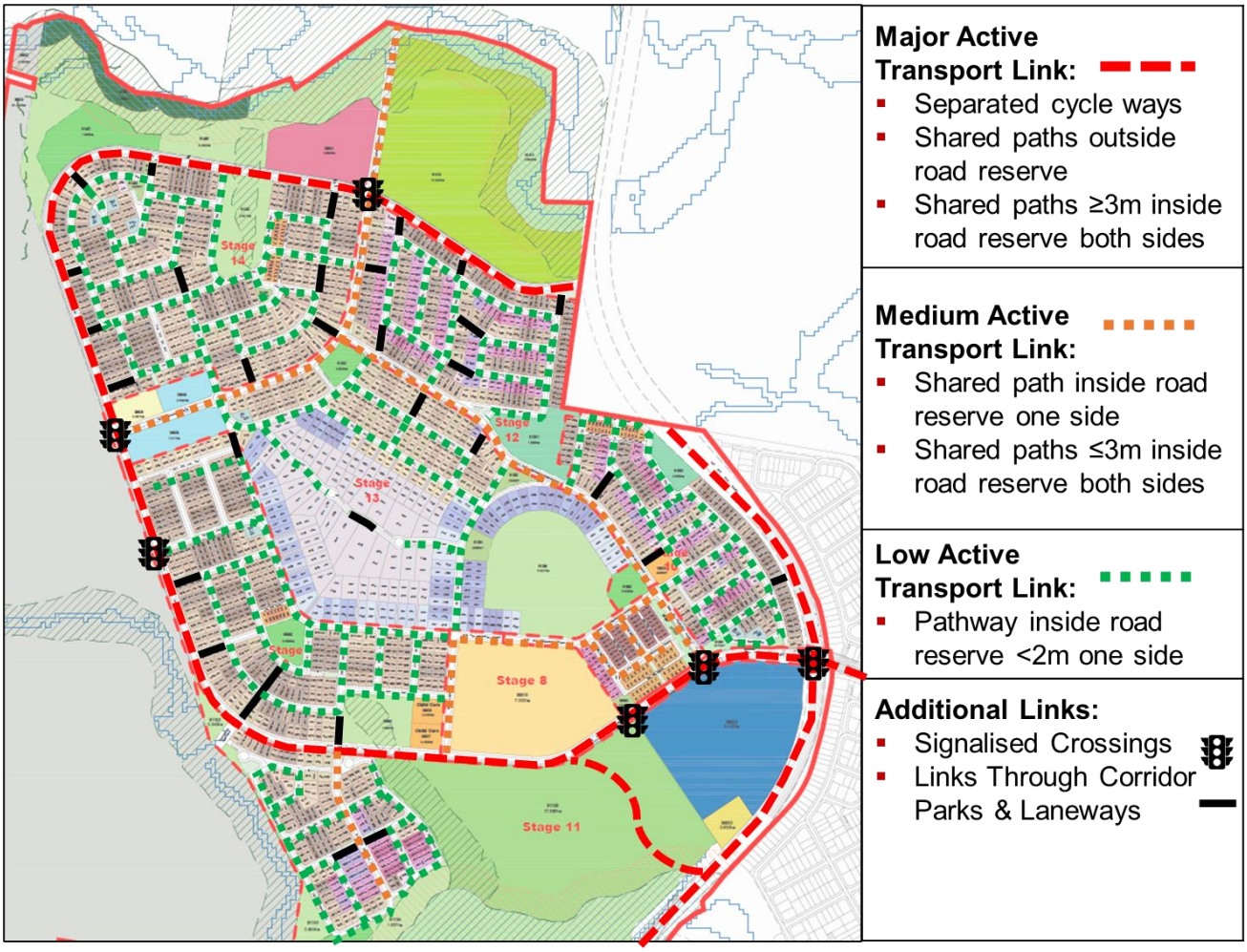


Figure 5.3: **Active Transport Linkages**

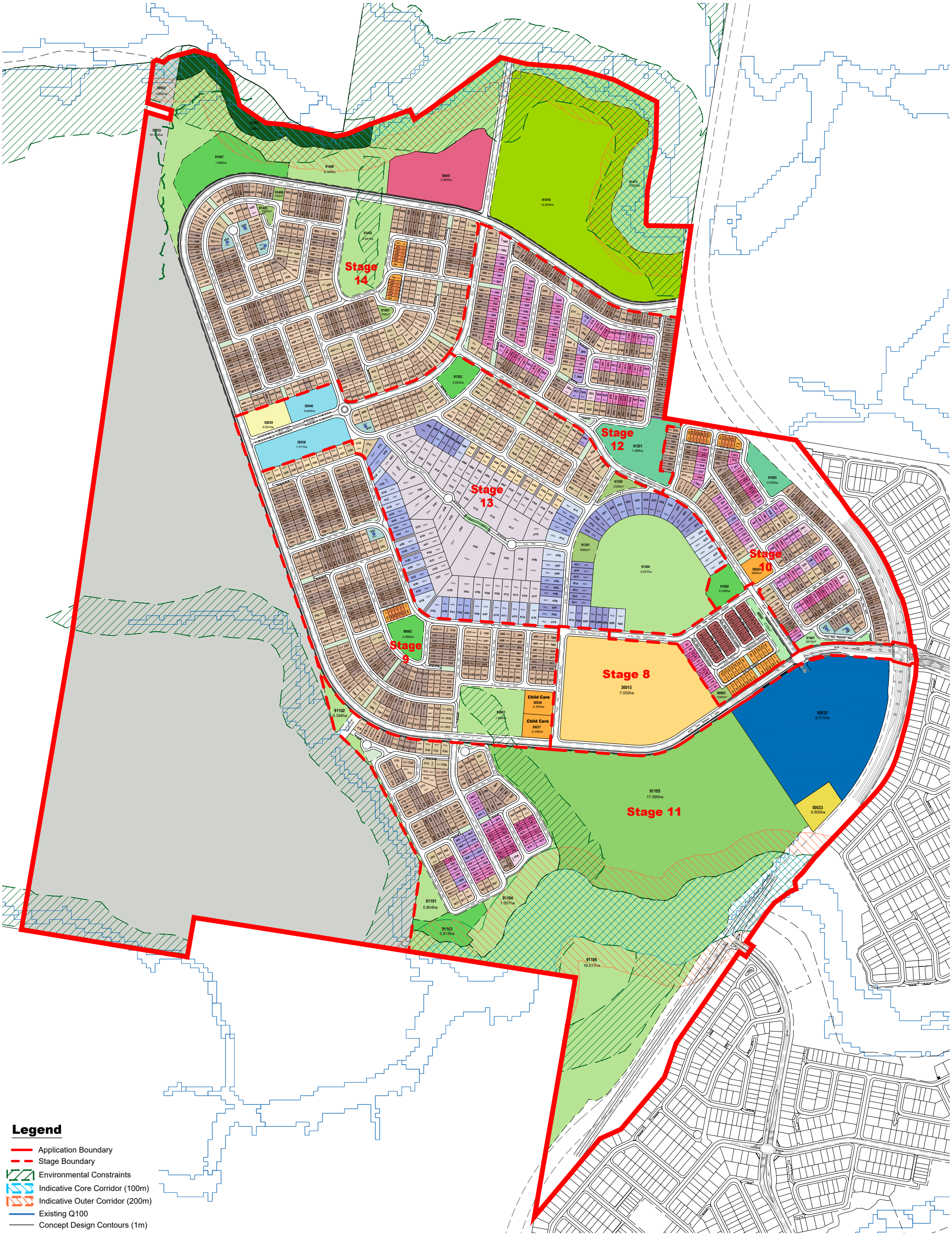
6. SUMMARY & CONCLUSIONS

The traffic and transport findings for the Flagstone Town Centre Masterplan are summarised below:

- The proposed development is located within the southern portion of Context Area 3 (CA3 South) of Flagstone City and incorporates a range of land uses generally consistent with relevant planning
- CA3 South includes in the order of 1,700 low-medium density dwellings, local and district centres, a primary school and child care, community centre, ambulance station and parks and open spaces
- Proposed road hierarchies are generally in accordance with the Movement IMP and/or the EDQ *Street and Movement Network PDA Guideline*, with exception only to the "Neighbourhood Esplanade" which reflects EDQ's Neighbourhood Access (16.5m) with a marginal reduction in verge width on one side. Road hierarchies are therefore considered to meet the relevant requirements
- Strategic traffic modelling was undertaken by VLC for which cordon matrices were extracted for the development of microsimulation (Aimsun) traffic models of Flagstone City, this process has been used throughout all previous application material and as such, presents a consistent approach to determining road network / intersection requirements
- Microsimulation modelling indicates that CA3 links are typically expected to be within acceptable performance limits with some delays noted on approaches to signalised intersections on trunk roads. This is typical of signalised intersections in an urban environment, noting the 2066 design year adopted for the ultimate assessment
- Overall findings of intersection modelling of key intersections demonstrate that, based on current estimates of future traffic volumes, key intersections as detailed can generally cater for peak traffic demands within CA3 south
- Approximately 95% of the proposed site is located within 400m of a future bus route / stop / service achieving the public transport requirements of the Development Scheme. Stops are generally located close to signalised intersections (crossings) or midblock adjacent green pedestrian links
- The CA3 South site is considered to provide a highly accessible active transport network, with a range of route options both within and outside the road reserve. The proposed connections also generally align with the active transport components of the Movement IMP and do not preclude the off-road shared path provisions identified in the DCOP.

Based on the above assessment, it is concluded that the proposed road network, intersection arrangements and alternate transport provisions are expected to accommodate transport demands associated with the proposed CA3 South development.

Appendix A: CA3 South Layout



Legend

- Application Boundary
- Stage Boundary
- Environmental Constraints
- Indicative Core Corridor (100m)
- Indicative Outer Corridor (200m)
- Existing Q100
- Concept Design Contours (1m)
- (1) Possible Multiple Residential Allotment (Max. no. of dwellings)

TO BE READ IN CONJUNCTION WITH 110056-640 STAGES 8-14 OVERALL STATISTICS

PLAN REF:	110056 – 639
Rev No:	–
DATE:	13 MARCH 2024
CLIENT:	PEET
DRAWN BY:	JC / MM
CHECKED BY:	MD

0 100 200 300 400 500 1 : 7,500 @ A3

FLAGSTONE CA3 SOUTH
STAGES 8 - 14
OVERALL PLAN OF SUBDIVISION

PEET

URBAN DESIGN
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CA3 SOUTH - Stage 8 - 14 Yield Breakdown

Lot Type	Stage 8	Stage 9	Stage 10	Stage 11	Stage 12	Stage 13	Stage 14	Overall	
	Yield	Yield	Yield	Yield	Yield	Yield	Yield	Yield	%
25m Deep Terrace Product									
Terrace 9.5m Allotment	—	32	—	—	—	—	—	32	**2%**
Subtotal	**—**	**32**	**—**	**—**	**—**	**—**	**—**	**32**	**2%**
25m Deep Product									
Villa 10m Allotment	—	4	8	15	7	—	—	34	**2%**
Premium Villa 12.5m Allotment	—	7	21	15	41	—	—	84	**5%**
Courtyard 14m Allotment	—	—	28	16	33	—	—	77	**5%**
Premium Courtyard 16m Allotment	—	—	3	8	5	1	—	17	**1%**
Premium Traditional 20m Allotment	—	—	4	1	4	—	1	10	**1%**
Subtotal	**—**	**11**	**64**	**55**	**90**	**1**	**1**	**222**	**14%**
28m Deep Terrace Product									
Terrace 7.5m Allotment	—	5	9	—	—	—	10	24	**1%**
Terrace 9.5m Allotment	—	26	4	—	—	—	4	34	**2%**
Subtotal	**—**	**31**	**13**	**—**	**—**	**—**	**14**	**58**	**4%**
30m Deep Product									
Villa 10m Allotment	—	53	23	5	26	—	47	154	**9%**
Premium Villa 12.5m Allotment	—	89	52	29	66	—	94	330	**20%**
Courtyard 14m Allotment	—	123	42	40	43	37	170	455	**28%**
Premium Courtyard 16m Allotment	—	24	6	15	8	44	54	151	**9%**
Traditional 18m Allotment	—	4	—	—	—	11	—	15	**1%**
Premium Traditional 20m Allotment	—	11	5	9	5	22	14	66	**4%**
Possible Multiple Residential Allotment	—	1	2	—	—	1	3	7	**0%**
Subtotal	**—**	**305**	**130**	**98**	**148**	**115**	**382**	**1178**	**72%**
50m+ Deep Product									
Courtyard 14m Allotment	—	—	—	—	—	30	—	30	**2%**
Premium Courtyard 16m Allotment	—	—	—	—	—	25	—	25	**2%**
Traditional 18m Allotment	—	—	—	—	—	20	—	20	**1%**
Premium Traditional 20m Allotment	—	—	—	—	—	14	—	14	**1%**
Ridgetop Allotment	—	—	—	—	—	56	—	56	**3%**
Subtotal	**—**	**—**	**—**	**—**	**—**	**145**	**—**	**145**	**9%**
Total Residential Allotments	**—**	**379**	**207**	**153**	**238**	**261**	**397**	**1635**	**100%**
Residential Net Density	**—**	**14.7 dw/ha**	**15.3 dw/ha**	**13.6 dw/ha**	**14.8 dw/ha**	**8.9 dw/ha**	**11.9 dw/ha**	**13.6 dw/ha**	
Super Lots									
Local Centre	—	—	—	—	—	—	—	—	
District Centre	—	—	—	1	—	—	—	1	
Ambulance	—	—	—	1	—	—	—	1	
Child Care	—	2	1	—	—	—	—	3	
Community Centre	—	—	—	—	—	—	—	—	
State Primary School	1	—	—	—	—	—	—	1	
Medium Density Allotment	—	—	—	—	—	—	1	1	
Balance Allotment	—	—	—	—	—	—	2	2	
Subtotal	**1**	**2**	**1**	**2**	**—**	**—**	**3**	**9**	
Total Allotments	**1**	**381**	**208**	**155**	**238**	**261**	**400**	**1644**	
Maximum Potential Residential Dwellings (Includes Multiple Residential Allotments)	**—**	**380**	**209**	**153**	**238**	**262**	**402**	**1644**	
Maximum Potential Net Residential Density	**—**	**14.7 dw/ha**	**15.5 dw/ha**	**13.6 dw/ha**	**14.8 dw/ha**	**8.9 dw/ha**	**12.1 dw/ha**	**12.7 dw/ha**	

CA3 SOUTH - Stage 8 - 14 Land Budget

Land Use	Stage 8	Stage 9	Stage 10	Stage 11	Stage 12	Stage 13	Stage 14	Overall	
	Area	Area	Area	Area	Area	Area	Area	Area	%
	10.082 ha	28.083 ha	16.892 ha	66.313 ha	16.131 ha	37.552 ha	144.019 ha	319.072 ha	100.0%
Saleable Area									
Residential Allotments	—	14.631 ha	7.860 ha	6.287 ha	9.271 ha	23.013 ha	16.894 ha	77.956 ha	24.4%
Medium Density	—	—	—	—	—	—	2.863 ha	2.863 ha	0.9%
Local Centre	—	—	—	—	—	1.945 ha	—	1.945 ha	0.6%
District Centre	—	—	—	8.015 ha	—	—	—	8.015 ha	2.5%
Ambulance	—	—	—	0.600 ha	—	—	—	0.600 ha	0.2%
Child Care	—	0.700 ha	0.301 ha	—	—	—	—	1.001 ha	0.3%
Community Centre	—	—	—	—	—	0.551 ha	—	0.551 ha	0.2%
State Primary School	7.002 ha	—	—	—	—	—	—	7.002 ha	2.2%
Total Area of Allotments	**7.002 ha**	**15.331 ha**	**8.161 ha**	**14.902 ha**	**9.271 ha**	**25.509 ha**	**19.757 ha**	**99.933 ha**	31.3%
Road									
North South Arterial Dedication (incl. batters)	0.266 ha	—	3.079 ha	9.562 ha	—	—	0.132 ha	13.039 ha	4.1%
Trunk Connector 2 Lanes (23.7m)	2.102 ha	2.498 ha	—	0.144 ha	0.028 ha	0.327 ha	4.052 ha	9.151 ha	2.9%
Neighbourhood Connector (20.2m)	0.712 ha	1.771 ha	0.598 ha	0.689 ha	1.746 ha	1.016 ha	0.687 ha	7.219 ha	2.3%
Neighbourhood Access Street (16.5m)	—	5.257 ha	3.512 ha	3.116 ha	3.243 ha	3.813 ha	5.971 ha	24.912 ha	7.8%
Laneway (6.5m)	—	0.320 ha	0.075 ha	—	—	—	0.082 ha	0.477 ha	0.1%
Pedestrian Linkages	—	0.365 ha	0.132 ha	0.163 ha	0.256 ha	0.214 ha	0.535 ha	1.665 ha	0.5%
Total Area of New Road	**3.080 ha**	**10.211 ha**	**7.396 ha**	**13.674 ha**	**5.273 ha**	**5.370 ha**	**11.459 ha**	**56.463 ha**	17.7%
Open Space									
Conservation Buffer	—	—	—	—	—	—	1.988 ha	1.988 ha	0.6%
Corridor Park / Conservation	—	1.564 ha	—	19.327 ha	—	5.627 ha	13.997 ha	40.515 ha	12.7%
Stormwater Management	—	—	0.555 ha	—	1.588 ha	—	—	2.143 ha	0.7%
Regional Sports	—	—	—	17.595 ha	—	—	—	17.595 ha	5.5%
District Sports	—	—	—	—	—	—	12.624 ha	12.624 ha	4.0%
Neighbourhood Recreation Park	—	0.580 ha	0.539 ha	0.815 ha	—	—	1.905 ha	3.839 ha	1.2%
Local Recreation Park	—	0.124 ha	—	—	—	0.502 ha	0.255 ha	0.881 ha	0.3%
Local Linear Recreation Park	—	0.273 ha	0.241 ha	—	—	0.542 ha	—	1.056 ha	0.3%
Total Open Space	**—**	**2.541 ha**	**1.335 ha**	**37.737 ha**	**1.588 ha**	**6.671 ha**	**30.769 ha**	**80.641 ha**	25.3%
Balance Allotments									
Balance Allotment	—	—	—	—	—	—	82.034 ha	82.034 ha	25.7%
Total Balance Allotments	**—**	**—**	**—**	**—**	**—**	**—**	**82.034 ha**	**82.034 ha**	25.7%

PLAN REF: **110056 – 640**
Rev No: –
DATE: 13 MARCH 2024
CLIENT: PEET
DRAWN BY: JC / MM
CHECKED BY: MD

Not to Scale @ A3

FLAGSTONE CA3 SOUTH
STAGES 8 - 14
OVERALL PLAN OF SUBDIVISION STATISTICS

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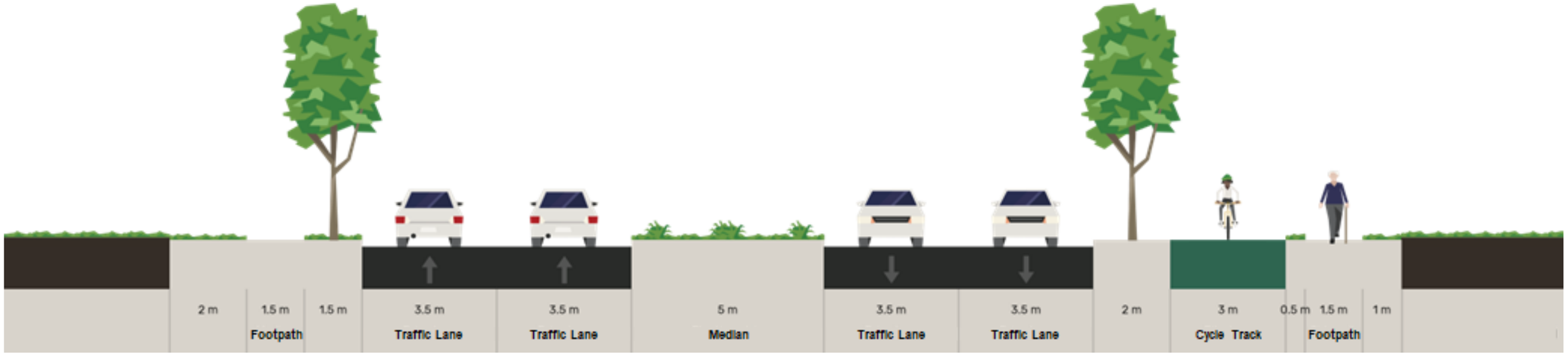
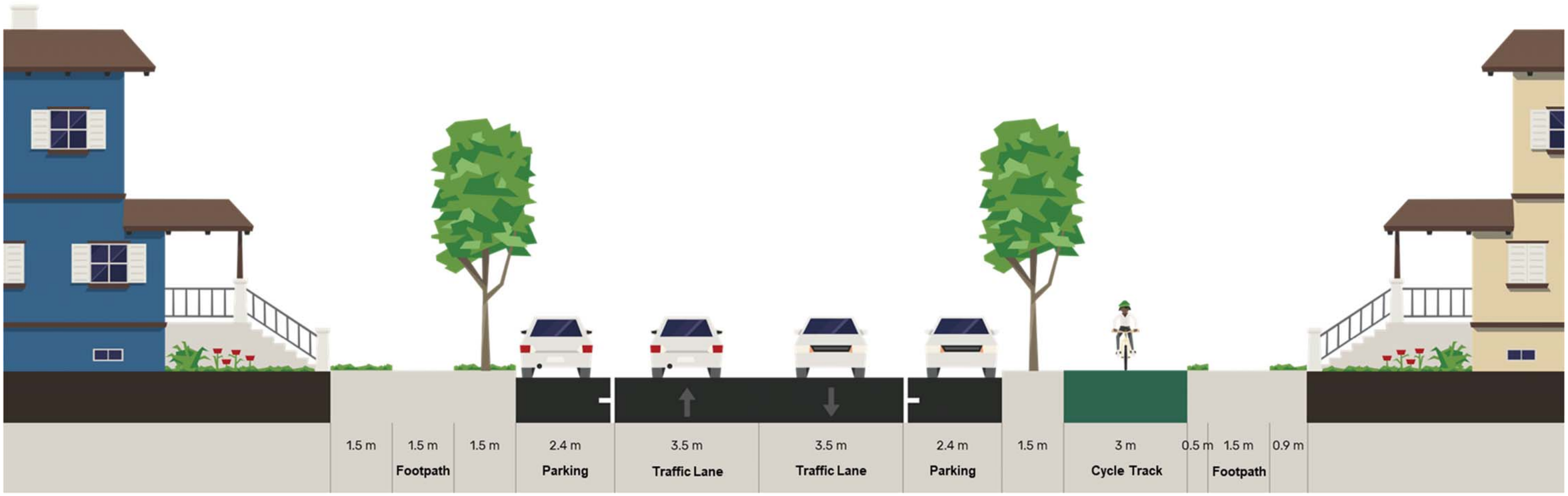
Appendix B: Typical Road Cross-Sections

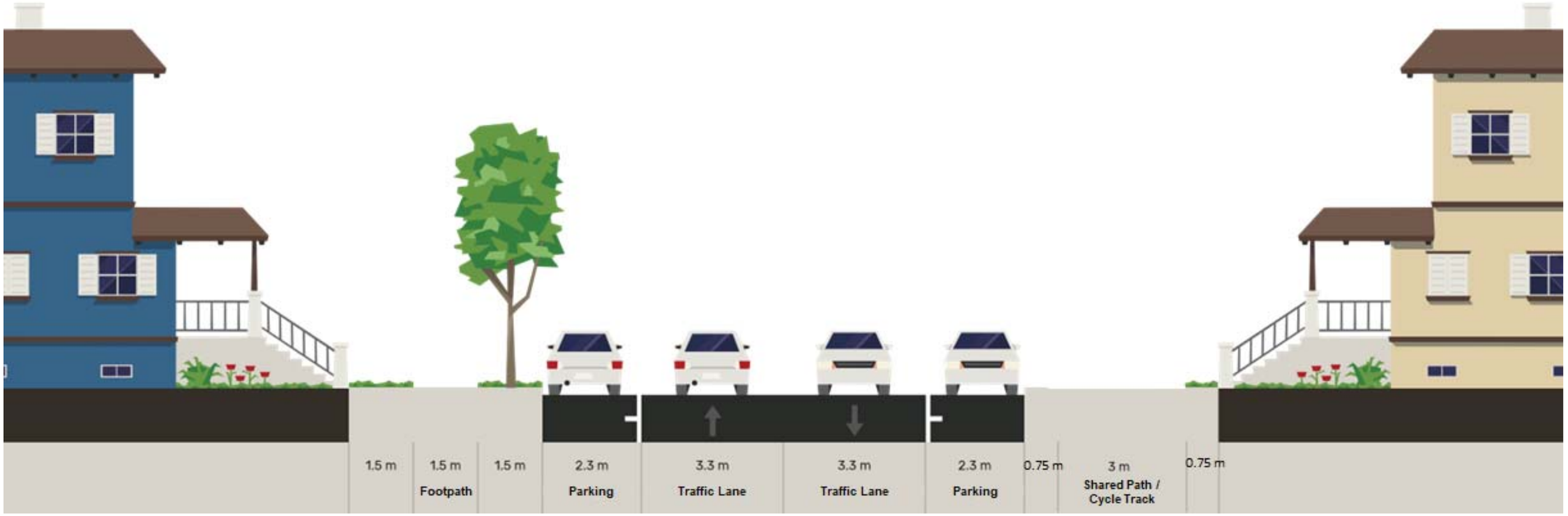
Arterial & Trunk Connector (4 Lanes) Ultimate



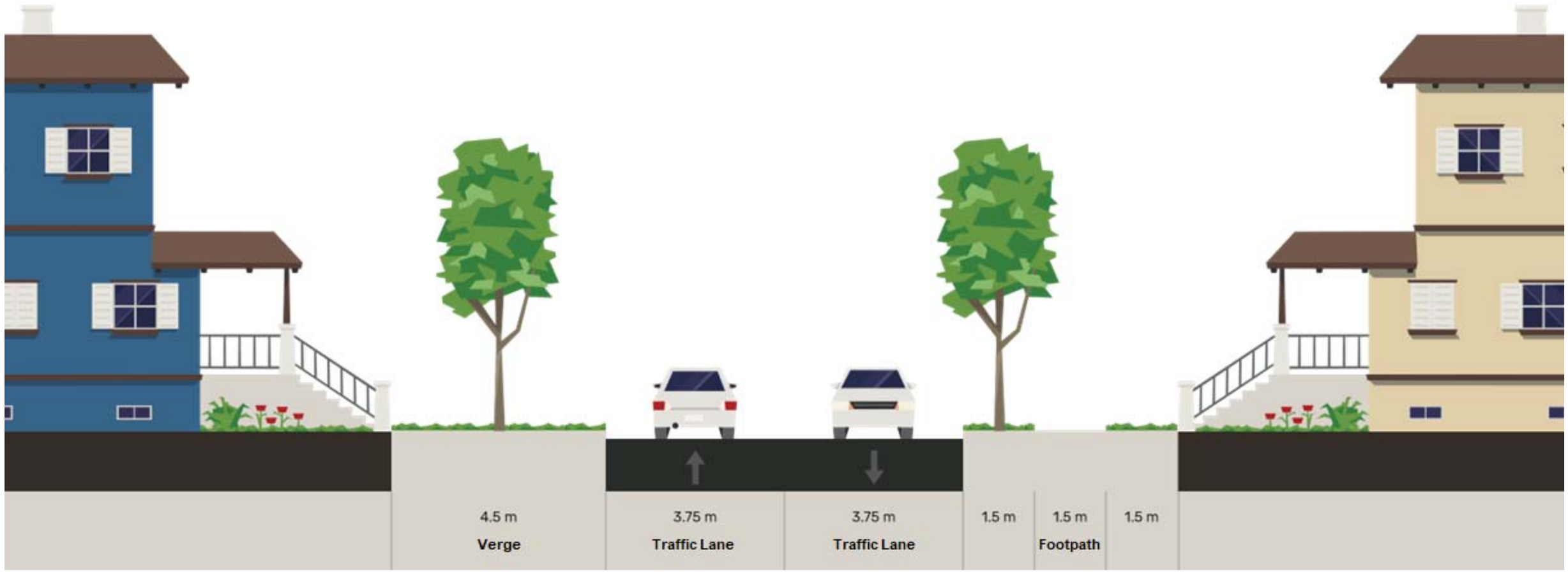
Trunk Connector 2 Lanes (With Parking)



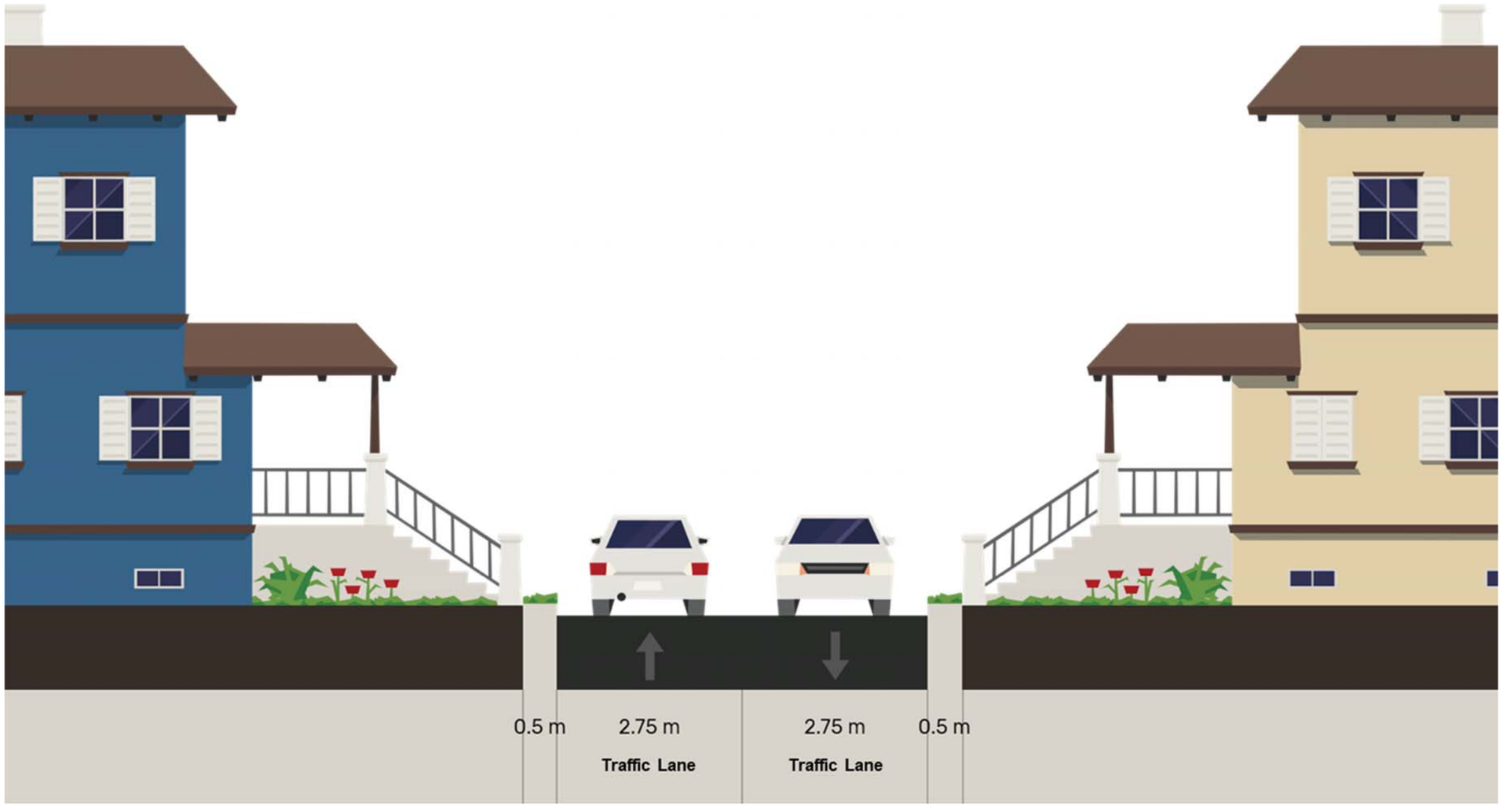
Neighbourhood Connector



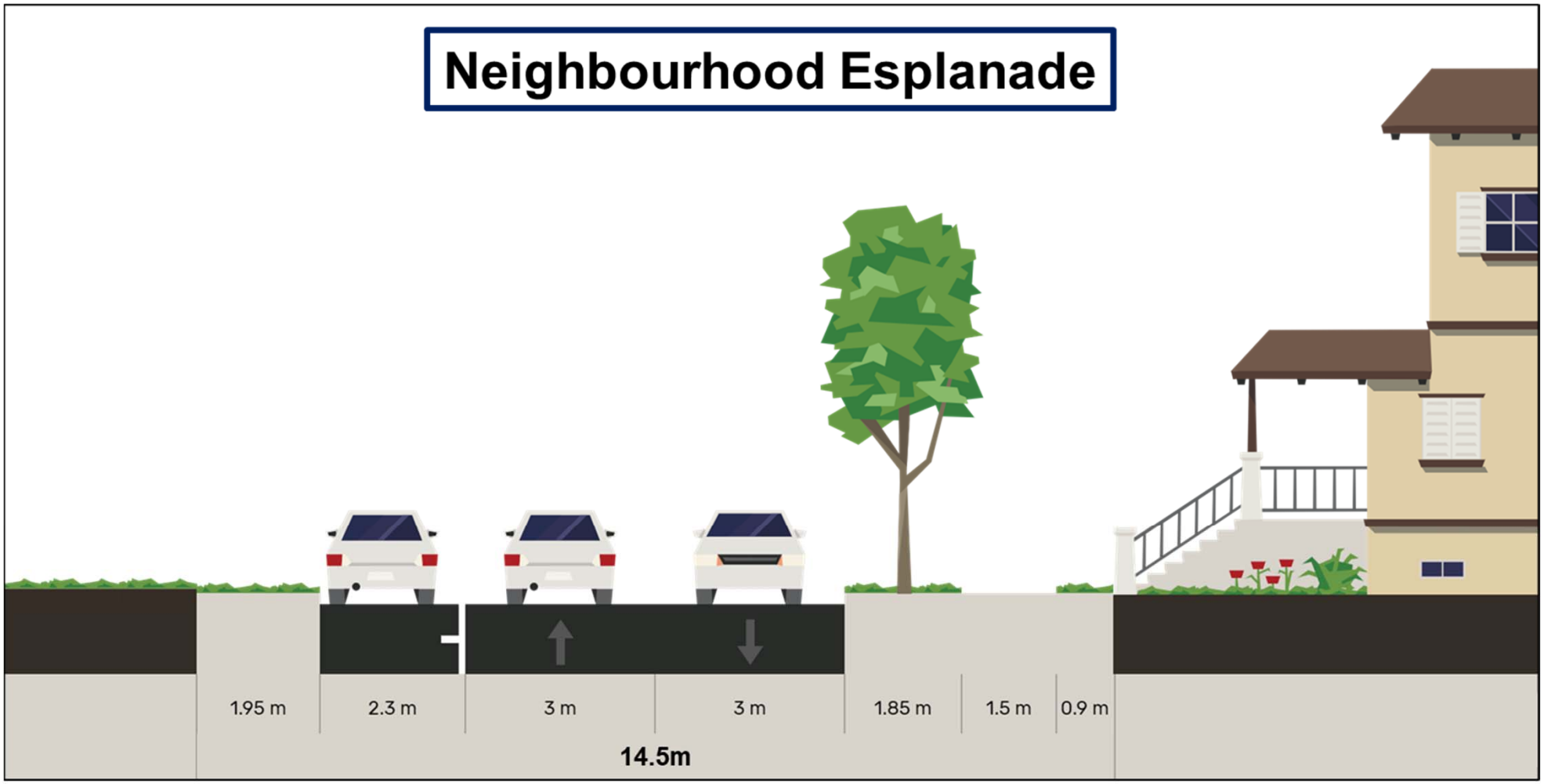
Neighbourhood Access 16.5m



Neighbourhood Lane



Neighbourhood Esplanade



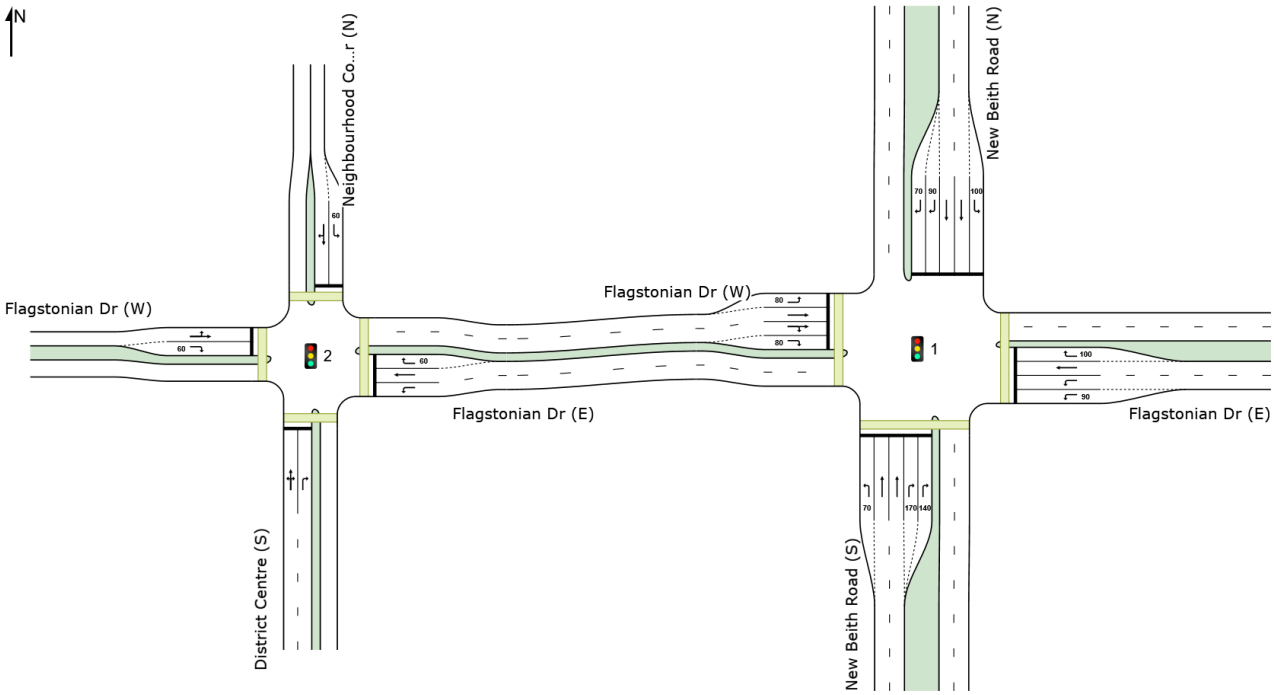
Appendix C: Key Intersection SIDRA Summaries

NETWORK LAYOUT

Network: N101 [2066 District Centre AM (Network Folder: General)]

New Network
Network Category: (None)

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



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
1	NA	1_2066 AM
2	NA	2_2066 AM

Organisation: BITZIOS CONSULTING | Licence: PLUS / FLOATING | Created: Friday, 15 March 2024 2:23:40 PM
Project: P:\P2300 Flagstone City Stages 2-5\Technical\Models\SIDRA\2024_02_16 CA3 Masterplan SIDRAs\P2300.001M 2066 CA3 South Masterplan SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 1 [1_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre AM (Network Folder: General)]

New Beith Road / Flagstonian Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Beith Road (S)															
1	L2	All MCs	160	2.5	160	2.5	0.166	22.4	LOS C	1.8	13.0	0.55	0.71	0.55	45.8
2	T1	All MCs	1346	2.6	1346	2.6	0.847	30.2	LOS C	20.4	146.0	0.88	0.85	0.95	53.1
3	R2	All MCs	675	1.3	675	1.3	* 0.877	62.4	LOS E	12.4	87.6	1.00	0.98	1.24	30.5
Approach			2181	2.2	2181	2.2	0.877	39.6	LOS D	20.4	146.0	0.90	0.88	1.01	43.9
East: Flagstonian Dr (E)															
4	L2	All MCs	240	2.5	240	2.5	0.315	46.5	LOS D	3.4	24.2	0.89	0.78	0.89	35.0
5	T1	All MCs	260	1.9	260	1.9	* 0.646	43.5	LOS D	7.9	56.5	0.97	0.81	0.97	16.2
6	R2	All MCs	221	2.7	221	2.7	0.580	49.5	LOS D	6.7	47.7	0.95	0.82	0.95	36.6
Approach			721	2.4	721	2.4	0.646	46.3	LOS D	7.9	56.5	0.94	0.81	0.94	31.0
North: New Beith Road (N)															
7	L2	All MCs	370	3.2	370	3.2	0.477	19.8	LOS B	5.7	40.8	0.77	0.80	0.77	49.5
8	T1	All MCs	789	6.6	789	6.6	0.766	41.8	LOS D	12.4	91.9	0.98	0.88	1.03	46.4
9	R2	All MCs	178	2.2	178	2.2	* 0.893	73.5	LOS E	3.4	24.3	1.00	0.98	1.49	25.0
Approach			1337	5.1	1337	5.1	0.893	39.9	LOS D	12.4	91.9	0.92	0.87	1.02	43.8
West: Flagstonian Dr (W)															
10	L2	All MCs	274	3.3	274	3.3	0.722	51.2	LOS D	8.7	62.9	0.99	0.86	1.04	32.2
11	T1	All MCs	346	1.4	346	1.4	* 0.896	64.8	LOS E	6.5	46.4	1.00	1.03	1.39	17.6
12	R2	All MCs	155	0.0	155	0.0	0.835	65.6	LOS E	5.6	39.1	1.00	0.96	1.27	27.1
Approach			775	1.8	775	1.8	0.896	60.2	LOS E	8.7	62.9	1.00	0.96	1.24	25.5
All Vehicles			5014	2.9	5014	2.9	0.896	43.8	LOS D	20.4	146.0	0.92	0.88	1.04	39.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: New Beith Road (S)											
P1	Full	50	48.3	LOS E	0.1	0.1	0.94	0.94	63.7	20.0	0.31

East: Flagstonian Dr (E)										
P2 Full	50	48.3	LOS E	0.1	0.1	0.94	0.94	63.7	20.0	0.31
West: Flagstonian Dr (W)										
P4 Full	50	49.3	LOS E	0.1	0.1	0.95	0.95	203.1	200.0	0.98
All Pedestrians	150	48.6	LOS E	0.1	0.1	0.94	0.94	110.2	80.0	0.73

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

MOVEMENT SUMMARY

Site: 2 [2_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre AM (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 75 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: District Centre (S)															
1	L2	All MCs	2	0.0	2	0.0	0.173	39.5	LOS D	1.0	7.0	0.90	0.71	0.90	18.0
2	T1	All MCs	7	0.0	7	0.0	0.173	30.1	LOS C	1.0	7.0	0.90	0.71	0.90	27.8
3	R2	All MCs	89	3.5	89	3.5	0.173	33.5	LOS C	1.0	7.3	0.90	0.72	0.90	9.8
Approach			99	3.2	99	3.2	0.173	33.4	LOS C	1.0	7.3	0.90	0.72	0.90	12.3
East: Flagstonian Dr (E)															
4	L2	All MCs	297	2.1	297	2.1	* 0.676	23.8	LOS C	4.1	29.5	0.96	0.86	1.00	23.4
5	T1	All MCs	301	2.1	301	2.1	0.533	24.4	LOS C	5.8	41.1	0.89	0.75	0.89	28.0
6	R2	All MCs	29	3.6	29	3.6	* 0.407	48.3	LOS D	0.7	5.3	1.00	0.71	1.00	25.7
Approach			627	2.2	627	2.2	0.676	25.2	LOS C	5.8	41.1	0.93	0.80	0.95	25.7
North: Neighbourhood Connector (N)															
7	L2	All MCs	173	1.8	173	1.8	0.353	29.0	LOS C	3.2	22.7	0.85	0.78	0.85	28.1
8	T1	All MCs	27	0.0	27	0.0	* 0.090	29.0	LOS C	0.6	4.3	0.86	0.67	0.86	29.4
9	R2	All MCs	5	0.0	5	0.0	0.090	32.2	LOS C	0.6	4.3	0.86	0.67	0.86	31.0
Approach			205	1.5	205	1.5	0.353	29.1	LOS C	3.2	22.7	0.85	0.76	0.85	28.3
West: Flagstonian Dr (W)															
10	L2	All MCs	2	0.0	2	0.0	0.816	37.9	LOS D	12.7	90.3	0.97	0.95	1.10	31.8
11	T1	All MCs	555	1.9	555	1.9	* 0.816	32.3	LOS C	12.7	90.3	0.97	0.95	1.10	16.4
12	R2	All MCs	46	4.5	46	4.5	0.215	43.5	LOS D	1.0	7.2	0.94	0.73	0.94	16.7
Approach			603	2.1	603	2.1	0.816	33.2	LOS C	12.7	90.3	0.97	0.93	1.09	15.0
All Vehicles			1535	2.1	1535	2.1	0.816	29.4	LOS C	12.7	90.3	0.93	0.84	0.99	21.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: District Centre (S)											
P1	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08

East: Flagstonian Dr (E)										
P2	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08
North: Neighbourhood Connector (N)										
P3	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08
West: Flagstonian Dr (W)										
P4	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08
All Pedestrians		200	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08

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

MOVEMENT SUMMARY

Site: 1 [1_2066 AM_Sensitivity (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre AM_Sensitivity (Network Folder: General)]

New Beith Road / Flagstonian Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Beith Road (S)															
1	L2	All MCs	160	2.5	160	2.5	0.159	17.4	LOS B	1.5	10.4	0.52	0.70	0.52	47.2
2	T1	All MCs	1346	2.6	1346	2.6	0.815	23.6	LOS C	17.2	123.0	0.84	0.79	0.89	55.7
3	R2	All MCs	675	1.3	675	1.3	* 0.874	57.8	LOS E	11.3	80.2	1.00	0.98	1.26	31.8
Approach			2181	2.2	2181	2.2	0.874	33.7	LOS C	17.2	123.0	0.87	0.85	0.97	46.4
East: Flagstonian Dr (E)															
4	L2	All MCs	240	2.5	240	2.5	0.227	35.5	LOS D	2.7	19.6	0.80	0.77	0.80	39.3
5	T1	All MCs	260	1.9	260	1.9	* 0.844	51.3	LOS D	8.5	60.4	1.00	0.99	1.23	14.4
6	R2	All MCs	221	2.7	221	2.7	0.758	53.8	LOS D	6.8	48.7	1.00	0.89	1.12	35.2
Approach			721	2.4	721	2.4	0.844	46.8	LOS D	8.5	60.4	0.93	0.89	1.06	30.9
North: New Beith Road (N)															
7	L2	All MCs	370	3.2	370	3.2	0.536	20.7	LOS C	5.6	39.9	0.83	0.81	0.83	48.9
8	T1	All MCs	789	6.6	789	6.6	0.746	37.0	LOS D	11.2	82.5	0.97	0.87	1.02	48.2
9	R2	All MCs	178	2.2	178	2.2	* 0.696	59.4	LOS E	2.8	20.3	1.00	0.85	1.15	28.2
Approach			1337	5.1	1337	5.1	0.746	35.5	LOS D	11.2	82.5	0.94	0.85	0.98	45.6
West: Flagstonian Dr (W)															
10	L2	All MCs	274	3.3	274	3.3	0.629	42.8	LOS D	7.5	53.7	0.95	0.83	0.95	34.7
11	T1	All MCs	346	1.4	346	1.4	* 0.814	53.1	LOS D	5.6	39.7	1.00	0.95	1.24	20.2
12	R2	All MCs	155	0.0	155	0.0	0.759	56.8	LOS E	4.9	34.3	1.00	0.90	1.17	29.2
Approach			775	1.8	775	1.8	0.814	50.2	LOS D	7.5	53.7	0.98	0.90	1.12	28.1
All Vehicles			5014	2.9	5014	2.9	0.874	38.6	LOS D	17.2	123.0	0.91	0.86	1.01	41.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: New Beith Road (S)											
P1	Full	20	43.3	LOS E	0.1	0.1	0.93	0.93	58.7	20.0	0.34

East: Flagstonian Dr (E)										
P2	Full	50	43.3	LOS E	0.1	0.1	0.93	0.93	58.7	20.0	0.34
West: Flagstonian Dr (W)										
P4	Full	50	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		120	43.7	LOS E	0.1	0.1	0.94	0.94	116.8	95.0	0.81

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

MOVEMENT SUMMARY

Site: 2 [2_2066 AM_Sensitivity (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre AM_Sensitivity (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 75 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: District Centre (S)															
1	L2	All MCs	2	0.0	2	0.0	0.173	39.5	LOS D	1.0	7.0	0.90	0.71	0.90	18.0
2	T1	All MCs	7	0.0	7	0.0	0.173	30.1	LOS C	1.0	7.0	0.90	0.71	0.90	27.8
3	R2	All MCs	89	3.5	89	3.5	0.173	33.5	LOS C	1.0	7.3	0.90	0.72	0.90	9.8
Approach			99	3.2	99	3.2	0.173	33.4	LOS C	1.0	7.3	0.90	0.72	0.90	12.3
East: Flagstonian Dr (E)															
4	L2	All MCs	297	2.1	297	2.1	* 0.676	23.8	LOS C	4.1	29.5	0.96	0.86	1.00	23.4
5	T1	All MCs	301	2.1	301	2.1	0.533	24.4	LOS C	5.8	41.1	0.89	0.75	0.89	28.0
6	R2	All MCs	29	3.6	29	3.6	* 0.407	48.3	LOS D	0.7	5.3	1.00	0.71	1.00	25.7
Approach			627	2.2	627	2.2	0.676	25.2	LOS C	5.8	41.1	0.93	0.80	0.95	25.7
North: Neighbourhood Connector (N)															
7	L2	All MCs	173	1.8	173	1.8	0.353	29.0	LOS C	3.2	22.7	0.85	0.78	0.85	28.1
8	T1	All MCs	27	0.0	27	0.0	* 0.090	29.0	LOS C	0.6	4.3	0.86	0.67	0.86	29.4
9	R2	All MCs	5	0.0	5	0.0	0.090	32.2	LOS C	0.6	4.3	0.86	0.67	0.86	31.0
Approach			205	1.5	205	1.5	0.353	29.1	LOS C	3.2	22.7	0.85	0.76	0.85	28.3
West: Flagstonian Dr (W)															
10	L2	All MCs	2	0.0	2	0.0	0.816	37.9	LOS D	12.7	90.3	0.97	0.95	1.10	31.8
11	T1	All MCs	555	1.9	555	1.9	* 0.816	32.3	LOS C	12.7	90.3	0.97	0.95	1.10	16.4
12	R2	All MCs	46	4.5	46	4.5	0.215	43.5	LOS D	1.0	7.2	0.94	0.73	0.94	16.7
Approach			603	2.1	603	2.1	0.816	33.2	LOS C	12.7	90.3	0.97	0.93	1.09	15.0
All Vehicles			1535	2.1	1535	2.1	0.816	29.4	LOS C	12.7	90.3	0.93	0.84	0.99	21.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: District Centre (S)											
P1	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08

East: Flagstonian Dr (E)										
P2	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08
North: Neighbourhood Connector (N)										
P3	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08
West: Flagstonian Dr (W)										
P4	Full	50	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08
All Pedestrians		200	31.8	LOS D	0.1	0.1	0.92	0.92	185.7	200.0	1.08

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

MOVEMENT SUMMARY

Site: 1 [1_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre PM (Network Folder: General)]

New Beith Road / Flagstonian Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 160 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Beith Road (S)															
1	L2	All MCs	175	1.1	175	1.1	0.271	44.0	LOS D	3.7	25.9	0.76	0.76	0.76	37.3
2	T1	All MCs	778	1.7	778	1.7	0.797	68.5	LOS E	18.9	134.2	1.00	0.90	1.03	40.3
3	R2	All MCs	191	2.1	191	2.1	0.642	86.6	LOS F	4.6	32.9	1.00	0.81	1.04	25.2
Approach			1144	1.7	1144	1.7	0.797	67.8	LOS E	18.9	134.2	0.96	0.86	0.99	35.2
East: Flagstonian Dr (E)															
4	L2	All MCs	805	0.7	805	0.7	* 1.058	169.8	LOS F	28.2	198.5	1.00	1.16	1.61	16.8
5	T1	All MCs	360	1.7	360	1.7	0.574	47.7	LOS D	14.1	100.3	0.89	0.77	0.89	15.2
6	R2	All MCs	368	2.7	368	2.7	0.622	55.4	LOS E	14.8	105.7	0.91	0.85	0.91	34.7
Approach			1533	1.4	1533	1.4	1.058	113.7	LOS F	28.2	198.5	0.95	1.00	1.27	19.0
North: New Bieth Road (N)															
7	L2	All MCs	171	1.2	171	1.2	0.143	37.4	LOS D	1.7	12.2	0.41	0.70	0.41	54.8
8	T1	All MCs	1324	1.0	1324	1.0	* 1.063	150.9	LOS F	44.6	314.8	1.00	1.37	1.51	27.8
9	R2	All MCs	321	1.2	321	1.2	0.517	85.1	LOS F	7.3	51.4	0.96	0.81	0.96	25.6
Approach			1816	1.0	1816	1.0	1.063	128.6	LOS F	44.6	314.8	0.94	1.20	1.31	25.2
West: Flagstonian Dr (W)															
10	L2	All MCs	167	2.4	167	2.4	0.311	52.3	LOS D	6.1	43.9	0.82	0.79	0.82	32.0
11	T1	All MCs	280	3.2	280	3.2	* 1.035	140.8	LOS F	10.5	75.3	1.00	1.18	1.64	9.6
12	R2	All MCs	195	1.0	195	1.0	1.035	146.8	LOS F	10.4	74.4	1.00	1.17	1.65	16.4
Approach			642	2.3	642	2.3	1.035	119.6	LOS F	10.5	75.3	0.95	1.08	1.43	16.3
All Vehicles			5135	1.5	5135	1.5	1.063	109.5	LOS F	44.6	314.8	0.95	1.05	1.24	24.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: New Beith Road (S)											
P1	Full	50	73.3	LOS F	0.2	0.2	0.96	0.96	88.7	20.0	0.23

East: Flagstonian Dr (E)										
P2	Full	50	73.3	LOS F	0.2	0.2	0.96	0.96	88.7	20.0	0.23
West: Flagstonian Dr (W)										
P4	Full	50	74.3	LOS F	0.2	0.2	0.96	0.96	228.1	200.0	0.88
All Pedestrians		150	73.6	LOS F	0.2	0.2	0.96	0.96	135.2	80.0	0.59

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

MOVEMENT SUMMARY

Site: 2 [2_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre PM (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: District Centre (S)															
1	L2	All MCs	13	0.0	13	0.0	0.599	44.6	LOS D	3.9	27.8	0.98	0.81	0.99	16.5
2	T1	All MCs	27	0.0	27	0.0	* 0.599	34.7	LOS C	3.9	27.8	0.98	0.81	0.99	26.3
3	R2	All MCs	306	2.1	306	2.1	0.599	38.2	LOS D	4.1	29.5	0.98	0.81	0.99	8.8
Approach			346	1.8	346	1.8	0.599	38.1	LOS D	4.1	29.5	0.98	0.81	0.99	11.4
East: Flagstonian Dr (E)															
4	L2	All MCs	147	2.1	147	2.1	0.230	15.9	LOS B	1.4	9.9	0.74	0.75	0.74	28.2
5	T1	All MCs	608	1.6	608	1.6	* 0.866	39.9	LOS D	15.9	113.0	0.99	1.02	1.19	23.5
6	R2	All MCs	134	0.0	134	0.0	0.480	47.4	LOS D	3.1	21.4	0.96	0.79	0.96	27.9
Approach			889	1.4	889	1.4	0.866	37.0	LOS D	15.9	113.0	0.94	0.94	1.08	22.8
North: Neighbourhood Connector (N)															
7	L2	All MCs	82	0.0	82	0.0	0.111	20.7	LOS C	1.2	8.6	0.66	0.70	0.66	32.1
8	T1	All MCs	5	0.0	5	0.0	0.019	30.9	LOS C	0.1	0.9	0.85	0.61	0.85	28.7
9	R2	All MCs	1	0.0	1	0.0	0.019	34.1	LOS C	0.1	0.9	0.85	0.61	0.85	30.2
Approach			88	0.0	88	0.0	0.111	21.5	LOS C	1.2	8.6	0.67	0.69	0.67	31.8
West: Flagstonian Dr (W)															
10	L2	All MCs	13	8.3	13	8.3	0.646	35.3	LOS D	6.7	48.6	0.95	0.81	0.95	31.0
11	T1	All MCs	295	3.2	295	3.2	0.646	29.6	LOS C	6.7	48.6	0.95	0.81	0.95	15.7
12	R2	All MCs	27	3.8	27	3.8	* 0.404	51.3	LOS D	0.7	5.2	1.00	0.71	1.00	13.9
Approach			335	3.5	335	3.5	0.646	31.6	LOS C	6.7	48.6	0.95	0.80	0.96	16.5
All Vehicles			1659	1.8	1659	1.8	0.866	35.3	LOS D	15.9	113.0	0.94	0.87	1.01	20.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: District Centre (S)											
P1	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06

East: Flagstonian Dr (E)											
P2	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06
North: Neighbourhood Connector (N)											
P3	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06
West: Flagstonian Dr (W)											
P4	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06
All Pedestrians		200	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06

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

MOVEMENT SUMMARY

Site: 1 [1_2066 PM_Sensitivity (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre PM_Sensitivity (Network Folder: General)]

New Beith Road / Flagstonian Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 160 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Beith Road (S)															
1	L2	All MCs	175	1.1	175	1.1	0.271	43.9	LOS D	3.4	23.9	0.76	0.76	0.76	37.7
2	T1	All MCs	778	1.7	778	1.7	0.817	71.1	LOS E	19.4	137.5	1.00	0.92	1.06	39.6
3	R2	All MCs	191	2.1	191	2.1	0.696	88.7	LOS F	4.7	33.5	1.00	0.83	1.08	24.9
Approach			1144	1.7	1144	1.7	0.817	69.9	LOS E	19.4	137.5	0.96	0.88	1.02	34.7
East: Flagstonian Dr (E)															
4	L2	All MCs	805	0.7	805	0.7	* 0.995	128.2	LOS F	25.6	180.6	1.00	1.08	1.40	20.8
5	T1	All MCs	360	1.7	360	1.7	0.635	54.2	LOS D	14.8	105.3	0.93	0.81	0.93	14.1
6	R2	All MCs	368	2.7	368	2.7	0.717	62.5	LOS E	15.7	112.1	0.96	0.86	0.96	33.2
Approach			1533	1.4	1533	1.4	0.995	95.0	LOS F	25.6	180.6	0.97	0.96	1.19	21.5
North: New Bieth Road (N)															
7	L2	All MCs	171	1.2	171	1.2	0.143	32.1	LOS C	1.7	11.8	0.41	0.70	0.41	54.8
8	T1	All MCs	1324	1.0	1324	1.0	* 0.972	87.9	LOS F	36.0	253.9	1.00	1.08	1.21	38.7
9	R2	All MCs	321	1.2	321	1.2	0.439	77.3	LOS E	7.0	49.2	0.92	0.80	0.92	26.7
Approach			1816	1.0	1816	1.0	0.972	80.8	LOS F	36.0	253.9	0.93	0.99	1.09	32.9
West: Flagstonian Dr (W)															
10	L2	All MCs	167	2.4	167	2.4	0.276	47.3	LOS D	5.8	41.4	0.78	0.78	0.78	33.4
11	T1	All MCs	280	3.2	280	3.2	* 0.961	104.5	LOS F	9.3	66.6	1.00	1.08	1.44	12.2
12	R2	All MCs	195	1.0	195	1.0	0.961	110.5	LOS F	9.2	65.7	1.00	1.07	1.44	19.9
Approach			642	2.3	642	2.3	0.961	91.5	LOS F	9.3	66.6	0.94	1.00	1.27	19.6
All Vehicles			5135	1.5	5135	1.5	0.995	83.9	LOS F	36.0	253.9	0.95	0.96	1.12	28.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: New Beith Road (S)											
P1	Full	20	73.2	LOS F	0.1	0.1	0.96	0.96	88.6	20.0	0.23

East: Flagstonian Dr (E)										
P2	Full	50	73.3	LOS F	0.2	0.2	0.96	0.96	88.7	20.0	0.23
West: Flagstonian Dr (W)										
P4	Full	50	74.3	LOS F	0.2	0.2	0.96	0.96	228.1	200.0	0.88
All Pedestrians		120	73.7	LOS F	0.2	0.2	0.96	0.96	146.8	95.0	0.65

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

MOVEMENT SUMMARY

Site: 2 [2_2066 PM_Sensitivity (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2066 District Centre PM_Sensitivity (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: District Centre (S)															
1	L2	All MCs	13	0.0	13	0.0	0.599	44.6	LOS D	3.9	27.8	0.98	0.81	0.99	16.5
2	T1	All MCs	27	0.0	27	0.0	* 0.599	34.7	LOS C	3.9	27.8	0.98	0.81	0.99	26.3
3	R2	All MCs	306	2.1	306	2.1	0.599	38.2	LOS D	4.1	29.5	0.98	0.81	0.99	8.8
Approach			346	1.8	346	1.8	0.599	38.1	LOS D	4.1	29.5	0.98	0.81	0.99	11.4
East: Flagstonian Dr (E)															
4	L2	All MCs	147	2.1	147	2.1	0.230	15.9	LOS B	1.4	9.9	0.74	0.75	0.74	28.2
5	T1	All MCs	608	1.6	608	1.6	* 0.866	39.9	LOS D	15.9	113.0	0.99	1.02	1.19	23.5
6	R2	All MCs	134	0.0	134	0.0	0.480	47.4	LOS D	3.1	21.4	0.96	0.79	0.96	27.9
Approach			889	1.4	889	1.4	0.866	37.0	LOS D	15.9	113.0	0.94	0.94	1.08	22.8
North: Neighbourhood Connector (N)															
7	L2	All MCs	82	0.0	82	0.0	0.111	20.7	LOS C	1.2	8.6	0.66	0.70	0.66	32.1
8	T1	All MCs	5	0.0	5	0.0	0.019	30.9	LOS C	0.1	0.9	0.85	0.61	0.85	28.7
9	R2	All MCs	1	0.0	1	0.0	0.019	34.1	LOS C	0.1	0.9	0.85	0.61	0.85	30.2
Approach			88	0.0	88	0.0	0.111	21.5	LOS C	1.2	8.6	0.67	0.69	0.67	31.8
West: Flagstonian Dr (W)															
10	L2	All MCs	13	8.3	13	8.3	0.646	35.3	LOS D	6.7	48.6	0.95	0.81	0.95	31.0
11	T1	All MCs	295	3.2	295	3.2	0.646	29.6	LOS C	6.7	48.6	0.95	0.81	0.95	15.7
12	R2	All MCs	27	3.8	27	3.8	* 0.404	51.3	LOS D	0.7	5.2	1.00	0.71	1.00	13.9
Approach			335	3.5	335	3.5	0.646	31.6	LOS C	6.7	48.6	0.95	0.80	0.96	16.5
All Vehicles			1659	1.8	1659	1.8	0.866	35.3	LOS D	15.9	113.0	0.94	0.87	1.01	20.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data 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	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: District Centre (S)											
P1	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06

East: Flagstonian Dr (E)											
P2	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06
North: Neighbourhood Connector (N)											
P3	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06
West: Flagstonian Dr (W)											
P4	Full	50	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06
All Pedestrians		200	34.3	LOS D	0.1	0.1	0.93	0.93	188.1	200.0	1.06

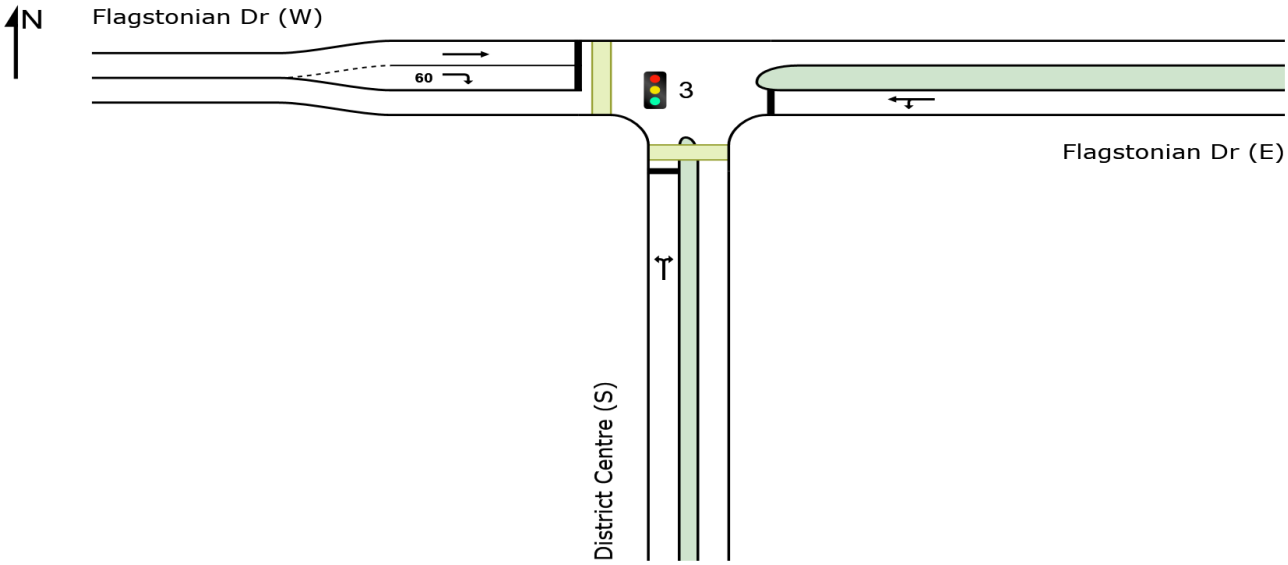
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 3 [3_2066 AM (Site Folder: 2066 AM)]

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

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



MOVEMENT SUMMARY

Site: 3 [3_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 35 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: District Centre (S)															
1	L2	All MCs	7	0.0	7	0.0	0.233	18.0	LOS B	1.1	8.2	0.87	0.73	0.87	34.2
3	R2	All MCs	66	3.2	66	3.2	0.233	17.1	LOS B	1.1	8.2	0.87	0.73	0.87	24.7
Approach			74	2.9	74	2.9	0.233	17.2	LOS B	1.1	8.2	0.87	0.73	0.87	25.9
East: Flagstonian Dr (E)															
4	L2	All MCs	72	1.5	72	1.5	* 0.636	20.9	LOS C	5.1	36.6	0.92	0.82	1.01	28.1
5	T1	All MCs	240	2.2	240	2.2	0.636	12.5	LOS B	5.1	36.6	0.92	0.82	1.01	42.2
Approach			312	2.0	312	2.0	0.636	14.5	LOS B	5.1	36.6	0.92	0.82	1.01	39.8
West: Flagstonian Dr (W)															
11	T1	All MCs	545	1.9	545	1.9	0.522	5.7	LOS A	6.1	43.6	0.68	0.60	0.68	51.5
12	R2	All MCs	20	0.0	20	0.0	* 0.377	28.1	LOS C	0.4	3.0	1.00	0.69	1.03	29.2
Approach			565	1.9	565	1.9	0.522	6.5	LOS A	6.1	43.6	0.69	0.60	0.69	50.3
All Vehicles			951	2.0	951	2.0	0.636	9.9	LOS A	6.1	43.6	0.78	0.68	0.81	44.7

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. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: District Centre (S)												
P1	Full	50	50	12.0	LOS B	0.0	0.0	0.83	0.83	165.9	200.0	1.21
West: Flagstonian Dr (W)												
P4	Full	50	50	12.0	LOS B	0.0	0.0	0.83	0.83	165.9	200.0	1.21
All Pedestrians		100	100	12.0	LOS B	0.0	0.0	0.83	0.83	165.9	200.0	1.21

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

MOVEMENT SUMMARY

Site: 3 [3_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 40 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: District Centre (S)															
1	L2	All MCs	37	0.0	37	0.0	0.475	21.7	LOS C	2.4	17.7	0.94	0.77	0.94	32.0
3	R2	All MCs	89	5.9	89	5.9	* 0.475	20.7	LOS C	2.4	17.7	0.94	0.77	0.94	22.4
Approach			126	4.2	126	4.2	0.475	21.0	LOS C	2.4	17.7	0.94	0.77	0.94	25.8
East: Flagstonian Dr (E)															
4	L2	All MCs	43	0.0	43	0.0	0.732	16.7	LOS B	11.0	77.9	0.86	0.83	0.96	30.7
5	T1	All MCs	576	1.6	576	1.6	* 0.732	11.1	LOS B	11.0	77.9	0.86	0.83	0.96	44.9
Approach			619	1.5	619	1.5	0.732	11.5	LOS B	11.0	77.9	0.86	0.83	0.96	44.2
West: Flagstonian Dr (W)															
11	T1	All MCs	243	2.6	243	2.6	0.231	5.1	LOS A	2.5	17.8	0.55	0.46	0.55	52.3
12	R2	All MCs	5	20.0	5	20.0	* 0.130	31.2	LOS C	0.1	1.0	1.00	0.63	1.00	27.9
Approach			248	3.0	248	3.0	0.231	5.6	LOS A	2.5	17.8	0.56	0.46	0.56	51.4
All Vehicles			994	2.2	994	2.2	0.732	11.2	LOS B	11.0	77.9	0.80	0.73	0.86	43.3

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. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: District Centre (S)												
P1	Full	50	50	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19
West: Flagstonian Dr (W)												
P4	Full	50	50	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19
All Pedestrians		100	100	14.5	LOS B	0.0	0.0	0.85	0.85	168.3	200.0	1.19

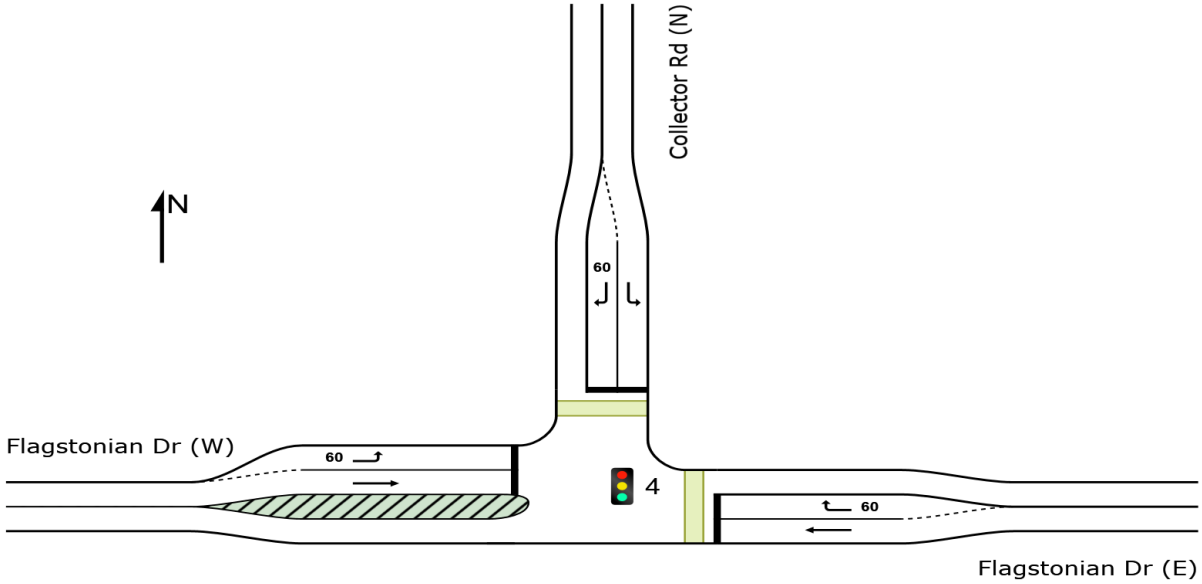
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 4 [4_2066 AM (Site Folder: 2066 AM)]

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

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



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Project: P:\P2300 Flagstone City Stages 2-5\Technical\Models\SIDRA\2024_02_16 CA3 Masterplan SIDRAs\P2300.001M 2066 CA3 South Masterplan SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 4 [4_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 30 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Flagstonian Dr (E)															
5	T1	All MCs	154	3.4	154	3.4	0.142	3.4	LOS A	1.1	7.8	0.50	0.40	0.50	56.5
6	R2	All MCs	28	0.0	28	0.0	* 0.230	22.2	LOS C	0.5	3.2	0.98	0.70	0.98	38.7
Approach			182	2.9	182	2.9	0.230	6.3	LOS A	1.1	7.8	0.57	0.45	0.57	52.7
North: Collector Rd (N)															
7	L2	All MCs	100	0.0	100	0.0	0.538	20.7	LOS C	1.6	11.3	0.99	0.80	1.10	39.0
9	R2	All MCs	17	0.0	17	0.0	* 0.054	16.7	LOS B	0.2	1.6	0.87	0.67	0.87	42.3
Approach			117	0.0	117	0.0	0.538	20.1	LOS C	1.6	11.3	0.97	0.78	1.07	39.5
West: Flagstonian Dr (W)															
10	L2	All MCs	26	8.0	26	8.0	0.024	7.9	LOS A	0.1	1.1	0.39	0.64	0.39	47.6
11	T1	All MCs	458	2.3	458	2.3	* 0.511	6.3	LOS A	4.9	35.1	0.75	0.64	0.75	53.8
Approach			484	2.6	484	2.6	0.511	6.4	LOS A	4.9	35.1	0.73	0.64	0.73	53.4
All Vehicles			783	2.3	783	2.3	0.538	8.4	LOS A	4.9	35.1	0.73	0.62	0.74	50.6

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Flagstonian Dr (E)												
P2	Full	50	50	9.6	LOS A	0.0	0.0	0.80	0.80	163.5	200.0	1.22
North: Collector Rd (N)												
P3	Full	50	50	9.6	LOS A	0.0	0.0	0.80	0.80	163.5	200.0	1.22
All Pedestrians		100	100	9.6	LOS A	0.0	0.0	0.80	0.80	163.5	200.0	1.22

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

MOVEMENT SUMMARY

Site: 4 [4_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 25 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Flagstonian Dr (E)															
5	T1	All MCs	516	1.0	516	1.0	0.444	3.1	LOS A	3.6	25.3	0.58	0.50	0.58	56.8
6	R2	All MCs	75	0.0	75	0.0	* 0.252	16.5	LOS B	0.9	6.2	0.91	0.74	0.91	41.4
Approach			591	0.9	591	0.9	0.444	4.8	LOS A	3.6	25.3	0.62	0.53	0.62	54.3
North: Collector Rd (N)															
7	L2	All MCs	43	2.4	43	2.4	0.148	15.4	LOS B	0.5	3.6	0.89	0.71	0.89	41.6
9	R2	All MCs	27	0.0	27	0.0	* 0.092	15.1	LOS B	0.3	2.2	0.88	0.69	0.88	43.1
Approach			71	1.5	71	1.5	0.148	15.3	LOS B	0.5	3.6	0.89	0.70	0.89	42.2
West: Flagstonian Dr (W)															
10	L2	All MCs	14	0.0	14	0.0	0.017	9.9	LOS A	0.1	0.7	0.58	0.64	0.58	46.5
11	T1	All MCs	160	3.9	160	3.9	* 0.234	6.4	LOS A	1.4	10.5	0.73	0.59	0.73	53.7
Approach			174	3.6	174	3.6	0.234	6.7	LOS A	1.4	10.5	0.72	0.59	0.72	53.0
All Vehicles			835	1.5	835	1.5	0.444	6.1	LOS A	3.6	25.3	0.67	0.56	0.67	52.7

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. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Flagstonian Dr (E)												
P2	Full	50	50	7.2	LOS A	0.0	0.0	0.76	0.76	161.1	200.0	1.24
North: Collector Rd (N)												
P3	Full	50	50	7.2	LOS A	0.0	0.0	0.76	0.76	161.1	200.0	1.24
All Pedestrians		100	100	7.2	LOS A	0.0	0.0	0.76	0.76	161.1	200.0	1.24

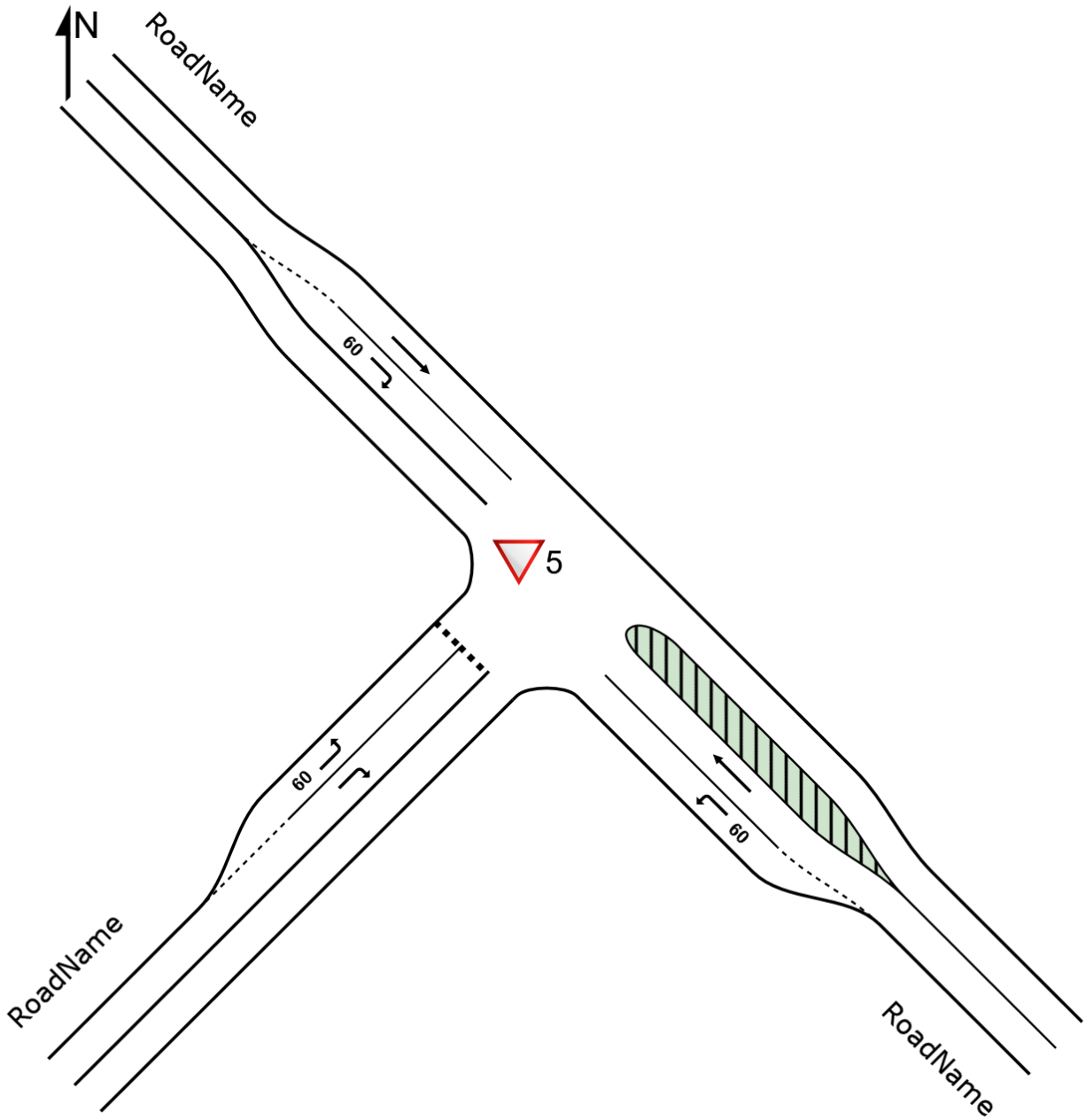
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 5 [5_2066 AM (Site Folder: 2066 AM)]

CA3 Collector / Ulladulla N Connection
Site Category: (None)
Give-Way (Two-Way)

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



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Project: P:\P2300 Flagstone City Stages 2-5\Technical\Models\SIDRA\2024_02_16 CA3 Masterplan SIDRAs\P2300.001M 2066 CA3 South Masterplan SIDRA Models.sip9

MOVEMENT SUMMARY

Site: 5 [5_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

CA3 Collector / Ulladulla N Connection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: RoadName															
4	L2	All MCs	113	2.7	113	2.7	0.062	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
5	T1	All MCs	50	4.0	50	4.0	0.026	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			163	3.1	163	3.1	0.062	3.9	NA	0.0	0.0	0.00	0.40	0.00	54.8
NorthWest: RoadName															
11	T1	All MCs	32	3.1	32	3.1	0.017	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
12	R2	All MCs	50	0.0	50	0.0	0.041	6.1	LOS A	0.2	1.1	0.27	0.56	0.27	52.0
Approach			82	1.2	82	1.2	0.041	3.7	NA	0.2	1.1	0.16	0.34	0.16	54.9
SouthWest: RoadName															
1	L2	All MCs	230	1.7	230	1.7	0.182	5.8	LOS A	0.7	5.3	0.15	0.55	0.15	52.4
3	R2	All MCs	406	2.2	406	2.2	0.475	8.3	LOS A	3.4	24.4	0.49	0.66	0.56	50.9
Approach			636	2.0	636	2.0	0.475	7.4	LOS A	3.4	24.4	0.36	0.62	0.41	51.4
All Vehicles			881	2.2	881	2.2	0.475	6.4	NA	3.4	24.4	0.28	0.55	0.31	52.3

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.

MOVEMENT SUMMARY

Site: 5 [5_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

CA3 Collector / Ulladulla N Connection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: RoadName															
4	L2	All MCs	390	1.0	390	1.0	0.212	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
5	T1	All MCs	95	1.1	95	1.1	0.049	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			485	1.0	485	1.0	0.212	4.5	NA	0.0	0.0	0.00	0.46	0.00	54.0
NorthWest: RoadName															
11	T1	All MCs	46	13.0	46	13.0	0.025	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
12	R2	All MCs	84	0.0	84	0.0	0.098	8.0	LOS A	0.4	2.6	0.50	0.71	0.50	51.0
Approach			130	4.6	130	4.6	0.098	5.1	NA	0.4	2.6	0.32	0.46	0.32	53.9
SouthWest: RoadName															
1	L2	All MCs	69	1.4	69	1.4	0.057	5.9	LOS A	0.2	1.5	0.19	0.55	0.19	52.3
3	R2	All MCs	106	0.0	106	0.0	0.167	9.2	LOS A	0.7	4.6	0.53	0.73	0.53	50.3
Approach			175	0.6	175	0.6	0.167	7.9	LOS A	0.7	4.6	0.39	0.66	0.39	51.1
All Vehicles			790	1.5	790	1.5	0.212	5.4	NA	0.7	4.6	0.14	0.51	0.14	53.3

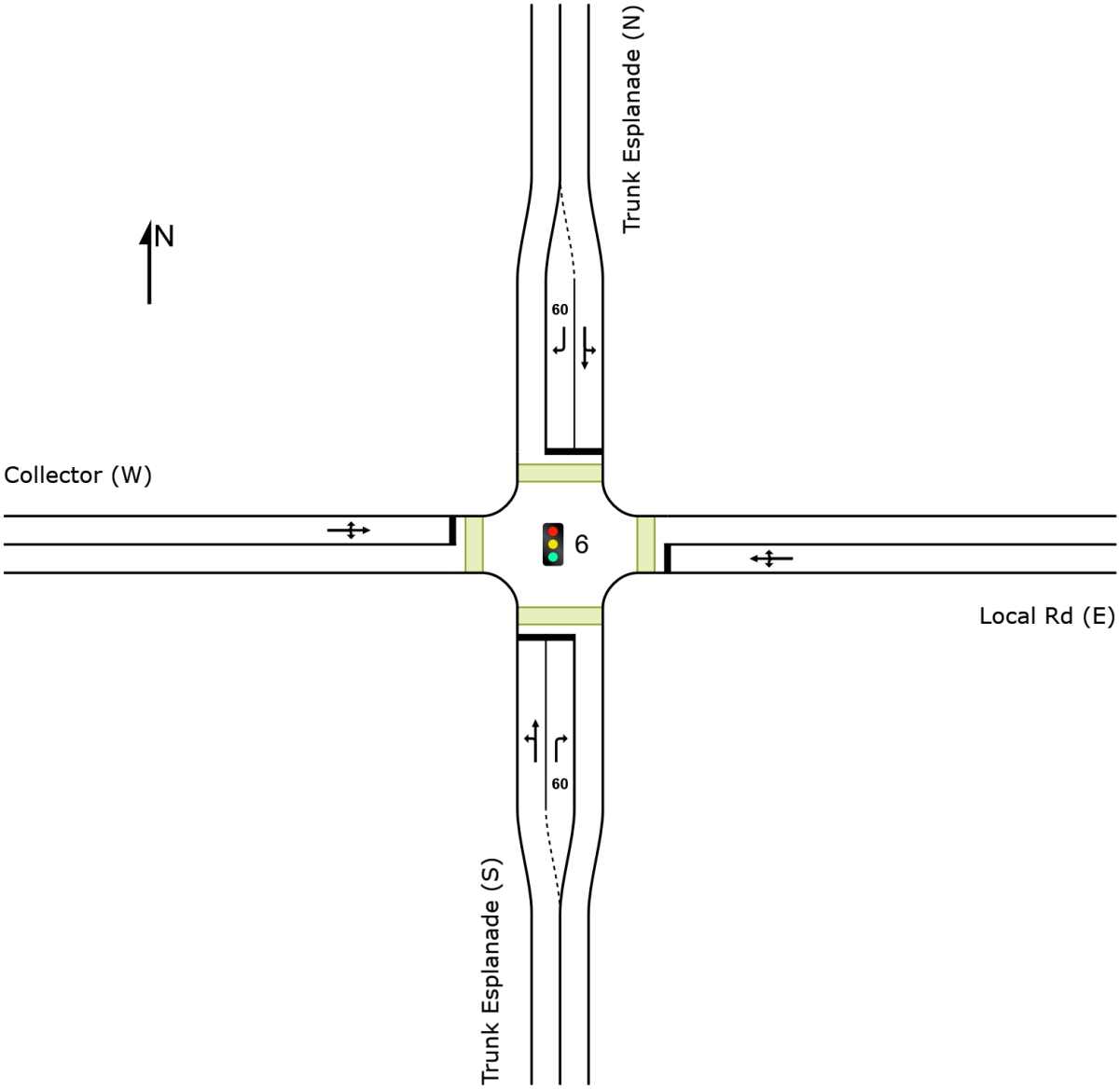
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of 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.

SITE LAYOUT

Site: 6 [6_2066 AM (Site Folder: 2066 AM)]

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

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



MOVEMENT SUMMARY

Site: 6 [6_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Trunk Esplanade (S)															
1	L2	All MCs	26	8.0	26	8.0	*0.329	26.1	LOS C	4.1	29.1	0.67	0.58	0.67	47.0
2	T1	All MCs	262	1.6	262	1.6	0.329	7.1	LOS A	4.1	29.1	0.67	0.58	0.67	52.4
3	R2	All MCs	3	0.0	3	0.0	0.077	33.3	LOS C	0.1	0.6	1.00	0.61	1.00	35.6
Approach			292	2.2	292	2.2	0.329	9.1	LOS A	4.1	29.1	0.67	0.58	0.67	51.6
East: Local Rd (E)															
4	L2	All MCs	1	0.0	1	0.0	*0.044	27.8	LOS C	0.1	0.8	0.96	0.63	0.96	38.2
5	T1	All MCs	2	0.0	2	0.0	0.044	23.2	LOS C	0.1	0.8	0.96	0.63	0.96	36.9
6	R2	All MCs	2	0.0	2	0.0	0.044	27.8	LOS C	0.1	0.8	0.96	0.63	0.96	38.1
Approach			5	0.0	5	0.0	0.044	26.0	LOS C	0.1	0.8	0.96	0.63	0.96	37.6
North: Trunk Esplanade (N)															
7	L2	All MCs	4	0.0	4	0.0	0.083	13.8	LOS B	0.9	6.4	0.49	0.40	0.49	49.3
8	T1	All MCs	83	1.3	83	1.3	0.083	4.9	LOS A	0.9	6.4	0.49	0.40	0.49	55.2
9	R2	All MCs	6	0.0	6	0.0	*0.153	33.8	LOS C	0.2	1.2	1.00	0.63	1.00	35.4
Approach			94	1.1	94	1.1	0.153	7.2	LOS A	0.9	6.4	0.52	0.42	0.52	52.9
West: Collector (W)															
10	L2	All MCs	2	0.0	2	0.0	*0.064	26.8	LOS C	0.3	2.0	0.90	0.66	0.90	39.5
11	T1	All MCs	4	0.0	4	0.0	0.064	19.2	LOS B	0.3	2.0	0.90	0.66	0.90	38.1
12	R2	All MCs	7	0.0	7	0.0	0.064	23.7	LOS C	0.3	2.0	0.90	0.66	0.90	39.4
Approach			14	0.0	14	0.0	0.064	22.8	LOS C	0.3	2.0	0.90	0.66	0.90	39.0
All Vehicles			404	1.8	404	1.8	0.329	9.3	LOS A	4.1	29.1	0.65	0.55	0.65	51.1

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Trunk Esplanade (S)												
P1	Full	20	20	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17
East: Local Rd (E)												
P2	Full	20	20	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17

North: Trunk Esplanade (N)											
P3	Full	20	20	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17
West: Collector (W)											
P4	Full	50	50	16.9	LOS B	0.1	0.1	0.87	0.87	170.8	200.0	1.17
All Pedestrians		110	110	16.9	LOS B	0.1	0.1	0.87	0.87	170.8	200.0	1.17

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

MOVEMENT SUMMARY

Site: 6 [6_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Trunk Esplanade (S)															
1	L2	All MCs	73	1.4	73	1.4	*0.431	32.0	LOS C	3.5	24.7	0.90	0.75	0.90	41.4
2	T1	All MCs	102	1.0	102	1.0	0.431	10.6	LOS B	3.5	24.7	0.90	0.75	0.90	45.4
3	R2	All MCs	1	0.0	1	0.0	0.026	32.6	LOS C	0.0	0.2	0.99	0.57	0.99	35.8
Approach			176	1.2	176	1.2	0.431	19.6	LOS B	3.5	24.7	0.91	0.75	0.91	43.6
East: Local Rd (E)															
4	L2	All MCs	2	0.0	2	0.0	*0.110	28.5	LOS C	0.5	3.3	0.93	0.66	0.93	39.9
5	T1	All MCs	17	0.0	17	0.0	0.110	20.7	LOS C	0.5	3.3	0.93	0.66	0.93	38.5
6	R2	All MCs	2	50.0	2	50.0	0.110	25.7	LOS C	0.5	3.3	0.93	0.66	0.93	38.7
Approach			21	5.0	21	5.0	0.110	22.0	LOS C	0.5	3.3	0.93	0.66	0.93	38.7
North: Trunk Esplanade (N)															
7	L2	All MCs	11	0.0	11	0.0	0.166	16.9	LOS B	1.8	13.2	0.61	0.51	0.61	47.5
8	T1	All MCs	131	4.0	131	4.0	0.166	7.3	LOS A	1.8	13.2	0.61	0.51	0.61	53.0
9	R2	All MCs	15	0.0	15	0.0	*0.357	34.6	LOS C	0.4	2.8	1.00	0.67	1.01	35.2
Approach			156	3.4	156	3.4	0.357	10.5	LOS B	1.8	13.2	0.65	0.53	0.65	50.2
West: Collector (W)															
10	L2	All MCs	6	16.7	6	16.7	*0.118	31.4	LOS C	0.4	2.8	0.95	0.68	0.95	37.6
11	T1	All MCs	2	0.0	2	0.0	0.118	19.9	LOS B	0.4	2.8	0.95	0.68	0.95	36.7
12	R2	All MCs	8	0.0	8	0.0	0.118	24.5	LOS C	0.4	2.8	0.95	0.68	0.95	37.9
Approach			17	6.3	17	6.3	0.118	26.5	LOS C	0.4	2.8	0.95	0.68	0.95	37.7
All Vehicles			369	2.6	369	2.6	0.431	16.2	LOS B	3.5	24.7	0.80	0.65	0.80	45.5

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. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Trunk Esplanade (S)												
P1	Full	20	20	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17
East: Local Rd (E)												
P2	Full	20	20	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17

North: Trunk Esplanade (N)											
P3	Full	20	20	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17
West: Collector (W)											
P4	Full	50	50	16.9	LOS B	0.1	0.1	0.87	0.87	170.8	200.0	1.17
All Pedestrians		110	110	16.9	LOS B	0.1	0.1	0.87	0.87	170.8	200.0	1.17

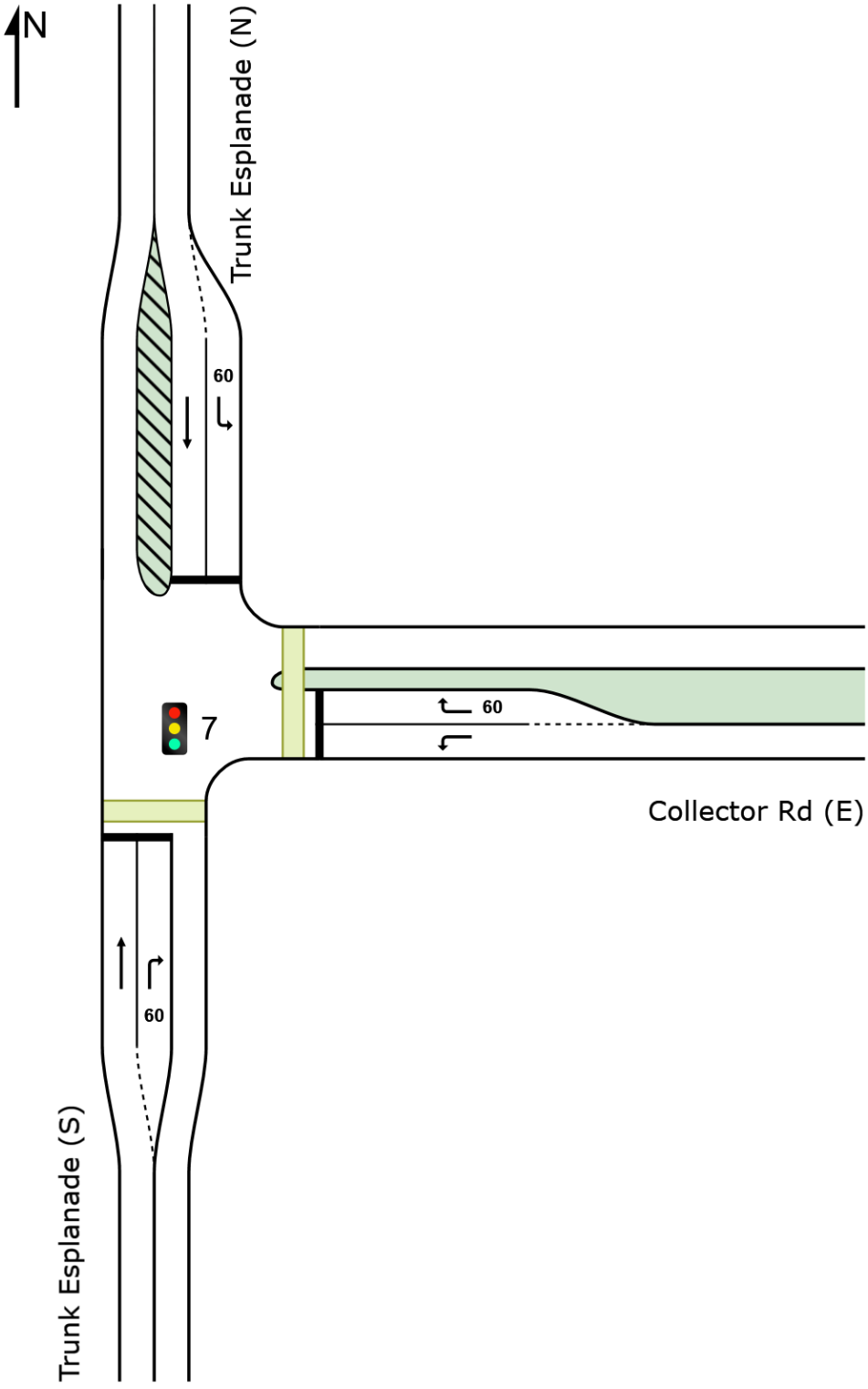
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 7 [7_2066 AM (Site Folder: 2066 AM)]

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

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



MOVEMENT SUMMARY

Site: 7 [7_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 20 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Trunk Esplanade (S)															
2	T1	All MCs	164	2.6	164	2.6	0.122	1.1	LOS A	0.5	3.9	0.35	0.23	0.35	58.4
3	R2	All MCs	106	0.0	106	0.0	* 0.143	9.9	LOS A	0.7	4.9	0.67	0.71	0.67	46.5
Approach			271	1.6	271	1.6	0.143	4.6	LOS A	0.7	4.9	0.47	0.42	0.47	53.1
East: Collector Rd (E)															
4	L2	All MCs	61	1.7	61	1.7	0.111	10.5	LOS B	0.5	3.3	0.75	0.70	0.75	45.5
6	R2	All MCs	11	0.0	11	0.0	* 0.038	13.2	LOS B	0.1	0.7	0.88	0.65	0.88	44.2
Approach			72	1.5	72	1.5	0.111	10.9	LOS B	0.5	3.3	0.77	0.69	0.77	45.3
North: Trunk Esplanade (N)															
7	L2	All MCs	33	0.0	33	0.0	0.117	14.5	LOS B	0.3	2.2	0.89	0.70	0.89	43.9
8	T1	All MCs	33	0.0	33	0.0	* 0.084	7.7	LOS A	0.3	2.0	0.84	0.60	0.84	53.3
Approach			65	0.0	65	0.0	0.117	11.1	LOS B	0.3	2.2	0.87	0.65	0.87	48.1
All Vehicles			407	1.3	407	1.3	0.143	6.7	LOS A	0.7	4.9	0.59	0.50	0.59	50.7

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. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Trunk Esplanade (S)												
P1	Full	50	50	4.9	LOS A	0.0	0.0	0.70	0.70	158.8	200.0	1.26
East: Collector Rd (E)												
P2	Full	50	50	4.9	LOS A	0.0	0.0	0.70	0.70	158.8	200.0	1.26
All Pedestrians		100	100	4.9	LOS A	0.0	0.0	0.70	0.70	158.8	200.0	1.26

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

MOVEMENT SUMMARY

Site: 7 [7_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 20 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Trunk Esplanade (S)															
2	T1	All MCs	67	1.6	67	1.6	0.063	2.3	LOS A	0.3	2.3	0.49	0.37	0.49	57.8
3	R2	All MCs	47	2.2	47	2.2	0.086	11.4	LOS B	0.4	2.6	0.75	0.70	0.75	45.6
Approach			115	1.8	115	1.8	0.086	6.1	LOS A	0.4	2.6	0.59	0.51	0.59	52.0
East: Collector Rd (E)															
4	L2	All MCs	124	3.4	124	3.4	* 0.196	9.9	LOS A	0.9	6.6	0.73	0.72	0.73	45.8
6	R2	All MCs	41	0.0	41	0.0	0.088	11.3	LOS B	0.3	2.3	0.79	0.69	0.79	45.2
Approach			165	2.5	165	2.5	0.196	10.2	LOS B	0.9	6.6	0.75	0.71	0.75	45.7
North: Trunk Esplanade (N)															
7	L2	All MCs	17	0.0	17	0.0	0.036	12.1	LOS B	0.1	0.9	0.78	0.67	0.78	45.2
8	T1	All MCs	34	3.1	34	3.1	* 0.088	7.7	LOS A	0.3	2.1	0.84	0.60	0.84	53.3
Approach			51	2.1	51	2.1	0.088	9.2	LOS A	0.3	2.1	0.82	0.62	0.82	50.3
All Vehicles			331	2.2	331	2.2	0.196	8.6	LOS A	0.9	6.6	0.70	0.63	0.70	48.4

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Trunk Esplanade (S)												
P1	Full	50	50	4.9	LOS A	0.0	0.0	0.70	0.70	158.8	200.0	1.26
East: Collector Rd (E)												
P2	Full	50	50	4.9	LOS A	0.0	0.0	0.70	0.70	158.8	200.0	1.26
All Pedestrians		100	100	4.9	LOS A	0.0	0.0	0.70	0.70	158.8	200.0	1.26

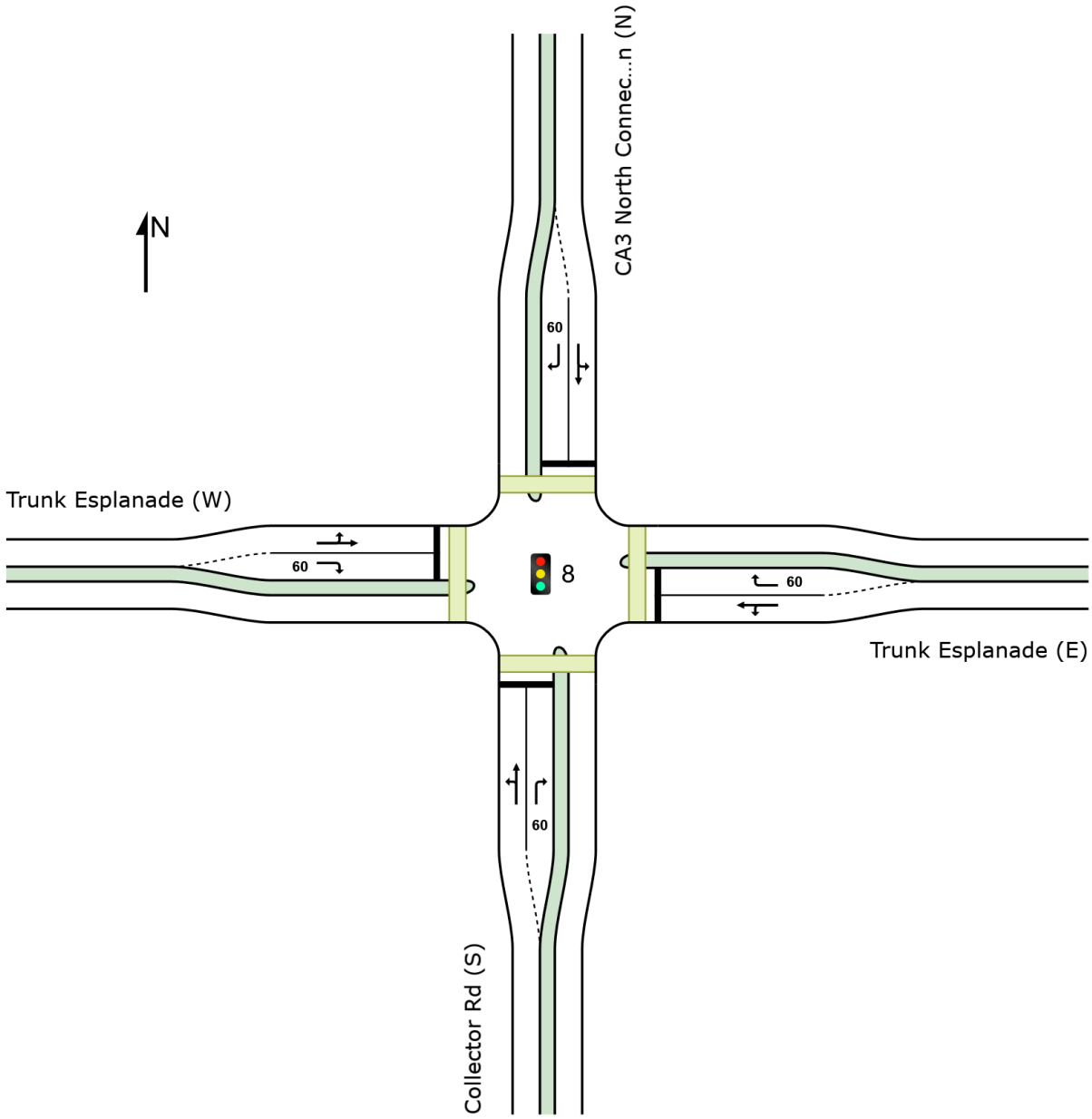
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 8 [8_2066 AM (Site Folder: 2066 AM)]

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

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



MOVEMENT SUMMARY

Site: 8 [8_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Collector Rd (S)															
1	L2	All MCs	1	0.0	1	0.0	0.115	39.5	LOS D	1.0	7.2	0.89	0.65	0.89	39.8
2	T1	All MCs	33	0.0	33	0.0	0.115	28.0	LOS C	1.0	7.2	0.89	0.65	0.89	41.0
3	R2	All MCs	87	1.1	87	1.1	*0.551	41.6	LOS D	3.1	22.0	1.00	0.78	1.04	34.8
Approach			121	0.8	121	0.8	0.551	37.9	LOS D	3.1	22.0	0.97	0.75	1.00	36.3
East: Trunk Esplanade (E)															
4	L2	All MCs	128	0.8	128	0.8	0.220	19.7	LOS B	3.8	27.0	0.65	0.68	0.65	45.4
5	T1	All MCs	53	1.9	53	1.9	0.220	10.2	LOS B	3.8	27.0	0.65	0.68	0.65	47.0
6	R2	All MCs	3	0.0	3	0.0	*0.113	49.6	LOS D	0.1	0.9	1.00	0.61	1.00	32.3
Approach			184	1.1	184	1.1	0.220	17.5	LOS B	3.8	27.0	0.66	0.68	0.66	45.5
North: CA3 North Connection (N)															
7	L2	All MCs	27	3.7	27	3.7	0.291	42.3	LOS D	1.7	12.3	0.96	0.73	0.96	36.4
8	T1	All MCs	24	0.0	24	0.0	*0.291	30.2	LOS C	1.7	12.3	0.96	0.73	0.96	37.5
9	R2	All MCs	7	0.0	7	0.0	0.044	38.7	LOS D	0.2	1.6	0.94	0.65	0.94	35.7
Approach			58	1.7	58	1.7	0.291	36.9	LOS D	1.7	12.3	0.96	0.72	0.96	36.8
West: Trunk Esplanade (W)															
10	L2	All MCs	80	0.0	80	0.0	*0.705	40.6	LOS D	15.8	111.4	0.89	0.80	0.90	43.9
11	T1	All MCs	464	1.3	464	1.3	0.705	16.7	LOS B	15.8	111.4	0.89	0.80	0.90	45.4
12	R2	All MCs	1	0.0	1	0.0	0.038	49.0	LOS D	0.0	0.3	1.00	0.57	1.00	32.6
Approach			545	1.1	545	1.1	0.705	20.2	LOS C	15.8	111.4	0.89	0.80	0.90	44.8
All Vehicles			908	1.1	908	1.1	0.705	23.1	LOS C	15.8	111.4	0.86	0.76	0.87	43.0

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Collector Rd (S)												
P1	Full	20	20	28.4	LOS C	0.0	0.0	0.90	0.90	182.2	200.0	1.10
East: Trunk Esplanade (E)												

P2	Full	20	20	28.4	LOS C	0.0	0.0	0.90	0.90	182.2	200.0	1.10
North: CA3 North Connection (N)												
P3	Full	20	20	28.4	LOS C	0.0	0.0	0.90	0.90	182.2	200.0	1.10
West: Trunk Esplanade (W)												
P4	Full	20	20	28.4	LOS C	0.0	0.0	0.90	0.90	182.2	200.0	1.10
All Pedestrians		80	80	28.4	LOS C	0.0	0.0	0.90	0.90	182.2	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.

MOVEMENT SUMMARY

Site: 8 [8_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Collector Road (S)															
1	L2	All MCs	1	0.0	1	0.0	0.076	35.9	LOS D	0.5	3.8	0.89	0.63	0.89	41.3
2	T1	All MCs	19	5.3	19	5.3	0.076	24.3	LOS C	0.5	3.8	0.89	0.63	0.89	42.6
3	R2	All MCs	53	1.9	53	1.9	*0.434	37.8	LOS D	1.7	11.8	1.00	0.74	1.00	36.1
Approach			73	2.7	73	2.7	0.434	34.2	LOS C	1.7	11.8	0.97	0.71	0.97	37.6
East: Trunk Esplanade (E)															
4	L2	All MCs	234	0.9	234	0.9	*0.622	24.6	LOS C	10.7	75.5	0.86	0.79	0.86	44.0
5	T1	All MCs	209	0.0	209	0.0	0.622	13.6	LOS B	10.7	75.5	0.86	0.79	0.86	45.5
6	R2	All MCs	37	0.0	37	0.0	*0.398	39.2	LOS D	1.2	8.3	1.00	0.72	1.00	35.6
Approach			480	0.4	480	0.4	0.622	20.9	LOS C	10.7	75.5	0.87	0.79	0.87	43.8
North: CA3 North Connection (N)															
7	L2	All MCs	16	0.0	16	0.0	0.199	38.3	LOS D	0.8	5.4	0.96	0.70	0.96	37.6
8	T1	All MCs	10	0.0	10	0.0	*0.199	26.2	LOS C	0.8	5.4	0.96	0.70	0.96	38.6
9	R2	All MCs	8	12.5	8	12.5	0.070	36.4	LOS D	0.2	1.9	0.96	0.66	0.96	36.4
Approach			34	2.9	34	2.9	0.199	34.3	LOS C	0.8	5.4	0.96	0.69	0.96	37.6
West: Trunk Esplanade (W)															
10	L2	All MCs	14	0.0	14	0.0	0.176	35.2	LOS D	2.4	16.8	0.74	0.61	0.74	45.8
11	T1	All MCs	99	1.0	99	1.0	0.176	13.5	LOS B	2.4	16.8	0.74	0.61	0.74	47.4
12	R2	All MCs	1	0.0	1	0.0	0.011	36.7	LOS D	0.0	0.2	0.97	0.58	0.97	36.5
Approach			114	0.9	114	0.9	0.176	16.3	LOS B	2.4	16.8	0.75	0.61	0.75	47.1
All Vehicles			701	0.9	701	0.9	0.622	22.2	LOS C	10.7	75.5	0.87	0.75	0.87	43.2

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Collector Road (S)												
P1	Full	20	20	23.4	LOS C	0.0	0.0	0.88	0.88	177.3	200.0	1.13
East: Trunk Esplanade (E)												

P2	Full	20	20	23.4	LOS C	0.0	0.0	0.88	0.88	177.3	200.0	1.13
North: CA3 North Connection (N)												
P3	Full	20	20	23.4	LOS C	0.0	0.0	0.88	0.88	177.3	200.0	1.13
West: Trunk Esplanade (W)												
P4	Full	20	20	23.4	LOS C	0.0	0.0	0.88	0.88	177.3	200.0	1.13
All Pedestrians		80	80	23.4	LOS C	0.0	0.0	0.88	0.88	177.3	200.0	1.13

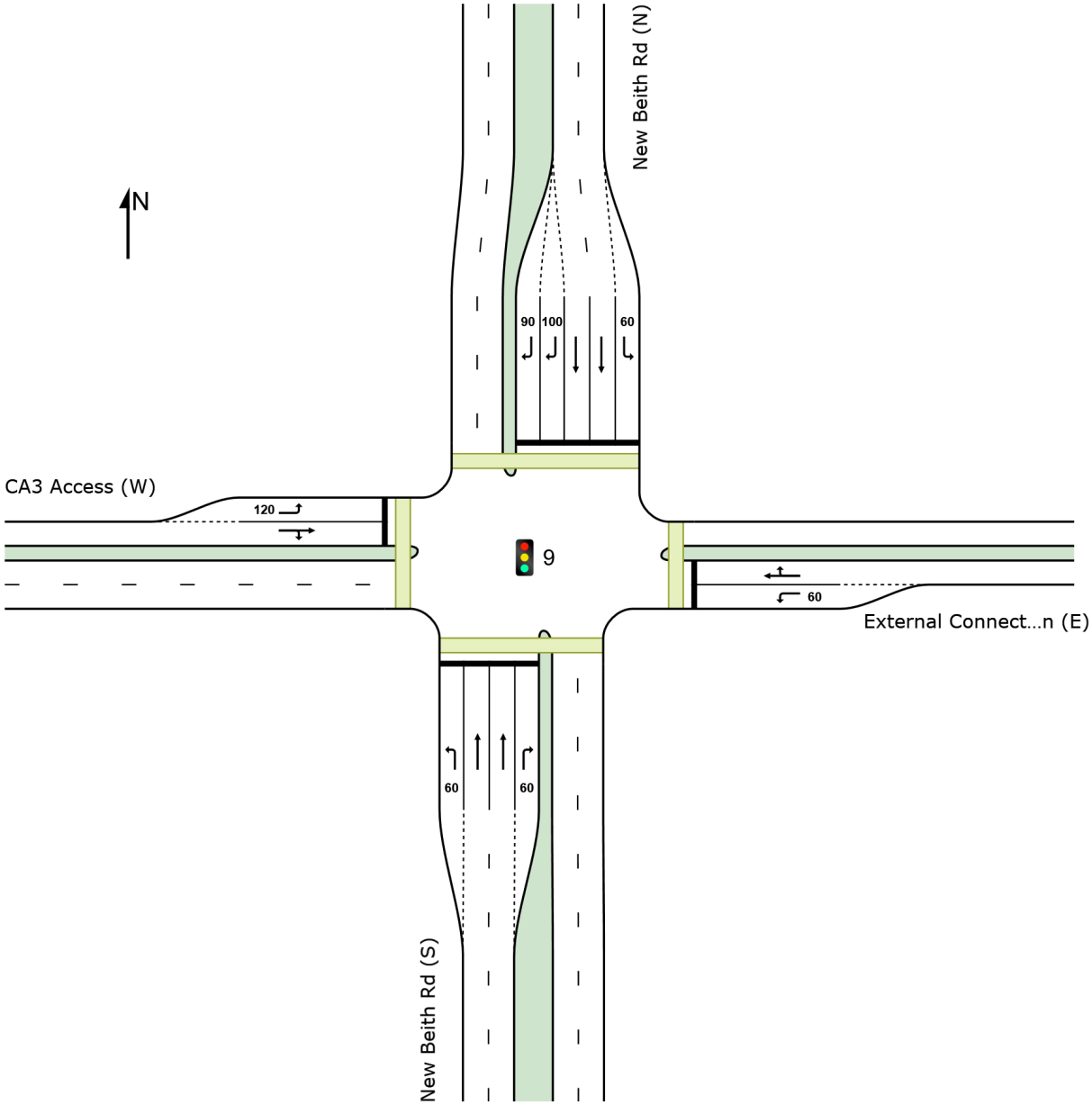
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 9 [9_2066 AM (Site Folder: 2066 AM)]

New Beith Road / CA3 Central Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



MOVEMENT SUMMARY

Site: 9 [9_2066 AM (Site Folder: 2066 AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Beith Road / CA3 Central Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Beith Rd (S)															
1	L2	All MCs	48	0.0	48	0.0	0.049	34.8	LOS C	1.2	8.5	0.51	0.70	0.51	53.6
2	T1	All MCs	1751	2.6	1751	2.6	*0.883	47.2	LOS D	46.9	335.2	0.96	0.96	1.06	57.3
3	R2	All MCs	30	13.3	30	13.3	0.072	56.3	LOS E	1.2	9.6	0.80	0.72	0.80	43.4
Approach			1829	2.7	1829	2.7	0.883	47.0	LOS D	46.9	335.2	0.94	0.95	1.04	50.5
East: External Connection (E)															
4	L2	All MCs	64	0.0	64	0.0	0.111	34.6	LOS C	2.4	17.1	0.75	0.73	0.75	45.6
5	T1	All MCs	3	0.0	3	0.0	*0.406	55.5	LOS E	3.0	20.9	0.99	0.75	0.99	30.2
6	R2	All MCs	52	0.0	52	0.0	0.406	61.1	LOS E	3.0	20.9	0.99	0.75	0.99	38.3
Approach			119	0.0	119	0.0	0.406	46.7	LOS D	3.0	20.9	0.86	0.74	0.86	41.6
North: New Beith Rd (N)															
7	L2	All MCs	12	0.0	12	0.0	0.017	36.0	LOS D	0.2	1.7	0.65	0.67	0.65	55.4
8	T1	All MCs	1164	5.5	1164	5.5	0.876	56.1	LOS E	33.4	244.6	1.00	0.99	1.15	51.7
9	R2	All MCs	136	0.7	136	0.7	*0.675	70.2	LOS E	3.9	27.6	1.00	0.81	1.14	36.8
Approach			1312	5.0	1312	5.0	0.876	57.3	LOS E	33.4	244.6	1.00	0.97	1.14	46.2
West: CA3 Access (W)															
10	L2	All MCs	418	0.5	418	0.5	0.887	59.5	LOS E	25.1	176.7	1.00	0.99	1.23	38.5
11	T1	All MCs	3	0.0	3	0.0	*0.489	47.9	LOS D	6.5	47.4	0.97	0.79	0.97	32.1
12	R2	All MCs	125	4.8	125	4.8	0.489	53.6	LOS D	6.5	47.4	0.97	0.79	0.97	38.8
Approach			546	1.5	546	1.5	0.887	58.1	LOS E	25.1	176.7	0.99	0.94	1.17	38.5
All Vehicles			3806	3.2	3806	3.2	0.887	52.1	LOS D	46.9	335.2	0.97	0.95	1.09	46.9

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: New Beith Rd (S)												
P1	Full	5	5	48.2	LOS E	0.0	0.0	0.94	0.94	202.1	200.0	0.99
East: External Connection (E)												
P2	Full	30	30	48.3	LOS E	0.1	0.1	0.94	0.94	202.1	200.0	0.99

North: New Beith Rd (N)												
P3	Full	20	20	48.3	LOS E	0.1	0.1	0.94	0.94	202.1	200.0	0.99
West: CA3 Access (W)												
P4	Full	50	50	48.3	LOS E	0.1	0.1	0.94	0.94	202.2	200.0	0.99
All Pedestrians		105	105	48.3	LOS E	0.1	0.1	0.94	0.94	202.1	200.0	0.99

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

MOVEMENT SUMMARY

Site: 9 [9_2066 PM (Site Folder: 2066 PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Beith Road / CA3 Central Access
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New Beith Rd (S)															
1	L2	All MCs	121	0.8	121	0.8	0.179	51.8	LOS D	4.7	33.5	0.72	0.76	0.72	46.4
2	T1	All MCs	1150	2.3	1150	2.3	0.875	65.2	LOS E	36.2	258.2	1.00	0.98	1.13	50.8
3	R2	All MCs	55	0.0	55	0.0	*0.711	93.9	LOS F	3.5	24.6	1.00	0.81	1.19	33.6
Approach			1326	2.0	1326	2.0	0.875	65.1	LOS E	36.2	258.2	0.97	0.96	1.10	43.5
East: External Connection (E)															
4	L2	All MCs	30	0.0	30	0.0	0.162	60.2	LOS E	1.7	11.6	0.95	0.72	0.95	36.9
5	T1	All MCs	3	0.0	3	0.0	0.241	60.0	LOS E	1.7	12.2	0.98	0.72	0.98	29.2
6	R2	All MCs	27	0.0	27	0.0	0.241	65.6	LOS E	1.7	12.2	0.98	0.72	0.98	37.1
Approach			60	0.0	60	0.0	0.241	62.6	LOS E	1.7	12.2	0.97	0.72	0.97	36.6
North: New Beith Rd (N)															
7	L2	All MCs	54	0.0	54	0.0	*0.048	27.6	LOS C	0.8	5.4	0.43	0.69	0.43	59.6
8	T1	All MCs	1922	1.2	1922	1.2	*0.896	44.1	LOS D	55.7	393.7	0.95	0.94	1.03	57.7
9	R2	All MCs	358	0.3	358	0.3	0.386	52.3	LOS D	8.7	61.3	0.88	0.80	0.88	42.8
Approach			2334	1.0	2334	1.0	0.896	45.0	LOS D	55.7	393.7	0.93	0.91	1.00	50.3
West: CA3 Access (W)															
10	L2	All MCs	125	1.6	125	1.6	0.157	27.5	LOS C	4.4	31.1	0.64	0.73	0.64	50.1
11	T1	All MCs	4	0.0	4	0.0	*0.181	50.6	LOS D	2.4	16.7	0.92	0.73	0.92	31.5
12	R2	All MCs	41	0.0	41	0.0	0.181	56.2	LOS E	2.4	16.7	0.92	0.73	0.92	38.3
Approach			170	1.2	170	1.2	0.181	34.9	LOS C	4.4	31.1	0.72	0.73	0.72	46.3
All Vehicles			3890	1.4	3890	1.4	0.896	51.7	LOS D	55.7	393.7	0.93	0.92	1.02	47.4

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

* Critical Movement (Signal Timing)

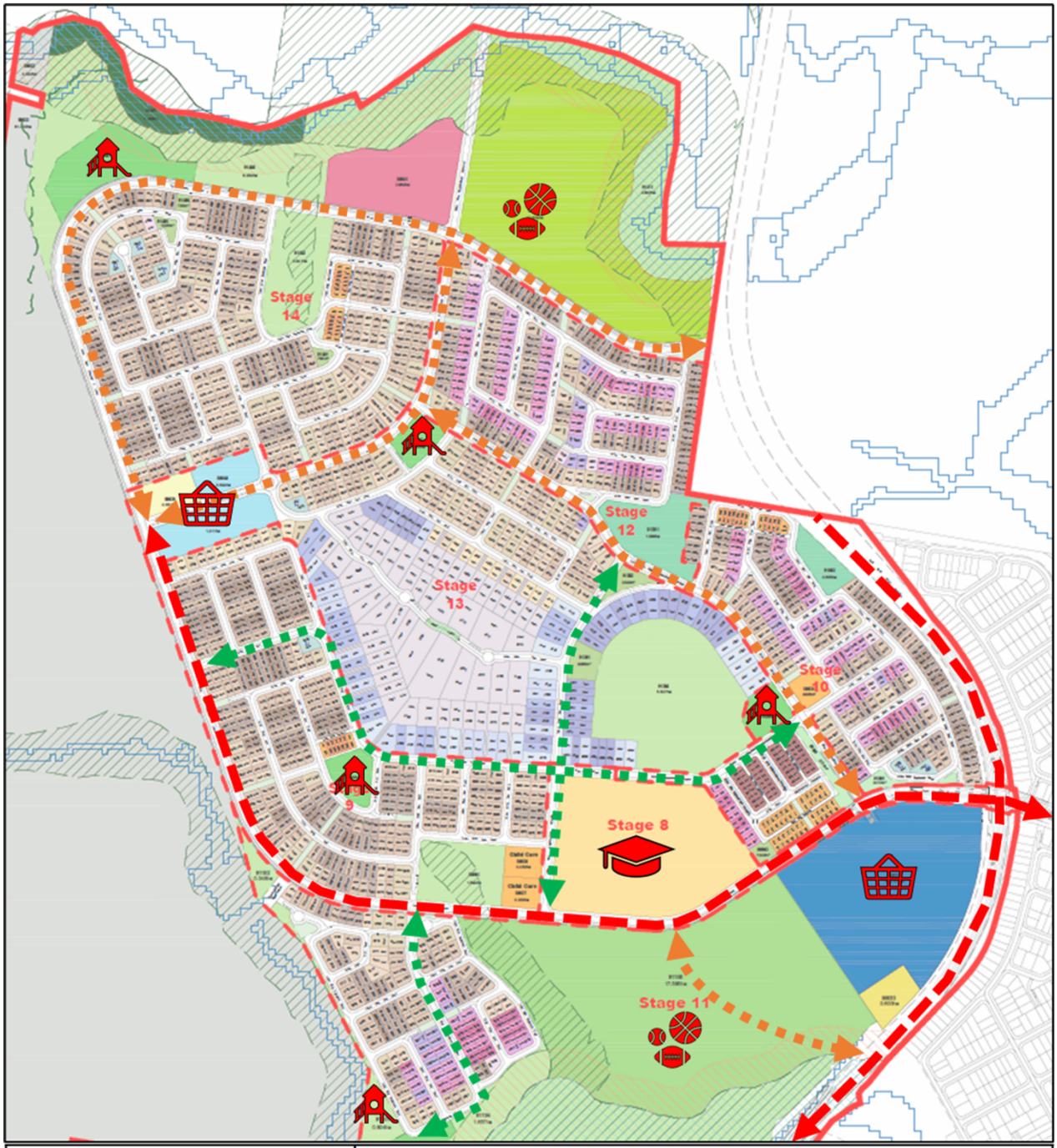
Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: New Beith Rd (S)												
P1	Full	5	5	53.2	LOS E	0.0	0.0	0.94	0.94	207.1	200.0	0.97
East: External Connection (E)												
P2	Full	30	30	53.3	LOS E	0.1	0.1	0.94	0.94	207.1	200.0	0.97

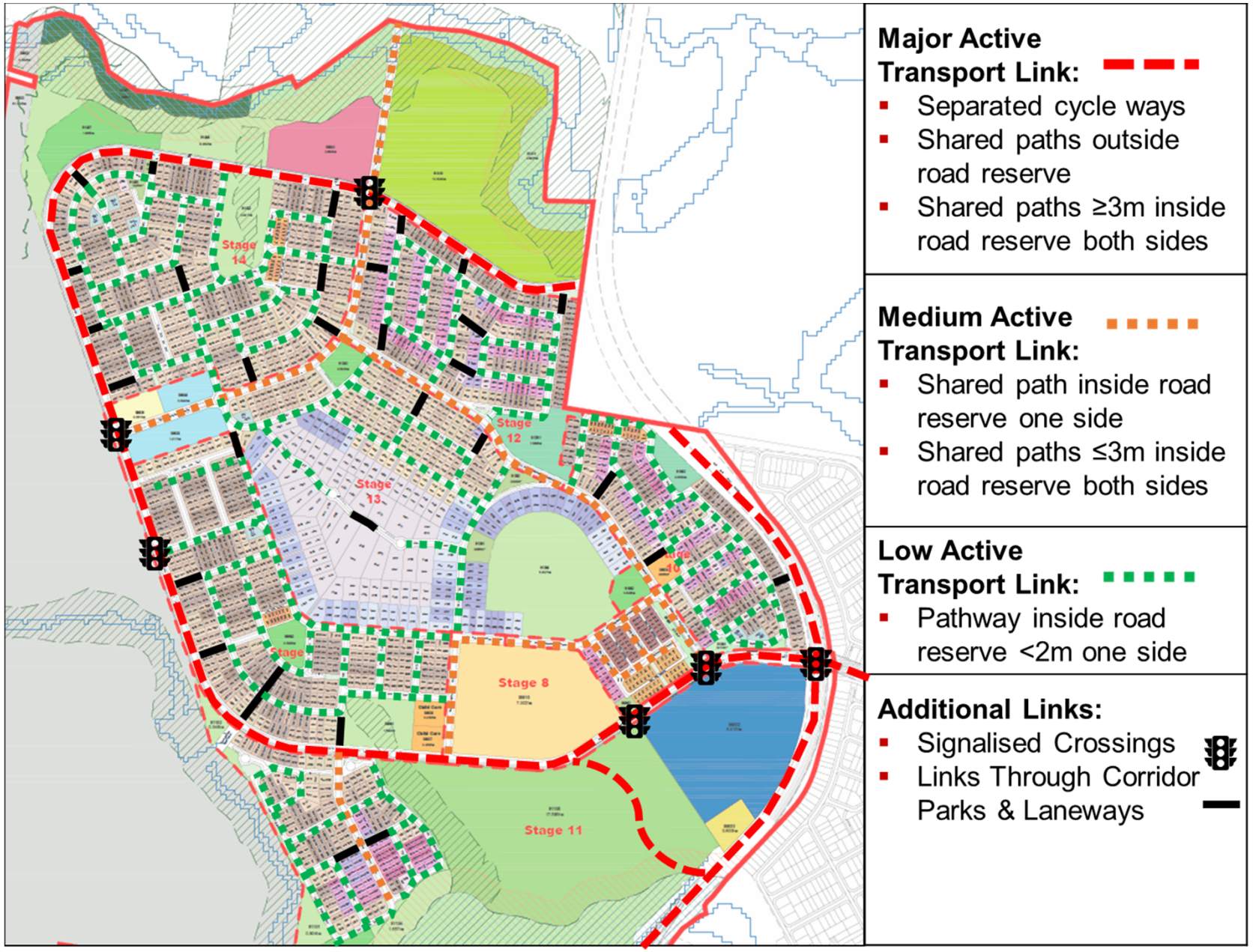
North: New Beith Rd (N)												
P3	Full	20	20	53.2	LOS E	0.1	0.1	0.94	0.94	207.1	200.0	0.97
West: CA3 Access (W)												
P4	Full	50	50	53.3	LOS E	0.2	0.2	0.94	0.94	207.2	200.0	0.97
All Pedestrians		105	105	53.3	LOS E	0.2	0.2	0.94	0.94	207.1	200.0	0.97

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

Appendix D: Active Transport Provisions



Desire Line Routes		Key Attractors			
Major	← — — →	Retail / Dining		Sports Parks	
Medium	← ····· →	State School		Local Parks	
Low	← ····· →				


Stage 14
Stage 12
Stage 13
Stage 8
Stage 11
Major Active Transport Link:
Separated cycle ways
Shared paths outside road reserve
Shared paths ≥3m inside road reserve both sides
Medium Active Transport Link:
Shared path inside road reserve one side
Shared paths ≤3m inside road reserve both sides
Low Active Transport Link:
Pathway inside road reserve <2m one side
Additional Links:
Signalised Crossings
Links Through Corridor Parks & Laneways