Flagstone City Town Centre

Stage 1 Traffic Impact Assessment

PEET Limited

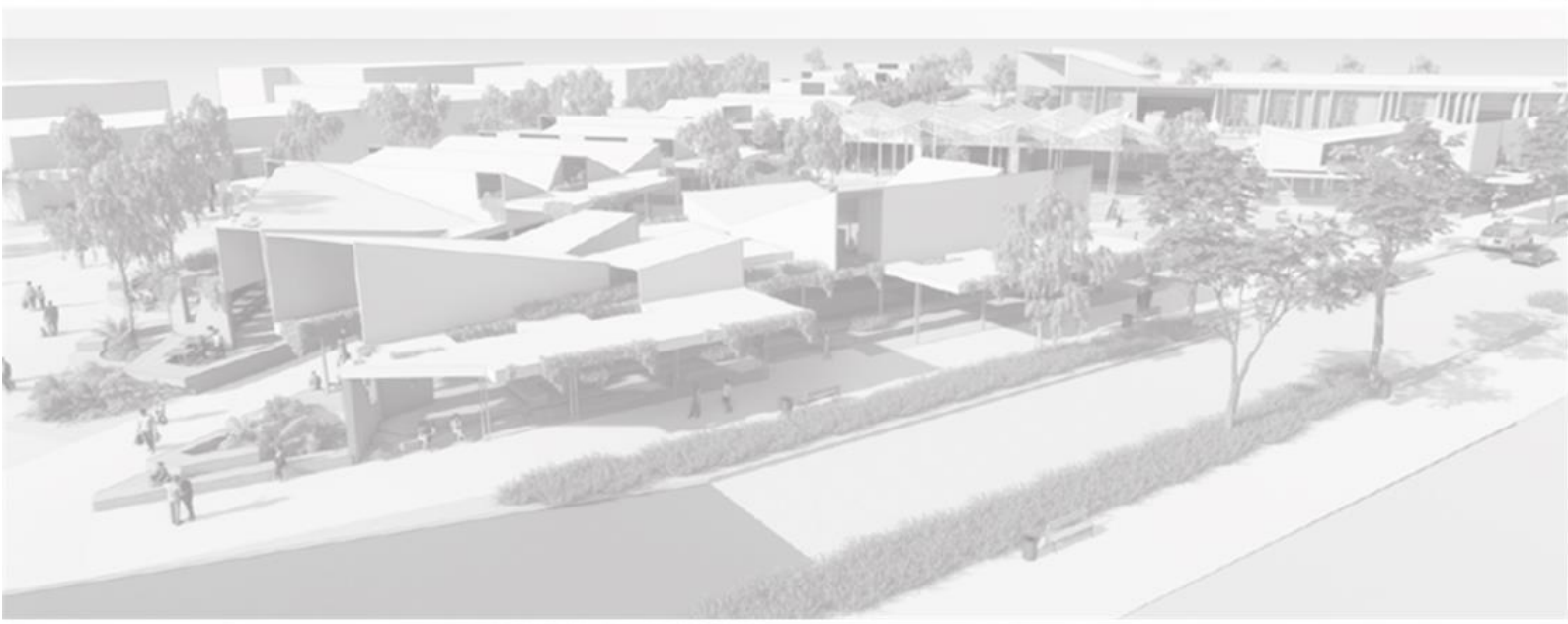
29 August 2024

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2022/1313

Date: 04/10/2024

Queensland Government



Gold Coast
Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
P: (07) 5562 5377

Brisbane
Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442

Sydney
Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202

W: www.bitziosconsulting.com.au

E: admin@bitziosconsulting.com.au

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Gold Coast Office
S: Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
M: PO Box 5102 Q Super Centre
Mermaid Waters QLD 4218
P: (07) 5562 5377
F: (07) 5562 5733
W: www.bitziosconsulting.com.au

Brisbane Office
S: Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
M: Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442
F: (07) 3831 4455
E: admin@bitziosconsulting.com.au

Sydney Office
S: Studio 203, 3 Gladstone Street
Newtown NSW 2042
M: Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202
F: (02) 9557 6219

Your reference: DEV2022/1313

29 August 2024

PEET Flagstone City Pty Ltd
C/- RPS Group
Level 4 HQ South, 520 Wickham Street
FORTITUDE VALLEY QLD 4006

Attention: **Louisa Sloan**
Sent via email: louisa.sloan@rpsgroup.com.au

Dear Louisa

RE: FLAGSTONE TOWN CENTRE STAGE 1 – FURTHER ISSUES RESPONSE (TRAFFIC)

This response has been prepared in relation to the Further Issues email received from Economic Development Queensland (EDQ) on 2 April 2024 in relation to the Flagstone Town Centre Stage 1 development application (DEV2022/1313) submitted. Specifically, this response addresses items relevant to traffic and transport. An updated Traffic Impact Assessment (TIA) has been prepared incorporating the relevant response items for completeness included herein.

In addition to the response items, certain changes to the application material have been implemented to improve the movement network arrangements, including:

- Removing the previously proposed interim access arrangement via the HATUA (Parkland Drive) removing vehicle turning movements and conflicts from the raised crossing treatment
- Delivering the ultimate access arrangement via the Centre Access Street (22m) along the western boundary of Stage 1 down to Little High Street, inclusive of a temporary turnaround head at the southern end of the road, prior to commencement of use of Stage 1
- Delivering Little High Street (private road) with the application via an access easement
- Signalisation of the Flagstonian Drive / Parkland Drive (HATUA) intersection to provide controlled active transport crossing facilities (signalisation not triggered by intersection performance).

Further to the above, the previously proposed temporary car park has been modified in size catering for the displaced car parking spaces associated with the Regional Recreation Park opposite.

1.0 RESPONSE ITEMS

1.1. Item 1: ROL: Timing of the Construction of the City Centre Access Street

Clarify the timing of the construction of the city centre access street. There are concerns that development will be completed on the leagues club site prior to the road being constructed

Response:

The Centre Access Street (22m) is proposed to be delivered prior to the commencement of Stage 1 uses, achieving the ultimate access arrangements to service Stage 1 without the need for the previously proposed interim arrangement via Parkland Drive (HATUA).

1.2. Item 2: ROL: Standard of Construction for the Access Easements

Clarify the proposed standard of construction for the access easements.

Response:

The easements relevant to this application include:

- Access Easement A: North-south private road – *not delivered with this application*
- Access Easement B: Little High Street (private road)
- Temporary Access Easement C: Temporary car park
- Temporary Access Easement D: Temporary turnaround.

It is understood that Little High Street will be constructed to its ultimate standard, while the temporary car park and temporary turnaround will be constructed of chipseal.

1.3. Item 3: ROL: Centre Access Street and Little High Street

Amend the ROL to include the city centre access street to Little High Street, and Little High Street to be constructed as part of this first stage of development

Response:

The ROL has been amended to include delivery of the Centre Access Street (22m) down to Little High Street, and Little High Street (via Access Easement B).

1.4. Item 4: POD: Gym Car Parking

ii. Decrease the max gfa of the gym to 150-200m^2. Given the amount of car parking spaces required for a gym (67 + 23 bike spaces in this instance), EDQ does not support the area proposed. Specify the rate of provision for carparking for the gym on the POD.

Response:

The intention is not to reduce the maximum size of a potential gym, rather; the POD has been updated to specify:

- The gym parking rate of 1 space per 15m^2 GFA
- That all car parking must be located underground or sleeved by built form.

The total car parking requirements based on the potential GFA of 10,500m^2 would be as follows:

Table 1: Potential Car Parking Requirements

Land Use	Area (m^2)	Parking Rate	Spaces Required
Gym	1,000	1 space per 15m^2	**67**
Balance Area	9,500	1 space per 100m^2	**95**
Total	**10,500**	**-**	**162**

Based on the above scenario a total of 162 spaces would be required. As previously demonstrated in the example material prepared by COX, the site could deliver approximately 252 spaces (excluding any on-street parking) which is sufficient to meet the requirement.

Bicycle parking can also be provided in suitable locations consistent either underground or sleeved by built form (or as street furniture located appropriately).

1.5. Item 4: POD: End of Trip Facilities (EOTF)

> *viii. Include provision for EOTF for staff, and bicycle parking in accordance with Logan Planning Policy 5 – Infrastructure. The spaces are to be located a maximum of 25m from any pedestrian entrance into the development.*

Response:

It is understood the POD has been amended to include provision for EOTF for staff and bicycle parking in accordance with Logan Planning Policy 5 – Infrastructure.

1.6. Item 11: Engineering: Traffic Impact Assessment

> *Amend the Traffic Report prepared by Bitzios Consulting dated 21 July 2020 to incorporate/amend the followings:*

Response:

Specific responses to each sub-item are included below. The TIA report has been updated to incorporate / address these items accordingly further below.

> ***i. Interim access arrangement:***
>
> *Parkland drive (HATUA) is designed for high level of pedestrian movement and the approved shared crossing arrangement is one of the main crossing points between the DCC lot and Stage 1. The proposed interim access through the shared crossing will create several conflicts and safety concerns for pedestrians' movement from the approved DCC, existing adventure park, Stage 1 development, and the interim car parking area. As such, the proposed interim access to Parkland drive is not supported at its current form and an alternative access arrangement is required. It is therefore recommended that the plans be amended to include the Centre Access Street to the west and Little High Street as part of this application to provide an ultimate access connection.*
>
> *It is acknowledged that the signalisation of Hatua/Flagstonian Dr intersection has not been triggered, however, more recently there have been concerns about pedestrian safety where crossing Flagstonian Drive to the Flagstone Rec Park and potentially to this Eat Street precinct. Consider bringing this on line earlier.*

Response:

The interim access to Stage 1 directly from Parkland Drive (HATUA) has been removed and delivery of the Centre Access Street (22m) to its ultimate form down to Little High Street has been included. This addresses the concern raised by EDQ and ensures pedestrian-vehicle conflicts at the HATUA raised crossing are reduced.

Further to the above, it is now proposed to signalise the Flagstonian Drive / Parkland Drive (HATUA) intersection, prior to commencement of use of Stage 1, to provide controlled active transport crossings at the intersection as well as manage traffic flows. Note, signalisation of the intersection is not triggered by intersection performance.

ii. Pedestrian access:

No pedestrian facility has been provided along the western side of Shared Street.

- *Demonstrate how safe pedestrian movement can be facilitated from the Leagues Club basement car parking to Eat Street and surrounding facilities.*

It is anticipated that a high number of pedestrians will cross Parkland Dr to and from the Rec Park at the existing crossing point located at the intersection of Parkland Drive and Flagstonian Drive.

- *Demonstrate safety and efficiency of the crossing and provide measures required to provide a safe and appropriate infrastructure for all road users, e.g signalised pedestrian crossings.*

Response:

The intent of "Shared Street" is that it will operate as a shared environment due to the limited traffic volumes regularly using the area (no through traffic or external traffic required to enter "Shared Street"). As such, pedestrians have the ability to use the area in a shared capacity. That said, the eastern side of "Shared Street" also provides a dedicated pathway given the activated frontages of the tenancies on this side and allowing pedestrians to walk here if desired and clear of any service vehicle manoeuvring (albeit low in volume, infrequent, and typically outside peak times).

Furthermore, a dedicated pathway is provided along the northern side of Little High Street allowing connections across the north-south private road ("Shared Street") and throughout Little High Street.

In relation to the COX plan previously submitted, no public pedestrian accesses were provided to the western side of the north-south private road ("Shared Street"), rather, access points were shown at the northern and southern extent of the site where dedicated active transport facilities are provided (i.e. at Little High Street in the south and the HATUA in the north).

The intersection of Flagstonian Drive / Parkland Drive (HATUA) is proposed to be signalised with Stage 1 which will provide controlled active transport crossings / facilities improving the safety and efficiency of these movements at the intersection.

iii. Car parking spaces:

Provide a traffic assessment report based on the amended plans (ie removal of poker machines).

The traffic assessment report proposes 508 interim car parking spaces solely intended to service Stage 1 of the development to achieve preferred commercial outcomes however, the existing Regional Recreation Park facility currently lacks sufficient parking spaces, particularly in summer, and relies on the temporary car park currently located on the subject site.

- *Demonstrate where the existing temporary car parking spaces associated with the park will be relocated to and possibly additional parking spaces can be provided to support the facility.*

Response:

Refer to the ROL plans provided in **Appendix A** of the revised TIA report. The temporary car park has been revised and will cater for the displaced parking associated with the Regional Recreation Park (i.e. 72 spaces).

Any parking to service the Stage 1 development shall be provided in accordance with the parking rates outlined in the proposed POD and as stipulated in the POD i.e. underground or sleeved by built form.

iv. Servicing:

The temporary T-turnaround area does not seem to have been sufficiently designed to cater for the largest design vehicles turning circles. The HRV turning circles will need to be fully contained within the area with a minimum of 300mm clearance with the kerb, trees, etc.

- *Provide a swept path assessment for the ultimate cul-de-sac at the end of shared street*

Response:

The interim access arrangement has been removed from the application and so too has the temporary T-turnaround, as this is no longer required (given the delivery of Centre Access Street and Little High Street now proposed).

That said, a temporary turnaround head has been provided via Access Easement D which is 18m in diameter (9m radius), as per the requirements of the Logan Planning scheme for a cul-de-sac. There will also be no physical infrastructure (vertical obstructions) surrounding the temporary turnaround. Swept path diagrams have therefore been prepared demonstrating a Medium Rigid Vehicle (MRV, 8.8m long) and Heavy Rigid Vehicle (HRV, 12.5m long) using the turnaround to perform a 3-point turn. The HRV brings its wheels up to the edge of the chipseal to complete the turnaround.

The cul-de-sac head at the end of the north-south private road ("Shared Street") is only required to be used by passenger vehicles as service vehicles will have dedicated loading zones either side of the road where turning / manoeuvring takes place. As such, a swept path diagram demonstrating the ability for the 99th percentile passenger vehicle (B99) has been completed.

Swept path diagrams are provided in **Appendix B** of the TIA report.

v. Traffic report general notes:

Recent assessment of the Town Centre Master Plan and the Movement IMP applications (both are yet to be approved) has resulted in some changes (and possibility of further changes) required to the development, for instance road hierarchy, pedestrian paths, cross sections, etc therefore the proposed traffic report will need to be updated to reflect the changes and maintain consistency across the development. Please note that that this application will not be approved until all the requirements/issues for the Town Centre Master Plan and the Movement IMP are resolved and the applications are approved

Response:

The TIA report has been updated herein to reflect the latest amendments to the Town Centre Masterplan and the Movement IMP.

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Tables

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1. INTRODUCTION

1.1 Background

This Traffic Impact Assessment (TIA) report was prepared on behalf of PEET Limited for the proposed Stage 1 (subject site) of the Flagstone City Town Centre development. It is located in the northeast corner of the broader Town Centre area bounded by Flagstonian Drive in the east and located south of Parkland Drive, the approved District Community Centre (DCC) and the existing Adventure (Regional Recreation) Park.

1.2 Site Location

The indicative location of the subject site is illustrated in Figure 1.1.

Source: Nearmap (edited by Bitzios)

Figure 1.1: Site Location

As shown, the site occupies predominantly vacant land and the existing temporary car park accessed off the road stub from Flagstonian Drive. The road stub will be extended to service the DCC and will be known as Parkland Drive. Parkland Drive (between Flagstonian Drive and the DCC) will ultimately be designed as a High Active Transport User Area (HATUA) as per the currently approved designs catering for the movement of people between the subject site, the DCC lot and the adventure park as the region grows.

Figure 1.2 demonstrates the location of Stage 1 within the context of the overarching Town Centre.

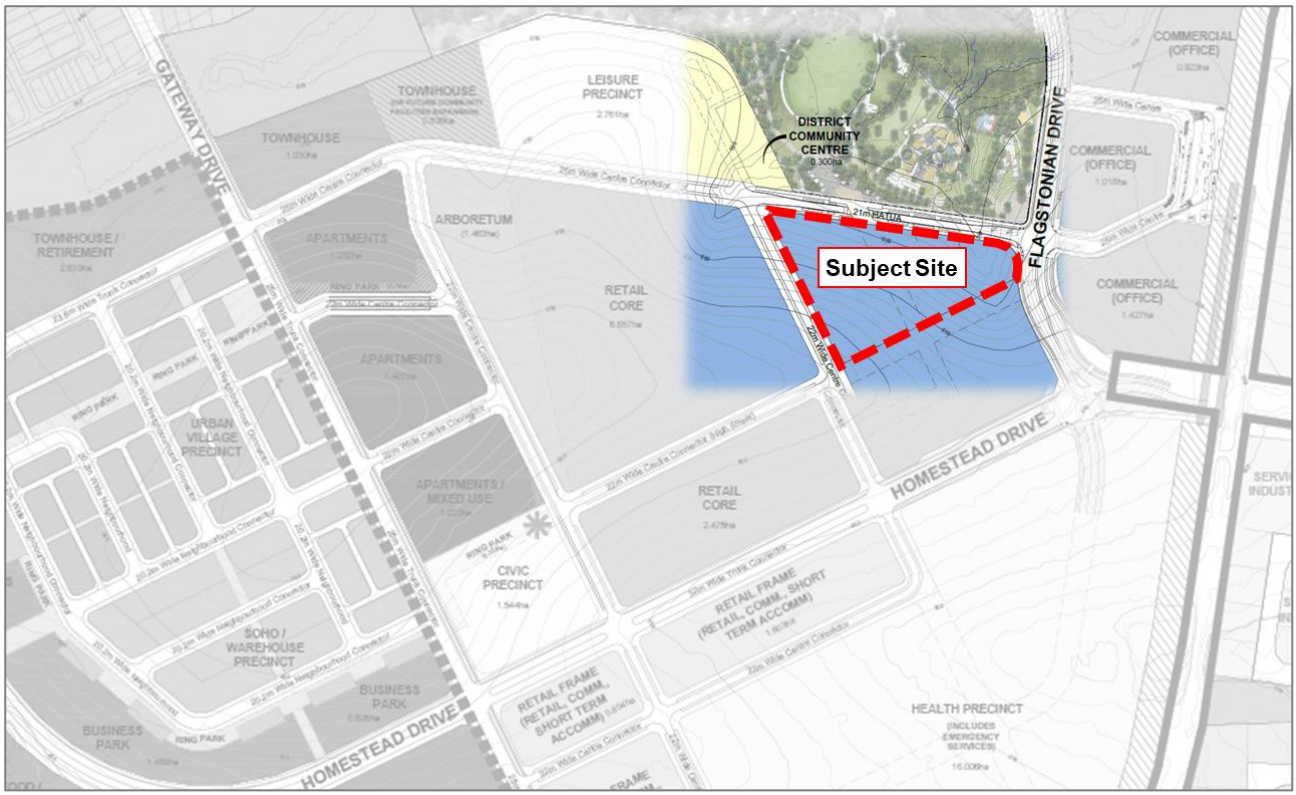


Figure 1.2: Stage 1 Location within Town Centre

1.3 Proposed Development Summary

Stage 1 will be comprised of a key destination tenancy on the western side of the site, with a number of smaller tenancies on the eastern side of the site. The town centre masterplan indicates an indicative overall floor area (GFA) of 10,500m^2.

Relevant plans are provided at **Appendix A**.

1.4 Scope of Work

The scope of the assessment included:

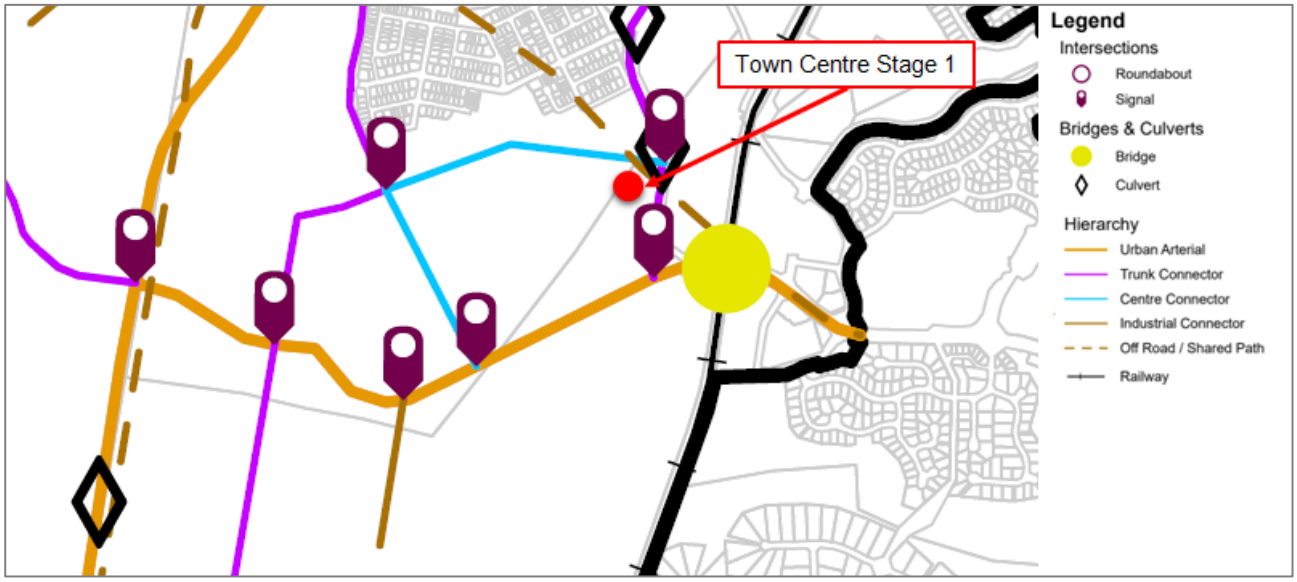
- Review of the existing and proposed road networks surrounding the subject site with consideration to future transport planning in the area
- Review of existing and future alternate transport provisions in the vicinity of the subject site and assessment of the development's connectivity to the services
- Review of strategic and microsimulation modelling completed to date within the Flagstone City boundaries to identify forecast future traffic movements in the vicinity of the subject site
- Detailed assessment of the development's traffic impact on the interim and ultimate surrounding road networks with particular focus on the Flagstonian Drive / Parkland Drive intersection
- Review of the interim and ultimate design requirements for the Flagstonian Drive / Parkland Drive intersection in accordance with the relevant Council and Austroads requirements
- Review the proposed car and bicycle parking provision against the City of Logan (Council) Planning Scheme (version 8.1)
- Assessment of the geometric layout of internal roads and car parking layouts against the relevant requirements of AS2890 and Council's Planning Scheme
- Review of interim and ultimate access arrangements for general traffic and design service vehicles.

2. ROAD NETWORK CONSIDERATIONS

2.1 Planning Context

Surrounding planned trunk road network infrastructure has historically been identified in Economic Development Queensland's (EDQ) *Infrastructure Charging Offset Plan* (ICOP). The ICOP has since been superseded (effective July 2022) by the *Development Charges and Offset Plan* (DCOP) which outlines the trunk infrastructure required to service the PDA, including the relevant charges and their calculations.

For context, the superseded ICOP map is reproduced in Figure 2.1 with the indicative site location.

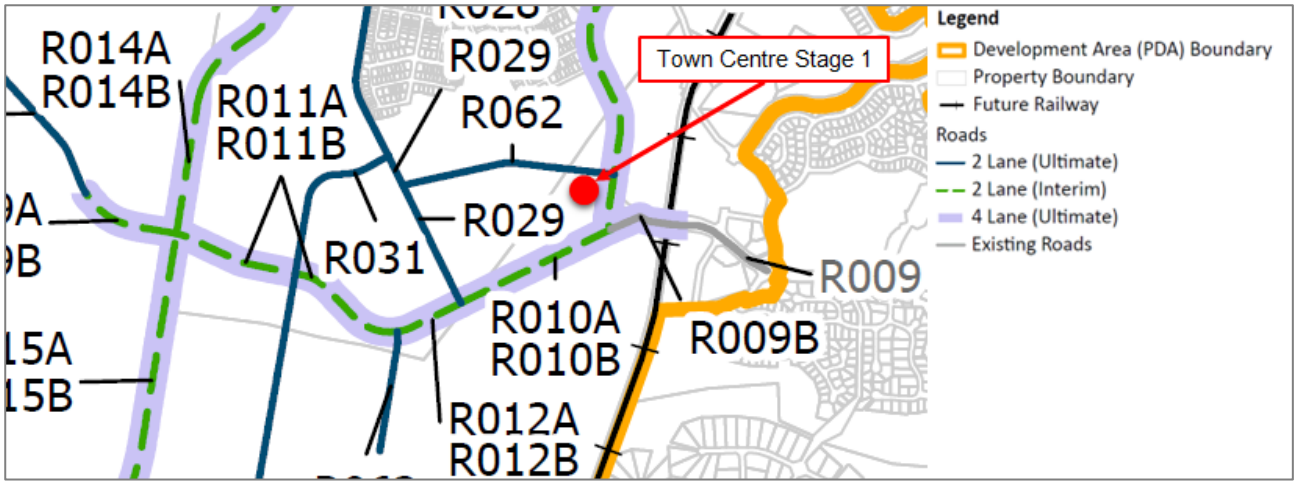


Source: EDQ ICOP Map: Transport Network Overview (edited by Bitzios)

Figure 2.1: Stage 1 Indicative Location: ICOP Transport Network Overview Map

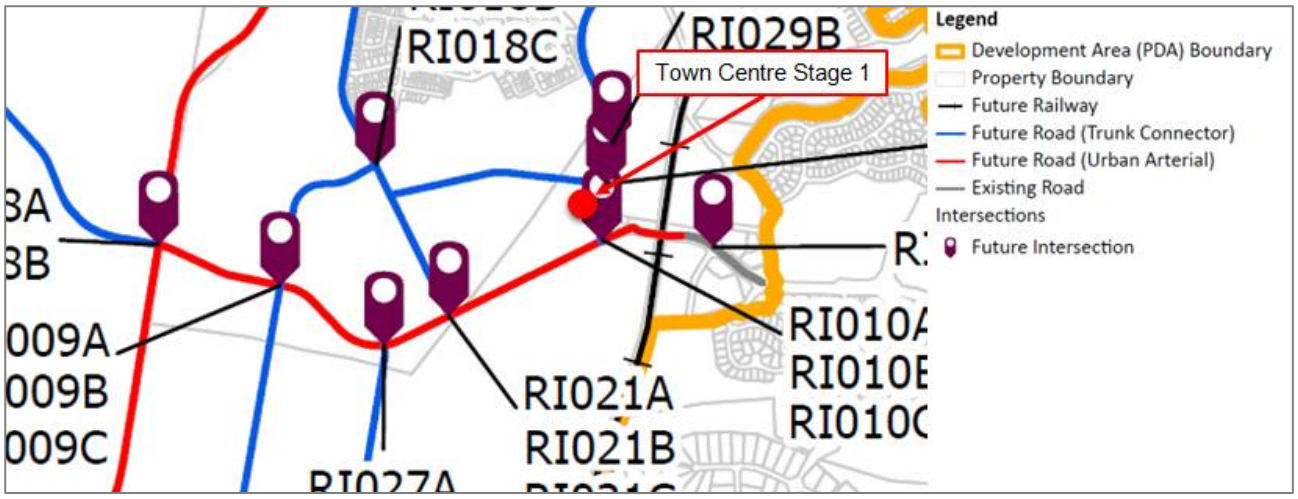
As shown, the proposed Stage 1 development is bounded by a Trunk Connector in the east (Flagstonian Drive) and a Centre Connector on the north (Parkland Drive), with a signalised intersection adjacent to the north-east corner of the site.

Figure 2.2 and Figure 2.3 show the site's indicative location in the context of the DCOP mapping.



Source: EDQ DCOP Map: Transport (Roads) Trunk Infrastructure (edited by Bitzios)

Figure 2.2: Stage 1 Indicative Location: DCOP Transport (Roads) Trunk Infrastructure



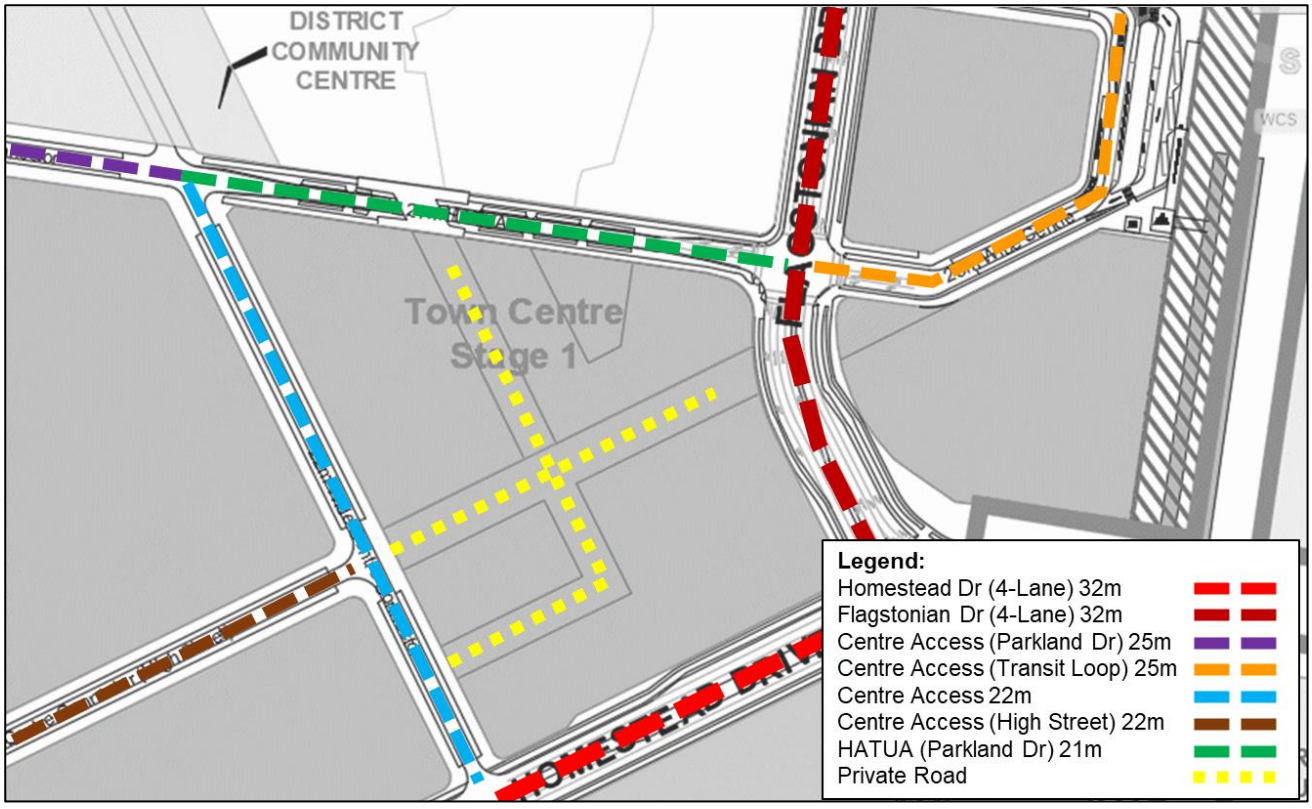
Source: EDQ DCOP Map: Transport (Intersections) Trunk Infrastructure (edited by Bitzios)

Figure 2.3: Stage 1 Indicative Location: DCOP Transport (Intersection) Trunk Infrastructure

Importantly, the Stage 1 development considers the interim and future trunk infrastructure planning considering the superseded ICOP, and now adopted DCOP.

2.2 Proposed (Ultimate) Road Network

The latest road network planning and hierarchy in the vicinity of the subject site with consideration to the immediately surrounding Town Centre is illustrated in Figure 2.4. While this application covers just Stage 1 of the Town Centre, it is important to consider the immediately adjacent Town Centre area (based on current planning) for context and future integration.



Source: RPS Town Centre Masterplan (edited by Bitzios)

Figure 2.4: Future Flagstone Town Centre Road Hierarchy

2.3 Stage 1 Road Network

The key roads relevant to Stage 1 include:

- Homestead Drive
- Flagstonian Drive
- HATUA (Parkland Drive)
- Centre Access Street (running north-south adjacent Stage 1)
- Proposed internal Private Roads.

Details of these road types, consistent with the Town Centre Masterplan, are outlined in

Table 2.1: Relevant Stage 1 Road Cross-Section Parameters

Road Hierarchy	Reserve	Pavement	Lanes	Median	Parking	Bus	Footpath	Cycle	Trunk
Homestead Drive Trunk Connector (4-Lane)	32m	14m	4	Yes	No	Yes	3m (min.) shared path (both sides)	3m two-way (one side)	Yes
Flagstonian Drive Trunk Connector (4-Lane)	32m	14m	4	Yes	No	Yes	1.5m (one side) + 3m shared path (one side)	3m two-way (one side)	Yes
HATUA (Parkland Drive)	21m	6.6m	2	No	Yes	Yes	3m shared path (both sides)		Yes
Centre Access	22m	12m	2	No	Yes	Yes	3m shared path (both sides)		No

Ultimately, Flagstonian Drive and Homestead Drive (in the vicinity of the Town Centre) will be delivered as Trunk Connectors consistent with the Town Centre Masterplan. Details of relevant proposed alternate cross-sections, consistent with the Town Centre Masterplan, are outlined below.

HATUA (Parkland Drive)

As shown in Figure 2.4, a 21m wide HATUA road cross-section is proposed on the northern boundary of Stage 1 forming the eastern portion of Parkland Drive. This cross-section formed part of the previous application for the District Community Centre (DCC) Lot and allows for an activated and highly pedestrianised road type without significantly impacting traffic throughput.

The approved HATUA cross-section is illustrated in Figure 2.5.

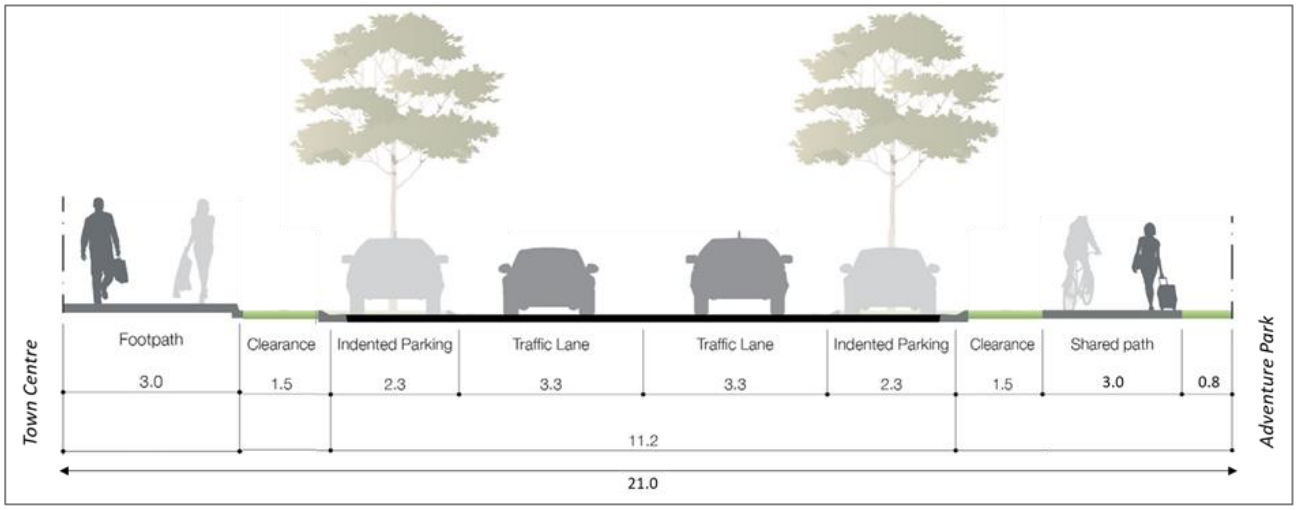


Figure 2.5: Parklands Drive (HATUA) Cross-Section

Centre Access Street (22m)

The Centre Access Street running north-south on the western boundary of Stage 1 is proposed to be delivered upfront with Stage 1 of the Town Centre. It is proposed to be delivered to its ultimate form and will be the primary access to/from Stage 1.

The Centre Access Street shall have a typology generally in accordance with EDQ's *Guideline No. 6 – Street and Movement Network*, yet with a modified 22m cross-section. The proposed "typical" Centre Access modified cross-section is shown below in Figure 2.6 as outlined in the Town Centre Masterplan application material.

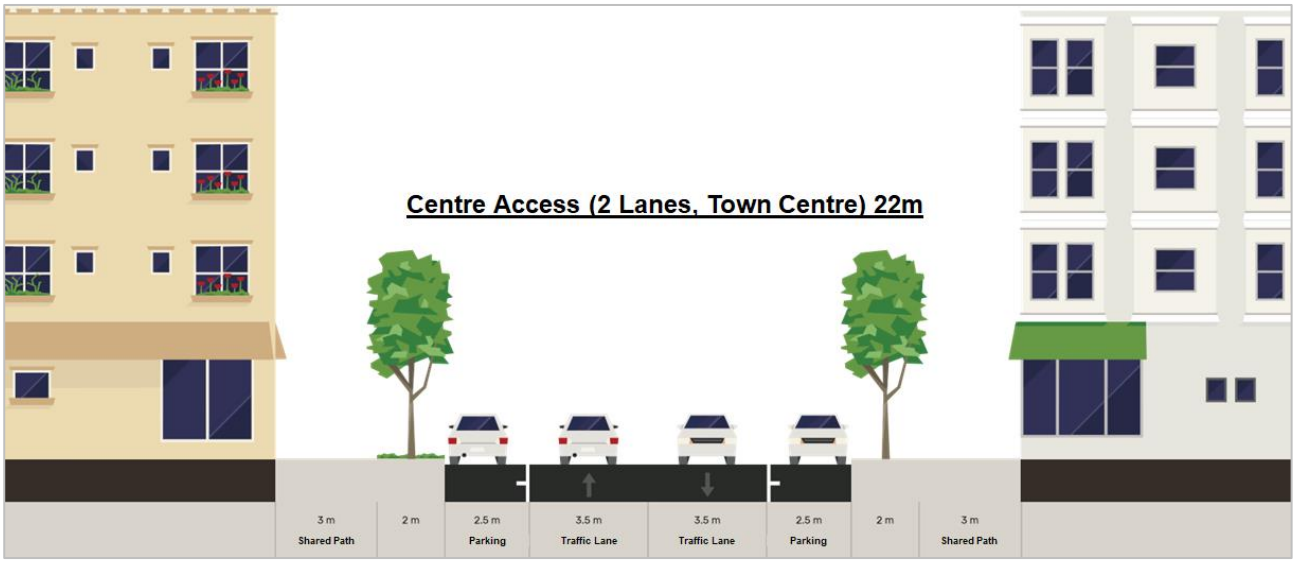


Figure 2.6: Centre Access Street (22m) Cross-section

Further commentary on the proposed Centre Access (22m) cross-section is provided below:

- Traffic lanes, parking lanes and footpath widths are provided consistent with the typical EDQ cross-section
- Separated cycle tracks are not proposed however due to the number of direct property accesses and conflicts / safety concerns associated with this
- Minimum 3m wide pathways are proposed each side
- The cross-section fronting Stage 1 includes a mix of indented parking and planting / clearance where appropriate.

Based on the above and the function the road will perform, the modified cross-section is considered appropriate.

Internal Private Roads

The private internal road within Stage 1 (Easement A) is subject to further development applications for specific uses proposed within Stage 1B of the Town Centre. The private internal road within Easement B (Little High Street) is subject to further assessment by EDQ as a consequence of the conditions of approval imposed on the subject ROL application (DEV2022/1313).

Notwithstanding the above, an indicative cross-section for internal private roads, as consistent with the Town Centre Masterplan, is shown in Figure 2.7.

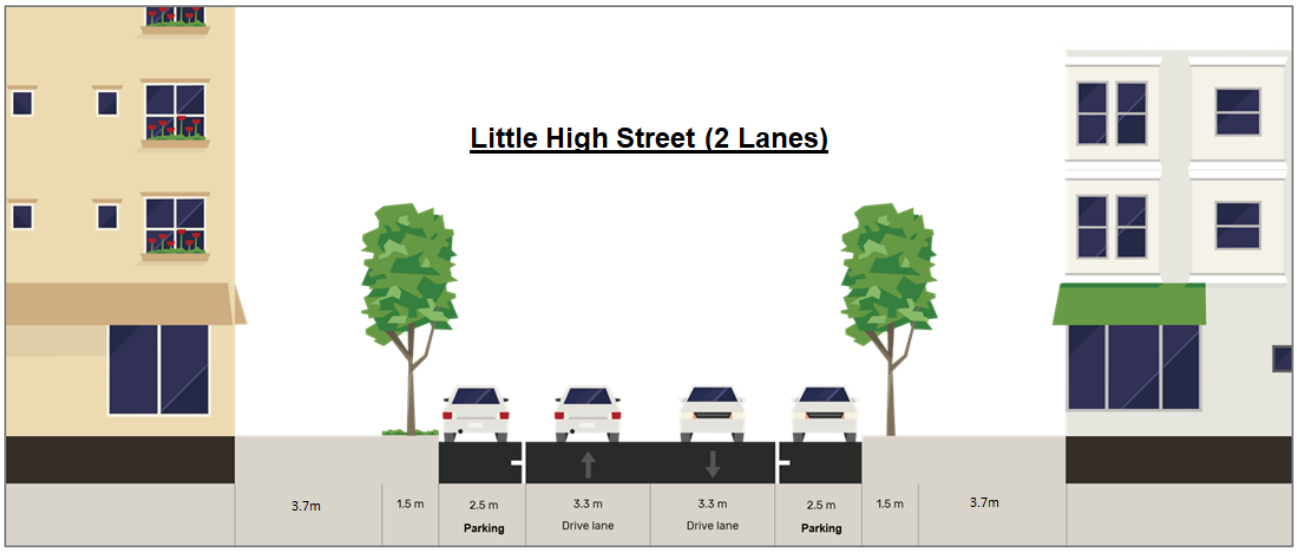


Figure 2.7: Stage 1 Private Roads Indicative Cross-Section

While the above cross-section is indicative only, and the Access Easement A private road is subject to further assessment, proposed private roads shall meet the following requirements:

- Private roads shall comply with the relevant requirements of AS2890
- Private roads within Access Easement A and Access Easement B shall cater for priority car parking, general vehicle movements and service vehicle access, as required for the proposed uses within Stage 1B
- A shared path shall be provided within Access Easement A and Access Easement B private roads to provide north-south and east-west pedestrian connectivity through Stage 1 of the Town Centre
- Active transport connections shall generally be separated from vehicle movements, with any potential crossing / conflict locations managed appropriately.

3. ALTERNATE TRANSPORT

3.1 Existing Services

3.1.1 Public Transport

Bus stop pairs are currently located on Homestead Drive and Flagstonian Drive approximately 400m from the entrance point (north-east corner) to the subject site. These stops are currently serviced by Route 535 connecting Flagstone to Browns Plains via South Maclean, North Maclean and Greenbank.

The location of the existing bus stops with respect to the subject site are illustrated in Figure 3.1.

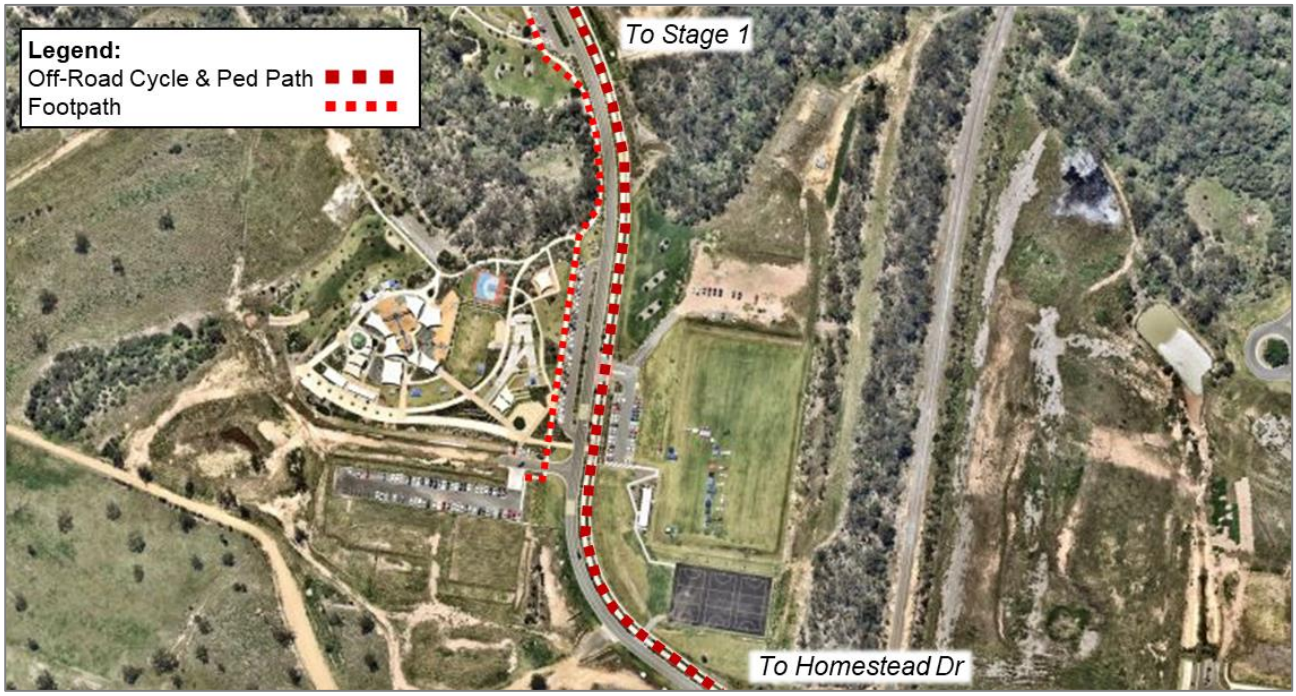
Source: Nearmap (edited by Bitzios)

Figure 3.1: Existing Public Transport Services

Noting the relatively minimal development of the area and the nature of the subject site, the existing bus services are considered to adequately service the subject site for the years immediately following development of the subject site.

3.1.2 Active Transport

Existing active transport facilities on Flagstonian Drive are illustrated in Figure 3.2.



Source: Nearmap (edited by Bitzios)

Figure 3.2: Existing Active Transport Connections

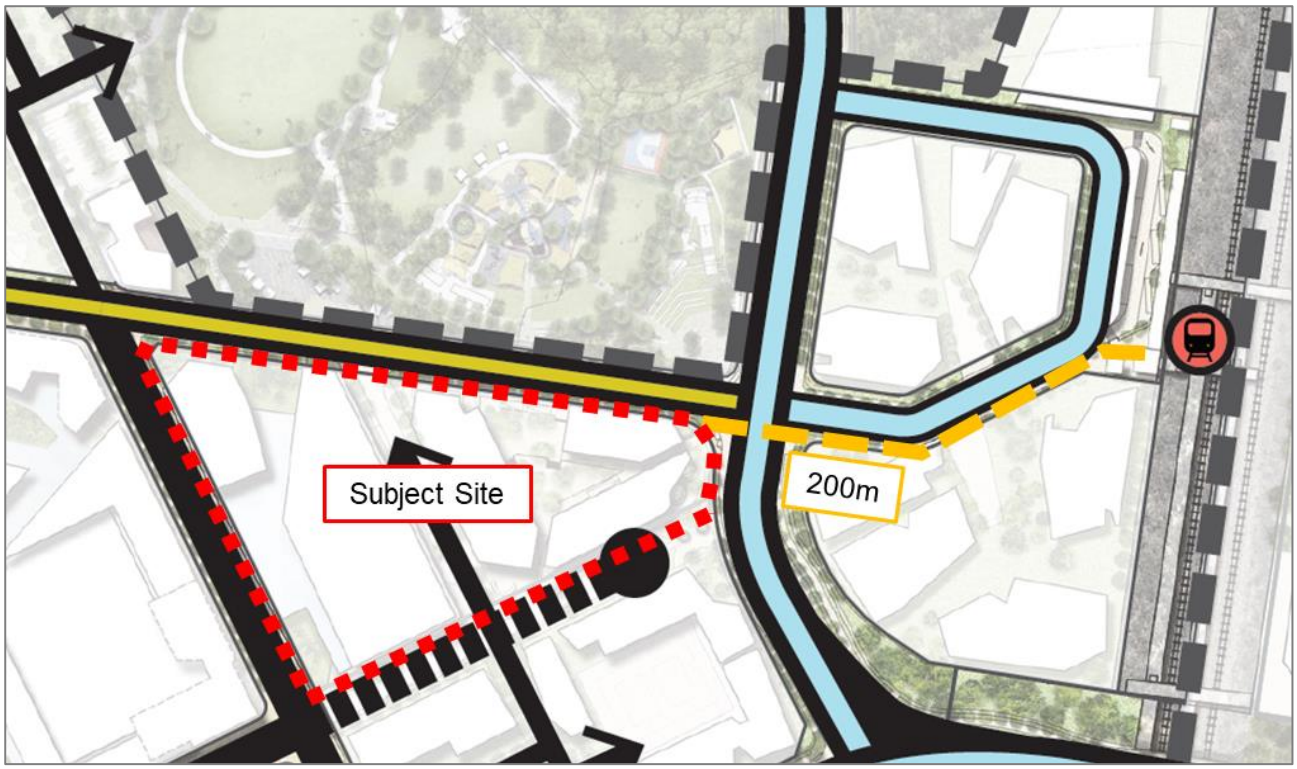
As shown, the subject site is well connected to the existing residential catchment to the north and the commercial uses currently present on Homestead Drive with connectivity to the Adventure Park.

3.2 Future Services

3.2.1 Public Transport

Ultimately, the subject site will be located in close proximity to the future train station and bus interchange located to the east of Flagstonian Drive.

The ultimate design and layout of the station / interchange is subject to future planning, regardless the location of this station / interchange with respect to the subject site is illustrated in Figure 3.3.



Source: Town Centre Masterplan Report, prepared by RPS (edited by Bitzios)

Figure 3.3: Future Train Station & Bus Interchange Location

As shown, the future train station and bus stop interchange will be located approximately 200m walking distance from the subject site. The intersection of Parkland Drive / Flagstonian Drive will be signalised both in the interim (supporting Stage 1) and ultimately accommodating active transport crossings to/from the town centre and accommodating future bus movements.

As such, the site will ultimately be very well serviced by public transport facilities consistent with the intended Town Centre nature of the development.

3.2.2 Active Transport

Expected ultimate active transport provisions in the vicinity of the site are shown in Figure 3.4.

Source: Town Centre Masterplan Report, Section A, prepared by RPS

Figure 3.4: Ultimate Active Transport Network (Town Centre Masterplan)

The site will ultimately be serviced by a highly connected, accessible and high-quality active transport network through a combination separated cycle facilities, shared paths, footpaths and internal linkages and connections through activated areas and green space, consistent with the Town Centre Masterplan.

In the interim, Town Centre Stage 1 will be supported by shared paths on both sides of roads fronting the subject site. Shared path connections shall also be provided on private roads internal to the site within Easement A and Easement B providing high-quality connections to Parkland Drive (HATUA) and to the north-east corner of Stage 1, filtering throughout the entire precinct connecting with the above external infrastructure.

A raised treatment is provided mid-block on the HATUA road promoting safe pedestrian crossing between the regional recreation park and Stage 1 of the Town Centre (via access Easement A). Prior to the commencement of Stage 1 uses, the Flagstonian Drive / Parkland Drive (HATUA) intersection is proposed to be signalised, providing safe crossing locations for pedestrian travelling to / from the subject site.

Figure 3.5 shows the key active transport components delivered in Stage 1.

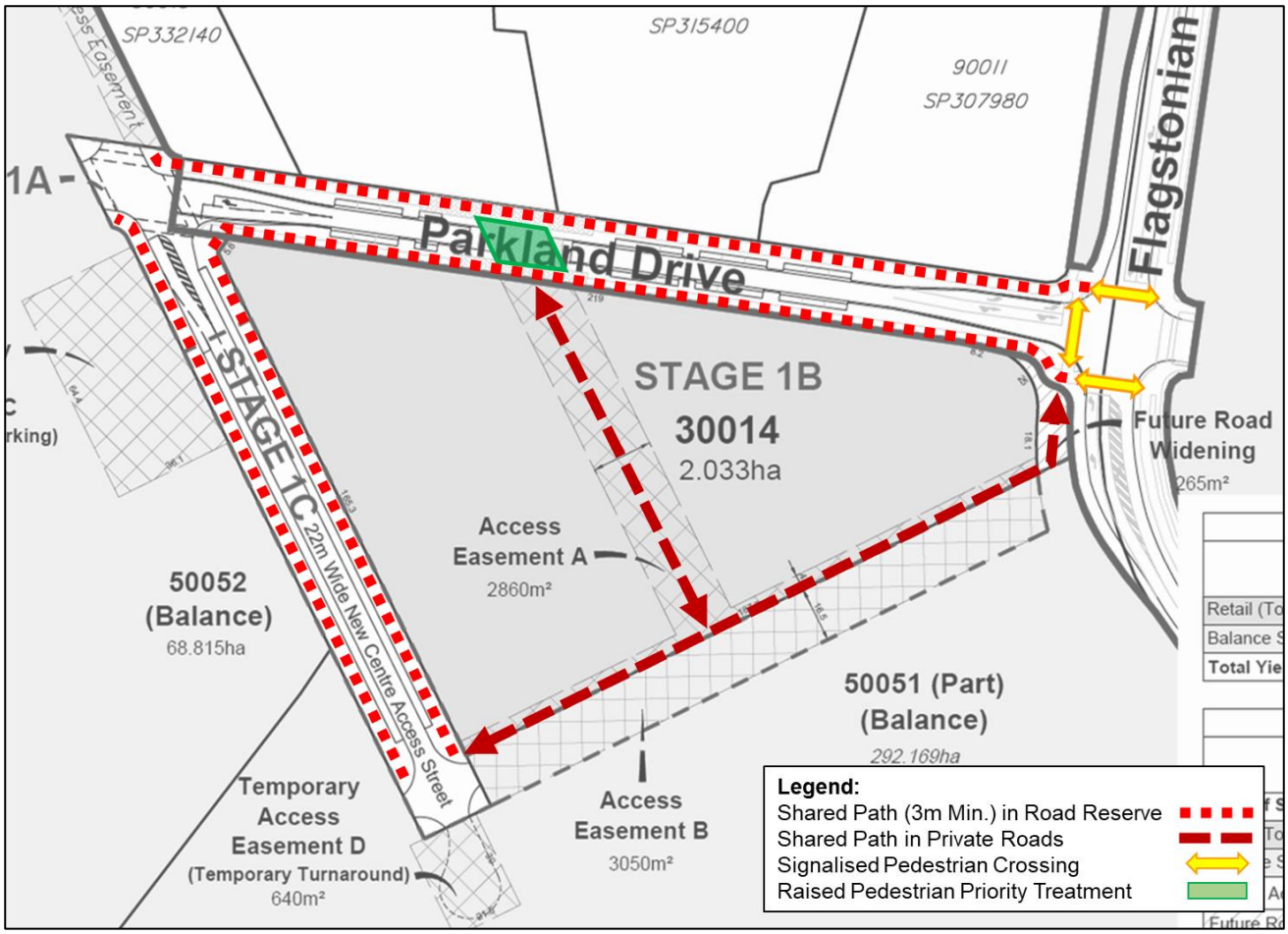


Figure 3.5: Stage 1 Active Transport Network

As shown above, the proposed development will be well serviced by active transport connections throughout the Town Centre through Stage 1 and beyond, connecting the subject site to surrounding land uses and public transport services.

4. CAR PARKING ASSESSMENT

4.1 Context

The proposed development falls within the core area of the Flagstone City Town Centre. Ultimately, this Town Centre core is expected to be similar in nature to a principal / major centre as defined in the Logan Planning Scheme. Centre zone characteristics of the Flagstone City Town Centre include:

- A mix of key trip attractors (e.g. major shopping / dining / recreation) supported with a blend of complimentary uses that encourages multi-purpose trip types to / from the Town Centre
- Close proximity to major public transport services with the future train / bus interchange as detailed above encouraging alternate travel modes to the Town Centre
- Close proximity to surrounding residential with high quality active transport connections promoting local residents to walk / cycle to the precinct.

Based on the above, the centre zone car parking rates defined in Column 3 of Table 9.4.7.3.2 of Logan's Planning Scheme are considered applicable to the proposed development.

An existing temporary car park is also present on the subject site providing car parking for the existing portion of the Flagstone Regional Recreation Park (RRP). This parking is required to be retained following the delivery of Stage 1 of the Town Centre as shown by the temporary car park proposed in Access Easement C.

4.2 Required Car Parking

Car parking requirements for indicative Stage 1 land uses and floor areas defined, in accordance with the Logan Planning Scheme, are outlined in Table 4.1.

Table 4.1: Centre Parking Requirements

Land Use	Area (m^2)	Parking Rate	Spaces Required
Gym	1,000	1 space per 15m^2	**67**
Balance Area	9,500	1 space per 100m^2	**95**
Total	**10,500**	**-**	**162**

Balance area may included uses such as Club, Food & Drink, Retail, etc.

As shown, based on indicative floor areas proposed, a minimum of 162 car parking spaces shall be provided for the subject site. Exact car parking requirements and details of proposed car parking arrangements shall be detailed in further applications over the site for specific tenancies to be identified at a later date. As outlined in the POD, car parking shall be provided underground or sleeved by built form.

The existing temporary RRP car park provides 72 car parking spaces, including 2 PWD spaces. With delivery of the subject site and subsequent removal of this temporary car park, this parking supply shall be reinstated / retained to ensure parking supply for the RRP is not impacted.

4.3 Car Parking Provision

As noted above, a temporary car park shall be provided within Access Easement C on the western side of the subject site providing sufficient car parking supply for the RRP – replacing the existing temporary car park which is displaced due to Stage 1.

The proposed temporary car parking area provides sufficient space for the existing 72 car parking spaces, including 2 PWD spaces.

Parking for the tenancies within Stage 1 shall be provided in accordance with the POD, either underground or sleeved by built form excluding parking within Access Easements which will resemble roads with on-street parking. Parking shall be provided at the following rates:

- Minimum Rate of Provision (excl. gym): 1 space per 100m^2 of GFA
- Gymnasium: 1 space per 15m^2 of GFA

As alluded to above, additional parallel parking will be provided on private roads within Easement A and B servicing the subject site. Subject to the scale of uses ultimately proposed within the eastern 'Eat Street' precinct, temporary car parking may also be provided on the southern side of Easement B to service the precinct.

4.4 Geometric Compliance Review

The internal layout of car parking and servicing areas within the subject site shall comply with the relevant requirements of AS2890.1 and AS2890.2, including the temporary car park within Access Easement C. Key dimensional considerations are outlined in Table 4.2.

Table 4.2: Parking Geometric Assessment

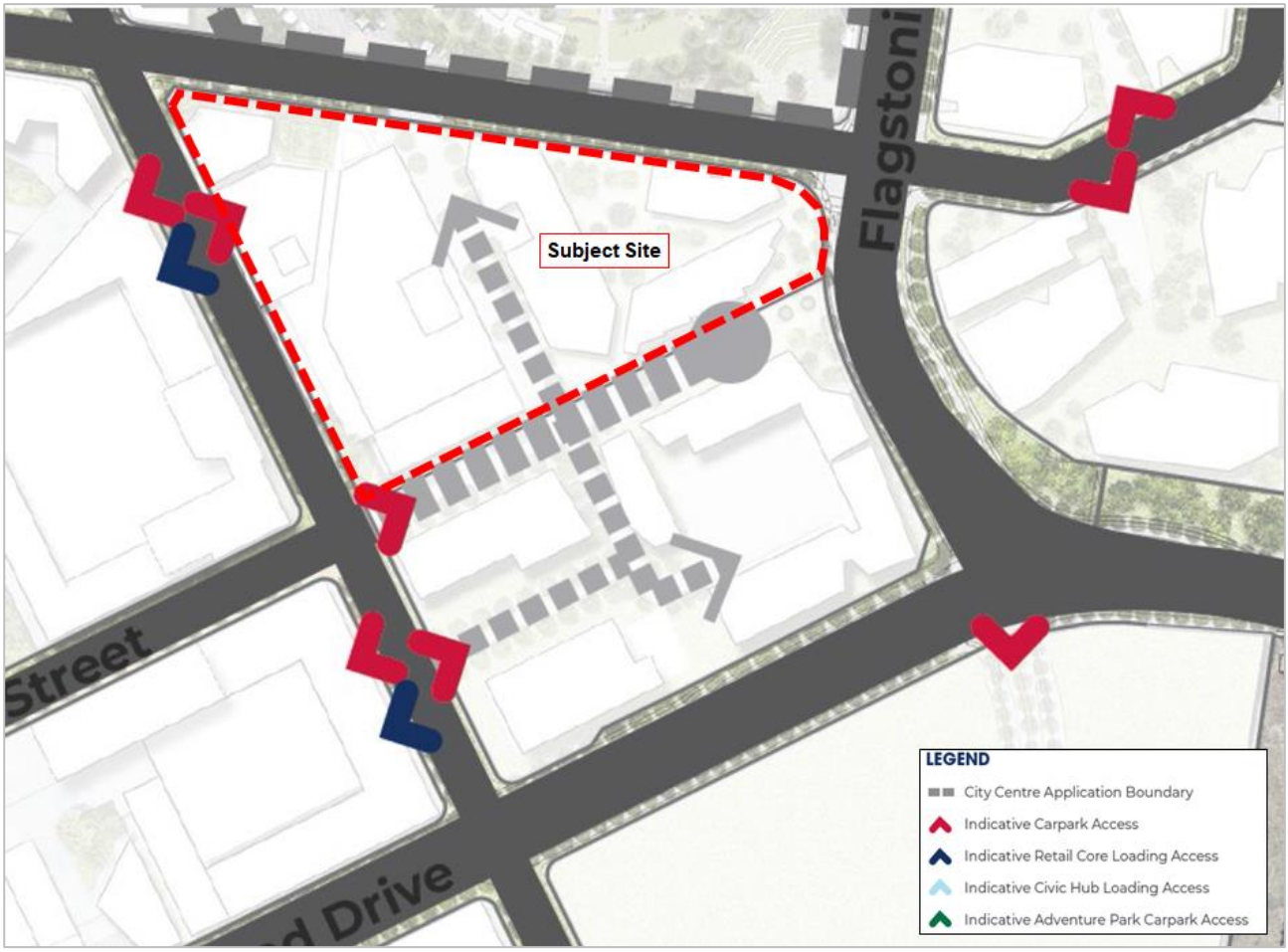
Design Element	Minimum Requirements
Employee Car Parking Bays (User Class 1)	2.4m x 5.4m + 6.2m aisle
Residential Car Parking Bays (User Class 1A)	2.4m x 5.4m + 5.8m aisle
Residential Visitor Car Parking Bays (User Class 2)	2.5m x 5.4m + 5.8m aisle
Visitor Car Parking Bays (User Class 3)	2.6m x 5.4m + 5.8m aisle
PWD Car Parking Bays (User Class 4)	2.4m x 5.4m (with adjacent shared area of the same) + 5.8m aisle
Parallel Parking Bays (Private Car Park)	Obstructed End Space = 2.1m x 6.6m Unobstructed End Space = 2.1m x 5.4m Intermediate Space = 2.1m x 6.3m
Parallel Parking Bays (On-Street)	Obstructed End Space = 2.5m x 6.3m Unobstructed End Space = 2.5m x 5.4m Intermediate Space = 2.5m x 6.0-6.7m
Parking Aisle Width (Two-way)	As per relevant User Class / Type + 0.3m clearance where bounded by high wall
Blind Aisle Extension	1.0m
Clearance to Vertical Obstructions	0.3m
Height Clearance (Car Parking)	Minimum 2.3m

Note, while the minimum requirements as per AS2890 are defined above, on-street parallel parking spaces shall be provided in accordance with approved cross-sections within the Town Centre, achieving a minimum of 2.5m wide parallel parking spaces in accordance with the Town Centre Masterplan and Movement Network IMP.

5. ACCESS & SERVICING

5.1 Access

The proposed access and loading locations are illustrated in Figure 5.1.

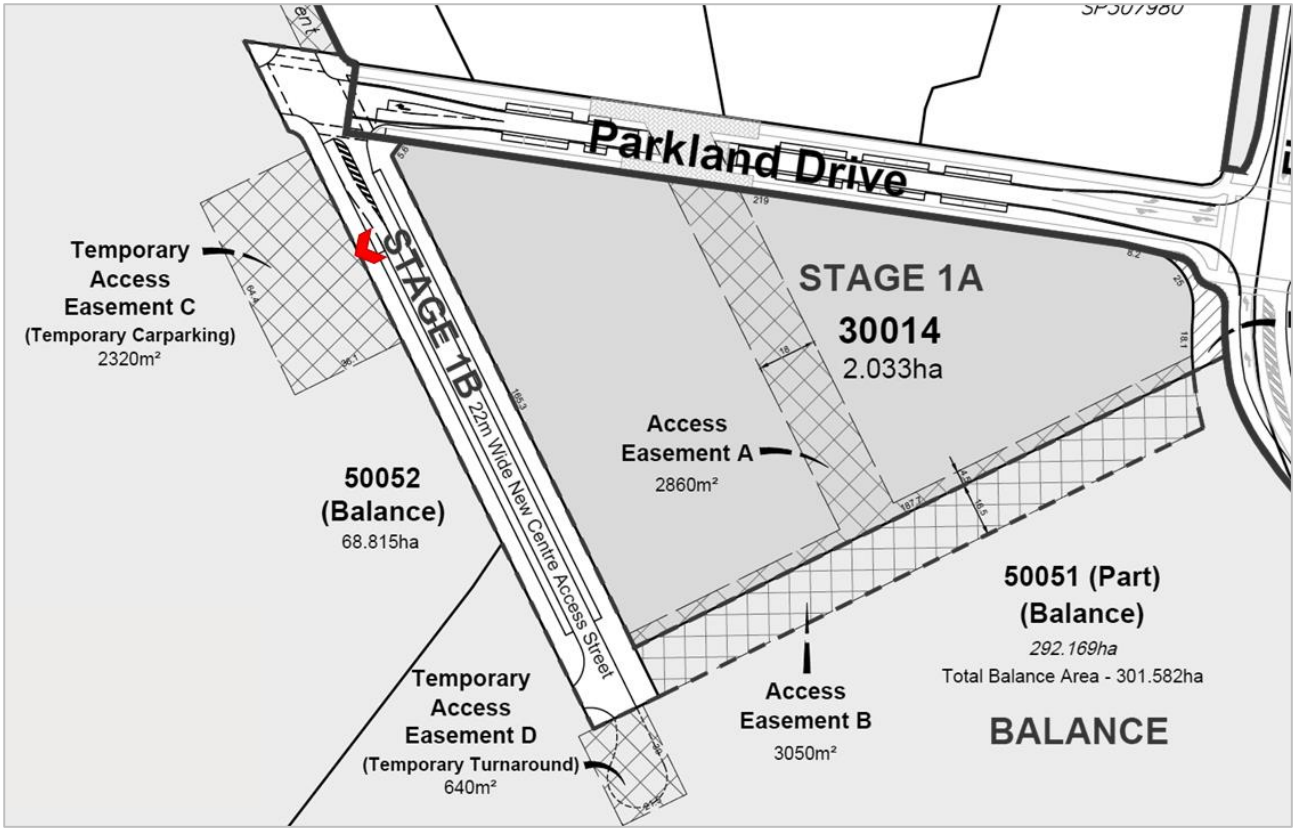


Source: Town Centre Masterplan Report, Section A, prepared by RPS

Figure 5.1: Indicative Access Locations

As shown, key access and loading locations will be delivered along the Centre Access Street (22m). Specific tenancy / parking area access locations within the Private Roads shall be delivered with each application, however the previously submitted COX plans show an example of how this will likely be delivered.

The access to the temporary car park located in Access Easement C will also be provided off the Centre Access Street (22m) in a similar location to that shown above, as illustrated indicatively in Figure 5.2.



Source: Town Centre Stage 1 ROL Plan (prepared by RPS, edited by Bitzios)

Figure 5.2: Indicative Temporary Car Park Access Location

5.2 Servicing & Refuse Collection

As outlined in the Logan Planning Scheme, design service vehicle requirements for proposed / potential land uses within Stage 1 of the Flagstone Town Centre are as follows:

- Club: 12.5m HRV
- Shop (where tenancy is >500m^2 GFA): 12.5m HRV
- Shop (where tenancy is <500m^2 GFA): 8.8m MRV
- Food and Drink Outlet (where tenancy is >200m^2 GFA): 12.5m HRV
- Food and Drink Outlet (where tenancy is <200m^2 GFA): 8.8m MRV
- Indoor Sport & Recreation: 12.5m HRV

Servicing provisions shall be provided in accordance with the Logan Planning Scheme, to be determined in detail with future applications outlining specific uses to be delivered in Stage 1.

Swept path diagrams have been prepared demonstrating the ability for design service vehicles listed above to perform a 3-point turnaround in the temporary turnaround head with Access Easement D. While it is not expected these vehicles will be required to use the turnaround (given the delivery of Centre Access Street and Little High Street), it has been demonstrated for information purposes. Note that the temporary turnaround will be constructed of chipseal with no surrounding infrastructure (or vertical obstructions) hence the largest design vehicle uses the full width of the chipseal (i.e. bringing its wheels to the edge of the seal for the turnaround).

In addition, a swept path of the Private Road ("Shared Street") turnaround performed by a passenger vehicle (B99) has been included for information purposes.

Swept path diagrams are provided in **Appendix B**.

6. TRAFFIC ASSESSMENT

6.1 Flagstone City Traffic Modelling

Bitzios Consulting has prepared Aimsun micro-simulation models of the PEET Flagstone City development area within the Flagstone PDA. This model adopted OD matrices from the *Greater Flagstone Strategic Transport Model* (GFSTM) developed by VLC and is used to accurately model vehicle route choice and subsequently traffic distribution through the PEET development land.

Interim (2031) and ultimate (2066) micro-simulation models have been developed. Turn volumes from these models were used to undertake intersection modelling using SIDRA to support specific stages of development. For the assessment of Stage 1 of the Town Centre a SIDRA Intersection model was developed for the Flagstonian Drive / Parklands Drive intersection to test both interim and ultimate scenarios.

6.2 Interim Intersection Traffic Volumes

6.2.1 Background Traffic

Through traffic volumes on Flagstonian Drive were adopted from the 2031 Flagstone City micro-simulation model with turning volumes to / from Parklands Drive, prior to any development of the Town Centre, largely comprised of traffic generated by the District Community Centre (DCC). This traffic generation is outlined in the traffic assessment supporting the ROL application for the DCC (*P2300.002T Flagstone DCC_ ROL Change Application (Traffic)*).

Background traffic in 2031 is therefore shown in Figure 6.1.

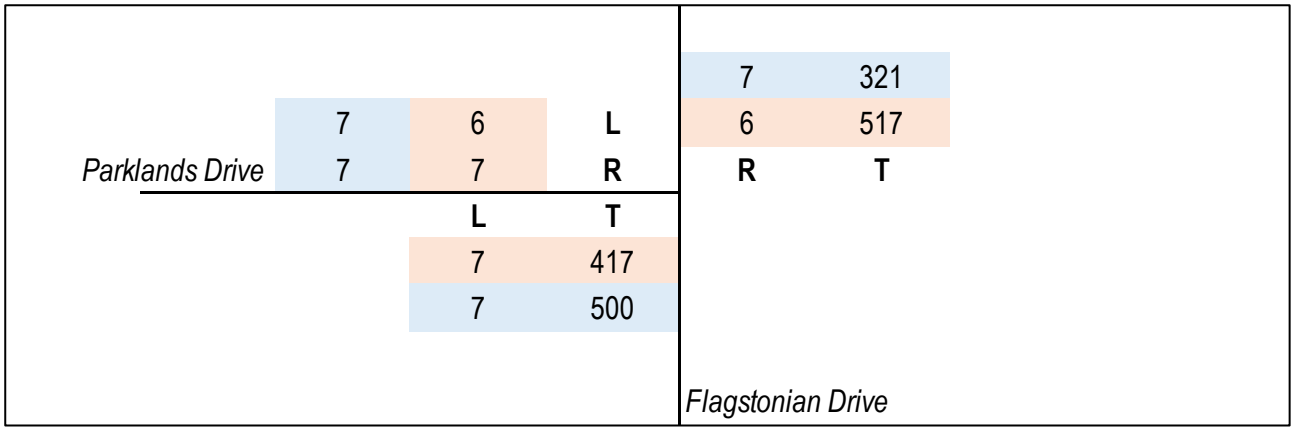


Figure 6.1: Flagstonian Drive / Parklands Drive Interim Background Volumes

6.2.2 Development Traffic

The portion of the subject site west of Easement A is expected to primarily comprise of a key destination tenancy operating as a Club land use or similar. Traffic generation rates for this Club land use were sourced from average peak hour traffic generation of a 'Tavern' land use from the *QLD Government Open Data Portal Traffic Generation Data*. Consistent with the site survey data, the proposed Club use is expected to generate negligible development trips in the AM peak and generate peak development trips during the network PM peak.

The portion of the subject site east of Easement A is expected to primarily comprise of a mix of specialty store / food & beverage uses potentially also including a gym tenancy. Considering these expected uses, peak period trip generation was determined using the evening peak hour (V(P)) shopping centre traffic generation rate defined in the *RMS Guide to Traffic Generating Developments: Technical Direction*, as follows:

V(P) = 20A(S) + 51A(F) + 155A(SM) + 46A(SS) + 22A(OM).

Where:

- Trip numbers are per 1,000m^2 GFA
- A(SS) = Floor area of specialty shops / secondary retail, including take-away food & beverage

From this formula, peak weekday specialty store trip generation is shown as 46 trips per 1,000m^2 GFA or 4.6 trips per 100m^2 GFA. For a conservative assessment, peak specialty store traffic generation was assumed to occur in both AM and PM network peak hours for the expected shop, food and drink and gym uses east of Easement A.

Adopting the above rates, peak traffic generation of Stage 1 of the Flagstone Town Centre is outlined in Table 6.1. Indicative floor areas below are consistent with Stage 1 GFA values outlined in the Flagstone City Town Centre Masterplan.

Table 6.1: Stage 1 Development Traffic Generation

Land Use	Quantity	AM Rate	PM Rate	AM Trips (veh/h)	PM Trips (veh/h)
Club	6,000m^2 GFA	-	7.24 trips per 100m^2 GFA	-	435
Specialty Stores / F&B	4,500m^2 GFA	4.6 trips per 100m^2 GFA	4.6 trips per 100m^2 GFA	207	207
			Total	**207**	**642**

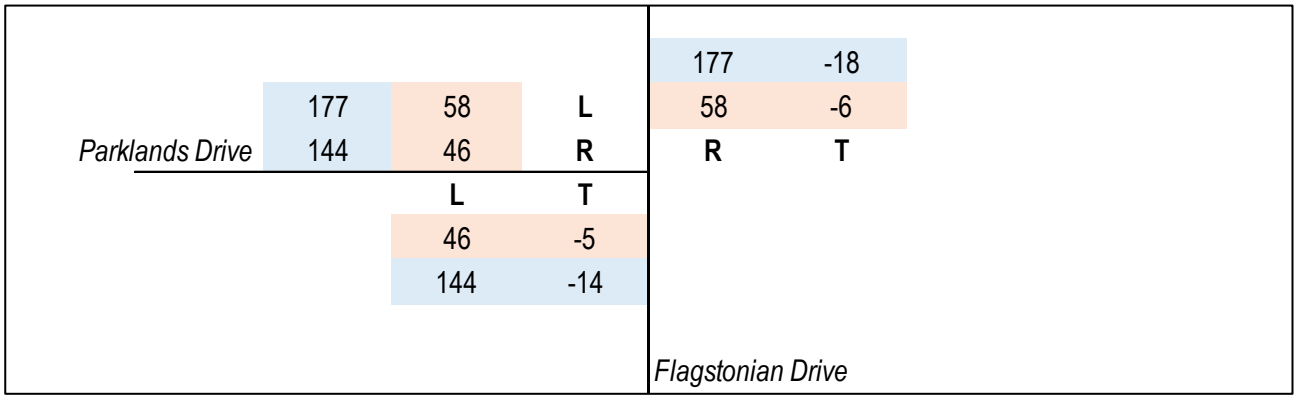
As shown, the proposed development is expected to generate in the order of 207 AM peak hour vehicle trips and 642 PM peak hour vehicle trips. It is assumed that development trip directionality will be split approximately 50% in and 50% out in the peak hours, with development trip directionality outlined in Table 6.2.

Table 6.2: Stage 1 Development Traffic Directionality

AM Trip Split		PM Trip Split		AM Trips (veh/h)		PM Trips (veh/h)	
IN	OUT	IN	OUT	IN	OUT	IN	OUT
50%	50%	50%	50%	**104**	**104**	**321**	**321**

It is also expected that a small portion of development trips will be 'drop-in' trips with patrons visiting the proposed land uses as a 'side-track' from another trip (e.g. on their way home). This is also consistent with trip discount factors specified in the *RMS guide to Traffic Generating Developments.*

Development traffic generation at the interim Flagstonian Drive / Parklands Drive intersection is therefore shown in Figure 6.2.



NOTE: Negative values represent diverted drop-in trips already on the network that now deviate to Stage 1 before continuing their trip

Figure 6.2: Stage 1 Development Traffic Volumes

Interim (2031) design traffic volumes (background + development trips) are shown in Figure 6.3.

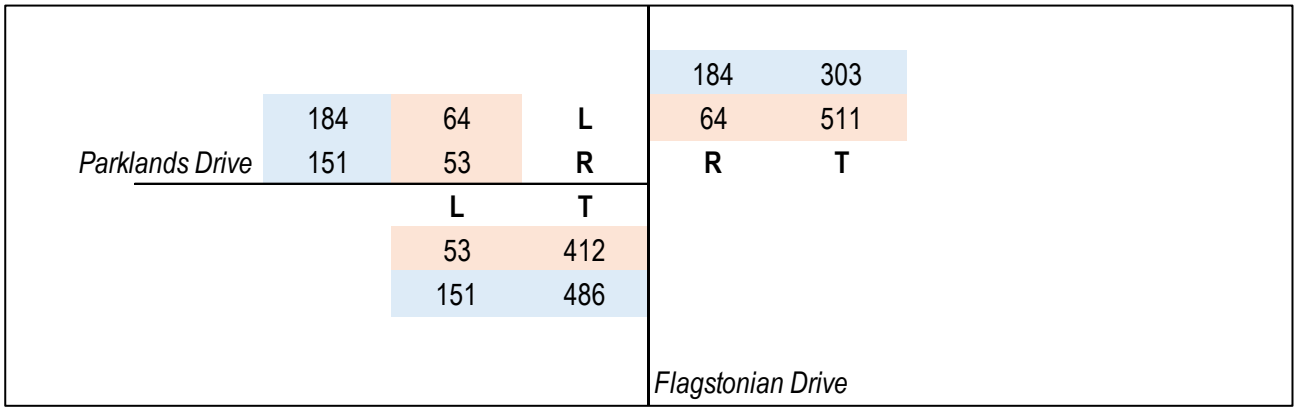


Figure 6.3: Flagstonian Drive / Parklands Drive Interim Design Volumes

Note, this assessment conservatively assumes all development traffic enters and exits via Parkland Drive. It is expected that by 2031, further development of the town centre will provide additional road connections to Stage 1 and therefore traffic may be redistributed onto other road links.

6.3 Turn Warrants Assessment

A turn warrants assessment was undertaken at the Flagstonian Drive / Parkland Drive intersection for interim design traffic volumes as shown in Figure 6.4, noting that only the critical PM peak hour is considered.

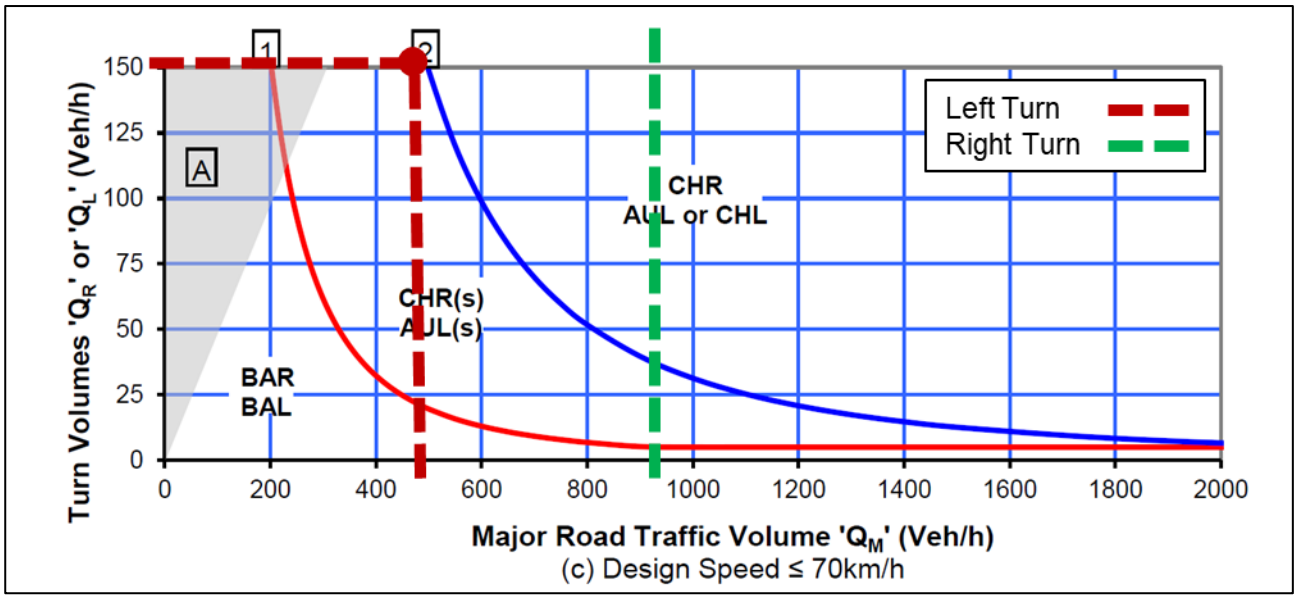


Figure 6.4: Interim Turn Warrants Assessment

As shown, a short auxiliary left-turn (AUL(s)) lane and channelised right-turn (CHR) lane is warranted at the interim Flagstonian Drive / Parklands Drive intersection. The existing Flagstonian Drive / HATUA intersection form includes a short auxiliary left-turn (AUL(s)) and channelised right-turn (CHR) treatment as per the above warrants, in a priority-controlled arrangement.

6.4 Ultimate Traffic Volumes

For the purposes of this assessment, ultimate (2066) traffic volumes were adopted from the ultimate microsimulation traffic model, consistent with the application for the DCC Lot as shown in Figure 6.5.

	192	147	L	176	646	6	
	9	20	T	326	806	3	
Parklands Drive	118	71	R	R	T	L	*Station Access*
	L	T	R	R	32	22	
	291	615	70	T	16	20	
	163	776	64	L	27	49	
				Flagstonian Drive			

Figure 6.5: Flagstonian Drive / Parklands Drive Ultimate Traffic Volumes

6.5 Intersection Modelling

The Flagstonian Drive / Parkland Drive intersection was modelled using SIDRA Intersection (version 9) for interim and ultimate scenarios. Intersection layouts assessed, as modelled in SIDRA are illustrated in Figure 6.6.

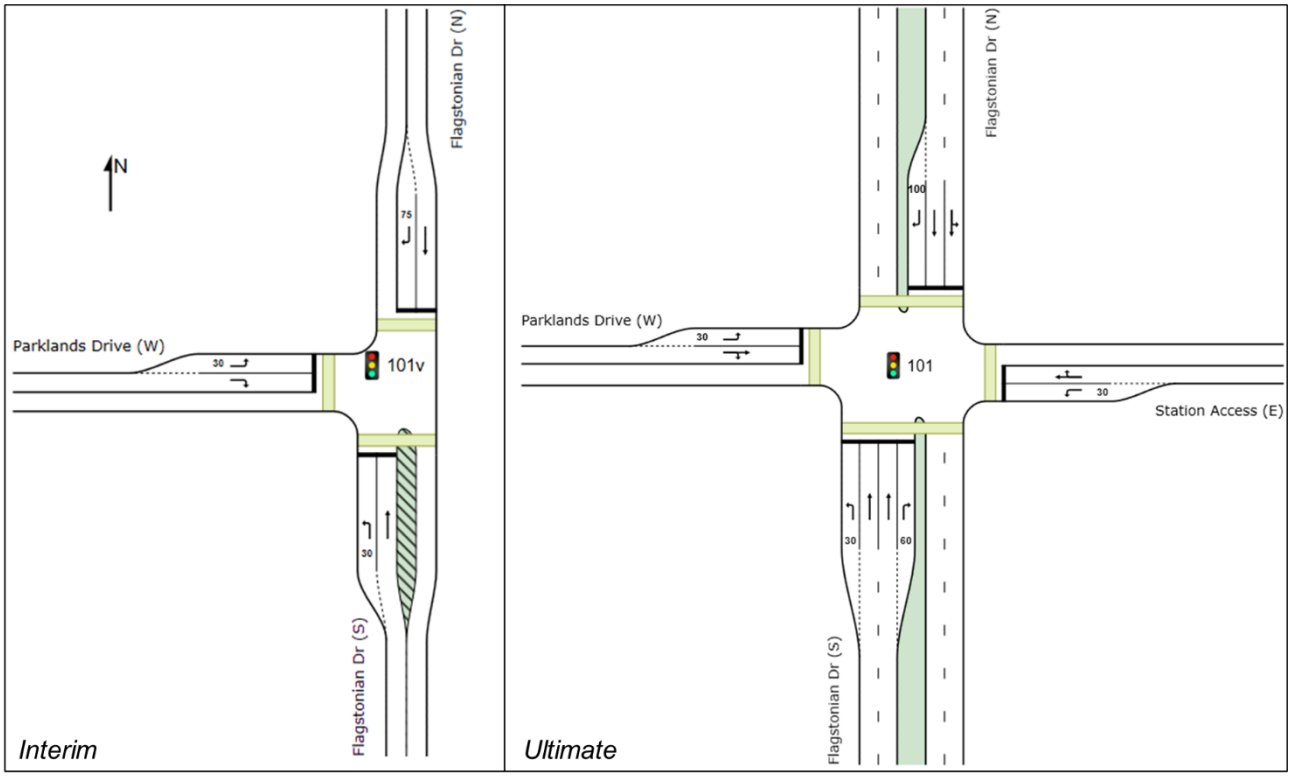


Figure 6.6: Interim and Ultimate SIDRA Intersection Layouts

SIDRA Intersection results at the Flagstonian Drive / Parkland Drive intersection are summarised in Table 6.3 for design traffic volumes.

Table 6.3: Flagstonian Drive / Parklands Drive SIDRA Results Summary

Approach	AM Peak				PM Peak			
	Volume	DOS	LOS	Queue (m)	Volume	DOS	LOS	Queue (m)
Interim (2031)								
Flagstonian Drive (S)	465	0.52	A	40	637	0.81	C	88
Flagstonian Drive (N)	575	0.65	A	55	487	0.46	B	40
Parkland Drive (W)	117	0.22	B	8	335	0.56	C	25
Overall	**1,157**	**0.65**	**A**	**55**	**1,459**	**0.81**	**C**	**88**
Ultimate (2066)								
Flagstonian Drive (S)	976	0.89	E	185	1,003	0.85	E	183
Station Access (E)	79	0.16	D	19	91	0.12	C	14
Flagstonian Drive (N)	1,195	0.88	D	160	828	0.81	D	110
Parkland Drive (W)	251	0.33	C	37	319	0.45	C	47
Overall	**2,552**	**0.89**	**D**	**185**	**2,241**	**0.85**	**D**	**183**

As shown, the interim intersection layout is expected to cater for Stage 1 development traffic with background growth to 2031. It is expected that prior to 2031, further development of the Town Centre will be completed allowing redistribution of Stage 1 trips via other intersections. Regardless, there is sufficient capacity to cater for full Stage 1 development based on the assessed intersection configuration based on typical operational performance thresholds for a signalised intersection (i.e. DOS ≤ 0.9).

SIDRA modelling also indicates that the ultimate Flagstonian Drive / Parklands Drive signalised layout will cater for ultimate (2066) traffic volumes and remain within acceptable operational performance thresholds for a signalised intersection (i.e. DOS ≤ 0.90). Importantly, this ultimate (2066) scenario assumes full development of the entire PDA. While the assessment is focussed on PEET's Flagstone City, review of ongoing modelling for the region by VLC, specifically using the South Logan Strategic Transport Model (SLSTM), suggests that the assumed volumes remain entirely consistent with those estimated in SLSTM.

Detailed SIDRA outputs are provided at **Appendix C**.

7. FLAGSTONIAN DRIVE / PARKLAND DRIVE

7.1 Overview

As demonstrated above, the Flagstonian Drive / Parkland Drive intersection geometric design was assessed at the following stages:

- **Interim Scenario:** signalisation of the existing layout inclusive of dedicated turn treatments
- **Ultimate Scenario:** final four-way intersection with ultimate Flagstonian Drive cross-section.

Concept layout designs were produced for interim and ultimate which are provided at **Appendix D** and based on the *Austroads Guide to Road Design*.

7.2 Interim Intersection Design

It is noted that the interim design plan provided at **Appendix D** is conceptual only. Detailed signal design plans shall be prepared prior to the signalisation of the intersection. The existing turn treatments on the priority-controlled intersection comply with the minimum Austroads requirements for a CHR and AUL(s):

- A channelised right turn (CHR) pocket in the southbound direction:
  - Storage Length: 14.5m
  - Lane Width: 3.5m
  - Deceleration Length: 75m
  - Taper Length: 23m
- A short auxiliary left-turn lane (AUL(s)) in the northbound direction:
  - Lane Width: 3.5m
  - Deceleration Length: 35m
  - Taper Length: 23m
- 3.5m wide through traffic lane width on Flagstonian Drive.

Interim intersection SIDRA results provided at **Appendix C** demonstrate that modelled 95th percentile vehicle queues on Flagstonian Drive turn lanes do not exceed the storage length of a design vehicle (14.5m). As such, existing turn treatment lengths are considered suitable for the interim arrangement and, subject to detailed signal design, the proposed signalisation of the intersection shall only require delivery of signal infrastructure on the existing intersection from.

A swept path assessment provided at **Appendix B** demonstrates that the interim intersection design can cater for all turn movements of a 14.5m coach / bus.

7.3 Ultimate Intersection Design

The ultimate four-way, signalised intersection concept layout is provided at **Appendix D**.

Dedicated left and right turn treatments are proposed on Flagstonian Drive with the exception of the left turn pocket from the northern approach. Traffic modelling indicates that southbound left turn volumes are negligible with the majority of left turn volumes expected to ultimately use the left-in / left-out intersection to the north.

A swept path assessment provided at **Appendix B** demonstrates that the intersection design can cater for all turn movements of a 14.5m coach / bus.

Importantly, the SIDRA modelling completed verifies that this intersection configuration remains appropriate for the anticipated forecast traffic volumes with full development of the PDA.

8. CONCLUSION

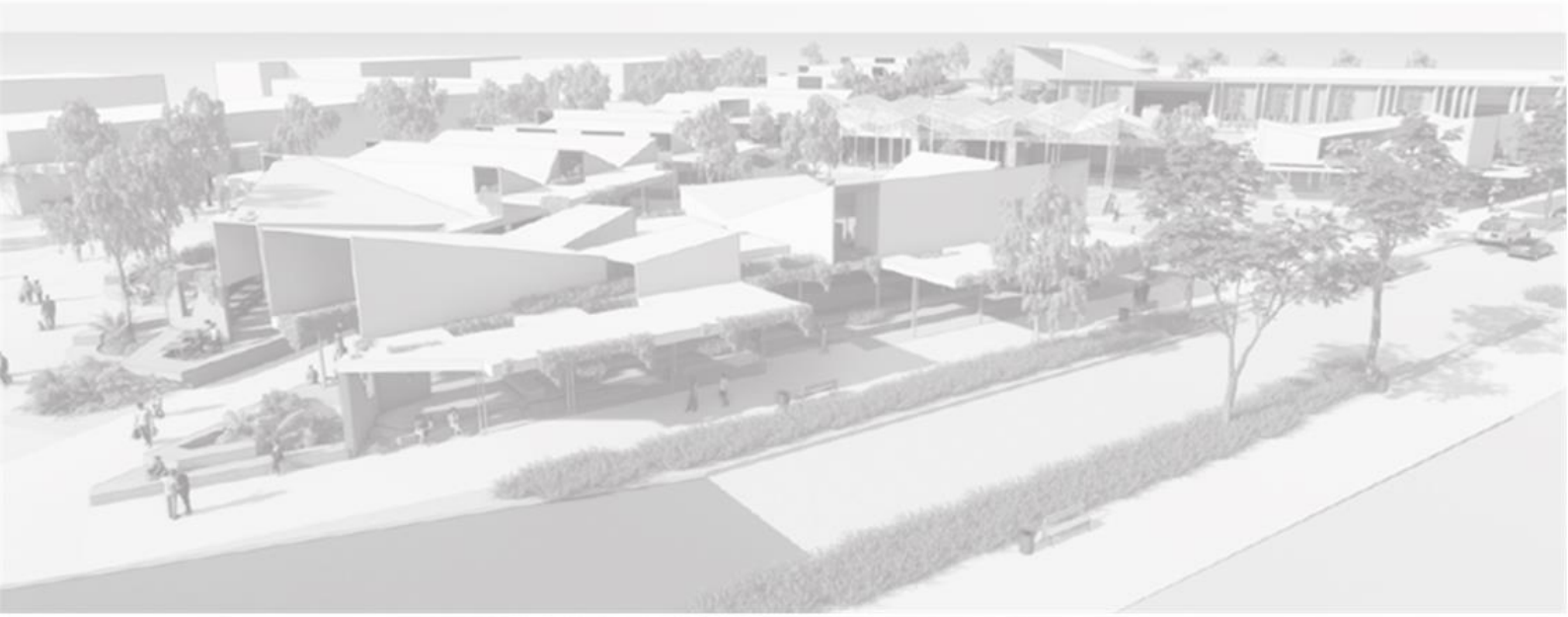
The traffic and transport findings for the proposed Flagstone Town Centre Stage 1 development are summarised as follows:

- A HATUA is proposed on the northern extent of Stage 1 (known as Parkland Drive) to facilitate high active transport connectivity while maintaining traffic throughput
- The Flagstonian Drive / Parkland Drive (HATUA) intersection is proposed to be signalised for Stage 1 to cater for controlled, safe active transport movements (not trigger by performance)
- Existing bus services are considered to adequately cater for the demands of the proposed development and the site will be considered well serviced by public transport services with ultimate development of the Town Centre
- The proposed development is well service by existing active transport connections and ultimate active transport facilities will provide high-quality connectivity to surrounding destinations and public transport services
- A temporary car park will be provided within Access Easement C to cater for the Regional Recreation Park car parking which will be displaced due to delivery of Stage 1
- The ultimate car parking provisions will be sufficient to cater for the expected car parking demand based on the parking rates and requirements outlined in the POD
- Parking provisions and access arrangements shall be provided in accordance with the relevant requirements of AS2890 and IPWEAQ Standard Drawings
- A swept path assessment demonstrates passenger and service vehicle manoeuvring to/from key turnaround areas as required by the Logan Planning Scheme is suitable
- A turn warrants assessment indicates that an interim Flagstonian Drive / Parkland Drive intersection form warrants AUL(s) and CHR turn treatments to cater for expected Stage 1 traffic
- SIDRA assessment indicates that the Flagstonian Drive / Parkland Drive interim intersection design can cater for Stage 1 traffic volumes with background traffic growth to 2031
- SIDRA assessment indicates that the Flagstonian Drive / Parklands Drive ultimate intersection design can cater for ultimate (2066) forecast traffic volumes
- Interim and ultimate conceptual layouts of the Flagstonian Drive / Parkland Drive intersection are provided at **Appendix D**, designed in accordance with relevant requirements of the Austroads Guide to Road Design and to cater for turning manoeuvres of a 14.5m long coach / bus.

Based on the above assessment, it is concluded that there are no significant traffic or transport impacts associated with the proposed Town Centre Stage 1 development to preclude its approval and relevant conditioning on transport planning grounds.

It is considered that the proposed provisions are suitable to cater for the early stage of the town centre while allowing for appropriate integration into the ultimate town centre as the region grows and develops.

Appendix A: Stage 1 ROL and POD Plans



Legend

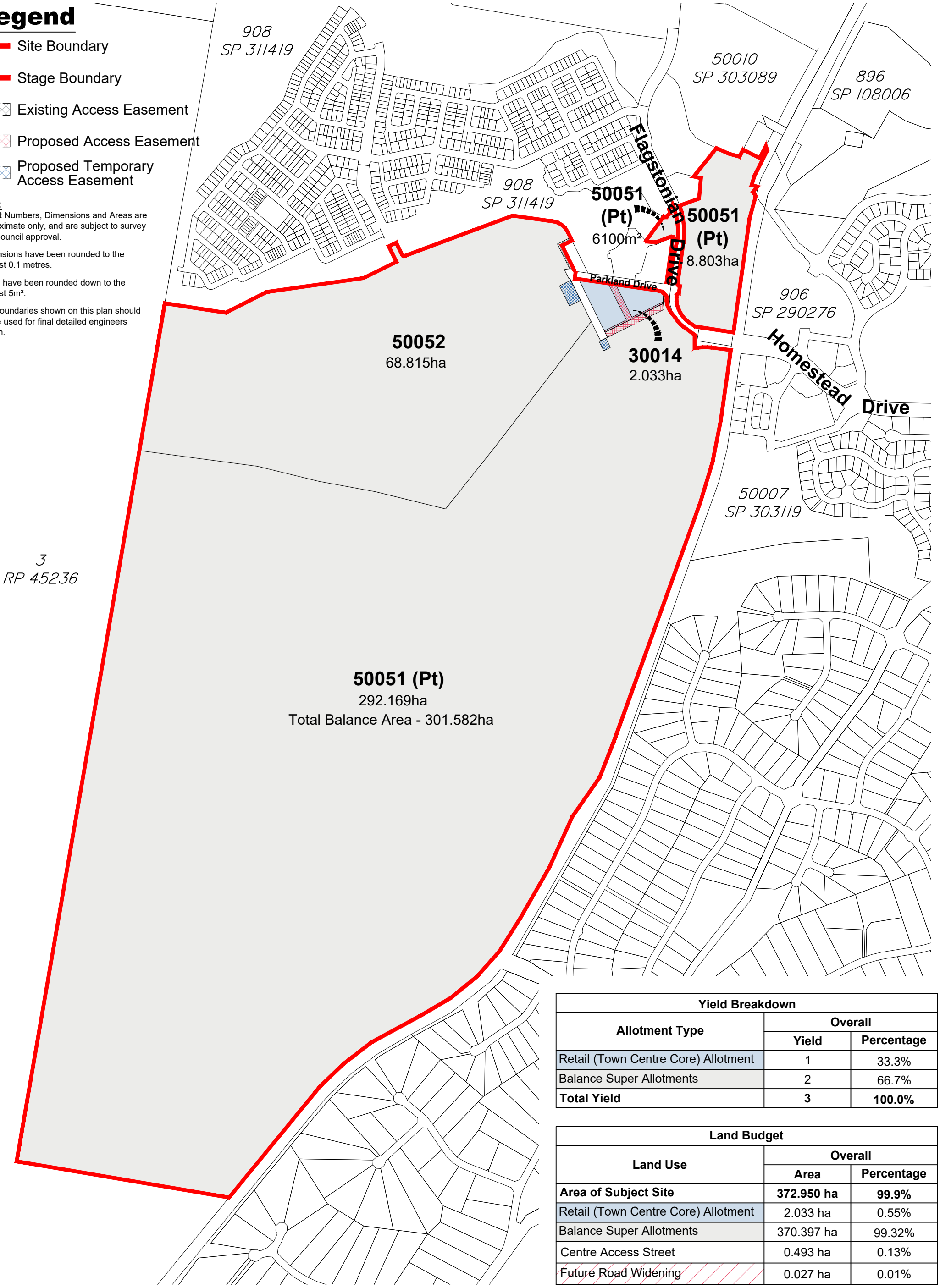
- Site Boundary
- Stage Boundary
- Existing Access Easement
- Proposed Access Easement
- Proposed Temporary Access Easement

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.

Dimensions have been rounded to the nearest 0.1 metres.

Areas have been rounded down to the nearest 5m².

The boundaries shown on this plan should not be used for final detailed engineers design.



Yield Breakdown		
Allotment Type	**Overall**	
	Yield	**Percentage**
Retail (Town Centre Core) Allotment	1	33.3%
Balance Super Allotments	2	66.7%
Total Yield	**3**	**100.0%**

Land Budget		
Land Use	**Overall**	
	Area	**Percentage**
Area of Subject Site	**372.950 ha**	**99.9%**
Retail (Town Centre Core) Allotment	2.033 ha	0.55%
Balance Super Allotments	370.397 ha	99.32%
Centre Access Street	0.493 ha	0.13%
Future Road Widening	0.027 ha	0.01%

PLAN REF: 110056 - 533C

DATE: 15 AUGUST 2024
CLIENT: PEET
DRAWN BY: MD
CHECKED BY: MD/DG
SHEET: 1 of 2

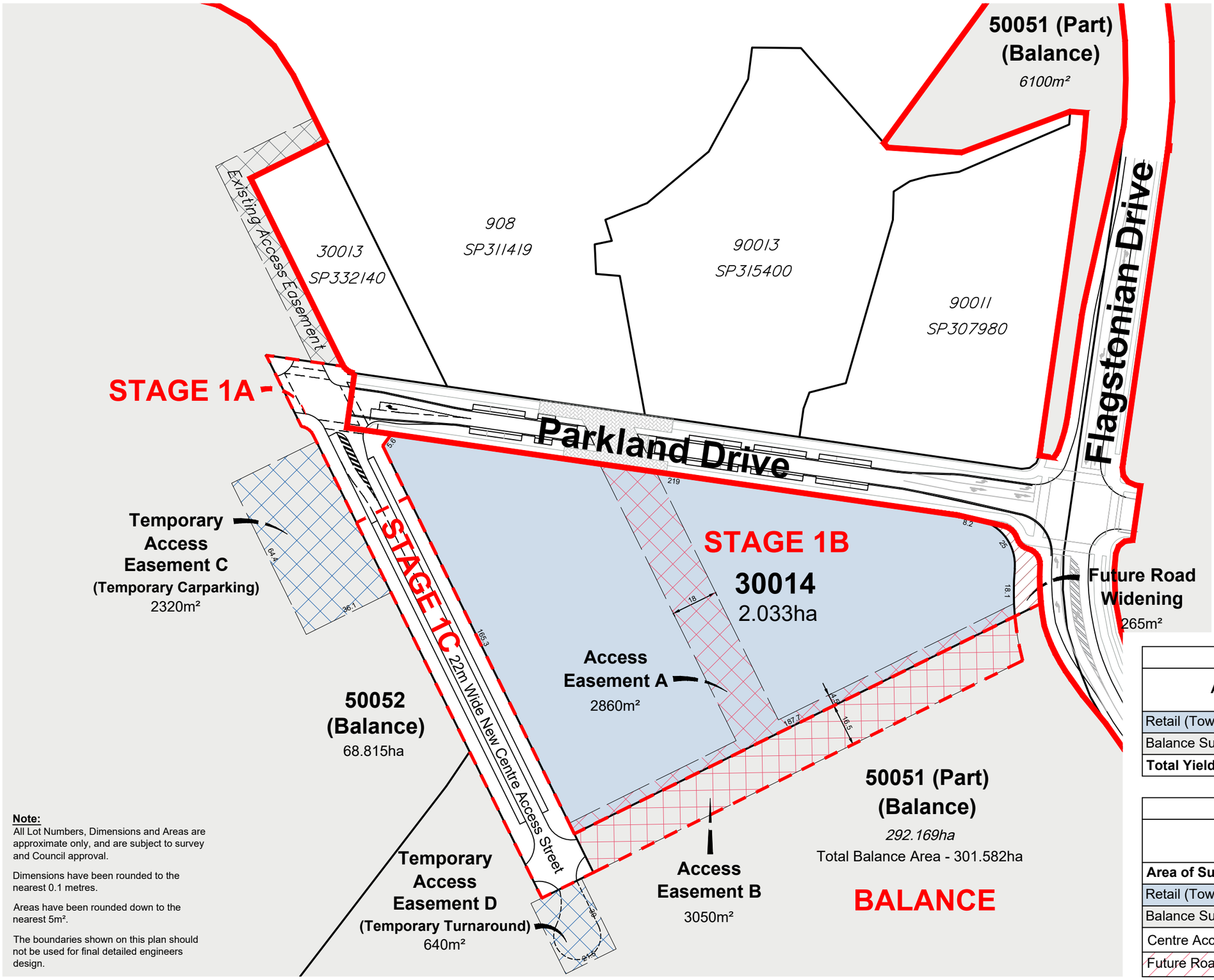
0 100 200 300 400 500 **1 : 10,000 @ A3**

FLAGSTONE TOWN CENTRE

PROPOSED STAGE 1 SUBDIVISION - 2 INTO 3 ALLOTMENTS

CANCELLING LOT 50050 & LOT 907 ON SP332140

URBAN DESIGN
Level 4 HQ South
520 Wickham Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3539 9500
W rpsgroup.com



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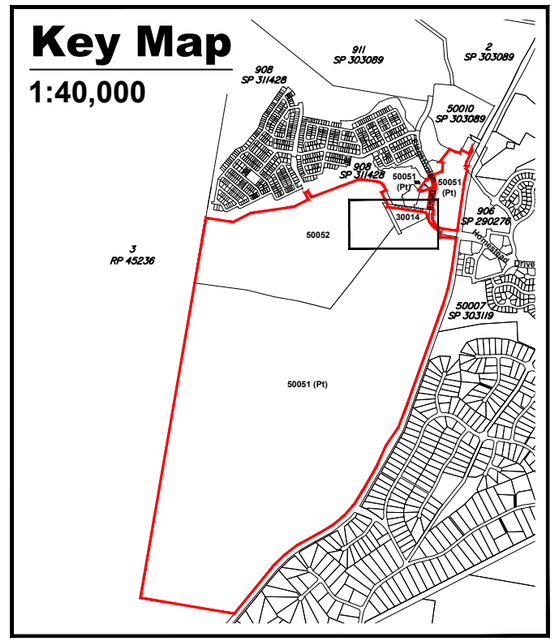

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DATE: 15 AUGUST 2024
CLIENT: PEET
DRAWN BY: MD
CHECKED BY: MD/DG
SHEET: 1 of 2

0 20 40 60 80 100 1 : 1,500 @ A3

FLAGSTONE TOWN CENTRE
PROPOSED STAGE 1 SUBDIVISION - 2 INTO 3 ALLOTMENTS
CANCELLING LOT 50050 & LOT 907 ON SP332140

URBAN DESIGN
Level 4 HQ South
520 Wickham Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3539 9500
W rpsgroup.com

Lot 30014 Notes

Use & Function:

The development site is intended to function as a *retail and food and beverage precinct* within the Flagstone Town Centre. The Plan of Development proposes a scale and intensity of development that is commensurate with a *town centre core retail node* that compliments the long term objectives and demand in the Town Centre.

Architecture and built form in the Town Centre is intended to contribute to an urban character including; activated edges, diverse built form solutions addressing key subtropical design considerations, and varied uses integrated with adjoining streets and public realm. All development will incorporate built form, urban design and social considerations to facilitate a safe and security conscious environment which prioritises pedestrians, cyclists and vehicles in that order. All buildings and outdoor areas are to be designed to comply with CPTED principles.

Relevant Approvals and Guidelines:

Development is to be undertaken in accordance with the Flagstone Town Centre Masterplan (DEV2022/1312) and EDQ's PDA Guideline 09 (Centres).

Permitted Uses:

Permitted Uses as per the Whole of Site MCU Table of Approved Uses for Major Centre Zone - Major Centre Core - DEV2012/209, plus:
- Indoor Sport and Recreation, where:
a) gymnasium only, and
b) maximum 1000m² GFA.

Built Form Outcomes:

Building Height & Site Cover:

Minimum building height is 2 storeys. Maximum building height is 12 storeys.

Maximum site cover is 75%.

Development must ensure:

- All other planning and development requirements of the Plan of Development (POD) are complied with.
- Development is in context with, and visually compatible with the appearance of any neighbouring and/or surrounding buildings.

Building Orientation and Activation:

Buildings are to provide street activation along Active Frontages through a range of design outcomes, including but not limited to: provision of windows and openings; pedestrian entries; balconies and awnings; provision of a range of uses along the facade and building orientation.

Buildings are to address and provide street activation to the Active Frontages by:

- Being aligned generally parallel to the street;
- Providing clear, legible entry points for both pedestrians and vehicles;
- Utilising opportunities for natural ventilation and shading; and
- Maximising opportunities for overlooking and casual surveillance of streets, public spaces, parking areas and pedestrian/cycling paths.

Signage:

Signage scale, colours, materials and graphics must complement the character and materials of the building and not create visual clutter. No neon or flashing signs are permitted.

Signage / advertising device location and size to be in accordance with the Logan City Council Advertising Device Code and may require OPW approval.

Lighting:

All car parking and public areas will be provided with lighting for public safety and must comply with AS1158 Lighting for Roads and Public Spaces Set.

Lighting should be located and directed to limit light spill beyond the site boundary and comply with AS4282 Control of the Obtrusive Effects of Outdoor Lighting. External lighting should follow CPTED principles.

Building Setbacks:

Active Frontage - Connector Street: Minimum 0.0m - 3.0m.

Active Frontage - High Street: Minimum 4.5m - 7.5m (setback includes 4.5m of Future Little High Street Access Easement located within Lot 30014)

Building Articulation:

Maximum length of any one building plane is 20.0m. Buildings that extend beyond this must demonstrate visually significant variation using horizontal and vertical articulation.

Statement Building:

Built form outcomes in locations notated as Statement Buildings must provide an architectural solution that reinforces the buildings role as a landmark building. This is to be achieved through increased building height, increased building scale, prominent roof forms, facade articulation, facade artwork and/or material selection.

Service Screening:

All refuse and plant areas will be suitably screened to all boundaries.

All air conditioning, lift rooms, ventilation plant and other equipment located on the roof or externally around the building will be treated as an integral part of the building and either screened from view or painted to match the surrounding building.

Landscaping:

Minimum landscape area to be 5% of the site.

Development to incorporate areas for deep planting. Deep planting areas are to:
- Provide for the establishment of vegetation to contribute to the landscape character of the centre; and
- Be open to the sky with access to light, rainfall and natural ground (i.e. no underground development);

Landscape areas to include spaces capable of accommodating vegetation that (at maturity) provides effective shade or screening to buildings and/or outdoor spaces.

Landscape to be designed with CPTED principles in mind to reduce area of possible concealment close to footpaths, parking areas and other publicly accessible spaces.

The built form design is to facilitate a publicly accessible open space or courtyard adjoining Parkland Drive, providing the opportunity for further interaction and connectivity with the adjoining Regional Recreation Park.

Car Parking & Traffic:

Vehicle access is only permitted in areas notated as 'Indicative Vehicle Access Location' on the Plan of Development. No vehicular access permitted off Parkland Drive.

Car parking to be provided at a minimum rate of 1 space per 100sqm of GFA for all uses excluding gymnasiums. Gymnasiums to provide car parking at a minimum rate of 1 space per 15sqm of GFA.

Car parking is to be located underground or visibly screened from street frontages through the positioning of built form. This excludes car parking provided within Access Easements which will resemble roads with on-street perpendicular and/or parallel car parking.

Off-street car parking, loading and service must comply with AS 2890.

End of Trip Facilities must be provided in accordance with *Logan Planning Policy 5 - Infrastructure*. The spaces are to be located a maximum of 25m from any pedestrian entrance into the development.

Legend

- Lot 30014 Boundary
- Proposed Access Easements
- Regional Recreation Park

Frontage Type

- Active Frontage - Connector Street
- Active Frontage - High Street

POD Controls

- Indicative Vehicle Access Location
- Indicative Drop Off Location
- Indicative Loading Location
- Statement Building

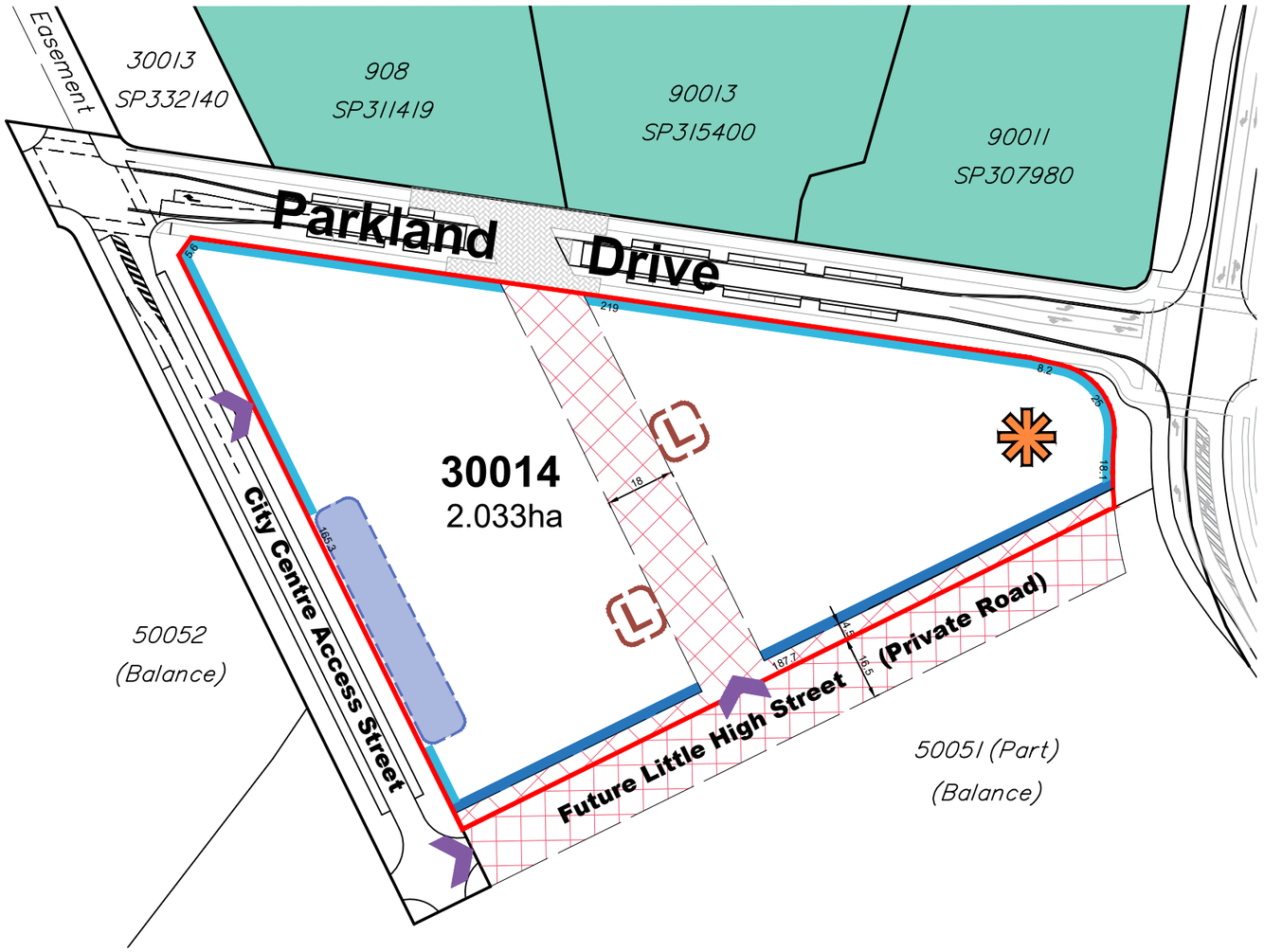
Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.

Dimensions have been rounded to the nearest 0.1 metres.

Areas have been rounded down to the nearest 5m².

The boundaries shown on this plan should not be used for final detailed engineers design.

Source Information:
Site boundaries: Veris.
Adjoining information: Veris.



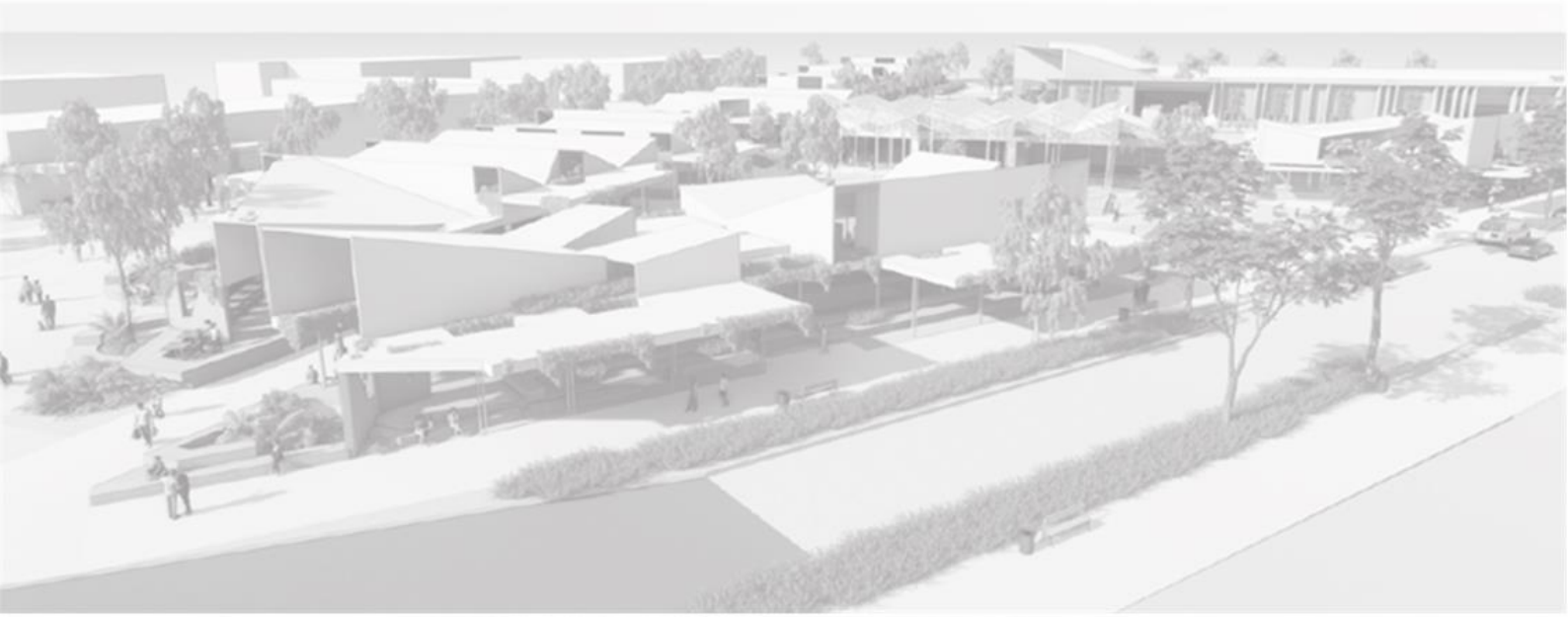
PLAN REF: **110056 - 534E**
DATE: 15 AUGUST 2024
CLIENT: PEET
DRAWN BY: MD
CHECKED BY: MD/DG

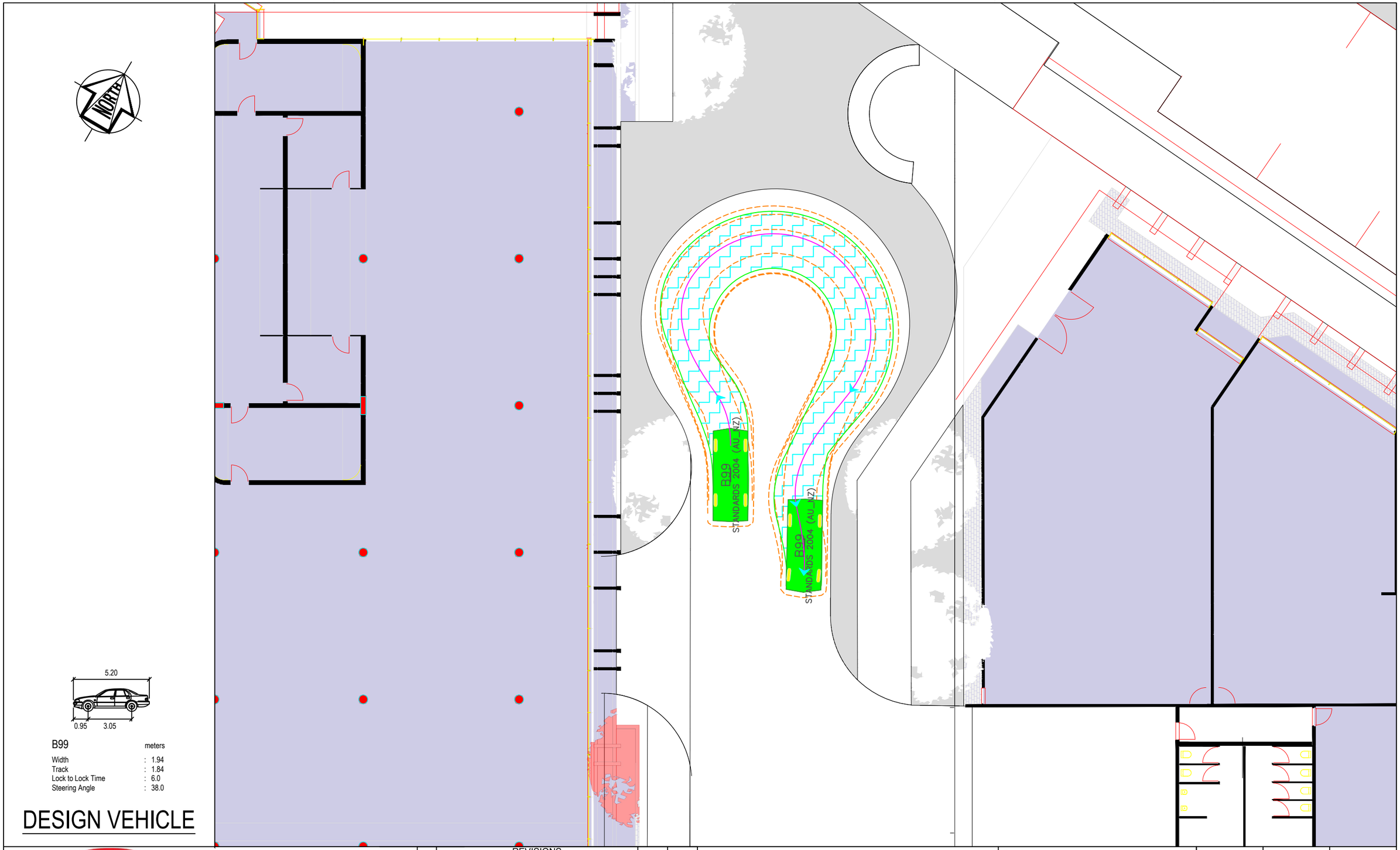
0 20 40 60 80 100 **1 : 1,500 @ A3**

FLAGSTONE TOWN CENTRE
LOT 30014 PLAN OF DEVELOPMENT

URBAN DESIGN
Level 4 HQ South
520 Wickham Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3539 9500
W rpsgroup.com

Appendix B: Swept Path Diagrams





B99	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 38.0

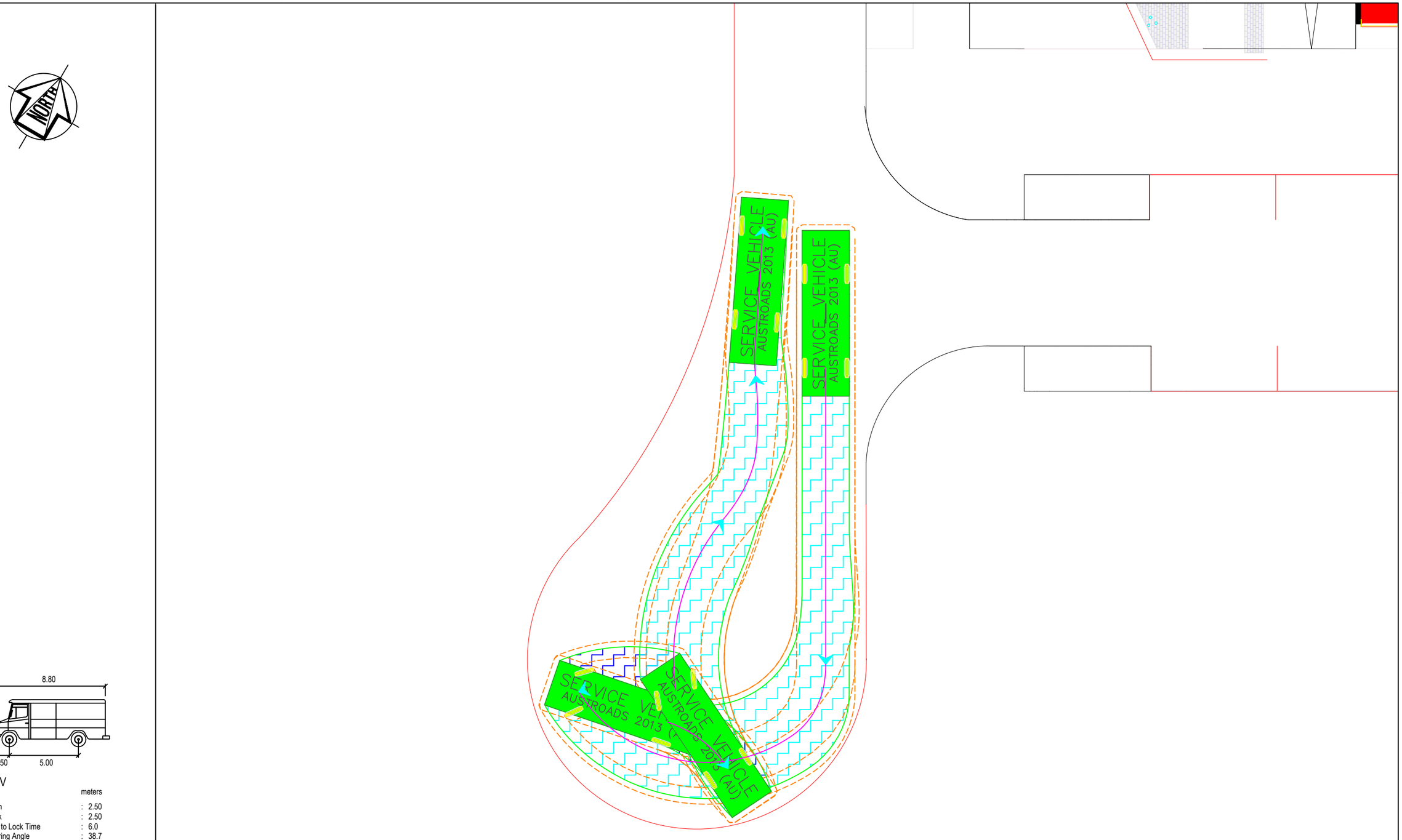
DESIGN VEHICLE

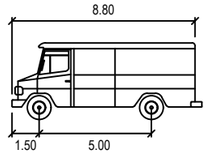
Gold Coast
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226
P: (07) 5562-5377
W: www.bitziosconsulting.com.au
Brisbane
Level 2, 428 Upper Edward Street, Spring Hill 4000
P: (07) 3831-4442
E: admin@bitziosconsulting.com.au
Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Swept Path Assessment	L.D	04.06.2024

Scale @ A3 0 2 4 6 8 10 1:200

Project: Flagstone Town Centre Stage 1	Design: A.P	Drawn: A.P	Checked: L.D
Title: Swept Path Assessment Private Road Turnaround	CONCEPT ONLY	Date: 04.06.24
	Project Number: P2300	Sheet Number: 1	Issue: 001





MRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7

DESIGN VEHICLE

Gold Coast
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226
P: (07) 5562-5377
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Level 2, 428 Upper Edward Street, Spring Hill 4000
P: (07) 3831-4442
E: admin@bitziosconsulting.com.au
Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

REVISIONS

Issue	Revisions/Descriptions	Drawn	Date
001	Swept Path Assessment	L.D	04.06.2024

Scale @ A3 0 2 4 6 8 10 1:200

Project: Flagstone Town Centre Stage 1

Title: Swept Path Assessment MRV Temporary Turnaround

Design	Drawn	Checked
A.P	A.P	L.D

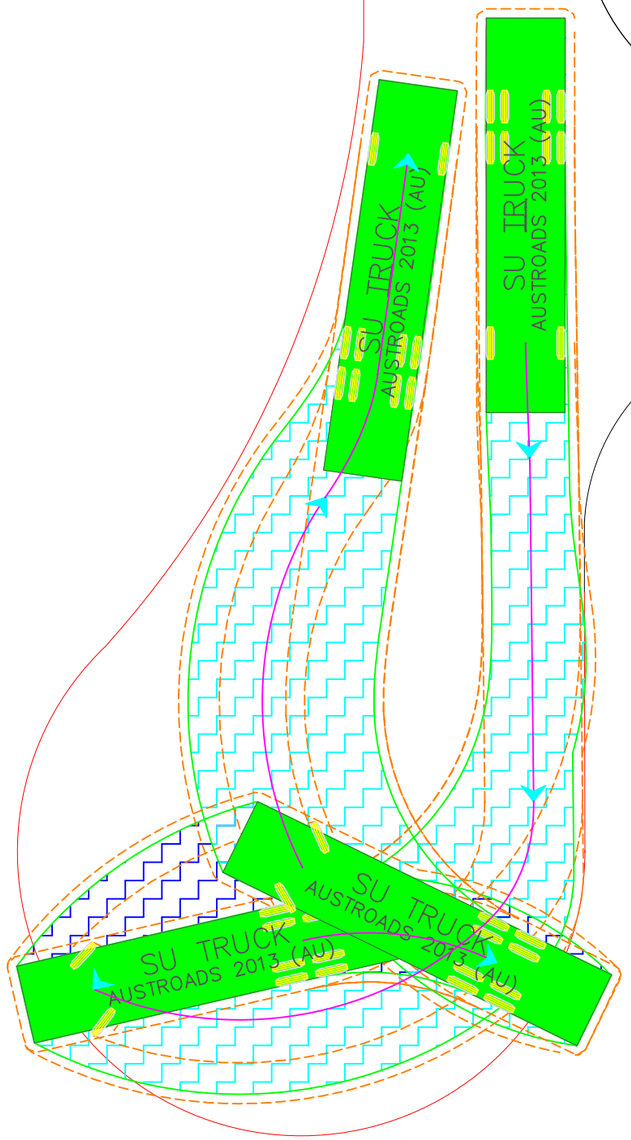
CONCEPT ONLY

Date: 04.06.24

Project Number	Sheet Number	Issue
P2300	2	001

HRV	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

DESIGN VEHICLE



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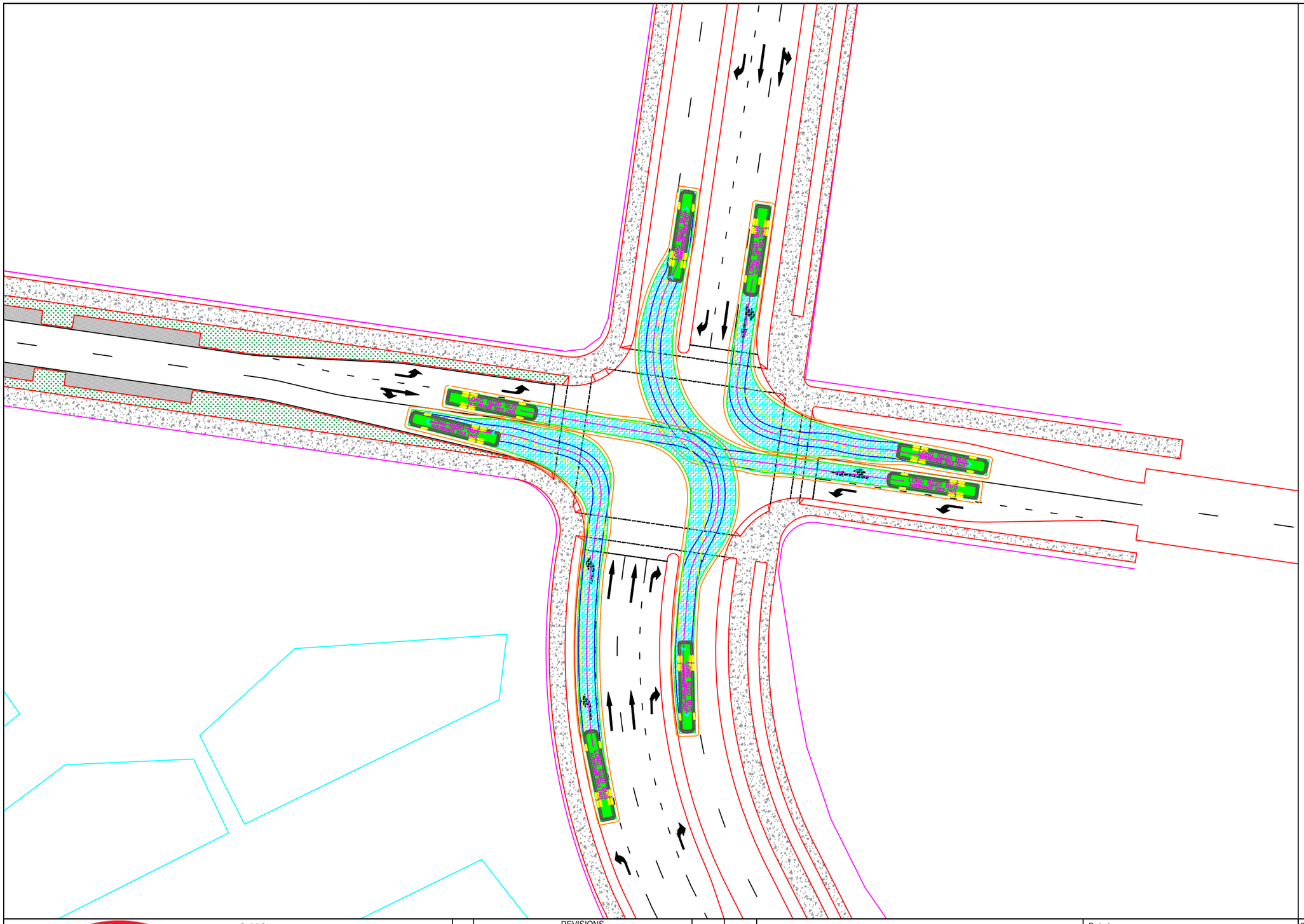
Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Swept Path Assessment	L.D	04.06.2024

Scale @ A3 0 2 4 6 8 10 1:200

Project: Flagstone Town Centre Stage 1	Design: A.P	Drawn: A.P	Checked: L.D
Title: Swept Path Assessment HRV Temporary Turnaround	CONCEPT ONLY	Date: 04.06.24	
	Project Number: P2300	Sheet Number: 3	Issue: 001



NORTH

NOTE

Intersection turn pocket lengths to be determined at detailed design

LEGEND

- Proposed Kerb Line / Footpath Edge
- Lot Boundary
- Footpath / Shared Path
- Grass / Landscaping
- Indented Parking

WARNING!

BEWARE OF AERIAL SERVICES

Overhead powerlines and communication cables within work area. Contact service provider for advice prior to commencement of work.

WARNING!

BEWARE OF UNDERGROUND SERVICES

The location of underground services has been compiled from engineering survey and interpolated from Dial Before You Dig as provided by the Service Authorities. No responsibility is taken for the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

BITZIOS consulting

Gold Coast
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226
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Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Flagstonian Dr / HATUA Intersection Ultimate Concept	A.P	09/03/21

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

Project: Flagstone City

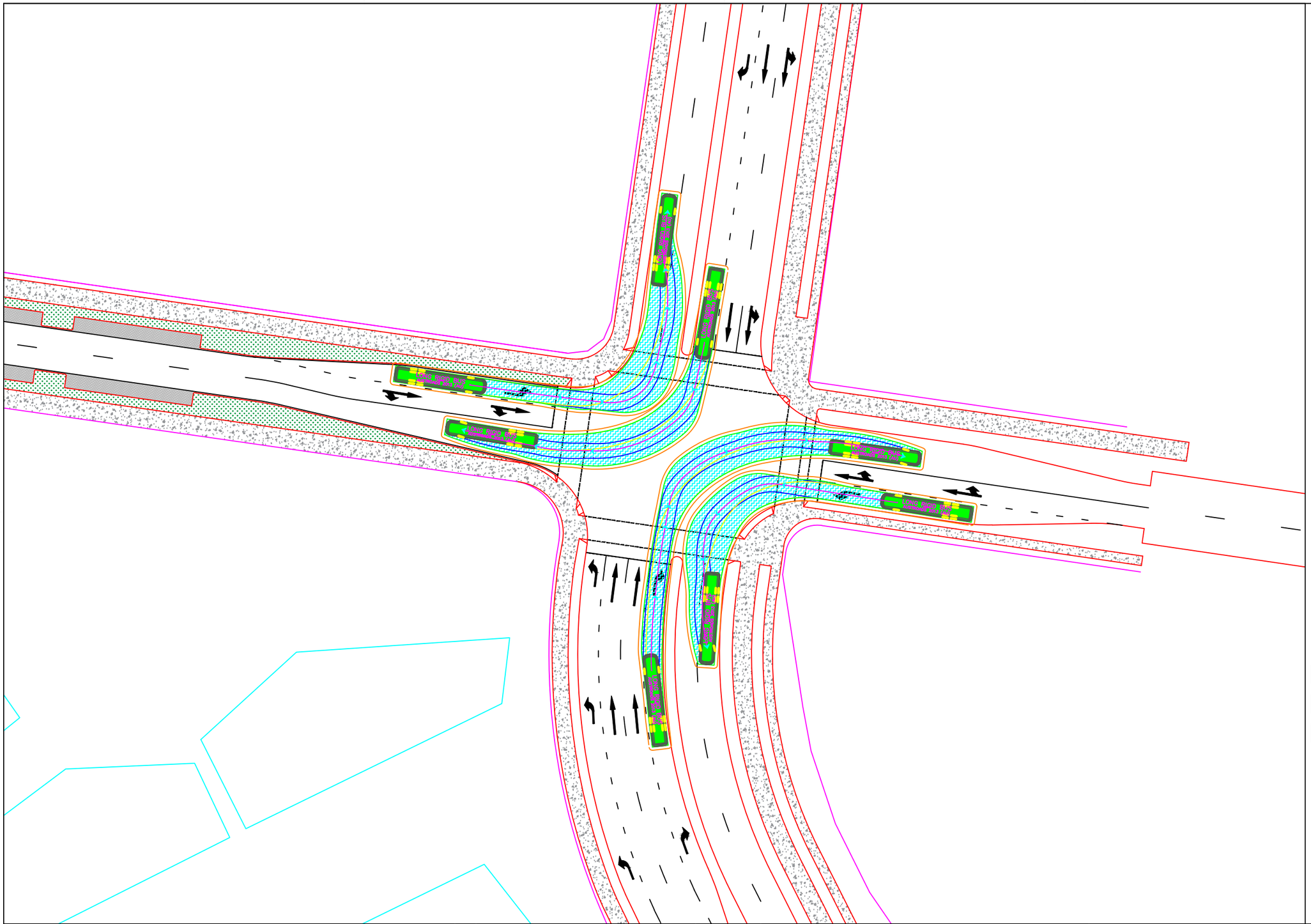
Title: Flagstonian Drive / HATUA Ultimate Intersection Concept 14.5m Bus Swept Path Assessment

Design	Drawn	Checked
A.P	A.P	L.D

CONCEPT ONLY

Date: 09.03.2021

Project Number	Sheet Number	Issue
P2300	4	001



NORTH

NOTE

Intersection turn pocket lengths to be determined at detailed design

LEGEND

- Proposed Kerb Line / Footpath Edge
- Lot Boundary
- Footpath / Shared Path
- Grass / Landscaping
- Indented Parking

WARNING!

BEWARE OF AERIAL SERVICES

Overhead powerlines and communication cables within work area. Contact service provider for advice prior to commencement of work.

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Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Flagstonian Dr / HATUA Intersection Ultimate Concept	A.P	09/03/21

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

Project: Flagstone City

Title: Flagstonian Drive / HATUA Ultimate Intersection Concept 14.5m Bus Swept Path Assessment

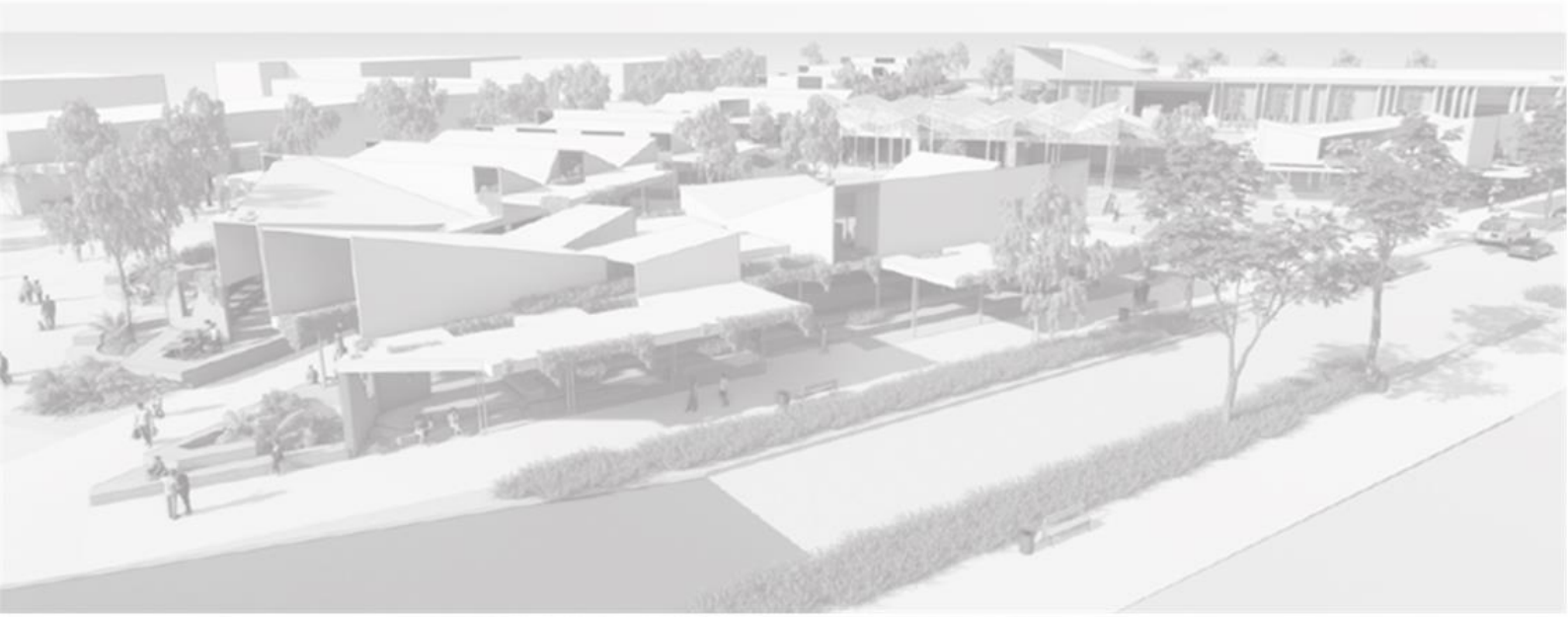
Design	Drawn	Checked
A.P	A.P	L.D

CONCEPT ONLY

Date: 09.03.2021

Project Number	Sheet Number	Issue
P2300	5	001

Appendix C: SIDRA Intersection Results

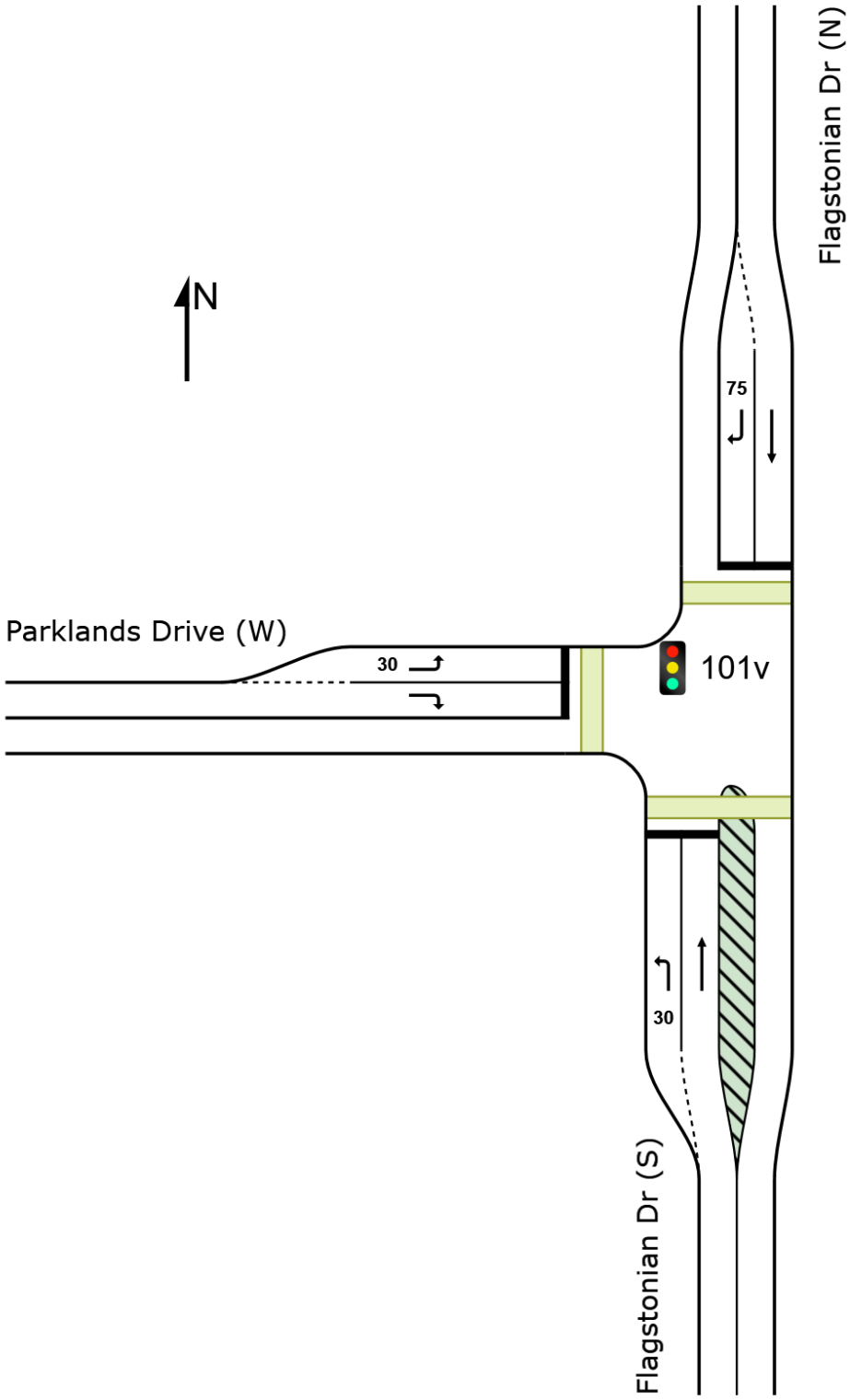


SITE LAYOUT

Site: 101v [Interim AM_Signals (Site Folder: General)]

Flagstonian Drive / HATUA
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: 101v [Interim AM_Signals (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Flagstonian Drive / HATUA
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: Flagstonian Dr (S)															
1	L2	All MCs	56	2.0	56	2.0	0.053	9.2	LOS A	0.4	3.0	0.46	0.66	0.46	35.1
2	T1	All MCs	434	2.0	434	2.0	0.520	8.2	LOS A	5.7	40.4	0.78	0.67	0.78	49.7
Approach			489	2.0	489	2.0	0.520	8.3	LOS A	5.7	40.4	0.75	0.67	0.75	48.2
North: Flagstonian Dr (N)															
8	T1	All MCs	538	2.0	538	2.0	*0.645	9.2	LOS A	7.7	55.1	0.84	0.75	0.87	48.7
9	R2	All MCs	67	2.0	67	2.0	*0.118	10.1	LOS B	0.5	3.8	0.68	0.70	0.68	42.5
Approach			605	2.0	605	2.0	0.645	9.3	LOS A	7.7	55.1	0.82	0.74	0.85	47.8
West: Parklands Drive (W)															
10	L2	All MCs	67	2.0	67	2.0	0.215	17.9	LOS B	1.1	7.6	0.89	0.72	0.89	37.0
12	R2	All MCs	56	2.0	56	2.0	*0.213	19.0	LOS B	0.9	6.6	0.92	0.72	0.92	27.4
Approach			123	2.0	123	2.0	0.215	18.4	LOS B	1.1	7.6	0.91	0.72	0.91	33.3
All Vehicles			1218	2.0	1218	2.0	0.645	9.8	LOS A	7.7	55.1	0.80	0.71	0.82	46.1

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: Flagstonian Dr (S)												
P1	Full	20	21	12.0	LOS B	0.0	0.0	0.83	0.83	165.9	200.0	1.21
North: Flagstonian Dr (N)												
P3	Full	20	21	12.0	LOS B	0.0	0.0	0.83	0.83	165.9	200.0	1.21
West: Parklands Drive (W)												
P4	Full	50	53	12.0	LOS B	0.0	0.0	0.83	0.83	165.9	200.0	1.21
All Pedestrians		0	95	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: 101v [Interim PM_Signals (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Flagstonian Drive / HATUA
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: Flagstonian Dr (S)															
1	L2	All MCs	159	2.0	159	2.0	0.170	15.2	LOS B	1.9	13.5	0.56	0.71	0.56	32.9
2	T1	All MCs	512	2.0	512	2.0	* 0.814	22.5	LOS C	12.3	87.8	0.97	0.98	1.22	40.4
Approach			671	2.0	671	2.0	0.814	20.8	LOS C	12.3	87.8	0.87	0.92	1.07	36.8
North: Flagstonian Dr (N)															
8	T1	All MCs	319	2.0	319	2.0	0.461	12.4	LOS B	5.6	39.8	0.82	0.69	0.82	45.7
9	R2	All MCs	194	2.0	194	2.0	* 0.405	13.6	LOS B	2.1	14.7	0.86	0.78	0.86	40.3
Approach			513	2.0	513	2.0	0.461	12.9	LOS B	5.6	39.8	0.83	0.72	0.83	43.3
West: Parklands Drive (W)															
10	L2	All MCs	194	2.0	194	2.0	0.366	17.7	LOS B	3.5	25.2	0.84	0.76	0.84	37.1
12	R2	All MCs	159	2.0	159	2.0	* 0.558	24.0	LOS C	3.5	25.1	0.97	0.81	1.01	25.1
Approach			353	2.0	353	2.0	0.558	20.6	LOS C	3.5	25.2	0.90	0.78	0.91	32.3
All Vehicles			1536	2.0	1536	2.0	0.814	18.1	LOS B	12.3	87.8	0.87	0.82	0.95	37.8

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

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Flagstonian Dr (S)												
P1	Full	20	21	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17
North: Flagstonian Dr (N)												
P3	Full	20	21	16.9	LOS B	0.0	0.0	0.87	0.87	170.8	200.0	1.17
West: Parklands Drive (W)												
P4	Full	50	53	16.9	LOS B	0.1	0.1	0.87	0.87	170.8	200.0	1.17
All Pedestrians		0	95	16.9	LOS B	0.1	0.1	0.87	0.87	170.8	200.0	1.17

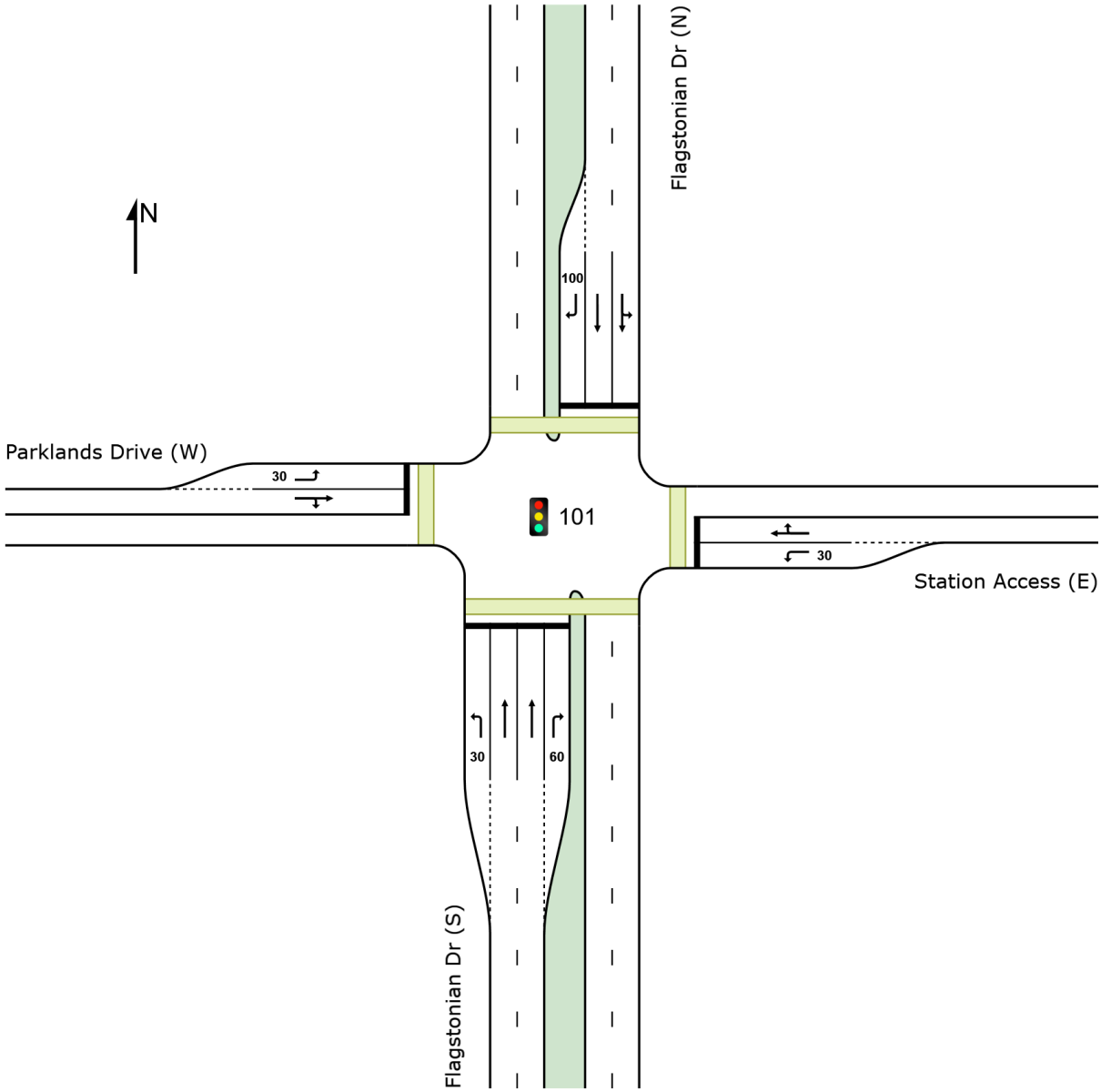
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 101 [Ultimate AM (Site Folder: General)]

Flagstonian Drive / HATUA
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: 101 [Ultimate AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Flagstonian Drive / HATUA
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: Flagstonian Dr (S)															
1	L2	All MCs	306	2.1	306	2.1	0.572	55.8	LOS E	13.8	98.6	0.83	0.90	0.83	21.9
2	T1	All MCs	647	3.6	647	3.6	* 0.893	77.8	LOS E	25.6	185.0	1.00	1.07	1.26	25.0
3	R2	All MCs	74	0.0	74	0.0	0.595	83.4	LOS F	4.5	31.3	1.00	0.79	1.04	15.5
Approach			1027	2.9	1027	2.9	0.893	71.6	LOS E	25.6	185.0	0.95	1.00	1.12	19.7
East: Station Access (E)															
4	L2	All MCs	28	0.0	28	0.0	0.077	27.5	LOS C	0.9	6.1	0.84	0.69	0.84	25.9
5	T1	All MCs	17	18.8	17	18.8	* 0.156	46.2	LOS D	2.5	19.1	0.88	0.72	0.88	20.8
6	R2	All MCs	34	6.3	34	6.3	0.156	49.3	LOS D	2.5	19.1	0.88	0.72	0.88	28.1
Approach			79	6.7	79	6.7	0.156	40.8	LOS D	2.5	19.1	0.86	0.71	0.86	25.8
North: Flagstonian Dr (N)															
7	L2	All MCs	3	33.3	3	33.3	0.566	18.2	LOS B	19.2	139.2	0.83	0.73	0.83	35.7
8	T1	All MCs	848	4.0	848	4.0	0.566	30.2	LOS C	19.4	140.2	0.83	0.73	0.83	37.1
9	R2	All MCs	343	2.5	343	2.5	* 0.868	64.7	LOS E	21.9	156.2	1.00	0.96	1.20	24.1
Approach			1195	3.6	1195	3.6	0.868	40.1	LOS D	21.9	156.2	0.88	0.80	0.94	31.7
West: Parklands Drive (W)															
10	L2	All MCs	155	6.8	155	6.8	0.269	20.5	LOS C	4.1	30.1	0.78	0.73	0.78	36.4
11	T1	All MCs	21	0.0	21	0.0	* 0.330	49.1	LOS D	5.1	36.5	0.93	0.76	0.93	20.0
12	R2	All MCs	75	4.2	75	4.2	0.330	52.3	LOS D	5.1	36.5	0.93	0.76	0.93	17.5
Approach			251	5.5	251	5.5	0.330	32.4	LOS C	5.1	36.5	0.84	0.74	0.84	28.7
All Vehicles			2552	3.6	2552	3.6	0.893	52.1	LOS D	25.6	185.0	0.90	0.87	1.00	25.6

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
South: Flagstonian Dr (S)												
P1	Full	50	53	53.3	LOS E	0.2	0.2	0.94	0.94	207.2	200.0	0.97
East: Station Access (E)												
P2	Full	50	53	53.3	LOS E	0.2	0.2	0.94	0.94	207.2	200.0	0.97

North: Flagstonian Dr (N)												
P3	Full	50	53	53.3	LOS E	0.2	0.2	0.94	0.94	207.2	200.0	0.97
West: Parklands Drive (W)												
P4	Full	50	53	53.3	LOS E	0.2	0.2	0.94	0.94	207.2	200.0	0.97
All Pedestrians		200	211	53.3	LOS E	0.2	0.2	0.94	0.94	207.2	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.

MOVEMENT SUMMARY

Site: 101 [Ultimate PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Flagstonian Drive / HATUA
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: Flagstonian Dr (S)															
1	L2	All MCs	172	3.7	172	3.7	0.204	46.0	LOS D	5.4	38.9	0.63	0.75	0.63	26.2
2	T1	All MCs	817	3.4	817	3.4	* 0.850	63.8	LOS E	25.4	182.8	1.00	0.98	1.16	29.4
3	R2	All MCs	67	0.0	67	0.0	0.363	71.1	LOS E	3.5	24.6	0.97	0.76	0.97	17.4
Approach			1056	3.2	1056	3.2	0.850	61.3	LOS E	25.4	182.8	0.94	0.93	1.06	23.1
East: Station Access (E)															
4	L2	All MCs	52	2.0	52	2.0	0.119	23.2	LOS C	1.3	9.0	0.82	0.71	0.82	27.9
5	T1	All MCs	21	0.0	21	0.0	* 0.124	41.4	LOS D	2.0	14.1	0.86	0.70	0.86	22.1
6	R2	All MCs	23	4.5	23	4.5	0.124	44.5	LOS D	2.0	14.1	0.86	0.70	0.86	29.9
Approach			96	2.2	96	2.2	0.124	32.3	LOS C	2.0	14.1	0.84	0.71	0.84	27.0
North: Flagstonian Dr (N)															
7	L2	All MCs	6	16.7	6	16.7	0.558	20.2	LOS C	15.2	109.1	0.88	0.76	0.88	34.5
8	T1	All MCs	680	2.9	680	2.9	0.558	33.3	LOS C	15.3	109.8	0.88	0.76	0.88	35.5
9	R2	All MCs	185	4.0	185	4.0	* 0.806	62.9	LOS E	10.6	76.9	1.00	0.91	1.20	24.5
Approach			872	3.3	872	3.3	0.806	39.5	LOS D	15.3	109.8	0.91	0.79	0.95	32.1
West: Parklands Drive (W)															
10	L2	All MCs	202	2.1	202	2.1	0.450	24.0	LOS C	5.8	41.3	0.89	0.78	0.89	35.5
11	T1	All MCs	9	0.0	9	0.0	* 0.427	44.7	LOS D	6.5	47.4	0.94	0.78	0.94	20.8
12	R2	All MCs	124	4.2	124	4.2	0.427	47.9	LOS D	6.5	47.4	0.94	0.78	0.94	18.3
Approach			336	2.8	336	2.8	0.450	33.4	LOS C	6.5	47.4	0.91	0.78	0.91	28.4
All Vehicles			2359	3.1	2359	3.1	0.850	48.1	LOS D	25.4	182.8	0.92	0.85	0.99	26.9

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.
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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)

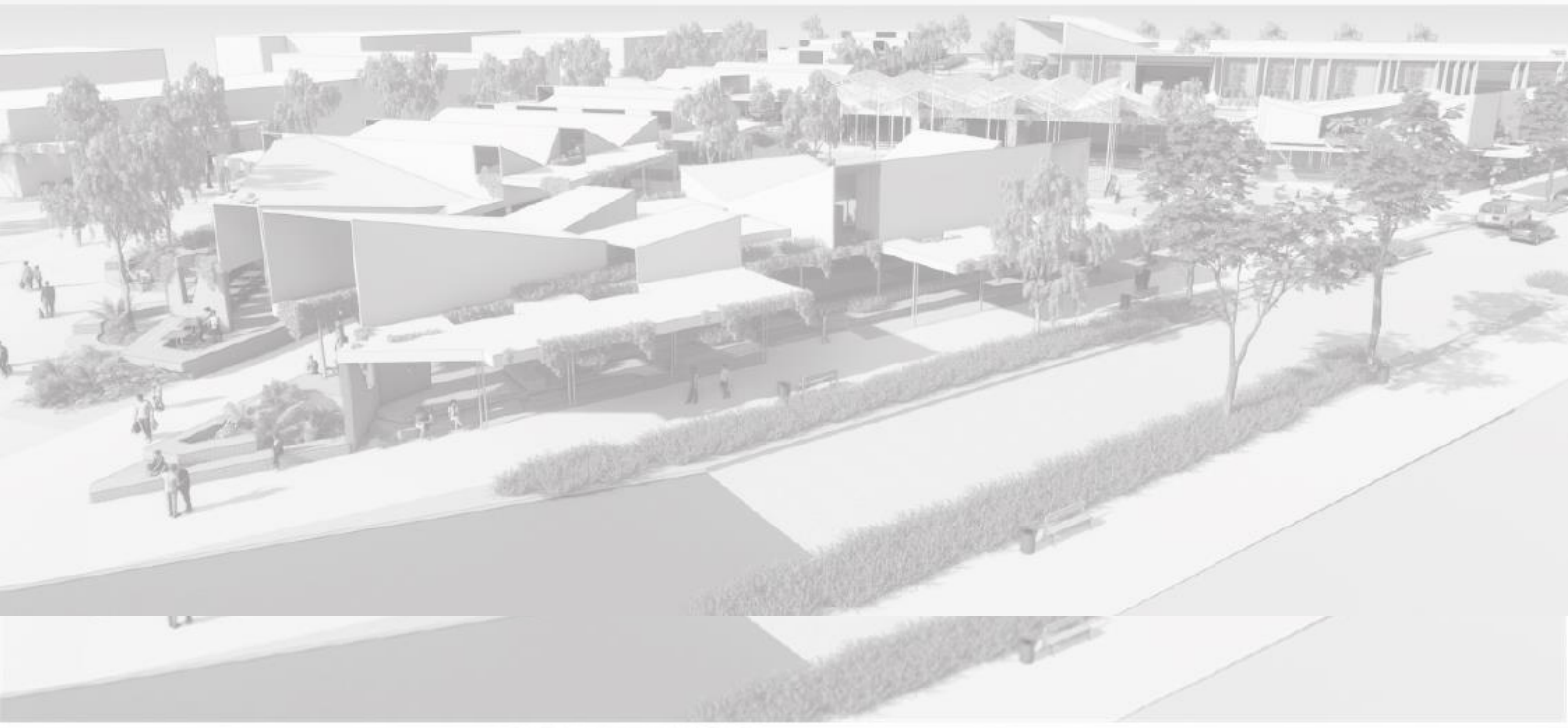
Pedestrian Movement Performance

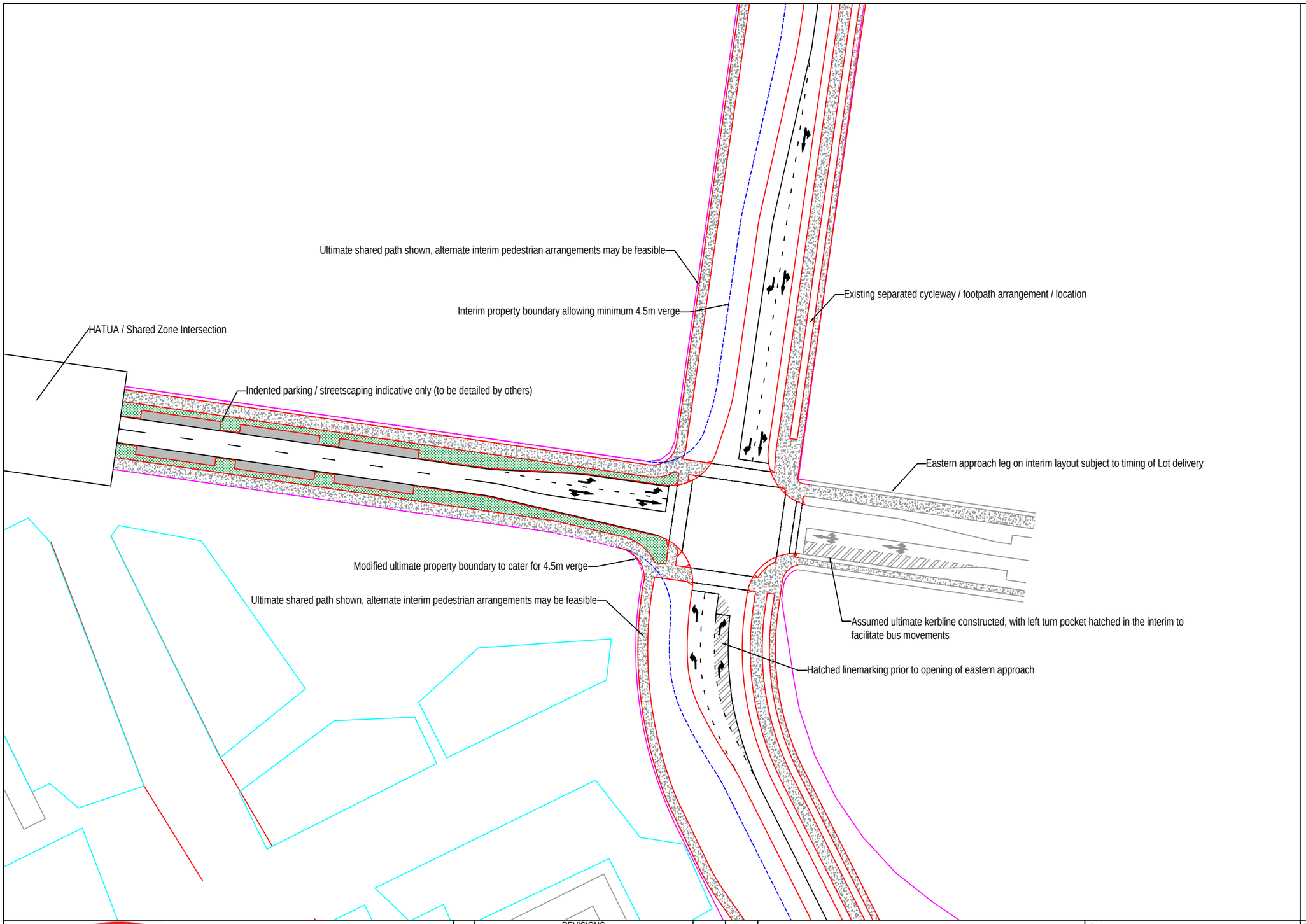
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Flagstonian Dr (S)												
P1	Full	50	53	48.3	LOS E	0.2	0.2	0.94	0.94	202.2	200.0	0.99
East: Station Access (E)												
P2	Full	50	53	48.3	LOS E	0.2	0.2	0.94	0.94	202.2	200.0	0.99

North: Flagstonian Dr (N)												
P3	Full	50	53	48.3	LOS E	0.2	0.2	0.94	0.94	202.2	200.0	0.99
West: Parklands Drive (W)												
P4	Full	50	53	48.3	LOS E	0.2	0.2	0.94	0.94	202.2	200.0	0.99
All Pedestrians		200	211	48.3	LOS E	0.2	0.2	0.94	0.94	202.2	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.

Appendix D: Flagstonian Drive / Parkland Drive Concept Designs





NORTH

NOTE

Intersection turn pocket lengths to be determined at detailed design

LEGEND

- Proposed Kerb Line / Footpath Edge
- Lot Boundary
- Interim Road Reserve Boundary
- Footpath / Shared Path
- Grass / Landscaping
- Indented Parking

WARNING!

BEWARE OF AERIAL SERVICES

Overhead powerlines and communication cables within work area. Contact service provider for advice prior to commencement of work.

WARNING!

BEWARE OF UNDERGROUND SERVICES

The location of underground services has been compiled from engineering survey and interpolated from Dial Before You Dig as provided by the Service Authorities. No responsibility is taken for the accuracy of the interpolated information supplied. Ensure all services are accurately located prior to commencement of work.

BITZIOS consulting

Gold Coast
Suite 26, 58 Riverwalk Avenue, Robina QLD 4226
P: (07) 5562-5377
W: www.bitziosconsulting.com.au
Brisbane
Level 2, 428 Upper Edward Street, Spring Hill 4000
P: (07) 3831-4442
E: admin@bitziosconsulting.com.au
Sydney
Studio 203, 3 Gladstone Street, Newtown NSW 2042
P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Flagstonian Dr / HATUA Intersection Interim Concept	A.P	09/03/21

Scale @ A3 0 10 20 30 40 50 1:1000

Project: Flagstone City

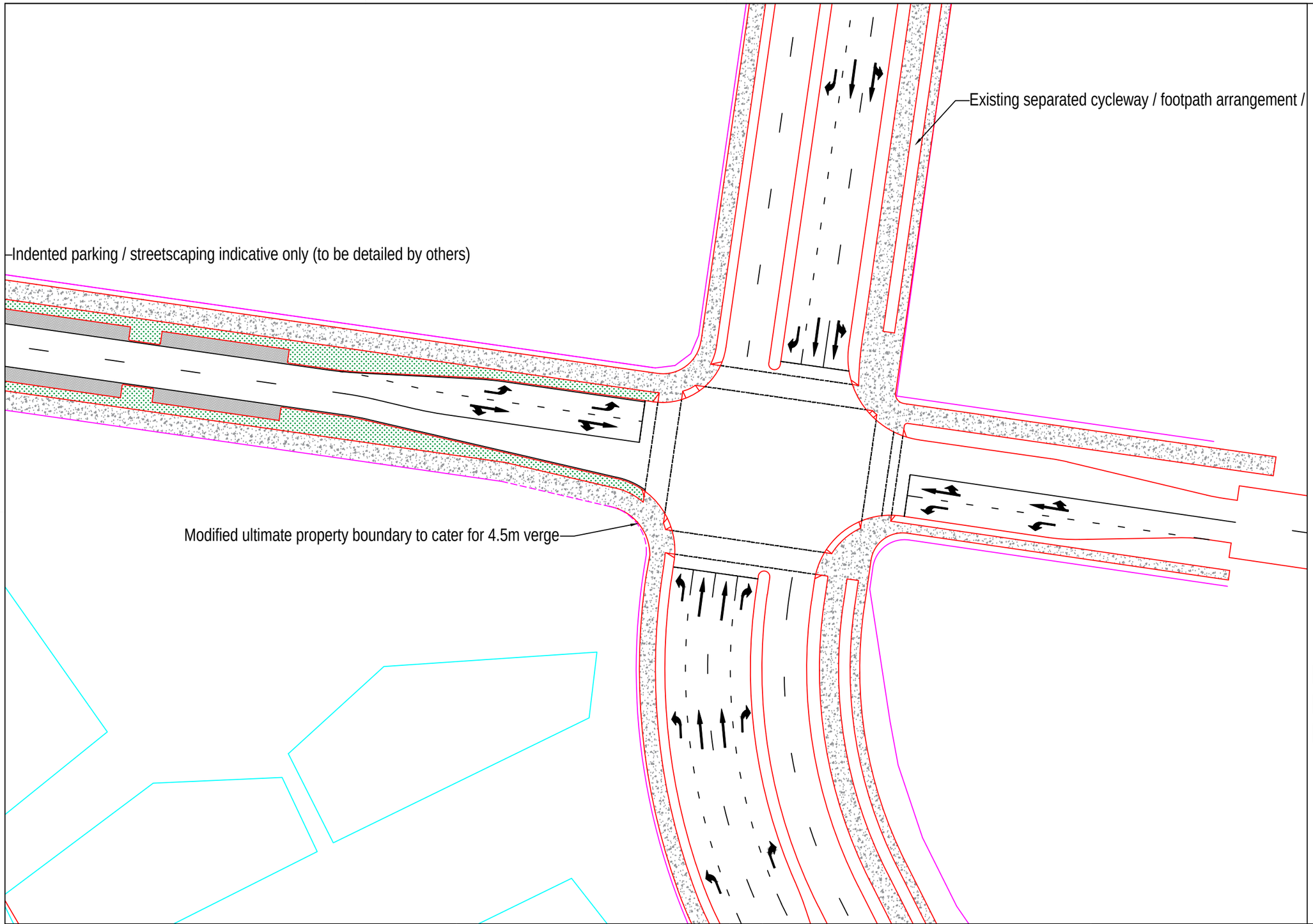
Title: Flagstonian Drive / HATUA Interim Intersection Concept

Design	Drawn	Checked
A.P	A.P	L.D

CONCEPT ONLY

Date: 09.03.2021

Project Number	Sheet Number	Issue
P2300	1	001



NORTH

NOTE

Intersection turn pocket lengths to be determined at detailed design

LEGEND

- Proposed Kerb Line / Footpath Edge
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P: (02) 9557 6202

Issue	REVISIONS Revisions/Descriptions	Drawn	Date
001	Flagstonian Dr / HATUA Intersection Ultimate Concept	A.P	09/03/21

Scale @ A3 0 10 20 30 40 50 1:1000

Project: Flagstone City

Title: Flagstonian Drive / HATUA Ultimate Intersection Concept

Design	Drawn	Checked
A.P	A.P	L.D

CONCEPT ONLY

Date: 09.03.2021

Project Number	Sheet Number	Issue
P2300	1	001