



Metro Outer Development Assessment Panel Related Information

Meeting Date and Time: Wednesday, 17 December 2025; 1:00pm
Meeting Number: MODAP/118

PART B – CITY OF WANNEROO

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
 - 3.1 Part Lot 9002 (2570K) Marmion Avenue, Alkimos - Proposed Alkimos Shopping Centre – DAP/25/02972
4. Form 2 DAP Applications
5. Section 31 SAT Reconsiderations

PART C – SHIRE OF SERPENTINE-JARRAHDALE

1. Declarations of Due Consideration
2. Disclosure of Interests
3. Form 1 DAP Applications
 - 3.1 Lot 32 (1324) Thomas Road, Oakford - Proposed Oat Mill Operating Facility and Associated Buildings and Structures - 'Industry-Rural' – DAP/25/02840
4. Form 2 DAP Applications
5. Section 31 SAT Reconsiderations



PART B – CITY OF WANNEROO

Applicant
Marc Re (Planning Solutions) Aoise Noone (Planning Solutions) James Dann (Centuria Capital) Stephanie Voon (Place Fabric)
Officers/Technical Advisors in Attendance
Aaron Jones Nick de Vecchis

1. Declarations of Due Consideration

2. Disclosure of Interests

Please note a standing declaration of interest, if the items on this agenda have been considered at the relevant local government council meeting or having attending a briefing session, the local government DAP members acknowledge that in accordance with section 2.4.5 of the DAP Code of Conduct 2025 they have declared that they had participated in a prior Council meeting or briefing in relation an item being determined at this meeting. However, under section 2.1.2 of the DAP Code of Conduct 2025, they acknowledged that they are not bound by any previous decision or resolution of the local government and undertakes to exercise independent judgment in relation to any DAP application before them, which will be considered on its planning merits.

3. Form 1 DAP Applications

3.1 Part Lot 9002 (2570K) Marmion Avenue, Alkimos - Proposed Alkimos Shopping Centre – DAP/25/02972

3.1.1 Deputations

Marc Re (Planning Solutions) speaking in support of the application at Item 3.1. The deputation will address support of the application and request to amend condition 24.

The City of Wanneroo may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

3.1.2 Additional Information

The Presiding Member notes an addendum to the responsible authority report was published on 11 December 2025 in relation to Item 3.1.

4. Form 2 DAP Applications

Nil



5. Section 31 SAT Reconsiderations

Nil



Deputation Request Form

Regulation 40(3) and DAP Standing Orders 2025 cl. 3.6

Must be submitted at least 72 hours (3 calendar days) before the meeting

Deputation Request Guidelines

Before requesting to present to a DAP please review the Responsible Authority Report that has been published on the DAP website and consider whether any previous comments have been adequately addressed.

Your request will be determined by the Presiding Member based on relevance to the subject application, individual merit, other requests raising the same issues and likely contribution to the DAP's consideration and determination of the application.

Deputations are not to exceed **3 minutes**, unless otherwise approved by the Presiding Member. The Presiding Member may agree to or require combined deputations where the deputations are considered complementary to each other and would assist the efficiency and effectiveness of the DAP meeting.

In accordance with Clause 3.6.2 of the *DAP Standing Orders*, your deputation request must be accompanied with a document setting out the deputation content.

Handouts or power points will not be accepted on the day.

In accordance with Clause 3.6.9 of the *DAP Standing Orders*, if your deputation request is not approved, the submitted content will be circulated to the DAP and published on the DAP website as a written submission.

Please complete a separate form for each presenter and submit to daps@dplh.wa.gov.au

Presenter Details

Name	Marc Re
Company (if applicable)	Planning Solutions
Relationship to proposed development	Applicant
Please identify if you have any special requirements:	YES ☐ NO ☒ If yes, please state any accessibility or special requirements: Click or tap here to enter text.



Meeting Details

DAP Name	Metro Outer DAP
Meeting Date	17/12/2025
DAP Application Number	DAP/25/02972
Property Location	Part Lot 9002 (2570K) Marmion Avenue, Alkimos

Deputation Details

I have read the contents of the Responsible Authority Report contained in the published DAP Meeting Agenda	YES ☒ NO ☐
Is your deputation in support or against the <u>proposed development</u> ?	SUPPORT ☒ AGAINST ☐
Will your deputation involve a presentation that requires power-point facilities?	YES ☐ NO ☒
Will you be attending in person or via electronic means	In person ☒ Online ☐
I acknowledge that my deputation content <u>will be</u> published on the DAP website and circulated to the local government and applicant	YES ☒

Deputation Content*

Brief sentence summarising your deputation (To be included in the Related Information part of the agenda)	<i>The deputation will address:</i> Presentation in support of the application and request to amend condition 24. The following project team members will also be available to answer questions from the Panel: • James Dann, Centuria Capital • Stephanie Voon, Place Fabric
--	--

Please provide your deputation content below or attach as a separate document. Any document must be provided in Microsoft word (.doc), PDF (.pdf), PowerPoint .pptx) or Image (.jpeg) format and be no more than 5MB.

If your deputation references documents that are contained within the Responsible Authority Report and/or its attachments, please consider referencing the document rather than including a duplication of documents:-



Refer to the presentation summary.

Presentation Summary

To:	Metro Outer DAP	From:	Planning Solutions
Copy to:	City of Wanneroo	Job No:	9165
Agenda Item:	MODAP/118 - Part B, Item 3.1	Date:	15 December 2025
Subject:	Proposed Alkimos Shopping Centre Part Lot 9002 (2570K) Marmion Avenue, Alkimos		

Planning Solutions acts on behalf of Centuria Capital Limited, the proponent of the proposed shopping centre at Part Lot 9002 (2570K) Marmion Avenue, Alkimos (**subject site**).

We are pleased to receive the City's Responsible Authority Report (**RAR**) and recommendation to approve the application, subject to conditions. We thank the City's officers for their engagement and collaboration throughout the application process.

We have reviewed the conditions and advice notes in the City's RAR. We largely support the recommended conditions, however request minor amendments to new condition 24.

Planning Merits

The application seeks approval for the use and development of a shopping centre comprising a mix of retail, commercial and community land uses adjacent to the Alkimos Train Station. The application has planning merit and warrants approval for the following reasons:

1. The proposed shopping centre is a significant investment and one of the first developments within the Alkimos City Centre that will provide a diverse range of retail and commercial services, providing for the daily and weekly goods and services for residents, visitors and workers within the emerging locality.
2. The proposed land uses and development outcomes are consistent with the relevant provisions of the City's DPS2, the Alkimos Activity Centre Plan, SPP4.2 and the City's local planning framework.
3. The proposal represents a high-quality architectural design that will serve as a focus for retail, commercial and community activity. The proposed development comprises a pedestrian focused, main street development and internal mall with high quality landscaping integrated into the design and public realm.
4. The proposed design has been informed by pre-lodgement consultation and input from the City's Design Review Panel. Modifications have been made to the proposed design in response to the DRP feedback, where practical.
5. Comprehensive technical assessments demonstrate the proposed development will not adversely affect the amenity of the local area. Factors such as noise, waste management and traffic have been carefully considered and addressed through detailed design and planning.

New Condition 24

We understand the City has recommended a new condition, in addition to the conditions presented in the original RAR. In principle, we agree to new condition 24, subject to the requested minor amendments:

Prior to the submission of a building permit, a revised Traffic Report and SIDRA intersection modelling for 10 years after the opening of the development is to be undertaken to assess the modelling, service level and operation of the ~~surrounding intersections, specifically the~~ Kambarniny Street and Romeo Road intersection. The report is to include modelling which outlines whether the unsignalised intersection appropriately services the development ~~and locality~~. The revised Traffic Report is to ~~detail responsibility for any contributions toward the design, constructed and/or funding of the ultimate intersection control.~~

Condition 24, as currently drafted, extends to precinct level traffic matters that have been addressed through Alkimos Central Precinct Structure Plan – Transport Impact Assessment (**TIA**). The requirement for modelling of surrounding intersections outside of the Kambarniny Street and Romeo Road intersection, and details for future upgrade contributions extends beyond the scope of this development application. The revised Transport Impact Assessment and SIDRA intersection should only be provided in connection with the proposed development, and its associated traffic, not the wider precinct.

Attachment 1 contains correspondence from DevelopmentWA (estate developer) providing further clarification in relation to the Alkimos Activity Centre Plan, supporting transport modelling and analysis underpinning the precinct, and the interim and ultimate intention for the Kambarniny Street and Romeo Road intersection. The key considerations are:

- The extension of Kambarniny Street to Romeo Road is programmed to be opened in early 2027 (unsignalised left-in, left-out, right-in) as part of the next stage of subdivision. This intersection layout is noted on the Movement Network Plan within the Alkimos Central Precinct Structure Plan (Note #1).
- The 10-year modelling (2031) undertaken for the Alkimos Central Precinct Structure Plan – Transport Impact Assessment (Rev 8, dated 17 April 2023) indicates the Kambarniny Street and Romeo Road intersection (as an unsignalised intersection) would operate at Level of Service A.
- Table 6.4 from the TIA includes land use staging inputs for the traffic model. It forecast development in the first 10 years of 79,570sqm (GFA). When deducting the Service Commercial Precinct land use, the Town Centre Precinct would see 63,087sqm by 2032 under the precinct modelling. It appears the actual rate of development is tracking at a slower rate than the TIA modelling assumptions.
- In relation to future signalisation of the Kambarniny Street and Romeo Road intersection, the Movement Network Plan refers to potential future signalisation noting it is ‘subject to a future TSAP assessment’. The Precinct Structure Plan and TIA document note:

“In the future the intersection of NS1 / Romeo Road may become a full movement signalised 3-way intersection. This prospect will be assessed in the future as part of a future TSAP assessment. Provision of this design will be allowed for in the initial design of this intersection. (page 19); and

“Finally, the design of the intersection of Romeo Road and NS1 will be such to allow the flexibility of a full movement 3-way signalised intersection. This will be the subject of a future TSAP assessment most likely at a time when traffic flows on Romeo Road have reduced as a result of the extension of Mitchell Freeway beyond Romeo Road by 2041. (page 20).
- Undertaking a modelling exercise for a signalisation scenario in 2037 at a precinct level (+10 years from shopping centre opening year) is premature, with traffic flows on Romeo Road not ‘settled’ yet. This means volumes used along Romeo Road will likely be inflated until such time Mitchell Freeway is extended north and operating, and the traffic volumes on Romeo Road have had time to ‘settle/readjust’.

The Alkimos Central Precinct Structure Plan – Transport Impact Assessment (Rev 8, dated 17 April 2023) is contained in **Attachment 2**.

For the reasons outlined above, we respectfully request the application is considered on its merits and approved.

Yours sincerely,

Marc Re

**MARC RE
PRINCIPAL**

Your Ref: 9165
Our Ref: A3192373
Enquiries: 0417 916 524
Date: 15 December 2025

James Dann
Senior Development Manager (Retail)
Centuria Capital Limited
Level 27, 140 St Georges Terrace
PERTH WA 6000

Dear James

**Development Application for Proposed Alkimos Shopping Centre
Part Lot 9002 (2570K) Marmion Avenue, Alkimos**

Thank you for forwarding the Draft Responsible Authority Report (RAR) prepared by the City of Wanneroo for the Alkimos Retail Development Application.

You have since made us aware of a proposed additional Draft Condition #24 regarding Traffic Modelling, as follows:

Prior to the submission of a building permit, a revised Traffic Report and SIDRA intersection modelling for 10 years after the opening of the development is to be undertaken to assess the modelling, service level and operation of the surrounding intersections, specifically the Kambarniny Street and Romeo Road intersection. The report is to include modelling which outlines whether the unsignalised intersection appropriately services the development and locality. The revised Traffic Report is to detail responsibility for any contributions toward the design, constructed and/or funding of the ultimate intersection control.

Although we have only received the RAR and Draft condition #24 on Tuesday 9th and Friday 12th December respectively, we have sought preliminary review from our Transport consultants PJA, and can provide the following comments as the Precinct level Developer for Alkimos Central:

- The requested condition #24 and background commentary appears to relate to Precinct level traffic issues, with requested modelling details and future signalisation in our view being outside the control of this individual site's Development Application (DA).
- We note that the Precinct is at a very early stage of its development, with stage 1 of the Town Centre Precinct having been developed recently and roads opened in July 2024.
- This application is just the 3rd DA for the Precinct following Alkimos Station and the City's Aquatic and Recreation Centre.

- The extension of Kambarniny Street to Romeo Road is programmed to be opened in early 2027 (unsignalised Left-in, Left-out, Right-in) as part of the next stage of subdivision, which includes the lot the subject of the DA. This intersection layout is noted on the Movement Network Plan within the Alkimos Central Precinct Structure Plan (Note #1) – refer **Attachment #1** below.
- We also refer to the 10-year modelling (2031) undertaken for the Alkimos Central Precinct Structure Plan Appendix L – Transport Impact Assessment (Rev 8, dated 17 April 2023) indicates the Kambarniny Street and Romeo Road intersection (as an unsignalised intersection) would operate at Level of Service: A. A copy of this report is provided for information.
- Additionally we refer to Table 6.4 from the TIA regarding Land Use Staging inputs for the Traffic Model – refer **Attachment #2** below. It had forecast development in the first 10 years of 79,570sqm (GFA). When deducting the Service Commercial Precinct land use, the Town Centre Precinct would see 63,087sqm by 2032 under the precinct modelling. It appears the actual rate of development is tracking at a slower rate than the TIA modelling assumptions.
- Regarding Signalisation, the Movement Network Plan (below) refers to potential future signalisation noting it is 'subject to a future TSAP assessment'. The Precinct Structure Plan and TIA document had note:

“In the future the intersection of NS1 / Romeo Road may become a full movement signalised 3-way intersection. This prospect will be assessed in the future as part of a future TSAP assessment. Provision of this design will be allowed for in the initial design of this intersection. (page 19); and

“Finally, the design of the intersection of Romeo Road and NS1 will be such to allow the flexibility of a full movement 3-way signalised intersection. This will be the subject of a future TSAP assessment most likely at a time when traffic flows on Romeo Road have reduced as a result of the extension of Mitchell Freeway beyond Romeo Road by 2041. (page 20).

This wording supports that undertaking a modelling exercise for a signalisation scenario in 2037 (+10 years from Centuria's opening year) is premature, with traffic flows on Romeo Road not 'settled' yet. This means volumes used along Romeo Road will be likely inflated until such time Mitchell Freeway is extended north and operating, and the traffic volumes on Romeo Road have had time to 'settle/readjust'.

- In relation to the wording 'subject to a future TSAP assessment' we note that TSAP assessments have a 2-year approval life from date of MRWA endorsement for each of their 3 stages of the Policy. If the approval date lapses, the subject intersection(s) have to undergo a re-survey new traffic counts (to assist with model calibration etc). If the traffic signals are not needed in the next few years, undergoing a TSAP is again premature.
- In relation to the questions regarding the contributions toward the design, constructed and/or funding of the ultimate intersection control “, it is noted that DevelopmentWA has funding capacity to contribute towards the future signalisation once approved.

In Summary, DevelopmentWA's position is:

- The requested condition #24 relates to Precinct level traffic issues, and appears outside the control of this individual site's Development Application.
- It is inappropriate for the Applicant to undertake Precinct level modelling, which should include predicted development in the Precinct and staging of the traffic network.
- If the condition stands, we are concerned that such conditions will be applied to future Development Applications.
- There has not been any direct contact to DevelopmentWA in relation to the noted issues in the RAR.
- While the requested modelling appears to be premature, DevelopmentWA would be happy to meet the City of Wanneroo, DPLH and Main Roads separately to discuss the matters raised.

Yours sincerely,

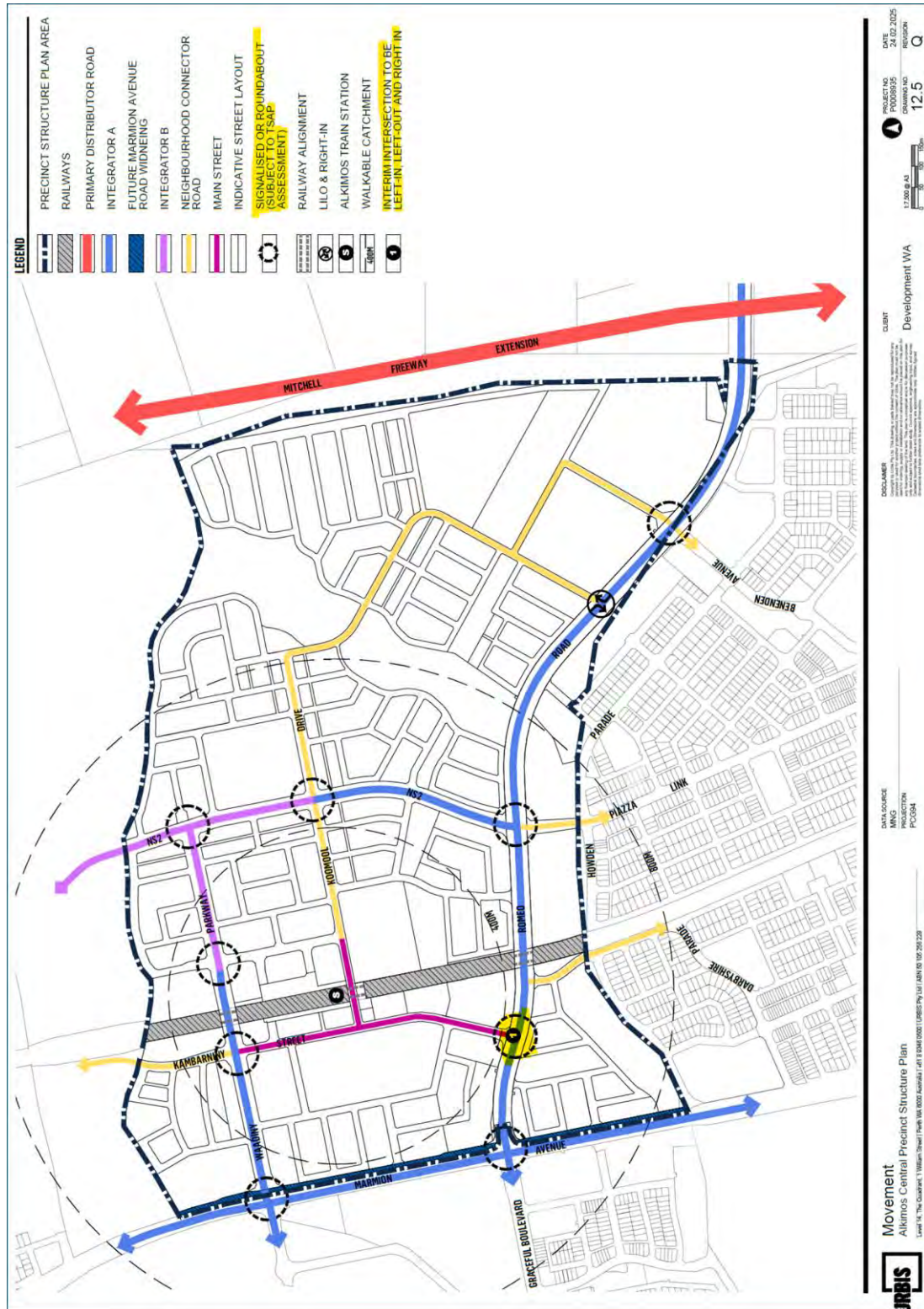


Phil Slater
SENIOR DEVELOPMENT MANAGER

Attachments:

1. Movement Network Plan from the Alkimos Central Precinct Structure Plan
2. Table 6.4 regarding Land Use Staging inputs for the Traffic Model:
Extract from the Alkimos Central Precinct Structure Plan Appendix L -
Transport Impact Assessment (Rev 8, dated 17 April 2023).

Movement Network Plan from the Alkimos Central Precinct Structure Plan



Attachment 2

Table 6.4 regarding Land Use Staging inputs for the Traffic Model:
Extract from the Alkimos Central Precinct Structure Plan Appendix L -
Transport Impact Assessment (Rev 8, dated 17 April 2023).

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Table 6.4: Land Use Staging

Land Uses	2022-2032	2032-2042	2042-2052	Total GFA (2052)
PRI	0	0	0	0
MAN	1,721	8,606	6,884	17,211
STO	6,746	9,444	10,793	26,983
SER	8,016	11,222	12,825	32,063
Service Commercial	5,210	7,294	8,336	20,841
Showroom	2,805	3,928	4,489	11,222
SHP	18,090	25,327	28,945	72,362
Main Shopping Centre	16,281	22,794	26,050	65,126
Convenience Centre/Main Street/Mixed Use	1,809	2,533	2,894	7,236
ENT	4,094	5,731	6,550	16,374
Library/Community Centre	1,146	1,605	1,834	4,585
Aquatic Centre/Indoor Recreation	860	1,204	1,375	3,439
Taverns	614	860	982	2,456
Gyms	819	1,146	1,310	3,275
Other	655	917	1,048	2,620
RET	7,181	10,054	11,490	28,725
OFF	10,687	53,437	42,750	106,875
HEL	20,331	97,412	78,496	196,239
Public Admin	1,179	1,650	1,886	4,715
Order, Safety and Regulatory Services	1,860	9,301	7,440	18,601
Non-Tertiary Education	641	3,204	2,563	6,408
Tertiary and Adult Education	3,139	15,697	12,558	31,394
Hospitals	4,567	22,836	18,269	45,672
Medical and Other Health Care Services	3,932	19,658	15,726	39,316
Residential Care Services	1,180	5,902	4,722	11,804
Social Assistance Services	1,536	7,681	6,145	15,362
Personal and Other Services	2,297	11,483	9,187	22,967
RES	0	0	0	0
UTE	2,704	3,786	4,327	10,817
Total	79,570	225,018	203,060	507,648

□



Alkimos
Central

Alkimos Central Precinct Plan Technical Studies Suite

April 2023

Technical Studies Appendices Index

Appendix Ref.	Document Title	Author
A	Environmental Assessment and Management Strategy (Rev. G)	Emerge Associates
B	Local Water Management Strategy (Rev. E)	Emerge Associates
C	Aboriginal Heritage Survey and Cultural Survey	Moodjar Consultancy and Dortch Cuthbert
D	Bushfire Management Plan (Rev. D)	Emerge Associates
E	Housing Need Assessment (Rev. D)	RPS
F	Alkimos Central Community Development Plan (Rev. C)	Element
G	Crime Prevention Through Environmental Design Review (Rev. Nov 2021)	Urbis
H	Retail Needs Assessment (Rev. C)	RPS
I	Economic and Employment Strategy (Rev. C)	RPS
J	Landscape Masterplan Report (Rev. H)	UDLA
K	Tree Species and Planting Principles	UDLA
L	Transport Impact Assessment (Rev. 8)	Stantec (GTA)
M	Engineering Services Report (Rev. F)	Cossill and Webley

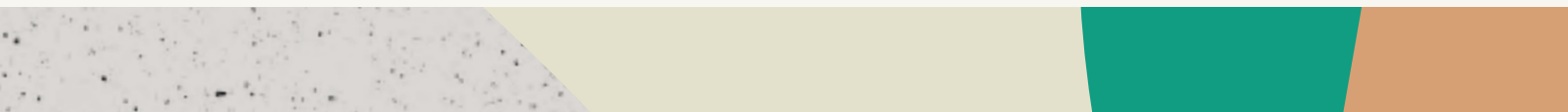


Appendix L

Transport Impact Assessment (Rev. 8)

Author: Stantec (GTA)

[Return to Home](#)



Alkimos Central Precinct Plan

Transport Impact Assessment

Prepared by: Stantec (Australia) Pty Ltd for Cossill & Webley on behalf of Development WA
on 17/04/23

Reference: 301400719

Issue #: Rev8

Alkimos Central Precinct Plan

Transport Impact Assessment

Client: Cossill & Webley on behalf of Development WA

on 17/04/23

Reference: 301400719

Issue #: Rev8

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A-Dr	19/06/20	Draft	Angela Zhang Kieran Mann	Trish Robertson Aaron MacNish	Tanya Moran	-
B-Dr	28/07/20	Draft updated with Project Team Comments	Angela Zhang Kieran Mann Trish Robertson	Aaron MacNish	Tanya Moran	-
A-Final	10/08/20	Rev A - Final	Angela Zhang Kieran Mann Trish Robertson	Aaron MacNish	Tanya Moran	-
B-Final	24/06/21	Rev B – Revised SP with Romeo Road realignment	Aaron MacNish William Finlay	Aaron MacNish	Tanya Moran	
C-Dr	21/09/21	Rev C Draft – minor text updates	Aaron MacNish	Tanya Moran	Tanya Moran	
C-Final	23/11/21	Rev C – updated figures to latest masterplan	Aaron MacNish	Tanya Moran	Tanya Moran	
d	04/11/22	Revised Final Draft – address agency comments	Gary Soo Rodney Ding			
Rev 3	18/11/22	Revised Final – address DevWA comments	Rodney Ding	Alix Oakes	Rodney Ding	
Rev 4	13/12/22	Revised Final – updated PP Plans	Rodney Ding	Sonja Hayes	Rodney Ding	

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
Rev 5	14/12/22	Revised Final – amend two figures	Rodney Ding	Sonja Hayes	Rodney Ding	
Rev 6	27/02/23	Revised Final – address City and DPLH comments	Sonja Hayes	Scott Lambie	Sonja Hayes	
Rev 7	27/03/23	Revised – Final	Sonja Hayes	Sam Laybutt	Sam Laybutt	
Rev 8	17/04/23	Revised Final – update Fig 4.1 and 4.2	Sonja Hayes			

The conclusions in the Report titled Alkimos Central Precinct Plan – Transport Impact Assessment are Stantec’s professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient’s own risk.

Stantec has assumed all information received from Development WA (the “Client”) and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec’s contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec’s discretion.

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Appendices

- A. Proposed Precinct Plan
- B. ROM24 Plots
- C. Intersection Controls
- D. PJA Stage One Design Review Report
- E. WAPC Checklist

1. INTRODUCTION

01

1.1. Background & Proposal

The Alkimos Central Precinct Plan, also known as Alkimos Central, aims to be an employment focus and social hub with the requisite key services for the Alkimos-Eglinton District and its anticipated 57,000 residents over the next 25 to 30 years.

Alkimos Central is identified as a Secondary Centre in the Department of Planning, Lands and Heritage's policy documents for metropolitan Perth. Alkimos Central will be the major centre in the 25km corridor of coastal development between the Strategic Regional Centres of Joondalup and Yanchep.

The Alkimos City Centre Activity Centre Plan (Alkimos ACP) was commenced in August 2013 and was approved by the Western Australian Planning Commission (WAPC) in August 2018. Given the changing retail landscape and the time that has lapsed since the Alkimos ACP was initially designed, an independent design review of the Precinct Plan and Masterplan has been undertaken, and subsequently a number of changes have been made.

The development potential modelled within this Alkimos Central Precinct Plan (ACPP) is estimated to include:

- 2,457 dwellings by year 2051
- 106,875sqm of commercial office floor space
- 101,086sqm of retail, predominantly within the Alkimos Retail Precinct located in the western portion of the Precinct Plan
- 76,257sqm of service commercial
- Railway and bus interchange
- Health, educational, civic, community and recreational facilities.

A context plan for the ACPP and its surrounds is shown in Figure 1.1.

1.2. Purpose of this Report

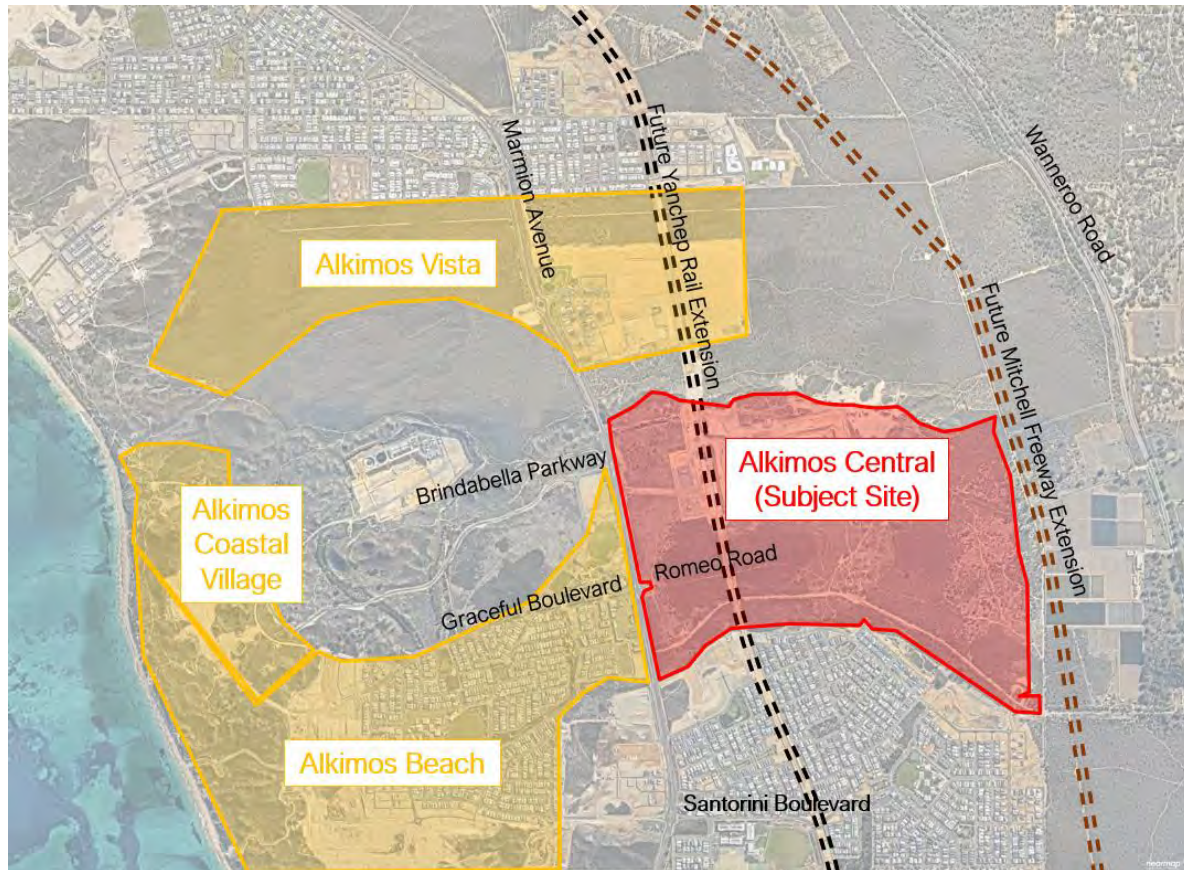
The *Western Australian Planning Commission Transport Assessment Guidelines (WAPC Guidelines)* require Structure Plans to be supported by a Transport Impact Assessment (TIA) and given the revised Precinct Plan, a fresh TIA has been conducted.

In accordance with the WAPC Guidelines, this TIA outlines:

- Existing transport conditions proximate to the site
- The adequacy of the proposed site layout
- The traffic generating characteristics of the proposed development
- The anticipated impact of the proposed development on the surrounding road network.

Volume 2 of the WAPC Guidelines provides direction on the preparation of a TIA specifically relating to Planning Schemes, Structure Plans and Activity Centre Plans. The WAPC Guidelines identify that a TIA for a Structure Plan is to provide a broad-brush assessment addressing key transport related issues, consistent with the level of planning ordinarily undertaken during this stage of development.

Figure 1.1: ACPP Context Plan



(PhotoMap courtesy of NearMap Pty Ltd)

1.3. Summary of Key Issues

From a traffic and transport point of view, the following key issues are of relevance to this TIA:

- As Alkimos Central is built around the future Alkimos Train Station and Bus Transfer Station, it is vital to provide high amenity pedestrian and cycling links both internally and from surrounding developments into Alkimos Central.
- With Romeo Road effectively being the end of the freeway in the short to medium term, external through traffic along Romeo Road is very high up until the point that the Mitchell Freeway is extended north (assumed 2031). This naturally results in a reduced level of service (refer to results in section 6.0) for several external access points for Alkimos Central in 2031 including:
 - o Marmion Avenue / Brindabella Parkway
 - o Marmion Avenue / Romeo Road
 - o Romeo Road / Benenden Avenue
 - o Romeo Road / NS 1
 - o Romeo Road / NS 2.

- The above is also the case for external through traffic along Marmion Avenue adjacent to the Precinct Plan, where traffic volumes expected to use this link are very high up until 2031, prior to the Mitchell Freeway planned extension north, past Romeo Road.
- The reduced levels of service for intersections accessing the Precinct Plan area are primarily due to the very high volumes of through traffic on the regional road network of Romeo Road and Marmion Avenue as these roads are effectively the end of the freeway. It is anticipated that as the centre matures changes in trip behaviour to utilise the excellent public transport offering *combined with the extension of the freeway north* through to Yanchep will provide an *acceptable level of service* to these intersections accessing Alkimos Central.

1.4. References

In preparing this report, reference has been made to the following:

- Concept Masterplan for the proposed development (Drawing No. 12.4, Project No. P0008935), prepared by Urbis, dated 07.10.2021, provided at Appendix A
- City of Wanneroo District Planning Scheme No. 2
- Liveable Neighbourhoods Guidelines
- WAPC Transport Assessment Guidelines for Development: Volume 2 – Planning Schemes, Structure Plans and Activity Centre Plans
- various technical data and other documents as referenced in the context of this report.

A number of previous studies have also been reviewed in the preparation of this TIA. These include:

- Alkimos City Centre Plan: Traffic and Movement Network (Bruce Aulabaugh Traffic Engineering & Transport Planning, Nov 2012 and rev 2, 9 May 2013)
- Alkimos City Centre Activity Centre Structure Plan: Strategic Transport and Public Transport Planning Report (Jacobs, 14 December 2012)
- Alkimos City Centre and Central Alkimos Memorandum (Jacobs, 27 October 2015).
- Alkimos Centre Technical Memorandum – Freeway Extension (Stantec February 2023)

2. PRECINCT PLAN OUTLINE

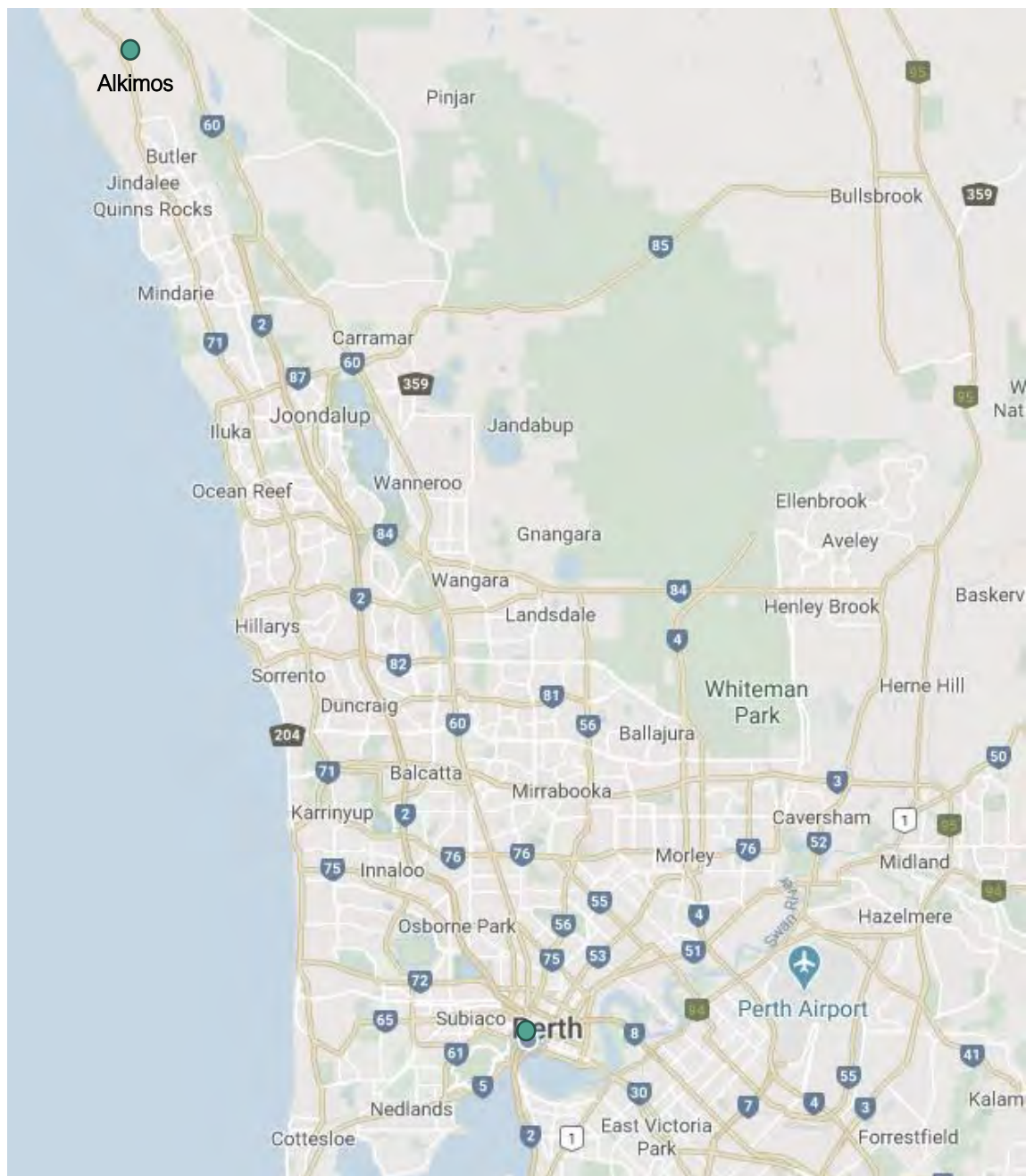
02

2.1. Regional Context

Alkimos Central is identified as a Secondary Centre in the Department of Planning, Lands and Heritage's policy documents for metropolitan Perth. Alkimos Central will be the major centre in the 25km corridor of coastal development between the Strategic Regional Centres of Joondalup and Yanchep.

The subject site is located in the suburb of Alkimos, within the City of Wanneroo. The site is approximately 40km north of the Perth CBD.

Figure 2.1: Location Map



(PhotoMap courtesy of GoogleMaps)

2.2. Proposed Land Uses

The development potential modelled within the ACPP is estimated to include:

- 2,457 dwellings by year 2051
- 106,875sqm of commercial office floor space
- 101,086sqm of retail, predominantly within the Alkimos Retail Precinct
- 76,257sqm of service commercial
- Railway and bus interchange
- Health, educational, civic, community and recreational facilities.

The key land use differences between this ACPP and the originally approved 2018 Structure Plan are defined in Table 2.1.

Table 2.1: Comparison of Development Yields

Structure Plan / Precinct Plan	Residential (Dwellings)	Mixed Use (office) (m ² GFA)	Retail (m2 GLAR)	Bulky Good / Service Commercial (m2 NLA)	Non-tertiary Education	TAFE (m ² GFA)	Aquatic Centre + Other uses	Park 'n' Ride
2018 Structure Plan	3,335	120,500	67,000	60,000	4.5ha site	-	-	
2021 Precinct Plan	2,457	106,875 • OFF (office) = 106,875	101,086 • SHP (shop/retail) = 72,362 • RET (other retail) = 28,725	76,257 • MAN (manufacturing) = 17,211 • STO (storage/distribution) = 26,983 • SER (service industry) = 32,063	4.0ha site	31,394	35,000	660 bays
Difference	-752	-13,625	+34,086	+16,257	-		-	-

Note: Floor areas are at the time of writing this TIA.

As can be seen, the number of residential dwellings is reducing by approximately 750 dwellings when comparing full development scenarios between the two plans. It is worth noting that the original 2018 Structure Plan forecasted full build out around the year 2060, whereas the ACPP forecasts full build out closer to year 2051.

Of note, the construction of the Yanchep Rail Extension has now commenced as part of METRONET providing confidence that Alkimos Central will have a major public transport hub within the centre to influence sustainable travel behaviour from Day 1 of opening.

2.3. Attractors or Generators of Traffic (non-residential)

There are numerous supporting facilities proposed within the ACPD which are considered attractors or generators of traffic, such as:

- Education (for the purposes of this proposal assumed as Primary School and TAFE)
- Sport and Recreation Centre
- Commercial (Retail and Entertainment)
- Mixed Use Development
- Service Commercial.

2.4. Specific Transport Issues

The development of Alkimos Central is projected to occur over the course of 30 years. This is a relatively long timeframe and as such, it is a challenge to provide the necessary infrastructure for ultimate development to support the vehicle trips expected based on existing travel mode preference of today's users, whilst balancing the aspirational goals of increased public transport, walking, and cycling mode shares and the rapid technological advancements effecting travel behaviours for the future.

There has been a conscious decision to design the transport network such that it continues to encourage alternative and sustainable modes of transport through providing priority to pedestrian and cycling safety and amenity, as well as a permeable and legible bus access. These design outcomes have been supplemented with allowing some measure of private motor vehicle congestion at key locations within the city centre, to further aid in driving the required mode share shift in future years.

In support of the reduction in private motor vehicle trips, the target modal splits for Alkimos Central are:

- Car Driver 45%
- Car Passenger 19%
- Public Transport 10%
- Cycling 6%
- Walking 20%.

These modal splits are for an ultimate development scenario and have previously been approved by the City of Wanneroo and the Department of Planning, Lands and Heritage as included in the 2014 Integrated Parking Strategy for Alkimos Central. It is expected that in the initial stages of development there will likely be a reliance on car vehicle trips until a local population is established. The benefit is that Alkimos Central will now have an operational train station and bus station from day one opening allowing public transport to establish itself as a valid trip pattern for trips to and from Alkimos.

3. EXISTING SITUATION

03

3.1. Subject Site

The City of Wanneroo's District Planning Scheme No. 2 (DPS 2) identifies that the subject site is zoned as 'Centre', and under the Metropolitan Region Scheme (MRS) it is zoned 'Central City Area'. The surrounding land uses include a mix of zones including Residential to the south, and Parks and Recreation to the north.

The subject site is bound by Marmion Avenue (an Other Regional Road, now under the care and control of Main Roads WA) to the west, the Mitchell Freeway Primary Regional Road Reserve to the east and the Romeo Road Other Regional Road Reserve along the southern boundary.

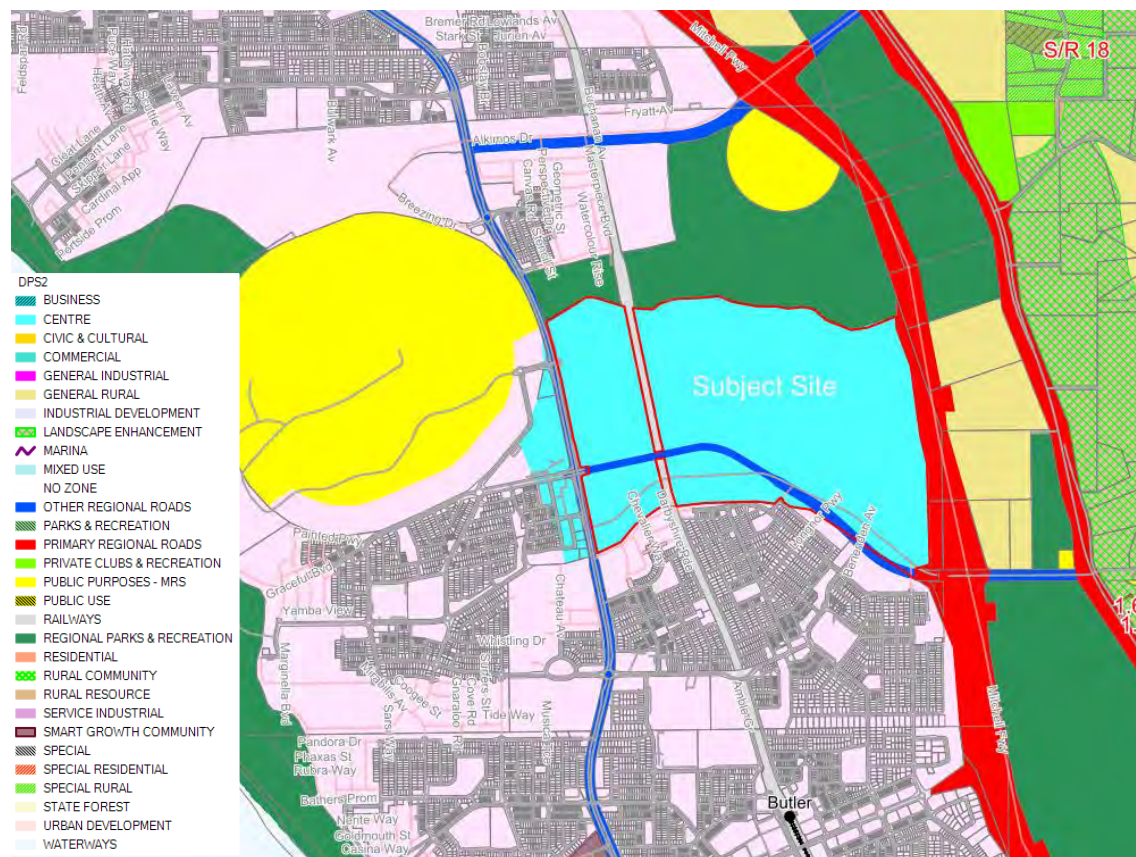
The location of the subject site and the surrounding environs is shown in Figure 3.1. The land zoning is shown in Figure 3.2.

Figure 3.1: Subject Site and its Environs



(PhotoMap courtesy of NearMap Pty Ltd)

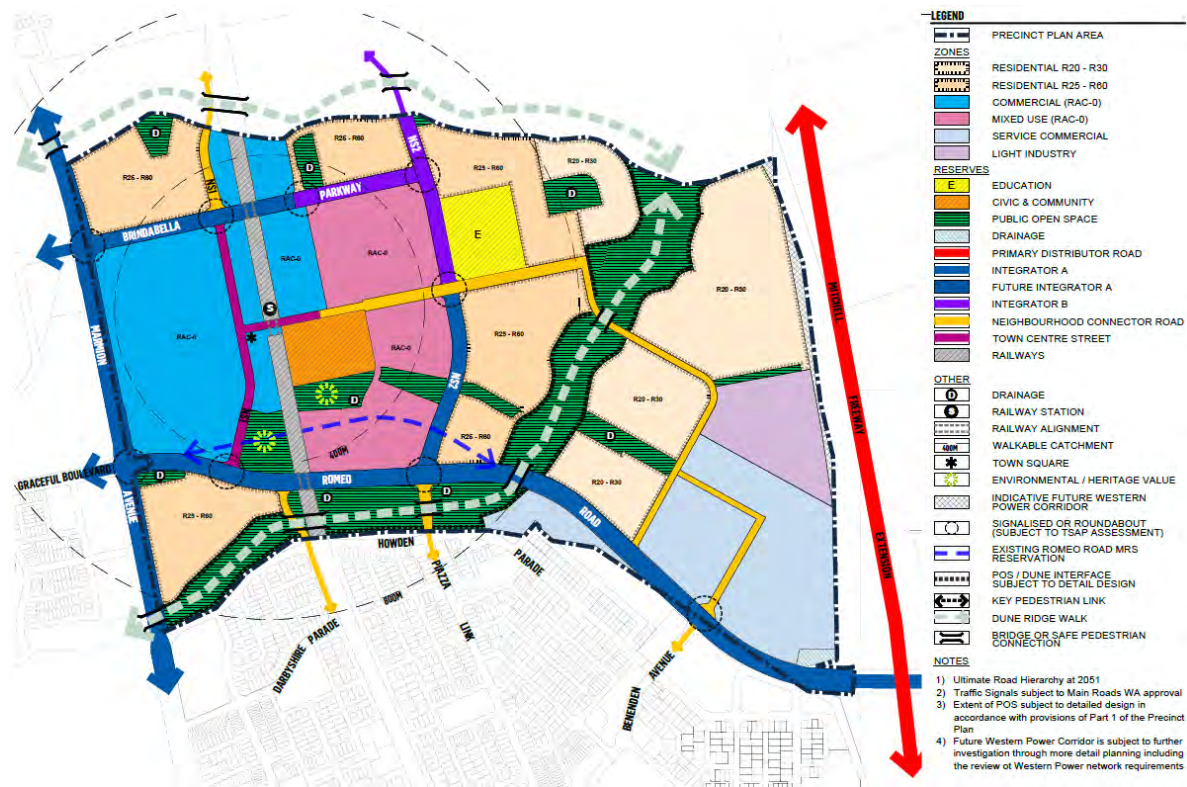
Figure 3.2: Land Zoning Map



(Reproduced from City of Wanneroo Intramaps)

The full proposed ACPP is shown below in Figure 3.3 for context.

Figure 3.3: Proposed ACPP



Source: Alkimos Central Precinct Plan, Urbis March 2023

3.2. Existing Movement Network

3.2.1. Roads

The wider Alkimos area is currently being developed and therefore development is occurring at different stages. Currently, the land immediately to the north is reserved for Parks and Recreation, limiting the potential for development. However, much of the surrounding area is zoned for Urban Development. The higher order road network has been established with reserves in place. There is also a railway reserve which runs north / south through the subject site. The land is currently vacant, with the only established road being Marmion Avenue.

Marmion Avenue

Marmion Avenue runs in a north / south alignment to the west of the subject site. It is currently the key access point for the development. It is identified as an “Other Regional Road” under the Metropolitan Region Scheme (MRS). It is identified as a Primary Distributor Road with a posted speed limit of 80km/h as per the Main Roads Western Australia (Main Roads WA) Functional Road Hierarchy and Road Information Mapping System.

Marmion Avenue has recently been duplicated to a four-lane dual carriageway up to Yanchep Beach Road and currently carries over 23,000 vehicles per day is under the care and control of Main Roads WA as a state road.

3.2.2. Pedestrian and Cyclist Network

Existing pedestrian and cyclist access to the subject site is currently limited as the area is yet to be developed. However, there is a newly constructed Shared Path adjacent to Marmion Avenue which was provided as part of the recent duplication. A Principal Shared Path will also be constructed as part of the Mitchell Freeway Extension to the east of the subject site.

3.2.3. Public Transport

There are currently two bus services which operate along Marmion Avenue (Route 490 and 491). The closest bus stops are located to the north and south of Sanderling Street on Marmion Avenue.

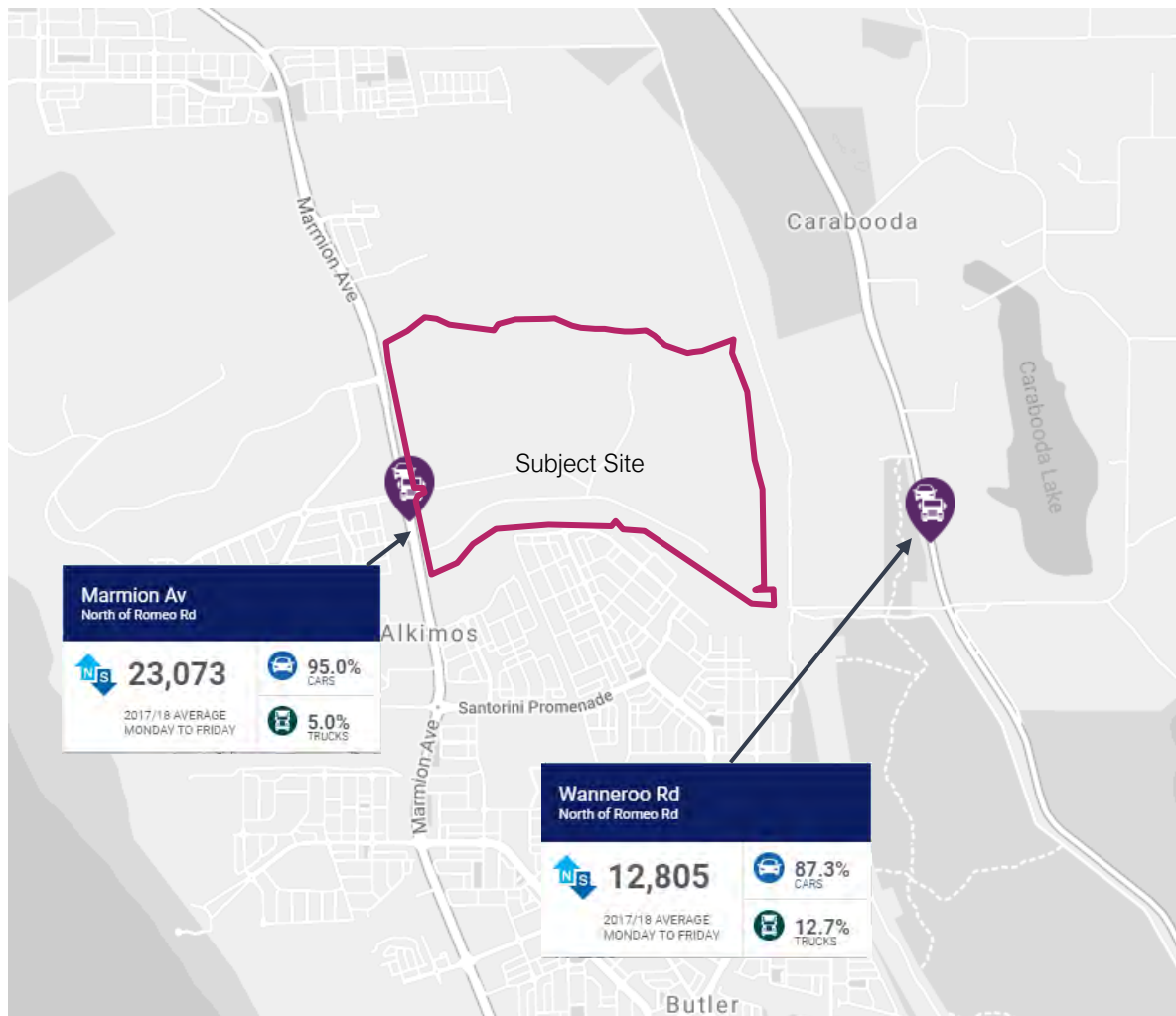
3.3. Existing Road Network (Within 2km)

Currently there is limited road network in the ACP, given that the subject site has not been developed, and the landlocked nature of the area. To the north, there is a small but increasing amount of residential development as part of Alkimos Vista, followed by another residential development north of that known as Shorehaven. To the south is the Trinity Estate which connects to the Butler Town Centre. The Water Corporation Wastewater Treatment plant encompasses the land immediately to the west with the residential development of Alkimos Beach located southwest of Alkimos Central. To the east is the Mitchell Freeway Road Reserve, which further limits the subject site's direct accessibility.

3.4. Traffic Counts (within 2km)

Traffic counts obtained from the Main Roads WA Traffic Map for roads proximate to the subject site are shown in Figure 3.4.

Figure 3.4: Location of Counters



Source: Main Roads Traffic Map

4. PROPOSED TRANSPORT NETWORKS

04

4.1. Changes to Existing Road Network

With the development of the northern suburbs, several existing key roads are being upgraded. These upgrades will alter the future transport movement in the area. Descriptions of the proposed road upgrades to existing roads are set out below. This section specifically discusses existing roads. Romeo Road is discussed later in the next section 4.2 Proposed Roads.

Mitchell Freeway

Mitchell Freeway currently terminates at Hester Avenue in Ridgewood, 5.6km south of the subject site. Mitchell Freeway is a Main Roads WA owned State Road and is identified as a Primary Distributor Road in the Main Roads WA Functional Road Hierarchy and Road Information Mapping System.

Main Roads WA are currently planning for the extension of Mitchell Freeway, with a 5.6km extension from Hester Avenue to Romeo Road, with two traffic lanes in each direction and provision for future widening. A new Principal Shared Path for cyclists and pedestrians is also proposed on the western side of the freeway in this section.

In addition to this, Romeo Road will be constructed between Marmion Avenue and Wanneroo Road as part of Main Roads WA's freeway extension.

Works are commencing in 2021 and is anticipated to be completed by 2023.

Wanneroo Road

Wanneroo Road is a State Road and a Primary Distributor Road. However, as part of the Mitchell Freeway extension, Romeo Road will connect the subject site to Wanneroo Road. Wanneroo Road will also be duplicated from Romeo Road north to Triana Road.

Marmion Avenue

Marmion Avenue has recently been upgraded from 2-lanes to a 4-lane dual carriageway adjacent to the subject site. A new 3-way signalised intersection has been constructed at Graceful Boulevard, to be converted to a 4-way intersection at the completion of Romeo Road. A future 4-way signalised intersection is also planned at Brindabella Parkway/Marmion Avenue.

4.2. Proposed Road Hierarchy, Road Reserve Widths and Speed Limits

The transport and movement network within Alkimos Central is proposed to consist of the following streets and roads and is shown in Figure 4.1. Speed limits are based on the general target speeds as specified in Liveable Neighbourhoods, either existing or target (street yet to be constructed and speed limit yet to be implemented).

- **Marmion Avenue**
 - 4 lane divided arterial road adjacent to Alkimos Central (although Main Roads are considering this to become a 6-lane divided arterial)
 - Other Regional Road in the MRS
 - Primary Distributor function (Currently 80km/h posted speed limit with potential for this to be reduced as built form increases and the Precinct Plan matures).

- **Romeo Road**
 - Ultimate 4 lane divided arterial (44m – 49m road reserve)
 - Other Regional Road in the MRS
 - Primary Distributor function (Currently 80km/h posted speed limit with potential for this to be reduced as built form increases and the Precinct Plan matures).).
- **Brindabella Parkway**
 - Ultimate 4 lane divided arterial west of NS1 (40m road reserve)
 - Integrator A function west of NS1 (target 60km/hr posted speed limit)
 - 2 lane divided arterial east of 'North South Bus Road' (24m road reserve)
 - Integrator B function east of NS1 (target 50km/hr default speed limit)
 - The change in hierarchy at NS1 will be managed through a transition via a signalised or roundabout intersection treatment.
 - Protected cycle lanes, as recommended in the Design Review (PJA January 2023, refer Appendix D).
- **NS1 – Town Centre Street**
 - Main Street typology prioritising pedestrian movements particularly east west across the corridor between the train station and the retail precinct.
 - Limit 'through vehicle' movements adjacent to the station, discouraging erroneous vehicles trips with raised intersections, alternative pavement treatments and target 40km/h posted speed limit.
- **NS1 – Except Town Centre Street**
 - Ultimate 2 lane divided street (22m road reserve)
 - Neighbourhood Connector function enabling access to the city centre.
- **NS2**
 - Ultimate 4 lane divided arterial south of Tuart Drive (36m road reserve)
 - Integrator A function south of Tuart Drive
 - 2 lane divided minor arterial north of Tuart Drive (24m road reserve)
 - Integrator B function north of Tuart Drive (target 50km/hr default speed limit)
 - The change in hierarchy at Tuart Drive will be managed through a signalised or roundabout intersection treatment.
- **Tuart Drive**
 - 2 lanes divided minor arterial adjacent to the train station (20m road reserve)
 - Neighbourhood Connector function (target 40km/hr posted speed limit)
 - 2 lane divided minor arterial east of the train station (30m road reserve)
 - Neighbourhood Connector function (target 50km/hr default speed limit).

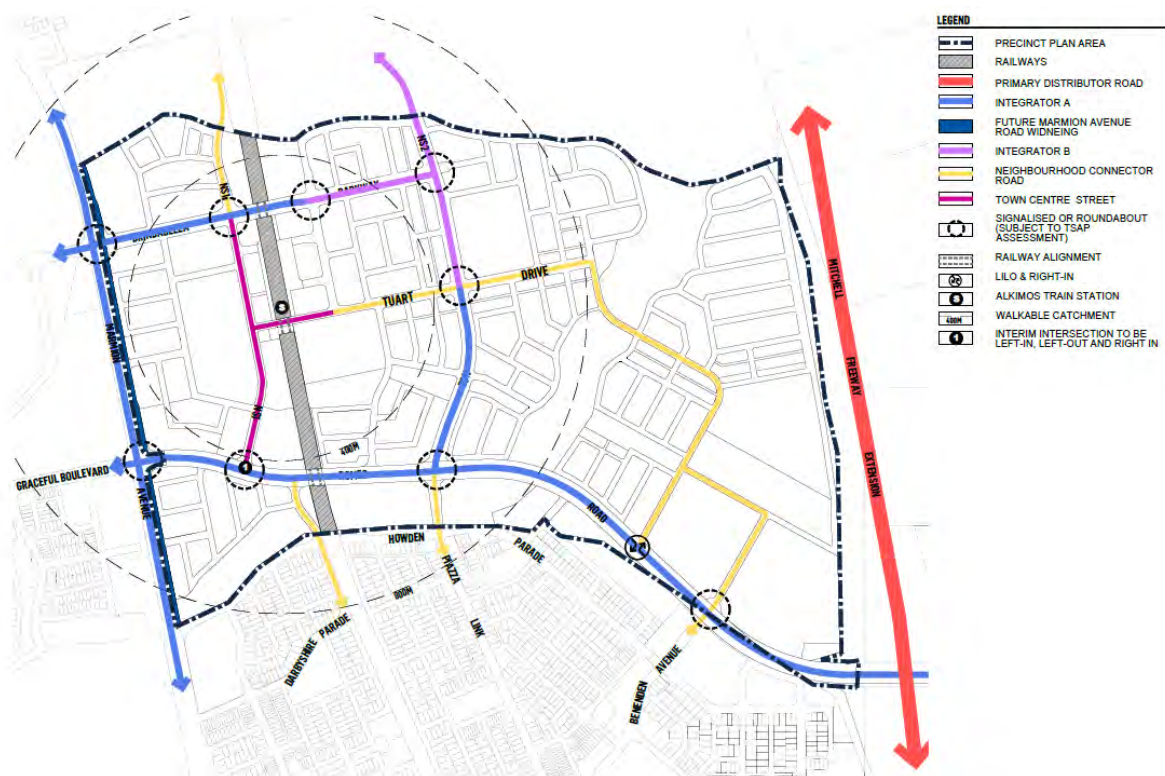
PROPOSED TRANSPORT NETWORKS

The functionality of the “Town Centre Street” differs from the typical layout and indicative cross-sections provided in *Liveable Neighbourhoods* (2009). NS1, Brindabella Parkway and Tuart Drive were assessed from a Healthy Street and Road Safety perspective through a *Stage One Design Review* undertaken by PJA (March 2023), refer Appendix D. The review determined a number of design features that should be included to promote the pedestrian priority nature of the roads in the vicinity of the station, promote active travel and shared space and improve the ability to cross. NS1 in the vicinity of Tuart Drive is documented as a Neighbourhood Connector type road, requiring 3.5m lanes. The PJA report demonstrates that lane widths between 3.0m and 3.7m are undesirable in areas with high volumes of cycle traffic as pinch points can be established where some motorists will try to pass a cyclist although there is insufficient width to do so. It is recommended that NS1 should be designed with 3.2m wide lanes to ensure that the pedestrians and cyclists are adequately accommodated and reduce the likelihood of passing by a motorist, whilst also providing flexibility should the road be required to facilitate bus movements in the future. In terms of Tuart Drive in the vicinity of the station, the road cross section is somewhat dictated by the construction of the railway bridge and therefore to promote lower vehicle speeds it is suggested that a flush median be established and 3.2m lanes are provided.

The remainder of the local road network will consist of Access Street (A/B/C/D) and laneways as required with road reserves between 15 – 17m and subject to the default built up speed limit target of 50km/h. As the Marmion Avenue and Romeo Road corridors mature the currently proposed posted speed limit of 80km/h may be investigated for reduction to 60 to 70km/hr through a built-up urban environment.

The proposed road layout and hierarchy as per *Liveable Neighbourhoods* (2009) is found at Figure 4.1 and the discussion and analysis around the ultimate road volumes are in Section 6.

Figure 4.1: Internal Road Layout and Proposed Road Hierarchy – Ultimate



Source: Alkimos Central Precinct Plan Movement Plan, Urbis, 2023

4.3. Proposed Road Access Strategy

Direct lot access is to be provided by Neighbourhood Connector Roads or lower. Due to their proposed volumes exceeding 500 vehicles per hour there is no direct lot access proposed on Romeo Road, Marmion Avenue, Brindabella Parkway or NS2.

NS1 is being designed and considered as a Main Street style development. As such, there will be limited direct lot access to NS1 for those lots on the western edge of the rail reserve with no alternative access and these access points should be in the form of shared accesses where possible. Vehicle access to and from the retail core (between Marmion Avenue and NS1) will be supported by a lower order road network, leaving NS1 with a focus on pedestrian activity, safety, and amenity.

Marmion Avenue and Romeo Road are both through-traffic carrying road barriers to the Alkimos Central Precinct area. As these roads are both expected to function as busy 4-lane dual carriageway even in the short to medium term (+10years) it is important for the Precinct Plan to consider access from and across these roads, for pedestrians, cyclists and vehicle users. Access onto and across Marmion Avenue from the ACPP is largely focused on two signal-controlled intersections at the northern and southern extent of the precinct intersecting with Brindabella Parkway in the north and Romeo Road in the south. These signalised intersections will provide crossing points for pedestrians and cyclists and will form the main connection for the Precinct's vehicular traffic accessing Marmion Avenue. In addition to the two signalised intersections at Marmion Avenue there is a mid-block left-in-left-out intersection on the southbound carriageway of Marmion Avenue adding additional permeability for local trips into and out of the ACPP. To assist with crossing Marmion Avenue the City has suggested investigating a pedestrian bridge connection. There have been no provisions included for this in the DSP and therefore no allowances for the connection in the road reserves assigned to the duplications.

Crossing of Romeo Road will largely be concentrated as two (proposed) signalised intersections at NS2 and Benenden Avenue. At the time of writing this impact assessment the intersection of NS2 / Romeo Road and Benenden Avenue / Romeo Road have both received Gateway 1 endorsement for traffic signals from *MRWA Network Operations Directorate*, with Benenden Avenue / Romeo Road progressing through Gateway 2 and 3 approvals at present.

In addition to the two signalised intersections, there are some other key access points worth noting along Romeo Road. All minor intersections along Romeo Road are proposed to function as Left-In-Left-Out except for the following intersections:

- NS1 / Romeo Road: Right in, left in left out, with a potential future upgrade to 3-way signalised
- Darbyshire Parade (NS3) / Romeo Road: Left in/Left out
- Longnor Parkway / Romeo Road: Right in, left in left out.

The proposed right-in movements are subject to detailed design and are progressing at various stages. The right-in movements at NS1 and Longnor Parkway both have support from the City of Wanneroo and are currently being constructed in this form (February 2023). In the future the intersection of NS1 / Romeo Road may become a full movement signalised 3-way intersection. This prospect will be assessed in the future as part of a future TSAP assessment. Provision of this design will be allowed for in the initial design of this intersection.

4.4. Intersection Controls

Intersection controls within Alkimos Central have been designed with due consideration of the design traffic volumes as detailed in Section 6 and proposed road function as detailed in Section 4.2.

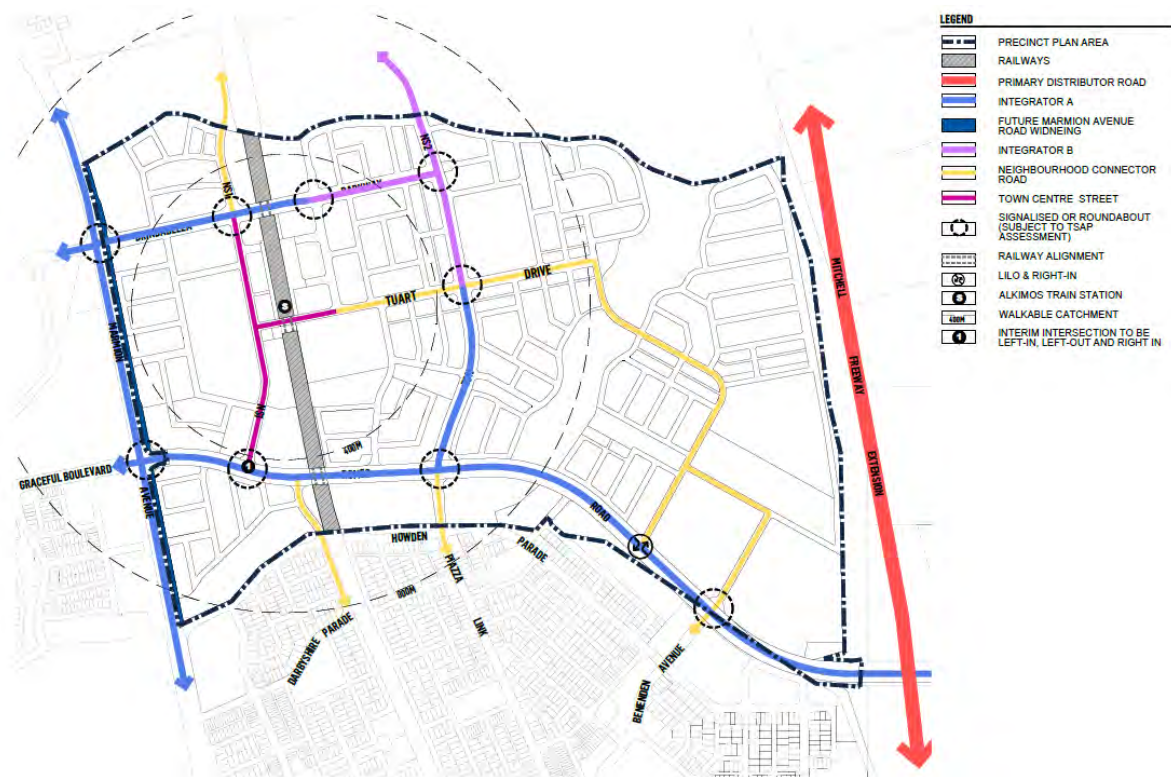
Intersections which are expected to cater to higher volumes of traffic are proposed to be signalised or roundabouts as indicated in Figure 4.2. Minor intersections are proposed to be priority controlled, with further detail to be provided at individual development application stages for each subdivision.

Current MRWA endorsements for signalised intersections within the ACPP include:

- Marmion Avenue / Brindabella Parkway (Gateway 2 endorsement)
- Marmion Avenue / Romeo Road (Gateway 2 endorsement)
- Romeo Road / NS2 (Gateway 1 endorsement)
- Romeo Road / Benenden Avenue (Gateway 2 endorsement)
- NS1 / Brindabella (Gateway 1 endorsement)

There is one other proposed signalised intersection within the ACPP that has not yet had an application for endorsement from MRWA, being at the intersection of Brindabella Parkway / Bus Station Access Road. The need for the Bus Station Access intersection to be signalised is not expected to be until at least +5 after the opening of the ACPP and therefore outside of the endorsement lifetime (2 years) for signalised intersections. It is expected that this intersection will undergo the relevant assessment and endorsement process during subsequent stages of subdivision when the timing falls into the endorsement lifetime for the progressive land use. Finally, the design of the intersection of Romeo Road and NS1 will be such to allow the flexibility of a full movement 3-way signalised intersection. This will be the subject of a future TSAP assessment most likely at a time when traffic flows on Romeo Road have reduced as a result of the extension of Mitchell Freeway beyond Romeo Road by 2041.

Figure 4.2: Proposed Intersection Controls (refer to current endorsement vs future endorsement discussion above)



Source: Alkimos Central Precinct Plan, Movement Network, Urbis, 07.03.2023

4.5. Pedestrian / Cycle Networks and Crossing Facilities

4.5.1. Pedestrian / Cycling Network

On April 27, 2016, WA's laws were changed to allow cyclists of all ages to use footpaths, unless otherwise signed. The amendment to the *Road Traffic Code 2000* brought WA's bicycle laws into line with the rest of Australia, making it legal for parents to cycle alongside their children on footpaths, improving safety especially for vulnerable road users.

The Precinct Plan has been designed in accordance with *Liveable Neighbourhoods* and is cognisant of achieving walkable catchments with high cycling and pedestrian amenity. The proposed networks of paths within the Precinct Plan area will provide an excellent level of accessibility and permeability for pedestrians and cyclists. Additionally, the *Stage One Design Review (PJA January 2023)* recommends that separated cycle lanes be provided on Brindabella Parkway, in line with the Safe System approach that physical protection should be provided for on-road cycle lanes where vehicle speeds exceed 30km/h.

The proposed Precinct Plan includes the provision of footpaths along every street. Additionally, it includes the provision of shared paths along the following roads:

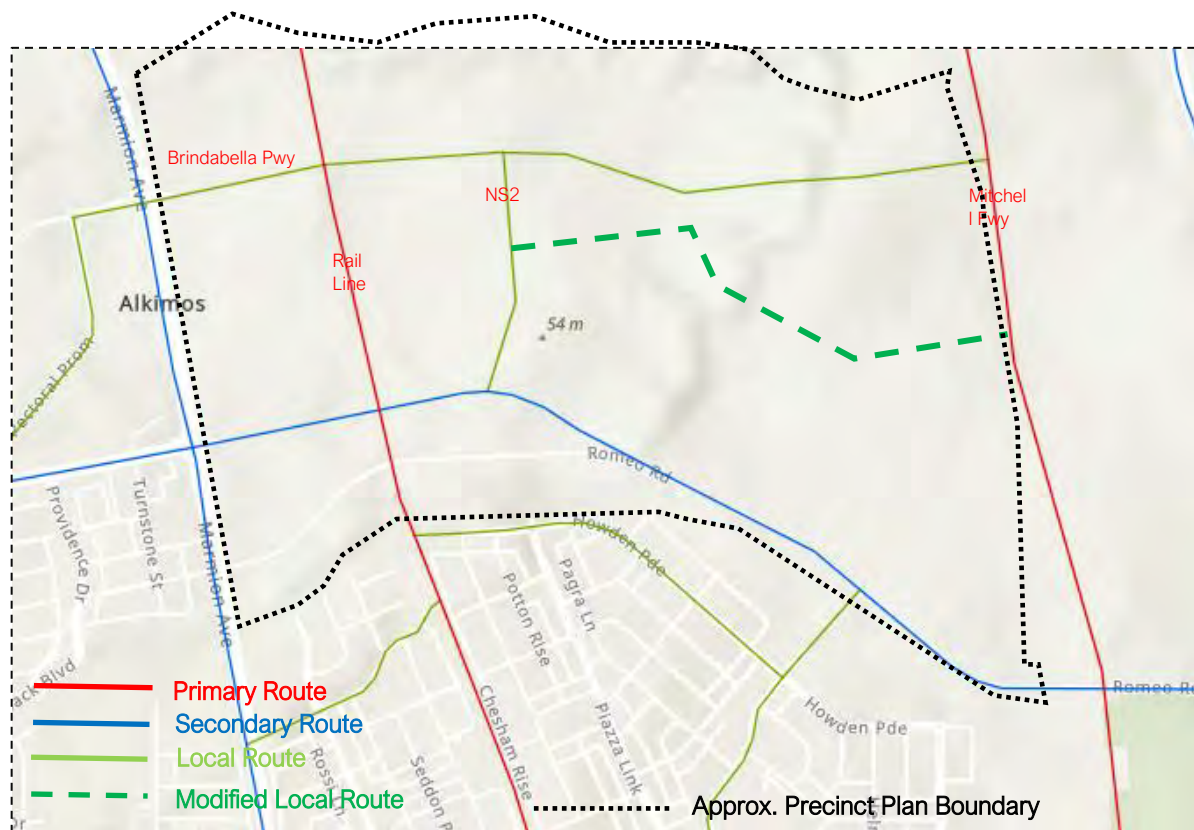
- NS1
- NS2
- Brindabella Parkway

PROPOSED TRANSPORT NETWORKS

- Tuart Drive
- Romeo Road.

These facilities will effectively provide for the cycle routes proposed in the Long Term Cycle Network (LTCN) as shown below in Figure 4.3. The section of the Local Route east of the proposed NS2 alignment shown in the LTCN may need to be modified to follow the proposed alignment of Tuart Drive to the east towards Mitchell Freeway. This local route is thus able to be maintained from the activity centre out to the Mitchell freeway. This is noted by the dash green linework.

Figure 4.3: Long Term Cycle Network near Precinct



In the subdivision stage process and approvals, pedestrian and cycling infrastructure will be detailed and included in detailed designs in accordance Department of Transport's Planning and *Designing for Bike Riding in Western Australia, Shared and Separate Paths*.

At a more detailed level bicycle parking and end-of-trip facilities will be considered as part of an integrated transport plan and parking management strategy for the activity centre precinct. This will be developed as a separate exercise by DevelopmentWA and will guide these requirements for individual developments within the precinct and also detail public realm facilities if and where required.

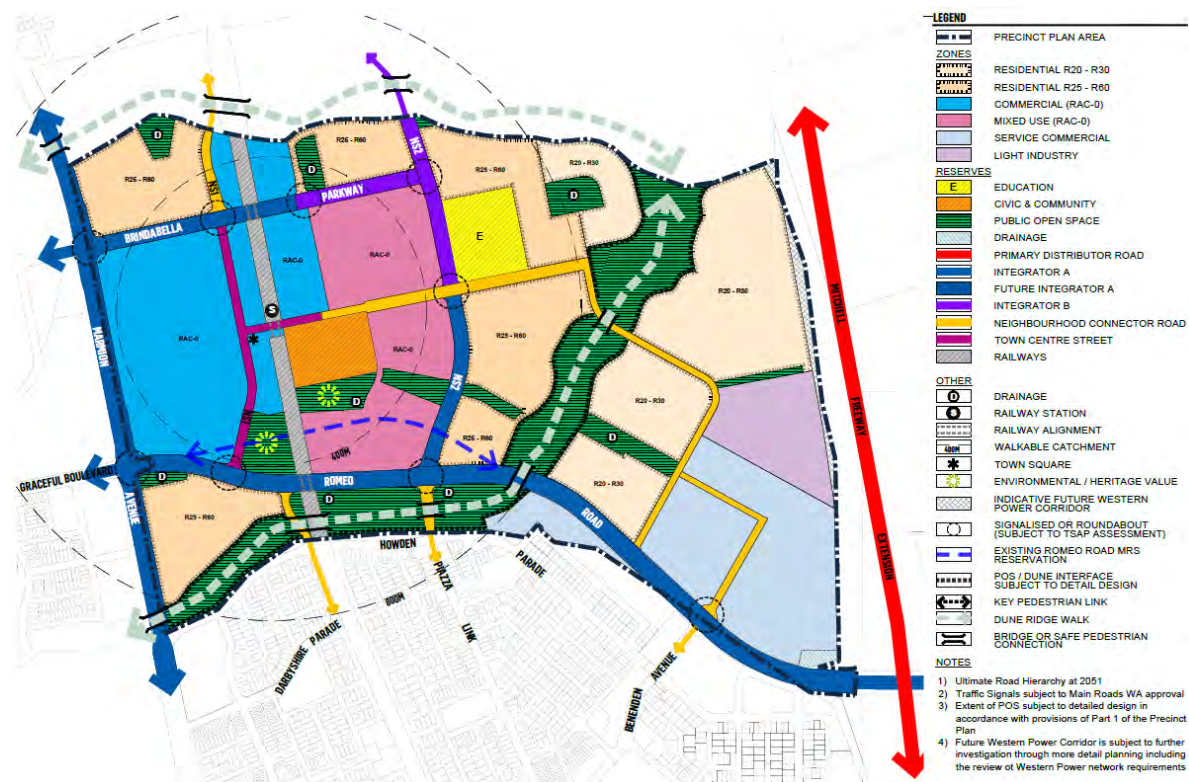
4.5.2. Station Catchment Analysis

The Alkimos Train Station is located adjacent to several higher density land uses such as the retail, office space, school, and recreational facility. Access to the station is to be supported via an extensive active transport network.

Analysis has been completed to determine the 400m and 800m walking catchment for the station. This analysis indicates that all higher density uses are contained within a 400m and 800m walking catchment.

The analysis map is contained in Figure 4.4.

Figure 4.4: Station Walkability Catchment (400m and 800m)



Source: Alkimos Centre Precinct Plan, Urbis, March 2023

4.6. Public Transport Routes

The proposed Yanchep Rail Extension is a 14.5km rail line proposed by the Western Australian government connecting the existing Butler Station to Yanchep to the north of the site. This project has commenced construction and is expected to be completed by 2023 with a station proposed at Alkimos located within the Precinct Plan. Additional stations are proposed at Yanchep and Eglinton north of the proposed Alkimos Station.

A map of the proposed Yanchep Rail Extension is contained in Figure 4.5.

Figure 4.5: Yanchep Rail Extension Map



Source: METRONET Yanchep Rail Extension, July 2018

To service the proposed development and provide connectivity to the proposed train station it is expected that several feeder bus routes will run radially to the station from surrounding suburbs. Preliminary information has been provided by the PTA for future bus services that will service Alkimos Central. Information provided by PTA indicates the suburbs serviced and their general route of travel. However, the route utilised within Alkimos Central has not been finalised.

As discussed above the design of the NS1 – Main Street prioritises pedestrian movements over vehicle movements. There are also several street alignments that intersect with NS1 that have fixed locations due to adjoining lot depths and minimum developable areas. The design of NS1 has tight turn radii and narrow traffic lanes which prioritises safer pedestrian movements and therefore does not result in a suitable environment as a bus corridor.

This restriction of vehicles on NS1 is further supported by the requirement for the intersection of NS1 and Romeo Road which due to the proximity to Marmion Avenue is limited to a Left in – left out – right in configuration and does not allow a right-out vehicle movement.

The road network planning that has been undertaken for the ACPP supports bus access to the station via Marmion Avenue, along Brindabella Parkway then entering the station through the proposed eastern access (the same access used by all other bus services to the eastern side of the rail). Consistent with the Transport Impact Assessment undertaken for the Alkimos Train Station (NEWest Alliance, Rev C 25-Aug-2021) there is provision for a left-in only bus movement into the bus station from the northern portion of NS1 before the pedestrian treatments. NEWest have confirmed that the proposed bus movements from NS1 are limited to left-in movements only with all other entry and exit movements to occur on the eastern side of the rail line. The proposed routes in and out of the bus station are shown in Figure 4.6.

It is acknowledged that this does result in marginally longer trips for the 480, 482 and STS services (south-west quadrant). However, with this being so minor, it should not adversely impact the attractiveness of the uses of buses as a viable mode to/from the Alkimos Train Station and surrounds, particularly as there is no planned bus stop opportunities between the Station and the current stops on Graceful Boulevard (482 and STS) Given this, it is considered acceptable in the context of achieving the 'people and place' focus that METRONET is advocating in proximity to stations.

Details of the proposed routes and frequencies are provided in Table 4.1 on the following page.

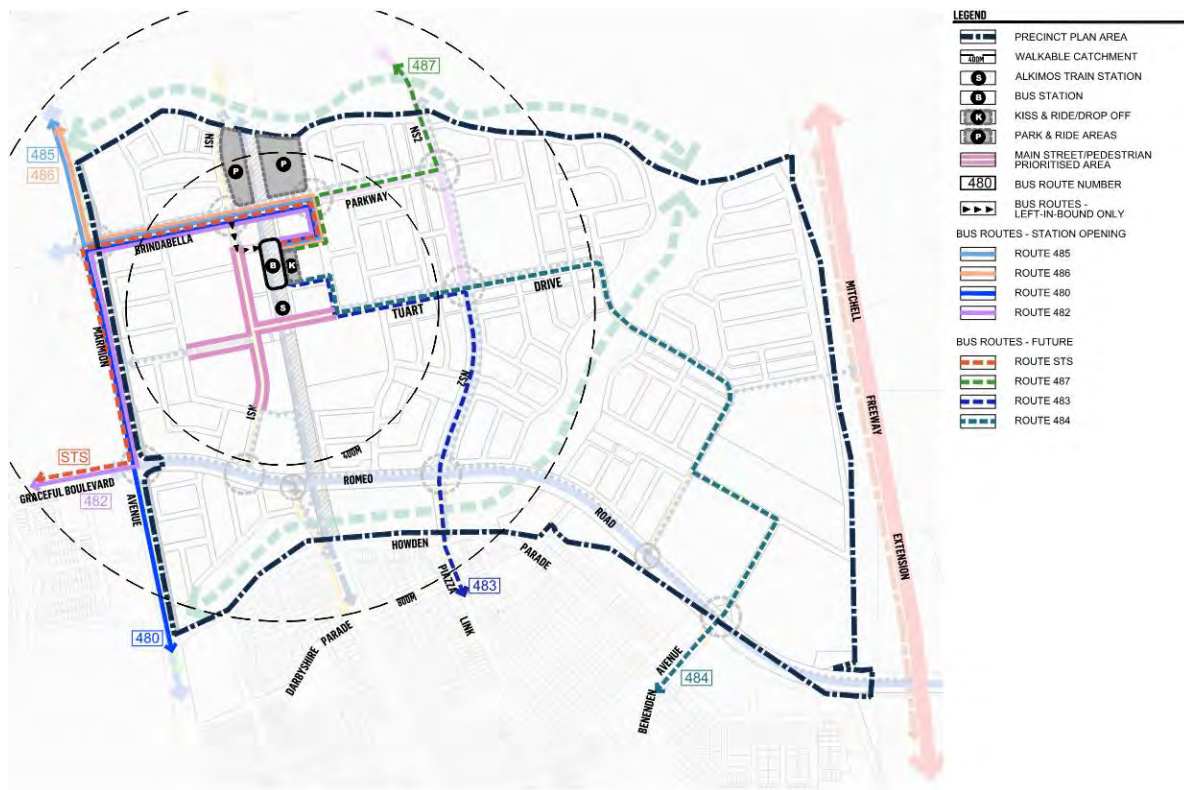
It is noted that the PTA cannot confirm the arrangement regarding the proposed bus movements at this stage as Transperth is still in discussion with the NEWest Alliance. The PTA will notify the City of Wanneroo once a bus arrangement has been confirmed.

Table 4.1: Road Based Public Transport Provision

Service	Route Number	Route Description	Frequency On / Off Peak
Bus	480	Clarkson Stn via Marmion Av to Alkimos Central Station	10mins On / 30mins Off
Bus	482	Clarkson Stn via Jindee Estate & Alkimos Beach to Alkimos Central Station	10mins On / 30mins Off
Bus	483	Clarkson / Butler Stns to Alkimos Central Station	10mins On / 30mins Off
Bus	484	Clarkson / Butler Stns to Alkimos Central Station	10mins On / 30mins Off
Bus	485	Eglinton Stn via Shorehaven West to Alkimos Central Station	10mins On / 30mins Off
Bus	486	Eglinton Stn via Marmion Av to Alkimos Central Station	10mins On / 30mins Off
Bus	487	Eglinton Stn via Shorehaven East to Alkimos Central Station	10mins On / 30mins Off
Bus	STS (special transit service)	Eglinton Stn to Alkimos Central Station	10mins On / 15mins Off

PROPOSED TRANSPORT NETWORKS

Figure 4.6: Bus Network Planning



Source: Alkimos Central Precinct Plan, Urbis, 2022

5. INTEGRATION WITH SURROUNDING AREA

05

5.1. Major Trip Attractors and Generators

Typically, a Transport Impact Assessment will consider major trip attractors and generators within 800m of a Precinct Plan.

Trip generators within 800m of the Precinct Plan include all the surrounding residential subdivisions including Trinity, Alkimos Beach, Alkimos Vista and Shorehaven.

The substantial mixed use, office and retail land uses proposed within the Alkimos Central retail core are likely to be attractors of trips for residents both internal and external to the subdivision. The Precinct Plan allows direct connections to adjacent residential developments to the north and south via internal local distributor roads designated as NS1 and NS2 with connections to other neighbouring suburbs achieved through Marmion Avenue and the Mitchell Freeway via Romeo Road.

Alkimos Central is well placed between the two lower order District Centres of Butler and Eglinton and approximately halfway between the two Strategic Metropolitan Centres of Joondalup and Yanchep.

5.2. Changes to Land Uses within 800m

Land uses are not expected to change significantly from the approved Precinct Plans in the vicinity of the Alkimos Centre Precinct Plan. The impact of any changes should be considered upon assessment of those respective structure plans.

5.3. Travel Desire Lines from Precinct Plan to these Attractors / Generators

Travel desire lines to local attractors such as Education and Retail Centre will be well catered for when developed as they are all easily accessible as they are all connected on the major (such as Marmion Avenue and Romeo Road) and minor road (such as NS1 and NS2) network which will cater for motor vehicles, pedestrians, and cyclists.

5.4. Adequacy and Deficiencies in External Transport Networks

A few deficiencies exist in the external road transport network adjoining the site. These are detailed as follows:

- Marmion Avenue has recently been upgraded to a 4-lane dual carriageway standard to cater for the future traffic generated from the development and adjoining developments.
- Romeo Road, a proposed 4-lane dual carriageway standard east-west road is currently unconstructed. This road is needed to provide access to Wanneroo Road to the east and interchange with the Mitchell Freeway.
- The Mitchell Freeway is proposed to be extended to bypass the east of the Precinct Plan. In the initial stages, it will run to the proposed Romeo Road project, funnelling the freeway traffic to Marmion Avenue in the interim until the ultimate extension is constructed bypassing Alkimos Central.

The proposed staged nature of Marmion Avenue may result in considerable traffic congestion and from a traffic operation point of view, a 3rd southbound lane on Marmion Avenue could allow for traffic intending to turn left onto Romeo Road to reduce the queue length for the southbound movements. This 3rd lane has

been designed for and can be accommodated within the existing road reserve widths provided however there is no nexus on the ACPD to develop or contribute toward the 3rd lane upgrade.

The proposed staged construction of the Mitchell Freeway Extension will result in high traffic volumes being funnelled onto Romeo Road and then Marmion Avenue, potentially resulting in considerable traffic congestion in peak periods.

The proposed roads to be constructed as discussed above, should also provide active transport connections and crossing points in the initial stages, to encourage active transport usage and provide adequate levels of infrastructure for safe transport.

Similarly, the proposed roads will need to cater for adequate road public transport routing in an interim and long-term scenario, which may be different for each development stage.

5.5. Remedial Measures to Address Deficiencies

The identified deficiencies in the road network such as the potential congestion on Romeo Road and Marmion Avenue in the short term can be alleviated/mitigated by a potential 3rd lane on Marmion Avenue southbound between Brindabella Parkway and Romeo Road. In the medium term (10 years, to 2031), it is expected traffic congestion on Marmion Avenue and to a lesser extent, Romeo Road will exceed available capacity. The proposed Mitchell Freeway extension to bypass the Precinct Plan should be planned to be completed within 10 years prior to 2031 which will result in significant reduction in traffic volumes on Marmion Avenue and Romeo Road. Although a 3rd lane has been designed and accommodated for in the road reserve width, the upgrade to create the additional lane is not tied to the ACPD development.

6. ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

06

6.1. Assessment Year(s) and Time Period(s)

The ACPP has a long development period of 30 years. As such this Precinct Plan TIA has assessed the following design horizons:

- 10-year design horizon - 2031
- 20-year design horizon - 2041
- Ultimate Development - 2051

Key intersections have been assessed for the 10-year design horizon (2031) to determine anticipated levels of traffic operations. The ultimate development (2051) has been assessed to determine the required road hierarchy and in turn ultimate road cross-sectional requirements as per the WAPC Guidelines for TIAs for Structure Planning. The volumes assigned to each assessment is based on the ROM24 data provided by MRWA for the area, noting that the 2031 ROM24 information does not consider the completion of the freeway extension, therefore displays significant volumes on Marmion Avenue and Romeo Road. The 2041 dataset considers the extension and displays a reduction in the volumes on the aforementioned roads.

The full staging of the Precinct Plan is proposed as follows; this is an indicative plan for development which is subject to change dependant on market conditions.

Figure 6.1: Indicative Alkimos Central Precinct Plan Staging



Source: GTA, 2020

6.2. Precinct Plan Generated Traffic

6.2.1. Vehicle Trip Generation

Trip generations for the proposed land uses were taken from accepted values used by the *Institute of Transportation Engineers (ITE)* and as referenced in the *WAPC Transport Impact Assessment Guidelines* as referenced below in Table 6.1a. A comparison of rates between the *ITE 9th Edition* (used) and the *11th Edition* has been undertaken for the uses noted in the table below. There is a negligible difference in the rates between the two editions, with the assessment initiated utilising the *9th Edition* still relevant for use.

Table 6.1: Trip Generation Rate Sources

Land Use	Trip Generation Reference
Residential (lots)	WAPC guidelines
Office	WAPC guidelines
Industrial	WAPC guidelines
Shopping	WAPC guidelines
Service Commercial	ITE - 110
Specialty Retail	ITE - 826
Church	ITE - 560
Warehousing	ITE - 150
Hospital	ITE - 610
P n R	AECOM / PTA
Aquatic Centre	ITE - 492
School	ITE - 520
Tafe	ITE - 540

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Trip generation rates are contained in Table 6.2.

Table 6.2: Trip Generation Rates

		Residential (lots) (trips per lot)	Office (trips per 100m ²)	Shopping (trips per 100m ²)	Specialty Retail (trips per 100m ²)	Service Commercial (trips per 100m ²)	Hospital (trips per bed)	P n R (trips per space)	Aquatic Centre (trips per ha)	School (trips per student)
AM	Production	0.53	0.40	0.63	0.33	0.24	0.95	0.15	2.37	0.5
	Attraction	0.18	1.60	0.63	0.31	0.96	0.37	0.56	2.37	0.5
PM	Production	0.26	1.60	2.50	0.21	0.96	0.47	0.47	7.13	0.5
	Attraction	0.44	0.40	2.50	0.26	0.24	0.95	0.16	7.13	0.5

The trip generation of the site for the 10-year design horizon, 20-year design horizon and ultimate development are contained in Table 6.3. These were based on the supplied land use staging provided by DevelopmentWA in Table 6.4 on the following page.

Table 6.3: Trip Generation

Year	Period	Generated	Attracted	Total
2032	AM Peak	612	583	1195
	PM Peak	936	863	1799
2042	AM Peak	1503	1498	3001
	PM Peak	2298	2005	4302
2052	AM Peak	2178	2344	4522
	PM Peak	3516	2954	6470

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Table 6.4: Land Use Staging

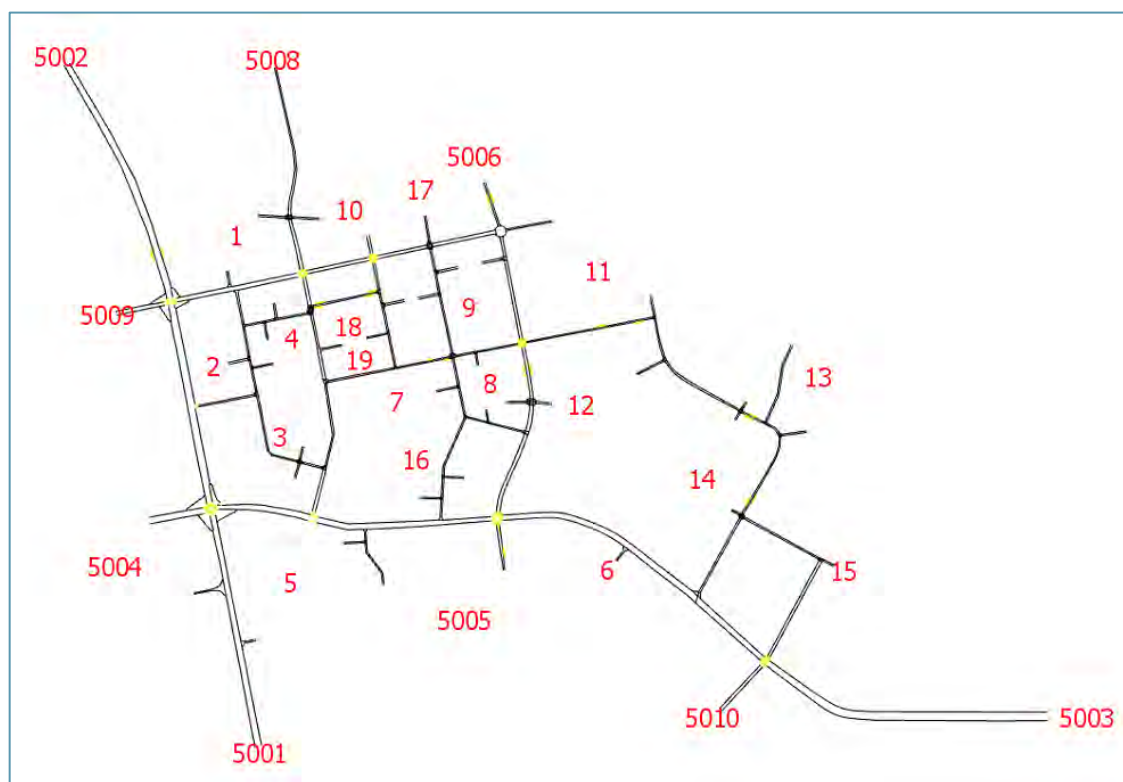
Land Uses	2022-2032	2032-2042	2042-2052	Total GFA (2052)
PRI	0	0	0	0
MAN	1,721	8,606	6,884	17,211
STO	6,746	9,444	10,793	26,983
SER	8,016	11,222	12,825	32,063
<i>Service Commercial</i>	<i>5,210</i>	<i>7,294</i>	<i>8,336</i>	<i>20,841</i>
<i>Showroom</i>	<i>2,805</i>	<i>3,928</i>	<i>4,489</i>	<i>11,222</i>
SHP	18,090	25,327	28,945	72,362
<i>Main Shopping Centre</i>	<i>16,281</i>	<i>22,794</i>	<i>26,050</i>	<i>65,126</i>
<i>Convenience Centre/Main Street/Mixed Use</i>	<i>1,809</i>	<i>2,533</i>	<i>2,894</i>	<i>7,236</i>
ENT	4,094	5,731	6,550	16,374
<i>Library/Community Centre</i>	<i>1,146</i>	<i>1,605</i>	<i>1,834</i>	<i>4,585</i>
<i>Aquatic Centre/Indoor Recreation</i>	<i>860</i>	<i>1,204</i>	<i>1,375</i>	<i>3,439</i>
<i>Taverns</i>	<i>614</i>	<i>860</i>	<i>982</i>	<i>2,456</i>
<i>Gyms</i>	<i>819</i>	<i>1,146</i>	<i>1,310</i>	<i>3,275</i>
<i>Other</i>	<i>655</i>	<i>917</i>	<i>1,048</i>	<i>2,620</i>
RET	7,181	10,054	11,490	28,725
OFF	10,687	53,437	42,750	106,875
HEL	20,331	97,412	78,496	196,239
<i>Public Admin</i>	<i>1,179</i>	<i>1,650</i>	<i>1,886</i>	<i>4,715</i>
<i>Order, Safety and Regulatory Services</i>	<i>1,860</i>	<i>9,301</i>	<i>7,440</i>	<i>18,601</i>
<i>Non-Tertiary Education</i>	<i>641</i>	<i>3,204</i>	<i>2,563</i>	<i>6,408</i>
<i>Tertiary and Adult Education</i>	<i>3,139</i>	<i>15,697</i>	<i>12,558</i>	<i>31,394</i>
<i>Hospitals</i>	<i>4,567</i>	<i>22,836</i>	<i>18,269</i>	<i>45,672</i>
<i>Medical and Other Health Care Services</i>	<i>3,932</i>	<i>19,658</i>	<i>15,726</i>	<i>39,316</i>
<i>Residential Care Services</i>	<i>1,180</i>	<i>5,902</i>	<i>4,722</i>	<i>11,804</i>
<i>Social Assistance Services</i>	<i>1,536</i>	<i>7,681</i>	<i>6,145</i>	<i>15,362</i>
<i>Personal and Other Services</i>	<i>2,297</i>	<i>11,483</i>	<i>9,187</i>	<i>22,967</i>
RES	0	0	0	0
UTE	2,704	3,786	4,327	10,817
Total	79,570	225,018	203,060	507,648

6.2.2. Vehicle Trip Distribution and Assignment

Traffic generation was distributed onto the road network using the following assumptions:

- The network was disaggregated into 19 zones, with each zone including a single or mix of land uses, as contained in Figure 6.2 (5000 series zones are external zones, low series zones are internal zones)
- The development generated traffic was split between internal trips and intra trips.
- The external traffic distribution was informed by the ROM24 model extracts provided by Main Roads WA on the 7th of October 2019. The distribution is based on this model, with some variation applied to reflect more realistic local distribution patterns. The ROM24 model plots provided are shown attached in Appendix B.

Figure 6.2: Traffic Assessment Zones



6.3. Extraneous (Through) Traffic

The Precinct Plan in its current form provides links to Trinity in the south and Alkimos Vista to the north. These links are provided by a Neighbourhood Connector B NS1 and a District Distributor B NS2 (nominated as the equivalent Integrator A in Figure 4.1) running north-south through the Precinct Plan.

Due to their nature, Marmion Avenue and Romeo Road both carry a significant volume of through (background) traffic not attributed to the ACPP area. This significant level of traffic has impacts on the operations of intersections on Marmion Avenue and Romeo Road, with some intersections exceeding capacity prior to the Mitchell Freeway extension north of Romeo Road. Should intersections exceed capacity, it is expected the extraneous traffic may seek alternative routes around the site (naturally redistribute) potentially leading to the intersections to operate at capacity.

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

The through traffic on Marmion Avenue and Romeo Road adjacent the Precinct Plan is expected to reduce post 2031 when the Mitchell Freeway extension is expected to be completed. This will provide a major free-flow alternative north-south route for through traffic and is expected to significantly reduce the peak traffic on Marmion Avenue and Romeo Road. The volumes used for each year scenario assessed is based on the ROM24 volumes provided by MRWA and refined based on the detailed of the ACPP. ROM24 information is presented in Appendix B.

The 2051 external traffic volumes are contained in Figure 6.3 and Figure 6.4 for the AM peak and PM peak respectively.

Figure 6.3: External Traffic Flows – 2051 – AM Peak



Figure 6.4: External Traffic Flows – 2051 – PM Peak



6.4. Design Traffic Flows

The expected AM and PM Peak design traffic flows based on the extraneous traffic and development generated traffic are contained in Figure 6.5 and Figure 6.6. Anticipated all-day volumes assuming a typical 10% peak hour are shown in Figure 6.7 based on the critical PM peak volumes. Larger copies of these plans are included in Appendix C.

It is noted that the design traffic flows used in the LinSIG modelling at the intersections of Marmion Avenue / Romeo Road and Marmion Avenue / Brindabella Parkway in 2031 are based on the turning volumes provided by Main Roads WA, provided as an operational directive to enable the assessment of the ACPP to progress. These volumes therefore differ slightly from the volumes reported in this TIA due to more granular land use assumptions within this TIA.

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Figure 6.5: Design Traffic Flows – 2051 – AM Peak

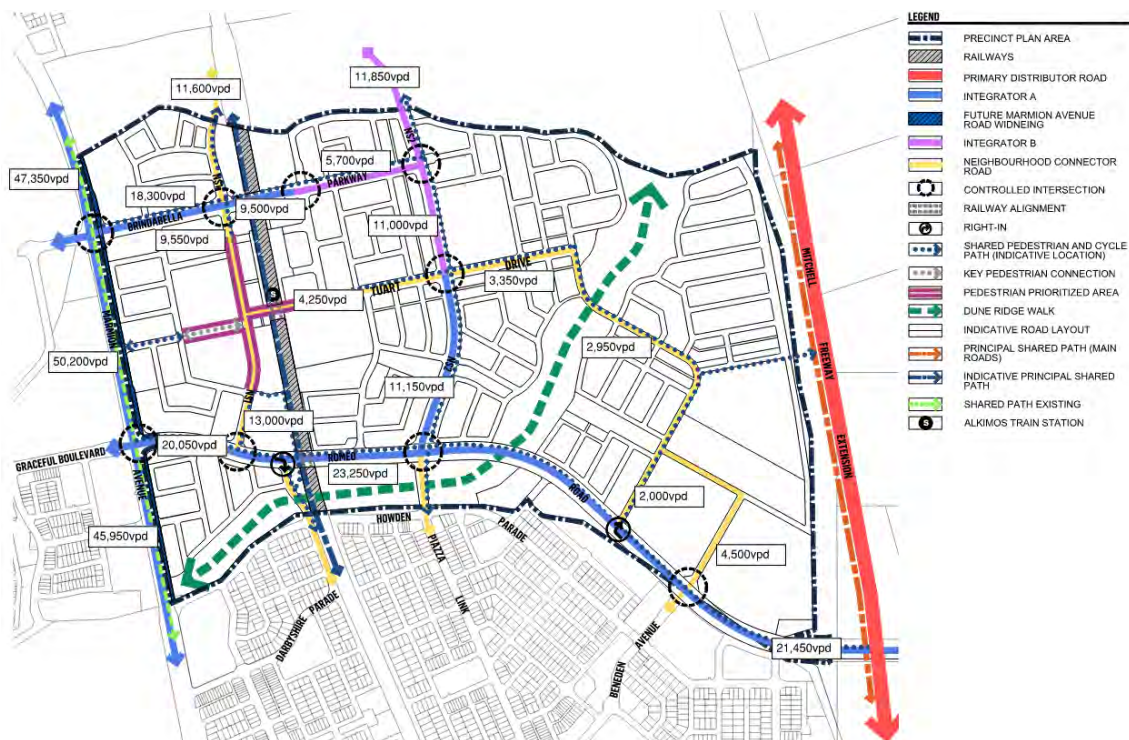


Figure 6.6: Design Traffic Flows – 2051 – PM Peak



ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Figure 6.7: Forecast Design Traffic Flows (background + development) – 2051 – Daily Flows (10% peak hour)



Source: Base plan, Urbis 2021. Volumes added by GTA Consultants.

The indicative upper volumes and target speeds for the road classifications outlined in Figure 4.1 have been summarised in Table 6.5 below. These are based on *Liveable Neighbourhood* Guidelines.

Table 6.5: Road Hierarchy

Road Classification	Indicative upper volume (vpd)	Target Speed (km/h)
Primary Distributor	35,000 (4 lanes) – 50,000 (6 lanes)	80km/h
Integrator A	15,000 – 35,000	60km/h – 70km/h
Integrator B	15,000	60km/h
Neighbourhood Connector	7,000	50km/h

The 2051 modelled daily volumes presented in Figure 6.7 generally align with the target volumes outlined in Table 6.5, except for:

- **Marmion Avenue** is a 4-lane carriageway where the 4-lane sections are anticipated to exceed the upper limit with 50,000vpd expected to travel along the Primary Distributor, most vehicles trips are attributed to external traffic. The Marmion Avenue road reserve width has provision for a three lanes should an upgrade be required, however there is no nexus on the ACPP to develop or contribute toward the 3rd lane upgrade.

- **NS1** is designated as a Neighbourhood Connector and is anticipated to record a maximum of around 13,000vpd exceeding the 7,000vpd upper limit indicated in Table 6.5. However, the trips attributed to NS1 are travelling to/from the Alkimos Retail Core where a low-speed environment is acceptable and promoted within the vicinity. Furthermore, the volumes are modelled for a 30-year horizon to 2051 where potential upgrades or strategies could be implemented alleviate any potential issues that arise.

6.5. Intersection Analysis

The proposed Precinct Plan results in several intersections operating at capacity or near capacity prior to the Mitchell Freeway Extension. As a result of this, these intersections have been modelled utilising the preliminary design traffic for the 10-year design horizon (this is theoretically the worst performance prior to the planned Mitchell Freeway extension). The Marmion Avenue intersections and Romeo Road / Benenden Avenue intersection have been modelled in LinSIG¹ and other critical intersections in SIDRA.

This TIA demonstrates the major intersections within the ACPP area can function at an acceptable level of service up to 2031.

The modelled intersections are shown in Figure 6.8.

Figure 6.8: Proposed Intersection Controls



*Romeo Road / Benenden Avenue three-way is being delivered by MRWA

¹ The Marmion Avenue intersections and Romeo / Benenden intersection were modelled in LinSIG as a requirement of MRWA for the completion of Stage 2 of the Traffic Signal Approval Policy that is currently underway concurrently with this TIA assessment.

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Marmion Avenue & Brindabella Parkway

The Marmion Avenue / Brindabella Parkway intersection is expected to operate poorly for some approaches in 2031 but achieves an overall intersection with Degree of Saturation equal or less than 100% in both AM and PM peaks in accordance with Main Roads WA Modelling Guidelines.

The modelled intersection geometry is shown in Figure 6.9 and intersection operational results in Table 6.6.

Figure 6.9: Marmion Avenue / Brindabella Parkway - Intersection Geometry

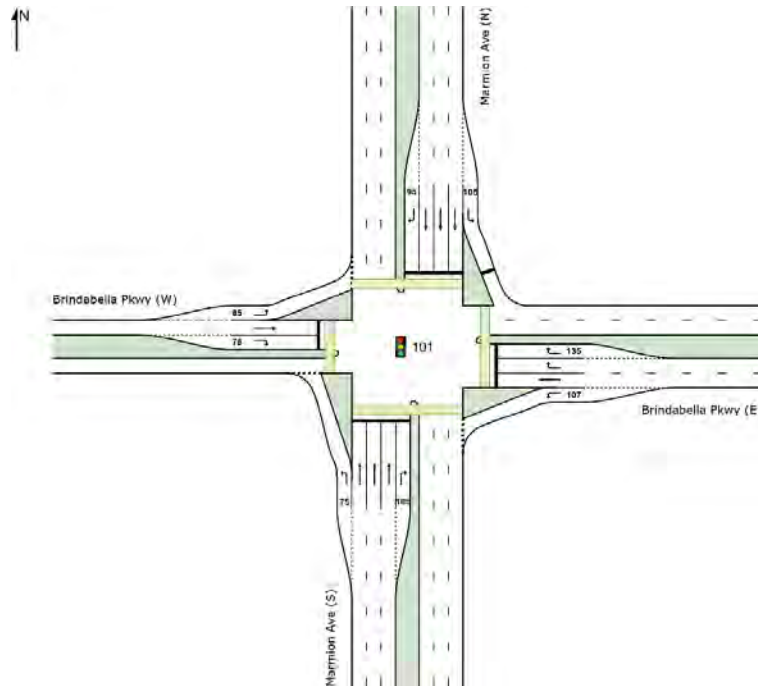


Table 6.6: Marmion Avenue / Brindabella Parkway Intersection Performance 2031

	AM			PM		
Arm	DOS	LOS	Mean Maximum Queue (pcu)	DOS	LOS	Mean Maximum Queue (pcu)
Marmion Ave (S)	0.99	F	23.0	0.78	D	27.0
Brindabella Pkwy (E)	1.00	F	29.7	0.94	F	30.8
Marmion Ave (N)	1.00	F	47.5	0.94	F	30.8
Brindabella Pkwy (W)	0.28	E	3.9	0.34	F	2.7
Intersection	1.00	E	47.5	0.94	D	30.8

Marmion Avenue & Romeo Road

The Marmion Avenue / Romeo Road intersection is expected to operate poorly in 2031 achieving a Degree of Saturation beyond 100% in the PM peak. This is a result of the extraneous through (background) traffic utilising Romeo Road and Marmion Avenue. Once the Mitchell Freeway extension bypasses the site the intersection operations are expected to return to satisfactory levels.

The LOS F in 2031 is an interim congestion issue created by the staged extension of the Freeway that is unavoidable, but temporary. The traffic volumes on Romeo Road near Marmion Road reduce from in the order of 29,300 – 31,000vpd in 2031, to 19,000 – 25,100 in 2041, and 20,000 in 2051 – a reduction of approximately 35%. Designing an ultimate solution to carry the high traffic volumes expected in the short-term will have significant bearing on road reservation widths and will result in a vastly oversized road and intersection network.

The modelled intersection geometry is shown in Figure 6.10 and intersection operational results in Table 6.7.

Figure 6.10: Marmion Avenue / Romeo Road - Intersection Geometry

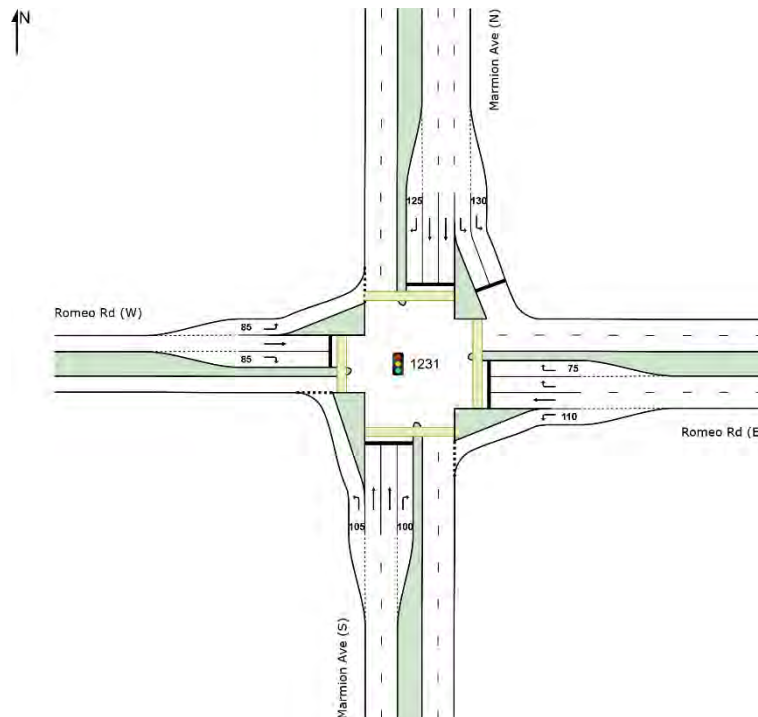


Table 6.7: Marmion Avenue / Romeo Road Intersection Performance 2031

	AM			PM		
Arm	DOS	LOS	Mean Maximum Queue (pcu)	DOS	LOS	Mean Maximum Queue (pcu)
Marmion Ave (S)	0.90	F	18.3	1.03	F	23.1
Romeo Rd (E)	0.94	F	26.7	1.15	F	148.8
Marmion Ave (N)	0.95	D	74.8	1.14	F	68.7
Graceful Blvd (W)	0.91	F	14.8	1.14	F	42.4
Intersection	0.95	D	74.8	1.15	F	68.7

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Brindabella Parkway / NS1

The Brindabella Parkway / NS1 intersection is expected to operate well in 2031 achieving a Level of Service of B in the AM peak and Level of Service C in the PM peak.

The modelled intersection geometry is shown in Figure 6.11 and intersection operational results in Table 6.8.

Figure 6.11: Brindabella Parkway / NS1 - Intersection Geometry

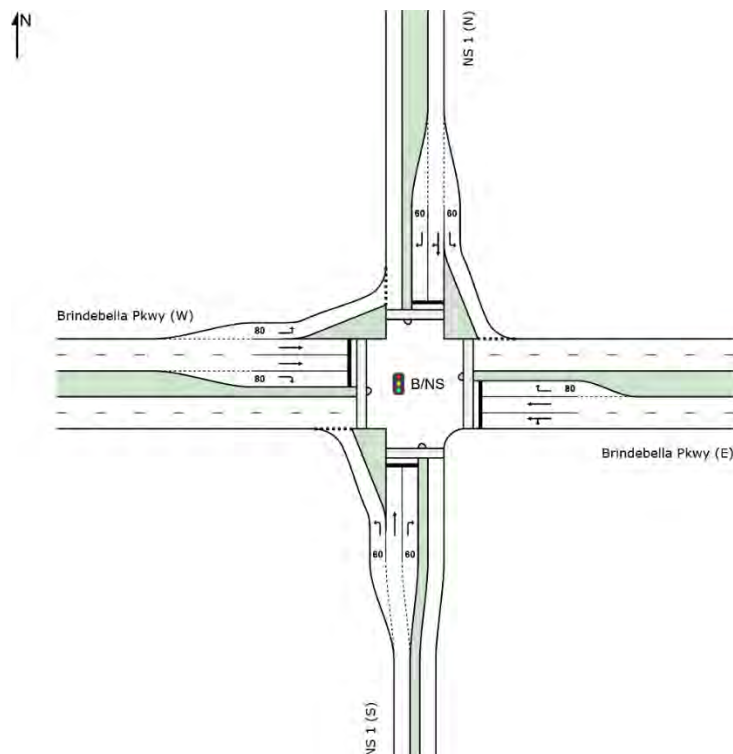


Table 6.8: Brindabella Parkway / NS1 Intersection Performance 2031

Arm	AM			PM		
	DOS	LOS	95th %ile Queue (m)	DOS	LOS	95th %ile Queue (m)
NS 1 (S)	0.49	B	34m	0.46	B	18m
Brindabella Pkwy (E)	0.01	B	0m	0.01	B	0m
NS 1 (N)	0.37	D	20m	0.76	D	55m
Brindabella Pkwy (W)	0.47	B	25m	0.78	C	46m
Intersection	0.49	C	36m	0.78	C	55m

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Romeo Road / NS1

The Romeo Road / NS1 intersection is expected to operate well in 2031 achieving a Level of Service of A in both AM and PM peaks.

The modelled intersection geometry is shown in Figure 6.12 and intersection operational results in Table 6.9.

Figure 6.12: Romeo Road / NS1 – Intersection Geometry

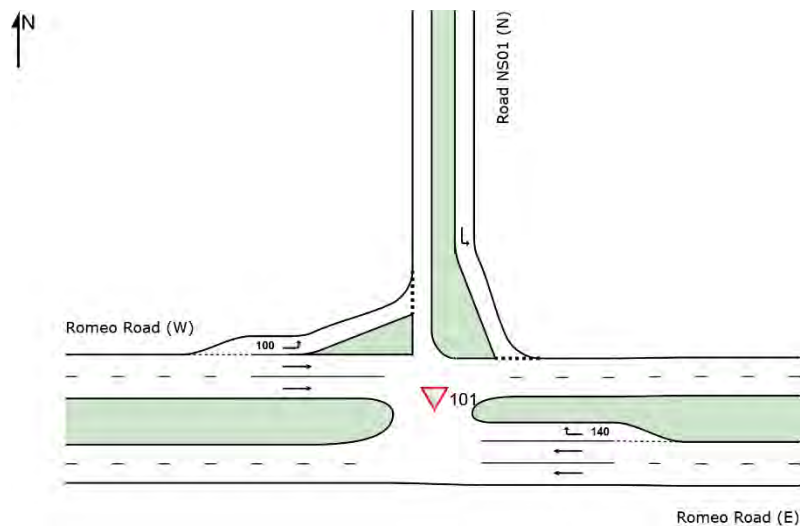


Table 6.9: Romeo Road / NS1 – Intersection Performance 2031

	AM			PM		
Arm	DOS	LOS	95th %ile Queue (m)	DOS	LOS	95th %ile Queue (m)
Romeo Rd (E)	0.25	-	8m	0.18	-	6m
NS 1 (N)	0.10	A	3m	0.17	A	5m
Romeo Rd (W)	0.22	A	2m	0.11	A	4m
Intersection	0.25	-	8m	0.18	-	6m

ANALYSIS OF INTERNAL & EXTERNAL TRANSPORT NETWORKS

Romeo Road / NS2

The Romeo Road / NS2 intersection is expected to operate well in 2031 achieving a Level of Service of C in both AM and PM peaks.

The modelled intersection geometry is shown in Figure 6.13 and intersection operational results in Table 6.10.

Figure 6.13: Romeo Road / NS2 – Intersection Geometry

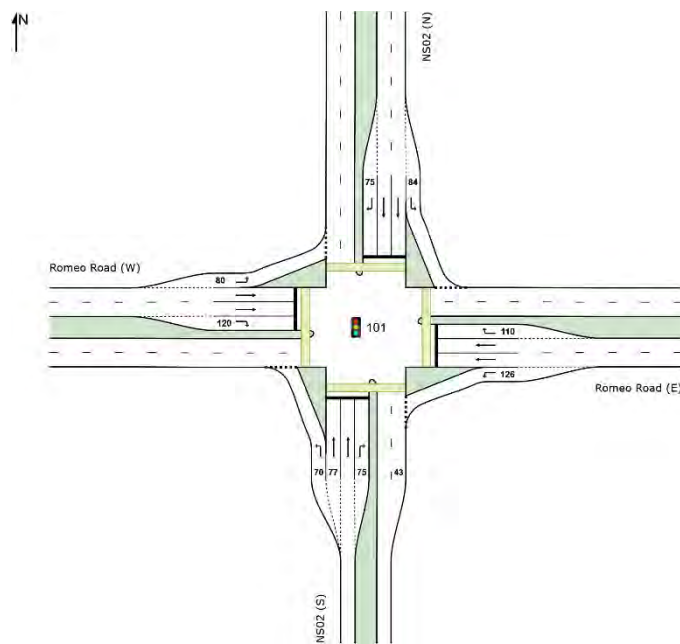


Table 6.10: Romeo Road / NS2 – Intersection Performance 2031

Arm	AM			PM		
	DOS	LOS	95th %ile Queue (m)	DOS	LOS	95th %ile Queue (m)
NS 2 (S)	0.08	C	3m	0.13	C	5m
Romeo Rd (E)	0.25	B	60m	0.73	C	78m
NS 2 (N)	0.59	D	25m	0.41	C	17m
Romeo Rd (W)	0.71	C	105m	0.48	C	44m
Intersection	0.71	C	105m	0.73	C	78m

Romeo Road / Benenden Avenue

Romeo Road / Benenden Avenue is being constructed as a three-way intersection by MRWA and will be upgraded to a four-way intersection (with the connection from the north) as part of this Precinct development.

The intersection operates at a LOS E with a DoS of 0.99 in both the AM and PM peak periods in 2031. As previously discussed, the traffic volumes on Romeo Road will decrease with the extension of Mitchell Freeway which will improve the performance of the intersection. The four-way intersection layout has received Stage 2 TSAP approval from MRWA.

Figure 6.14: Romeo Road / Benenden Avenue – Intersection Geometry

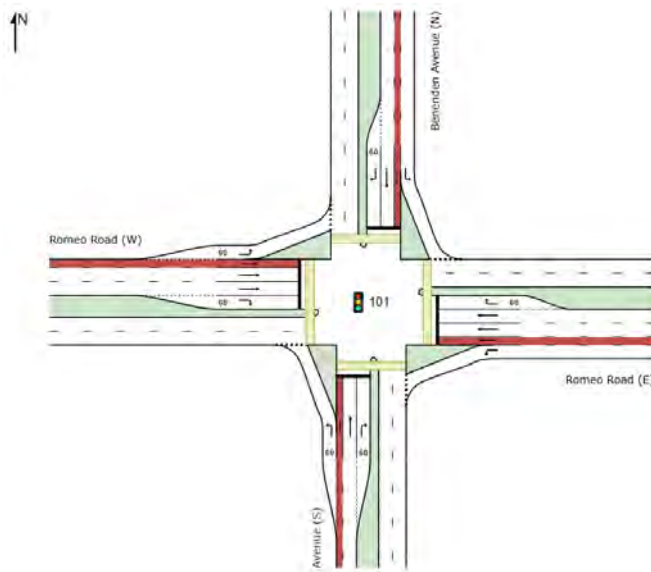


Table 6.11: Romeo Road / Benenden Avenue – Intersection Performance 2031

	AM			PM		
Arm	DOS	LOS	95th %ile Queue (m)	DOS	LOS	95th %ile Queue (m)
Benenden Ave (S)	0.85	F	95m	0.48	E	37m
Romeo Rd (E)	0.62	C	84m	0.99	E	304m
Benenden Ave (N)	0.23	C	19m	0.50	A	46m
Romeo Rd (W)	0.99	F	300m	0.92	D	78m
Intersection	0.99	E	300m	0.99	E	304m

6.6. Safe Routes to Schools

Within the Precinct Plan there is one proposed Primary School located centrally within Alkimos Central. The proposed school is well serviced by the proposed shared paths in the Precinct Plan, along with the footpaths on all local streets. Safe pedestrian crossings will be provided adjacent to the primary school at intersections and mid-block locations (to be determined as a part of the detailed design). Consideration will need to be given to the safe crossing of school students at the intersection of Tuart Drive and NS2 when determining the form of intersection control during future development stages as this is the logical crossing point of NS2 for students access the primary school.

External to Alkimos Central there are several other schools: Alkimos Primary School, Alkimos College and St James Anglican School. These schools will be accessible by the extensive path network proposed in the Precinct Plan. Protected pedestrian crossing points will be provided along Marmion Avenue and Romeo Road at signalised intersections to access the schools external to the Precinct Plan.

7. CONCLUSION

07

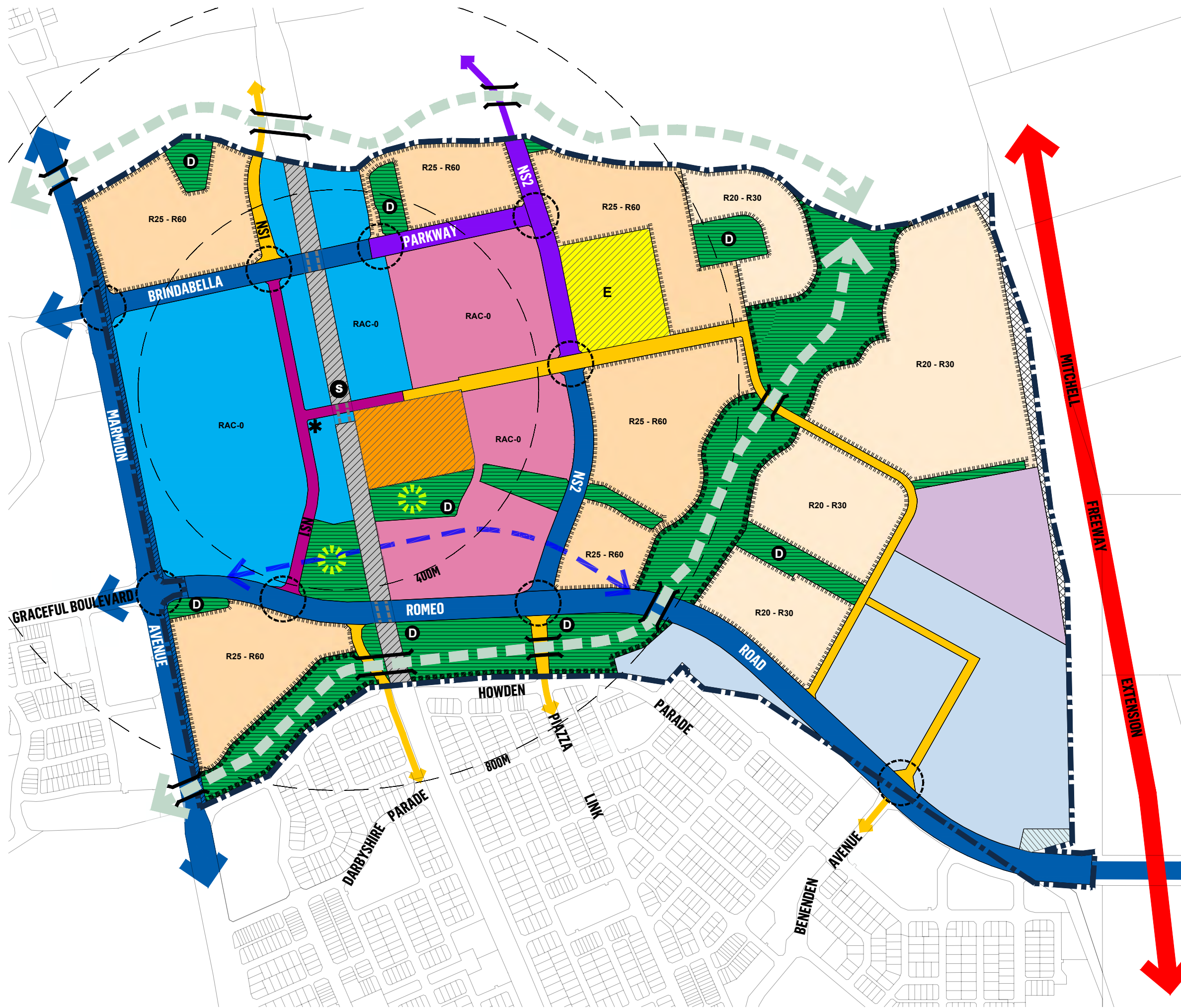
This Transport Impact Assessment Report has been prepared in support of the revised Alkimos Central Precinct Plan.

Based on the analysis and discussions presented within this report, the following conclusions are made:

1. Alkimos Central will be a Secondary Activity Centre to service the 25km corridor of coastal development between the Strategic Regional Centres of Joondalup and Yanchep.
2. The development of Alkimos Central is projected to occur over a longer than typical 30 years, and as such, the challenge is to provide the necessary infrastructure to support the vehicle trips and existing mode preference of today's users, whilst balancing the aspirational goals of increased public transport, walking, and cycling mode shares and the rapid technological advancements effecting travel behaviours for the future.
3. The proposed site will include approximately 2,500 dwellings, 106,800sqm of commercial office space, 101,000 sqm of retail and 76,300qm of service commercial space when completely developed.
4. As Alkimos Central is built around the future Alkimos Train station and bus transfer station, the Precinct Plan has focussed on providing high amenity for active transport links both internally and from surrounding developments into Alkimos Central.
5. There has been a conscious decision to design the transport network within Alkimos Central such that it encourages alternative and sustainable modes of transport through providing increased pedestrian and cycling safety and amenity, permeable and legible bus access. Much of the centre is within a walkable 400m catchment of the railway station and bus station.
6. The proposed transport network has been designed with consideration of the existing and future transport network to provide good connectivity for all modes of travel.
7. A comprehensive network of shared paths will be provided along internal higher order roads (Neighbourhood Connectors and Integrators) and footpaths will be provided along all remaining roads. Pedestrian crossings will be provided at intersections and mid-block locations as required.
8. The site is expected to generate 3,000 trips per hour and 4,300 trips per hour for the AM and PM peak respectively in 2042 (20-year design horizon) and 4,522 trips per hour and 6,470 trips per hour for the AM and PM peak respectively when fully developed in 2051.
9. The road network within the Precinct Plan has been determined based on daily volume thresholds and demand for on-street parking in accordance with *Liveable Neighbourhoods*.
10. The land uses are consistent with previous planning for the Precinct Plan. Traffic impacts are expected to exceed the capacity of the network in 2031 at several intersections on Marmion Avenue and Romeo Road. This is attributed to the high traffic volumes of the extraneous through traffic that is passing the site. The completion of the planned Mitchell Freeway extension north of Romero Road will reduce this extraneous traffic resulting on these roads beyond this point in time and operate more satisfactorily.

A.PROPOSED PRECINCT PLAN





LEGEND

PRECINCT PLAN AREA

ZONES

RESIDENTIAL R20 - R30

RESIDENTIAL R25 - R60

COMMERCIAL (RAC-0)

MIXED USE (RAC-0)

SERVICE COMMERCIAL

LIGHT INDUSTRY

RESERVES

EDUCATION

CIVIC & COMMUNITY

PUBLIC OPEN SPACE

DRAINAGE

PRIMARY DISTRIBUTOR ROAD

INTEGRATOR A

FUTURE INTEGRATOR A

INTEGRATOR B

NEIGHBOURHOOD CONNECTOR ROAD

TOWN CENTRE STREET

RAILWAYS

OTHER

DRAINAGE

RAILWAY STATION

RAILWAY ALIGNMENT

WALKABLE CATCHMENT

TOWN SQUARE

ENVIRONMENTAL / HERITAGE VALUE

INDICATIVE FUTURE WESTERN POWER CORRIDOR

SIGNALISED OR ROUNDABOUT (SUBJECT TO TSAP ASSESSMENT)

EXISTING ROMEO ROAD MRS RESERVATION

POS / DUNE INTERFACE SUBJECT TO DETAIL DESIGN

KEY PEDESTRIAN LINK

DUNE RIDGE WALK

BRIDGE OR SAFE PEDESTRIAN CONNECTION

- NOTES**
- 1) Ultimate Road Hierarchy at 2051

2) Traffic Signals subject to Main Roads WA approval

3) Extent of POS subject to detailed design in accordance with provisions of Part 1 of the Precinct Plan

4) Future Western Power Corridor is subject to further investigation through more detail planning including the review of Western Power network requirements

B.ROM24 PLOTS

B

2031 ROM24 Link Volume Plot

All Day

Based on Mitchell Freewy Extension 2031 Network Scenario 7

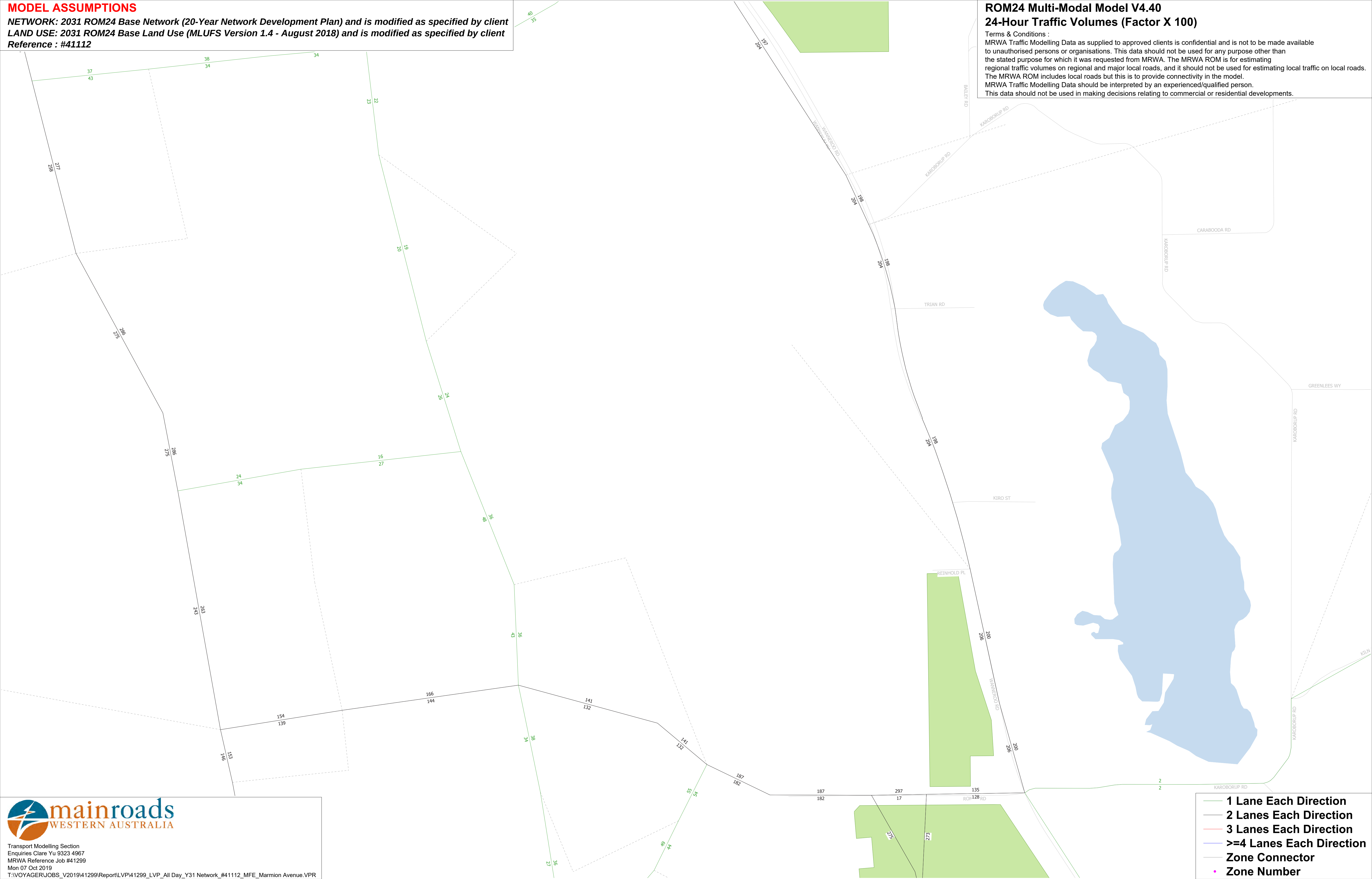
Marmion Avenue

MODEL ASSUMPTIONS

NETWORK: 2031 ROM24 Base Network (20-Year Network Development Plan) and is modified as specified by client
LAND USE: 2031 ROM24 Base Land Use (MLUFS Version 1.4 - August 2018) and is modified as specified by client
Reference : #41112

ROM24 Multi-Modal Model V4.40
24-Hour Traffic Volumes (Factor X 100)

Terms & Conditions :
MRWA Traffic Modelling Data as supplied to approved clients is confidential and is not to be made available to unauthorised persons or organisations. This data should not be used for any purpose other than the stated purpose for which it was requested from MRWA. The MRWA ROM is for estimating regional traffic volumes on regional and major local roads, and it should not be used for estimating local traffic on local roads. The MRWA ROM includes local roads but this is to provide connectivity in the model.
MRWA Traffic Modelling Data should be interpreted by an experienced/qualified person.
This data should not be used in making decisions relating to commercial or residential developments.



Transport Modelling Section
Enquiries Clare Yu 9323 4967
MRWA Reference Job #41299
Mon 07 Oct 2019
T:\VOYAGER\JOBS_V2019\41299\Report\LVP\41299_LVP_All Day_Y31 Network_#41112_MFE_Marmion Avenue.VPR

- 1 Lane Each Direction
- 2 Lanes Each Direction
- 3 Lanes Each Direction
- >=4 Lanes Each Direction
- Zone Connector
- Zone Number

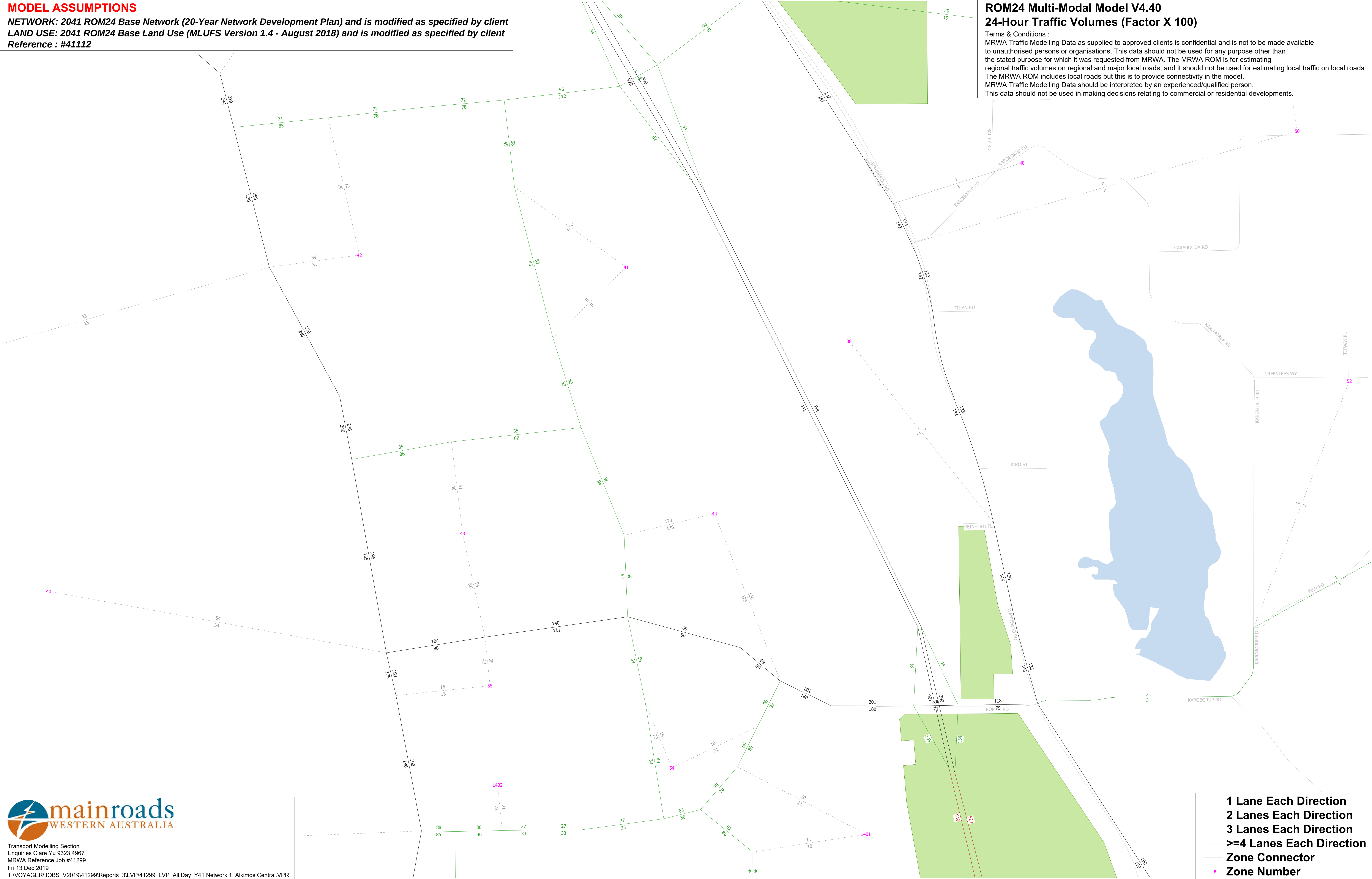
2041 ROM24 Link Volume Plot
All Day
Based on Mitchell Freewy Extension 2041 Network Scenario 1
Marmion Avenue

MODEL ASSUMPTIONS

NETWORK: 2041 ROM24 Base Network (20-Year Network Development Plan) and is modified as specified by client
LAND USE: 2041 ROM24 Base Land Use (MLUFS Version 1.4 - August 2018) and is modified as specified by client
Reference : #41112

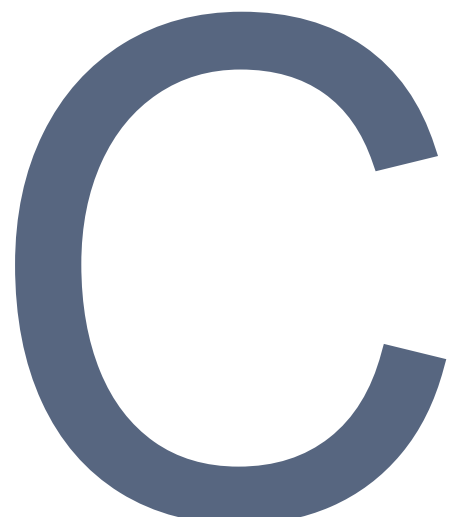
ROM24 Multi-Modal Model V4.40
24-Hour Traffic Volumes (Factor X 100)

Terms & Conditions :
MRWA Traffic Modelling Data as supplied to approved clients is confidential and is not to be made available to unauthorised persons or organisations. This data should not be used for any purpose other than the stated purpose for which it was requested from MRWA. The MRWA ROM is for estimating regional traffic volumes on regional and major local roads, and it should not be used for estimating local traffic on local roads. The MRWA ROM includes local roads but this is to provide connectivity in the model.
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- 1 Lane Each Direction
- 2 Lanes Each Direction
- 3 Lanes Each Direction
- >=4 Lanes Each Direction
- Zone Connector
- Zone Number

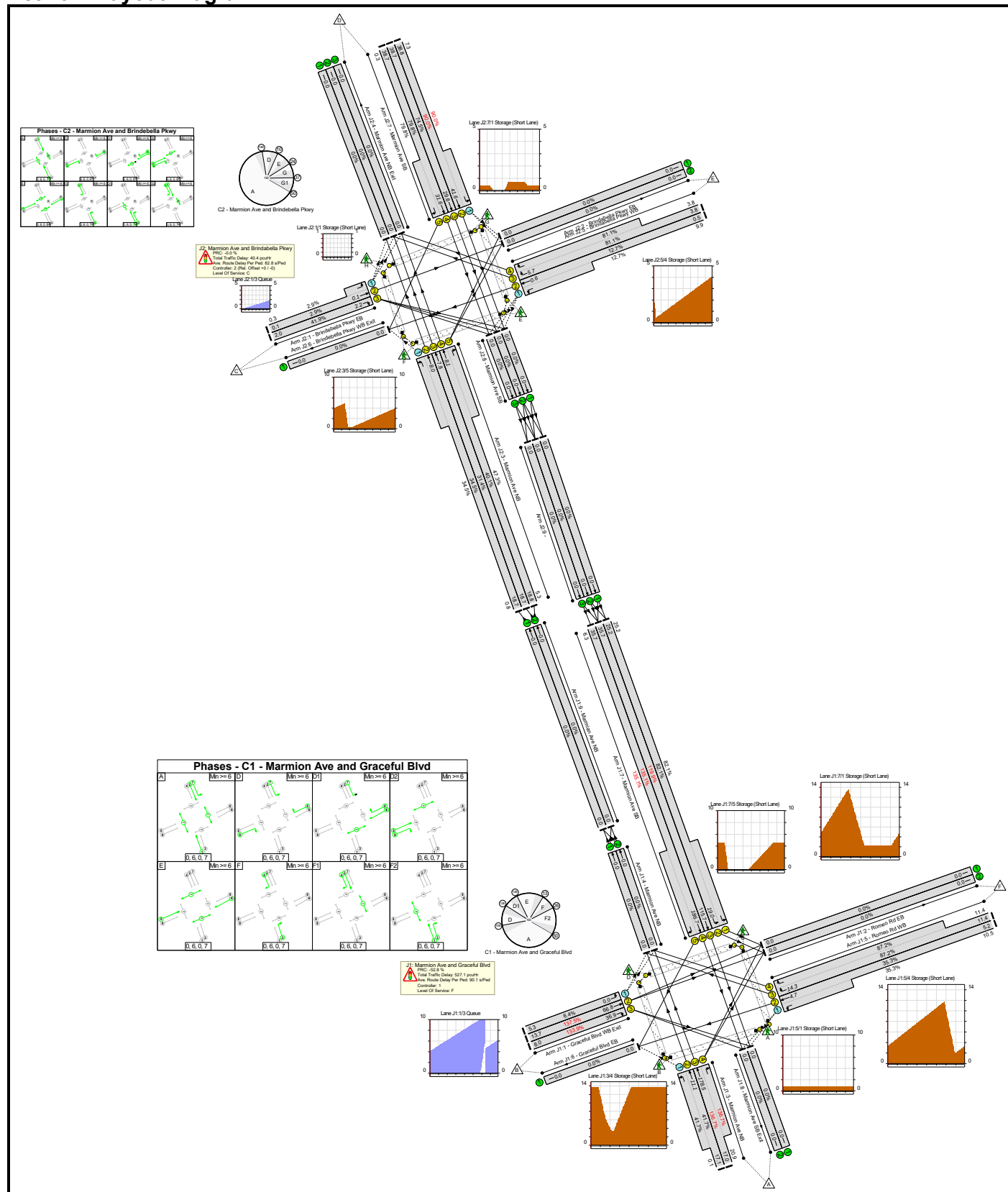
C. INTERSECTION CONTROLS



Main Roads Reports
Main Roads Reports

Project and User Details

Project:	Alkimos Central
Title:	Stage 2 - 2026 - 2031 Full Build of Marmion Avenue
Location:	Alkimos
File name:	200409-Alkimos - Marmion Ave.lsg3x
Author:	Kieran Mann
Company:	GTA Consultants
Address:	Level 2, 5 Mill Street, Perth, WA 6000

Scenario 1: '2032 AM Peak Stage 2 ' (FG1: '2032 AM Peak', Plan 1: 'Network Control Plan 1')
Network Layout Diagram

Main Roads Reports
Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Level Of Service	Mean Max Queue (pcu)
Network: Stage 2 - 2026 - 2031 Full Build of Marmion Avenue	-	-	-	-	-	137.5%	567.4	-	F	-
J1: Marmion Ave and Graceful Blvd	-	-	-	-	-	137.5%	527.1	-	F	-
1/1	Graceful Blvd WB Exit Left	-	126	1965	1965	6.4%	0.0	1.0	A	0.0
1/2	Graceful Blvd WB Exit Ahead	17	328	2105	239	137.5%	60.0	658.5	F	66.8
1/3	Graceful Blvd WB Exit Right	11	193	1965	144	133.9%	33.0	616.4	F	36.9
2/1	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	75	413	1965:1965	982+7	41.7 : 41.7%	3.1	26.6	C	11.1
3/3+3/4	Marmion Ave NB Right Ahead	75:30	910	1965:1965	299+366	136.7 : 136.7%	149.2	590.4	F	178.5
4/1	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
5/2+5/1	Romeo Rd WB Ahead Left	30	375	1965:1965	351+710	35.3 : 35.3%	2.0	19.6	B	4.7
5/3+5/4	Romeo Rd WB Right	24	548	1965:1965	314+314	87.2 : 87.2%	12.5	82.2	F	14.3
6/1	Graceful Blvd EB	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left	82	1212	1965:1965	738+738	82.1 : 82.1%	9.8	29.0	C	19.0
7/3	Marmion Ave SB Ahead	51	858	2105	716	119.9%	94.6	397.0	F	115.7
7/4+7/5	Marmion Ave SB Right Ahead	51:13	1008	1965:1965	635+111	135.1 : 135.1%	162.8	581.4	F	186.7
8/1	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/1	Marmian Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0

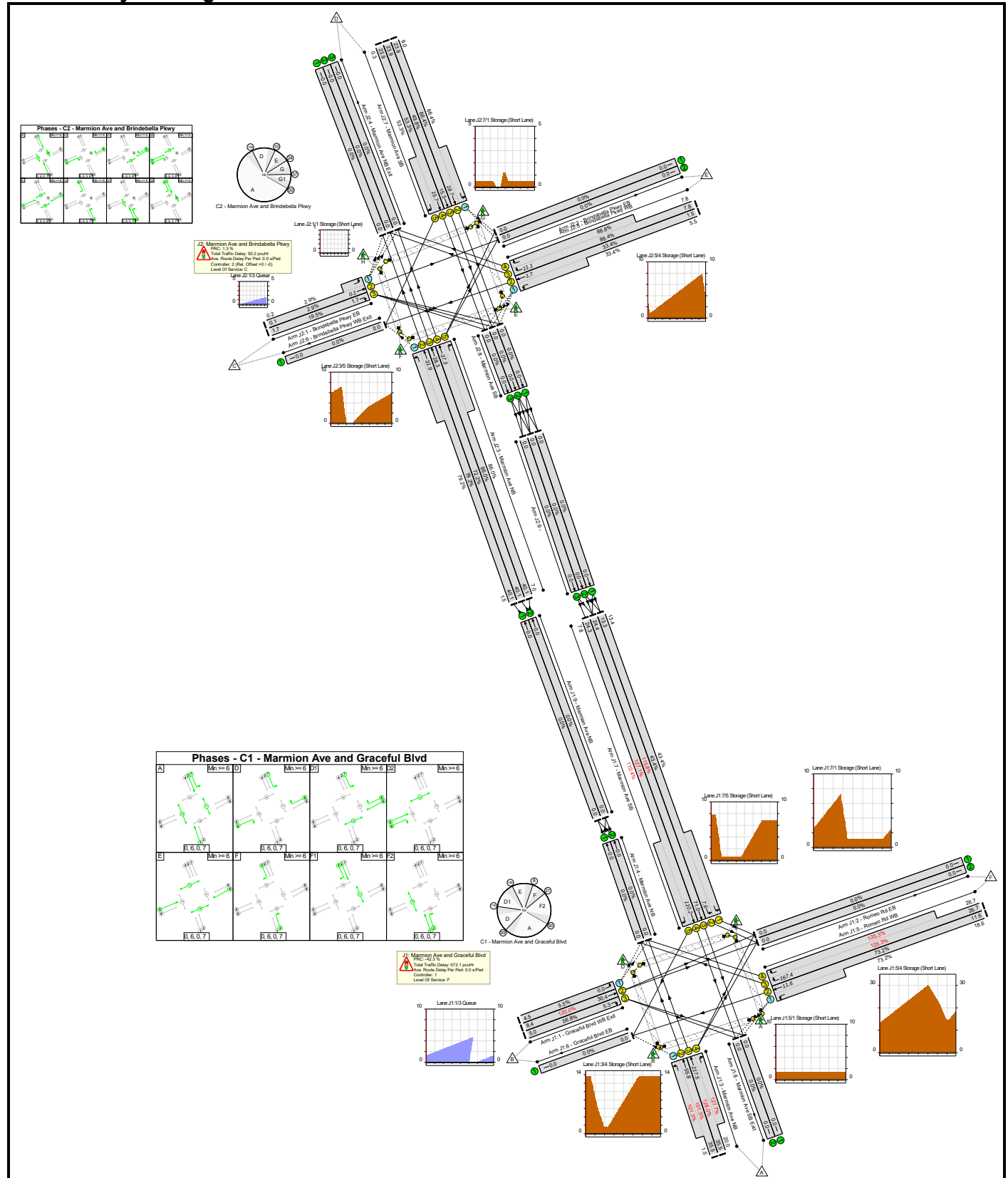
Main Roads Reports

9/2	Marmion Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	Unnamed Ped Link	3	40	-	1440	2.8%	0.7	66.1	-	1.7
Ped Link: P2	Unnamed Ped Link	3	40	-	1440	2.8%	0.8	75.1	-	1.7
Ped Link: P3	Unnamed Ped Link	3	40	-	1440	2.8%	0.6	54.1	-	1.7
Ped Link: P4	P4	3	40	-	1440	2.8%	0.8	75.1	-	1.7
J2: Marmion Ave and Brindabella Pkwy	-	-	-	-	-	90.0%	40.4	-	C	-
1/2+1/1	Brindebella Pkwy EB Ahead Left	8	9	1965:1965	103+205	2.9 : 2.9%	0.1	28.6	C	0.1
1/3	Brindebella Pkwy EB Right	8	47	2105	112	41.9%	1.3	96.1	F	2.2
2/1	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	102	467	1965:1965	1301+52	34.5 : 34.5%	1.5	11.6	B	8.0
3/3	Marmion Ave NB Ahead	102	449	2105	1431	31.4%	1.4	11.6	B	7.8
3/4+3/5	Marmion Ave NB Right Ahead	102:19	576	1965:2105	1121+267	40.1 : 47.3%	3.7	23.3	C	8.1
4/1	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/3	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
5/2+5/1	Brindabella Pkwy WB Ahead Left	8	250	1965:1965	102+1863	12.7 : 12.7%	0.3	4.6	A	0.6
5/3+5/4	Brindabella Pkwy WB Right	8	182	2105:2105	112+112	81.1 : 81.1%	5.5	109.0	F	5.7
6/1	Brindebella Pkwy WB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left Ahead	89	1107	1965:1965	1034+195	90.0 : 90.0%	11.2	36.4	D	41.6
7/3	Marmion Ave SB Ahead	89	930	2105	1249	74.5%	7.2	27.8	C	29.6
7/4+7/5	Marmion Ave SB Right Ahead	89:6	936	1965:1965	1166+8	79.8 : 79.8%	8.1	31.3	C	31.6

Main Roads Reports

8/1	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Ahead	-	0	2105	2105	0.0%	0.0	0.0	-	0.0
8/3	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
9/1	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/2	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/3	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	P1	3	40	-	1440	2.8%	0.6	52.3	-	1.7
Ped Link: P2	P2	3	40	-	1440	2.8%	0.5	45.8	-	1.7
Ped Link: P3	P3	3	40	-	1440	2.8%	0.8	75.1	-	1.7
Ped Link: P4	P4	3	40	-	1440	2.8%	0.8	75.1	-	1.7
C1 - Marmion Ave and Graceful Blvd		PRC for Signalled Lanes (%):	-52.8	Total Delay for Signalled Lanes (pcuHr):		527.04	Cycle Time (s): 150			
C2 - Marmion Ave and Brindebella Pkwy		PRC for Signalled Lanes (%):	-0.0	Total Delay for Signalled Lanes (pcuHr):		40.36	Cycle Time (s): 150			
		PRC Over All Lanes (%):	-52.8	Total Delay Over All Lanes(pcuHr):		567.44				

Network Layout Diagram



Main Roads Reports

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Level Of Service	Mean Max Queue (pcu)
Network: Stage 2 - 2026 - 2031 Full Build of Marmion Avenue	-	-	-	-	-	128.0%	622.3	-	F	-
J1: Marmion Ave and Graceful Blvd	-	-	-	-	-	128.0%	572.1	-	F	-
1/1	Graceful Blvd WB Exit Left	-	109	1965	1965	5.5%	0.0	1.0	A	0.0
1/2	Graceful Blvd WB Exit Ahead	12	202	2105	168	120.0%	26.1	465.1	F	30.4
1/3	Graceful Blvd WB Exit Right	16	119	1965	210	56.8%	2.8	83.3	F	5.3
2/1	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	65	889	1965:1965	841+37	101.3 : 101.3%	29.0	117.6	F	55.8
3/3+3/4	Marmion Ave NB Right Ahead	65:35	1333	1965:1965	665+377	128.0 : 127.7%	187.3	505.8	F	217.5
4/1	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
5/2+5/1	Romeo Rd WB Ahead Left	35	725	1965:1965	380+611	73.2 : 73.2%	5.3	26.4	C	11.6
5/3+5/4	Romeo Rd WB Right	39	1280	1965:1965	511+511	125.3 : 125.3%	164.5	462.8	F	167.4
6/1	Graceful Blvd EB	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left	82	641	1965:1965	737+739	43.4 : 43.4%	3.7	20.6	C	7.6
7/3	Marmion Ave SB Ahead	36	585	2105	505	115.8%	57.6	354.6	F	71.0
7/4+7/5	Marmion Ave SB Right Ahead	36:13	772	1965:1965	460+170	127.1 : 110.4%	95.7	446.4	F	110.2
8/1	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/1	Marmion Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0

Main Roads Reports

9/2	Marmion Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	Unnamed Ped Link	3	0	-	1440	0.0%	0.0	0.0	-	0.0
Ped Link: P2	Unnamed Ped Link	3	0	-	1440	0.0%	0.0	0.0	-	0.0
Ped Link: P3	Unnamed Ped Link	3	0	-	1440	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1440	0.0%	0.0	0.0	-	0.0
J2: Marmion Ave and Brindabella Pkwy	-	-	-	-	-	88.8%	50.2	-	C	-
1/2+1/1	Brindebella Pkwy EB Ahead Left	8	7	1965:1965	104+138	2.9 : 2.9%	0.1	36.7	D	0.1
1/3	Brindebella Pkwy EB Right	15	41	2105	210	19.5%	0.8	72.6	E	1.7
2/1	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	95	999	1965:1965	1216+45	79.2 : 79.2%	7.3	26.1	C	31.9
3/3	Marmion Ave NB Ahead	95	963	2105	1333	72.2%	6.3	23.4	C	28.3
3/4+3/5	Marmion Ave NB Right Ahead	95:19	1131	1965:2105	1119+197	86.0 : 86.0%	12.0	38.1	D	37.3
4/1	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/3	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
5/2+5/1	Brindabella Pkwy WB Ahead Left	8	166	1965:1965	105+392	33.4 : 33.4%	0.9	19.9	B	1.7
5/3+5/4	Brindabella Pkwy WB Right	15	373	2105:2105	210+210	88.4 : 88.8%	10.3	99.5	F	11.1
6/1	Brindebella Pkwy WB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left Ahead	82	788	1965:1965	863+324	66.4 : 66.4%	4.6	20.9	C	18.7
7/3	Marmion Ave SB Ahead	82	573	2105	1151	49.8%	3.9	24.3	C	15.3
7/4+7/5	Marmion Ave SB Right Ahead	82:6	579	1965:1965	1074+11	53.3 : 53.3%	4.1	25.8	C	15.7

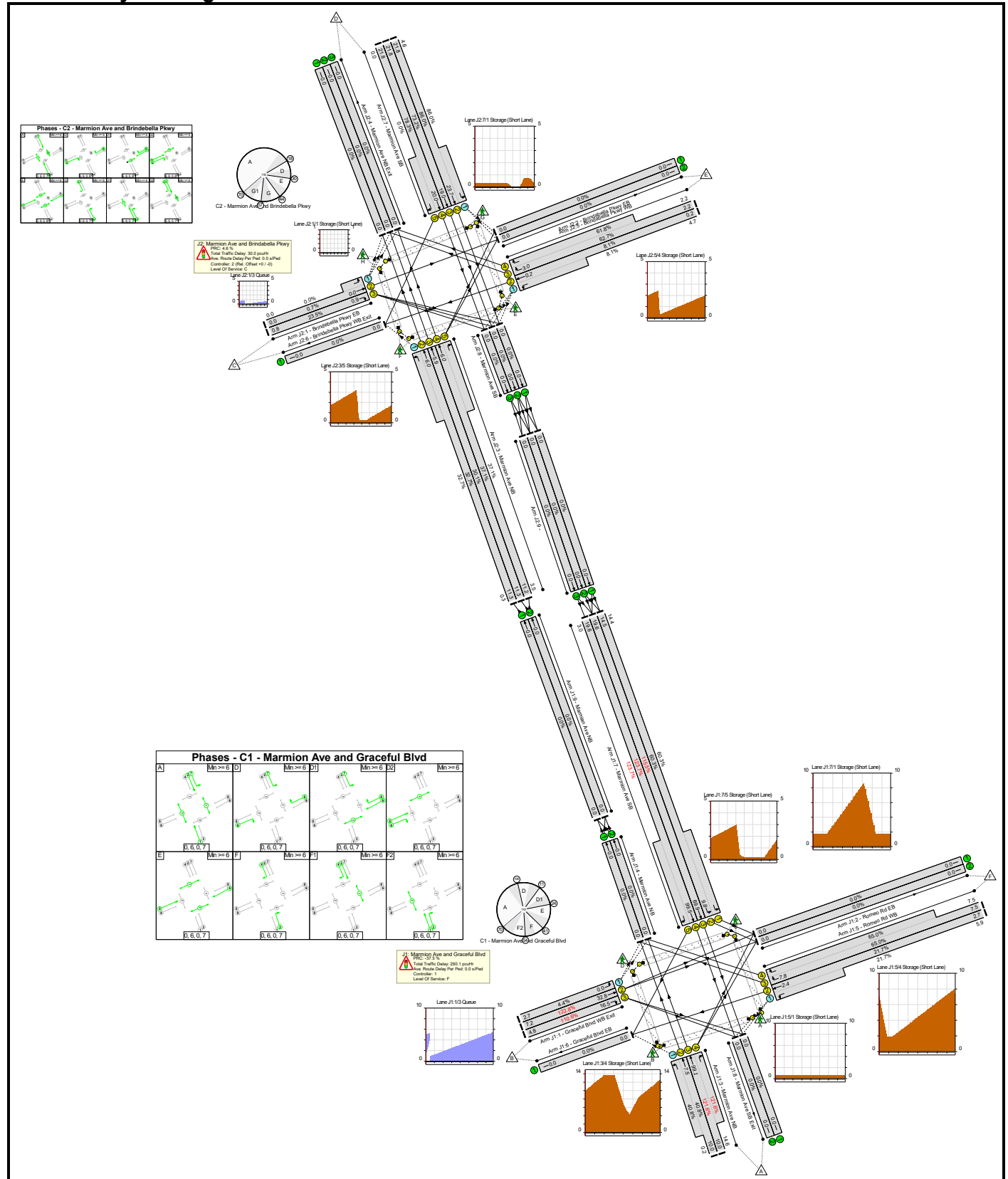
Main Roads Reports

8/1	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Ahead	-	0	2105	2105	0.0%	0.0	0.0	-	0.0
8/3	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
9/1	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/2	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/3	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	P1	3	0	-	1440	0.0%	0.0	0.0	-	0.0
Ped Link: P2	P2	3	0	-	1440	0.0%	0.0	0.0	-	0.0
Ped Link: P3	P3	3	0	-	1440	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1440	0.0%	0.0	0.0	-	0.0
C1 - Marmion Ave and Graceful Blvd C2 - Marmion Ave and Brindebella Pkwy		PRC for Signalled Lanes (%): PRC for Signalled Lanes (%): PRC Over All Lanes (%):	-42.3 1.3 -42.3	Total Delay for Signalled Lanes (pcuHr): Total Delay for Signalled Lanes (pcuHr): Total Delay Over All Lanes(pcuHr):		572.08 50.19 622.30	Cycle Time (s): 150 Cycle Time (s): 150			

Main Roads Reports

Scenario 3: '2027 AM Peak Stage 1' (FG3: '2027 AM Peak', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Main Roads Reports
Network Results

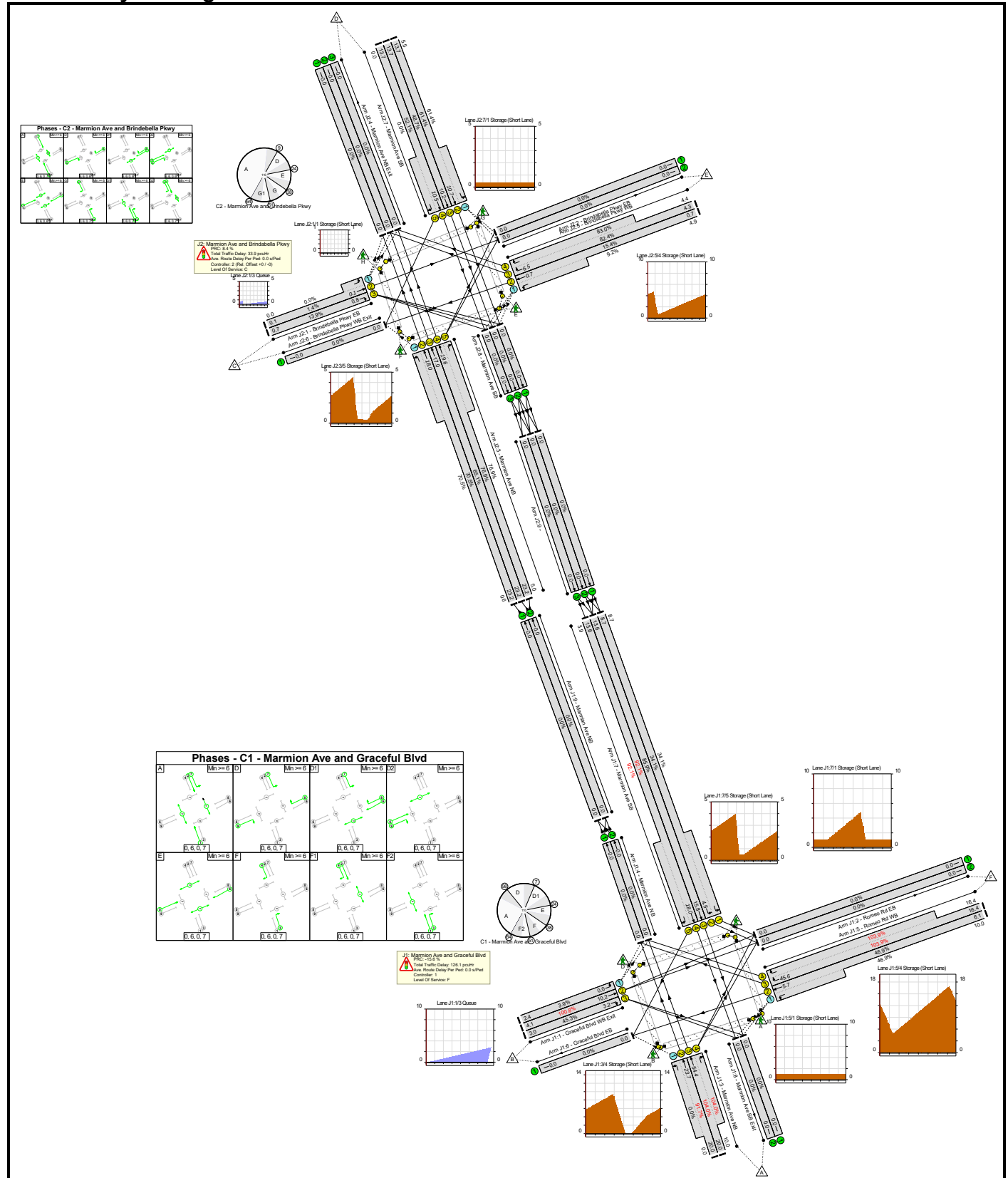
Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Level Of Service	Mean Max Queue (pcu)
Network: Stage 2 - 2026 - 2031 Full Build of Marmion Avenue	-	-	-	-	-	123.7%	320.1	-	F	-
J1: Marmion Ave and Graceful Blvd	-	-	-	-	-	123.7%	290.1	-	F	-
1/1	Graceful Blvd WB Exit Left	-	87	1965	1965	4.4%	0.0	1.0	A	0.0
1/2	Graceful Blvd WB Exit Ahead	10	235	2105	191	122.8%	29.8	456.4	F	32.8
1/3	Graceful Blvd WB Exit Right	8	158	1965	143	110.6%	14.3	324.8	F	16.5
2/1	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	45	336	1965:1965	804+20	40.8 : 40.8%	2.4	26.2	C	7.5
3/3+3/4	Marmion Ave NB Right Ahead	45:22	805	1965:1965	269+393	121.6 : 121.6%	86.4	386.4	F	99.1
4/1	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
5/2+5/1	Romeo Rd WB Ahead Left	23	282	1965:1965	411+891	21.7 : 21.7%	1.0	13.1	B	2.4
5/3+5/4	Romeo Rd WB Right	21	488	1965:1965	375+375	65.0 : 65.0%	6.5	47.9	D	7.8
6/1	Graceful Blvd EB	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left	57	945	1965:1965	784+782	60.3 : 60.3%	5.2	19.7	B	9.8
7/3	Marmion Ave SB Ahead	29	641	2105	555	115.5%	58.1	326.1	F	69.9
7/4+7/5	Marmion Ave SB Right Ahead	29:13	739	1965:1965	518+79	123.7 : 123.7%	86.4	420.8	F	99.5
8/1	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/1	Marmian Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0

Main Roads Reports

9/2	Marmion Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P2	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P3	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1964	0.0%	0.0	0.0	-	0.0
J2: Marmion Ave and Brindabella Pkwy	-	-	-	-	-	86.0%	30.0	-	C	-
1/2+1/1	Brindebella Pkwy EB Ahead Left	8	1	1965:1965	143+0	0.7 : 0.0%	0.0	60.5	E	0.0
1/3	Brindebella Pkwy EB Right	6	27	2105	115	23.5%	0.5	70.3	E	0.9
2/1	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	64	380	1965:1965	1129+34	32.7 : 32.7%	1.5	13.8	B	6.0
3/3	Marmion Ave NB Ahead	64	369	2105	1225	30.1%	1.4	13.8	B	5.9
3/4+3/5	Marmion Ave NB Right Ahead	64:19	483	1965:2105	991+310	37.1 : 37.1%	2.8	20.7	C	6.0
4/1	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/3	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
5/2+5/1	Brindabella Pkwy WB Ahead Left	8	159	1965:1965	74+1891	8.1 : 8.1%	0.1	2.8	A	0.2
5/3+5/4	Brindabella Pkwy WB Right	6	143	2105:2105	115+115	62.7 : 61.8%	2.8	71.3	E	3.0
6/1	Brindebella Pkwy WB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left Ahead	51	866	1965:1965	830+177	86.0 : 86.0%	8.1	33.7	C	23.7
7/3	Marmion Ave SB Ahead	51	714	2105	976	73.2%	6.1	30.7	C	19.0
7/4+7/5	Marmion Ave SB Right Ahead	51:6	713	1965:1965	911+0	78.3 : 0.0%	6.7	33.8	C	20.0

Main Roads Reports

8/1	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Ahead	-	0	2105	2105	0.0%	0.0	0.0	-	0.0
8/3	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
9/1	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/2	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/3	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	P1	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P2	P2	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P3	P3	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1964	0.0%	0.0	0.0	-	0.0
C1 - Marmion Ave and Graceful Blvd C2 - Marmion Ave and Brindebella Pkwy										
PRC for Signalled Lanes (%):		-37.5		Total Delay for Signalled Lanes (pcuHr):		290.05		Cycle Time (s): 110		
PRC for Signalled Lanes (%):		4.6		Total Delay for Signalled Lanes (pcuHr):		30.05		Cycle Time (s): 110		
PRC Over All Lanes (%):		-37.5		Total Delay Over All Lanes(pcuHr):		320.12				

Network Layout Diagram

Main Roads Reports
Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Level Of Service	Mean Max Queue (pcu)
Network: Stage 2 - 2026 - 2031 Full Build of Marmion Avenue	-	-	-	-	-	104.0%	159.9	-	E	-
J1: Marmion Ave and Graceful Blvd	-	-	-	-	-	104.0%	126.1	-	F	-
1/1	Graceful Blvd WB Exit Left	-	77	1965	1965	3.9%	0.0	1.0	A	0.0
1/2	Graceful Blvd WB Exit Ahead	7	135	2105	134	100.8%	8.1	215.0	F	10.2
1/3	Graceful Blvd WB Exit Right	12	97	1965	214	45.3%	1.6	61.2	E	3.2
2/1	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	40	655	1965:1965	715+0	91.7 : 0.0%	10.8	59.5	E	23.7
3/3+3/4	Marmion Ave NB Right Ahead	40:19	982	1965:1965	630+314	104.0 : 104.0%	39.2	143.9	F	54.4
4/1	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
5/2+5/1	Romeo Rd WB Ahead Left	24	528	1965:1965	429+697	46.9 : 46.9%	2.5	17.3	B	5.7
5/3+5/4	Romeo Rd WB Right	29	1076	1965:1965	518+518	103.9 : 103.9%	42.4	142.0	F	45.6
6/1	Graceful Blvd EB	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left	63	570	1965:1965	837+837	34.1 : 34.1%	2.1	13.4	B	4.5
7/3	Marmion Ave SB Ahead	27	444	2105	517	85.9%	7.7	62.7	E	15.8
7/4+7/5	Marmion Ave SB Right Ahead	27:13	573	1965:1965	482+140	92.1 : 92.1%	11.5	72.1	E	18.0
8/1	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/1	Marmian Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0

Main Roads Reports

9/2	Marmion Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P2	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P3	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1964	0.0%	0.0	0.0	-	0.0
J2: Marmion Ave and Brindabella Pkwy	-	-	-	-	-	83.0%	33.9	-	C	-
1/2+1/1	Brindebella Pkwy EB Ahead Left	8	2	1965:1965	143+0	1.4 : 0.0%	0.0	60.5	E	0.1
1/3	Brindebella Pkwy EB Right	9	24	2105	172	13.9%	0.4	59.1	E	0.8
2/1	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	61	781	1965:1965	1078+30	70.5 : 70.5%	4.9	22.8	C	18.0
3/3	Marmion Ave NB Ahead	61	760	2105	1167	65.1%	4.5	21.5	C	17.0
3/4+3/5	Marmion Ave NB Right Ahead	61:19	922	1965:2105	988+211	76.9 : 76.9%	7.2	28.3	C	19.6
4/1	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/3	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
5/2+5/1	Brindabella Pkwy WB Ahead Left	8	181	1965:1965	143+1726	15.4 : 9.2%	0.3	6.9	A	0.7
5/3+5/4	Brindabella Pkwy WB Right	9	285	2105:2105	172+172	82.4 : 83.0%	6.2	77.9	E	6.5
6/1	Brindebella Pkwy WB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left Ahead	48	626	1965:1965	728+292	61.4 : 61.4%	3.6	20.7	C	10.7
7/3	Marmion Ave SB Ahead	48	447	2105	919	48.7%	3.2	26.0	C	10.2
7/4+7/5	Marmion Ave SB Right Ahead	48:6	447	1965:1965	857+0	52.1 : 0.0%	3.4	27.0	C	10.5

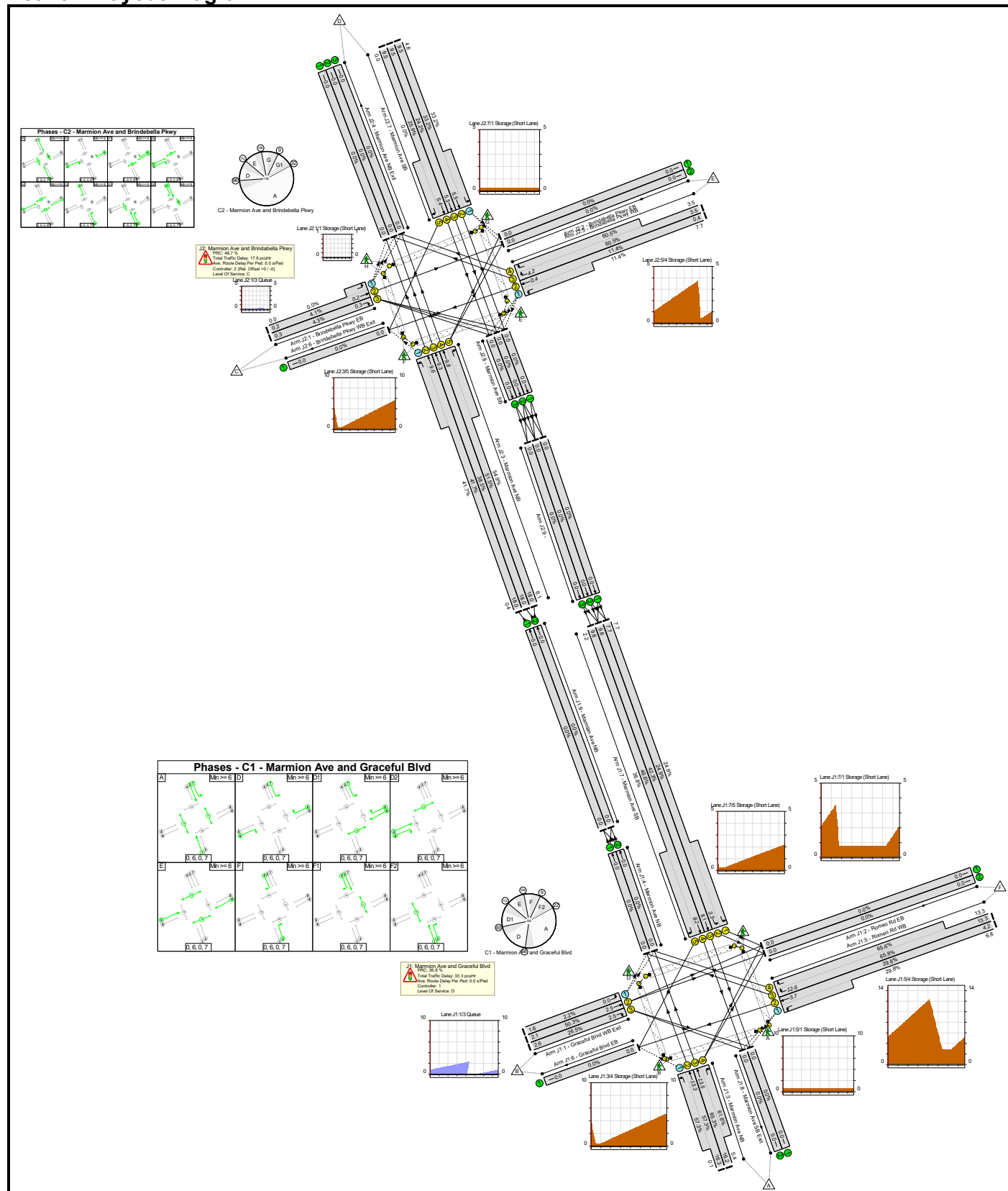
Main Roads Reports

8/1	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Ahead	-	0	2105	2105	0.0%	0.0	0.0	-	0.0
8/3	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
9/1	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/2	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/3	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	P1	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P2	P2	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P3	P3	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1964	0.0%	0.0	0.0	-	0.0
C1 - Marmion Ave and Graceful Blvd C2 - Marmion Ave and Brindebella Pkwy		PRC for Signalled Lanes (%): PRC for Signalled Lanes (%): PRC Over All Lanes (%):	-15.6 8.4 -15.6	Total Delay for Signalled Lanes (pcuHr): Total Delay for Signalled Lanes (pcuHr): Total Delay Over All Lanes(pcuHr):		126.07 33.85 159.95	Cycle Time (s): 110 Cycle Time (s): 110			

Main Roads Reports

Scenario 5: '2022 PM Peak Stage 1' (FG6: '2022 PM Peak', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Main Roads Reports

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Level Of Service	Mean Max Queue (pcu)
Network: Stage 2 - 2026 - 2031 Full Build of Marmion Avenue	-	-	-	-	-	65.8%	51.0	-	C	-
J1: Marmion Ave and Graceful Blvd	-	-	-	-	-	65.8%	33.3	-	D	-
1/1	Graceful Blvd WB Exit Left	-	43	1965	1965	2.2%	0.0	0.9	A	0.0
1/2	Graceful Blvd WB Exit Ahead	7	57	2105	113	50.3%	1.4	91.2	F	2.5
1/3	Graceful Blvd WB Exit Right	18	72	1965	272	26.5%	1.2	59.1	E	2.5
2/1	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	52	453	1965:1965	786+5	57.3 : 57.3%	4.5	35.5	D	13.3
3/3+3/4	Marmion Ave NB Right Ahead	52:19	599	1965:1965	688+243	65.3 : 61.8%	6.8	41.0	D	13.5
4/1	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
5/2+5/1	Romeo Rd WB Ahead Left	26	304	1965:1965	386+634	29.8 : 29.8%	1.6	19.2	B	3.7
5/3+5/4	Romeo Rd WB Right	37	735	1965:1965	559+559	65.8 : 65.6%	9.3	45.6	D	12.6
6/1	Graceful Blvd EB	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left	83	427	1965:1965	861+857	24.9 : 24.9%	1.3	10.9	B	3.3
7/3	Marmion Ave SB Ahead	39	267	2105	632	42.3%	3.1	41.4	D	8.1
7/4+7/5	Marmion Ave SB Right Ahead	39:13	327	1965:1965	573+163	46.6 : 36.8%	4.0	44.5	D	8.2
8/1	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/1	Marmian Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0

Main Roads Reports

9/2	Marmian Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	Unnamed Ped Link	3	0	-	1662	0.0%	0.0	0.0	-	0.0
Ped Link: P2	Unnamed Ped Link	3	0	-	1662	0.0%	0.0	0.0	-	0.0
Ped Link: P3	Unnamed Ped Link	3	0	-	1662	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1662	0.0%	0.0	0.0	-	0.0
J2: Marmion Ave and Brindabella Pkwy	-	-	-	-	-	60.5%	17.8	-	C	-
1/2+1/1	Brindebella Pkwy EB Ahead Left	8	5	1965:1965	121+0	4.1 : 0.0%	0.1	73.2	E	0.2
1/3	Brindebella Pkwy EB Right	10	7	2105	162	4.3%	0.1	67.5	E	0.3
2/1	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	80	509	1965:1965	1198+24	41.7 : 41.7%	2.1	15.2	B	9.6
3/3	Marmion Ave NB Ahead	80	499	2105	1295	38.5%	2.1	14.9	B	9.3
3/4+3/5	Marmion Ave NB Right Ahead	80:19	668	1965:2105	969+308	51.5 : 54.9%	4.8	25.6	C	9.8
4/1	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/3	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
5/2+5/1	Brindabella Pkwy WB Ahead Left	8	224	1965:1965	88+1877	11.4 : 11.4%	0.2	3.6	A	0.4
5/3+5/4	Brindabella Pkwy WB Right	10	196	2105:2105	162+162	60.5 : 60.5%	3.9	72.0	E	4.2
6/1	Brindebella Pkwy WB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left Ahead	67	390	1965:1965	793+383	33.2 : 33.2%	1.5	14.2	B	5.5
7/3	Marmion Ave SB Ahead	67	262	2105	1085	24.2%	1.4	19.6	B	5.3
7/4+7/5	Marmion Ave SB Right Ahead	67:6	262	1965:1965	1013+0	25.9 : 0.0%	1.5	20.0	C	5.4

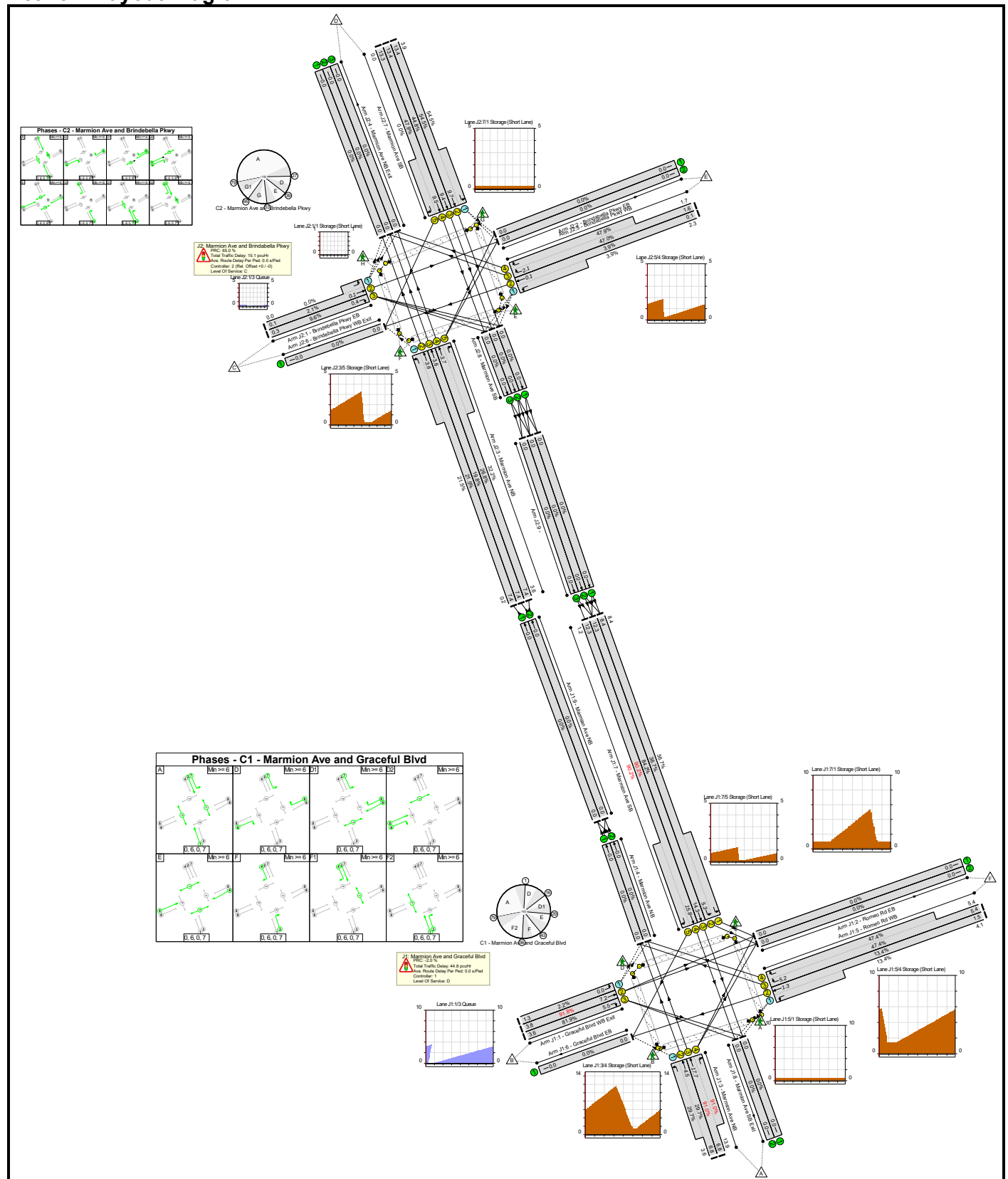
Main Roads Reports

8/1	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Ahead	-	0	2105	2105	0.0%	0.0	0.0	-	0.0
8/3	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
9/1	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/2	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/3	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	P1	3	0	-	1662	0.0%	0.0	0.0	-	0.0
Ped Link: P2	P2	3	0	-	1662	0.0%	0.0	0.0	-	0.0
Ped Link: P3	P3	3	0	-	1662	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1662	0.0%	0.0	0.0	-	0.0
C1 - Marmion Ave and Graceful Blvd C2 - Marmion Ave and Brindebella Pkwy		PRC for Signalled Lanes (%):	36.8	Total Delay for Signalled Lanes (pcuHr):		33.25	Cycle Time (s): 130			
		PRC for Signalled Lanes (%):	48.7	Total Delay for Signalled Lanes (pcuHr):		17.76	Cycle Time (s): 130			
		PRC Over All Lanes (%):	36.8	Total Delay Over All Lanes(pcuHr):		51.01				

Main Roads Reports

Scenario 6: '2022 AM Peak Stage 1' (FG5: '2022 AM Peak', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Main Roads Reports

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Level Of Service	Mean Max Queue (pcu)
Network: Stage 2 - 2026 - 2031 Full Build of Marmion Avenue	-	-	-	-	-	91.8%	59.9	-	D	-
J1: Marmion Ave and Graceful Blvd	-	-	-	-	-	91.8%	44.8	-	D	-
1/1	Graceful Blvd WB Exit Left	-	44	1965	1965	2.2%	0.0	0.9	A	0.0
1/2	Graceful Blvd WB Exit Ahead	7	123	2105	134	91.8%	5.2	152.1	F	7.2
1/3	Graceful Blvd WB Exit Right	8	117	1965	143	81.9%	3.6	110.6	F	5.5
2/1	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Romeo Rd EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	48	342	1965:1965	755+398	29.7 : 29.7%	1.4	15.1	B	4.5
3/3+3/4	Marmion Ave NB Right Ahead	48:29	678	1965:1965	246+499	91.0 : 91.0%	10.6	56.2	E	17.7
4/1	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
5/2+5/1	Romeo Rd WB Ahead Left	20	182	1965:1965	357+997	13.4 : 13.4%	0.6	11.5	B	1.3
5/3+5/4	Romeo Rd WB Right	21	356	1965:1965	375+375	47.4 : 47.4%	4.4	44.2	D	5.2
6/1	Graceful Blvd EB	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left	53	549	1965:1965	746+749	36.7 : 36.7%	2.9	19.1	B	5.3
7/3	Marmion Ave SB Ahead	25	403	2105	478	84.2%	7.1	63.0	E	14.3
7/4+7/5	Marmion Ave SB Right Ahead	25:13	443	1965:1965	447+44	90.2 : 90.2%	9.1	73.8	E	15.8
8/1	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/1	Marmian Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0

Main Roads Reports

9/2	Marmion Ave NB Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P2	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P3	Unnamed Ped Link	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1964	0.0%	0.0	0.0	-	0.0
J2: Marmion Ave and Brindabella Pkwy	-	-	-	-	-	54.5%	15.1	-	C	-
1/2+1/1	Brindabella Pkwy EB Ahead Left	8	3	1965:1965	143+0	2.1 : 0.0%	0.1	60.6	E	0.1
1/3	Brindabella Pkwy EB Right	6	11	2105	115	9.6%	0.2	67.0	E	0.4
2/1	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
2/2	Brindabella Pkwy EB	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
3/2+3/1	Marmion Ave NB Ahead Left	64	249	1965:1965	1132+28	21.5 : 21.5%	0.9	12.7	B	3.6
3/3	Marmion Ave NB Ahead	64	243	2105	1225	19.8%	0.9	12.7	B	3.6
3/4+3/5	Marmion Ave NB Right Ahead	64:19	359	1965:2105	904+364	26.8 : 32.2%	2.2	22.4	C	3.7
4/1	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/2	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
4/3	Marmion Ave NB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
5/2+5/1	Brindabella Pkwy WB Ahead Left	8	77	1965:1965	77+1888	3.9 : 3.9%	0.1	2.8	A	0.1
5/3+5/4	Brindabella Pkwy WB Right	6	109	2105:2105	115+115	47.0 : 47.9%	2.0	65.3	E	2.1
6/1	Brindabella Pkwy WB Exit	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
7/2+7/1	Marmion Ave SB Left Ahead	51	564	1965:1965	801+233	54.5 : 54.5%	3.1	19.6	B	9.7
7/3	Marmion Ave SB Ahead	51	437	2105	976	44.8%	2.8	23.3	C	9.4
7/4+7/5	Marmion Ave SB Right Ahead	51:6	436	1965:1965	911+0	47.9 : 0.0%	2.9	24.1	C	9.5

Main Roads Reports

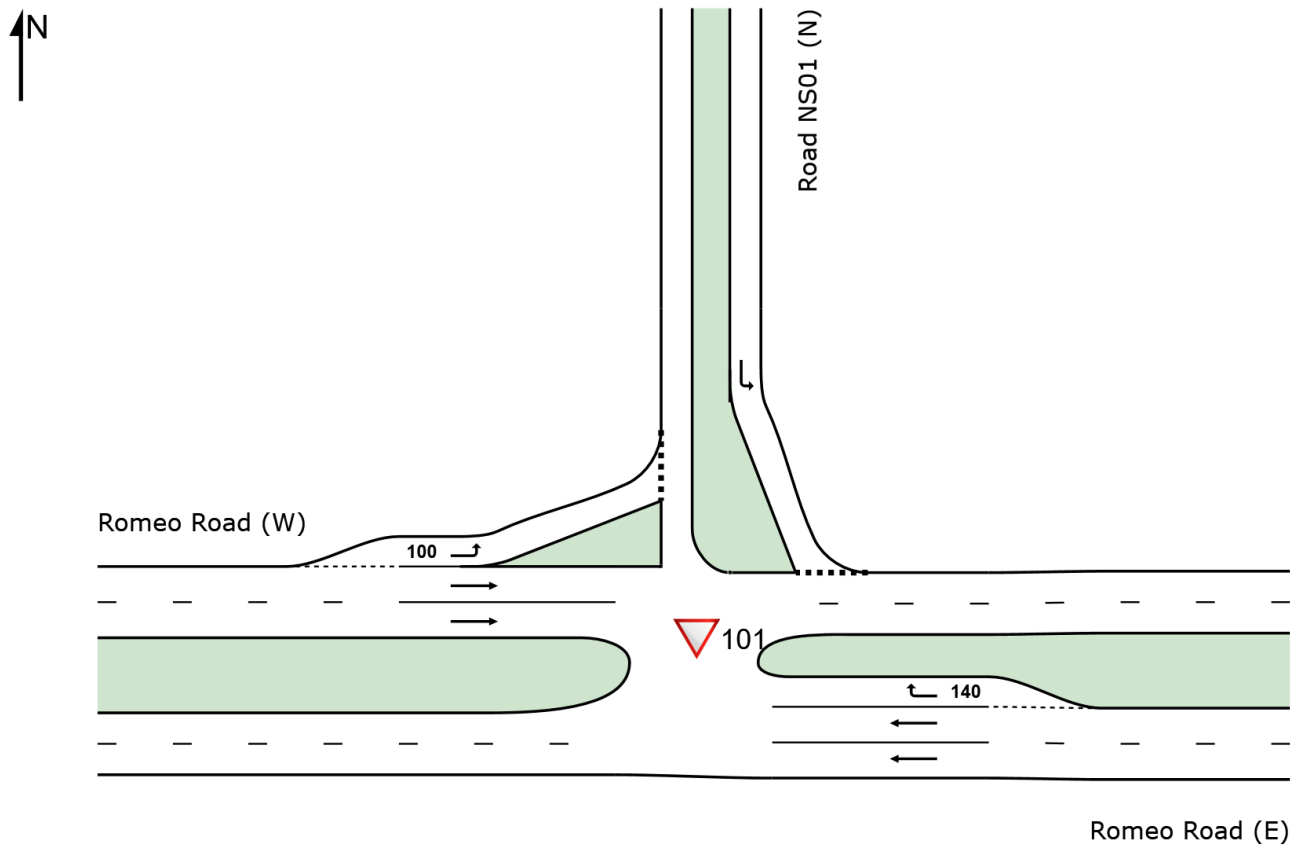
8/1	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
8/2	Marmion Ave SB Ahead	-	0	2105	2105	0.0%	0.0	0.0	-	0.0
8/3	Marmion Ave SB Ahead	-	0	1965	1965	0.0%	0.0	0.0	-	0.0
9/1	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/2	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
9/3	Ahead	-	0	Inf	Inf	0.0%	0.0	0.0	-	0.0
Ped Link: P1	P1	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P2	P2	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P3	P3	3	0	-	1964	0.0%	0.0	0.0	-	0.0
Ped Link: P4	P4	3	0	-	1964	0.0%	0.0	0.0	-	0.0
C1 - Marmion Ave and Graceful Blvd C2 - Marmion Ave and Brindebella Pkwy		PRC for Signalled Lanes (%):	-2.0	Total Delay for Signalled Lanes (pcuHr):		44.80	Cycle Time (s): 110			
		PRC for Signalled Lanes (%):	65.0	Total Delay for Signalled Lanes (pcuHr):		15.08	Cycle Time (s): 110			
		PRC Over All Lanes (%):	-2.0	Total Delay Over All Lanes(pcuHr):		59.88				

All Movement Classes

Template: Default Site User Report - signal

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

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



Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
East: Romeo Road (E)													
Lane 1	183	5.0	1905	0.096	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	181	5.0	1879	0.096	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 3	131	5.0	521	0.251	100	13.6	LOS B	1.0	7.9	Short	140	0.0	NA
Approach	495	5.0		0.251		3.6	NA	1.0	7.9				
North: Road NS01 (N)													
Lane 1	82	5.0	824	0.100	100	6.8	LOS A	0.4	2.8	Full	500	0.0	0.0
Approach	82	5.0		0.100		6.8	LOS A	0.4	2.8				
West: Romeo Road (W)													
Lane 1	76	5.0	1421	0.053	100	7.8	LOS A	0.2	1.7	Short	100	0.0	NA
Lane 2	417	5.0	1891	0.221	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 3	417	5.0	1891	0.221	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Approach	911	5.0		0.221		0.7	LOS A	0.2	1.7				
Intersection	1487	5.0		0.251		2.0	NA	1.0	7.9				

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

Lane LOS values are based on average delay per lane.

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

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

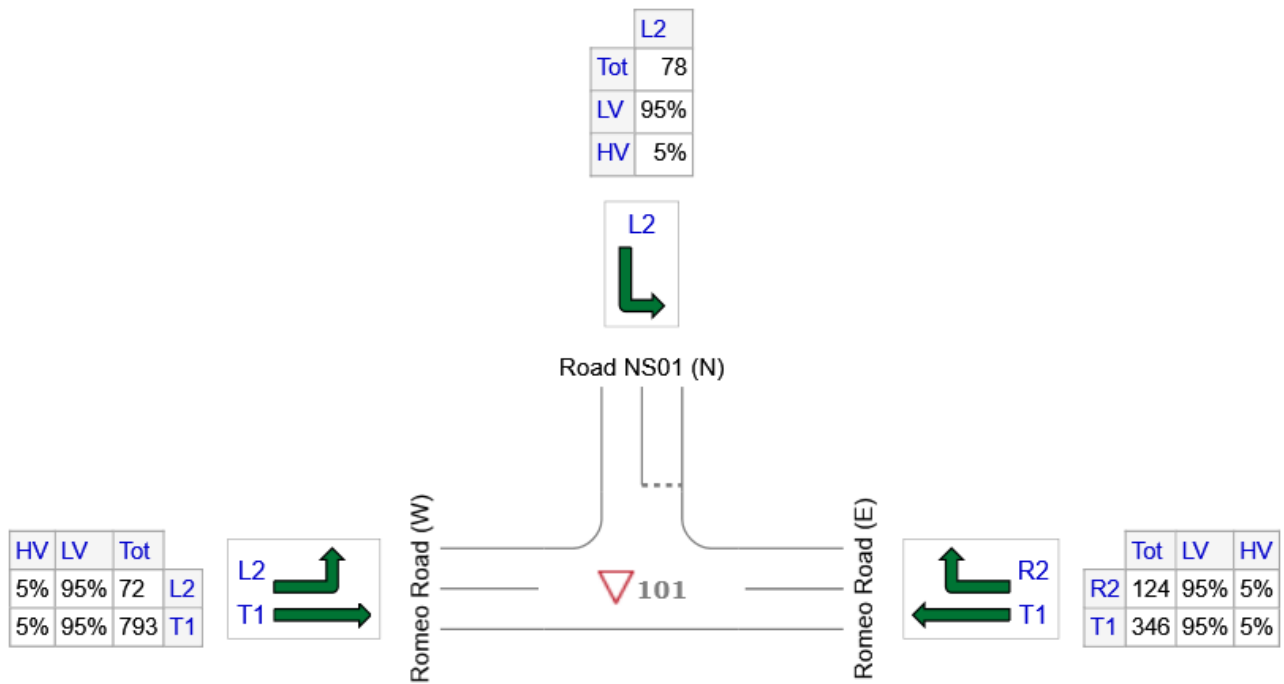
Queue Model: SIDRA Standard.

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

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

Input Volumes

Volume Display Method: Total and %



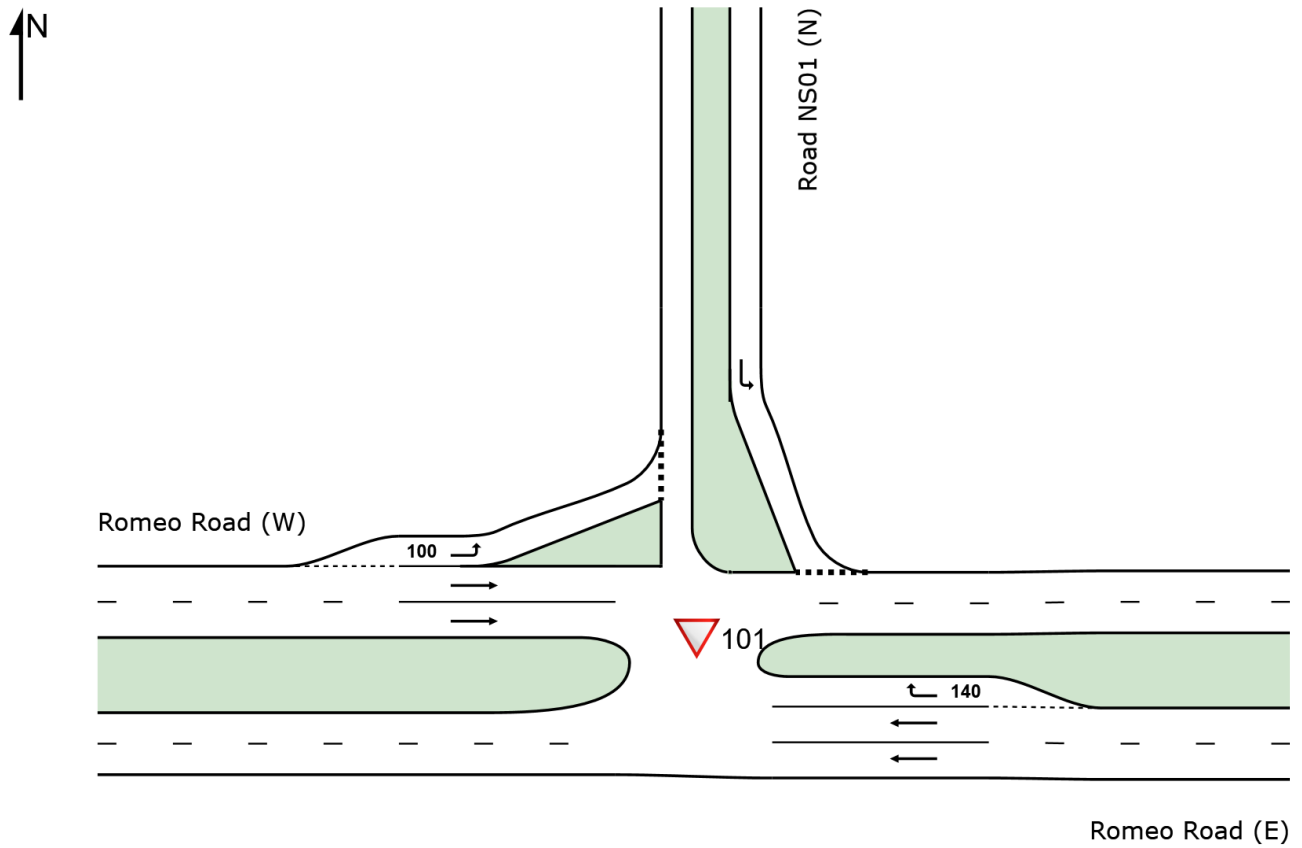
	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
E: Romeo Road (E)	470	447	24
N: Road NS01 (N)	78	74	4
W: Romeo Road (W)	865	822	43
Total	1413	1342	71

 Site: 101 [Romeo Road / Road NS01 - 2031 PM (Site Folder: General)]

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

Site Layout

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



Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
East: Romeo Road (E)													
Lane 1	335	5.0	1905	0.176	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	331	5.0	1885	0.176	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 3	158	5.0	905	0.174	100	9.2	LOS A	0.7	5.6	Short	140	0.0	NA
Approach	824	5.0		0.176		1.8	NA	0.7	5.6				
North: Road NS01 (N)													
Lane 1	184	5.0	1057	0.174	100	5.6	LOS A	0.7	5.3	Full	500	0.0	0.0
Approach	184	5.0		0.174		5.6	LOS A	0.7	5.3				
West: Romeo Road (W)													
Lane 1	156	5.0	1385	0.112	100	7.9	LOS A	0.5	3.7	Short	100	0.0	NA
Lane 2	208	5.0	1891	0.110	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 3	208	5.0	1891	0.110	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Approach	572	5.0		0.112		2.2	LOS A	0.5	3.7				
Intersection	1580	5.0		0.176		2.4	NA	0.7	5.6				

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

Lane LOS values are based on average delay per lane.

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

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

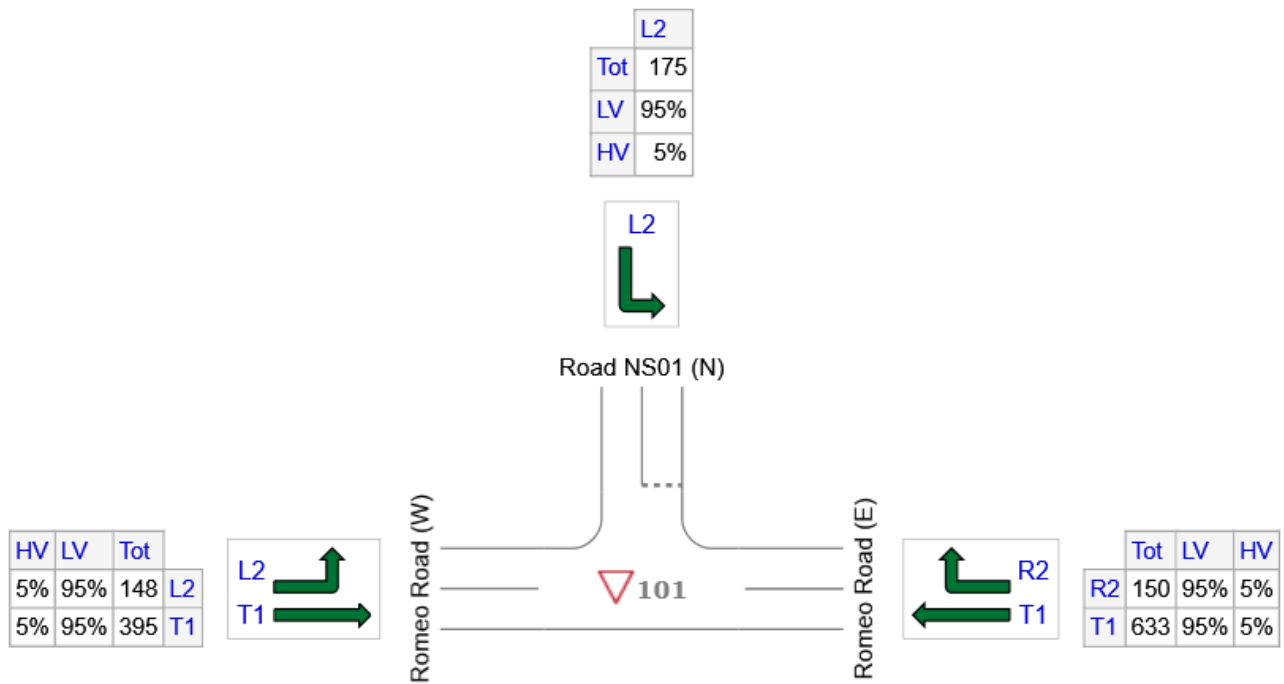
Queue Model: SIDRA Standard.

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

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

Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
E: Romeo Road (E)	783	744	39
N: Road NS01 (N)	175	166	9
W: Romeo Road (W)	543	516	27
Total	1501	1426	75

Site: 101 [Romeo Road / NS02 - 2031 AM (Site Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Double Diamond - Import

Reference Phase: Phase A

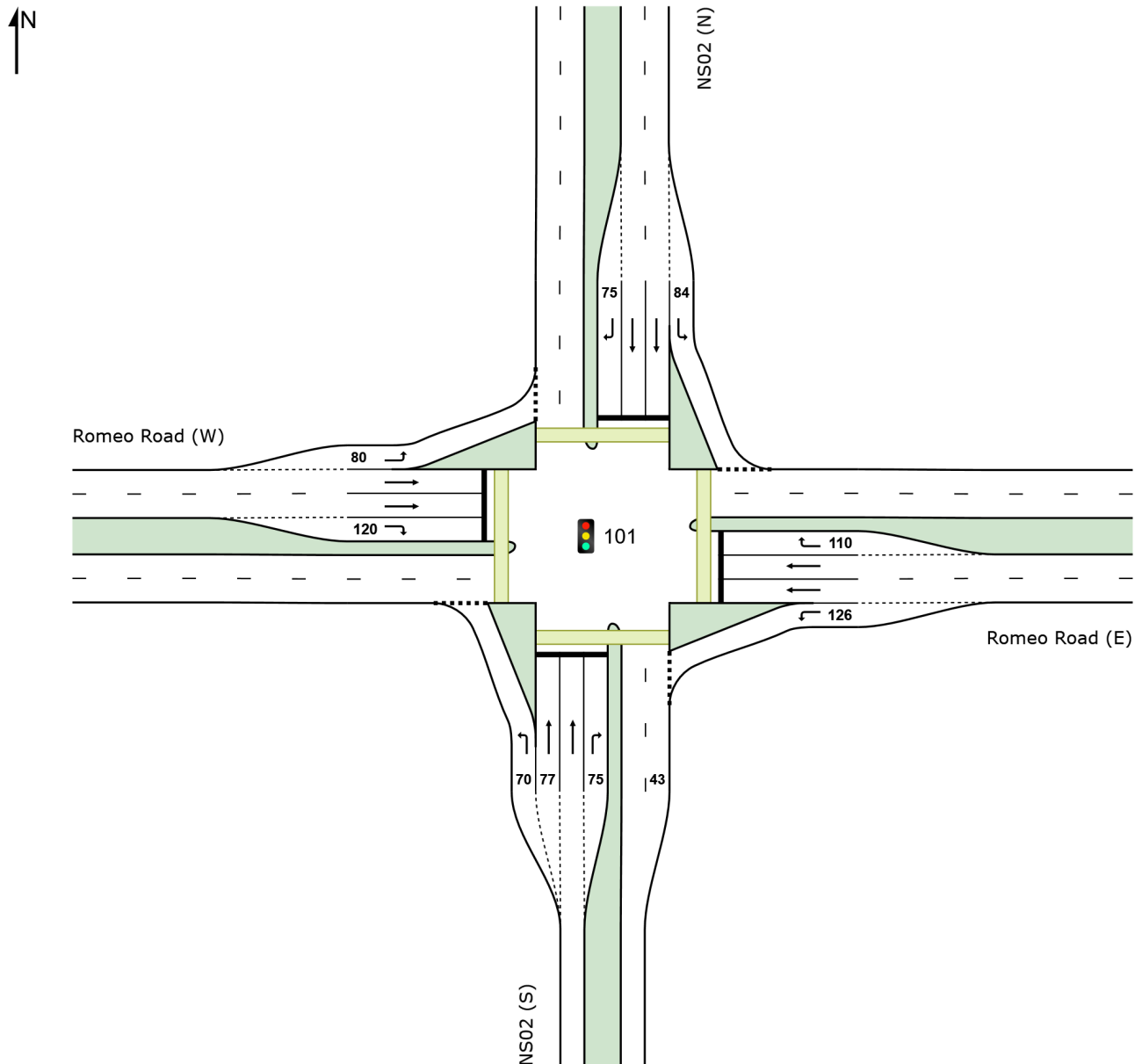
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*

Output Phase Sequence: A, D, E, G

(* Variable Phase)

Site Layout

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



Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
South: NS02 (S)													
Lane 1	1	5.0	1200	0.001	100	7.2	LOS A	0.0	0.1	Short	70	0.0	NA
Lane 2	5	5.0	295	0.016	100	27.2	LOS C	0.1	1.1	Short	77	0.0	NA
Lane 3	5	5.0	295	0.016	100	27.2	LOS C	0.1	1.1	Full	500	0.0	0.0
Lane 4	12	5.0	153	0.076	100	39.3	LOS D	0.4	3.0	Short	75	0.0	NA
Approach	22	5.0		0.076		32.6	LOS C	0.4	3.0				
East: Romeo Road (E)													
Lane 1	4	5.0	1424	0.003	100	6.3	LOS A	0.0	0.1	Short	126	0.0	NA
Lane 2	153	5.0	613	0.249	100	18.7	LOS B	3.9	29.9	Full	500	0.0	0.0
Lane 3	153	5.0	613	0.249	100	18.7	LOS B	3.9	29.9	Full	500	0.0	0.0
Lane 4	5	5.0	152	0.035	100	38.8	LOS D	0.2	1.3	Short	110	0.0	NA
Approach	315	5.0		0.249		18.9	LOS B	3.9	29.9				
North: NS02 (N)													
Lane 1	14	5.0	1004	0.014	100	9.1	LOS A	0.1	1.1	Short	84	0.0	NA
Lane 2	2	5.0	295	0.007	33 ⁶	27.0	LOS C	0.1	0.5	Full	500	0.0	0.0
Lane 3	6	5.0	295	0.021	100	27.3	LOS C	0.2	1.4	Full	500	0.0	0.0
Lane 4	91	5.0	153	0.593	100	42.2	LOS D	3.3	25.3	Short	75	0.0	NA
Approach	113	5.0		0.593		37.0	LOS D	3.3	25.3				
West: Romeo Road (W)													
Lane 1	11	5.0	1445	0.007	100	6.2	LOS A	0.0	0.2	Short	80	0.0	NA
Lane 2	434	5.0	613	0.709	100	23.5	LOS C	13.6	105.3	Full	500	0.0	0.0
Lane 3	434	5.0	613	0.709	100	23.5	LOS C	13.6	105.3	Full	500	0.0	0.0
Lane 4	33	5.0	152	0.215	100	40.1	LOS D	1.1	8.6	Short	120	0.0	NA
Approach	912	5.0		0.709		23.9	LOS C	13.6	105.3				
Intersection	1361	5.0		0.709		24.0	LOS C	13.6	105.3				

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

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

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

Queue Model: SIDRA Standard.

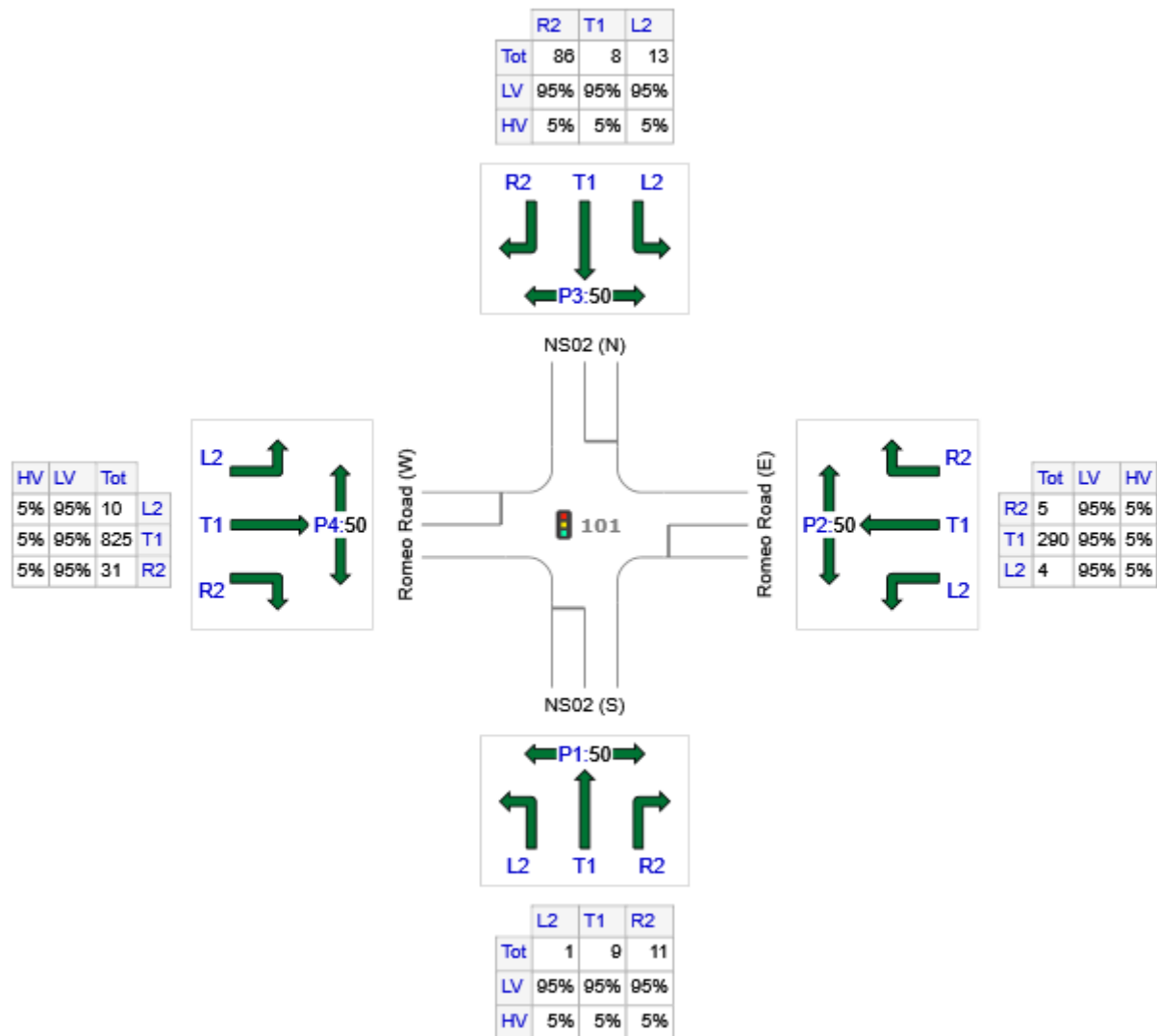
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

⁶ Lane under-utilisation due to downstream effects

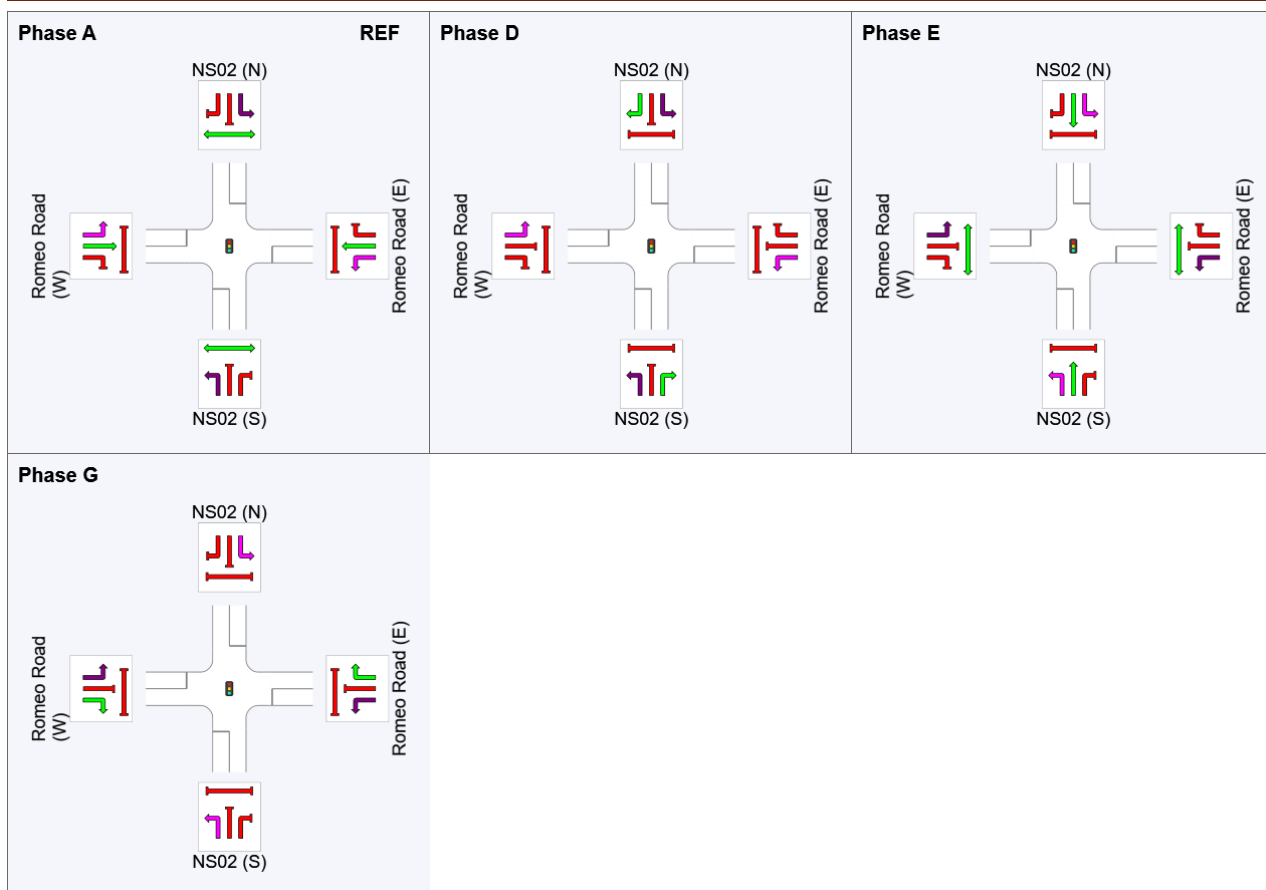
Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: NS02 (S)	21	20	1
E: Romeo Road (E)	299	284	15
N: NS02 (N)	107	102	5
W: Romeo Road (W)	866	823	43
Total	1293	1228	65

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	0	29	41	58
Green Time (sec)	23	6	11	6
Phase Time (sec)	29	12	17	12
Phase Split	41%	17%	24%	17%

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

Site: 101 [Romeo Road / NS02 - 2031 PM (Site Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Double Diamond - Import

Reference Phase: Phase A

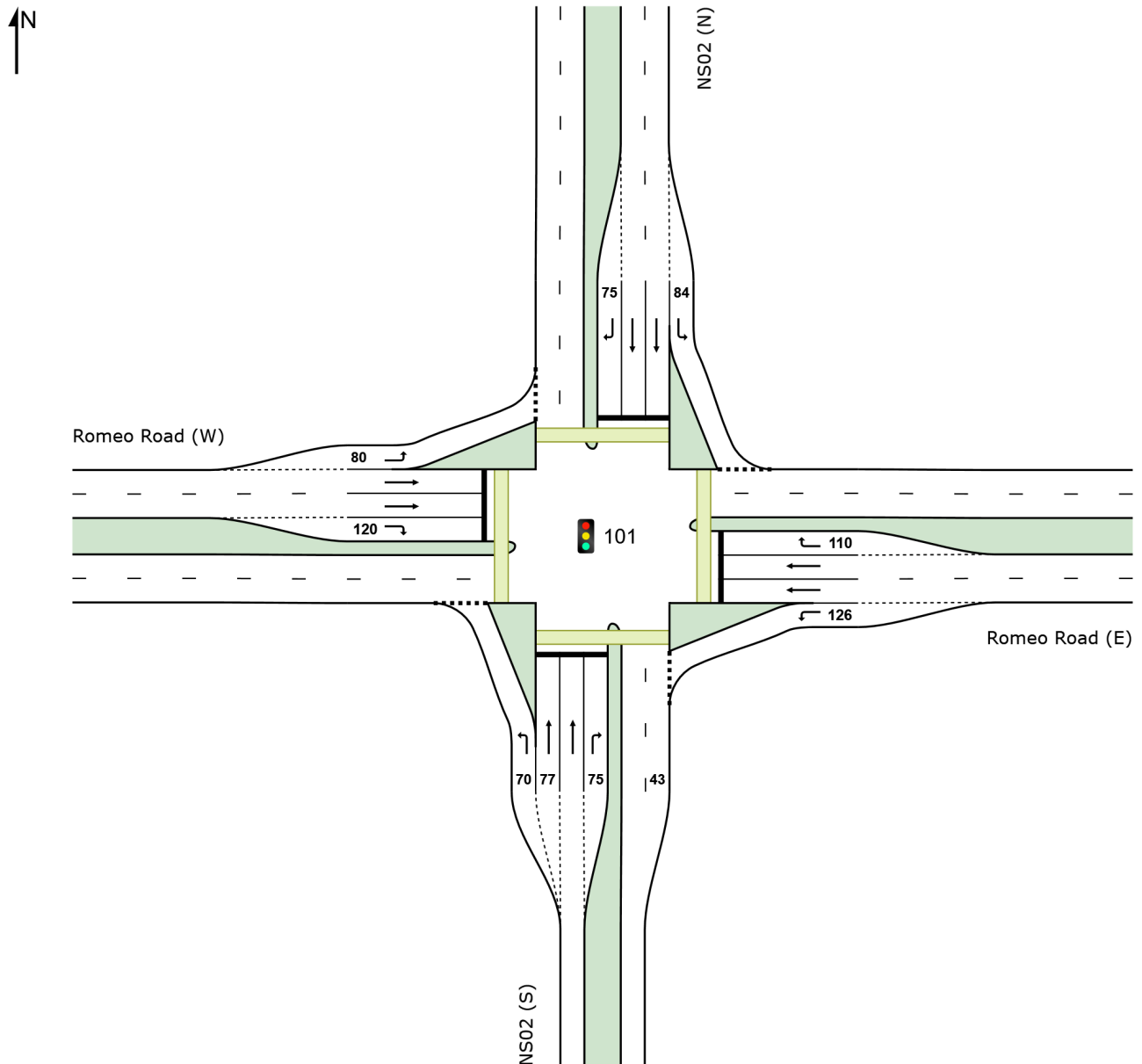
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*

Output Phase Sequence: A, D, E, G

(* Variable Phase)

Site Layout

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



Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
South: NS02 (S)													
Lane 1	1	5.0	1049	0.001	100	8.9	LOS A	0.0	0.1	Short	70	0.0	NA
Lane 2	8	5.0	281	0.028	100	24.1	LOS C	0.2	1.6	Short	77	0.0	NA
Lane 3	8	5.0	281	0.028	100	24.1	LOS C	0.2	1.6	Full	500	0.0	0.0
Lane 4	23	5.0	178	0.130	100	34.0	LOS C	0.7	5.1	Short	75	0.0	NA
Approach	40	5.0		0.130		29.4	LOS C	0.7	5.1				
East: Romeo Road (E)													
Lane 1	7	5.0	1351	0.005	100	6.6	LOS A	0.0	0.2	Short	126	0.0	NA
Lane 2	342	5.0	466	0.733	100	24.9	LOS C	10.1	77.8	Full	500	0.0	0.0
Lane 3	342	5.0	466	0.733	100	24.9	LOS C	10.1	77.8	Full	500	0.0	0.0
Lane 4	15	5.0	177	0.083	100	33.7	LOS C	0.4	3.2	Short	110	0.0	NA
Approach	705	5.0		0.733		24.9	LOS C	10.1	77.8				
North: NS02 (N)													
Lane 1	7	5.0	1152	0.006	100	7.3	LOS A	0.0	0.3	Short	84	0.0	NA
Lane 2	2	5.0	281	0.006	33 ⁶	23.7	LOS C	0.0	0.3	Full	500	0.0	0.0
Lane 3	5	5.0	281	0.017	100	23.9	LOS C	0.1	0.9	Full	500	0.0	0.0
Lane 4	74	5.0	178	0.414	100	35.3	LOS D	2.2	17.0	Short	75	0.0	NA
Approach	87	5.0		0.414		32.1	LOS C	2.2	17.0				
West: Romeo Road (W)													
Lane 1	22	5.0	1392	0.016	100	6.3	LOS A	0.1	0.5	Short	80	0.0	NA
Lane 2	222	5.0	466	0.475	100	21.4	LOS C	5.7	44.3	Full	500	0.0	0.0
Lane 3	222	5.0	466	0.475	100	21.4	LOS C	5.7	44.3	Full	500	0.0	0.0
Lane 4	69	5.0	177	0.393	100	35.2	LOS D	2.1	16.0	Short	120	0.0	NA
Approach	535	5.0		0.475		22.5	LOS C	5.7	44.3				
Intersection	1367	5.0		0.733		24.6	LOS C	10.1	77.8				

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

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

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

Queue Model: SIDRA Standard.

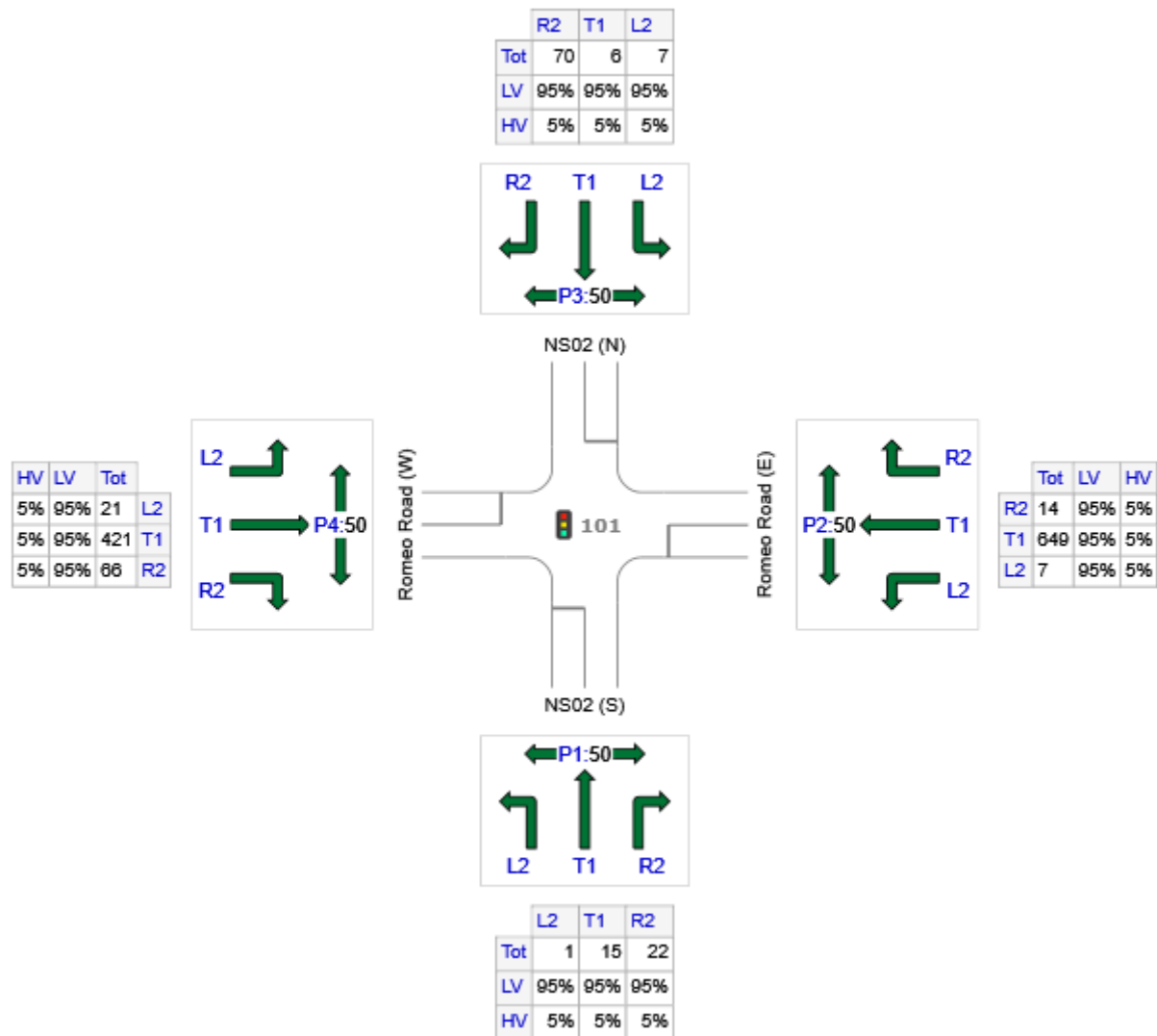
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

⁶ Lane under-utilisation due to downstream effects

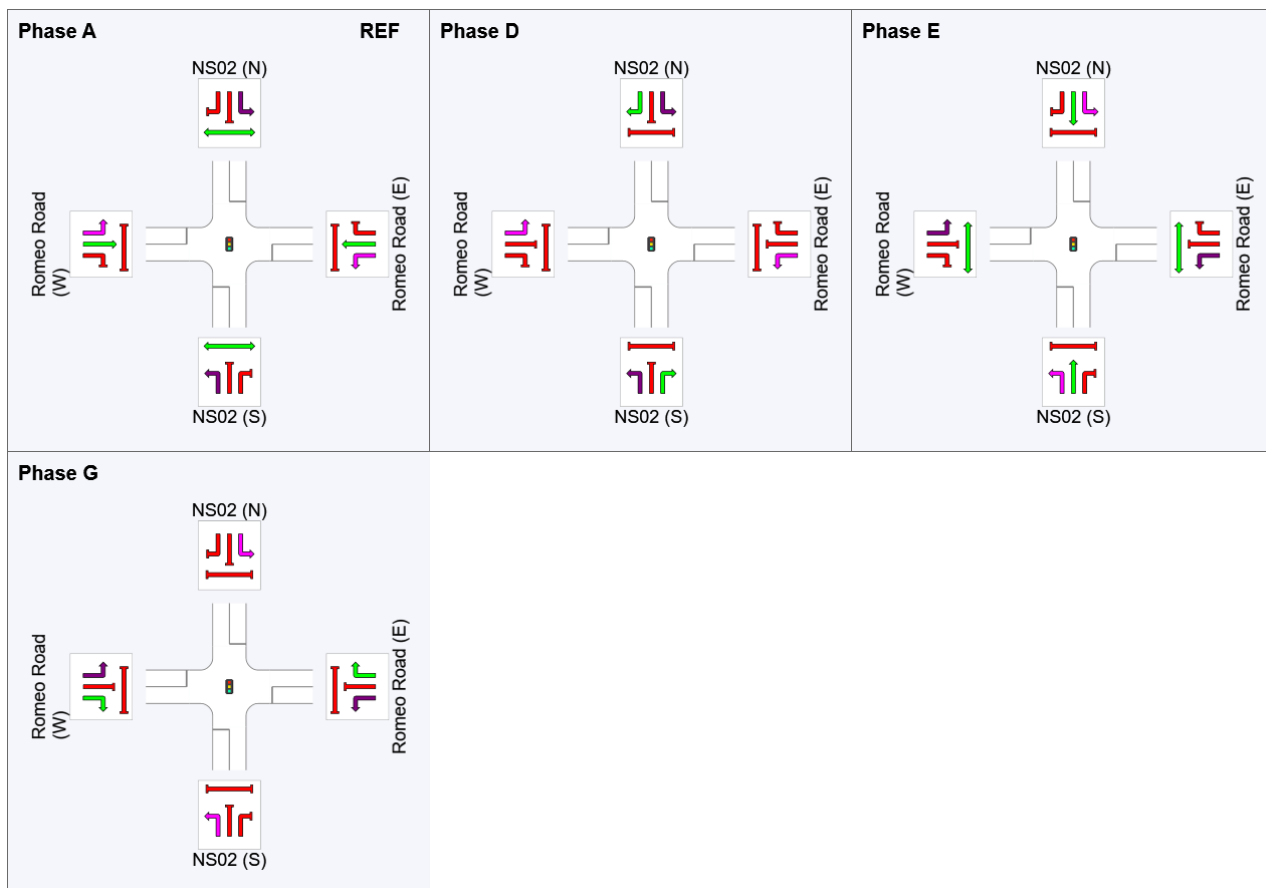
Input Volumes

Volume Display Method: Total and %



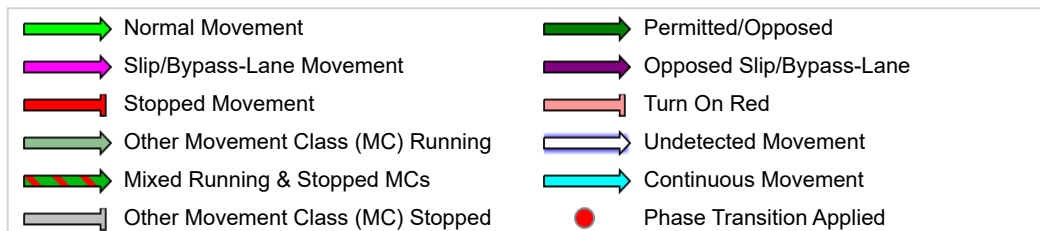
	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: NS02 (S)	38	36	2
E: Romeo Road (E)	670	637	34
N: NS02 (N)	83	79	4
W: Romeo Road (W)	508	483	25
Total	1299	1234	65

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



Phase Timing Summary

Phase	A	D	E	G
Phase Change Time (sec)	0	21	33	48
Green Time (sec)	15	6	9	6
Phase Time (sec)	21	12	15	12
Phase Split	35%	20%	25%	20%

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

Site: 101 [Brindabella Pkwy / NS01 - 2031 AM (Site Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Convert Function Default

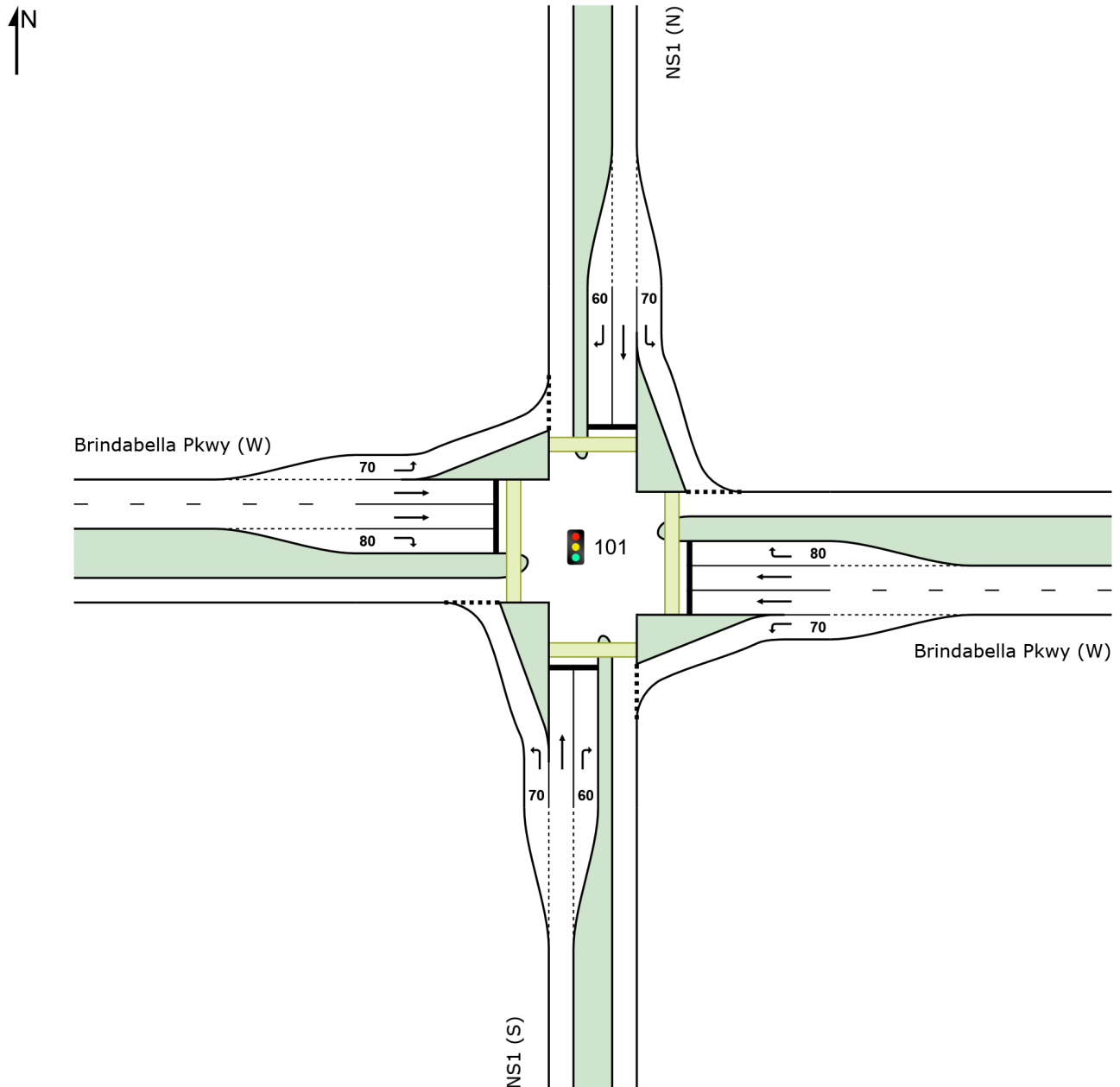
Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

Output Phase Sequence: A, B, C, D, E

Site Layout

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



Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
South: NS1 (S)													
Lane 1	137	5.0	1347	0.102	100	6.5	LOS A	0.6	4.5	Short	70	0.0	NA
Lane 2	131	5.0	268	0.487	100	31.3	LOS C	4.3	33.5	Full	100	0.0	0.0
Lane 3	1	5.0	254	0.004	100	33.5	LOS C	0.0	0.2	Short	60	0.0	NA
Approach	268	5.0		0.487		18.7	LOS B	4.3	33.5				
East: Brindabella Pkwy (W)													
Lane 1	4	5.0	1347	0.003	100	6.9	LOS A	0.0	0.2	Short	70	0.0	NA
Lane 2	0	5.0	536	0.001	20 ⁶	18.8	LOS B	0.0	0.1	Full	220	0.0	0.0
Lane 3	2	5.0	536	0.003	100	19.0	LOS B	0.0	0.3	Full	220	0.0	0.0
Lane 4	1	5.0	153	0.007	100	38.1	LOS D	0.0	0.3	Short	80	0.0	NA
Approach	7	5.0		0.007		14.8	LOS B	0.0	0.3				
North: NS1 (N)													
Lane 1	1	5.0	1337	0.001	100	6.2	LOS A	0.0	0.0	Short	70	0.0	NA
Lane 2	52	5.0	214	0.241	100	32.1	LOS C	1.7	13.1	Full	120	0.0	0.0
Lane 3	76	5.0	204	0.372	100	38.5	LOS D	2.6	19.7	Short	60	0.0	NA
Approach	128	5.0		0.372		35.7	LOS D	2.6	19.7				
West: Brindabella Pkwy (W)													
Lane 1	163	5.0	1346	0.121	100	6.8	LOS A	0.9	6.8	Short	70	0.0	NA
Lane 2	1	5.0	590	0.001	20 ⁶	17.3	LOS B	0.0	0.1	Full	330	0.0	0.0
Lane 3	4	5.0	590	0.006	100	17.5	LOS B	0.1	0.6	Full	330	0.0	0.0
Lane 4	95	5.0	204	0.466	100	39.0	LOS D	3.2	25.0	Short	80	0.0	NA
Approach	262	5.0		0.466		18.6	LOS B	3.2	25.0				
Intersection	666	5.0		0.487		21.9	LOS C	4.3	33.5				

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

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

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

Queue Model: SIDRA Standard.

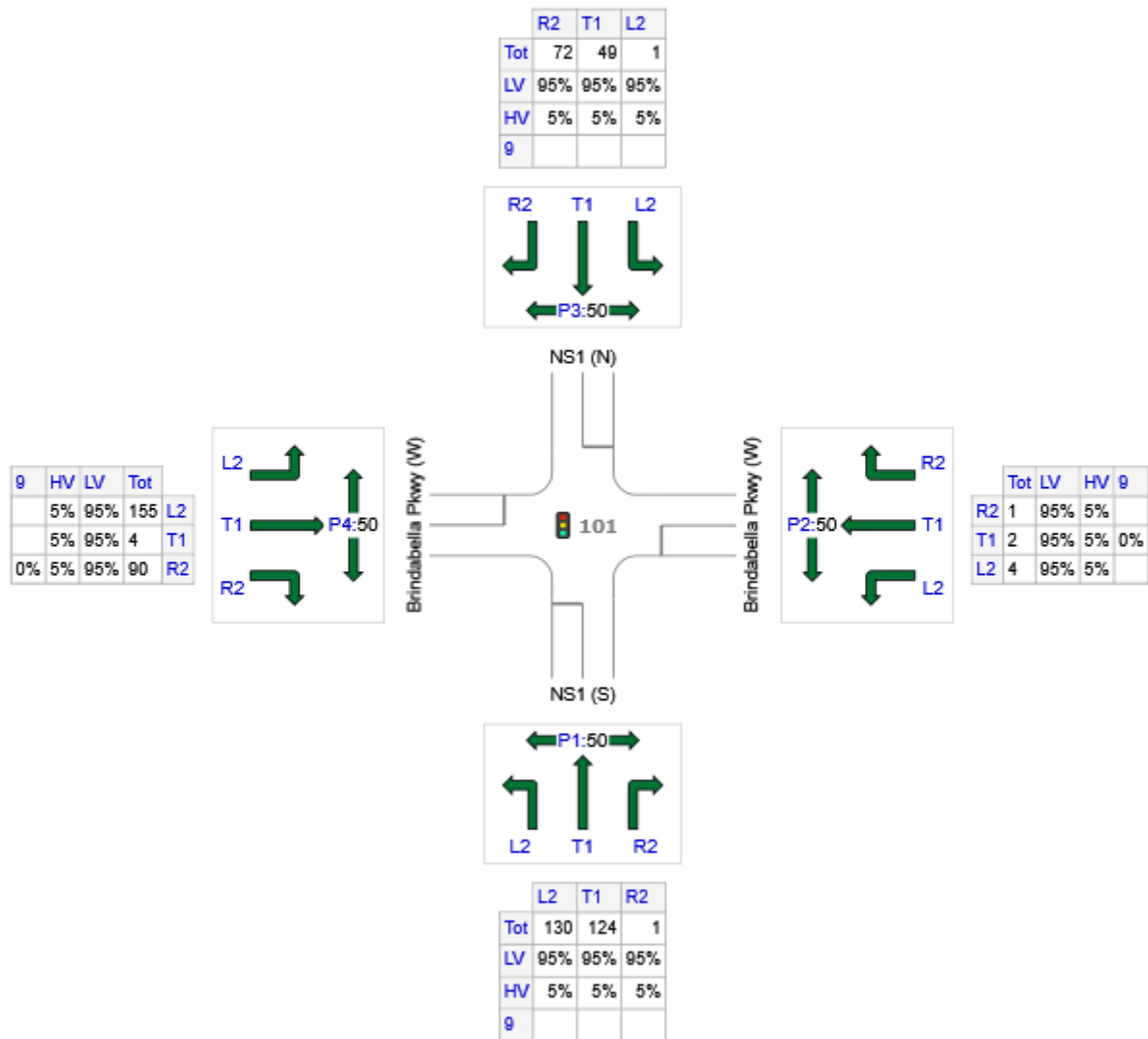
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

⁶ Lane under-utilisation due to downstream effects

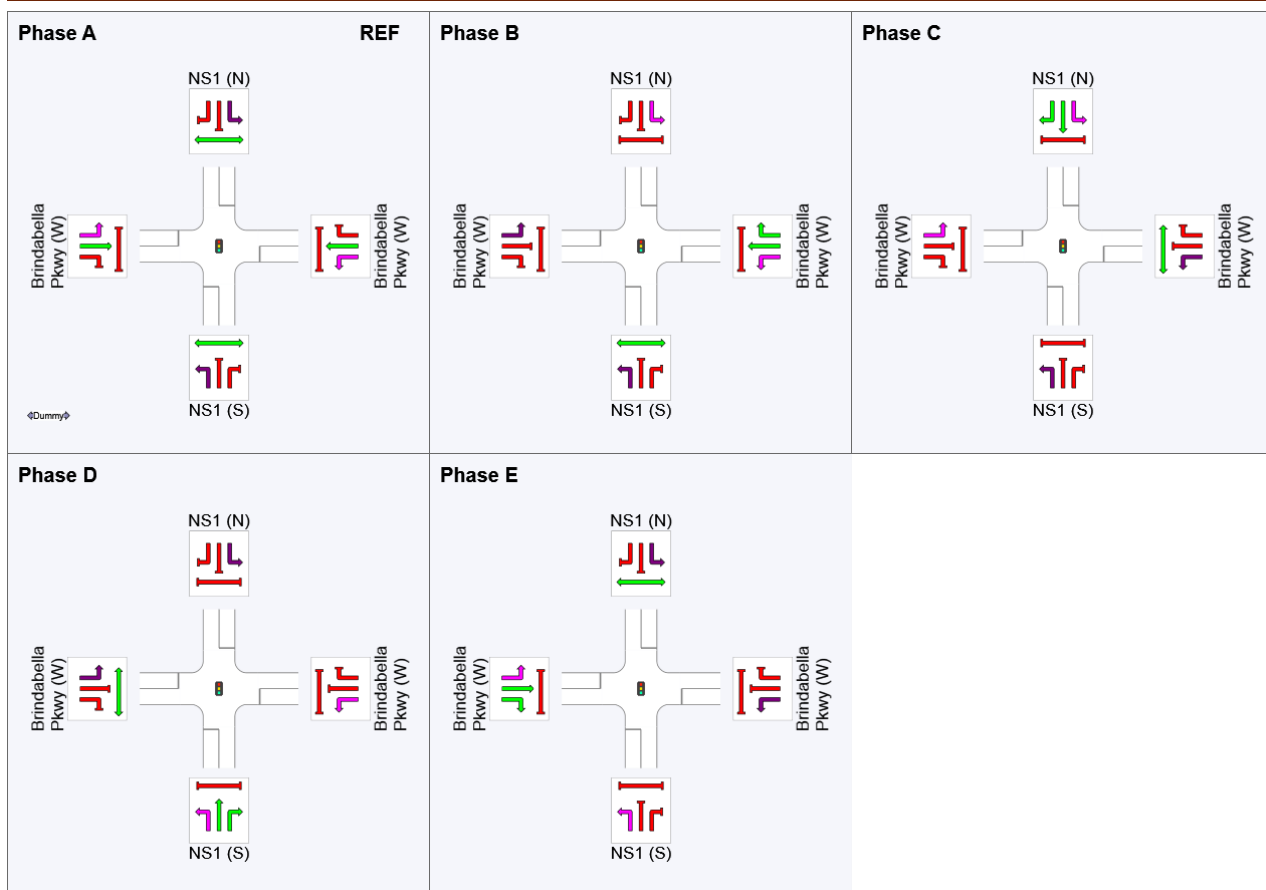
Input Volumes

Volume Display Method: Total and %



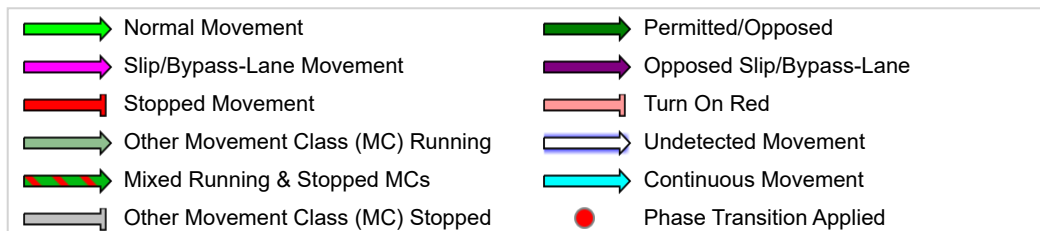
	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)	C 6-9 (9)
S: NS1 (S)	255	242	13	-
E: Brindabella Pkwy (W)	7	7	0	0
N: NS1 (N)	122	116	6	-
W: Brindabella Pkwy (W)	249	237	12	0
Total	633	601	32	0

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	14	26	40	56
Green Time (sec)	8	6	8	10	8
Phase Time (sec)	14	12	14	16	14
Phase Split	20%	17%	20%	23%	20%

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

Site: 101 [Brindabella Pkwy / NS01 - 2031 PM (Site Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Convert Function Default

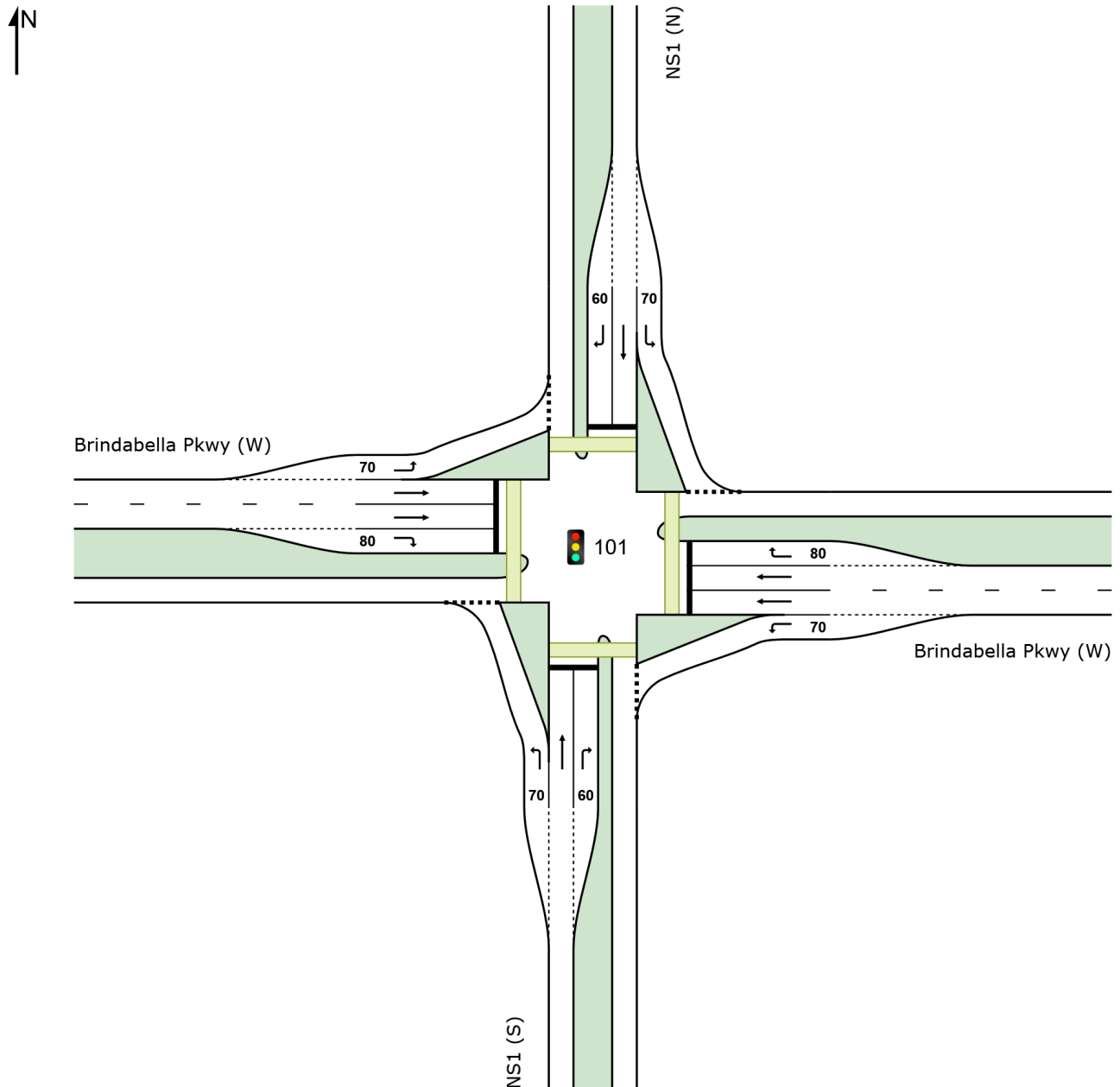
Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

Output Phase Sequence: A, B, C, D, E

Site Layout

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



Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
South: NS1 (S)													
Lane 1	144	5.0	1241	0.116	100	7.4	LOS A	1.0	7.8	Short	70	0.0	NA
Lane 2	98	5.0	214	0.456	100	33.2	LOS C	3.3	25.7	Full	100	0.0	0.0
Lane 3	1	5.0	204	0.005	100	35.7	LOS D	0.0	0.3	Short	60	0.0	NA
Approach	243	5.0		0.456		17.9	LOS B	3.3	25.7				
East: Brindabella Pkwy (W)													
Lane 1	2	5.0	1226	0.002	100	7.9	LOS A	0.0	0.1	Short	70	0.0	NA
Lane 2	0	5.0	514	0.000	20 ⁶	18.8	LOS B	0.0	0.0	Full	220	0.0	0.0
Lane 3	1	5.0	536	0.002	100	18.9	LOS B	0.0	0.2	Full	220	0.0	0.0
Lane 4	1	5.0	153	0.007	100	38.1	LOS D	0.0	0.3	Short	80	0.0	NA
Approach	4	5.0		0.007		18.2	LOS B	0.0	0.3				
North: NS1 (N)													
Lane 1	1	5.0	1346	0.001	100	6.2	LOS A	0.0	0.0	Short	70	0.0	NA
Lane 2	132	5.0	268	0.491	100	31.4	LOS C	4.4	33.8	Full	120	0.0	0.0
Lane 3	194	5.0	254	0.761	100	41.1	LOS D	7.1	55.1	Short	60	0.0	NA
Approach	326	5.0		0.761		37.1	LOS D	7.1	55.1				
West: Brindabella Pkwy (W)													
Lane 1	54	5.0	1384	0.039	100	6.6	LOS A	0.2	1.9	Short	70	0.0	NA
Lane 2	1	5.0	590	0.001	20 ⁶	17.3	LOS B	0.0	0.1	Full	330	0.0	0.0
Lane 3	4	5.0	590	0.006	100	17.5	LOS B	0.1	0.6	Full	330	0.0	0.0
Lane 4	159	5.0	204	0.781	100	43.3	LOS D	6.0	46.4	Short	80	0.0	NA
Approach	217	5.0		0.781		33.7	LOS C	6.0	46.4				
Intersection	791	5.0		0.781		30.2	LOS C	7.1	55.1				

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

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

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

Queue Model: SIDRA Standard.

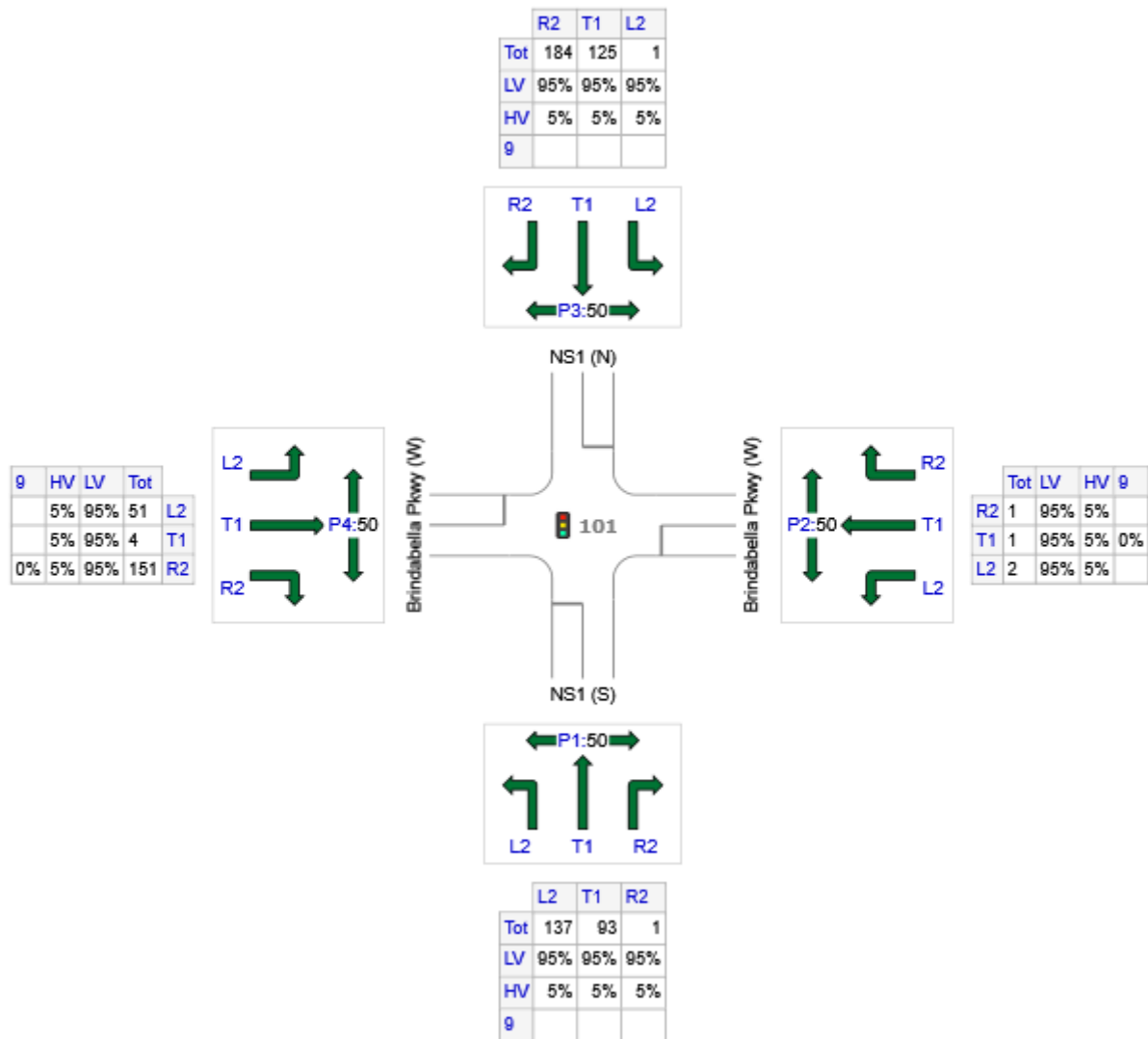
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

⁶ Lane under-utilisation due to downstream effects

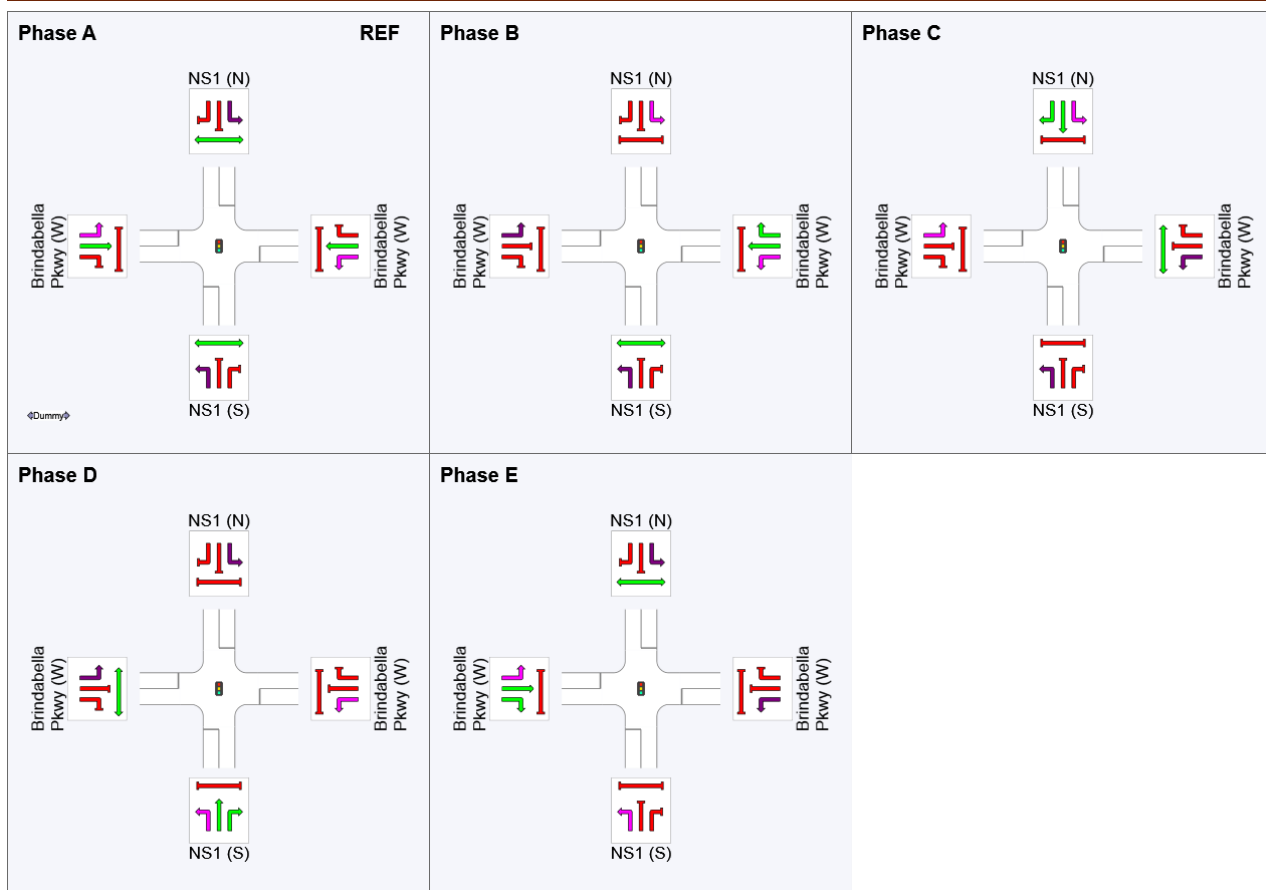
Input Volumes

Volume Display Method: Total and %



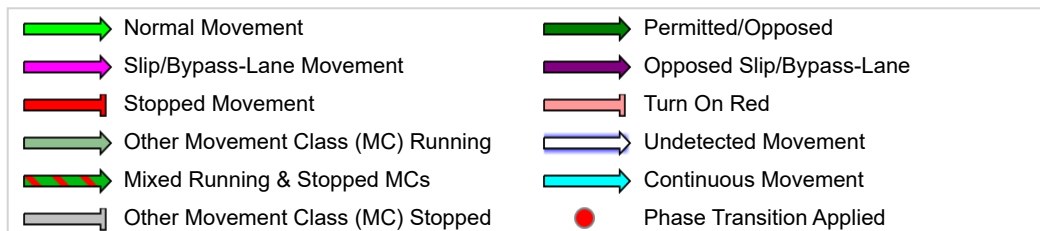
	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)	C 6-9 (9)
S: NS1 (S)	231	219	12	-
E: Brindabella Pkwy (W)	4	4	0	0
N: NS1 (N)	310	295	16	-
W: Brindabella Pkwy (W)	206	196	10	0
Total	751	713	38	0

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	14	26	42	56
Green Time (sec)	8	6	10	8	8
Phase Time (sec)	14	12	16	14	14
Phase Split	20%	17%	23%	20%	20%

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

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Organisation: STANTEC NEW ZEALAND | Licence: NETWORK / Enterprise | Created: Monday, 20 March 2023 2:58:09 PM

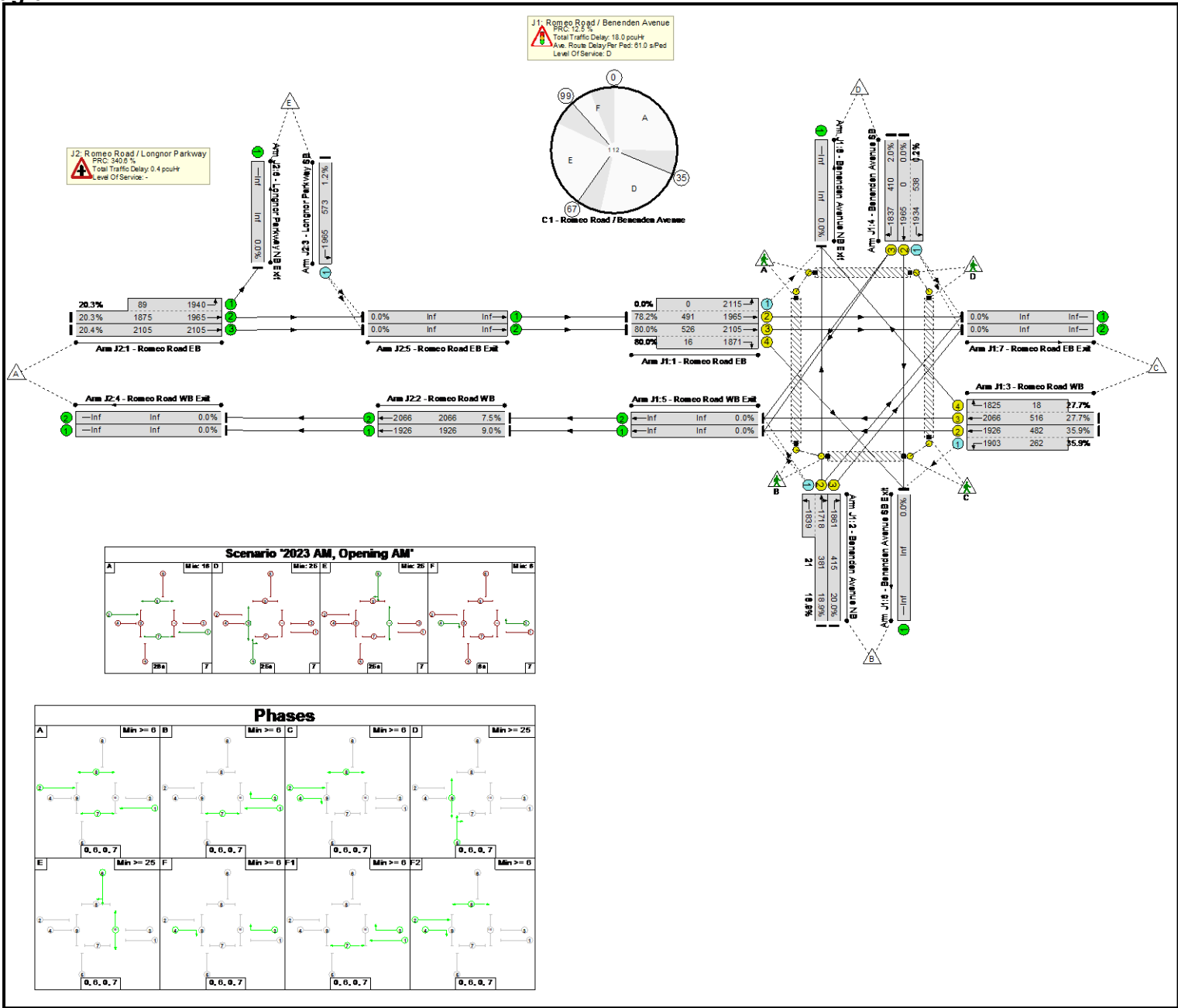
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Main Roads WA Result

Main Roads WA Result

Scenario 1: '2023 AM, Opening AM' (FG1: '2023 AM', Plan 1: 'NCP 1 - Diamond Split')

Network Layout Diagram



Main Roads WA Result

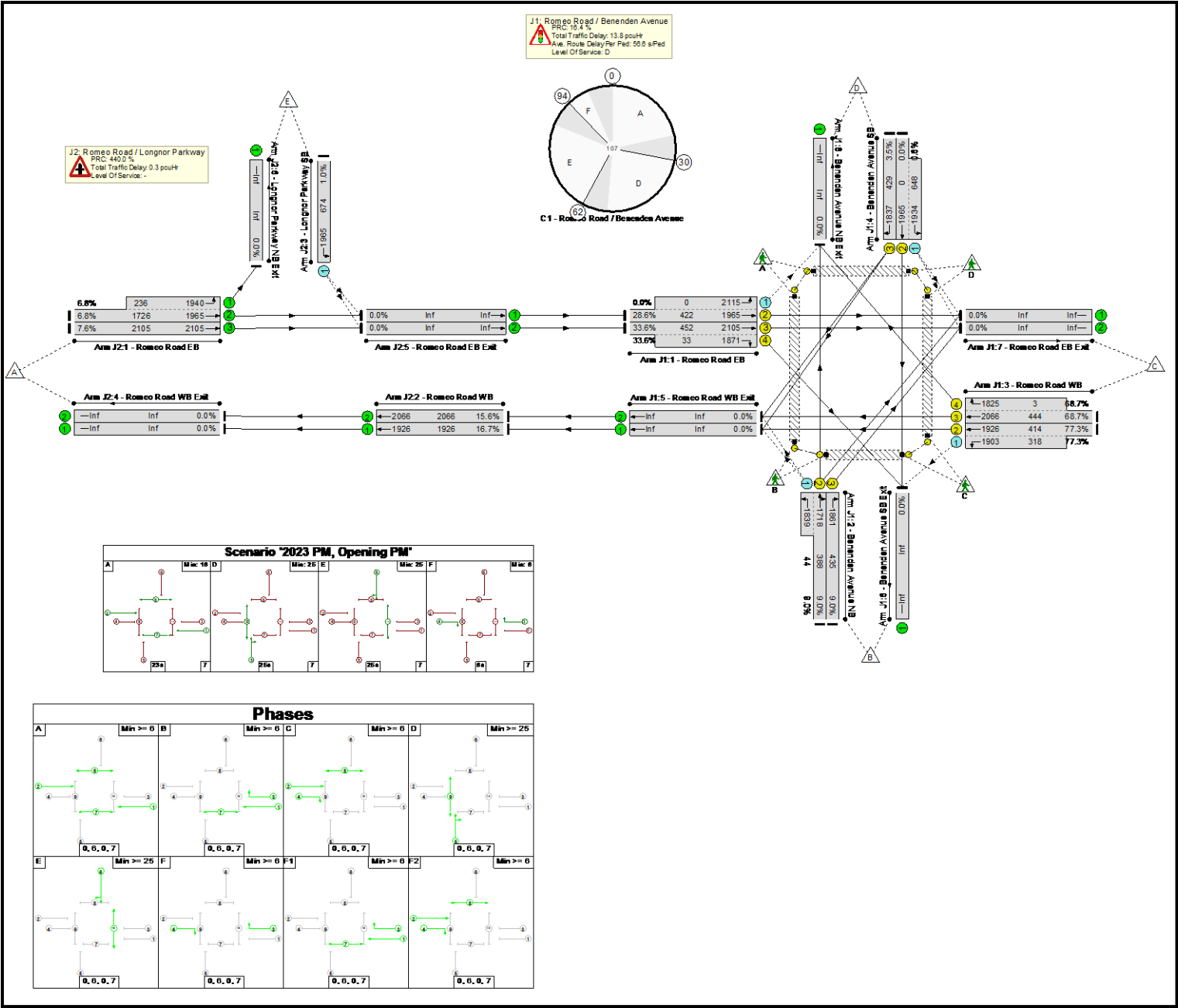
Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	80.0%	18.4	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	80.0%	18.0	-	-
1/2+1/1	Romeo Road EB Ahead Left	28	384	1965:2115	491+0	78.2 : 0.0%	5.9	55.4	12.8
1/3+1/4	Romeo Road EB Right Ahead	28:6	434	2105:1871	526+16	80.0 : 80.0%	6.7	55.7	14.1
2/2+2/1	Benenden Avenue NB Left Right Ahead	25	76	1718:1839	381+21	18.9 : 18.9%	0.8	38.9	1.9
2/3	Benenden Avenue NB Right	25	83	1861	415	20.0%	0.9	40.8	2.2
3/2+3/1	Romeo Road WB Ahead Left	28	267	1926:1903	482+262	35.9 : 35.9%	1.9	26.2	4.7
3/3+3/4	Romeo Road WB Ahead Right	28:6	148	2066:1825	516+18	27.7 : 27.7%	1.6	39.1	3.8
4/2+4/1	Benenden Avenue SB Ahead Left	25	1	1965:1934	0+538	0.0 : 0.2%	0.0	5.3	0.0
4/3	Benenden Avenue SB Right	25	8	1837	410	2.0%	0.1	38.7	0.2
Ped Link: P1	Benenden Ave South	6	32	-	3857	0.8%	0.5	51.6	1.0
Ped Link: P2	Benenden Ave N	6	48	-	3857	1.3%	0.6	48.6	1.4
Ped Link: P3	Romeo Road West	6	42	-	3857	1.0%	0.4	35.6	1.3
Ped Link: P4	Romeo Road East	6	38	-	3857	0.9%	0.5	48.5	1.2
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	20.4%	0.4	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	399	1965:1940	1875+89	20.3 : 20.3%	0.1	1.2	0.1
1/3	Romeo Road EB Ahead	-	430	2105	2105	20.4%	0.1	1.1	0.1
2/1	Romeo Road WB Ahead	-	173	1926	1926	9.0%	0.0	1.0	0.0
2/2	Romeo Road WB Ahead	-	155	2066	2066	7.5%	0.0	0.9	0.0
3/1	Longnor Parkway SB Left	-	7	1965	573	1.2%	0.0	3.2	0.0
C1 - Romeo Road / Benenden Avenue		PRC for Signalled Lanes (%):	12.5	Total Delay for Signalled Lanes (pcuHr):		18.03	Cycle Time (s): 112		
		PRC Over All Lanes (%):	12.5	Total Delay Over All Lanes(pcuHr):		18.38			

Main Roads WA Result

Scenario 2: '2023 PM, Opening PM' (FG2: '2023 PM', Plan 1: 'NCP 1 - Diamond Split')

Network Layout Diagram



Main Roads WA Result

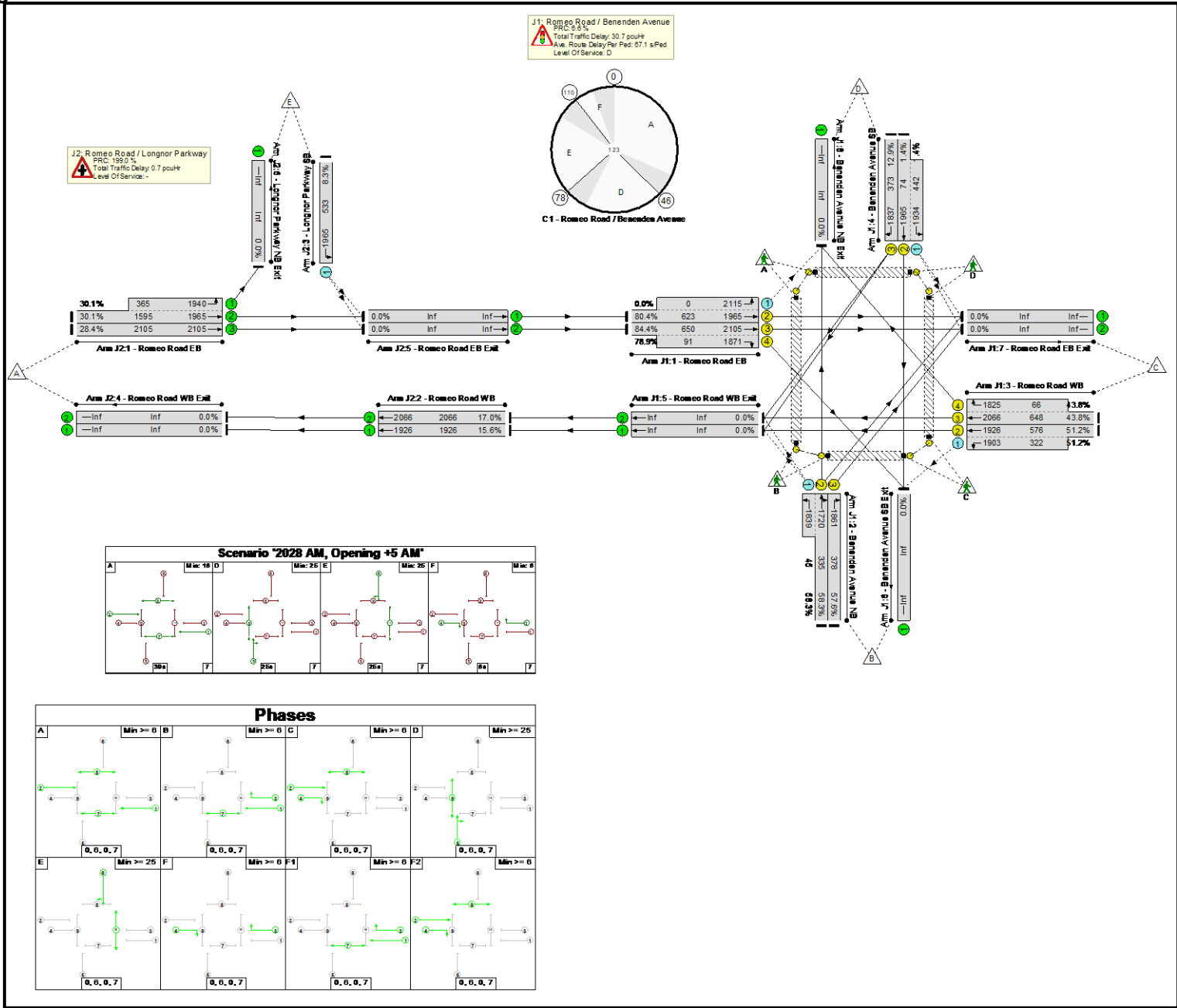
Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	77.3%	14.0	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	77.3%	13.8	-	-
1/2+1/1	Romeo Road EB Ahead Left	23	121	1965:2115	422+0	28.6 : 0.0%	1.4	41.1	3.2
1/3+1/4	Romeo Road EB Right Ahead	23:6	163	2105:1871	452+33	33.6 : 33.6%	1.9	42.0	4.1
2/2+2/1	Benenden Avenue NB Left Right Ahead	25	39	1718:1839	388+44	9.0 : 9.0%	0.4	33.5	0.9
2/3	Benenden Avenue NB Right	25	39	1861	435	9.0%	0.4	36.7	0.9
3/2+3/1	Romeo Road WB Ahead Left	23	566	1926:1903	414+318	77.3 : 77.3%	5.2	33.0	10.6
3/3+3/4	Romeo Road WB Ahead Right	23:6	307	2066:1825	444+3	68.7 : 68.7%	4.4	51.4	9.4
4/2+4/1	Benenden Avenue SB Ahead Left	25	4	1965:1934	0+648	0.0 : 0.6%	0.0	3.0	0.0
4/3	Benenden Avenue SB Right	25	15	1837	429	3.5%	0.2	36.2	0.4
Ped Link: P1	Benenden Ave South	6	40	-	4037	1.0%	0.5	49.0	1.1
Ped Link: P2	Benenden Ave N	6	40	-	4037	1.0%	0.5	49.0	1.1
Ped Link: P3	Romeo Road West	6	40	-	4037	1.0%	0.3	27.9	1.2
Ped Link: P4	Romeo Road East	6	40	-	4037	1.0%	0.5	43.9	1.2
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	16.7%	0.3	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	133	1965:1940	1726+236	6.8 : 6.8%	0.0	1.0	0.0
1/3	Romeo Road EB Ahead	-	160	2105	2105	7.6%	0.0	0.9	0.0
2/1	Romeo Road WB Ahead	-	321	1926	1926	16.7%	0.1	1.1	0.1
2/2	Romeo Road WB Ahead	-	323	2066	2066	15.6%	0.1	1.0	0.1
3/1	Longnor Parkway SB Left	-	7	1965	674	1.0%	0.0	2.7	0.0
C1 - Romeo Road / Benenden Avenue PRC for Signalised Lanes (%): 16.4 Total Delay for Signalised Lanes (pcuHr): 13.77 Cycle Time (s): 107 PRC Over All Lanes (%): 16.4 Total Delay Over All Lanes(pcuHr): 14.04									

Main Roads WA Result

Scenario 3: '2028 AM, Opening +5 AM' (FG3: '2028 AM', Plan 1: 'NCP 1 - Diamond Split')

Network Layout Diagram

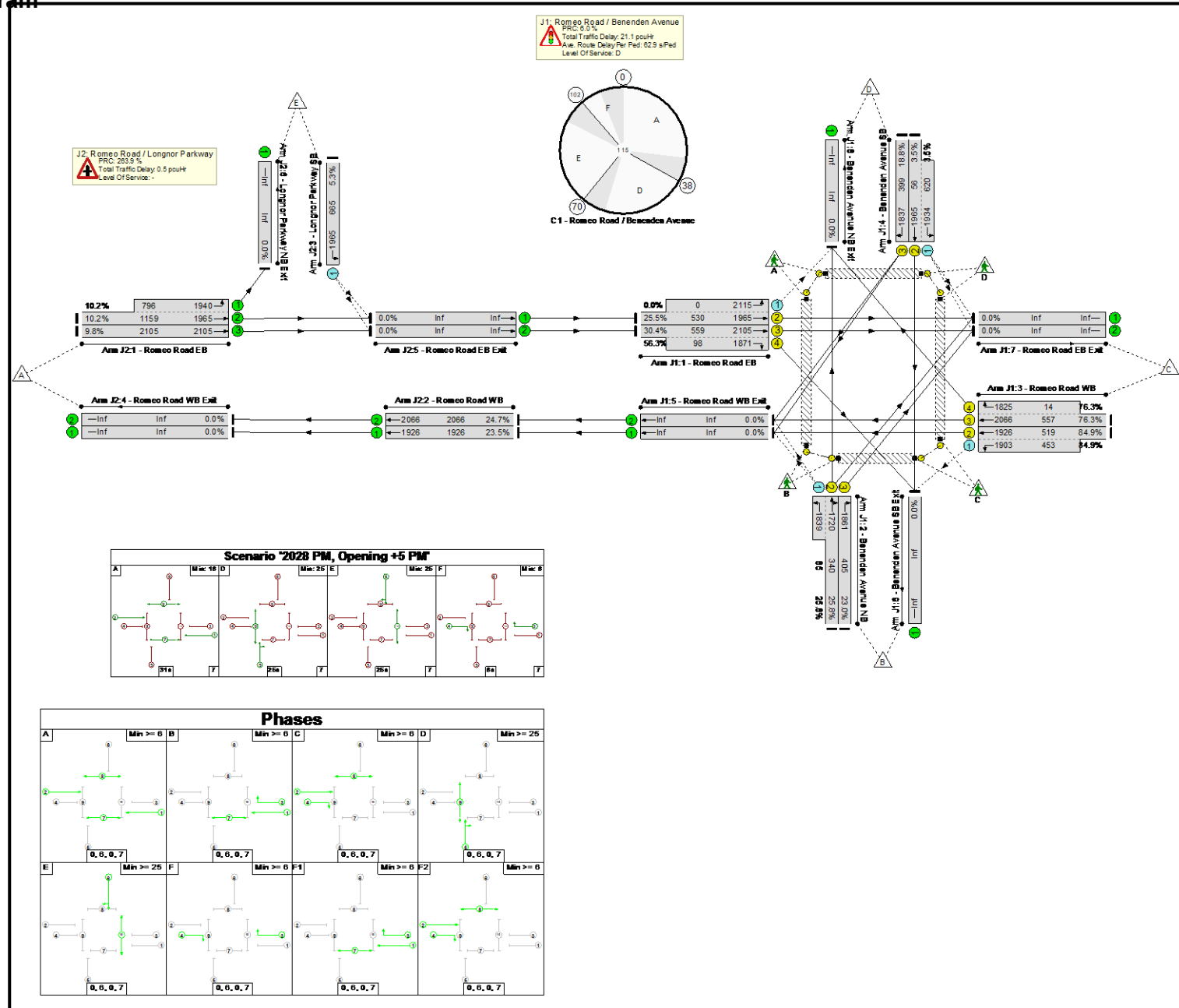


Main Roads WA Result

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	84.4%	31.4	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	84.4%	30.7	-	-
1/2+1/1	Romeo Road EB Ahead Left	39	501	1965:2115	623+0	80.4 : 0.0%	7.3	52.8	17.6
1/3+1/4	Romeo Road EB Right Ahead	39:6	621	2105:1871	650+91	84.4 : 78.9%	9.5	55.3	19.9
2/2+2/1	Benenden Avenue NB Left Right Ahead	25	221	1720:1839	335+45	58.3 : 58.3%	3.1	50.3	6.8
2/3	Benenden Avenue NB Right	25	218	1861	378	57.6%	3.4	55.4	7.4
3/2+3/1	Romeo Road WB Ahead Left	39	460	1926:1903	576+322	51.2 : 51.2%	3.3	25.8	8.6
3/3+3/4	Romeo Road WB Ahead Right	39:6	313	2066:1825	648+66	43.8 : 43.8%	3.5	39.9	8.0
4/2+4/1	Benenden Avenue SB Ahead Left	25	7	1965:1934	74+442	1.4 : 1.4%	0.0	12.8	0.1
4/3	Benenden Avenue SB Right	25	48	1837	373	12.9%	0.6	45.7	1.4
Ped Link: P1	Benenden Ave South	6	37	-	3512	1.0%	0.4	42.7	1.2
Ped Link: P2	Benenden Ave N	6	43	-	3512	1.3%	0.5	44.3	1.4
Ped Link: P3	Romeo Road West	6	37	-	3512	1.0%	0.6	57.2	1.2
Ped Link: P4	Romeo Road East	6	43	-	3512	1.1%	0.7	57.0	1.4
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	30.1%	0.7	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	590	1965:1940	1595+365	30.1 : 30.1%	0.2	1.3	0.2
1/3	Romeo Road EB Ahead	-	598	2105	2105	28.4%	0.2	1.2	0.2
2/1	Romeo Road WB Ahead	-	301	1926	1926	15.6%	0.1	1.1	0.1
2/2	Romeo Road WB Ahead	-	352	2066	2066	17.0%	0.1	1.1	0.1
3/1	Longnor Parkway SB Left	-	44	1965	533	8.3%	0.0	3.7	0.0
C1 - Romeo Road / Benenden Avenue		PRC for Signalled Lanes (%):	6.6	Total Delay for Signalled Lanes (pcuHr):		30.74	Cycle Time (s): 123		
		PRC Over All Lanes (%):	6.6	Total Delay Over All Lanes(pcuHr):		31.39			

Scenario 4: '2028 PM, Opening +5 PM' (FG4: '2028 PM', Plan 1: 'NCP 1 - Diamond Split')



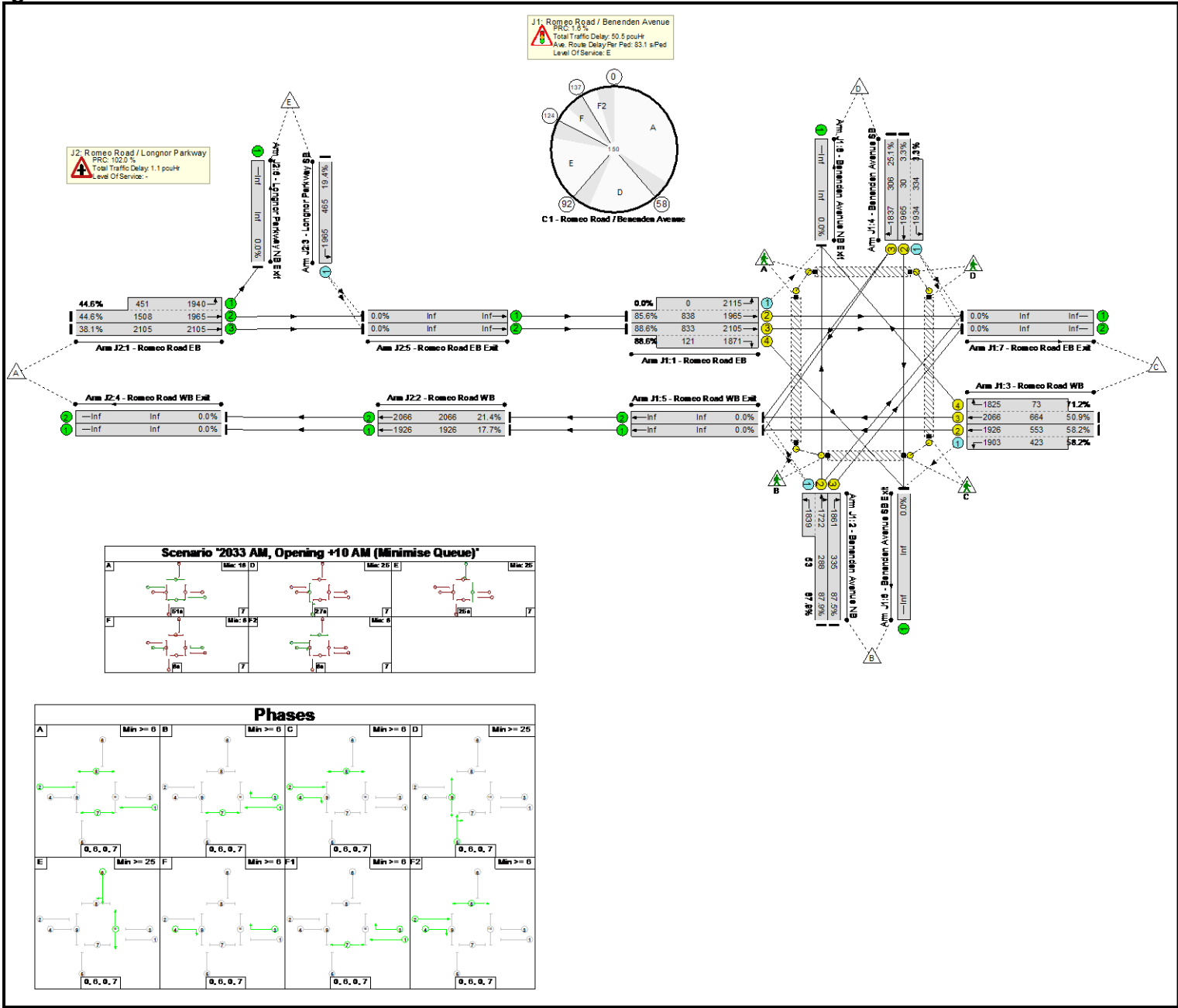
Main Roads WA Result

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	84.9%	21.5	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	84.9%	21.1	-	-
1/2+1/1	Romeo Road EB Ahead Left	31	135	1965:2115	530+0	25.5 : 0.0%	1.4	37.5	3.5
1/3+1/4	Romeo Road EB Right Ahead	31:6	225	2105:1871	559+98	30.4 : 56.3%	2.7	42.4	4.6
2/2+2/1	Benenden Avenue NB Left Right Ahead	25	110	1720:1839	340+85	25.8 : 25.8%	1.1	35.9	2.5
2/3	Benenden Avenue NB Right	25	93	1861	405	23.0%	1.1	42.9	2.6
3/2+3/1	Romeo Road WB Ahead Left	31	826	1926:1903	519+453	84.9 : 84.9%	7.6	33.1	15.9
3/3+3/4	Romeo Road WB Ahead Right	31:6	436	2066:1825	557+14	76.3 : 76.3%	6.3	52.0	14.0
4/2+4/1	Benenden Avenue SB Ahead Left	25	24	1965:1934	56+620	3.5 : 3.5%	0.0	6.0	0.1
4/3	Benenden Avenue SB Right	25	75	1837	399	18.8%	0.9	42.3	2.1
Ped Link: P1	Benenden Ave South	6	33	-	3757	0.8%	0.4	41.9	1.0
Ped Link: P2	Benenden Ave N	6	47	-	3757	1.3%	0.6	43.0	1.5
Ped Link: P3	Romeo Road West	6	37	-	3757	0.9%	0.5	51.1	1.1
Ped Link: P4	Romeo Road East	6	43	-	3757	1.1%	0.6	52.4	1.3
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	24.7%	0.5	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	199	1965:1940	1159+796	10.2 : 10.2%	0.1	1.0	0.1
1/3	Romeo Road EB Ahead	-	207	2105	2105	9.8%	0.1	0.9	0.1
2/1	Romeo Road WB Ahead	-	452	1926	1926	23.5%	0.2	1.2	0.2
2/2	Romeo Road WB Ahead	-	511	2066	2066	24.7%	0.2	1.2	0.2
3/1	Longnor Parkway SB Left	-	35	1965	665	5.3%	0.0	2.9	0.0
C1 - Romeo Road / Benenden Avenue		PRC for Signalled Lanes (%):	6.0	Total Delay for Signalled Lanes (pcuHr):		21.07	Cycle Time (s): 115		
		PRC Over All Lanes (%):	6.0	Total Delay Over All Lanes(pcuHr):		21.53			

Main Roads WA Result

Scenario 5: '2033 AM, Opening +10 AM (Minimise Queue)' (FG5: '2033 AM', Plan 2: 'NCP 2 - Diamond Split with Alternate')
Network Layout Diagram



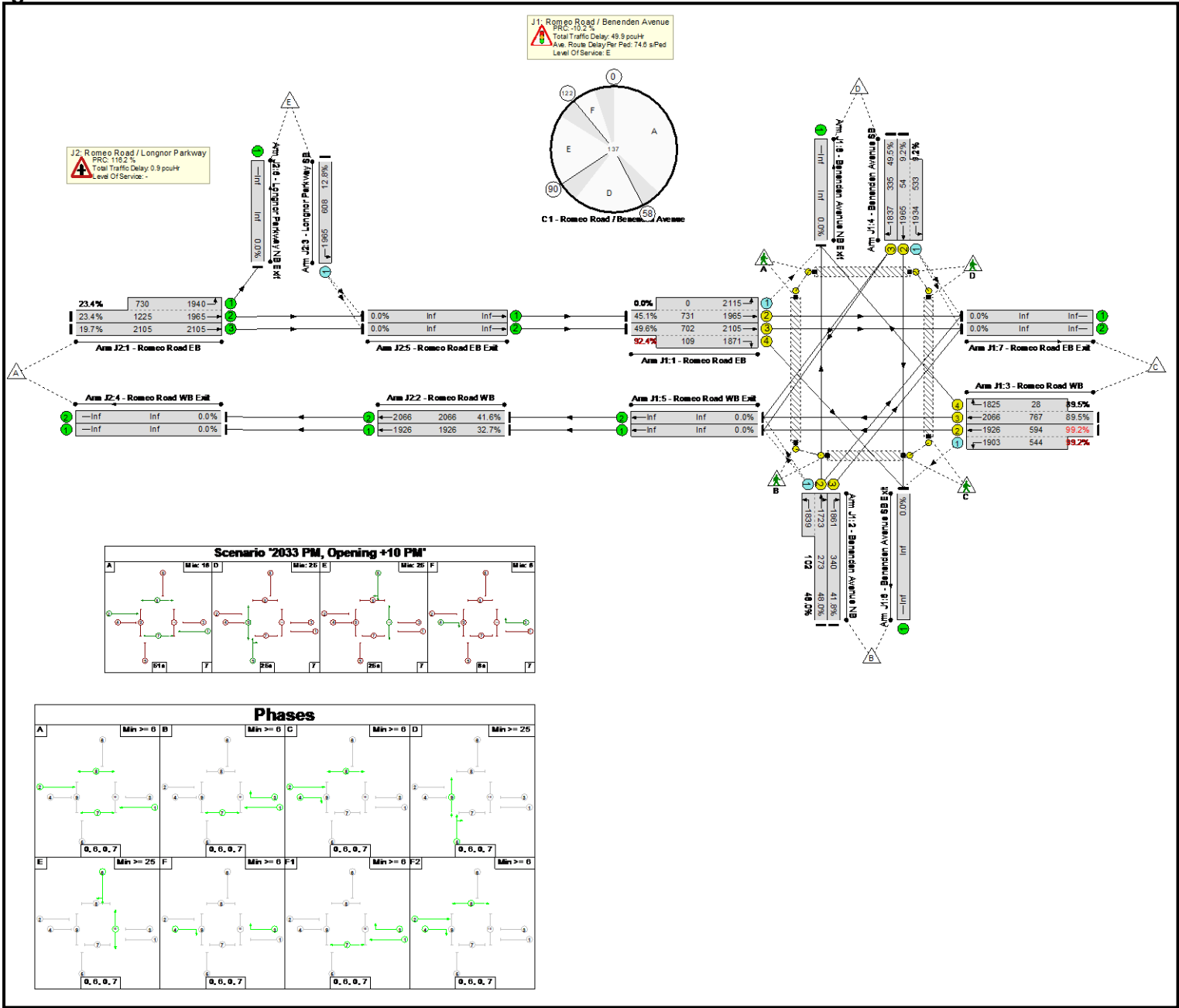
Main Roads WA Result

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	88.6%	51.5	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	88.6%	50.5	-	-
1/2+1/1	Romeo Road EB Ahead Left	64	718	1965:2115	838+0	85.6 : 0.0%	10.6	53.1	29.8
1/3+1/4	Romeo Road EB Right Ahead	64:19	845	2105:1871	833+121	88.6 : 88.6%	13.6	57.8	33.2
2/2+2/1	Benenden Avenue NB Left Right Ahead	27	300	1722:1839	288+53	87.9 : 87.9%	7.5	90.3	14.3
2/3	Benenden Avenue NB Right	27	293	1861	335	87.5%	7.9	97.3	14.8
3/2+3/1	Romeo Road WB Ahead Left	51	568	1926:1903	553+423	58.2 : 58.2%	4.2	26.6	11.2
3/3+3/4	Romeo Road WB Ahead Right	51:6	390	2066:1825	664+73	50.9 : 71.2%	5.3	48.5	11.6
4/2+4/1	Benenden Avenue SB Ahead Left	25	12	1965:1934	30+334	3.3 : 3.3%	0.1	19.0	0.2
4/3	Benenden Avenue SB Right	25	77	1837	306	25.1%	1.3	62.2	2.9
Ped Link: P1	Benenden Ave South	6	40	-	2880	1.4%	0.6	56.8	1.6
Ped Link: P2	Benenden Ave N	6	40	-	2880	1.4%	0.6	50.8	1.6
Ped Link: P3	Romeo Road West	6	40	-	2880	1.4%	0.8	70.9	1.6
Ped Link: P4	Romeo Road East	6	40	-	2880	1.4%	0.8	70.9	1.6
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	44.6%	1.1	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	873	1965:1940	1508+451	44.6 : 44.6%	0.4	1.7	0.4
1/3	Romeo Road EB Ahead	-	801	2105	2105	38.1%	0.3	1.4	0.3
2/1	Romeo Road WB Ahead	-	341	1926	1926	17.7%	0.1	1.1	0.1
2/2	Romeo Road WB Ahead	-	443	2066	2066	21.4%	0.1	1.1	0.1
3/1	Longnor Parkway SB Left	-	90	1965	465	19.4%	0.1	4.8	0.1
C1 - Romeo Road / Benenden Avenue		PRC for Signalled Lanes (%):	1.6	Total Delay for Signalled Lanes (pcuHr):		50.45	Cycle Time (s): 150		
		PRC Over All Lanes (%):	1.6	Total Delay Over All Lanes(pcuHr):		51.53			

Main Roads WA Result

Scenario 6: '2033 PM, Opening +10 PM' (FG6: '2033 PM', Plan 1: 'NCP 1 - Diamond Split')
Network Layout Diagram



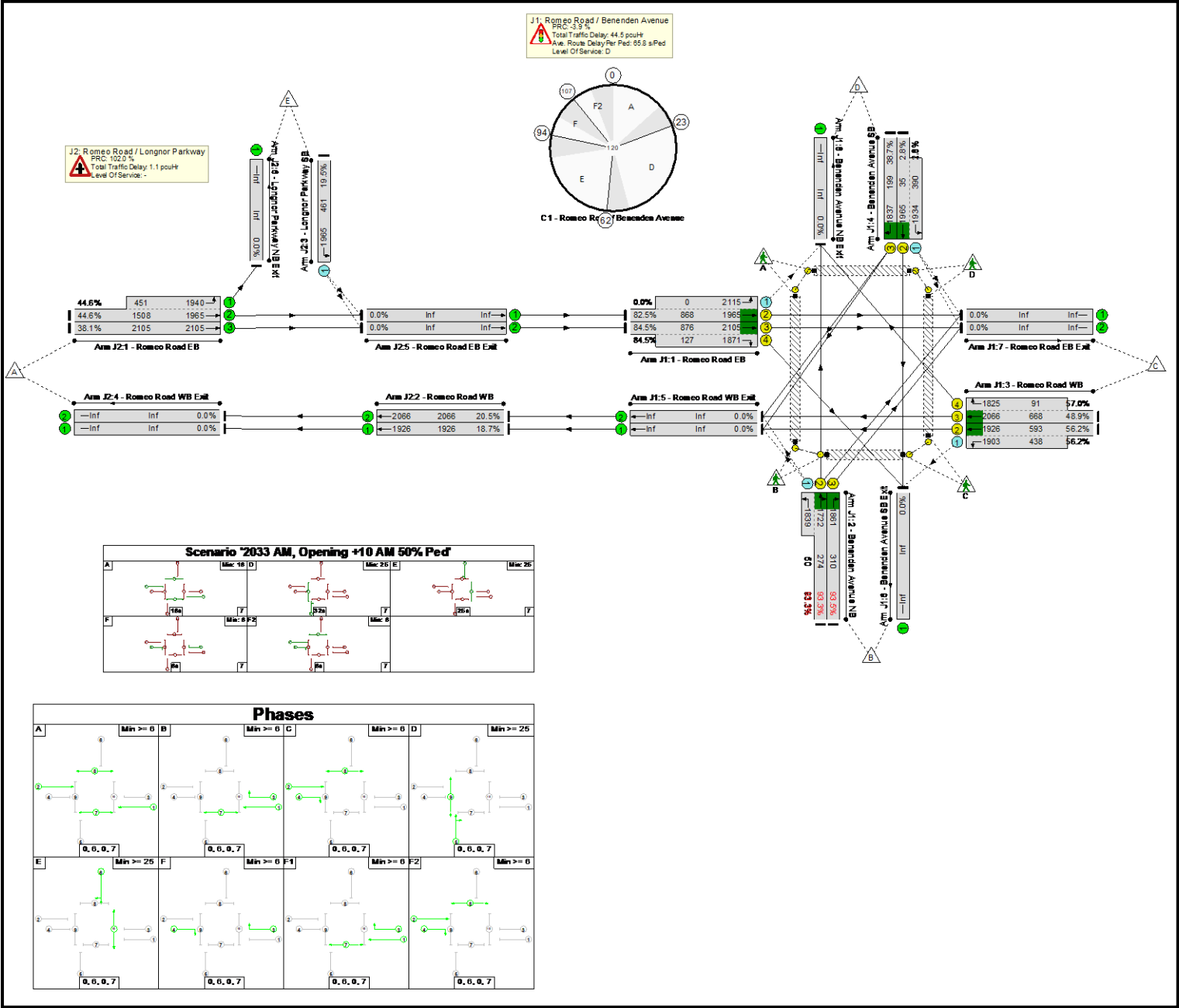
Main Roads WA Result

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	99.2%	50.9	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	99.2%	49.9	-	-
1/2+1/1	Romeo Road EB Ahead Left	51	330	1965:2115	731+0	45.1 : 0.0%	3.4	36.9	9.9
1/3+1/4	Romeo Road EB Right Ahead	51:8	449	2105:1871	702+109	49.6 : 92.4%	5.5	44.5	10.6
2/2+2/1	Benenden Avenue NB Left Right Ahead	25	180	1723:1839	273+102	48.0 : 48.0%	2.4	47.2	4.9
2/3	Benenden Avenue NB Right	25	142	1861	340	41.8%	2.3	58.6	5.1
3/2+3/1	Romeo Road WB Ahead Left	51	1129	1926:1903	594+544	99.2 : 99.2%	21.4	68.2	41.4
3/3+3/4	Romeo Road WB Ahead Right	51:8	711	2066:1825	767+28	89.5 : 89.5%	12.0	60.8	28.6
4/2+4/1	Benenden Avenue SB Ahead Left	25	54	1965:1934	54+533	9.2 : 9.2%	0.1	9.0	0.3
4/3	Benenden Avenue SB Right	25	166	1837	335	49.5%	2.8	60.9	6.2
Ped Link: P1	Benenden Ave South	6	40	-	3153	1.3%	0.5	47.4	1.5
Ped Link: P2	Benenden Ave N	6	40	-	3153	1.3%	0.5	47.9	1.5
Ped Link: P3	Romeo Road West	6	40	-	3153	1.3%	0.7	64.3	1.5
Ped Link: P4	Romeo Road East	6	40	-	3153	1.3%	0.7	64.3	1.5
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	41.6%	0.9	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	458	1965:1940	1225+730	23.4 : 23.4%	0.2	1.2	0.2
1/3	Romeo Road EB Ahead	-	414	2105	2105	19.7%	0.1	1.1	0.1
2/1	Romeo Road WB Ahead	-	630	1926	1926	32.7%	0.2	1.4	0.2
2/2	Romeo Road WB Ahead	-	860	2066	2066	41.6%	0.4	1.5	5.0
3/1	Longnor Parkway SB Left	-	78	1965	608	12.8%	0.1	3.4	0.1
C1 - Romeo Road / Benenden Avenue		PRC for Signalised Lanes (%):	-10.2	Total Delay for Signalised Lanes (pcuHr):		49.95	Cycle Time (s): 137		
		PRC Over All Lanes (%):	-10.2	Total Delay Over All Lanes(pcuHr):		50.90			

Main Roads WA Result

Scenario 7: '2033 AM, Opening +10 AM 50% Ped' (FG5: '2033 AM', Plan 2: 'NCP 2 - Diamond Split with Alternate')
Network Layout Diagram



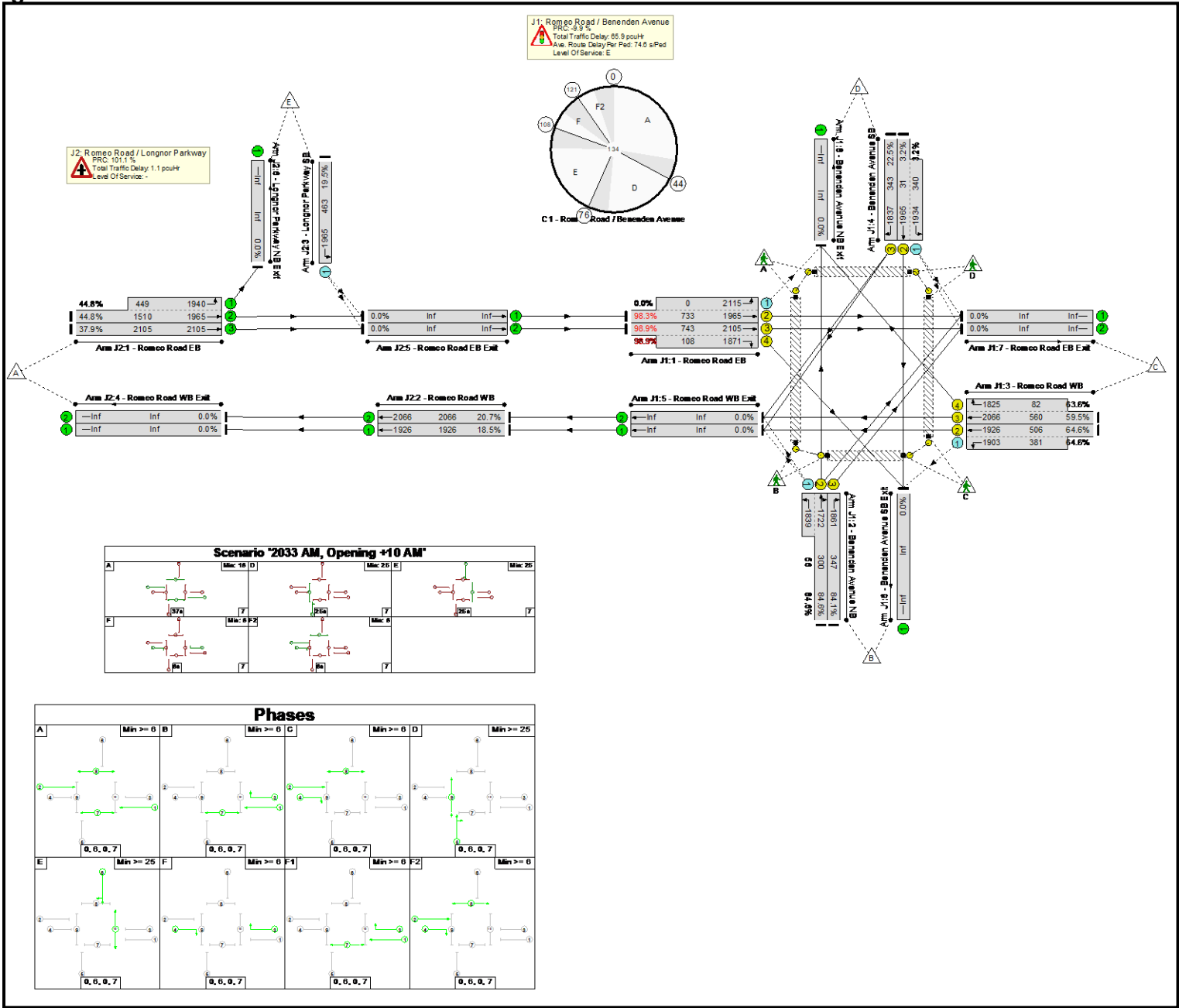
Main Roads WA Result

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	93.5%	45.6	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	93.5%	44.5	-	-
1/2+1/1	Romeo Road EB Ahead Left	29	716	1965:2115	868+0	82.5 : 0.0%	8.1	40.9	23.2
1/3+1/4	Romeo Road EB Right Ahead	29:19	847	2105:1871	876+127	84.5 : 84.5%	9.9	42.2	25.0
2/2+2/1	Benenden Avenue NB Left Right Ahead	32	303	1722:1839	274+50	93.3 : 93.3%	8.4	99.9	13.9
2/3	Benenden Avenue NB Right	32	290	1861	310	93.5%	8.8	109.6	14.4
3/2+3/1	Romeo Road WB Ahead Left	16	579	1926:1903	593+438	56.2 : 56.2%	3.6	22.5	9.5
3/3+3/4	Romeo Road WB Ahead Right	16:6	379	2066:1825	668+91	48.9 : 57.0%	4.2	39.7	9.1
4/2+4/1	Benenden Avenue SB Ahead Left	25	12	1965:1934	35+390	2.8 : 2.8%	0.1	19.9	0.2
4/3	Benenden Avenue SB Right	25	77	1837	199	38.7%	1.4	64.5	2.7
Ped Link: P1	Benenden Ave South	6	28	-	3600	0.8%	0.4	55.6	0.9
Ped Link: P2	Benenden Ave N	6	52	-	3600	1.4%	0.7	50.4	1.7
Ped Link: P3	Romeo Road West	6	40	-	3600	1.1%	0.4	39.9	1.2
Ped Link: P4	Romeo Road East	6	40	-	3600	1.1%	0.6	53.0	1.3
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	44.6%	1.1	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	873	1965:1940	1508+451	44.6 : 44.6%	0.4	1.7	0.4
1/3	Romeo Road EB Ahead	-	801	2105	2105	38.1%	0.3	1.4	0.3
2/1	Romeo Road WB Ahead	-	360	1926	1926	18.7%	0.1	1.1	0.1
2/2	Romeo Road WB Ahead	-	424	2066	2066	20.5%	0.1	1.1	0.1
3/1	Longnor Parkway SB Left	-	90	1965	461	19.5%	0.1	4.8	0.1
C1 - Romeo Road / Benenden Avenue		PRC for Signalled Lanes (%):	-3.9	Total Delay for Signalled Lanes (pcuHr):		44.54	Cycle Time (s): 120		
		PRC Over All Lanes (%):	-3.9	Total Delay Over All Lanes(pcuHr):		45.62			

Main Roads WA Result

Scenario 8: '2033 AM, Opening +10 AM' (FG5: '2033 AM', Plan 2: 'NCP 2 - Diamond Split with Alternate')
Network Layout Diagram



Main Roads WA Result

Network Results

Item	Lane Description	Total Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: 4-Way Signalised Intersection	-	-	-	-	-	98.9%	67.0	-	-
J1: Romeo Road / Benenden Avenue	-	-	-	-	-	98.9%	65.9	-	-
1/2+1/1	Romeo Road EB Ahead Left	50	721	1965:2115	733+0	98.3 : 0.0%	19.0	95.1	37.2
1/3+1/4	Romeo Road EB Right Ahead	50:19	842	2105:1871	743+108	98.9 : 98.9%	22.4	95.8	40.8
2/2+2/1	Benenden Avenue NB Left Right Ahead	25	301	1722:1839	300+56	84.6 : 84.6%	6.3	75.6	12.3
2/3	Benenden Avenue NB Right	25	292	1861	347	84.1%	6.7	82.6	12.9
3/2+3/1	Romeo Road WB Ahead Left	37	573	1926:1903	506+381	64.6 : 64.6%	4.7	29.8	11.4
3/3+3/4	Romeo Road WB Ahead Right	37:6	385	2066:1825	560+82	59.5 : 63.6%	5.5	51.7	11.4
4/2+4/1	Benenden Avenue SB Ahead Left	25	12	1965:1934	31+340	3.2 : 3.2%	0.1	18.6	0.2
4/3	Benenden Avenue SB Right	25	77	1837	343	22.5%	1.1	53.1	2.6
Ped Link: P1	Benenden Ave South	6	40	-	3224	1.2%	0.6	52.1	1.5
Ped Link: P2	Benenden Ave N	6	40	-	3224	1.2%	0.5	46.1	1.5
Ped Link: P3	Romeo Road West	6	40	-	3224	1.2%	0.7	62.7	1.4
Ped Link: P4	Romeo Road East	6	40	-	3224	1.2%	0.7	62.7	1.4
J2: Romeo Road / Longnor Parkway	-	-	-	-	-	44.8%	1.1	-	-
1/2+1/1	Romeo Road EB Ahead Left	-	877	1965:1940	1510+449	44.8 : 44.8%	0.4	1.7	0.4
1/3	Romeo Road EB Ahead	-	797	2105	2105	37.9%	0.3	1.4	0.3
2/1	Romeo Road WB Ahead	-	356	1926	1926	18.5%	0.1	1.1	0.1
2/2	Romeo Road WB Ahead	-	428	2066	2066	20.7%	0.1	1.1	0.1
3/1	Longnor Parkway SB Left	-	90	1965	463	19.5%	0.1	4.8	0.1
C1 - Romeo Road / Benenden Avenue		PRC for Signalled Lanes (%):	-9.9	Total Delay for Signalled Lanes (pcuHr):		65.94	Cycle Time (s): 134		
		PRC Over All Lanes (%):	-9.9	Total Delay Over All Lanes(pcuHr):		67.02			

D. PJA STAGE ONE DESIGN REVIEW REPORT

D

Technical Note

Project: Alkimos Central

Subject: Stage One Design Review

Client:	Development WA	Version:	D
Project No:	06637	Author:	Tim Judd
Date:	10/03/23	Approved:	Tanya Moran

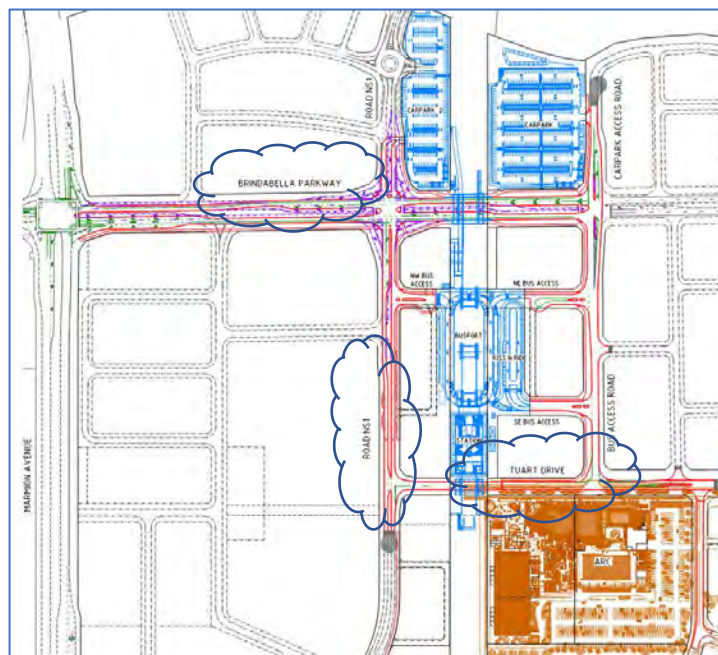
I Introduction

Development WA along with the appointed civil engineers (Cossill and Webley) have requested PJA to review the Alkimos Stage One road designs from a Healthy Streets and Road Safety perspective.

Three key roads have been reviewed, as follows:

- Brindabella Parkway
- Road NS1
- Tuart Drive.

These are illustrated on the following plan.



I.1 Brindabella Parkway

Brindabella Parkway in Stage 1 has single traffic lanes in each direction with turning pockets at intersections and on-road cycle lanes, separated from traffic by a painted white line.

1.1.1 Recommendation

Provide physical protection between the on-road cycle lanes and the adjacent traffic lane.

Benefit

The WA road safety strategy requires road design to ensure Safe System is considered and implemented where possible. We know from road safety research that to encourage people to be more active and ride bikes/scooters/gophers, the provided cycle infrastructure needs to be safe. As such, on roads and streets with a posted speed limit above 30km/h physical protection should be implemented for on-road cycle lanes to provide a safe riding environment.



Figure 1: Example of protected bike lane – Melbourne

I.2 Road NS1 – pedestrian priority

Road NS1 has a single lane in each direction with a raised central median. Where Road NS1 intersects with Tuart Drive, the intersection carriageway is raised to the footpath level, to provide a reduced traffic speed environment. It is noted at this intersection there will be a high pedestrian demand coming from the PTA train station, ARC development and adjacent retail developments.

1.2.1 Recommendation

As this area of Road NS1 and Tuart Drive has been noted as a *pedestrian prioritised* area within the Alkimos Movement Plan, illustrated below, and the high number of expected pedestrians each day crossing the road, it is recommended that the two pedestrian crossings across Road NS1 (north and south of Tuart Drive), and the pedestrian crossing to the east of Road NS1 across Tuart Drive should be zebra crossings to provide the priority for pedestrians.



Figure 2: Proposed Movement Network (URBIS)

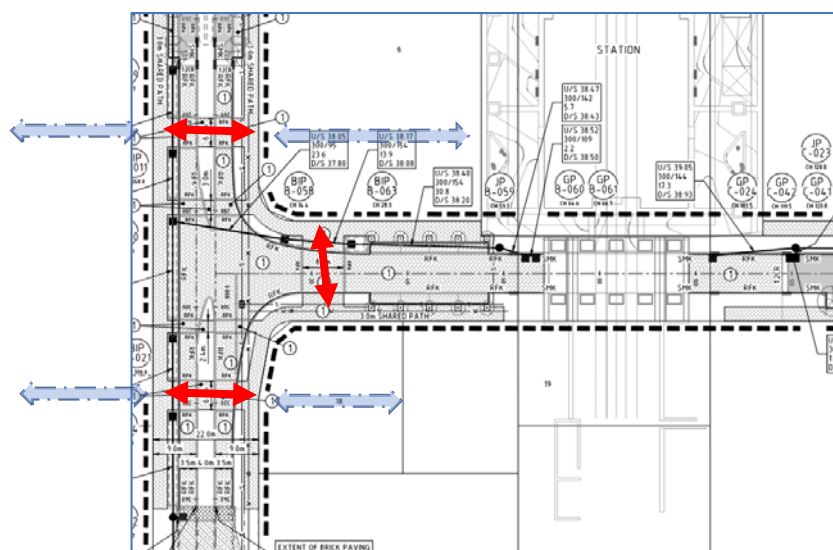


Figure 3: Crossings proposed to be zebra crossings on the raised intersection

Benefit

The WA road rules note that turning traffic is to Give-Way to pedestrians crossing the road. However, the design would not afford any pedestrian priority as vehicles would still expect the right of way along the road. The key road rules include:

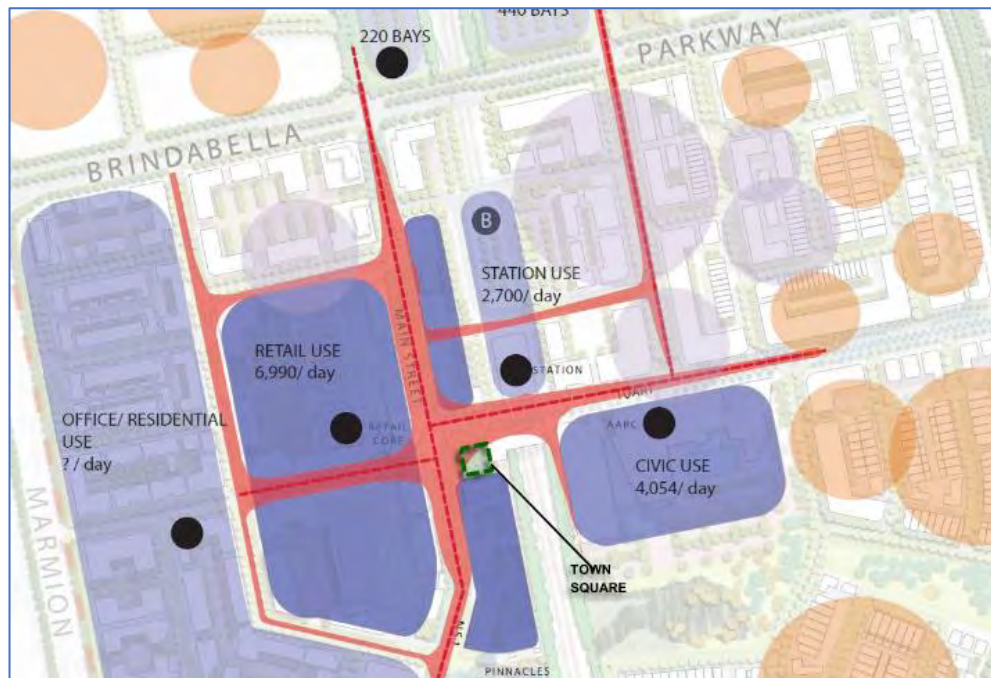
Requirement to give way, effect of (1) Where any of these regulations require a driver or pedestrian to give way to a person or vehicle, the requirement takes effect when there is a reasonable possibility that, if he or she proceeded, he or she would collide or come into conflict with, or create any other dangerous situation with regard to, that person or vehicle; and, in that event, he or she is obliged to slow down to such an extent, or, as the circumstances may require, stop and remain stationary for such time, as may be necessary to allow the person or vehicle to continue on his, her or its course. (2) Where any of these regulations require a driver who is turning from a carriageway at an intersection to give way to a pedestrian who is crossing the carriageway that the driver is entering, the requirement applies if and only if the pedestrian's line of travel in crossing the carriageway is essentially perpendicular to the edges of the carriageway the driver is entering.

As such, providing zebra crossings, the priority is then afforded to the pedestrians, for both turning traffic as well as through traffic.

PJA have reviewed the *Department of Transport Planning and Designing for Pedestrians* which notes that a zebra crossing may be considered if in two separate hours on an average weekday:

- The number of pedestrians crossing in close proximity of the site (generally within 30m) exceeds 60 per hour.
- The number of vehicles exceeds 600 per hour (total both directions).
- The product of the number of pedestrians crossing and vehicles passing the site exceeds 90,000 in the same hour.

Based on these thresholds noted within the guide and the forecast pedestrian numbers for the immediate area, provided overleaf, and considering that in general approximately 40% of the general population have some form of function limitation, provision of zebra crossings provides for the basic human need pedestrians require when crossing a road with vehicle traffic safely.



1.3 Road NS1 – lane widths

Road NS1 has a single lane in each direction with a raised central median. The lane widths on Road NS1 are proposed to be 3.5m in each direction with a 4m wide central median.

1.3.1 Recommendation

As road width is a key design criterion to be assessed for reduced speeds, it is recommended to reduce the lane widths from 3.5m to 3.1m in both directions. Following consultation with both City of Wanneroo and Transperth, to allow for any bus route changes in the future and to accord with *Bus Planning and Design Guidelines for Efficient People Movement (PTA, 2015)* it is proposed to reduce the lane widths from 3.5m to 3.2m in both directions.

Benefit

Austrroads Guide to Traffic Management Part 8: Street Management notes, for lane widths, care needs to be taken that the introduction of LATM treatments that narrow the road carriageway width do not create safety problems for cyclists.

Practice should be that lane widths are either designed to be wide enough in all instances to allow the safe passage of a cyclist and a vehicle side by side (3.7 m or more) or narrow enough to permit the passage of a vehicle or bicycle only (3.0 m or less). Widths in between these two extremes create squeeze points and result in conflicts.

Local streets with speed environments of 50 km/h or more should be 4.2 m or wider in order to be satisfactory for cyclists. In higher-speed environments, lane dimensions should be 4.3–5.0 m.

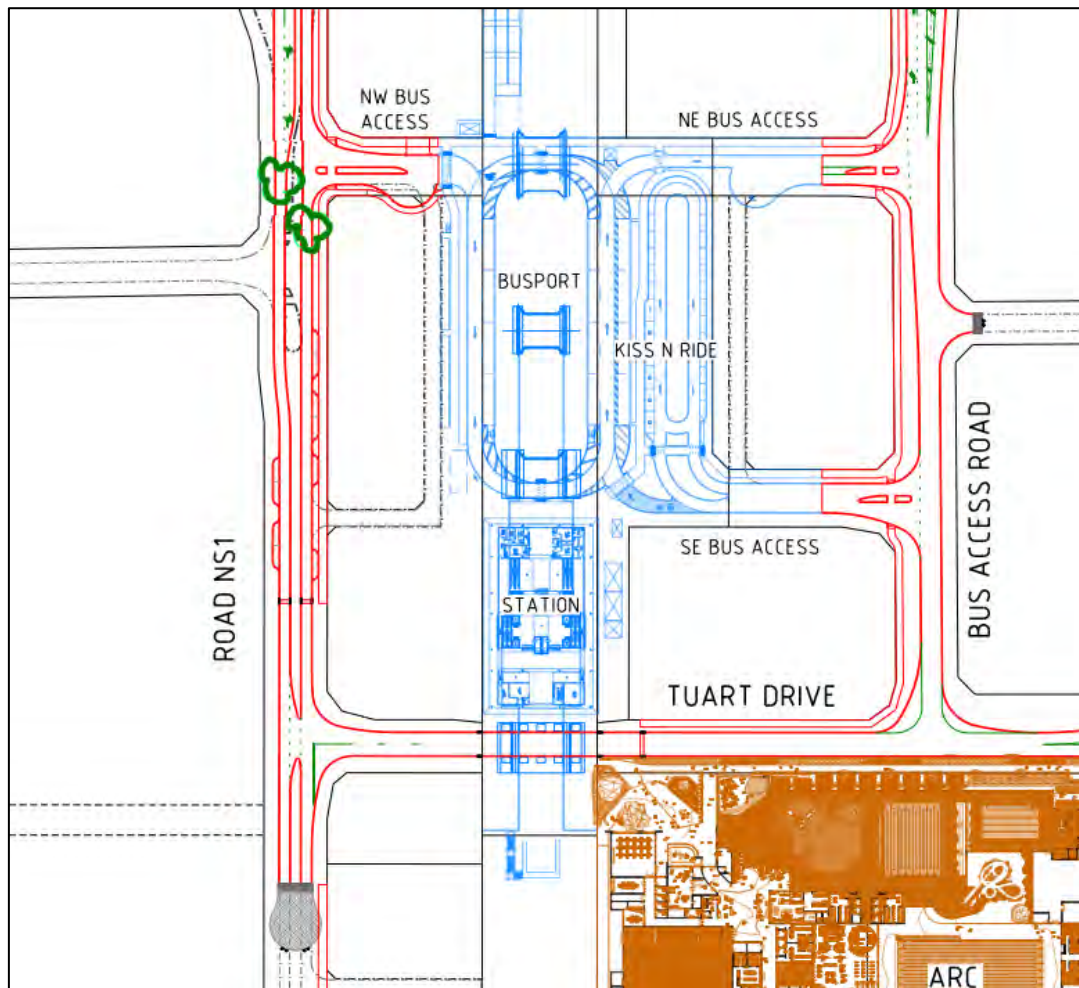
In local streets where the speed is 30 km/h or less it is generally preferable to adopt lane widths of 3.0 m or less. In these cases, there is no side-by-side travel and instead the cyclist will occupy the whole lane. However, narrow lane widths (3.0 m or less) should not be promoted where significant numbers of child or inexperienced cyclists are likely to occur, as it would be inappropriate from a safety perspective. In these instances, off-street bicycle paths should be considered to physically separate cyclists from vehicles.

Where the demand warrants it and it can be accommodated, separate facilities for cyclists such as bicycle lanes may be provided. It should be noted that the sharing of lanes cannot be legally performed in all states.

Wider lane widths (acceptable 3.7 m, desirable 4.2 m or more) should generally be used on roads with bus routes or that carry a reasonably high proportion of commercial vehicles. Kerbside lane widths in excess of 4.2 m should be avoided where kerbside parking demand is high to limit the possibility of moving and parked vehicles sharing the same lane.

For Road NS1, given the pedestrian prioritised customer experience focus to be designed, the lanes should be *narrow* enough to permit the passage of a vehicle or bicycle only (3.0 m or less) but allowing for flexibility for any changes in future bus movements due to the proximity of the train and bus station – thereby to 3.2m width is recommended.

The locations of where the 3.5m to 3.2m narrowing might commence towards and from the pedestrian prioritised area is shown in green clouds overleaf, subject to Cossill and Webley confirming that swept paths of the design vehicle work.



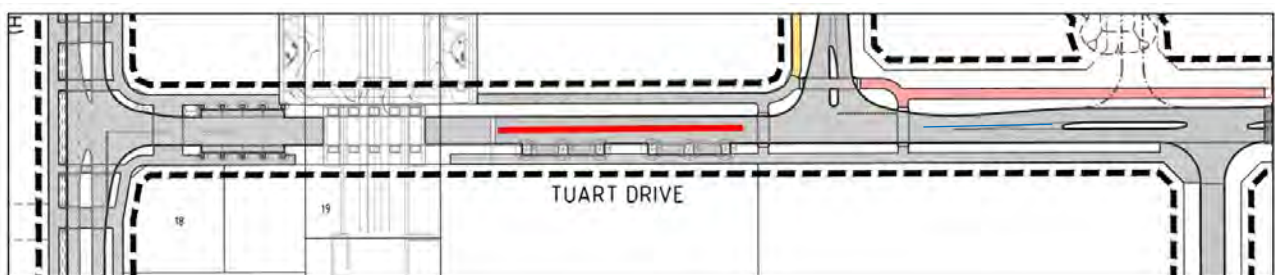
1.4 Tuart Drive

Tuart Drive has a single lane in each direction with no central median. The total carriageway width is depicted as 8m from kerb to kerb, with an assumed 4m lane in each direction. Where Tuart Drive intersects with Road NS1, the intersection carriageway is raised to the footpath level, to provide a reduced traffic speed environment.

1.4.1 Recommendation

As road width is a key design criterion to be assessed for reduced speeds, it is recommended to reduce the overall carriageway width to 6.2m (providing two 3.1m traffic lanes in both directions). However, as the PTA railway bridge at Tuart Drive is currently under construction incorporating an 8m wide pavement kerb to kerb, it is proposed to retain the 8m width on Tuart Drive and instead treat the streetscape incorporating a flushed landscaped median to encourage slower vehicular speeds nearing the railway station.

Development WA has noted a desire to keep the section of Tuart Drive in front of the railway station without a median to enable any future events to occur (potentially street markets with food trucks, under controlled traffic management). As such, the median location to slow traffic speeds is proposed as shown below in red. For the section of Tuart Drive just west of the bus T-intersection, it is proposed to reduce the current 8m wide kerb to kerb pavement to 3.2m wide lanes in each directions with a planted median. This will assist to slow speeds down for vehicles approaching the 'pedestrianised' area around the Tuart Dr/NS1 intersection.



Benefit

Reduced traffic lane width as noted in section 1.3 above is suggested within *Austroads Guide to Traffic Management Part 8: Street Management*. Reduced traffic lane widths will provide additional speed reduction benefits.

End.

E. WAPC CHECKLIST

E

APPENDIX: WAPC CHECKLIST

Item	Provided	Comments/Proposals
Summary	✓	
Introduction/Background	✓	
Precinct Plan proposal	✓	
regional context	✓	Section 2.1
proposed land uses	✓	Section 2.2
table of land uses and quantities	✓	Section 2.2
major attractors/generators	✓	Section 0
specific issues	✓	Section 2.4
Existing situation		
existing land uses within Precinct Plan	N/A	No existing development
existing land uses within 800 metres of Precinct Plan area	✓	Section 3.1
existing road network within Precinct Plan area	N/A	No existing development
existing pedestrian/cycle networks within Precinct Plan area	N/A	No existing development
existing public transport services within Precinct Plan area	N/A	No existing development
existing road network within 2 (or 5) km of Precinct Plan area	✓	Section 3.3
traffic flows on roads within Precinct Plan area (PM and/or AM peak hours)	N/A	No existing development
traffic flows on roads within 2 (or 5) km of Precinct Plan area (AM and/or PM peak hours)	✓	Section 3.4
existing pedestrian/cycle networks within 800m of Precinct Plan area	✓	Section 3.2.2
existing public transport services within 800m of Precinct Plan area	✓	Section 3.2.3
Proposed internal transport networks		
changes/additions to existing road network or proposed new road network	✓	Section 4.1
road reservation widths	✓	Section 4.2
road cross-sections & speed limits	✓	Section 4.2
intersection controls	✓	Section 4.4
pedestrian/cycle networks and crossing facilities	✓	Section 4.5
public transport routes	✓	Section 0
Changes to external transport networks		
road network	✓	Section 4.1
intersection controls	✓	Section 4.4

APPENDIX: WAPC CHECKLIST

pedestrian/cycle networks and crossing facilities	✓	Section 4.5
public transport services	✓	Section 0
Integration with surrounding area		
trip attractors/generators within 800 metres	✓	Section 5.1
proposed changes to land uses within 800 metres	✓	Section 5.2
travel desire lines from Precinct Plan to these attractors/generators	✓	Section 5.3
adequacy of external transport networks	✓	Section 5.4
deficiencies in external transport networks	✓	Section 5.4
remedial measures to address deficiencies	✓	Section 5.5
Analysis of internal transport networks		
assessment year(s) and time period(s)	✓	Section 6.1
Precinct Plan generated traffic	✓	Section 6.2
extraneous (through) traffic	✓	Section 6.3
design traffic flows (that is, total traffic)	✓	Section 6.4
road cross-sections	✓	Section 4.2
intersection controls	✓	Section 4.4
access strategy	✓	Section 4.3
pedestrian/cycle networks	✓	Section 4.5
safe routes to schools	✓	Section 6.6
pedestrian permeability & efficiency	✓	Section 4.5
access to public transport	✓	Section 0
Analysis of external transport networks		
extent of analysis	✓	Section 6.1
base flows for assessment year(s)	N/A	New development with no base flows
total traffic flows	✓	Section 6.4
road cross-sections	✓	Section 4.2
intersection layouts & controls	✓	Section 4.4
pedestrian/cycle networks	✓	Section 4.5
Conclusions		

Proponent's Name: Damien Guiduci

Company: Development WA

Date: 27/03/2023

Transport Assessor's Name: Aaron MacNish/Sonja Hayes

Company: Stantec

Date: 27/03/2023

From: [Jones, Aaron](#)
To: [Development Assessment Panels](#); [Helen Maruta](#)
Cc: [JDAP](#); [Helen Ball](#)
Subject: URGENT: Updated RAR Condition 24 | MODAP/118 | 17 December 2025 | City of Wanneroo - Shire of Serpentine-Jarrahdale
Date: Wednesday, 10 December 2025 4:56:32 PM
Attachments: [image179088.png](#)
[DA2025_1279 - JDAP Form 1 - Responsible Authority Report - DAP - ~ 2570K Marmion Avenue ALKIMOS.pdf](#)
Importance: High

Good afternoon Tenielle,

The City made an error in the report submitted which was missing a condition. The condition is discussed in the body of the report and there are no proposed changes to the body or detail in the report or attachments, simply the inclusion of condition 24, which reads as follows:

Prior to the submission of a building permit, a revised Traffic Report and SIDRA intersection modelling for 10 years after the opening of the development is to be undertaken to assess the modelling, service level and operation of the surrounding intersections, specifically the Kambarniny Street and Romeo Road intersection. The report is to include modelling which outlines whether the unsignalised intersection appropriately services the development and locality. The revised Traffic Report is to detail responsibility for any contributions toward the design, constructed and/or funding of the ultimate intersection control.

Can the report/agenda please be updated to reflect this.

Apologies once again for missing this.

Kind regards



Aaron Jones
Senior Planner
Approval Services

94055873
Aaron.Jones@wanneroo.wa.gov.au

Locked Bag 1, Wanneroo WA 6946

wanneroo.wa.gov.au



We wish to acknowledge the Traditional Custodians of the land we are working on, the Whadjuk people. We would like to pay respect to the Elders of the Noongar nation, past, present and future, who have walked and cared for the land and we acknowledge and respect their continuing culture and the contributions made to the life of this City and this region.

City of Wanneroo Disclaimer: The material transmitted in this e-mail may contain confidential and/or privileged material and is intended only for the addressee. If you receive this in error, please notify the sender and destroy any copies of the material immediately. We believe this e-mail to be free of viruses but recommend that you confirm this before opening any attachments.

From: Development Assessment Panels <daps@dplh.wa.gov.au>
Sent: Tuesday, 9 December 2025 3:29 PM
To: Jones, Aaron <aaron.jones@wanneroo.wa.gov.au>; Helen Maruta <hmaruta@sjshire.wa.gov.au>
Cc: JDAP <jdap@wanneroo.wa.gov.au>; Helen Ball <hball@sjshire.wa.gov.au>; Development Assessment Panels <daps@dplh.wa.gov.au>
Subject: URGENT: Confirmation of Submitter Notification | MODAP/118 | 17 December 2025 | City of Wanneroo - Shire of Serpentine-Jarrahdale
Importance: High

[EXTERNAL EMAIL] This email was received from outside the City of Wanneroo. Please do not click on links or open attachments unless you recognise the sender and know the content is safe.

Good afternoon,

Could you please confirm when submitters (including agencies and companies) have been notified of the abovementioned meeting in accordance with the below:

- **The local government is to place the full Agenda on their website as required in accordance with regulation 39 of the Planning and Development (Development Assessment Panels) Regulations 2011.**
- **The local government must, at least 7 days before the day of the DAP meeting, give written notice of the time, date and location of the DAP meeting, and the agenda for the meeting, to each person who made a written submission to the local government in relation to a DAP application to be considered at the meeting in accordance with regulation 39 (1A) of the Planning and Development (Development Assessment Panels) Regulations 2011.**

Please respond to this email providing confirmation and evidence the abovementioned has occurred.

We appreciate your assistance with this matter.

Kind regards

Tenielle Brownfield
Committee Support Officer | Office of the Director General Exec Support
Department of Planning, Lands and Heritage
140 William Street, Perth WA 6000
W: dplh.wa.gov.au | P: 6551 9919



The Department of Planning, Lands and Heritage acknowledges Aboriginal people as the traditional custodians of Western Australia. We pay our respects to the Ancestors and Elders, both past and present, and the ongoing connection between people, land, waters and community. We acknowledge those who continue to share knowledge, their traditions and culture to support our journey for reconciliation. In particular, we recognise land and cultural heritage as places that hold great significance for Aboriginal people. Learn more about our [Stretch Reconciliation Action Plan](#).

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**Part B - Item 3.1 - LOT 9002 (2570K) MARMION AVENUE,
PROPOSED SHOPPING CENTRE**

Form 1 – Responsible Authority Report
(Regulation 12)

DAP Name:	Metro Outer DAP
Local Government Area:	City of Wanneroo
Applicant:	Planning Solutions
Owner:	WA Land Authority (Landcorp)
Value of Development:	\$25 million
Responsible Authority:	City of Wanneroo
Authorising Officer:	Aaron Jones
LG Reference:	DA2025/1279
DAP File No:	DAP/25/02972
Application Received Date:	9 September 2025
Report Due Date:	9 December 2025
Application Statutory Process Timeframe:	90 Days
Attachment(s):	1. Development Plans 2. WAPC Subdivision Approval 200940 3. Location Plan 4. Consulted Properties Map 5. Summary of Submissions 6. DPLH Traffic Referral Response 7. Environmental Acoustic Assessment 8. DPLH Land Use Planning comments 9. MRWA Referral Response 10. Design Review Panel Minutes 11. Applicant DRP Response 12. Environmentally Sustainable Development Strategy 13. Transport Impact Assessment 14. Landscaping Strategy 15. Bushfire Management Plan 16. Waste Management Plan

Responsible Authority Recommendation

That the Metro Outer DAP resolves to:

1. **Approve** DAP Application reference DAP/25/02972 and accompanying plans in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, and the provisions the City of Wanneroo District Planning Scheme No. 2, subject to the following conditions:

Conditions

1. This decision constitutes planning approval only and is valid for a period of four (4) years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.
2. The approved uses must conform to the District Planning Scheme No. 2 definition. The following uses are approved:

Tenancy	Approved Use(s)
1	Liquor Store - Small
2	Convenience Store Restaurant/Café Lunch Bar
3	Convenience Store Restaurant/Café Lunch Bar
4	Convenience Store Restaurant/Café Lunch Bar
5	Convenience Store Restaurant/Café Lunch Bar
6	Convenience Store Restaurant/Café Lunch Bar
7	Convenience Store Shop Restaurant/Café Recreation – Private Office Lunch Bar
8	Convenience Store Shop Restaurant/Café Recreation – Private Office Lunch Bar
9	Convenience Store Shop Restaurant/Café Recreation – Private

	Office Lunch Bar
10	Convenience Store Shop Restaurant/Café Recreation – Private Office Lunch Bar
11	Convenience Store Shop Restaurant/Café Recreation – Private Office Lunch Bar
12	Shop Restaurant/Café Office Lunch Bar
13	Shop Restaurant/Café Office Lunch Bar
14	Small Bar Restaurant/Café Lunch Bar
15	Convenience Store Restaurant/Café Lunch Bar Shop
16	Convenience Store Shop Restaurant/Café Recreation – Private Office Lunch Bar
17	Convenience Store Shop Restaurant/Café Recreation – Private Office Lunch Bar
Childcare	Child Care Premises
Medical	Medical Centre Consulting Room Office
Supermarket	Shop

3. A maximum of **103 children** are permitted within the **Child Care Premises** at any one time.
4. No more than **ten (10)** practitioners or medical professionals may practice within the **Medical Centre** at any one time.

5. All signage is to be contained entirely within the lot.
6. Parking areas, driveways and points of ingress and egress must be designed and constructed in accordance with the Australian Standard for Offstreet Carparking (AS 2890) and must be drained, sealed, marked and maintained to the satisfaction of the City prior to occupation of the development.
7. The parking areas and associated access indicated on the approved plans must not be used for the purpose of storage or obstructed in any way at any time, without the prior approval of the City.
8. Prior to the lodgement of a building permit, a detailed schedule of external finishes (including materials, colour schemes and details) must be submitted and approved by the City. The development must be finished in accordance with the approved schedule.
9. Detailed landscaping plans for the subject site which include specifications for the planter boxes, a plant legend which includes botanical and common names and plant quantities, confirmation of mulch details, detail for the infrastructure proposed within the pedestrian plaza area and the outdoor play area of the Child Care Premises must be lodged for approval by the City prior to lodging a building permit. The plans must demonstrate that 9.1% of the site is used for deep soil areas. Planting and installation must be in accordance with the approved landscaping and reticulation plans and completed prior to occupation of the development and maintained thereafter, to the satisfaction of the City.
10. Detailed civil engineering drawings and specifications for works within the verge/road reserve for the on-street parking bays and intersection treatment for the southern full movement crossover and future four-way intersection (southern crossover), must be lodged for approval to the City prior to commencement of construction works. Construction works are to be undertaken in accordance with the approved development application, engineering drawings and specifications to the satisfaction of the City.
11. Line marking and signage must be installed surrounding the eastern vehicular entry to the carpark to prevent opposing vehicle movements for the left-in access point.
12. Line marking and signage must be installed at the proposed four-way intersection (southern crossover) to indicate right of way and appropriate treatments including the raised plateau.
13. An onsite stormwater drainage system, sufficient to contain a 1:100 year storm event (over 24 hours) must be provided. Plans illustrating the system proposed must be submitted and approved prior to a building permit being issued. The system must be installed during the construction of the development.
14. The development is to comply with the recommendations and assumptions of the Acoustic Report (Ref 35038-2-25287) prepared by **Herring Storer Acoustics** dated **July 2025**. Recommended works must be completed prior to the commencement of the use.

15. Lighting must be installed along all driveways, pedestrian pathways, car parking areas and in all common service areas prior to the development first being occupied.
16. All storage areas, external fixtures and building plant, including air conditioning units and water tanks must be located so as to minimise any visual and noise impact on surrounding landowners and screened from view from streets, public places and adjacent properties to the satisfaction of the City.
17. Any graffiti applied to the external surfaces of the building must be removed to the satisfaction of the City of Wanneroo.
18. Development is to be implemented in accordance with the Environmentally Sustainable Development Strategy provided by Full Circle Design Services dated 22 July 2025. Prior to occupancy of the development, information is to be provided demonstrating the development has incorporated the Environmentally Sustainable Development Strategy to the satisfaction of the City.
19. Information is to be provided to demonstrate that the measures contained in Table 4 of the **Bushfire Management Plan Addendum (70302 / 169586 (Rev 0))** undertaken by **JBS&G** dated **5 September 2025** have been implemented during subdivisional works. This information should include a completed 'Compliance Certificate' prepared by the bushfire planning practitioner.
20. Prior to occupancy, an Operational & Waste Management Plan is to be submitted and approved, to the satisfaction of the City. The management plan must include detail on how waste and deliveries for all tenancies will be managed and how the uses will operate to ensure there are no adverse impact on public areas. Future operations on the lot must be undertaken in accordance with the approved Operational & Waste Management Plan, to the satisfaction of the City.
21. Prior to occupancy of the 'Liquor Store – small' and 'Small Bar' tenancy an operational management plan must be provided and approved detailing measures to minimise the impact of the use on the amenity of the surrounding area. The operational management plan must then be implemented to the satisfaction of the City.
22. The approved development is to be situated on land parcel(s), with titles issued in accordance with the Western Australian Planning Commission subdivision approval Reference No. 200940 prior to the occupation of the development.
23. A Construction Management Plan must be submitted for approval when an application is made for a building permit. This plan is to detail how construction will be managed to minimise disruption in the area and to adjoining landowners. The plan must address the following:
 - a) The delivery of and delivery times for materials and equipment to the site;
 - b) Storage of materials and the location and types of equipment on site;
 - c) Parking arrangements for contractors and sub-contractors;
 - d) The impact on traffic movement;
 - e) Construction times;
 - f) The relocation of public footpaths;

- g) Measures to minimise impacts of noise and sand drift and dust from the site;
- h) Tree protection zones to be established for trees identified to be retained in the approved landscaping plan (including any verge trees) where applicable; and
- i) The relocation/disruption of any public transport infrastructure.

The construction management plan is to be submitted to and approved by the City prior to the commencement of any development. Construction is to be implemented in accordance with the approved construction management plan.

24. Prior to the submission of a building permit, a revised Traffic Report and SIDRA intersection modelling for 10 years after the opening of the development is to be undertaken to assess the modelling, service level and operation of the surrounding intersections, specifically the Kambarniny Street and Romeo Road intersection. The report is to include modelling which outlines whether the unsignalised intersection appropriately services the development and locality. The revised Traffic Report is to detail responsibility for any contributions toward the design, constructed and/or funding of the ultimate intersection control.

Advice Notes

1. The owner/applicant is to submit the "Certification of Compliance with Development Approval Conditions" form certifying that all of the conditions specified in the approval for the development of the land have been completed in accordance with the approved plans, and the certification is to be lodged with the City within 14 days from the date of practical completion, and applies to all of the conditions, except for those conditions relating to on-going compliance.

Details: outline of development application

Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Central City Area, Regional Open Space, Other Regional Roads
Local Planning Scheme	District Planning Scheme No.2
Local Planning Scheme - Zone/Reserve	Centre, Other Regional Roads
Structure Plan/Precinct Plan	Alkimos City Centre Activity Centre 89
Structure Plan/Precinct Plan - Land Use Designation	Residential, Commercial, Business, Service Industrial, Mixed Use, Civic and Cultural
Use Class and permissibility:	Child Care Premises – 'D' Discretionary Medical Centre – 'P' Permitted Restaurant/Café – 'P' Permitted Liquor Store – Small – 'A' Advertising required Shop – 'P' Permitted Recreation – Private 'D' Discretionary Lunch Bar 'P' Permitted Office 'P' Permitted Convenience Store 'P' Permitted Consulting Room 'P' Permitted Small Bar 'A' Advertising required
Lot Size:	181.6912 Hectares

Existing Land Use:	Mostly Vacant Land, Alkimos Aquatic and Recreation Centre (ARC)
State Heritage Register	No
Local Heritage	☒ N/A ☐ Heritage List ☐ Heritage Area
Design Review	☐ N/A ☒ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	Yes
Swan River Trust Area	No

Proposal:

The application seeks approval for stage 1 of the Alkimos Shopping Centre precinct within the Alkimos Secondary Centre which comprises a mix of retail and commercial tenancies. Details of the proposal include:

- 2,400m² supermarket anchor tenancy;
- A small Liquor Store;
- A Child Care Premises for 103 children and 20 staff;
- A Medical Centre accommodating 10 practitioners;
- 301 on-site car parking spaces including 4 electric vehicle bays, accessible bays and motorcycle bays;
- 36 visitor bicycle bays;
- Eight retail and commercial tenancies;
- Six lunch bar/café tenancies and one food and beverage;
- Public and staff amenities; and
- Landscaping across the site including 207 trees.

Vehicular access is provided via four surrounding entry points: one allows full movement through a four-way intersection, one is restricted to left-in/left-out movements, one is exit only and the fourth is designated for entry only. Pedestrian connectivity is prioritised through three access points from Kambarniny Street to the east, with the central access functioning as the primary pedestrian entry. This central plaza serves as a key focal point for pedestrian activity, with the majority of tenancies oriented to address and interact with the pedestrian realm.

The development plans for consideration are included as **Attachment 1**.

Background:

The development site forms part of a larger balance lot, totalling nearly 182 hectares in area, with the actual development proposed on a 2.35-hectare portion of the site. The subdivision of the development site (subject site) was approved by the Western Australian Planning Commission (WAPC) subject to conditions on 10 March 2025 and is included as **Attachment 2**.

The subject site is zoned Central City Area under the Metropolitan Region Scheme (MRS), Centre under the City's District Planning Scheme No.2 (DPS 2) and Commercial under ACP 89.

A location plan is included as **Attachment 3**.

ACP 89

The current approved ACP 89 was adopted in 2018. However Amendment No.1 to ACP 89 (draft ACP) was lodged in 2022 which replaces the entire structure plan to align with State Planning Policy 7.2: Precinct Design. Amendment No.1 was advertised for public comment in April 2022 and as such is considered seriously entertained and therefore must be given due regard in accordance with Clause 27(2) of Schedule 2 of the *Planning and Development (Local Planning Schemes) Regulations 2015*. The draft ACP was presented to the Statutory Planning Committee (SPC) which approved Amendment No.1 subject to modifications on 2 October 2024. To date, the final version of Amendment No.1 to ACP 89 has not yet been formally endorsed. The development has been considered against Amendment No. 1 to ACP 89.

The subject site is located in Precinct 1: City Central of ACP 89. The Alkimos Centre is identified as a secondary centre under State Planning Policy 4.2: Activity Centres (SPP 4.2), focused around the existing Alkimos train station northeast of the site. SPP 4.2 characterises secondary centres by medium to high-rise buildings with continuous, activated, pedestrian-friendly street frontages.

Draft ACP 89 identifies Precinct 1 as the gateway and heart of Alkimos Central, with the following objectives:

- **Pedestrian Focused:** Deliver an east-west 'activated pedestrian link' to provide a clear connection from Precinct 2, through to the town square and further east to Precinct 3.
- **Mixed Use:** An integrated urban village which is attractive, active, accessible and economically diverse, with the precinct home to the primary retail of the Precinct Plan and a mix of commercial, hospitality/ entertainment, civic and residential land uses.
- **Main Street:** Deliver two recognisable main streets converging at a central Town Square, integrated with Alkimos Station.
- **Cultural Focus:** Connect, protect and promote the 'environmental and cultural heritage values' of the city centre core to integrate with the wider cultural heritage values of Alkimos.
- **Shared Street:** Provide a 'shared street' environment that promotes safe pedestrian and cyclist movement and provides accessible, shady and active street spaces, with sleeved, above-grade or basement carparking.
- **Prominent Locations:** Deliver sustainable, experiential and distinctive design outcomes, with key prominent locations acting as key landmarks, interfaces and gateways.

Legislation and Policy:

Legislation

Metropolitan Region Scheme
District Planning Scheme No.2
State Government Policies

State Planning Policy 4.2: Activity Centres

State Planning Policy 3.7: Planning in Bushfire Prone Areas
State Planning Policy 5.4: Road and Rail Noise
State Planning Policy 7.0: Design of the Built Environment

Structure Plans/Activity Centre Plans

Alkimos City Centre Activity Centre Structure Plan No. 89 (including proposed Amendment No. 1)

Local Policies

Local Planning Policy 2.3: Childcare Premises
Local Planning Policy 2.8: Licensed Premises
Local Planning Policy 4.23: Design Review Panel
Local Planning Policy 4.6: Advertising Signs

Consultation:

Public Consultation

The application was advertised for a period of 14 days in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*, commencing on 2 October 2025 and concluding on 16 October 2025. Advertising was undertaken by way of letter to surrounding landowners/occupiers within approximately 200 metres of the subject site, a sign being erected on site, a notice being placed in the local newspaper and all development plans and supporting documentation being made available on the City's website.

A map of the properties which were directly advertised to is included as **Attachment 4**.

Following the completion of the advertising period, a total of 11 submissions were received, with six providing support, two objecting and three making comment on the proposal. A summary of submissions received, and Administrations response is included as **Attachment 5**.

The key concerns raised through the public consultation were:

- Proximity to and impact on existing centres;
- Universal access;
- Traffic and parking; and
- Inconsistency with ACP 89.

These are discussed in further detail in the planning assessment below.

Referrals/consultation with Government/Service Agencies

The development site has not been subdivided at this stage and as such the broader subject site abuts both Marmion Avenue and Romeo Road, both identified as Other Regional Roads as well as land reserved as Regional Open Space under the MRS to the north. In accordance with the WAPC Instrument of Delegation 2025/04 dated 31 March 2025 the application was required to be referred to the Department of

Planning, Lands and Heritage (DPLH) and Main Roads WA (MRWA) as the responsible authorities for the above reserves.

Department of Planning, Lands and Heritage Traffic

The application was referred to the DPLH as a result of the site abutting Romeo Road and Regional Open Space. As these are assessed by separate teams within the DPLH, two referral responses were provided.

The DPLH Traffic Team provided comments which were in support of the application, subject to conditions, which are included as **Attachment 6**. The conditions require the applicant to provide SIDRA analysis for the surrounding intersections, including the Kambarniny Street and Romeo Road unsignalised intersection to the south of the subject site. The DPLH queried the SIDRA analysis provided which considered traffic volumes during the PM peak rather than the AM peak, which is typically higher. Whilst this is acknowledged, the City's Traffic Services has advised that MRWA traffic data for Marmion Avenue records higher traffic volumes in the PM peak and as such the analysis is considered to assess traffic volumes during the busiest period, and further analysis for the AM peak is not required.

The intersection analysis and assessment requested by DPLH is discussed in further detail in the Traffic section of this report.

The development has considered the impact of road and rail noise through the Environmental Acoustic Assessment (EAA) submitted as part of the application, included as **Attachment 7**. The EAA concludes that the development is located outside of the exposure categories outlined within State Planning Policy 5.4: Road and Rail Noise and as such, no treatment is required and the DPLH comment has been adequately addressed.

Department of Planning, Land and Heritage Land Use Planning

The DPLH Land Use Planning team provided comments on the proposal, which are included as **Attachment 8**. The DPLH did not provide a position on the proposal however did recommend that the development be considered against the draft ACP.

The proposed development has been assessed against the draft ACP amendment and is generally compliant with its provisions. This is discussed in further detail in the 'Planning Assessment' section below.

Main Roads WA

MRWA provided comments on the proposal, as the subject site abuts Marmion Avenue, which is an Other Regional Road under MRWA control. MRWA's referral response is included as **Attachment 9**. MRWA had no objections to the proposal subject to conditions, which were similar to those of DPLH and are discussed in further detail in the Traffic section of this report. As noted in the DPLH Traffic response, the concerns surrounding noise attenuation have been adequately addressed by the provision of an EAA.

Design Review Panel Advice

The application was referred to the City's Design Review Panel (DRP) in May 2025, as a pre-lodgement review of the proposal. The DRP was supportive of the diversity of uses on the site, generous tree planting throughout the development. The DRP did raise concern over the density and height of the development, encouraging the development to utilise its proximity to the train station for greater transit orientated development (TOD) rather than the proposed 'neighbourhood centre' style design. The DRP also encouraged the development to improve the inactive edges of the site creating public spaces and reducing the extent of paving and landscaping throughout.

The DRP minutes from the May 2025 meeting are included as **Attachment 10**.

The application was not referred to the DRP upon lodgement as it was considered to have adequately addressed the comments raised by the panel in May. As part of the application, the applicant provided a detailed response to the DRP comments, which is included as **Attachment 11**.

Context and character

The Design Review Panel's primary concern with the proposal relates to its scale within the context of a planned high-rise town centre. The initial design was considered more akin to a neighbourhood centre, characterised by single-storey built form and a strong emphasis on vehicle-oriented development. While this observation is acknowledged, it is also recognised that the ultimate vision for the city centre involves higher density. However, as this represents the first stage of development, a realistic balance must be achieved between market demand and alignment with the planning framework.

In response to the DRP's comments, the development has been refined to strengthen its pedestrian focus. The layout is oriented toward the northeast corner of the site, closest to the train station, to improve connectivity and encourage active transport. A pedestrian plaza is proposed as the primary entry point to the centre, incorporating the anchor supermarket entrance and smaller retail tenancies that activate this space. Tenancies 12, 13, and 14 are positioned to address the future pedestrian link to the north, which will connect to Stage 2 of the development. This link will provide direct access to the train station and the future town square at the corner of Kambarniny Street and Koomool Drive, east of the site.

Furthermore, all tenancies fronting the main street are designed with pedestrian entries and active façades to create vibrant street edges. Additional public amenities, including seating, feature trees, and bike racks have been incorporated to further encourage pedestrian use and enhance the overall public realm. The Child Care Premises and Medical Centre have provided an updated façade which incorporates greater articulation, awnings and public access to the street.

Landscape Quality

The DRP did not support the initial landscape design of the proposal citing concerns over the exposed loading dock, limited detail for the outdoor play of the Child Care Premises, the extent of hard paved areas and the feasibility of growth for some of the proposed planted trees.

In response to these comments the revised plans have incorporated the following:

- Greater landscaping has been added to the loading dock area, which will help to screen it from public view from all angles;
- Additional trees have been planted within the carparking areas, especially at pedestrian crossings providing greater natural shade;
- Greater detail has been provided surrounding the tree wells for shade trees which exceed the size of a standard tree well. This provides a greater chance of success for trees to grow to maturity; and
- Some tree species have been removed which were identified by the DRP as being incompatible with the locality.

These changes are considered to have addressed the DRP comments, specifically noting that the number of trees proposed on the site exceed that required under both the structure plan and DPS 2. Whilst the applicant has also updated the landscaping design to increase the number of trees within the outdoor play area of the Child Care Premises, detail on the extent of hard and soft landscaping has not been provided as the operator of the premises has not been finalised. As such, the City recommends a condition for a revised landscaping plan to be provided which details hard and soft landscaping in the play area. This is to be provided prior to the occupancy of the site to allow for a tenant to be secured and the area to be designed to their needs.

Built Form and Scale

The DRP raised concerns over the lack of height within the development, as noted in the 'Context and Character' section above, the consistent heights of the building which do not create an architectural intrigue and the lack of landmark corners which are identified within the structure plan. As noted above, the high-rise development outcome envisaged by the ASP is not attainable currently due to market demands, however the design has been modified with the following aspects incorporated:

- Increase of the heights of the landmark corners to create a more prominent façade and entry;
- Change in materials for the corner façade entry to the pedestrian plaza; and
- Modification to the roof designs to incorporate flat and skillion roofs to reduce the 'boxy' façade originally raised by the DRP.

The built form changes result in a more visually appealing streetscape with different roof types and levels creating vertical articulation. The change in materials for the façade above the entry to the pedestrian plaza creates a more visible entry point especially at the pedestrian level. These changes are considered to have addressed the DRP comments.

Sustainability

In response to the DRP's comments surrounding sustainability, an Environmentally Sustainable Design (ESD) Strategy was provided as part of the application. The ESD Strategy outlines key design features that will be incorporated into the development to result in a more sustainable design. The City is satisfied that this addresses the DRP comments surrounding sustainability and recommends a condition is imposed requiring development to be undertaken in accordance with the ESD Strategy.

The ESD Strategy is included as **Attachment 12**.

Legibility and Safety

The legibility of the plaza was raised as a concern during the Design Review Panel (DRP), along with the lack of additional access points from the street. While the plaza itself has not been physically altered, additional wayfinding signage has been proposed. This is considered appropriate, particularly given the plaza's proximity to the train station, which will generate a higher volume of pedestrian movements.

The medical centre has been modified to include an entry point from the main street, enhancing legibility and improving interaction with the pedestrian environment.

To address safety concerns, additional marked pedestrian crossings have been incorporated within the car park, along with benches and increased tree planting to provide shade for pedestrians.

Overall, the changes to the design are considered to appropriately address the legibility and safety concerns raised by the DRP.

The development plans subject to this application have generally addressed the comments raised by the DRP with increased materiality, articulation and colours used to create a more visually appealing development. The development provides greater pedestrian connectivity both within the site and from the surrounding streets as well as additional public amenities within the pedestrian plaza, which is located adjacent to the future town square. Overall, the development is considered to have addressed the comments raised by the DRP and is supported by the City.

Planning Assessment:

An assessment of the proposal has been undertaken against the relevant provisions of the City's DPS 2, State and Local Planning Policies, and both the current and draft Alkimos City Centre Activity Centre Structure Plan No. 89 as detailed in the Legislation and Policy Section of this report. The following matters have been identified as key considerations in the determination of the application:

- Proximity to Existing Centres;
- Accessibility, Traffic and Parking;
- Assessment against the draft ACP 89;
- Landscaping; and
- Management Plans

Proximity to Existing Centres

Submissions were received which raised concerns over the proximity of the development to other, existing centres and how this will impact on the operation of these centres. Whilst it is acknowledged that there is a neighbourhood centre located approximately 400-metres from the subject site, the Alkimos City Centre has been identified as a secondary centre under State Planning Policy 4.2: Activity Centres and is appropriately zoned for centre development. The development is also supported by Retail Needs Assessments, which when undertaken at the structure plan stage, estimated that 72,000m² of net lettable area (NLA) for shops and retail will be needed by 2041 within the Alkimos Centre. The development itself proposes 5,625m² of NLA which is well within the anticipated retail NLA for the Alkimos

Secondary Centre. As such, the location of the development is considered appropriate.

Accessibility, Traffic and Parking

Accessibility

During the public consultation, feedback was received regarding the accessibility of the development and concerns about traffic. In response, the development—while still accommodating vehicle trips—has been designed with a strong emphasis on pedestrian movement. This includes open spaces within the plaza and direct street-level access to most tenancies. As outlined in the Design Review Panel section above, the design was revised to incorporate additional marked pedestrian crossings and raised plateaus within car parks to prioritize pedestrian safety and create a low-speed vehicle environment. ACROD bays have been positioned close to building entries, notably at the plaza and medical centre entrances.

Traffic

To support the proposal, a Transport Impact Assessment (TIA) was prepared and is included as **Attachment 13**.

The TIA concluded that the development is expected to generate approximately 662 vehicle trips during the weekday PM peak hour, which represents the busiest period for the site. This is classified as high impact under the WAPC Transport Impact Assessment Planning Guidelines. However, this level of traffic was anticipated during the structure planning stage for the City Centre. In 2020, a TIA for the entire Alkimos Central precinct informed the design of the road network and hierarchy. This TIA concluded that Kambarniny Street is to be designed to a Neighbourhood Connector level, which would typically be able to accommodate 7,000 vehicles per day (vpd), but due to the low-speed environment would accommodate up to 13,000 vpd and function appropriately. As the surrounding roads align with that TIA and this is the first stage of development within the centre, the proposal is not expected to adversely affect the network or exceed anticipated traffic volumes.

Intersection and SIDRA Analysis

During referrals to both DPLH and MRWA (as discussed in the Referrals section above), concerns were raised regarding the intersection analysis for Romeo Road and Kambarniny Street, located south of the development. The ACP 89 Traffic Report identifies this intersection as a left-in, left-out, right-in configuration, with right-out movements prohibited due to its proximity to the signalised Marmion Avenue/Romeo Road intersection. While this layout has been constructed, it remains unsignalised. Signalisation may be required if SIDRA analysis indicates the intersection fails, necessitating upgrades to maintain traffic flow. As the proposed development is among the first within the ACP and no prior SIDRA analysis was undertaken for signalisation, the development should provide this information to confirm it does not trigger intersection upgrades and that surrounding intersections will operate at an acceptable level of service (LOS).

It is noted that the TIA supporting the draft ACP undertook SIDRA analysis of the unsignalised intersection, which is expected to operate with a LOS A in 2031 during AM and PM peaks which is based on approximately half of the ACP area being developed. However, this does not address the 10-year modelling required by the

WAPC TIA Guidelines as this analysis is now outdated and will realistically only consider 4-5 years analysis post the completion of the subject development.

The City supports the DPLH recommendation for intersection modelling and recommends a condition requiring a revised Traffic Report to address this. Similarly, the 10-year SIDRA analysis requested by DPLH will ensure surrounding intersections operate effectively and demonstrate that the development does not necessitate upgrades. In addition, the City recommends a condition requiring markings and signage along the eastern entry to the carpark to prevent opposing vehicle movements, as this entry is designed for left-in access only. While the City's Traffic Services generally supports the findings of the TIA, it also recommends that the above analysis be completed.

MRWA has questioned responsibility for contributions to the design, construction, and/or funding of the ultimate intersection control. The City's position is that signalisation has been identified as a future requirement, and therefore, the developer should be responsible for delivering this upgrade, as they are developing the land (secondary centre) that generates the additional traffic. Furthermore, the City is requesting that the signals be implemented through the subdivision clearance and detailed road design stage. If this is not achieved, the responsibility to undertake these works would ultimately fall to the City.

Intersection and Crossover Detail

The development proposes four access points to the site, of which only the southern crossover proposes a full movement intersection. This intersection is located adjacent to a proposed access road, approved by the WAPC, which results in the intersection operating as a four-way uncontrolled intersection. The TIA outlines that whilst this is not a preferred outcome, the intersection will function well with appropriate treatments including signage and a raised plateau to slow traffic. Further, there is an entry only access point on the eastern side of the site, an exit only crossover and a left-in, left-out (LILO) crossover to the western side of the site.

The City's Traffic Services support the proposed accessways subject to the appropriate treatments and as such it is recommended that a condition is imposed requiring appropriate signage and design for all vehicle access points to the site to ensure they operate as designed, including any modifications to the four-way intersection within the road reserve.

Parking

Draft ACP 89 prescribes parking standards for development within an 800-metre radius of the Alkimos Station, which are:

- Car parking for all non-residential land uses shall be provided at a maximum rate of 4.5 car spaces per 100m² of NLA, with the exception of office and showroom which shall be provided at a maximum rate of 2 car spaces per 100m² of NLA.

Based on these parking requirements, the development requires a total of 254 parking bays on the site based on the 5,625m² net lettable area proposed. As the development provides 301 bays on-site, there is a 47 bay surplus. Therefore the proposal adequately meets the parking requirements of ACP 89.

Assessment against the draft ACP 89

Built Form

Draft ACP 89 outlines development objectives, which are outlined below. The development is considered to address these objectives.

Draft ACP 89 Objective	Planning Assessment
Pedestrian Focused: Deliver an east-west 'activated pedestrian link' to provide a clear connection from Precinct 2, through to the town square and further east to Precinct 3.	The development provides a pedestrian main street design to the north of the site, with tenancies 12, 13 and 14 incorporating awnings and openings to engage with the pedestrian walkway. Further the plaza which acts as the entry to the supermarket and the majority of the tenancies is accessed solely by pedestrians and is located adjacent to the future town square to the east of the site, encouraging greater pedestrian connectivity.
Mixed Use: An integrated urban village which is attractive, active, accessible and economically diverse, with the precinct home to the primary retail of the Precinct Plan and a mix of commercial, hospitality/ entertainment, civic and residential land uses.	The development proposes a range of land uses, which are generally supported land uses within draft ACP 89 for precinct 1. There is a pedestrian focus as outlined above especially towards the Kambarniny Street frontage, which is the Main Street.
Main Street: Deliver two recognisable main streets converging at a central Town Square, integrated with Alkimos Station.	The pedestrian plaza which provides pedestrian access for most of the tenancies including the supermarket is located directly adjacent to the future town square. All tenancies fronting Kambarniny Street have direct access and windows to further encourage street activation and deliver a main street design.
Cultural Focus: Connect, protect and promote the 'environmental and cultural heritage values' of the city centre core to integrate with the wider cultural heritage values of Alkimos.	The colours and materials proposed for the development as responsive to the context of the locality, with a coastal focus.
Shared Street: Provide a 'shared street' environment that promotes safe pedestrian and cyclist movement and provides accessible, shady and active street spaces, with sleeved, above-grade or basement carparking.	The development does not alter the existing approved main street layout or design, but does provide an additional pedestrian link to the north of the site which facilitates pedestrian connectivity from the Alkimos Train Station.
Prominent Locations: Deliver sustainable, experiential and distinctive design outcomes, with key prominent locations acting as key landmarks, interfaces and gateways.	Prominent location 3 (the laneway) is contained within a portion of the site to the north, which is required to act as a link between precinct 1 and precinct 2, to the west. The development proposes retail and food and beverage land uses which address the pedestrian laneway, consistent with the draft ACP requirements.

Through the assessment of the proposal and public consultation it has been noted that the development is not fully compliant with the built form requirements of ACP 89.

Draft ACP 89 Provision	Proposed Development
Storeys: Maximum 10	One storey building proposed.
Minimum height: 7.5-metres	Between 6-metres and 8.5-metres.
Minimum ground floor height: 4.5-metres	Between 6-metres and 8.5-metres.
Kambarniny street setback: Minimum: 0-metres Maximum: 0-metres	Main street setback: Minimum: 0-metres Maximum: 3.7-metres
Other street setback: Minimum: 0-metres Maximum: 3-metres	City street setback: Minimum: 0-metres Maximum: 5.4-metres
Awnings Minimum percentage of building frontage: Kambarniny Street: 100% Other streets: 80%	Awnings Minimum percentage of building frontage: Kambarniny Street: 100% Other streets: 59%

Development within Precinct 1 of ACP 89 should have a minimum building height of 7.5-metres and nil setbacks to street frontages. The development achieves the minimum height of some locations however as a result of the vertical building articulation, there are some area which do not meet the prescribed height, proposing a 6-metre building. The proposed Medical Centre and Child Care Premises do not achieve the heights required by ACP 89, however, given these buildings are stand alone and not connected to the main centre, the increased height would have limited benefit.

As discussed in the Design Review Panel section above, the proposed building heights are considered appropriate, particularly given that this development represents the first stage within the centre. Along the main street frontage and at the entry to the pedestrian plaza, the development delivers a building height of approximately 9 metres. From a pedestrian perspective, this scale creates a strong visual presence and contributes to the perception of density and urban character within the area. The use of contrasting colours and varied materials at the entry point further enhances this prominence, creating visual interest, reinforcing the sense of arrival, and helping to distinguish key elements of the development. This approach achieves a balance between creating a vibrant, human-scaled environment and acknowledging the economic realities of an initial stage development.

ACP 89 also requires nil setbacks to all street frontages, which is generally achieved in the proposal, with minor variations introduced to allow for articulated building frontages. These variations help create a more visually engaging and dynamic streetscape. The main street (Kambarniny Street) is required to have awnings provided along its entire frontage which is achieved. City streets, which are the southern and western frontages are required to achieve 80% of the building frontage with awnings. Only the Medical Centre and Child Care Premises address a City Street and awnings are provided for approximately 60% of the frontages. As the Child Care Premises has its access from the car park and the building frontage is

articulated away from the street in some locations, the extent of awnings proposed is considered appropriate.

While it is acknowledged that the development does not deliver the ultimate intended outcome for the centre, being high-rise development, such an outcome is not currently feasible given prevailing market conditions. Nevertheless, the proposal ensures a high standard of design and establishes a strong street-level presence that provides sufficient perceived density from the pedestrian perspective. This approach represents a practical balance between long-term aspirations and the economic realities of an initial stage. On this basis, the development is considered appropriate and is supported.

Land Uses

The applicant has requested, through the planning report and application submission, approval for a range of land uses across the site based on the tenancy types shown on the development plans. While this is generally supported, it is noted that many of the proposed uses are already permitted within the Commercial zone and therefore would not require further development approval to operate. However, some uses have been proposed that are either not supported or only appropriate in specific tenancies.

A Fast-Food Outlet, as defined in DPS 2, includes a drive-through component, which is not feasible given the proposed built form. In addition, draft ACP 89 identifies a Fast-Food Outlet as a non-preferred land use. The provision of food intended to be consumed off-site can instead be considered a Lunch Bar, which is a permitted use. Accordingly, no tenancy has approval to operate as a Fast-Food Outlet.

Tenancy 14 can accommodate a Small Bar, however, no other tenancies have such approval. This restriction ensures appropriate separation and control over the number of licensed premises in accordance with the City's Local Planning Policy 2.3: Licensed Premises.

The Recreation – Private land use is generally considered appropriate for most tenancies, except for Tenancies 12 and 13, which front the laneway prominent location. This pedestrian strip is intended to be an activated area featuring alfresco dining and retail, food, and entertainment uses. As the Recreation – Private use does not align with the objectives for this prominent laneway location, it is not approved for these tenancies.

All other proposed land uses are generally considered appropriate. Therefore, a condition is recommended to approve the land uses for each tenancy as proposed.

Landscaping

Landscaping Requirement	Proposed Development
10% of the site to be landscaped	Applicant has indicated 9.1% of the site is landscaped, however the plans do not provide enough detail to confirm this.
3-metre landscaping strip to all street boundaries	Kambarniny Street: Nil Other Street: Nil
1 tree to be provided per 200m ² of application area:	207 trees

Total: 118 trees	
1 tree per 4 car parking spaces on site with a 1.2-metre by 1.2-metre tree well. 75 trees required	89 shade trees indicated

The City's DPS 2 requires a 3-metre-wide landscaping strip along all street frontages, however, this is not consistently achieved across the site. The Main Street and City Street frontages have nil setbacks to buildings, as required under ACP 89, which is supported. Conversely, car parking areas addressing the remaining street frontages generally have nil setbacks, resulting in no landscaping buffers within the site. This shortfall is offset by the provision of 207 trees throughout the development as well as planting within the verge, significantly exceeding the minimum requirement of 112 trees, comprising 163 large or medium trees and 44 small trees, as detailed in the proposed Landscaping Strategy included as **Attachment 14**.

ACP 89 also requires that 10% of the site area be provided as deep soil planting area (DSA). The Landscaping Strategy indicates that the development achieves 9.1% DSA but does not specify planting species for groundcover or delineate the locations of small, medium, and large trees. Additionally, the City's Environmental Services has raised concerns regarding the suitability of some proposed tree species. The submitted plans do not clearly identify DSA areas, making it difficult for the City to validate the extent proposed. Furthermore, no detailed design has been provided for the outdoor play area of the Child Care premises, which should incorporate a mix of DSA planting and shade. With appropriate detail, it is expected that the site can achieve the required 10% DSA under ACP 89. Accordingly, a condition is recommended requiring a revised, detailed landscaping plan that addresses these matters, including planting specifications for the entire development site and the Child Care outdoor play area.

Management Plans

The development is supported by a Bushfire Management Plan (BMP) (**Attachment 15**), Environmental Acoustic Assessment (**Attachment 7**) and a Waste Management Plan (WMP) (**Attachment 16**).

Bushfire Management Plan

The BMP outlines that most of the site will achieve a BAL-Low rating once the measures are implemented. This has been reviewed by the City and is supported. A condition is recommended requiring the recommendations of Table 4 of the BMP to be implemented and a certificate of compliance provided prior to occupancy of the site.

Environmental Acoustic Assessment

The Environmental Acoustic Assessment (EAA) concludes that the development will be compliant with the *Environmental Protection (Noise) Regulations 1997* at all times subject to the below measures:

- Engines of large delivery trucks will be turned off once manoeuvred into the loading dock;

- Noise levels associated with typical mechanical plant is assumed to comply at all times, however this is indicative only and a further acoustic assessment should be undertaken; and
- The outdoor play area of the Child Care Premises is not used prior to 7am.

The City's Health Services has reviewed the EAA and agrees with its findings. Conditions are recommended to be imposed for the development to operate in accordance with the recommendations and findings of the EAA and for an Acoustic report to be provided prior to occupation of the site demonstrating all plant material will comply with the relevant regulations.

Operational & Waste Management Plan

The WMP provided does not detail how waste will be collected from the internal rubbish bins within the public areas or provide any details on the deliveries and servicing for tenancies other than the supermarket. To ensure that these operations occur without impacting parking areas, tenants or customers it is recommended that a condition is imposed requiring an operational & waste management plan which will address how waste and deliveries will be appropriately managed.

Licensed Premises Management Plan

Local Planning Policy 2.8: Licensed Premises requires all premises which intend to serve or sell alcohol to provide a management plan which addresses aspects to minimise the impact of the use on the amenity of the surrounding area. This has not been provided as the tenant for the sites subject to these licenses are not yet confirmed and therefore specific details are unable to be provided. As such, the City recommends a condition which requires a management plan for all licensed premises to be provided prior to occupancy of the uses.

Conclusion:

The proposed Alkimos Shopping Centre represents the first stage of development within the Alkimos City Centre and delivers a mix of retail, commercial, childcare, and medical uses consistent with the strategic intent of the precinct. While the design does not fully achieve the ultimate high-density vision outlined in ACP 89, it provides a strong pedestrian focus, active street frontages, and potential for a high standard of landscaping and built form appropriate for an initial stage. Key considerations such as traffic impacts, landscaping, and acoustic compliance have been addressed through recommended conditions, ensuring the development aligns with State and Local Planning Policies and the draft ACP 89.

Overall, the application demonstrates sound planning merit and is considered consistent with the relevant planning framework. Subject to the recommended conditions, the proposal will deliver a functional and well-designed centre that supports the long-term growth of Alkimos and establishes a foundation for future stages of the City Centre.



PART C – SHIRE OF SERPENTINE-JARRAHDALE

Applicant
Jason Hunt (Statewest Planning) Belinda Moharich (Moharich and More) Marina Kleyweg (Premise) Vincent Tran (VPE)
Officers/Technical Advisors in Attendance
Helen Maruta Andrew Trosic Martin Erlacher (Western Australia Planning Commission)

1. Declarations of Due Consideration

2. Disclosure of Interests

Please note a standing declaration of interest, if the items on this agenda have been considered at the relevant local government council meeting or having attending a briefing session, the local government DAP members acknowledge that in accordance with section 2.4.5 of the DAP Code of Conduct 2025 they have declared that they had participated in a prior Council meeting in relation an item being determined at this meeting. However, under section 2.1.2 of the DAP Code of Conduct 2025, they acknowledged that they are not bound by any previous decision or resolution of the local government and undertakes to exercise independent judgment in relation to any DAP application before them, which will be considered on its planning merits.

Member	Item	Nature of Interest
President Robert Coales	3.1	Impartiality Interest – President Robert Coales participated in the prior Council decision in accordance with his functions as a member of a local government.

3. Form 1 DAP Applications

3.1 Lot 32 (1324) Thomas Road, Oakford - Proposed Oat Mill Operating Facility and Associated Buildings and Structures - 'Industry-Rural' – DAP/25/02840

3.1.1 Deputations

Jason Hunt (Statewest Planning) speaking in support of the application at Item 3.1. The deputation will address support of the application and a response to DPLH reasons for refusal.



Belinda Moharich (Moharich and More) speaking in support of the application at Item 3.1. The deputation will address the legal status of the proposed driveway access to the development, and proposed conditions of development approval.

The Shire of Serpentine-Jarrahdale may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

The Western Australia Planning Commission may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

3.1.2 Additional Information

The Presiding Member notes additional information was received from the Shire of Serpentine-Jarrahdale and was published on 12 December 2025 in relation to Item 3.1.

The Presiding Member notes additional information was received from the Western Australian Planning Commission and was published on 12 December 2025 in relation to Item 3.1.

4. Form 2 DAP Applications

Nil

5. Section 31 SAT Reconsiderations

Nil



Deputation Request Form

Regulation 40(3) and DAP Standing Orders 2025 cl. 3.6

Must be submitted at least 72 hours (3 calendar days) before the meeting

Deputation Request Guidelines

Before requesting to present to a DAP please review the Responsible Authority Report that has been published on the DAP website and consider whether any previous comments have been adequately addressed.

Your request will be determined by the Presiding Member based on relevance to the subject application, individual merit, other requests raising the same issues and likely contribution to the DAP's consideration and determination of the application.

Deputations are not to exceed **3 minutes**, unless otherwise approved by the Presiding Member. The Presiding Member may agree to or require combined deputations where the deputations are considered complementary to each other and would assist the efficiency and effectiveness of the DAP meeting.

In accordance with Clause 3.6.2 of the *DAP Standing Orders*, your deputation request must be accompanied with a document setting out the deputation content.

Handouts or power points will not be accepted on the day.

In accordance with Clause 3.6.9 of the *DAP Standing Orders*, if your deputation request is not approved, the submitted content will be circulated to the DAP and published on the DAP website as a written submission.

Please complete a separate form for each presenter and submit to daps@dplh.wa.gov.au

Presenter Details

Name	Jason Hunt
Company (if applicable)	Statewest Planning
Relationship to proposed development	Applicant
Please identify if you have any special requirements:	YES ☐ NO ☒ If yes, please state any accessibility or special requirements: Click or tap here to enter text.



Meeting Details

DAP Name	Metro Outer Development Assessment Panel
Meeting Date	17/12/2025
DAP Application Number	DAP/25/02840
Property Location	Lot 32 1324 Thomas Road, Oakford

Deputation Details

I have read the contents of the Responsible Authority Report contained in the published DAP Meeting Agenda	YES ☒ NO ☐
Is your deputation in support or against the <u>proposed development</u> ?	SUPPORT ☒ AGAINST ☐
Will your deputation involve a presentation that requires power-point facilities?	YES ☐ NO ☒
Will you be attending in person or via electronic means	In person ☒ Online ☐
I acknowledge that my deputation content <u>will be</u> published on the DAP website and circulated to the local government and applicant	YES ☒

Deputation Content*

Brief sentence summarising your deputation (To be included in the Related Information part of the agenda)	<i>The deputation will address:</i> Speaking in Support of the Application and providing Traffic Report Rev H and plans S40 and S41 as well as table response to DPLH reasons for refusal. The landowners: Jonnie Morton (in person) and Barry Mansfield (Zoom), and from the project team - Marina Kleyweg, Premise - Vincent Tran, VPE (TBC) are available to answer questions from the Panel.
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Please provide your deputation content below or attach as a separate document. Any document must be provided in Microsoft word (.doc), PDF (.pdf), PowerPoint .pptx) or Image (.jpeg) format and be no more than 5MB.

If your deputation references documents that are contained within the Responsible Authority Report and/or its attachments, please consider referencing the document rather than including a duplication of documents:-



Click or tap here to enter text.

See attached Deputation

- Traffic Impact Statement Rev:H and appendix
- Response to DPLH reasons for refusal

15 December 2025
Our Ref: 23027
Your Ref: DAP/25/02840

Deputation – Proposed Oat Facility, Lot 32 (1324) Thomas Road, Oakford

1. My name is Jason Hunt. I'm from Statewest Planning and am here representing the landowners, we support the Shire planning officer recommendation for approval. We do not agree with the DPLH officer recommendation for refusal.

Purpose

2. The application proposes to construct an Oat Facility (Industry – Rural) on the lot to support primary production with a maximum daily capacity of 240tonne of oats.
3. The facility will clean and dry oats sourced from the Agricultural regions with Western Australian as follows:
 - a. The oats are purchased as raw product directly from the producer
 - b. The oats are received on site in trucks at pre-scheduled times and sampled
 - c. The oats are unloaded from the truck into storage silos
 - d. The oats are then transferred from silos to cleaning machines where they are aspirated and screened to remove chaff and weed seeds.
 - e. They are then sized with larger and smaller grains removed.
 - f. The oats are then passed through an impact hulling machine to remove their outer shell.
 - g. The shelled oat then passes over screens and is aspirated to remove broken grain and any foreign seeds.
 - h. The oats are then dried by passing between steam-heated pipes.
 - i. The dried oats are then transported to clients for further processing for use in various food products.

4. Representatives of the landowner Group are in attendance either in person or on Zoom and are available to provide comments on the proposed facility as required. The owners have significant experience in the industry, specifically with the management for grain trucks at facilities.
 - This includes the current operation of Demeter Grains which currently receives approximately 17,000 tonnes of grain per week
 - The previous operation of Morton Grain handling 7,000 tonnes of grain per week
5. The proposed facility at maximum capacity is a significant lower volume than the current and past receivable managed by the owners at other sites. The owners are suitably experienced to manage truck movements through the booking system and have provided the details contained in the Traffic report.

Background Planning Framework

6. The land is zoned Rural under the Shire of Serpentine Jarrahdale Local Planning Scheme No.3 (LPS3), the proposed use 'Industry – Rural' is a "D" use in the zone. The Shire's planning officers have undertaken a thorough and detailed review of the application, assessing all relevant planning and technical reports, including environmental, bushfire, and noise assessments.
7. We are pleased that the Shire officer's RAR recommends approval of the application. We generally support the proposed conditions, however due to the concerns raised by DPLH on the ROW, the applicant has recommended an additional condition to resolve this matter. This additional condition and a response to all proposed conditions will be covered in a separate deputation.
8. We do not agree with the Council reasons for refusal as the proposed land use is "D" in the zone and the noise and traffic matters have been suitably addressed.

Officer engagement

9. Over the past 18 plus months, we have worked closely with the landowners and Shire officers to develop a proposal that meets both the operational needs of the proposal and the Shire's planning objectives.
10. Through further recent engagement with DPLH and MRWA officers there have been updates to the lodged plans and the traffic report for approval referenced in the Shire RAR, specifically the Traffic Impact Statement, the version for consideration by the DAP is TIS Rev'H' (August 2025) and sketches S40 and S4 (Attachment 1).
11. Copies of these documents have been provided as part of this deputation and these documents have been previously provided to MRWA and DPLH as referenced in the RAR DPLH Part C – Item 3.1b pages 5 and 6.

Amendments to plan and reports

12. The Shire RAR references TIS 'G' (May 2025). MRWA provided a response to this version of the traffic report in July 2025. At this point the responsibility for the access from Thomas Road had been allocated to DPLH, so the response is referenced by DPLH in there RAR as part of Attachment 3.
13. The MRWA comments required amendments to the driveway layout and further details on the management of vehicle movements at the site. Rev H amended the plans in response, with further minor changes required when working drawings are prepared.
14. The DPLH RAR encloses TIS Rev I (Rev I), it is however clear in the RAR that DPLH received feedback on TIS Rev H (Rev H).
15. MRWA reviewed Rev H, and provide feedback to DPLH, which has been acknowledged in the RAR.
16. The comments provided are referred to in the MRWA commentary at pages 5-6 of the DPLH RAR.

17. The DPLH RAR references TIS I (October 2025), this is because DPLH had raised concerns over the minor encroachment over the existing right-of-way (ROW). The changes from version 'H' to 'I' occurred to seek to suitably respond to this encroachment, by moving the driveway location. This change is no longer required, as the Shire, through signing the Development Application and MRS form1, has agreed to allow this minor encroachment to occur.
18. The fact that Rev H is now the version relied upon, this version is attached to this deputation and referenced in the amended conditions.
19. To the extent that Rev I amended the plans in response to the MRWA comments, those amendments can be made as part of compliance with condition b of approval issued under LPS3.
20. The owners, who are suitably experienced in grain facilities, provided details on the onsite truck scheduling method to manage vehicle movements. This is done through a truck booking system to be used at the site which is common in the industry. The system allocates time schedules for trucks to arrive and depart the site. An updated spreadsheet was prepared and included in Rev H as well as an amendment to the maximum daily capacity of the site to 240 tonnes.
21. The site will have three staff shifts which coordinates with the vehicle movement schedule these shifts are:
 - 6am to 2pm
 - 2pm to 10pm
 - 10pm to 6am
22. A detailed response to the three reasons for refusal from DPLH is provided as part of this deputation (Attachment 2) and the traffic consultant is available via Zoom to respond to any questions on their report.

Conclusion

23. The use can be approved within the zone.
24. The proposed development has addressed the planning framework and relevant sections of SJLP3.
25. The proposed development will not generate excessive traffic volumes or have a detrimental impact on the surrounding road network.
26. The recommendation of support from the Shire planning staff is welcome.
27. The concerns from DPLH can be suitably managed through a condition of approval as outlined in the Moharich letter
28. This project represents a significant investment in the local economy, supporting agriculture, creating jobs, and adding value to Western Australia's oat industry.
29. The location and scale of the facility has been designed with careful consideration of environmental impacts, bushfire, noise and traffic.
30. In closing, we respectfully request that the Metro Outer Joint Development Assessment Panel approve the application, amended reports and plan and proposed conditions

Thank you for your time and consideration.

Jason Hunt
Jason.hunt@statewestplanning.com.au
08 9274 1363

Enc:

1. TIS Rev:H with (Appendix 1-3)
2. Crossover sketch S40 and S41
3. Response to WAPC reasons for refusal

TRANSPORT IMPACT STATEMENT

1324 Thomas Road,
Oakford

August 2025

Rev H



Premise

HISTORY AND STATUS OF THE DOCUMENT

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
Rev A Draft	23.10.2023	M Kleyweg	M Kleyweg	23.10.2023	Issued for Review
Rev A	26.10.2023	M Kleyweg	M Kleyweg	26.10.2023	Issued for Review
Rev B	8.03.2024	M Kleyweg	M Kleyweg	8.03.2024	Amended as per additional information from client
Rev C	6.12.2024	M Kleyweg	M Kleyweg	6.12.2024	Proposed layout amended
Rev D	12.12.2024	M Kleyweg	M Kleyweg	12.12.2024	Minor amendments included
Rev E	17.12.2024	M Kleyweg	M Kleyweg	17.12.2024	Minor amendments included
Rev F	19.12.2024	M Kleyweg	M Kleyweg	19.12.2024	Minor amendments included
Rev G	19.05.2025	M Kleyweg	M Kleyweg	20.05.2025	Proposed layout amended
Rev H	11.09.2025	M Kleyweg	M Kleyweg	11.09.2025	MRWA queries addressed

DISTRIBUTION OF COPIES

Revision	Date issue	Quantity	Issued to
Rev A Draft	23.10.2023	1 (PDF)	Barry Small (Bravura Design Pty Ltd)
Rev A	26.10.2023	1 (PDF)	Barry Small (Bravura Design Pty Ltd)
Rev B	8.03.2024	1 (PDF)	Barry Small (Bravura Design Pty Ltd)
Rev C	6.12.2024	1 (PDF)	Jason Hunt (Statewest Planning)
Rev D	6.12.2024	1 (PDF)	Jason Hunt (Statewest Planning)
Rev E	17.12.2024	1 (PDF)	Jason Hunt (Statewest Planning)
Rev F	19.12.2024	1 (PDF)	Jason Hunt (Statewest Planning)
Rev G	20.05.2025	1 (PDF)	Jason Hunt (Statewest Planning)
Rev H	11.09.2025	1 (PDF)	Jason Hunt (Statewest Planning)

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Author of the Rev A Draft	Ana Marijanovic
Author of the Current Revision	Marina Kleyweg
Project Team	/

Transport Impact Statement
KC01712.000 1324 Thomas Road, Oakford

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Name of Project	KC01712.000 1324 Thomas Road Oakford
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Appendices

- Appendix 1** - The layout of the proposed development
Appendix 2 - Transport Planning and Traffic Plans
Appendix 3 - Sight Lines and Vehicle Turning Circle Plan

1. Executive Summary

Site Context

- A small portion of the lot currently features a residential dwelling with rural industry facilities (poultry farm) onsite, while the majority is vacant. The proposed land use is a grain facility.
- The subject site is zoned as Rural and located within the Jandakot District Structure Plan and WAPC Planning control area No. 171 - Oakford Central (Thomas Road to Spears Drive).

Technical Findings

- According to WAPC guidelines, all developments generating less than 10 vehicular trips in peak hour have a low impact on the network.
The proposed development is expected to generate up to 68 vehicular trips per day 9 vehicular trips in the AM peak and 5 vehicular trips in the PM peak.
- The proposed driveway will be upgraded to MRWA standard and allows for the design vehicle movements. It should be noted that the proposed crossover currently encroaches on the area designated for the potential ROW connection to Thomas Road, which could lead to future conflicts between the two access points.
- The ROW is currently not constructed, and while the owners have indicated their intention to engage with the relevant authorities in the future regarding its potential use as access, this is outside the scope of the current application and is assessed in this report only as a possibility.
- Given the ROW's current state and lack of active use, it is considered reasonable to defer addressing the encroachment until such time as the ROW becomes actively utilised. This approach ensures that unnecessary modifications are avoided at this stage while acknowledging the need for future review if the ROW's use or status changes.
- Based on the information received from the proponent, the driveway does not require provision of auxiliary lanes when assessed against the MRWA and Austroads warrants.

Relationship with Policies

- A total of 27 car parking bays will be provided for staff employed at the facility and additional visitor parking. Two of the bays are marked as accessible and one 5min courier only parking bay.
- The development includes two passenger vehicle parking areas. The first features 90-degree parking, incorporating two accessible bays and a dedicated 5-minute courier-only bay. The second area consists of 75-degree angled parking, designed with adequate space for vehicles to turn around at the end of the aisle and exit in a forward direction.
While AS2890.1 does not specify dimensions for 75-degree angled parking, the provided dimensions align with the standard requirements for parking bays at any angle.
- Having in mind the character of the subject land use and the surrounding area it is highly unlikely that any of the staff members nor possible patrons will utilise the bicycle to access the site.
- As the facility will operate as a delivery and dispatch receival point there will be no additional parking of commercial vehicles on the property other than for loading and offloading. The site is designed to accommodate the circulation of 36.5m B-Triple vehicles, ensuring smooth movement throughout. Two weighbridges are provided, positioned at the entry and exit points, to facilitate vehicle weighing during ingress and egress.

Conclusion

- As stated above, the proposed development is expected to generate up to 68 vehicular trips per day 9 vehicular trips in the AM peak and 5 vehicular trips in the PM peak.
- Thomas Road is classified as a Primary Distributor as per MRWA classification. Currently there are around 2,100 vehicles in the peak hour on Thomas Road in the vicinity of the subject site. Therefore, it is not expected that the level of traffic from the proposed development would cause traffic flow disruptions on Thomas Road.
- Other surrounding roads would absorb significantly less traffic than Thomas Road, moreover, the traffic would be dispersed so that the impact can be considered negligible. In summary the proposed development will not have a negative impact on the surrounding road network.

2. Transport Impact Statement

2.1 Proposal

Statewest Planning engaged Premise to prepare a Transport Impact Statement (TIS) for the proposed grain facility. The facility has been designed for a maximum receival capacity of 240 tonnes of oats per day, equivalent to 4 truckloads of raw oats (60 tonnes per vehicle).

Grain will be transported on 36 m road train combinations, each with a 60-tonne payload capacity. These same vehicles will also be used to remove husks, ensuring no additional truck trips are generated

This report will primarily address the level of impact of the proposed development and the requirements for integration of the proposed development with the surroundings, namely the existing and planned immediate road network.

2.2 Location

Lot Number	32
Street Number	1324
Road Name	Thomas Road
Suburb	Oakford
Description of Site	A small portion of the lot currently features a residential dwelling with rural industry facilities onsite while the majority of the lot is vacant. The site used to operate as a poultry farm; however as the farm was closed some time ago, the operations are not reflected in the most recent traffic data count. The proposed land use is a grain facility. The subject site is zoned as Rural and located within the Jandakot District Structure Plan and WAPC Planning control area No. 171 - Oakford Central (Thomas Road to Spears Drive).

2.3 Technical Literature Used

Local Government Authority	Shire of Serpentine-Jarrahdale
Type of Development	Industrial - Rural
Are the R-Codes referenced?	NO
Is the NSW RTA Guide to Traffic Generating Developments Version 2.2 October 2002 (referenced to determine trip generation / attraction rates for various land uses) referenced?	YES
Which WAPC Transport Impact Assessment Guideline should be referenced?	Volume 4 - Individual Developments
Are there applicable LGA schemes for this type of development?	YES
If <u>YES</u> , Nominate:	
Name and Number of Scheme	Local Planning Scheme No. 3
Are Austroads documents referenced?	YES

Is the Perth Transport Plan for 3.5 million and NO
 Beyond referenced?

2.4 Land Uses

Are there any existing Land Uses YES

If YES, Nominate: 1 residential dwelling
 approximately 2,000m² rural industrial facilities

Proposed Land Uses

How many types of land uses are proposed? One

Nominate land use type and yield Industry Rural - grain facility 2,292m²
 There will be a maximum of 25 staff.
 The facility has been designed for a maximum receival capacity of 240 tonnes of oats per day, equivalent to 4 truckloads (B-triple) of raw oats (60 tonnes per vehicle).
 The client has indicated the deliveries will require the use of 36 m-long vehicles as the largest vehicle.

Proposed Vehicle Access It is intended all vehicle movements entering and exiting the property will be Left In - Left Out onto Thomas Road.
 Whilst all vehicle access in and out of the property can and will initially be managed/accommodated using the existing crossover off Thomas Road, the Client would like to consider providing access from the strip of land adjoining the western boundary of Lot 32 i.e., Lot 100 which is in the ownership of the state for a planned ROW.

Are the proposed land uses complementary with the surrounding land-uses? YES

2.5 Planning considerations

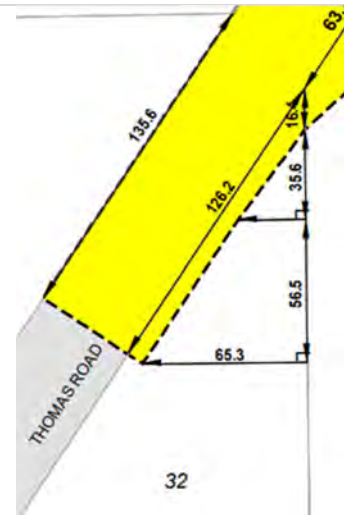
WAPC Planning control area No. 171 - Oakford Central (Thomas Road to Spears Drive) Westport Anketell-Thomas Road Freight Corridor

Impacted site area:

"The Planning Control Areas are intended to protect the land required for the proposed Anketell/Thomas Road primary regional road corridor.

The WAPC considers that the planning control areas are required over the properties to ensure that no development occurs on the land which might prejudice this purpose until it may be reserved for Primary Regional Roads in the Metropolitan Region Scheme."

"The early road concept for the freight corridor between Clementi Road in Mandogalup and Tonkin Highway in Oakford includes both four and six lanes with a concrete median, and proposed bridges, interchanges and roundabout access at key intersections to provide uninterrupted east-west movement for freight vehicles and enhanced safety for local road users."



Perth and Peel@3.5million The Transport Network March 2018

Thomas Road is identified as a Primary Distributor and a Secondary Freight Route.

MRWA Thomas Road Safety Improvements

- *"Dual carriageway between Kwinana Freeway and Bombay Boulevard, construction of a roundabout at Bombay Boulevard, and a four-metre wide pedestrian and cyclist path with lighting.*
- *Construction of a dual lane roundabout at Thomas Road and Nicholson Road, and upgrades on approach to the intersection.*
- *Construction of a dual lane roundabout at Thomas Road and Kargotich Road.*
- *Additional street lighting between Bombay Boulevard and Kargotich Road.*
- *Added safety measures added between Kwinana Freeway and Cumming Road including shoulder widening, new line markings, raised reflectors and resurfacing."*

Jandakot Structure Plan August 2007

"Freight routes

Thomas, Anketell and King Roads, and the Kwinana Freeway are designated primary freight routes that traverse the structure plan area. Rowley Road west of the freeway is proposed as a future primary freight route.

Road hierarchy

The existing major roads (Thomas Road west of Kwinana Freeway) will be retained in the structure plan. The function of the important regional roads will be also retained in the hierarchy. These are Thomas Road (east of Kwinana Freeway), Mortimer Road and Anketell Road (west of Kwinana Freeway).

Roads and transport

The study area is dominated by the Kwinana Freeway and southern suburbs railway and a number of major east-west roads which link into the freeway and provide connections westward to the Kwinana Industrial Area. These include Rowley Road, Anketell Road, Thomas Road and Mundijong Road (south of the structure plan area). In addition, in the proposed new urban areas, north-south collector and/or integrator roads are proposed to link these areas together and provide local access to facilities. They

also provide access on and off the major east-west roads and thus, access to the Kwinana Freeway and the proposed railway stations.

This will establish the potential for the public transport (bus) feeder services between the new urban areas and the railway stations and the Kwinana town centre.

Main Roads Western Australia

MRWA confirmed via email planned potential upgrades to Thomas Road. The following information has been received:

- *“Should a DA be formally lodged at the Council, the proposal (including crossover) would be referred to Main Roads for comments and recommended conditions would be provided to the local government to be considered in the planning decision/outcome.*
- *The crossover should be designed in accordance with the Main Roads Driveway Policy and meet the requirements of the WAPC Development Control Policy 5.1 – Regional Roads (Vehicular Access).*
- *The applicant will be required to submit an Application form to undertake works within the road reserve prior to undertaking any work within the road reserve.*
- *This section of Thomas Road is located within the Westport Project area which is currently under review. A planning study will be conducted to confirm whether any additional land requirements is needed for the project. Timing of the commencement of the planning study is currently unknown at this stage. Please note project timing is subject to change and Main Roads assumes no liability for any change to the timing information provided.*
- *There are a range of safety improvements underway that involves this section of Thomas Road. This includes but is not limited to street lighting works and an upgrade of the nearby Thomas Road and Nicholson Road intersection into a dual lane roundabout. For more information regarding this please visit the Projects & Initiatives page on the Main Roads website.”*

2.6 Local Road Network Information

How many roads front the subject site? 1

Name of Roads Fronting Subject Site / Road Classification and Description:

Road Name	Thomas Road
Number of Lanes	two way, one lane each direction, undivided
Road Reservation Width	40.0m
Road Pavement Width	9.0m inclusive of bicycle lanes
Classification	Primary Distributor
Speed Limit	80kph
Bus Route	NO
On-street parking	NO

Name of Other Roads within 400m radius of site, or roads likely to take increased traffic due to the development:

Road Name	King Road
Number of Lanes	two way, one lane each direction, undivided
Road Reservation Width	20.0m
Road Pavement Width	7.5m
Classification	Regional Distributor
Speed Limit	80kph
Bus Route	NO
On-street parking	NO

Road Name	Anketell Road
Number of Lanes	two way, one lane each direction, undivided
Road Reservation Width	20.0m
Road Pavement Width	9.0m
Classification	Regional Distributor
Speed Limit	90kph
Bus Route	NO
On-street parking	NO

2.7 Traffic Volumes

Road Name	Location of Traffic Count	Vehicles Per Day (VPD)	Vehicles per Peak Hour (VPH)				Heavy Vehicle % <i>If HV count is Not Available, are HV likely to be in higher volumes than generally expected?</i>	Date of Traffic Count	Estimation of 2025 Traffic Volumes (where needed)
			AM Peak Time	AM Peak - VPH	PM Peak Time	PM Peak - VPH			
Thomas Road	West of King Road	12,953	07:15 – 1,078		15:45 – 1,367		7%	Oct 2020	-
	East of King Road	14,135	07:15 – 1,251		15:45 – 1,476		7%	Oct 2020	-
	South of Anketell Road	14,111	06:15 – 1,155		16:15 – 1,431		8%	Oct 2020	-
	North of Anketell Road	17,120	06:15 – 1,446		16:15 – 1,766		9%	Oct 2020	-
	At 1324 Thomas Road Access*	/	07:00 – 2,100		15:45 – 2,108		11% AM; 8% PM	Mar 2025	Daily estimation** 22,500
King Road	South of Thomas Road	1,934	07:15 – 227		15:45 – 175		12%	Oct 2020	-
Anketell Road	West of Thomas Road	3,079	06:15 – 291		16:15 – 335		14%	Oct 2020	-

*Note – These traffic counts have been obtained through a survey conducted from 25-27th March 2025 for the purposes of this project. The values shown in the table are average of three survey days

**Note – Daily traffic volume for surveyed location has been estimated based on the ratio of Daily traffic and Peak traffic at traffic count locations – Thomas Road East of King Road and South of Anketell Road (closest to the surveyed location). The calculations show 25,000 VPD when using AM peak ratio and 20,000 VPD when using PM peak ratio. Therefore, an average of 22,500 VPD is estimated for this location in 2025.

2.8 Vehicular Crash Information

Is Crash Data Available on Main Roads WA website? YES

If YES, nominate important survey locations:

Location 1 Thomas Road SLK [11.66 - 13.29]

Period of crash data collection 01/01/2019 - 31/12/2024

The following table shows crash rates and crash densities in Perth Metropolitan area on local roads and state roads for the period from 2017 to 2022, as obtained from Main Roads WA on the 31st May 2022 by email request:

Crash Density and Crash Rate on Metropolitan State Roads Network only				
	All Crashes		Serious Injury Crashes (Fatal+Hospital)	
	Average Annual Crash Density (All Crashes/KM)	Average Annual Crash Rate (All Crashes/MVKT)	Average Annual Crash Density (Ser. Inj. Crashes/KM)	Average Annual Crash Rate (Ser. Inj. Crashes/MVKT)
Metro State Roads - Midblock	20.12	0.37	0.89	0.02
Metro State Roads - All	46.28	0.85	1.80	0.03

Note: Based on 5-years data for the period 2017 to 2021.

Definitions of acronyms and terms used in this analysis can be found below:

- PDO Crash - a crash that results in property damage only (major or minor) and does not require hospitalisation or medical treatment, as listed in Main Roads WA's Crash Analysis Reporting System (CARS).
- KSI Crashes - Killed and serious injury crash
- MVKT - Million Vehicle Kilometres Travelled.

Road Name				Crash Statistics						
				No of KSI Crashes	No of Medical Attention Crashes	No of PDO Major Crashes	No of PDO Minor Crashes			
SLK	Road Hierarchy	Speed Limit	Thomas Road	11.66 - 13.29	Primary Distributor	80kph	1	2	3	2
MR Nature	Rear End	Head On	Hit Pedestrian	Hit Animal	Hit Object	Other / Unknown				
Count	5	2	0	0	1	0				
No of MVKT Travelled at Location				App. 20,000 VPD * 365 * 5 years * 1.63 km = 59.46 MVKT						
KSI Crash Rate				1 KSI crashes / 59.46 MVKT = 0.016 KSI crashes/MVKT						
Comparison with KSI Crash Density and Crash Rate Statistics				Crash rate of 0.016 is lower than network average of 0.02 KSI Crashes per MVKT for Metropolitan State Roads Network						
All Crash Rate				8 crashes / 59.46 MVKT = 0.13 crashes/MVKT						
Comparison with Crash Density and Crash Rate Statistics				Crash rate of 0.13 is lower than the network average of 0.37 Crashes per MVKT for Metropolitan State Roads Network						

2.9 Vehicular Parking

Local Government	Shire of Serpentine-Jarrahdale		
Local Government Document Utilised	Local Planning Scheme No. 3 Town Planning Scheme No. 2		
Description of Parking Requirements in accordance with Scheme:			
LSP 3 does not offer parking rates for industrial land uses, therefore the superseded TPS was referred to for guidance on parking rates.			
TPS 2: "Industry Rural - 1 space per employee, except where industry is wholly a family concern"			
Calculation of Parking			
Land Use	Requirements	Yield	Total Parking
Grain Facility	1 space per employee	25 staff	25
Total Car Parking Requirement			25
Total Volume of Parking Provided by Proponent			27
Justification			
A total of 27 car parking bays will be provided for staff employed at the facility and additional visitor parking. Two of the bays are marked as accessible and one 5min courier only parking bay.			

2.10 Compliance with AS2890 Parking facilities

Which Austroads documents are referenced?	- Australian/New Zealand Standard, Parking facilities, Part 1: Off-street car parking - AS 2890.01 - Australian/New Zealand Standard, Parking facilities, Part 6: Off-street parking for people with disabilities – AS2890.06
Number of Parking Bays on-site	27 bays
Proposed development User Class	1A - Residential, domestic and employee parking 2 - Generally medium-term parking 4 - Parking for people with disabilities
Driveway category and dimensions	- Category 2 access driveway - Driveway width varies from 18.0m – 6.0m

2.10.1 Compliance Overview

FULL COMPLIANCE	PARTIAL DEPARTURE	FULL DEPARTURE	NOT APPLICABLE
Element	Compliance	Comment	
Car Bay Class 1A		AS2890.01 does not provide car parking and aisle dimensions for 75 ° parking. However, the provided dimensions are in line with the standard size bays for any angle.	
Car Bay Class 2			
Car Bay Class 4 (ACROD)			
Aisle width			
Blind Aisle Extension			
Reversing bay			
Location of driveway			

2.10.2 Comparison of proposed layout to AS2890.01 requirements

Parking Bay Type	AS2890.1:2004 Off-street car parking AS2890.6 Off-street parking for people with disabilities					
	Parking Bay Length		Parking Bay Width		Aisle Width	
	Required	Proposed	Required	Proposed	Required	Proposed
All bays at 75° (User Class 1A) STAFF	N/A*	5.4m	N/A*	2.6m	N/A*	6.4
All bays at 90° (User Class 2) VISITORS	5.4m	5.5m	2.5m	2.6m	5.8m	
ACROD Parking	5.4m		2.4m-ACROD 2.4m-shared space	m-ACROD m-shared space	5.8m	

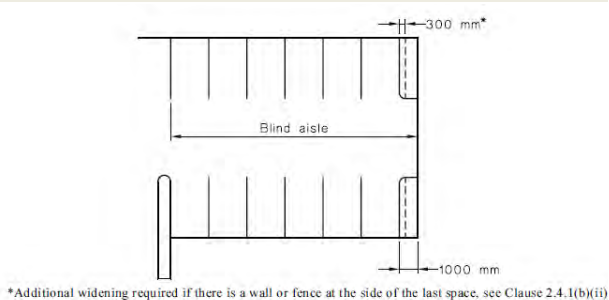
*Note * - AS2890.01 does not provide car parking and aisle dimensions for 75° parking. However, the provided dimensions are in line with the standard size bays for any angle.*

Name other requirements in the AS2890.1:2004 document.

"Blind aisles"

At blind aisles, the aisle shall be extended a minimum of 1 m beyond the last parking space, as shown in Figure 2.3, and the last parking space widened by at least 300 mm if it is bounded by a wall or fence.

In car parks open to the public, the maximum length of a blind aisle shall be equal to the width of six 90 degree spaces plus 1 m, unless provision is made for cars to turn around at the end and drive out forwards.



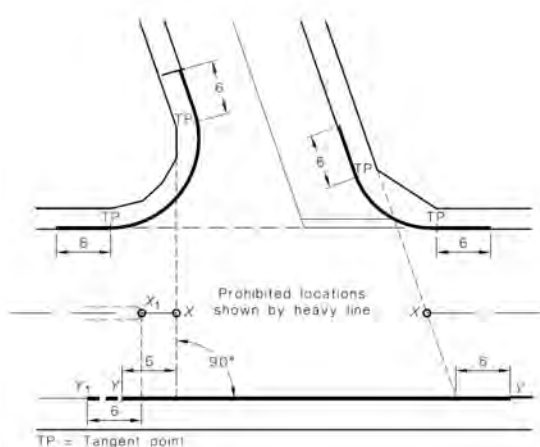
DIMENSIONS IN MILLIMETRES

FIGURE 2.3 BLIND AISLE EXTENSION

Blind aisle	Extended by 1m
Reversing bay	Not required, vehicles can turnaround without a reversing bay

"Access driveway location"

Driveway Categories 1 and 2 At unsignalized intersections of sub-arterial, collector or local streets with each other or with an arterial road, access driveways in Categories 1 and 2 (see Table 3.1) shall not be located in the sections of kerb shown by heavy lines in Figure 3.1. This requirement shall not apply to accesses to domestic driveways in the kerb section opposite the entering road at any intersection including signalized intersections. Furthermore, it shall not apply to any access driveway serving a property which would otherwise be denied access due to the physical impossibility of meeting the requirement."



Access driveway location	The proposed crossover will be located 6m from any intersection tangent point.
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2.10.3 Vehicle Swept Paths

Have Vehicle Swept Paths been checked for YES
 Parking?

If YES, provide description of performance:

The proposed parking area has been checked with a standard B99 Passenger Vehicle 5.2m, Service Vehicle 8.8m and B-Triple 36.5m.

The designated vehicle can easily navigate through the entire parking area, with a few important points to consider:

- All vehicles can make lane correct movement to and from Thomas Road
- Service vehicle 8.8m is expected to enter the designated loading area and traverse the internal driveways without issues.
- Left-in Left-out crossover is designed to cater to B triple movements.

Please refer to the swept path analysis plans provided in Appendix 3.

2.11 Bicycle Parking

Local Government Shire of Serpentine-Jarrahdale

Reference Document Utilised Local Planning Scheme No. 3
 Town Planning Scheme No. 2

Description of Parking Requirements in accordance with Scheme:

LSP 3 and TPS 2 do not offer bicycle parking rates for rural industrial land uses.

Justification

Having in mind the character of the subject land use and the surrounding area, it is highly unlikely that any of the staff members nor possible patrons will utilise the bicycle to access the site.

2.12 ACROD Parking

Class of Building Class 7b - for storage or display of goods or produce for sale by wholesale.

Does this building class require specific provision of ACROD Parking? YES

Reference Document Utilised Building Code of Australia

Description of Parking Requirements:

Class 7b — 1 space for every 100 carparking spaces or part thereof.

Parking Requirement in accordance with regulatory documents

Land Use	Requirements	Yield	Total Parking
Grain Facility	1 space for every 100 carparking spaces or part thereof	27	1
Total Volume of ACROD Parking Required			1

Justification

Two of the proposed parking bays are proposed to be accessible bays.

2.13 Delivery and Service Vehicles

Local Government	Shire of Serpentine-Jarrahdale
Reference Document Utilised	Local Planning Scheme No. 3 Town Planning Scheme No. 2
Description of Parking Requirements in accordance with Scheme:	
LSP 3 and TPS 2 do not offer commercial vehicle parking rates.	
Justification	
As the facility will operate as a delivery and dispatch receival point, there will be no parking of commercial vehicles on the property other than for loading and offloading. Service vehicle 8.8m is expected to access the designated loading area and exit the site following the site's movement pattern.	

2.14 Calculation of Development Generated / Attracted Trips

What are the likely hours of operation?	7 days per week / 24 hours per day
Guideline Documents Used	- NSW RTA Guide to Traffic Generating Developments - WAPC's Transport Impact Assessment Guidelines Volume 5 Technical guidance
Information from above document:	First Principles method was used as described in NSW RTA Guide 2024: "This method involves making evidence-based assumptions about the development, its users and their behaviour to inform trip generation assumptions. It is used particularly in the absence of information such as TfNSW trip generation survey data. An example would be an uncommon or special land use developments (e.g. stadiums, airports, distribution centres etc.), where there is a need to consider the available information as the basis for a trip generation estimate. - The approach may vary depending on the development's context, site characteristics and planned daily operations. Assumptions that may be required include: - number of employees/staff/visitors - respective arrival and departure profiles for employees/staff/visitors/deliveries etc. - mode share for the site or by grouping. - These assumptions can be used to estimate the level of trip generation throughout the day and week and allow practitioners to project the site peak periods and travel patterns." WAPC's Transport Impact Assessment Guidelines Volume 5 Technical guidance supports this method as well by stating: "Where more information is known on the likely trip generation of the development in question, site specific trip rates should be used in lieu of the rates in these guidelines."

Movement overview

Information received from the client presented in the table below representing the maximum output of vehicle movements at the proposed development

Vehicle Movements at Oat Mill Maximum Output

	12am to 5:45am	5:45 am to 6:45am	6:45am to 7:30am	7:30am to 8h30	8h30 to 9:30am	9:30am to 11am	11am to 4pm	4pm to 5pm	5pm to 7pm	7pm to 12am	Total trips
Labour Factory- car in	3						3			3	9
Labour Factory- car out		3					3			3	9
Labour Yard - car in		2					2			2	6
Labour Yard - car out		2					2			2	6
Quality staff- car in		1					1				2
Quality staff- car out		1					1				2
Admin staff- car in				2							2
Admin staff- car out								2			2
Maintenance staff-car in			1							1	2
Maintenance staff-car out	1							1			2
management- car in			2								2
management- car out								2			2
oats - 36 m truck in		1		1		1			1		4
husks or empty oats truck - 36m truck out		1		1		1			1		4
containers of oats in- 26m truck-in			1	1	1	1	1		1		6
containers of oats out- 26 m truck- out			1	1	1	1	1		1		6
other deliveries eg packaing- in					1						1
other deliveries eg packaing- out					1						1
Total	4	11	5	6	4	4	14	5	4	11	
Summary:											
Light vehicles	4	9	3	2	2	0	12	5	0	11	48
Truck movements	0	2	2	4	2	4	2	0	4	0	20

What are the likely peak hours of operation?	05:45 - 06:45 16:00 – 17:00
Do the development generated peaks coincide with existing road network peaks?	NO – AM peak YES – PM peak
Does the site have existing trip generation / attraction?	YES

Guideline Document Used **NSW RTA Guide to Traffic Generating Developments**

The traffic impact of the proposed development is assessed based on the operational information provided by the proponent.

Land Use Type	Rate above	Yield	Daily Traffic Generation	Peak Hour Traffic Generation	
				AM	PM
Existing (as per surveyed turning counts)					
Residential Dwelling / Industry Rural	/	/	Assumed 5	1	1
Proposed					
Grain Facility	As per client information	15 deliveries 25 staff	68	9	5
Total traffic from the proposed development (A)			68	9	5
Total Existing Traffic from the subject site (A ⁰)			5	1	1
Total Additional traffic from the proposed development (A-A ⁰)			63	8	4

What is the total impact of the new proposed development?

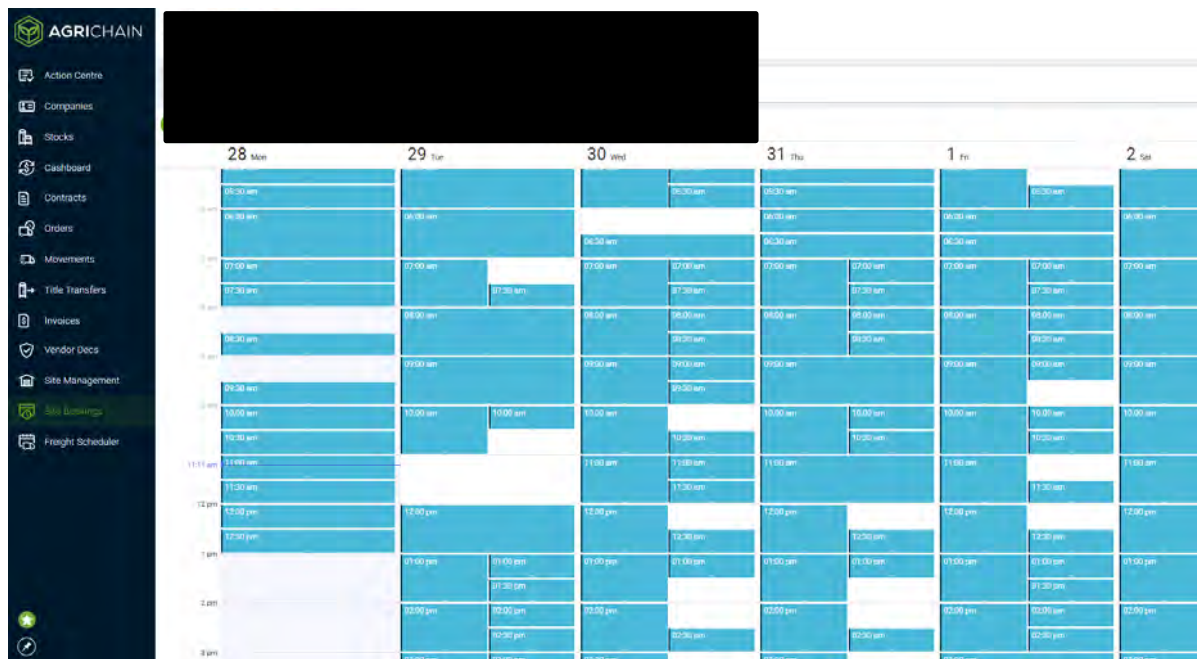
According to WAPC guidelines, all developments generating less than 10 vehicular trips in peak hour create **low** impact on the road network.

The proposed development is expected to generate up to 68 vehicular trips per day, 9 vehicular trips in the AM peak and 5 vehicular trips in the PM peak.

Considering the existing land uses, it can be concluded that the proposed land use will generate additional 63 daily vehicular trips, 8 vehicular trips in the AM peak and 4 vehicular trips in the PM peak. AM peak will occur at the shift changeover, while the PM peak occurs with most of the admin and management staff departing.

The facility is designed for a maximum receival capacity of 240 tonnes of oats per day, therefore it can only receive four (4) truckloads (B-triple) per day. The same vehicles will be used to remove / dispatch husks removing the requirement for additional truck movements.

The proponent will use scheduling system to manage arrivals and departures of heavy vehicles, similar to the system shown in the figure below. This system, successfully used at Demeter Grains - Hope Valley site, Quaker Oats, Weston Animal Nutrition – Hope Valley, ensures that truck arrivals are pre-booked, scheduled, and evenly spread throughout the day. This prevents clustering of vehicles and avoids heavy truck movements coinciding with peak traffic periods on Thomas Road.



2.15 Traffic Flow Distribution

How many routes are available for access / egress to the site? 2 routes:

- Left in from Thomas Road
- Left out to Thomas Road

Directional split was provided by the client as per table below:

AM in	4	PM in	0	Daily IN	34
AM out	5	PM out	5	Daily OUT	34

Note - For a graphical representation of the estimated vehicular traffic volumes and distribution please refer to the plans provided in Appendix 2.

It should be noted that routes for large vehicles will include roads which are in MRWA jurisdiction only – Primary Distributors.

Therefore, large vehicles arriving to the site will either arrive from Kwinana Freeway > Thomas Road > turnaround at the roundabout with Nicholson Road > Thomas Road to the west > Subject site; or from Tonkin Road > Thomas Road to the west > Subject site. Large vehicle exiting the site will travel to the west via Thomas Road to Kwinana Freeway.

2.16 Vehicle Crossover Requirements

Guideline Utilised	Documents	• Main Roads Driveways document • Main Roads supplements to Austroads Guide to Road Design • Austroads Guide to Road Design
---------------------------	------------------	---

Proposed Vehicle Access One existing crossover – to be upgraded and limited to Left in / Left Out

All vehicle access in and out of the property can and will initially be managed/accommodated using the crossover off Thomas Road.

MRWA Geometric Requirements of Driveways	• Driveway Type – B-Triple 36.5m • Maximum Width – 11.0m • Drawing containing layout details for rural driveways
---	--

-
- Storage Length for Long Vehicles, Road Trains & all other vehicles
- length of vehicle + 3 m = 39.5m
 - Maximum Gradients for Commercial Driveways – desirable 5% /
absolute maximum 8%
 - Maximum Change of Grade – 12%
-

Main Roads Driveways Document Requirements

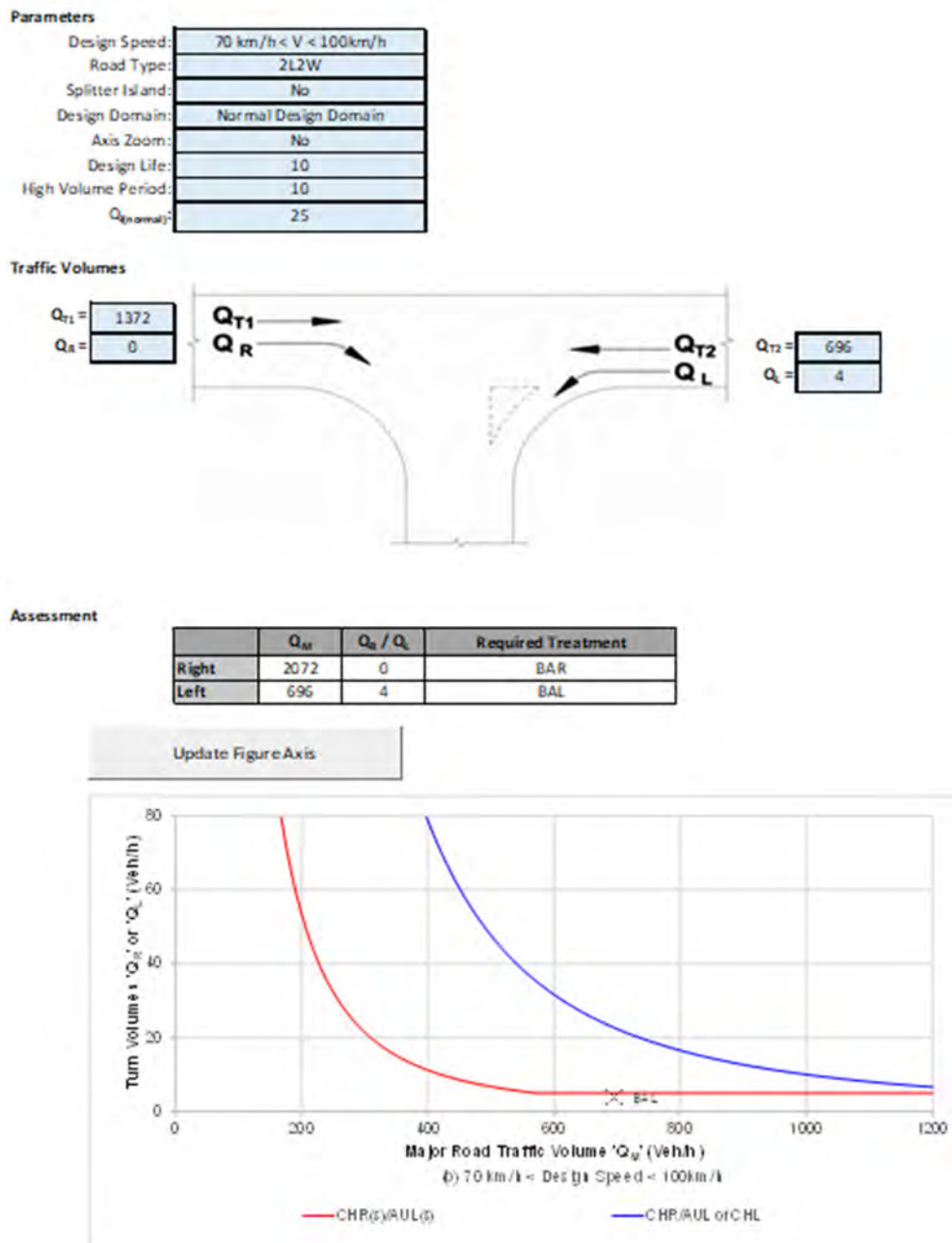
- *“Modifications to existing driveways shall comply with the requirements for new driveways.*
 - *Where alternative access to a Lot is or could be made available from side or rear streets or from rights of way, no access shall be permitted to the State Road unless special circumstances apply, such as an agreed vehicle access strategy.*
 - *Driveways serving access by large vehicles (multi-combination vehicles, road trains, etc.) including mine site accesses, logging tracks, quarry tracks, haul roads and other similar temporary access points, shall be treated in the same way as commercial driveways.*
 - *Where a driveway is permitted access to a State Road, the design shall ensure it will operate safely. As a minimum, all driveways must conform to Main Roads Driveways guideline and technical criteria.”*
 -
-

Auxiliary Turn Lanes Warrants

Auxiliary lane warrants were assessed using data collected in May 2025. The turn assessment is completed for 07:00-08:00 period, as representative of the development AM peak. At this time it is expected that a maximum of 4 vehicles will be accessing the development (left in movement only).

Based on the Austroads assessment (shown in the **Figure 1** below), the proposed development will not trigger the requirements for auxiliary lanes.

Figure 1 - Auxiliary lane requirement assessment



MRWA Sight Distance Requirements

The minimum required Safe Intersection Sight Distance (SISD) for trucks has been calculated using Equation 2 of AGRD04A and the parameters below. A 90 km/h operating speed has been assumed.

$$SISD = \frac{D_T \times V}{3.6} + \frac{V^2}{254 \times (d + 0.01 \times a)}$$

- Decision Time D_T = observation time (s) + reaction time (s) = 3.0 + 2.5 = 5.5 s (*reaction time of 2.5s shall be used as the Main Roads desirable minimum*)
- Operating Speed V = 90 km/h (10 km/h above speed limit)
- Coefficient of deceleration d = 0.29 (*coefficient of deceleration (d) of 0.29 for trucks used in Western Australia.*)

-
- Longitudinal grade $a = 0\%$

The desirable minimum sight distance is 248m which is achievable on both sides of the driveway as per figures below. It should be noted that the achievable sight distance is significantly higher than the minimum required SISD.

The existing driveway offers a sight distance of approximately 256m to the north and 348m to the south, measured per MRWA standards. A 10m distance from the stop line to conflict point was used for a conservative assessment. Please refer to Appendix 3 for sightlines review drawings.

Recommendations

The driveway treatment is designed to manage vehicle movements and to allow use of the weighbridge with a 'passing lane' for vehicle not using the weighbridge to exit and thus ensure suitable movements internally at the site.

Note for the construction - there should be a painted island in front of the weighbridge, to prevent double queues at the intersection, but to still allow vehicles from weighbridge to safely approach the intersection.

2.16.1 Right-of-Way (ROW)

The subject ROW was created in the mid-1960s. The land to the south of the ROW has direct frontage to Abernethy Road, which is a sealed and functional road. Currently, the ROW does not appear to serve an active access purpose for the adjoining lots.

The current crossover is in conflict with the ROW, resulting in minor encroachment. However, this encroachment does not impede the existing functionality of the ROW, given its limited current use and the alternative access provided to adjacent land.

The encroachment of the proposed crossover and turning movements into the ROW is acknowledged. However, the ROW is not presently utilised for regular access or significant traffic flow. As such, there is no immediate functional impact arising from the encroachment.

The adjoining land benefits from direct frontage to Thomas and Abernethy Roads, reducing reliance on the ROW for access.

Given the ROW's current state and lack of active use, it is reasonable to defer addressing the encroachment until such time as the ROW becomes actively utilised. This approach ensures that unnecessary modifications are avoided at this stage while acknowledging the need for future review if the ROW's use or status changes.

2.17 Access to RAV Network

Description of RAV Networks:

The Restricted Access Vehicle Network (RAV) is a network of roads approved by Main Roads Western Australia that can cater for the safe movement of certain heavy vehicles. There are several types of RAV networks:

- **Standard RAVs** are those vehicle combinations specified as Category 1 to 10 vehicle combinations under the Prime Mover, Trailer Combinations and Truck, Trailer Combinations Notice. Standard width of the RAV vehicle will not exceed 2.5m while standard height will not exceed 4.6m.
- **Tri-drive Restricted Access Vehicle (RAV) Network** are required to meet the requirements under the Standard Restricted Access Vehicle (RAV) Route Assessment Guidelines, with the exception of the structures assessments, gradient assessments and swept path assessments, which must be assessed in accordance with these Tri-drive Route Assessment Guidelines.
- **Concessionally loaded RAVs** provide the quantitative limits recommended ensuring additional safety margins for concessionally loaded RAVs, as the extra mass has a considerable impact on the vehicle's performance characteristics. For this reason, additional road width, stopping distances etc. are required.
- **Over Size Over Mass Vehicles** must have relevant Main Roads WA permits and may require pilot vehicles and/or police escorts if they exceed Main Roads WA specified size thresholds.

Existing RAV Networks: YES ([MRWA RAV Network Map](#))

If YES Nominate RAV Networks in vicinity of the subject site

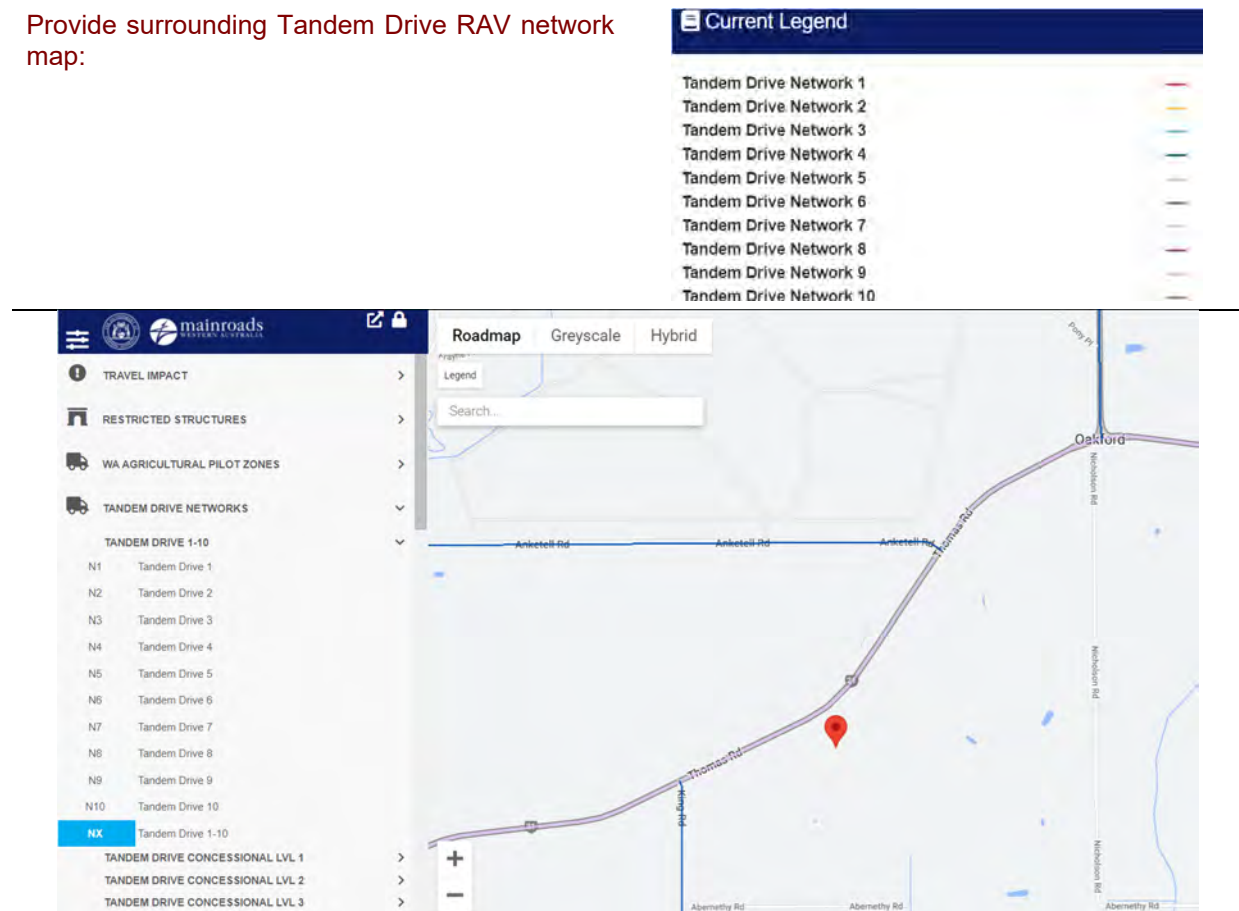
Thomas Road:

- Standard RAV Network 7 (e.g., RAVs with a maximum length of 36.5 m and a maximum mass of 107.5T)
- Tri drive RAV Network 4 (e.g., RAVs with a maximum length of 36.5 metres).
- Oversize Road Train Network 1 (27.5m Road Train)

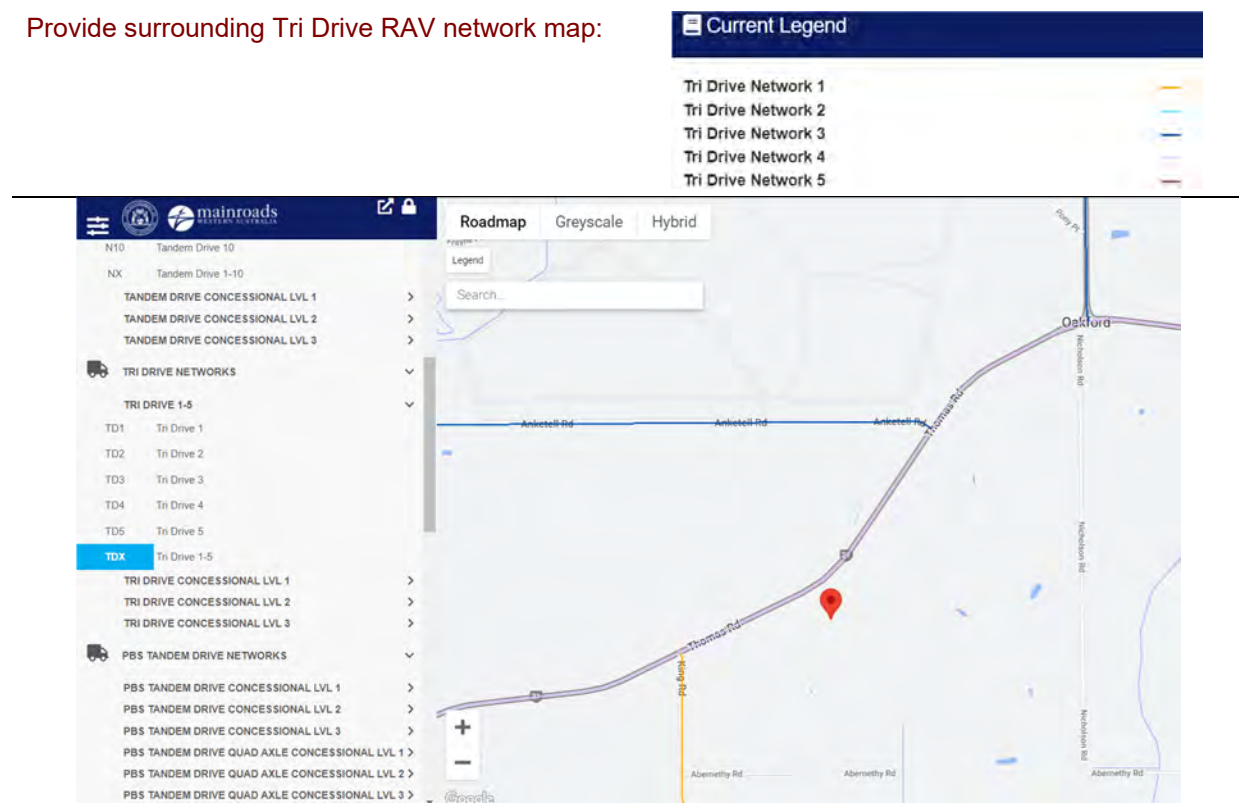
Anketell Road:

- Standard RAV Network 4 (e.g., pocket road train, B-Double, and other RAVs with a maximum length of either 25.0 m or 27.5 m)
- Tri drive RAV Network 3 (e.g. RAVs with a maximum length of 27.5 metres)
- Oversize Road Train Network 1 (27.5m Road Train)

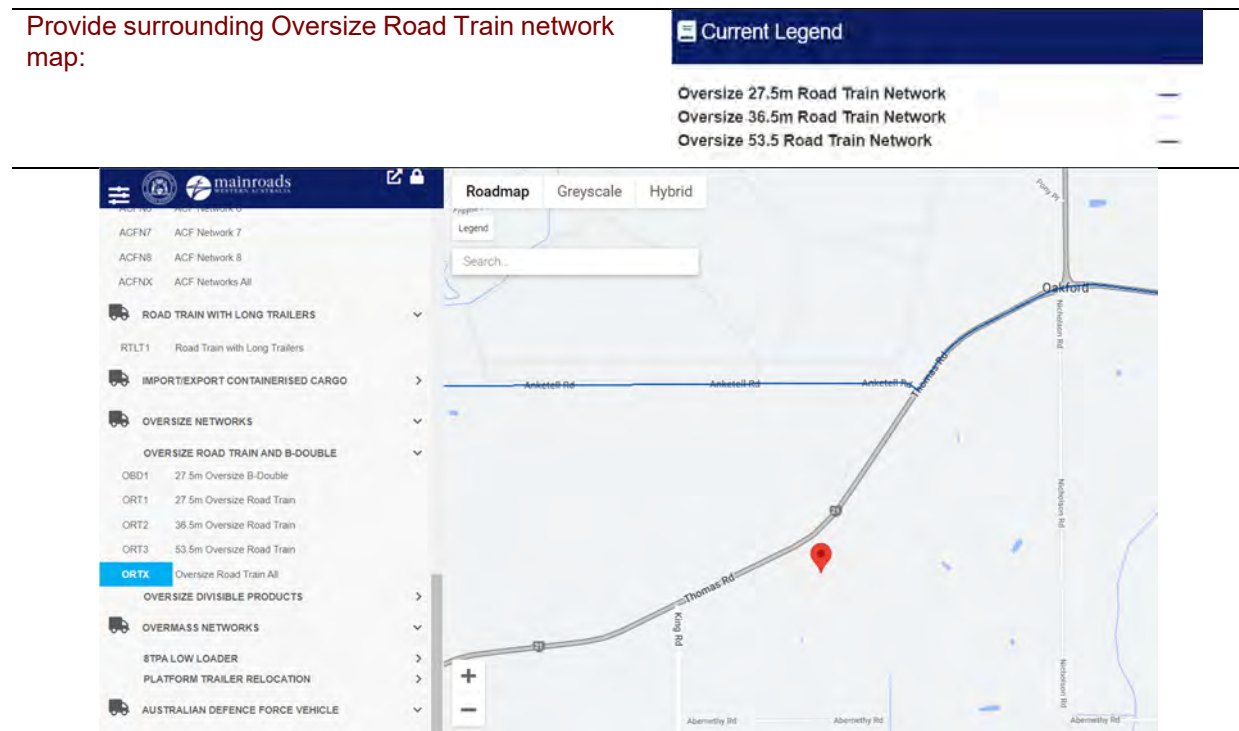
Provide surrounding Tandem Drive RAV network map:



Provide surrounding Tri Drive RAV network map:



Provide surrounding Oversize Road Train network map:



2.18 Public Transport Accessibility

How many bus routes are within 400 metres of the subject site?	None
How many rail routes are within 800 metres of the subject site?	None
The closest available public transportation options are located in Kwinana and Byford 7km and 11km from the subject site.	
Is the development in a Greenfields area?	YES

2.19 Pedestrian Infrastructure

There are no pedestrian paths in the vicinity of the subject site	
Does the site have existing pedestrian facilities	NO
Does the site propose to improve pedestrian facilities?	NO
What is the Walk Score Rating?	
0	Car-Dependent. Almost all errands require a car.

2.20 Cyclist Infrastructure

Are there any PBN Routes within an 800m radius of the subject site?	YES
If YES, describe:	
Classification	Road Name
"Bicycle Lanes or Sealed Shoulder Either Side"	Thomas Road
Are there any PBN Routes within a 400m radius of the subject site?	YES
If YES, describe:	
Classification	Road Name

"Bicycle Lanes or Sealed Shoulder Either Side" Thomas Road

It should be noted that Thomas Road and Anketell Road are classified as Secondary Routes in the Department of Transport Perth and Peel Long-Term Cycle Network.

Does the site have existing cyclist facilities? YES

Does the site propose to improve cyclist facilities? NO

2.21 Site-Specific Issues and Proposed Remedial Measures

How many site-specific issues need to be discussed? none

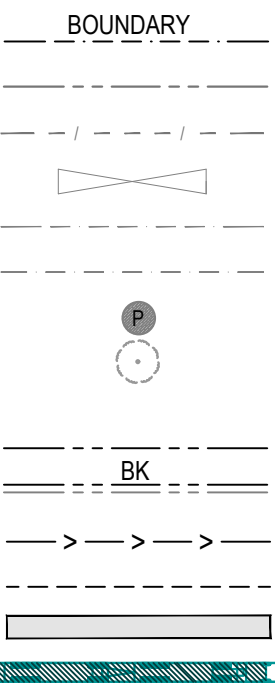
Appendix 1

The Layout of the Proposed Development

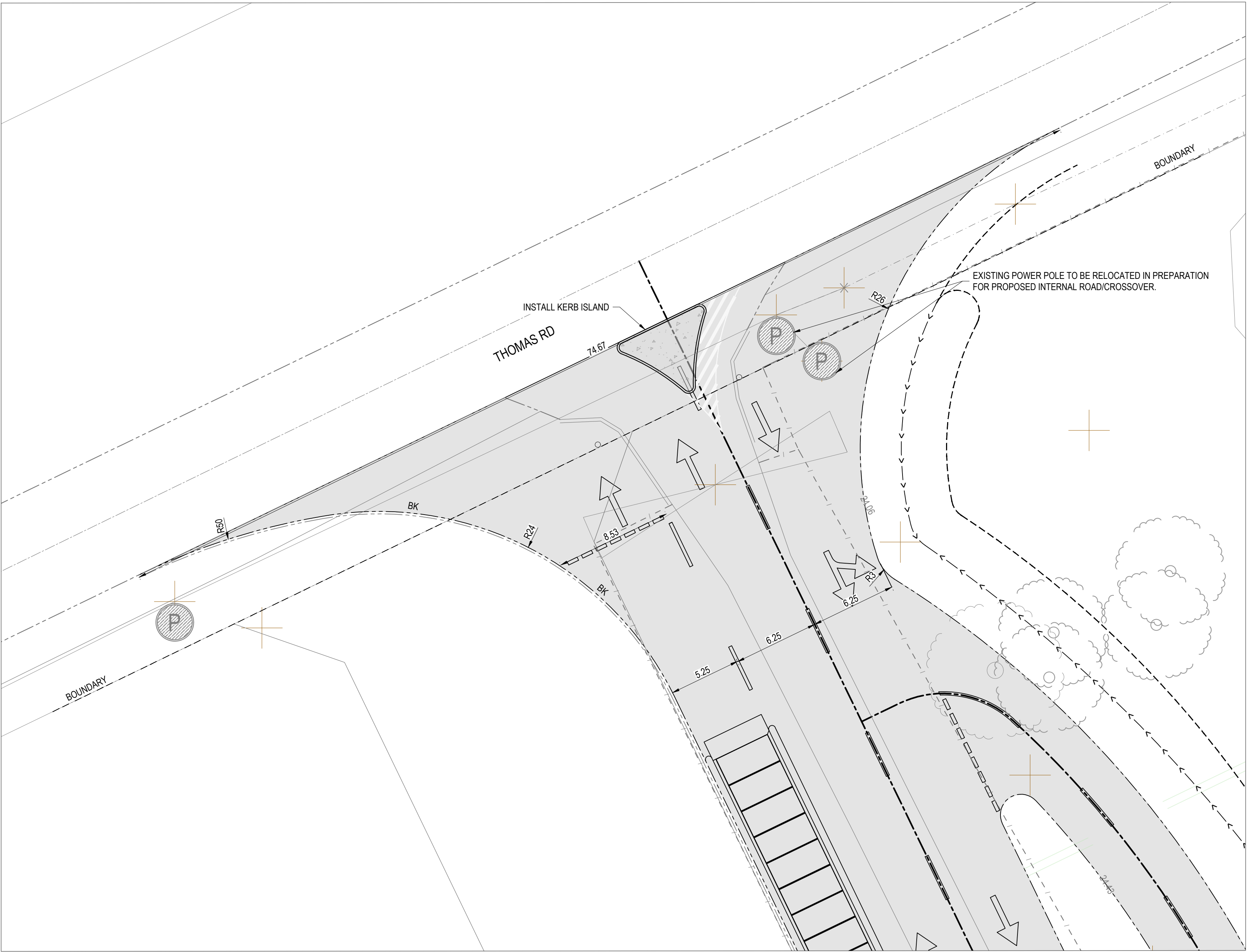


LOCALITY PLAN
40 0 40 80 120 Metres
SCALE 1:2000

- LEGEND**
- (EXISTING)
 - CADASTRAL BOUNDARY
 - BOUNDARY
 - EDGE OF SEAL
 - FENCE
 - GATE
 - TOP OF BANK
 - BOTTOM OF BANK
 - POWER POLE
 - VEGETATION (PROPOSED)
 - EDGE OF SEAL
 - CURB - BARRIER
 - V-DRAIN INVERT
 - INTERFACE TO EXISTING SURFACE
 - INTERNAL ROAD/CROSSOVER
 - FORWARD MOVEMENT OF DESIGN VEHICLE



- NOTES:**
- THIS DRAWING IS FOR DISCUSSION PURPOSES WITH MAIN ROADS AND NOT FOR CONSTRUCTION
 - ALL DIMENSIONS ARE IN METERS



ENLARGEMENT A
4 0 4 8 12 Metres
SCALE 1:200

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND CABLES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE CHECKED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING CABLES AND SERVICES ARE SHOWN. LOCATE ALL UNDERGROUND CABLES AND SERVICES BEFORE COMMENCEMENT OF WORK. REFER TO WORKSAFE REGULATION 3.21.

DIAL 1100
BEFORE YOU DIG

REV.	BY	DATE	DESCRIPTION
A	RV/RV	2025.04.07	INITIAL DRAWING
B	RV/RV	2025.05.07	ADDED KERB ISLAND
Copyright VPE CONSULTING PTY LTD. T: +61 8 6400 7433 Email: admin@vpeconsulting.com.au			



TITLE	PROPOSED INTERSECTION - LOCALITY PLAN
PROJECT	LOT 1324, THOMAS ROAD OAKFORD
DWG No.	PLN_92602-LP-002

DATE	2025.04.04	REV	B
DRAWN	RILEY VARNAVIDES	DESIGNED	ROB SMITH
CHECKED	VINCENT TRAN	A1 SCALE	AS NOTED ON DRAWING
JOB REF.	PLN_92602		



Appendix 2

Transport Planning and Traffic Plans



PARKS AND RECREATION

ROAD

Hay Street

STREET NAME

CITY OF SERPENTINE JARRAHDALE

NORTHBRIDGE

SUBURB NAME

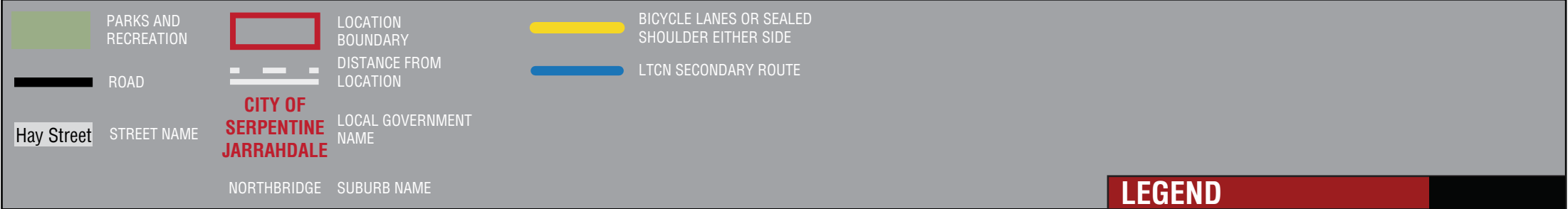
LOCATION BOUNDARY

DISTANCE FROM LOCATION

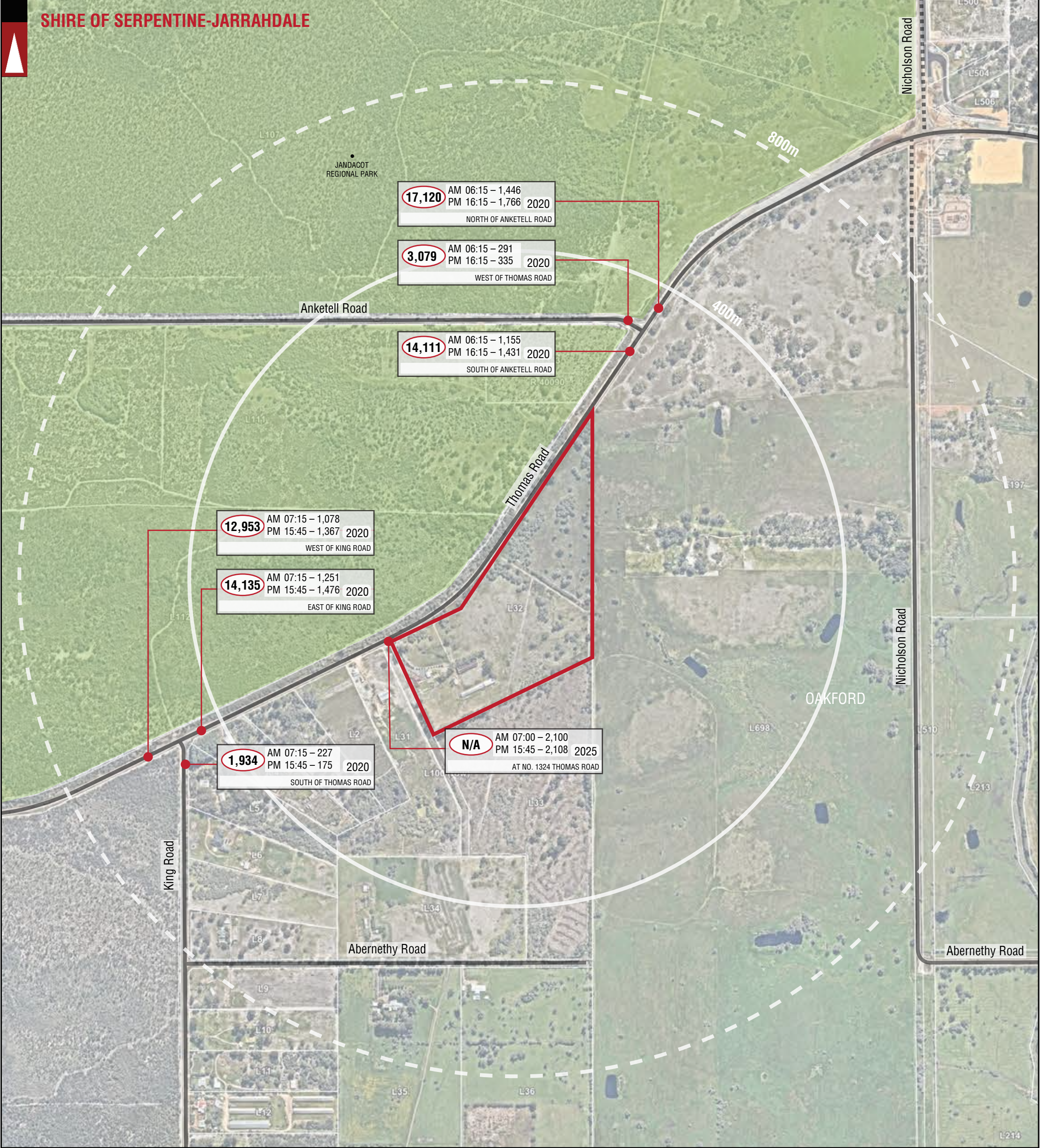
LOCAL GOVERNMENT NAME

LEGEND

			PROJECT: 1324 THOMAS ROAD, OAKFORD	DRAWN BY:	 Premise
			TITLE: LOCALITY PLAN - 800M RADIUS		
B	06-12-2024	BRANDING UPDATED	DRAWING NUMBER: KC01712.000_ S01		
A	13-10-2023	ISSUED FOR REVIEW			
No	DATE	AMENDMENT			



			PROJECT: 1324 THOMAS ROAD, OAKFORD	DRAWN BY:	 Premise
			TITLE: BICYCLE NETWORK PLAN - 800M RADIUS	A.M.	
B	06-12-2024	BRANDING UPDATED			
A	13-10-2023	ISSUED FOR REVIEW			
No	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_ S02		



PARKS AND RECREATION

ROAD

Hay Street

STREET NAME

NORTHBRIDGE

SUBURB NAME

CITY OF SERPENTINE JARRAHDALE

LOCATION BOUNDARY

DISTANCE FROM LOCATION

LOCAL GOVERNMENT NAME

YEAR

LOCATION

2014

EAST OF HARLOW ROAD

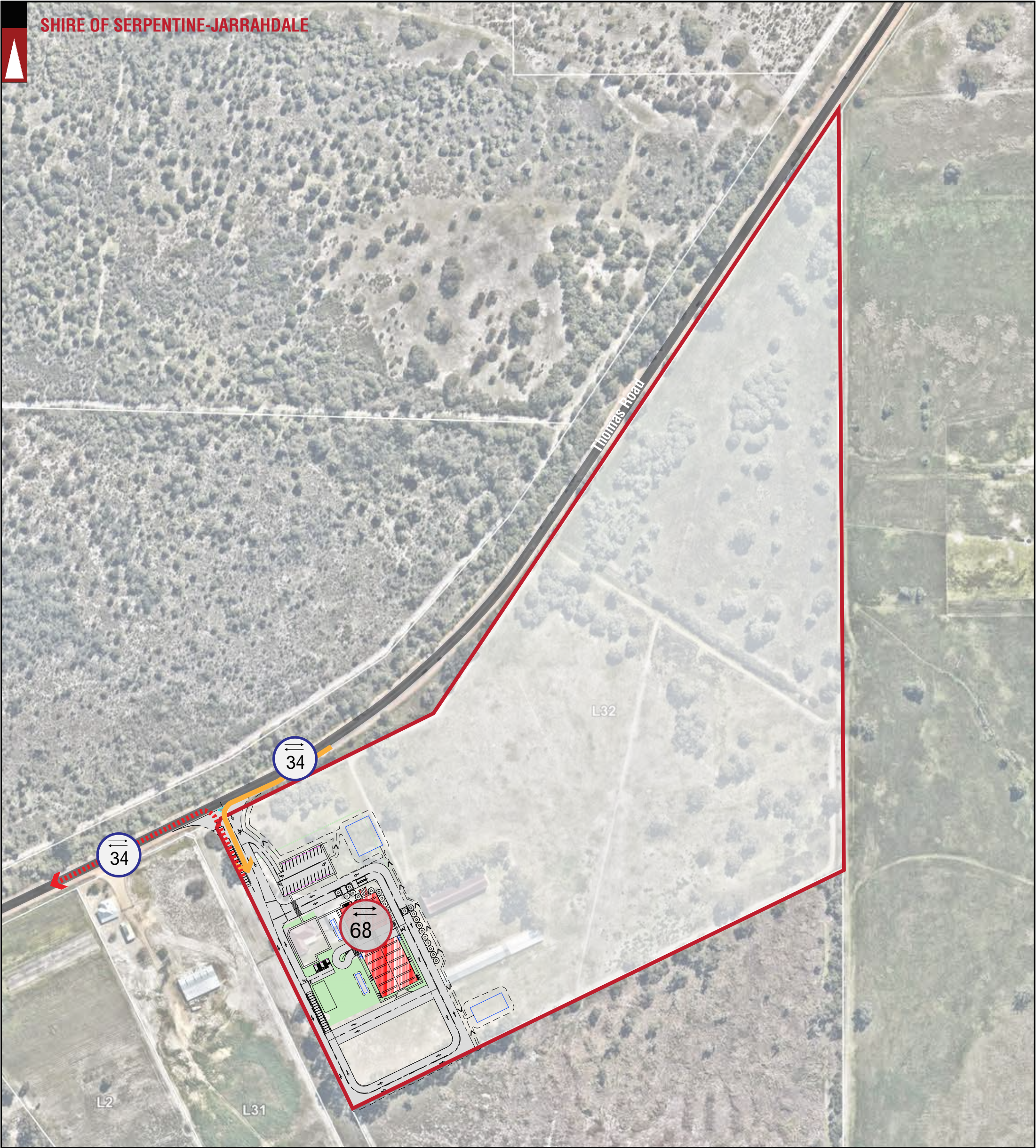
5,512

NUMBER OF VEHICLES PER DAY

NUMBER OF VEHICLES PER AM PEAK HOUR

NUMBER OF VEHICLES PER PM PEAK HOUR

C	19-05-2025	PROPOSED LAYOUT AMENDED	PROJECT:	1324 THOMAS ROAD, OAKFORD	DRAWN BY:	
	06-12-2024	BRANDING UPDATED	TITLE:	EXISTING TRAFFIC COUNTS - 800M RADIUS		
	13-10-2023	ISSUED FOR REVIEW	DRAWING NUMBER:	KC01712.000_ S05		
	No	DATE	AMENDMENT			



LOCATION
BOUNDARY

ROAD
(VARIED WITH ROAD WIDTH)

Lewis Road

ROAD NAME

1,389

Total Expected Traffic Generation from the proposed development

503

Total Expected Traffic Generation from Subject Site on the specific section of road - **IN and OUT** direction

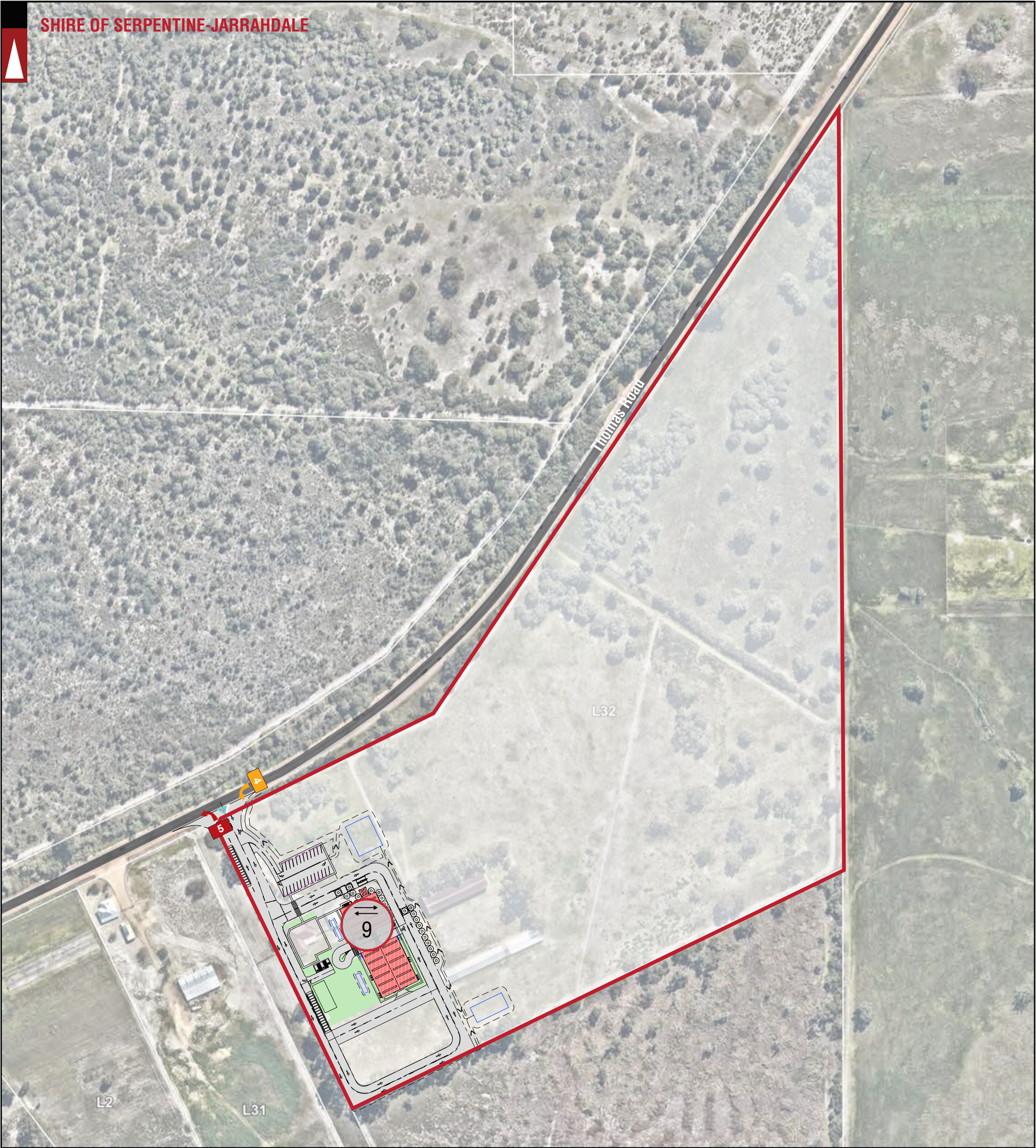
Traffic Flow IN Direction

Traffic Flow OUT Direction

NOTE: THE PLAN IS COURTEOUSY OF VPE CONSULTING

LEGEND

D	19-05-2025	PROPOSED LAYOUT AMENDED	PROJECT: 1324 THOMAS ROAD, OAKFORD	DRAWN BY:	 Premise
C	06-12-2024	PROPOSED LAYOUT AMENDED			
B	07-03-2023	AMENDED AS PER ADDITIONAL INFORMATION FROM CLIENT	TITLE: TRAFFIC FLOW DIAGRAM	N.M.	
A	13-10-2023	ISSUED FOR REVIEW			
No	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_ S06		



LOCATION
BOUNDARY

ROAD
(VARIED WITH ROAD WIDTH)

Lewis Road

ROAD NAME

000

000

000

Traffic Flow IN Direction

000

000

000

Traffic Flow OUT Direction

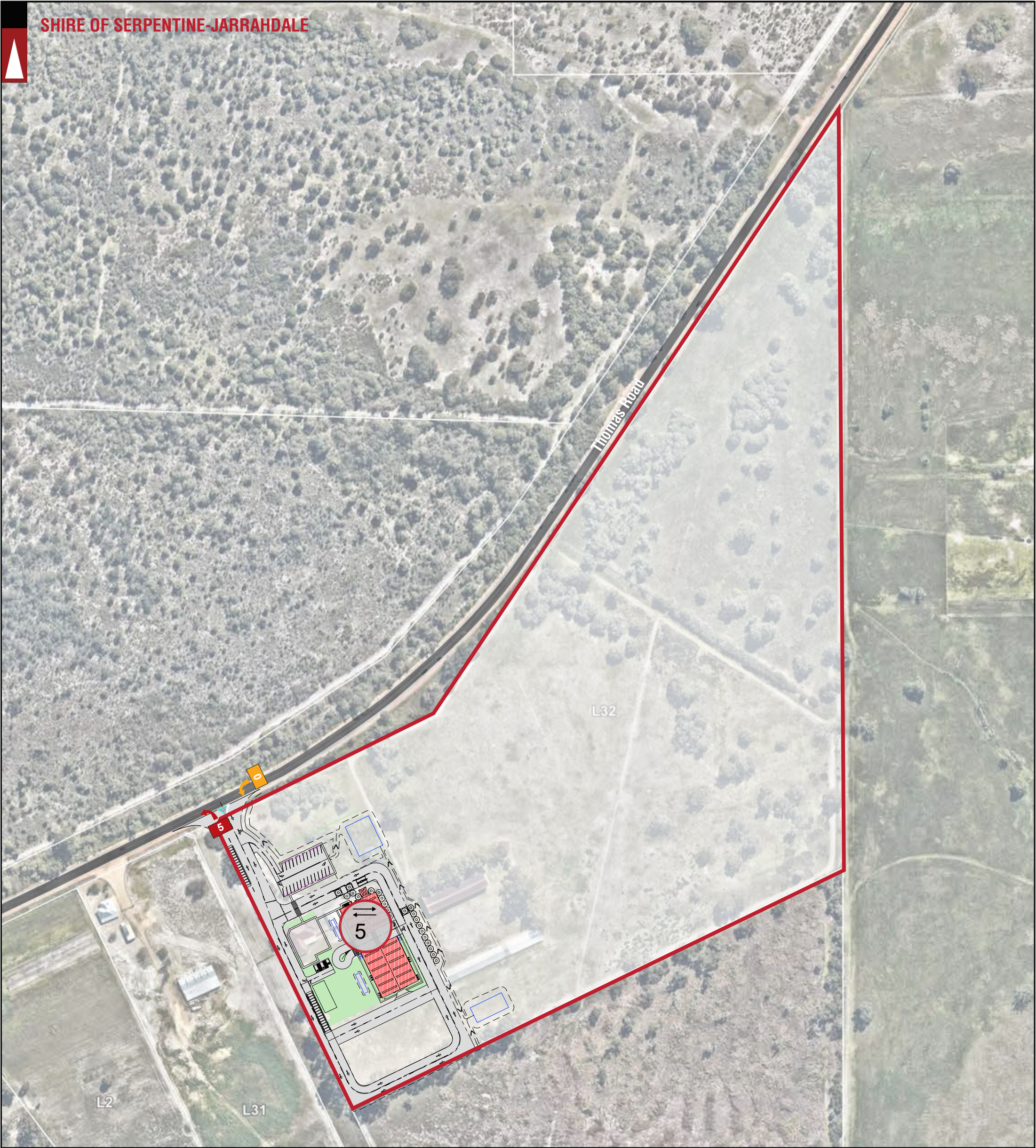
1,389

Total Expected Traffic Generation from the
proposed development - peak hours

NOTE: THE PLAN IS COURTESY OF VPE CONSULTING

LEGEND

D	19-05-2025	PROPOSED LAYOUT AMENDED	PROJECT: 1324 THOMAS ROAD, OAKFORD	DRAWN BY:	 Premise
C	06-12-2024	PROPOSED LAYOUT AMENDED			
B	07-03-2023	AMENDED AS PER ADDITIONAL INFORMATION FROM CLIENT	TITLE: TRAFFIC FLOW DIAGRAM - PEAK HOURS	N.M.	
A	13-10-2023	ISSUED FOR REVIEW			
No	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_ S07		



LOCATION BOUNDARY

ROAD (VARIED WITH ROAD WIDTH)

Lewis Road

ROAD NAME

000

000

000

Traffic Flow IN Direction

000

000

000

Traffic Flow OUT Direction

1,389

Total Expected Traffic Generation from the proposed development - PM peak

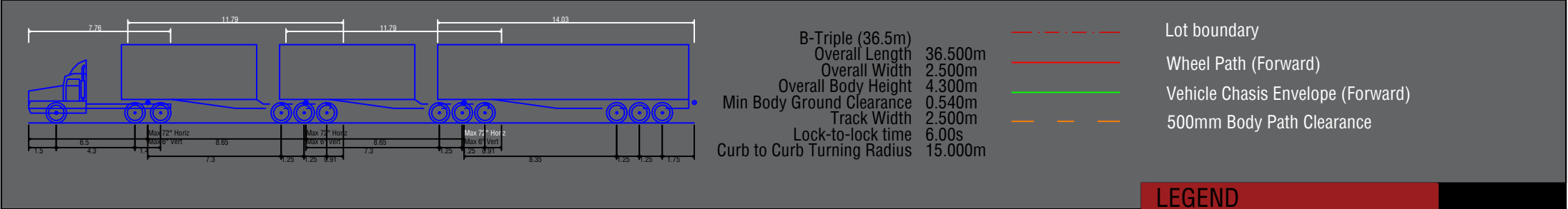
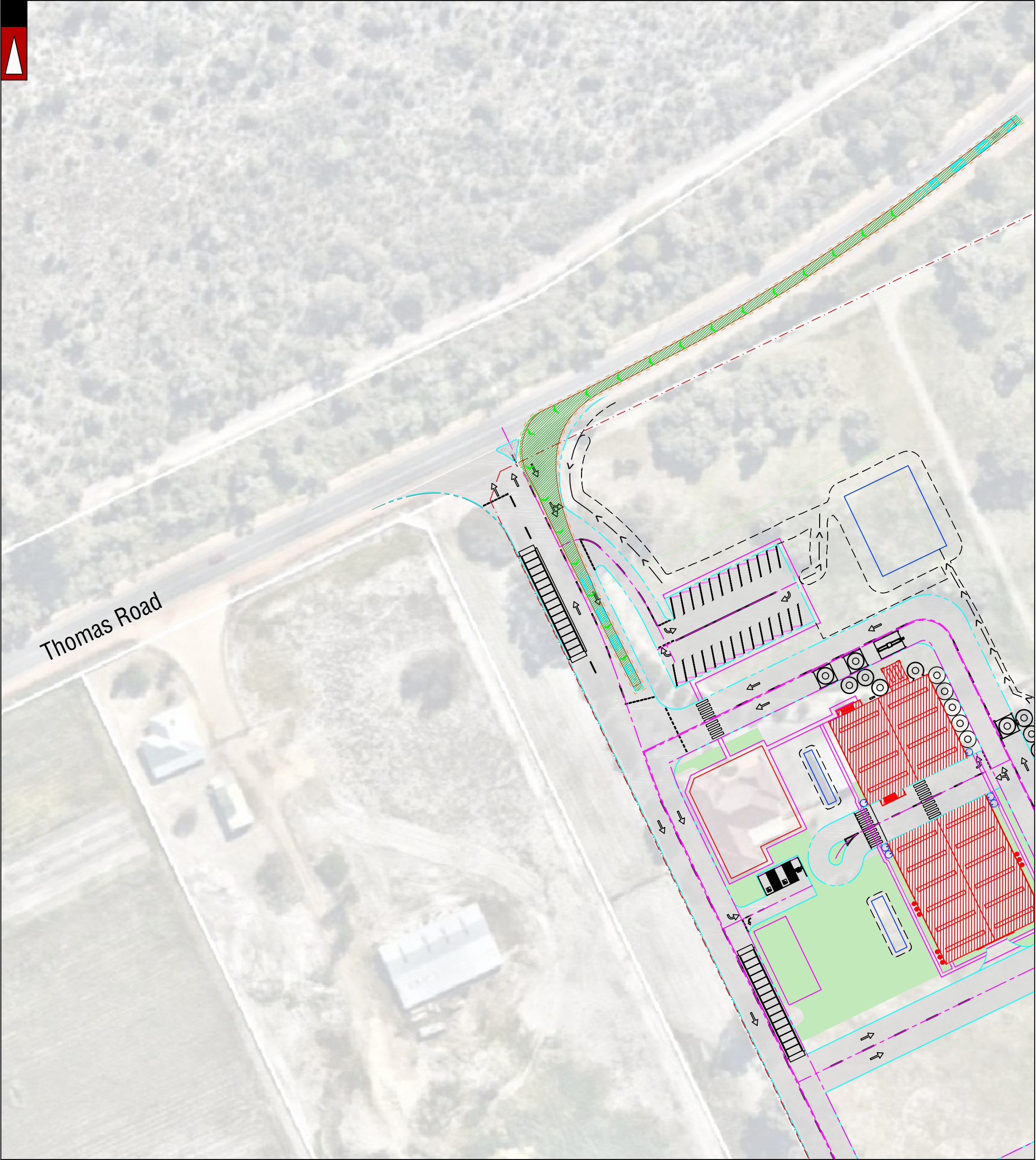
NOTE: THE PLAN IS COURTESY OF VPE CONSULTING

LEGEND

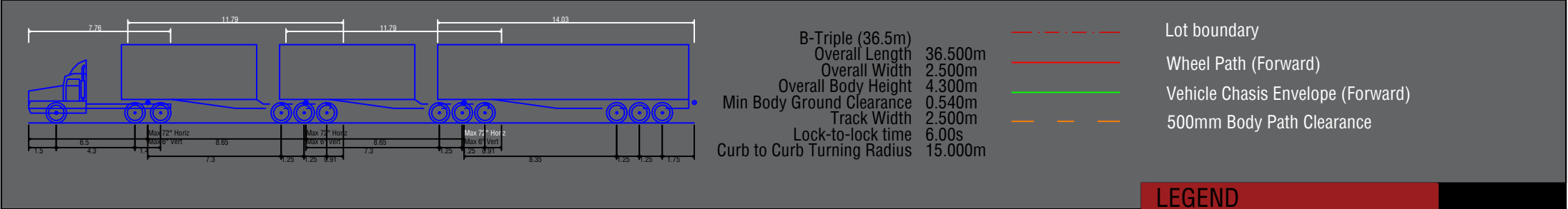
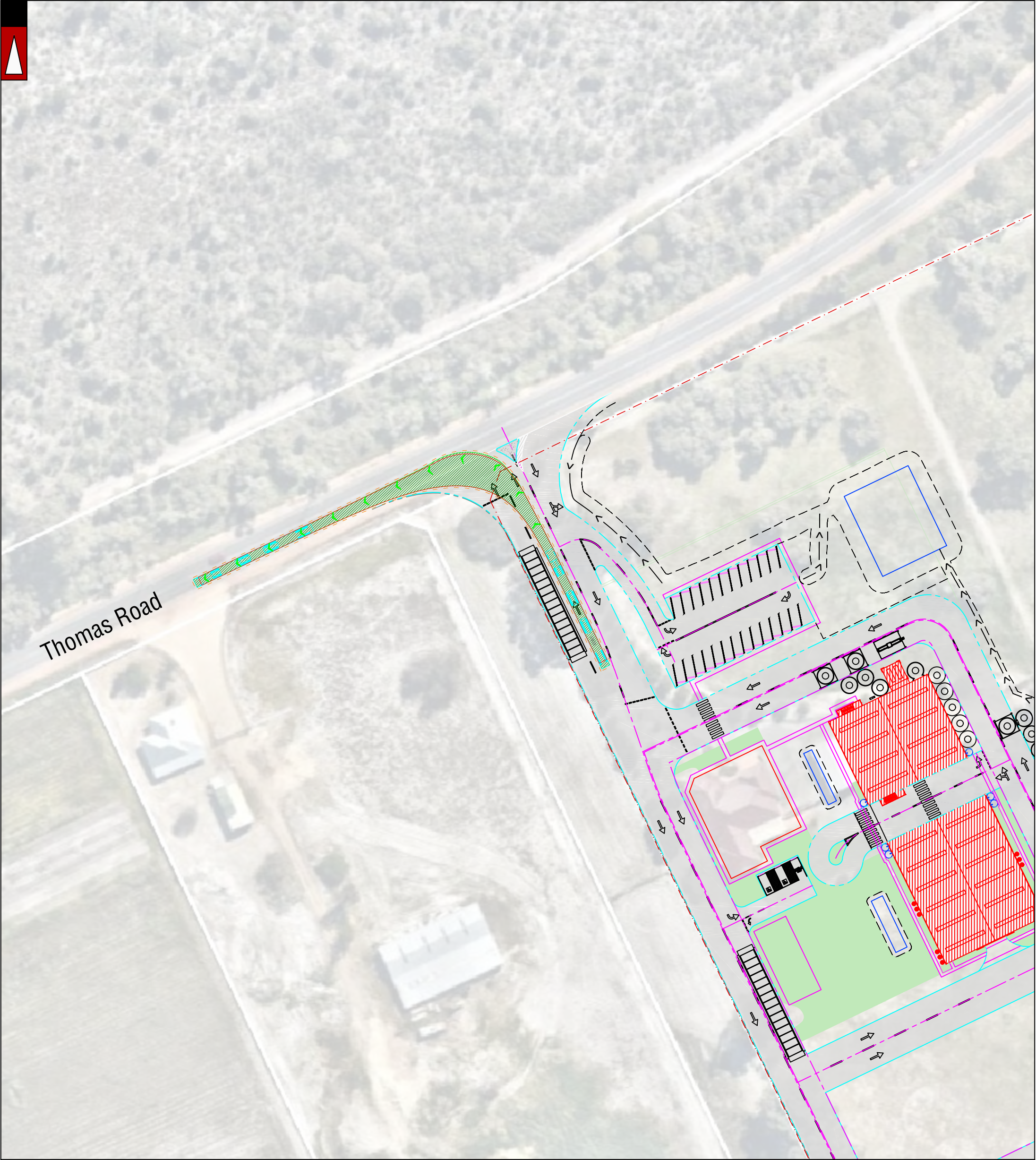
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C	06-12-2024	PROPOSED LAYOUT AMENDED			
B	07-03-2023	AMENDED AS PER ADDITIONAL INFORMATION FROM CLIENT	TITLE: TRAFFIC FLOW DIAGRAM - PM PEAK	N.M.	
A	13-10-2023	ISSUED FOR REVIEW			
No	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_ S08		

Appendix 3

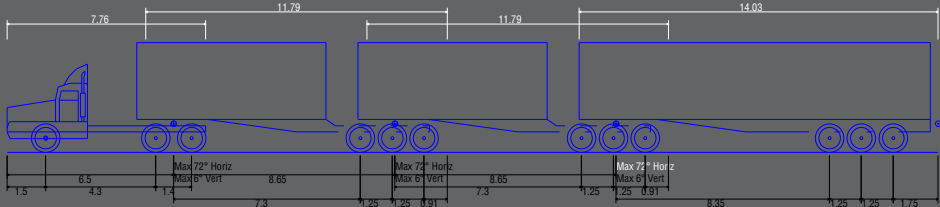
Sight Lines and Vehicle Turning Circle Plan



			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise
C	19-05-2025	PROPOSED LAYOUT AMENDED	TITLE: Vehicle Turning Circle Plan - B-Triple (36.5m)	N.M.	
B	06-12-2024	PROPOSED LAYOUT AMENDED			
A	23-10-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01712.000_S20		
NO	DATE	AMENDMENT			



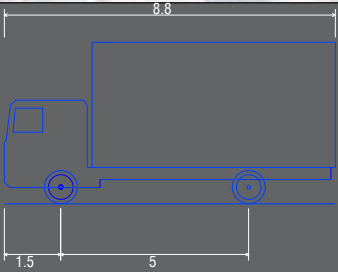
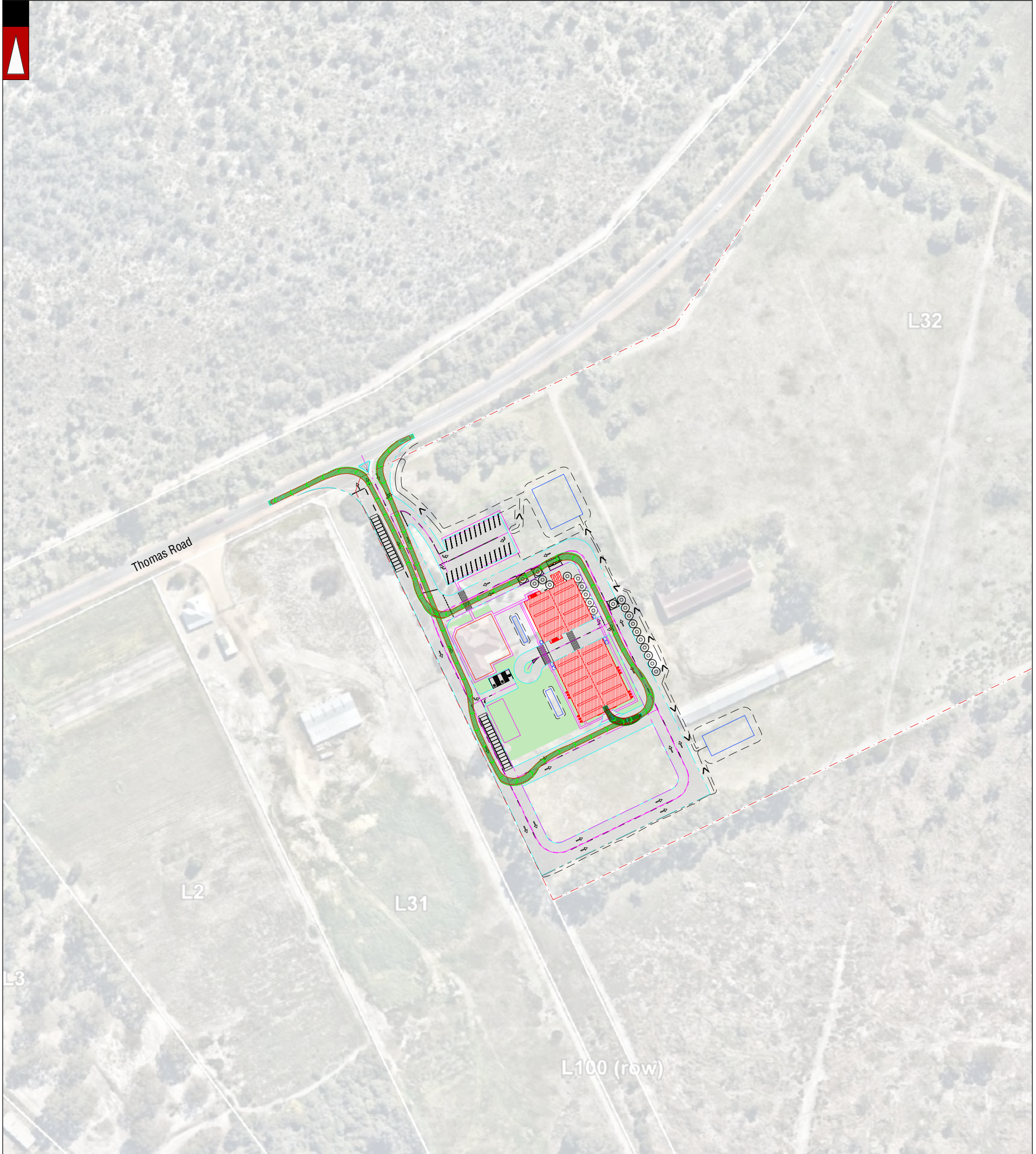
			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise
C	19-05-2025	PROPOSED LAYOUT AMENDED	TITLE: Vehicle Turning Circle Plan - B-Triple (36.5m)	N.M.	
B	06-12-2024	PROPOSED LAYOUT AMENDED			
A	23-10-2023	ISSUED FOR REVIEW			
NO	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_S21		



- B-Triple (36.5m)
 - Overall Length 36.500m
 - Overall Width 2.500m
 - Overall Body Height 4.300m
 - Min Body Ground Clearance 0.540m
 - Track Width 2.500m
 - Lock-to-lock time 6.00s
 - Curb to Curb Turning Radius 15.000m
- Lot boundary
 - Wheel Path (Forward)
 - Vehicle Chassis Envelope (Forward)
 - 500mm Body Path Clearance

LEGEND

			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	
C	19-05-2025	PROPOSED LAYOUT AMENDED	TITLE: Vehicle Turning Circle Plan - B-Triple (36.5m)	N.M.	
B	06-12-2024	PROPOSED LAYOUT AMENDED			
A	23-10-2023	ISSUED FOR REVIEW			
NO	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_S22		

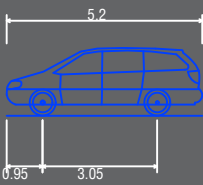
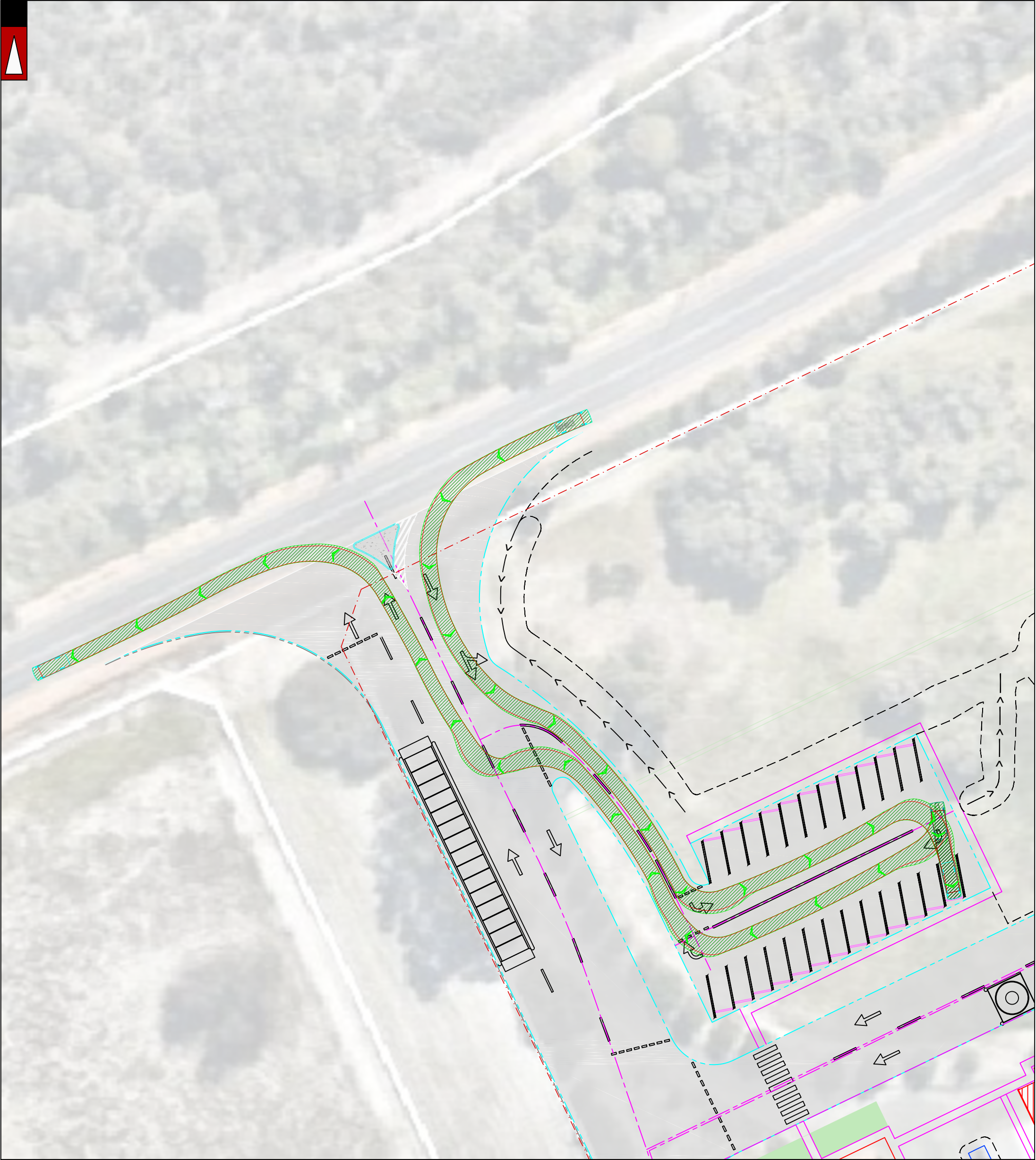


Service Vehicle (8.8 m)
Overall Length 8.800m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.427m
Track Width 2.500m
Lock to Lock Time 4.00s
Kerb to Kerb Turning Radius 12.500m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chasis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chasis Envelope (Reverse Vehicle Motion)

LEGEND

			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise
C	19-05-2025	PROPOSED LAYOUT AMENDED	TITLE: Vehicle Turning Circle Plan - Service Vehicle (8.8m)	N.M.	
B	06-12-2024	PROPOSED LAYOUT AMENDED			
A	23-10-2023	ISSUED FOR REVIEW			
NO	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_S23		

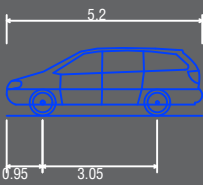
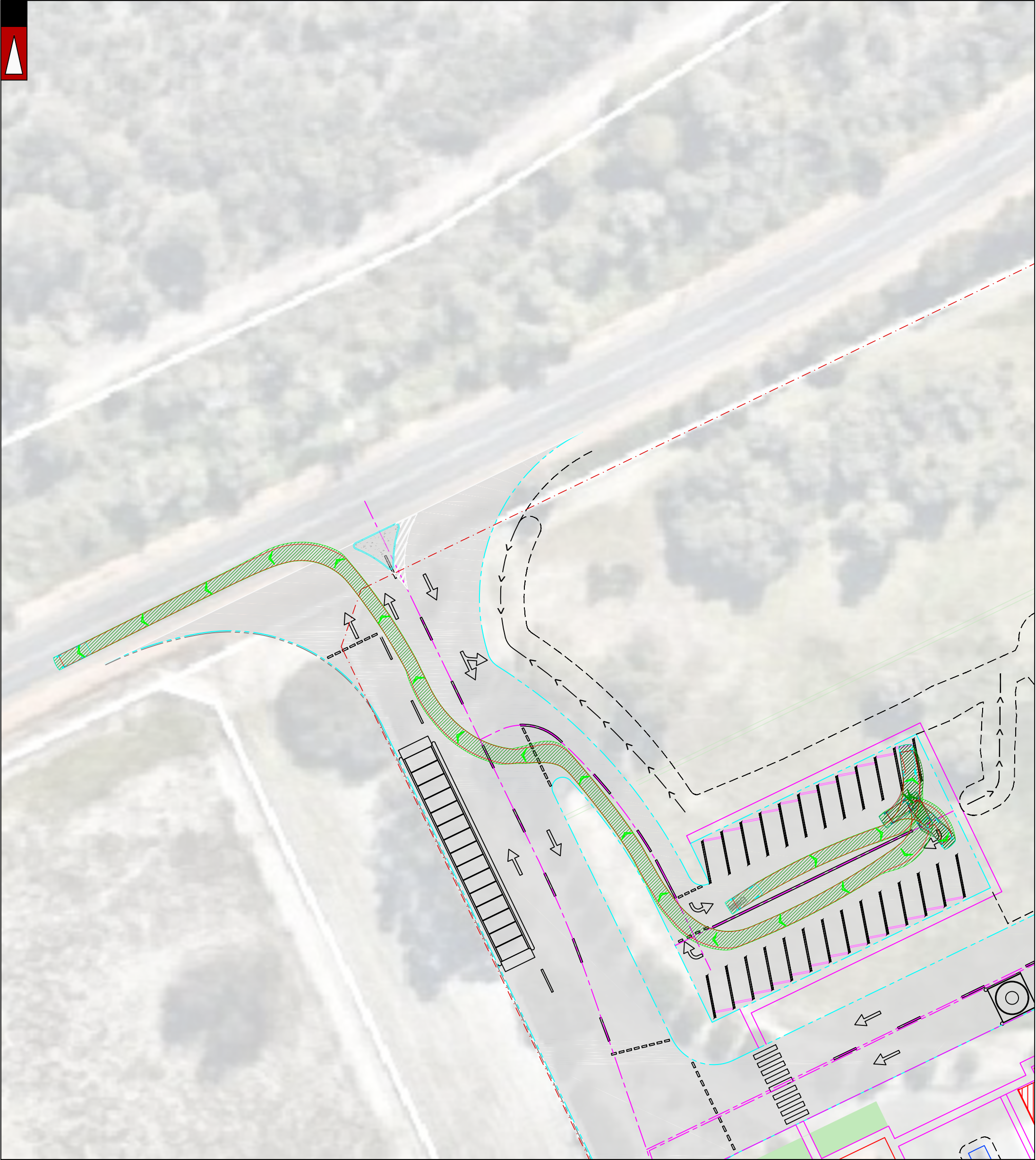


Passenger vehicle (5.2 m)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 1.804m
Min Body Ground Clearance 0.295m
Track Width 1.840m
Lock to Lock Time 4.00s
Kerb to Kerb Turning Radius 6.300m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chassis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chassis Envelope (Reverse Vehicle Motion)

LEGEND

			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise
C	19-05-2025	PROPOSED LAYOUT AMENDED	TITLE: Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)	N.M.	
B	06-12-2024	PROPOSED LAYOUT AMENDED			
A	23-10-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01712.000_S24		
NO	DATE	AMENDMENT			

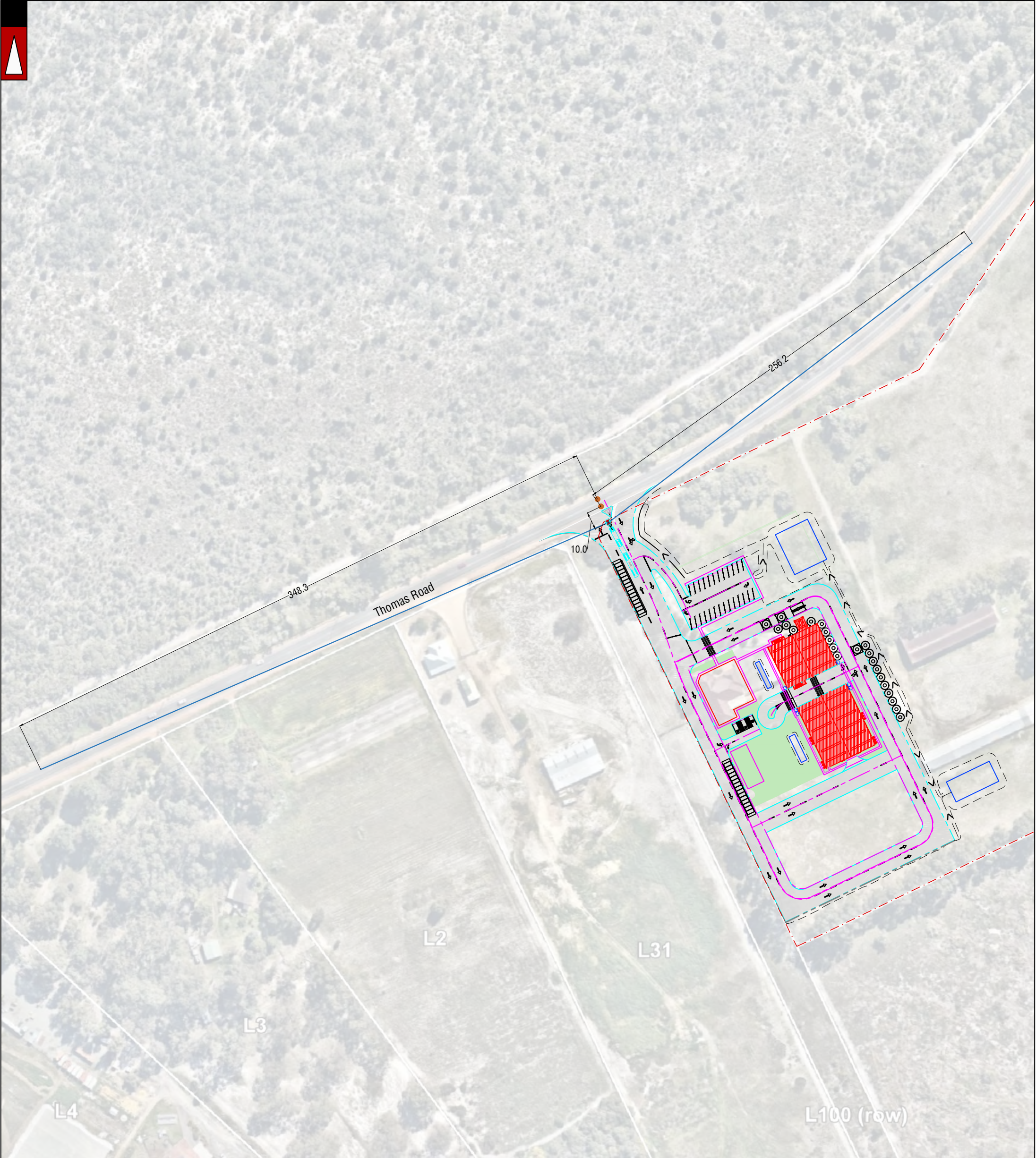


Passenger vehicle (5.2 m)
Overall Length 5.200m
Overall Width 1.940m
Overall Body Height 1.804m
Min Body Ground Clearance 0.295m
Track Width 1.840m
Lock to Lock Time 4.00s
Kerb to Kerb Turning Radius 6.300m

- Lot boundary
- Wheel Path (Forward Vehicle Motion)
- Vehicle Chassis Envelope (Forward Vehicle Motion)
- Wheel Path (Reverse Vehicle Motion)
- Vehicle Chassis Envelope (Reverse Vehicle Motion)

LEGEND

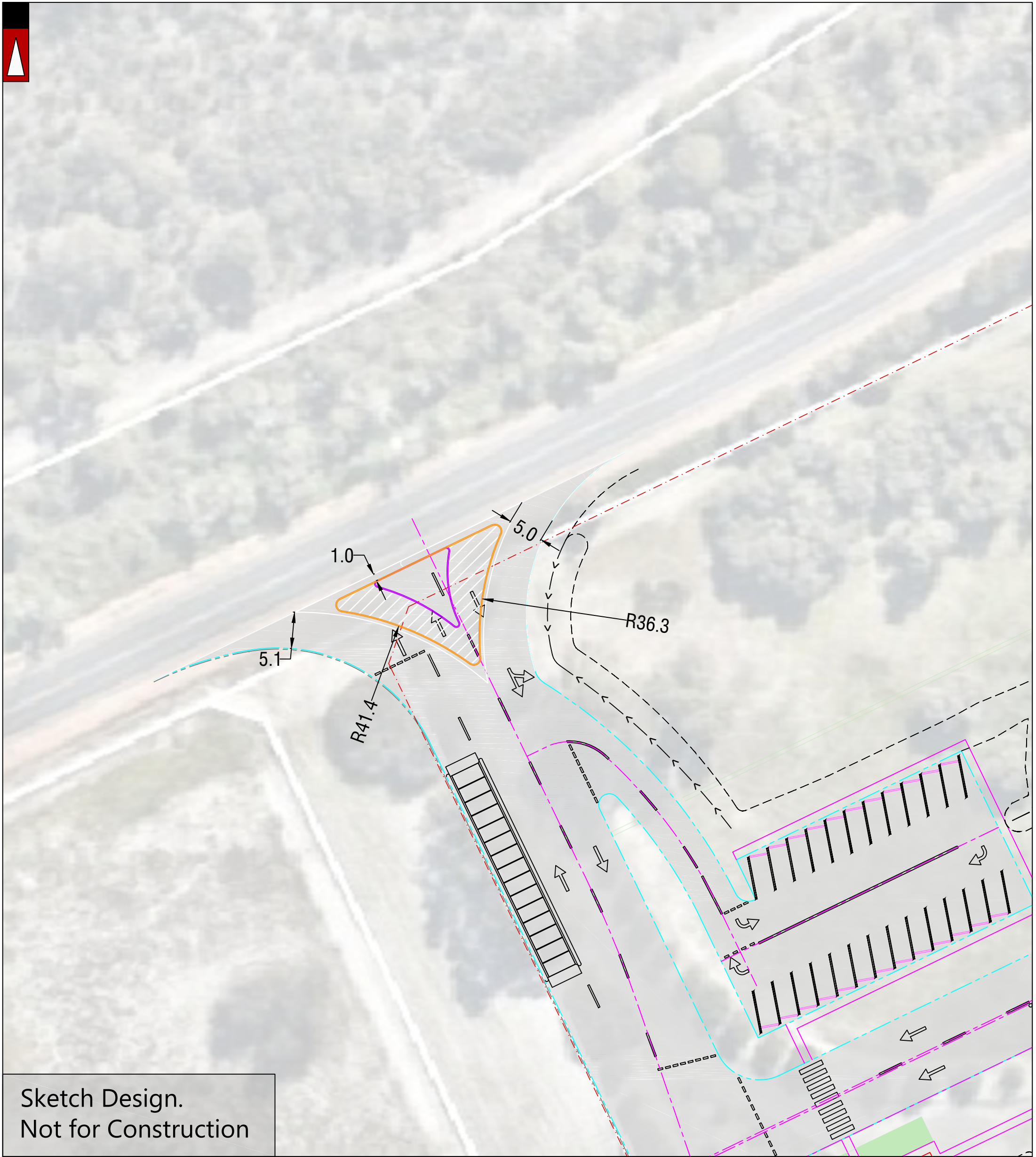
			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise
C	19-05-2025	PROPOSED LAYOUT AMENDED	TITLE: Vehicle Turning Circle Plan - B99 Passenger Vehicle (5.2m)	N.M.	
B	06-12-2024	PROPOSED LAYOUT AMENDED			
A	23-10-2023	ISSUED FOR REVIEW	DRAWING NUMBER: KC01712.000_S25		
NO	DATE	AMENDMENT			



- Lot boundary
- Sightlines
- Dimensions
- Driver's position
- Potential conflict point

LEGEND

			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise
C	19-05-2025	PROPOSED LAYOUT AMENDED	TITLE: Sight Distance Review	N.M.	
B	06-12-2024	PROPOSED LAYOUT AMENDED			
A	23-10-2023	ISSUED FOR REVIEW			
NO	DATE	AMENDMENT	DRAWING NUMBER: KC01712.000_S40		



Sketch Design.
Not for Construction

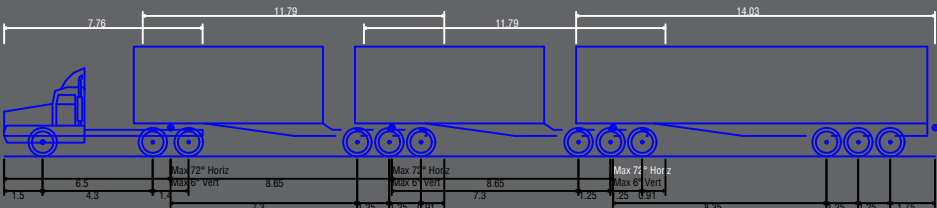
- Mountable Kerb
- Non-mountable Kerb

LEGEND

			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise PART OF THE AMEY GROUP
			TITLE: Crossover Sketch Design		
A	15-08-2025	ISSUED FOR REVIEW	DRAWING NUMBER: KC01712.000_S40	N.M.	
NO	DATE	AMENDMENT			



Sketch Design.
Not for Construction



B-Triple (36.5m)
Overall Length 36.500m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.540m
Track Width 2.500m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 15.000m

- Lot boundary
- Wheel Path (Forward)
- Vehicle Chassis Envelope (Forward)
- 500mm Body Path Clearance

LEGEND

			PROJECT: 1324 Thomas Road, Oakford	DRAWN BY:	 Premise PART OF THE AMEY GROUP
			TITLE: Crossover Sketch Design		
A	15-08-2025	ISSUED FOR REVIEW	DRAWING NUMBER: KC01712.000_S41	N.M.	
NO	DATE	AMENDMENT			

WAPC Reasons for Refusal

#	Reason for refusal	Applicant response
1	The proposed driveway and crossover onto Thomas Road encroach into a right of way (Lot 100 on D 31071). The proposed crossover onto Thomas Road would conflict with vehicle access to and from the right of way and Thomas Road.	Addressed through proposed condition on the LPS3 approval.
2	The application proposes access to and from Thomas Road for light vehicles and B-triple road trains. Thomas Road is reserved for Primary Regional Roads under the Metropolitan Region Scheme and is under the care and control of Main Roads Western Australia. Main Roads Western Australia is the responsible authority for managing the safety and function of Thomas Road. Main Roads Western Australia has not provided support for the proposal.	MRWA reviewed the TIS Rev 'H' and provided comments as detailed in the DPLH Part C – Item 3.1b pages 5 and 6, proposed condition 'b' satisfies updates.
3	Insufficient evidence has been provided to demonstrate adequate provision can be made for the access to and egress from the site onto Thomas Road. The Transport Impact Statement (Premise, Revision I, dated October 2025) is not supported for the following reasons:	
	(a) inconsistent truck movements per day are specified; An email with further details was provide by DPLH and that is below, it relates to Rev 'I' but the details are the same in Rev'H' , however there are different page number due to the formatting of page 2, so to assist we have placed the Rev'H' page number in brackets and highlighted in yellow. <i>“Hi Jason</i> <i>Would you please forward this to Marina.</i> <i>I noticed these different numbers for trucks accessing the site. There may be more different trip numbers.</i> <i>A table on page 17(18 in rev'H') of the TIS specifies 20 truck movements per day.</i> <i>A table on page 18 (19 in Rev'H') of the TIS specifies 15 deliveries per day. Information on page 7 specifies that deliveries will require the use of 36m-long vehicles.</i> <i>Sections 2.1 (Page 6)(7 of Rev'H') and 2.14 (Page 18) (19 of Rev'H') of TIS specify that the facility only has capacity to receive 4 B-triple truckloads per day.</i> <i>Regards,</i> <i>Martin”</i>	Based on the clarification received in an email from Martin – there seems to be a misinterpretation of sections of the report, which I am happy to clarify. In a nutshell: - Development will receive deliveries that may be arriving in a range of vehicles depending on items being delivered (from standard vans to B-triple trucks). We understand from the client's input that the development may receive up to 15 deliveries per day. - Some of these deliveries will use trucks (client's reference to heavy vehicles – Austroads Class 3 and up) - Inclusive in overall delivery trucks are four (4) B-triple vehicles. Other trucks accessing the site will be smaller than
	(b) survey data from similar sites has not been presented to provide evidence for the proposed trips generated and attracted to the development;	The site is unique based and traffic movements are based on the capacity of the facility, and the client does not have directly comparable sites under their management, and therefore they were unable to help us organise a direct survey of sites. Instead they provided us with details of software used by the industry to manage bookings and access of trucks in the facility demonstrating they have capability to stagger or condense arrivals to suit the requirements. The facility has been designed for a maximum receival capacity of 240 tonnes of oats per day.
	(c) information is not provided to detail the reason traffic generation information in Transport Impact Statements version H and version I is different from Version G;	As this is not a typical land use, application of standard traffic generation rates on this facility would not reflect the traffic impact. Instead, the client provided excel sheets estimating the number of vehicles based on the intended operations. The client through this process amended the processing capacity of the facility to minimise traffic impact on the network. This resulted in lower traffic generation in Rev H report when compared to Rev G report. Condition 'g' requires a OMP to manage delivery and access arrangements. Rev I report has identical traffic generation to Rev H report. The only difference between these two reports is the configuration of the driveway, where the project team tested relocation of the access point to remove the overlap of turnout radius with ROW.

#	Reason for refusal	Applicant response
	(d) future traffic volume considerations have not been provided;	This is not a staged development, the facility is intended to be operational to its capacity upon commencement. There is no anticipated traffic growth from this site. If the reference is to Thomas Road traffic growth, we would need extract from ROM24 to be able to comment on this. Private consultants do not have access to ROM24. Access can be obtained only via a government body or agency. As MRWA never requested this in any of correspondence that was made available to me, we did not go through the process of obtaining ROM24. If we were required to obtain this data, we would need to request it via Shire of Serpentine Jarrahdale.
	(e) Main Roads Western Australia crash data information for the period from 2017 to 2022 is provided. The current Main Roads Western Australia crash data information is for 2020-2024;	This is factually incorrect. The crash data collected and analysed in Rev G, H and I is from 2019-2024 (as per screenshot below). The network average statistic is from period 2017-2022. If the MRWA has more recent network analysis, we are more than happy to include it in the report. 2.8 Vehicular Crash Information Is Crash Data Available on Main Roads WA website? YES If YES, nominate important survey locations: Location 1 Thomas Road SLK [11.66 - 13.29] Period of crash data collection 01/01/2019 - 31/12/2024
	(f) the desirable minimum sight distance is incorrectly specified to be 248m. A desktop assessment at the Department of Planning, Lands and Heritage suggests that the sight distance provided is approximately 156m. Main Roads Western Australia have advised the Department of Planning, Lands and Heritage that a Safe Intersection Sight Distance of 156m would represent a Safe Intersection Sight Distance fail; and	Desirable minimum safe intersection sight distance (SISD) is determined by applying Austroads equation reproduced in Section 2.16 of TIS. As outlined in detail in the report, it was calculated using design speed (10km/h above speed limit) as 85% speed, coefficient of deceleration of 0.29 (suitable for trucks) and reaction time of 2.5s (the highest requirement) as conservative parameters. It is unclear what DPLH found “incorrect” in this calculation as it was conducted to the most conservative Austroads requirement. DPLH did not specify what distance value is a result of “correct” assessment of desirable minimum sight distance, or if they have preference for different parameters to be used in the assessment. Available sight distance of 156m would represent a fail of SISD given the requirement is 248m; however I have not seen DPLH plans showing their assessment of available sight distance. Plans showing our desktop assessment of sight distance were included in all revisions of TIS, provided to MRWA as a whole package and the MRWA never raised an issue with available sight distances while reviewing Rev H and Rev G reports.
	(g) the proposed mountable kerb is not sufficient to enforce left-out only vehicle movements.	This was addressed in the comments provide by MRWA and can be suitable resolved under condition ‘b’



Deputation Request Form

Regulation 40(3) and DAP Standing Orders 2025 cl. 3.6

Must be submitted at least 72 hours (3 calendar days) before the meeting

Deputation Request Guidelines

Before requesting to present to a DAP please review the Responsible Authority Report that has been published on the DAP website and consider whether any previous comments have been adequately addressed.

Your request will be determined by the Presiding Member based on relevance to the subject application, individual merit, other requests raising the same issues and likely contribution to the DAP's consideration and determination of the application.

Deputations are not to exceed **3 minutes**, unless otherwise approved by the Presiding Member. The Presiding Member may agree to or require combined deputations where the deputations are considered complementary to each other and would assist the efficiency and effectiveness of the DAP meeting.

In accordance with Clause 3.6.2 of the *DAP Standing Orders*, your deputation request must be accompanied with a document setting out the deputation content.

Handouts or power points will not be accepted on the day.

In accordance with Clause 3.6.9 of the *DAP Standing Orders*, if your deputation request is not approved, the submitted content will be circulated to the DAP and published on the DAP website as a written submission.

Please complete a separate form for each presenter and submit to daps@dplh.wa.gov.au

Presenter Details

Name	Belinda Moharich
Company (if applicable)	Moharich and More
Relationship to proposed development	Lawyer for Applicant
Please identify if you have any special requirements:	YES ☐ NO ☒ If yes, please state any accessibility or special requirements: Click or tap here to enter text.



Meeting Details

DAP Name	Metro Outer DAP
Meeting Date	17/12/2025
DAP Application Number	DAP/25/02840
Property Location	Lot 32 (1324) Thomas Road, Oakford

Deputation Details

I have read the contents of the Responsible Authority Report contained in the published DAP Meeting Agenda	YES ☒ NO ☐
Is your deputation in support or against the <u>proposed development</u> ?	SUPPORT ☒ AGAINST ☐
Will your deputation involve a presentation that requires power-point facilities?	YES ☐ NO ☒
Will you be attending in person or via electronic means	In person ☒ Online ☐
I acknowledge that my deputation content <u>will be</u> published on the DAP website and circulated to the local government and applicant	YES ☒

Deputation Content*

Brief sentence summarising your deputation (To be included in the Related Information part of the agenda)	<i>The deputation will address:</i> The legal status of the proposed driveway access to the development, and proposed conditions of development approval.
--	--

Please provide your deputation content below or attach as a separate document. Any document must be provided in Microsoft word (.doc), PDF (.pdf), PowerPoint .pptx) or Image (.jpeg) format and be no more than 5MB.

If your deputation references documents that are contained within the Responsible Authority Report and/or its attachments, please consider referencing the document rather than including a duplication of documents:-



Please see attached letter.

Our ref: 24-014
Your ref: DAP/25/02840

14 December 2025

Mr Eugene Koltasz
Presiding Member
Metro Outer Development Assessment Panel
DAP Secretariat
140 William Street
PERTH WA 6000
By email:
daps@dplh.wa.gov.au

Dear Presiding Member

Lot 32 (1324) Thomas Road, Oakford - Proposed Oat Mill Operating Facility

- 1 I act for the Applicant for the proposed oat mill operating facility proposed to be located at Lot 32 (1324) Thomas Road, Oakford (**the site**).
- 2 The purpose of my deputation is to provide further information regarding the proposed access to and from the site from Thomas Road.

Background

- 3 As you would have seen from the original Responsible Authority Report (**RAR**) prepared for the Western Australian Planning Commission (**WAPC**), and the subsequent regulation 13 response from the Shire of Serpentine-Jarrahdale (**the Shire**), the proposed location of the driveway for entry to and exit from the site marginally encroaches over an existing right-of-way (**ROW**) located to the west of the site.
- 4 For context, the ROW was created on the subdivision of the surrounding lots in 1964, and was ceded pursuant to section 20A of the *Town Planning and Development Act 1928*. Unusually, the ROW did not revert to Crown land, and remains within the *Transfer of Land Act 1893* system.
- 5 Pursuant to section 3.53(2) of the *Local Government Act 1995*, the responsibility for the control and management of the ROW falls to the Shire.

-
- 6 The ROW is adjacent to four lots, although there are no access points from those lots, as each has gazetted road access either to Thomas Road or Abernethy Road. The ROW is unsealed, and partially vegetated.
- 7 There is no plan for the ROW to be constructed.
- 8 It is on this basis that the Shire has agreed, through the signing of the development application forms, to allow this minor encroachment.
- 9 The WAPC in its RAR notes a concern regarding this encroachment, and the fact that the driveway would conflict with vehicle access to and from the ROW. Indeed, the Applicant acknowledges that this is correct, and would be correct regardless of the encroachment, because of the proximity of a driveway crossover immediately adjacent and parallel to the ROW.
- 10 It should however, be noted, that the driveway proposed by this application is in the same location as the existing driveway, which has been in place since at least 1991, servicing a poultry farm which operated on the site.
- 11 Our discussions with DPLH and the Shire suggest that there is very little likelihood that the ROW will ever be constructed.
- 12 This is particularly so because the creation of a new intersection on to Thomas Road (as opposed to the private driveway and crossover proposed by this application) brings with it a need for significantly more stringent design specifications, as the volume of traffic, the nature of that traffic and the times during which the ROW would be used would be uncontrolled. In addition, the driveway of the property to the west, which currently operates as a transport depot, is only 55 metres from the ROW, again, creating a potential conflict with the ROW in terms of safety.

Proposed solution

- 13 To allay the concerns raised by the WAPC in the RAR, the Applicant would agree to a condition of development approval which requires the Applicant to enter into a deed of agreement with the Shire of Serpentine-Jarrahdale which, on the construction of the ROW –
- 13.1 Requires the removal of the crossover; and
 - 13.2 Access from the site to be obtained either –
 - 13.2.1 via the ROW, or
 - 13.2.2 via a new crossover approved and constructed elsewhere along the Thomas Road frontage at a sufficient distance from the ROW.
- 14 If a condition was imposed on the development approval pursuant to the Shire of Serpentine-Jarrahdale's *Local Planning Scheme No.3 (LPS3)*, there would be no need

for any condition to be imposed in relation to the development approval under the *Metropolitan Region Scheme*.

- 15 In our view, it is more appropriate for the condition to be imposed on the LPS3 determination, given the Shire is the manager of the ROW.

Conditions of development approval

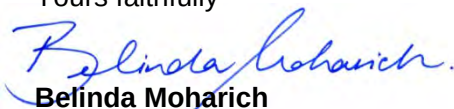
- 16 While the conditions proposed by the Shire in its RAR are largely acceptable, the Applicant has **enclosed** a table requesting amendment to a small number of those conditions.

- 17 The reasoning for the changes are included in the table.

Conclusion

- 18 We trust that the foregoing adequately resolves the concerns raised by WAPC in its RAR.

Yours faithfully


Belinda Moharich
Director

Conditions (Shire of Serpentine-Jarrahdale)

#	Proposed Condition		Applicant commentary	Applicant proposed amendment
a.	The development is to be carried out in compliance with the plans and documentation listed below except where amended by other conditions of this consent:			
	Plans and Specifications	Development Plans received on 30 January 2025	References to plans have been amended to confirm version numbers, rather than date received by the Shire, to provide greater certainty.	Development Plans received on 30 January 2025 <u>dated January 2025 (1.5.2411.20.0453)</u>
		Transport Impact Assessment received on 22 May 2025		Transport Impact Assessment (Rev.H) received on 22 May 2025 <u>dated August 2025.</u>
		Bushfire Management Plan received on 30 May 2025		Bushfire Management Plan received on 30 May 2025 <u>(version 3) dated 30 May 2025.</u>
		Environmental Noise Impact Assessment received on 22 July 2025		Environmental Noise Impact Assessment received on 22 July 2025 <u>(Rev.5) dated 21 July 2025)</u>
b.	Prior to the lodgement of a Building Permit, detailed engineering drawings shall be submitted to and approved by the Shire, on the advice of Main Roads Western Australia (MRWA). The drawings shall detail the provision of the following infrastructure improvements:			
	i.	The driveway entrance from Thomas Road being suitability upgraded to enforce the Left in/Left out movements only, restricting right turns to/from the site.		
	ii.	The raised/kerbed island being sufficiently offset from the Thomas Road carriageway as per MRWA standards.		
	iii.	The driveway lit as per Main Roads standards.		
	Once approved, the infrastructure improvements are required to be fully constructed prior to operation of the development.			
c.	Prior to the lodgement of a Building Permit, an updated Traffic Impact Assessment (TIA) shall be submitted to and approved by the Shire, on the advice of MRWA. The TIA shall be updated to provide trip generation surveys associated with the development.		MRWA has reviewed the relevant TIS, which is Revision H, and has already provided feedback, which has been included in the deputations. That feedback can be included in the documentation lodged to satisfy condition b.	Delete.
d.	Prior to occupation of the development, the vehicle parking areas, accessways, internal roads and crossover must:			
	i.	Be designed in accordance with the relevant Australian/New Zealand Standard;		
	ii.	Include a suitable number of car parking spaces dedicated to people with disability designed in accordance with the relevant Australian/New Zealand Standard;		
	iii.	Be constructed, sealed, kerbed, drained, marked and thereafter maintained.		
	Plans depicting these works are to be submitted to and approved by the Shire prior to the issue of a Building Permit and fully constructed prior to operation.			
e.	Prior to occupation, a monetary contribution of 1% of construction costs, shall be paid to the Shire of Serpentine Jarrahdale for the establishment of public art, or alternatively, the			

#	Proposed Condition	Applicant commentary	Applicant proposed amendment
	provision of public art shall be provided on site in accordance with the Shire of Serpentine Jarrahdale Local Planning Policy 1.6 – Public Art to the Shire's satisfaction.		
f.	Prior to lodgement of a Building Permit, a Construction Management Plan is to be submitted to and approved by the Shire of Serpentine Jarrahdale. The Plan should address the following matters:		
	i. Management of car parking, delivery vehicles and traffic associated with the construction of the development.		
	ii. Management of dust and noise		
	Once approved, the Construction Management Plan shall be implemented and adhered to for the duration of the construction unless otherwise agreed upon in writing by the Shire of Serpentine Jarrahdale		
g.	Prior to the occupation of the development, an Operational Management Plan (OMP) shall be submitted to and approved by the Shire of Serpentine Jarrahdale. The OMP shall include but not be limited to the following:		
	i. a log of all complaints received;		
	ii. a log of all actions taken in response to complaints;		
	iii. public safety and site security;		
	iv. parking arrangements for contractors and sub-contractors;		
	v. delivery and access arrangements.		
	Once approved the OMP shall be adhered to by the development unless otherwise agreed upon in writing to the Shire of Serpentine Jarrahdale.		
h.	Prior to occupation of the development, a Signage Plan shall be submitted to and approved by the Shire. Signage shall be in accordance with the Shire's Local Planning Policy 4.11 - Advertising Policy. No signs are permitted to be displayed in the road reserve at any time.		
i.	Prior to occupation of the development, a Dust Management Plan shall be submitted to and approved by the Shire. Once approved, the Dust Management Plan shall be adhered to in its entirety.		
j.	Prior to the commencement of works, a Drainage Management Plan must be submitted to and approved by the Shire, on the advice of the Department of Water and Environmental Regulation (DWER). Once approved, the Drainage Management Plan shall be implemented and maintained thereafter to the Shire's satisfaction.		
k.	Prior to the commencement of works, a Noise Management Plan shall be submitted to and approved by the Shire. The Noise Management Plan shall include measures to ensure the development does not cause adverse noise impacts on surrounding sensitive land uses, in accordance with the <i>Environmental Protection Noise) Regulations 1997</i> . Once approved, the development shall be undertaken in accordance with the Noise Management Plan.		
l.	Prior to the issue of a building permit, a Landscaping Plan shall be submitted to and approved by the Shire. The Landscaping Plan shall detail the following;		

#	Proposed Condition	Applicant commentary	Applicant proposed amendment
	i. Provision of vegetative landscaping within the adjoining verges of the site, and the full management of verges adjoining the site;		
	ii. Detailed planting regime and plans, identifying the number of plants, species, size of tubs;		
	iii. A schedule of planting including how vegetation is planted, monitored and replaced where failed.		
	Once approved, the Landscaping Plan shall be implemented prior to occupation and maintained thereafter.		
m.	Prior to the commencement of works, a Waste Management Plan must be submitted to and approved by the Shire. Once approved, waste must be managed in accordance with the approved Waste Management Plan.		
n.	Prior to the occupation of the development, all measures listed within the Bushfire Management Plan (BMP No: BMP24294v3.0) prepared by WA Fire & Safety shall be enacted and adhered to for the life of the development to the satisfaction of the Shire of Serpentine Jarrahdale.		
o.	-	New proposed condition as per letter, regarding removal of driveway in event of construction of the ROW.	<u>The Applicant is to enter into a Deed of Agreement with the Shire of Serpentine-Jarrahdale which, on the construction of the right-of-way (Lot 100 on Diagram 31071) –</u> i. _____ requires the removal of the approved crossover to Thomas Road; and ii. _____ access to the site to be obtained either – A _____ via the right-of-way; or B _____ via a new crossover approved and constructed further east along the Thomas Road frontage at a sufficient distance from the right-of-way.
	Advice Notes		
1.	Where an approval has so lapsed, no development shall be carried out without further approval having first been sought and obtained, unless the applicant has applied and obtained Development Assessment Panel approval to extend the approval term under regulation 17(1)(a) or local government approval under regulation 17A of the <i>Planning and Development (Development Assessment Panels) Regulations 2011</i> .		
2.	This development approval constitutes approval under the Local Planning Scheme No.3 only.		



PART C – SHIRE OF SERPENTINE-JARRAHDALE

ADDITIONAL INFORMATION

Item 3.1 - Lot 32 (1324) Thomas Road, Oakford

The Shire of Serpentine-Jarrahdale provided the following additional information to the Responsible Authority Report (RAR) on 11 December 2025;

- In that report, the Department notes that the proposed driveway and crossover arrangement interfaces with the adjoining right of way, being Lot 100 on D 31071, and that this land is owned by the State of Western Australia. The report records that the Shire manages the right of way under the *Local Government Act 1995*, and therefore has responsibility to provide consent for the application on behalf of the Minister for Lands.

What is not expressly recorded in the Department's report is the established property law position that an owner of land abutting a right of way benefits from an implied right of carriageway over that right of way by virtue of their lot ownership. In practical terms, this implied right is as legally binding as a right of way created and secured by a registered grant of easement, and it underpins the practice of recognising lawful access for abutting lots via such rights of way.

Notwithstanding this, the Shire acknowledges the administrative concern identified in the Department's RAR regarding the absence of a formal landowner consent for Lot 100. To remove any doubt for the Panel, and to assist in its determination of the application, the Shire has now executed updated landowner consent in its role as manager of the right of way on behalf of the Minister for Lands. This signed consent is provided under separate cover for inclusion with the application documentation.

In the Shire's view, this updated consent addresses the administrative matter identified by the Department, and confirms that the use of the right of way by the proposed development is supported by the managing authority for that land. We trust that this will assist the Panel in its consideration of the application.

From: [Andrew Trosic](#)
To: [Development Assessment Panels](#)
Cc: [Heather O'Brien](#); [Helen Maruta](#); [Marius.LeGrange](#); [Helen Ball](#)
Subject: DAP/25/02840 Lot 32 (No. 1324) Thomas Road, Oakford and Lot 100 on Diagram 31071 – Landowner Consent for Right of Way
Date: Thursday, 11 December 2025 1:44:32 PM
Attachments: [Certificate of Title 101-86A Lot 100 On Diagram 31071.pdf](#)
[DA lot 100 Thomas Road.pdf](#)
[MRS form1 lot 100 Thomas Road.pdf](#)

Attention: Chair - Metro Outer Development Assessment Panel

Dear Chair

I refer to the above matter and write in my capacity as Director of Development Services for the Shire of Serpentine Jarrahdale in relation to the above application.

As you are aware, the Department of Planning, Lands and Heritage has prepared a separate RAR in light of Main Roads WA not supporting the proposal.

In that report, the Department notes that the proposed driveway and crossover arrangement interfaces with the adjoining right of way, being Lot 100 on D 31071, and that this land is owned by the State of Western Australia. The report records that the Shire manages the right of way under the *Local Government Act 1995*, and therefore has responsibility to provide consent for the application on behalf of the Minister for Lands.

What is not expressly recorded in the Department's report is the established property law position that an owner of land abutting a right of way benefits from an implied right of carriageway over that right of way by virtue of their lot ownership. In practical terms, this implied right is as legally binding as a right of way created and secured by a registered grant of easement, and it underpins the practice of recognising lawful access for abutting lots via such rights of way.

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In the Shire's view, this updated consent addresses the administrative matter identified by the Department, and confirms that the use of the right of way by the proposed development is supported by the managing authority for that land. We trust that this will assist the Panel in its consideration of the application.

Please do not hesitate to contact me if any further clarification is required.

Yours sincerely

Andrew Trosic

Director Development Services

+61 8 9526 1111

Shire of Serpentine Jarrahdale

6 Paterson Street, Mundijong, WA, 6123

www.sjshire.wa.gov.au



Application for Development Approval

PROPERTY DETAILS OF PROPOSED DEVELOPMENT		
Lot No: 100	House/Street No:	Location No:
Diagram or Plan No: 31071	Certificate of Title Vol. No: 101	Folio: 86A
Title encumbrances (e.g easements, restrictive covenants):		
Street Name: THOMAS ROAD	Suburb: OAKFORD	
Nearest Street Intersection: KING ROAD		

PROPOSED DEVELOPMENT	
Nature of Development:	☐ Works ☐ Use ☒ Works and Use
Is an exemption from development claimed for part of the development? ☐ YES ☒ NO	
If yes, is the exemption for: ☐ Works ☐ Use	
Description of proposed works and/or land use: DRIVEWAY	
Description of exemption claimed (if relevant):	
Nature of any existing buildings and/or land use: VACANT LAND	
Approximate cost of proposed development (Excluding GST): \$ PART OF LODGE DAP	
Estimated time of completion: 18 MONTHS AFTER APPROVAL	

Office Use Only	
Fees Paid:	Date Received:
Receipt No:	Payment Method:
Application Number:	Acceptance Officers Initials:

Contact Us

Enquiries

Call: (08) 9526 1111

Fax: (08) 9525 5441

Email: info@sjshire.wa.gov.au

In Person

Shire of Serpentine Jarrahdale

6 Paterson Street, Mundijong WA 6123

Open Monday to Friday 8.30am-5pm (closed public holidays)



www.sjshire.wa.gov.au

**OWNER DETAILS**

Name:

Shire of Serpentine Jarrahdale

ABN (if applicable): 98 924 720 841

Address:

6 Paterson Street, Mundijong

Post Code: 6123

Phone: 9526 1111

Email:

Mobile:

info@sjshire.wa.gov.au

Contact Person for Correspondence: Heather O'Brien / Helen Maruta

Signature:

Date:

11 December 2025

Signature:

Date:

*The signature of **ALL** owner(s) is required on all applications. This planning application will not proceed without that signature. For the purposes of signing this application an owner includes the persons referred to in the Planning and Development (Local Planning Schemes) Regulations 2015 Schedule 2 clause 62(2).*

APPLICANT DETAILS (if different from owner)

Name:

STATEWEST PLANNING

Address:

PO BOX 5081
MIDLAND

Post Code: 6056

Phone:

Email:

Mobile: 0408 599 187

JASON.HUNT@STATEWESTPLANNING.COM.AU

Contact Person for Correspondence: JASON HUNT

The information and plans provided with this application may be made available by the local government for public viewing in connection with the application. ☐ YES ☐ NO

Signature:

Date:

11/12/2025

Note: Decision letter will be sent to applicant

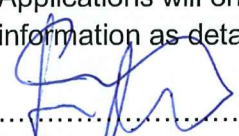
**PLANNING APPLICATION CHECKLIST**

INFORMATION REQUIREMENTS	Applicant	Office
Completed Application for Development Approval signed by property owner(s) and applicant (if applicable)	☒	☐
Appropriate Fee	☒	☐
Copy of Current Certificate of Title with Diagram and Strata Plan where applicable – These can be obtained from www.landgate.wa.gov.au	☒	☐
Detailed written statement in support of the proposal including:	☒	☐
Full details of the use/development.	☒	☐
Compliance with Scheme/ R-Codes/Policies/Design Guidelines/ Local Development Plans.	☒	☐
Justification addressing any proposed variations.	☒	☐
Lots identified in Bushfire prone areas require the following: (Check requirements with Shire's Fire and Emergency Services Department – 08 9526 1160)	☒	☐
Bushfire Attack Level (BAL) Assessment.	☒	☐
Site Plan - 2 copies required* (1 set is preferred to be submitted on USB or CD) To be on a scale of 1:100, 1:200 or 1:500 that includes the following:	☒	☐
The location of the site including street names, lot numbers, north point, scale bar and dimensions of the site.	☒	☐
Location, height and type of existing structures and environmental features to be retained.	☒	☐
Location of proposed buildings including dimensions, setbacks and their features (e.g. air conditioning units, solar panels, hot water systems etc).	☒	☐
Structures and environmental features that are proposed to be removed (including trees/vegetation).	☒	☐
Existing and proposed means of access for vehicles and pedestrians to and from the site (including where relevant roads, cross overs, car parking and manouvering).	☒	☐
Details of open space and outdoor living areas.	☒	☐
Site levels and floor levels.	☒	☐
Method of storm water treatment.	☒	☐
Location and Details of fencing if proposed within the street front setback.	☒	☐



• Location and details of excavation/fill and method of retaining (when applicable).	☒	☐
• Existing and Proposed contours and levels if the fall across the lot is greater than 0.5m.	☒	☐
• Location of bin enclosures (when applicable).	☒	☐
Full Floor Plan (2 copies *) scale not less than 1:100	☒	☐
Elevation Plans (2 copies *) scale not less than 1:100 including:	☒	☐
• All proposed buildings and signage (when applicable) showing building style, materials, colours and finishes.	☒	☐
• Ground levels, wall heights and roof heights.	☒	☐
Heritage Area Application to include the following (map of heritage areas available at http://www.sjshire.wa.gov.au/online-mapping/):	☐	☐
• Street elevations drawn as one continuous elevation to a scale not smaller than 1:100 showing the proposed development and the whole of the existing development on each lot immediately adjoining the land the subject of the application.	☐	☐
• A detailed schedule of all finishes, including materials and colours of the proposed development.	☐	☐
• A description of the finishes of the existing developments on the subject lot and on each lot immediately adjoining the subject lot.	☐	☐
Detailed Landscape Plan (NOT for single residential development or signage applications)	☐	☐
Detailed Feature Survey	☒	☐
Any further information that the Shire may reasonably require to understand and assess the proposed development	☒	☐

Applications will only be accepted if they are accompanied by the complete package of information as detailed above, including this Checklist, and signed by the Applicant below.

Signature:  Print Name: JASON HUNT Date: 11/12/2025

Note 1: The above information is required to enable an initial assessment of the application only. If required the Shire may request additional information to facilitate the assessment process.

* If the plans are larger than A3, you are required to provide an electronic copy or A3 set of plans and one set to scale.

Owner/s details

Registered proprietor/s (landowner/s) or the authorised agent's details must be provided in this section. If there are more than two landowners please provide all relevant information on a separate page. Signature/s must be provided by all registered proprietors or by an authorised agent. **Alternatively**, a letter of consent, which is signed by all registered proprietors or by the authorised agent, can be provided.

Full name			
Company/agency (if applicable)	Shire of Serpentine Jarrahdale		
ACN/ABN (if applicable)	98 924 720 841		
Postal address	6 Paterson Street		
Town/suburb	Mundijong	Postcode	6123
Signature		Date	11/12/2025
Print name and position (if signing on behalf of a company or agency)	Andrew Trosic - Director Development Services		

Applicant details

Name/company	STATEWEST PLANNING		
Contact person	JASON HUNT		
Postal address	PO BOX 5081		
Town/suburb	MIDLAND	Postcode	6056
Phone	92741363	Email	JASON.HUNT@STATEWEST PLANNING.COM.AU
Signature		Date	11/12/2025
Print name and position (if signing on behalf of a company or agency)	JASON HUNT (ASSOCIATE & SENIOR PLANNER)		

eLodgement

Our preferred method of lodgement is online at
[Planning Online \(https://planningonline.dplh.wa.gov.au\)](https://planningonline.dplh.wa.gov.au)

Online applications can be paid by credit card, debit card or cheque.

Only complete this form if you cannot lodge your application online

Property details

Certificate of title description of land:

Lot no. 100

Location no.

Plan or Diagram

31071

Vol.

104

Folio

86A

Certificate of title description of land:

Lot no.

Location no.

Plan or Diagram

Vol.

Folio

Local Government

SHIRE OF SERPENTINE JARRANDALE

Title encumbrances

(e.g. easements, restrictive covenants)

Locality of development

(house no., street name, suburb, etc)

THOMAS ROAD, OAKFORD

Nearest street intersection

KING ROAD

Existing building/land use

VACANT LAND

Description of proposed
development and/or use

DRIVEWAY

Nature of any existing
buildings and/or use

VACANT LAND

Approximate cost of
proposed development (excl. gst) \$

PART OF LODGE DAP

Estimated time of completion

18 MONTHS AFTER APPROVAL

Is the development within a designated bushfire prone area? Yes ☐ No ☐

If yes, please identify and address the bushfire risk (by including a BAL assessment(s) or BAL Contour Map and a Bushfire Management Plan with the application). Alternatively, include a justification why SPP 3.7 does not apply with the application.

Is the development within the Bush Forever policy area? Yes ☐ No ☒Is the development within the Swan and Canning Rivers Development Control area? Yes ☐ No ☒**Office use only**

Acceptance officer's initials

Date received

Local Government reference No.

Commission reference No.

The information and plans provided with this application may be made available by the WAPC for public viewing in connection with the application.

www.landgate.wa.gov.au

EASEMENTS AND ENCUMBRANCES REFERRED TO

As to Lot 31 on Diagram 31071 only.
~~Caveat A353765 Lodged 10-12-1970 at 10.4300.~~



Withdrawal A926171 of Caveat 353765 Lodged 19th February 1975 at 11-1100.



TRANSFER A926172

Registered 19th February 1975 at 11-1100
 The unvested Partion

To Vol. 1401 Fol. 359.



CT 0101 0086A B



CERTIFICATE OF TITLE

VOL. 101 FOL. 86A





Direction for Services from the Responsible Authority

Regulation 13(1)

Guidelines

Regulation 13 of the DAP regulations allows the DAP executive director to direct a responsible authority to provide further information to an application. The DAP executive director may do that directly using this form.

A DAP Member who wishes to request further information (e.g. technical advice and assistance or information in writing) from the Responsible Authority must also complete this form and submit to daps@dplh.wa.gov.au.

The request will be considered by the DAP Executive Director and if approved, the Responsible Authority will be directed to provide a response to DAP Secretariat within the form.

It is important to note that **the completed form containing the query, response and any accompanying documentation will be published on the DAP website** as an addendum to the meeting agenda.

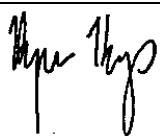
DAP Application Details

DAP Name	Metro Outer DAP
DAP Application Number	DAP/25/02840
Responsible Authority	Western Australian Planning Commission
Property Location	Lot 32 (1324) Thomas Road, Oakford

Nature of technical advice or information required

1	DAP query	Please provide a response to the additional information, including landowners consent, provided by the Shire of Serpentine-Jarrahdale (attached) together with any required adjustments to the planning assessment and recommendation contained in the Responsible Authority Report
	Response	The authority responsible for providing landowner consent for Lot 100 on D 31071 provided landowner consent on 11 December 2025. The WAPC responsible authority report has been revised.

DAP Executive Director Authorisation

Signature	
Date	12 December 2025
Response Due	15 December 2025; 12pm

* Any Alternative to the responsible authority recommendation sought does not infer a pre-determined position of the panel.

PART C - ITEM 3.1b - Lot 32 (No. 1324) Thomas Road, Oakford and Lot 100 on D 31071 – Oat facility

Form 1 – Responsible Authority Report (Regulation 12)

DAP Name:	Metro Outer Development Assessment Panel
Local Government Area:	Shire of Serpentine Jarrahdale
Applicant:	Statewest Planning
Owner:	Lot 100 on D 31071 (State of Western Australia) Lot 32 (No. 1324) Thomas Road, Oakford (1234 Thomas Road Blue Property Ltd, 1234 Thomas Road Red Property Ltd and Bam Oakford Pty Ltd)
Value of Development:	\$5 million
Responsible Authority:	Western Australian Planning Commission
Authorising Officer:	Planning Director, Land Use Planning
WAPC Reference:	29-50143-1
DAP File No:	DAP/25/02840
Application Received Date:	3 January 2025
Report Due Date:	8 December 2025
Application Statutory Process Timeframe:	90 Days with an additional 249 days agreed
Attachment(s):	1. Development plans 2. MRS location and zoning plan 3. MRWA referral responses dated 25 February 2025 and 8 July 2025 4. PCA 5. Jandakot Structure Plan 6. Transport Impact Statement, Revision I, dated October 2025 7. MRWA response dated 3 December 2025

Responsible Authority Recommendation

That the Metro Outer Development Assessment Panel resolves to:

Accept that the DAP Application reference DAP/25/02840 is appropriate for consideration as a rural land use under the Metropolitan Region Scheme and is compatible with the purpose of the Rural zone under the Metropolitan Region Scheme.

Refuse DAP Application reference DAP/25/02840 and accompanying plans date stamped 3 January 2025 by the Department of Planning, Lands and Heritage for the following reasons:

1. The proposed driveway and crossover onto Thomas Road encroach into a right of way (Lot 100 on D 31071). The proposed crossover onto Thomas Road would conflict with vehicle access to and from the right of way and Thomas Road.
2. The application proposes access to and from Thomas Road for light vehicles and B-triple road trains. Thomas Road is reserved for Primary Regional Roads under the Metropolitan Region Scheme and is under the care and control of Main Roads Western Australia. Main Roads Western Australia is the responsible authority for managing the safety and function of Thomas Road. Main Roads Western Australia has not provided support for the proposal.
3. Insufficient evidence has been provided to demonstrate adequate provision can be made for the access to and egress from the site onto Thomas Road. The Transport Impact Statement (Premise, Revision I, dated October 2025) is not supported for the following reasons:
 - (a) inconsistent truck movements per day are specified;
 - (b) survey data from similar sites has not been presented to provide evidence for the proposed trips generated and attracted to the development;
 - (c) information is not provided to detail the reason traffic generation information in Transport Impact Statements version H and version I is different from Version G;
 - (d) future traffic volume considerations have not been provided;
 - (e) Main Roads Western Australia crash data information for the period from 2017 to 2022 is provided. The current Main Roads Western Australia crash data information is for 2020-2024;
 - (f) the desirable minimum sight distance is incorrectly specified to be 248m. A desktop assessment at the Department of Planning, Lands and Heritage suggests that the sight distance provided is approximately 156m. Main Roads Western Australia have advised the Department of Planning, Lands and Heritage that a Safe Intersection Sight Distance of 156m would represent a Safe Intersection Sight Distance fail; and
 - (g) the proposed mountable kerb is not sufficient to enforce left-out only vehicle movements.

Details: outline of development application

Region Scheme	Metropolitan Region Scheme
Region Scheme - Zone/Reserve	Rural zone
Local Planning Scheme	Shire of Serpentine Jarrahdale Local Planning Scheme No. 3
Local Planning Scheme - Zone/Reserve	Rural zone
Local Planning Scheme Use Class and permissibility:	Industry - rural. Discretionary
Structure Plan/Precinct Plan	Jandakot Structure Plan
Structure Plan/Precinct Plan - Land Use Designation	Rural economic living
Lot Size:	Lot 1324 (19ha) Lot 100 (1ha)
Existing Land Use:	N/A. The site was previously used as a poultry farm
State Heritage Register	No

Local Heritage	☒ N/A ☐ Heritage List ☐ Heritage Area
Design Review	☒ N/A ☐ Local Design Review Panel ☐ State Design Review Panel ☐ Other
Bushfire Prone Area	Yes
Swan River Trust Area	No

Proposal:

The application proposes a facility for cleaning, drying, storing and dispatching oats in bulk quantities at Lot 32 (No. 1324) Thomas Road, Oakford. The proposed facility is to operate 24 hours per day, seven days per week for 50 weeks per year. Grain is to be delivered to the facility by 36m B-triple road trains.

Background:

Local context

The lot was previously used as a poultry farm. The lot is developed with a dwelling, sheds and paddocks. The Shire of Serpentine Jarrahdale's (the Shire) report provides information on the locality and an assessment of the proposal under the Shire of Serpentine Jarrahdale Local Planning Scheme No. 3 (LPS No. 3).

Metropolitan Region Scheme

The land is zoned Rural under the Metropolitan Region Scheme (MRS) (**Attachment 2 - MRS location and zoning plan**). Clause 22 of the MRS specifies the following purposes for the Rural zone under the MRS:

rural —

- (i) *to provide for the sustainable use of land for agriculture; and*
- (ii) *to assist in the conservation and wise use of natural resources, including water, flora, fauna and minerals; and*
- (iii) *to provide a distinctive rural landscape setting for urban areas; and*
- (iv) *to accommodate carefully planned rural living developments; and*
- (v) *to accommodate tourism in keeping with rural character, including, for example, farm stay accommodation, breweries and wineries;*

The MRS does not include land use definitions.

Delegation of powers to local government

The application proposes access to Thomas Road which is reserved for Primary Regional Roads (PRR) under the MRS. The Western Australian Planning Commission (WAPC) has delegated the Shire of Serpentine Jarrahdale with the power to determine the application under the MRS (WAPC Delegation 2025/04 Powers of Local Governments Metropolitan Region Scheme). In regard to development applications on zoned land that abut land reserved for PRR under the MRS, the aforementioned delegation specifies that that the power delegated to local government may be

exercised if the delegate complies with the referral requirements specified in the delegation, and if the delegate accepts and applies the advice and/or recommendation (if any) from the relevant public authority specified in the delegation. In this instance the delegate is the Shire and the relevant public authority is Main Roads Western Australia (MRWA).

Further, the delegation specifies that:

Where the advice and/or recommendation provided by the public authority specified in clause 2 above, is not acceptable to the delegate, the application, together with the advice and/or recommendations provided by all public authorities consulted, and the reasons why the recommendation is not acceptable to the delegate, shall be referred immediately to the WAPC for determination.

MRWA advised the Shire that additional information was required before MRWA would be in a position to support the proposal (**Attachment 3 - MRWA referral responses dated 25 February 2025 and 8 July 2025**). MRWA's advice and recommendation was not acceptable to the Shire. Accordingly, on 29 July 2025, the Shire referred the application to the WAPC for the WAPC to prepare a report to the Metro Outer Development Assessment Panel (MODAP).

Development Control Policy 5.1 - Regional Roads (Vehicular Access)

As previously detailed, Thomas Road is reserved for PRR under the MRS. *Development Control Policy 5.1 - Regional Roads (Vehicular Access)* (DC 5.1) details the WAPC's policy position on regional roads. The objectives of DC 5.1 are as follows:

- *To outline planning principles to be applied in the determination of proposals for vehicle access to regional roads.*
- *To ensure that vehicle access to regional roads and the type of abutting developments is controlled and conforms with sound town planning principles.*
- *To improve traffic flow and safety on all regional roads, either new or existing, by minimising the number of junctions or driveways.*

Section 3.3.1 of DC 5.1 specifies (inter alia) that:

In considering applications for access on regional roads, the effects of the proposals on traffic flow and road safety will be the primary consideration.

Section 3.3.2 of DC 5.1 specifies (inter alia) that:

Where alternative access is or could be made available from side or rear streets or from rights of way, no access shall be permitted to the regional road unless special circumstances apply.

Section 3.3.5 of DC 5.1 specifies that:

In determining applications for development involving the formation, laying out or alteration of a means of access to regional roads, the following must be considered:

- i) *the effects of the development on traffic flow and safety, the character and function of the road, the volume and speed of traffic, the width of the carriageway and visibility; and*

- ii) *the volume and type of traffic generated by the development.*

Section 3.3.6 of DC 5.1 specifies that:

Where access is permitted, conditions may be imposed prescribing the location and width of the junction or driveway to ensure adequate visibility and to provide for the safe and convenient movement of vehicles both entering and leaving the traffic stream. In determining design requirements for junctions and driveways, the Commission has regard to standards recommended by both the National Association of State Road Authorities and Main Roads Western Australia.

Planning Control Area

A minor portion of Lot 1324 is within a Planning Control Area 1324 (PCA) declared to protect land required for the proposed Anketell/Thomas Road primary regional road corridor (**Attachment 4 - PCA**). The proposed development does not impact the PCA area.

Perth and Peel@3.5million and the South Metropolitan Peel Sub-regional Planning Framework

Perth and Peel@3.5million and the South Metropolitan Peel Sub-regional Planning Framework identify the lot as being within a planning investigation area. Land that is within a planning investigation area is to be subject to further planning investigations to consider its suitability for a possible change of use.

Jandakot Structure Plan

The land is within the area of the WAPC's Jandakot Structure Plan. The lot is identified as rural economic living under the Jandakot Structure Plan (**Attachment 5 - Jandakot Structure Plan**). The Jandakot Structure applies a 4ha minimum lot size to rural living lots.

Legislation and Policy:

Legislation

Planning and Development Act 2005

Metropolitan Region Scheme

State Government Policies

State Planning Policy 2.5 - Rural Planning (SPP 2.5)

Development Control Policy 5.1 - Regional Roads (Vehicular Access) (DC 5.1)

State Government Strategies

Perth and Peel@3.5million and the South Metropolitan Peel Sub-regional Planning Framework

Structure Plans/Activity Centre Plans

Jandakot Structure Plan

Consultation:

Public Consultation

The application was advertised by the Shire. Public consultation is addressed in the Shire's report.

Referrals/consultation with Government/Service Agencies

The Shire referred the application to MRWA, the Department of Water and Environmental Regulation (DWER), the Department of Biodiversity, Conservation and Attractions (DBCA) and the Department of Fire and Emergency Services (DFES). The Shire is responsible for addressing any matters raised by DWER, DBCA and DFES in the Shire's report.

MRWA referral response dated 25 February 2025

In regard to the original development plans and the Transport Impact Statement provided with the application (Premise, Revision F, dated December 2024), MRWA advised that MRWA is not in a position to support the proposal without the provision of additional information. (**Attachment 3**).

MRWA referral response dated 8 July 2025

A revised Transport Impact Statement (Premise, Revision G, dated May 2025) and revised intersection plans were provided to MRWA. MRWA advised that MRWA is not in a position to support the proposal without the provision of additional information. (**Attachment 3**).

MRWA comments 12 September 2025 and 9 October 2025

On 19 August 2025, the applicant provided MRWA with revised intersection plans. MRWA provided the following preliminary comments on the revised intersection plans on 12 September 2025:

- *The raised island (using mountable and semi-mountable kerbing) must effectively deter non-compliant movements and support the Left-In, Left-Out (LILLO) arrangement. This should be reinforced with signage and pavement markings as per Main Roads standard drawing 200631-0002.*
- *The island angle for the left-turn-out movement must be 70 degrees, in line with Main Roads Supplement to Austroads Guide to Road Design – Part 4A, Section 6.1.3.*
- *Swept paths should be refined to maximise the use of semi-mountable kerbing and minimise mountable kerbing to further support the LILLO function.*
- *Street lighting provision is required as previously advised (refer to attached Main Roads letter) and may impact the proposed treatment.*

On 12 September 2025, the applicant provided MRWA with a revised Transport Impact Statement (Premise, Revision H, dated August 2025) and revised intersection plans.

MRWA provided the following comments on the revised Transport Impact Statement and revised intersection plans on 9 October 2025:

- *The TIS and associated appendices are to be updated to include the latest concept sketches and development plans.*
- *The concept sketch is to be revised to incorporate appropriate signage and line marking. Such as, left-turn out pavement arrows, 'Give Way' line and signage etc.*

MRWA comments 3 December 2025

The applicant provided a revised Transport Impact Statement (Premise, Revision I, dated October 2025) and revised intersection plans (**Attachment 6 - Transport Impact Statement, Revision I, dated October 2025**). The Transport Impact Statement and revised intersection plans were referred to MRWA for comment on 5 November 2025. MRWA comments were received 3 December 2025 and advised it does not support the application as amended due to concerns relating to road safety and non-compliance with Main Roads design guidelines and Driveways Policy. (**Attachment 7 - MRWA response dated 3 December 2025**). The Transport Impact Statement and revised intersection plans revised are discussed later in this report.

Design Review Panel Advice

Not applicable

Planning Assessment:

WAPC assessment

As previously detailed, the lot is zoned Rural under the MRS. The proposal for cleaning, drying and storing grain at the scale proposed by this application is broadly consistent the purpose of the Rural zone.

The WAPC's assessment of the proposal, and report to the MODAP under the MRS, is limited to matters related to the proposed access to Thomas Road, and the requirements of Clause 43 of the MRS. Clause 43 of the MRS requires the WAPC have regard for a wide range of matters if, and to the extent, they are of State or regional importance. The proposed facility does not have State or regional importance. Notwithstanding, the application proposes access to a regional road. Clause 43 specifies (inter alia) that the WAPC must have regard to the following matters:

- (q) *whether the proposed means of access to and egress from the site are adequate and whether adequate provision has been made for the loading, unloading, manoeuvring and parking of vehicles;*
- (r) *the amount of traffic likely to be generated by the proposal, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;*

The assessment of the proposal under the land use requirements of LPS No. 3, and the Shire's Local Planning Strategy, and any relevant development standards, is required to be addressed by the Shire and included in the Shire's report to the MODAP.

Right of way closure

The proposed crossover onto Thomas Road encroaches onto a right of way (Lot 100 on D 31071) which would conflict with vehicle access to and from the right of way and Thomas Road. For the proposed access to be facilitated the right of way would be required to be permanently closed which would be required to be initiated by the local government and approved by the Minister for Lands.

Main Roads has advised that prior to the closure of the right of way being considered, comprehensive and detailed consultation with all relevant stakeholders should be undertaken, which should include:

- Review of the ROW's history and original purpose for which the land was reserved.
- Engagement with adjoining landowners to understand and determine the future access requirements.
- Assessment of the potential reliance on this ROW for future subdivision of rural lots, including its role in providing road access and accommodating additional traffic if required.

Main Roads further advised that premature closure of the right of way may compromise future access arrangements and limit flexibility for future growth.

In this regard, the submitted application does not demonstrate suitable access and egress from the site.

Transport Impact Statement (Premise, Revision I, dated October 2025) and revised crossover plans

The encroachment of the crossover onto the right of way was discussed with the applicant and as a result the applicant prepared a revised Transport Impact Statement (Premise, Revision I, dated October 2025) and revised accessway/crossover plans that shifted the crossover outside the right of way (**Attachment 6**). The revised crossover remains in conflict with the right of way due to its close proximity to the right of way. The revised location would still require the closure of the right of way.

The applicant was advised that the revised intersection plans were not supported by the Department however the applicant asserted that the revised Transport Impact Statement and the revised intersection plans be forwarded to MRWA for comment. As previously detailed MRWA have reviewed the additional information and do not support the revised crossover and driveway location due to concerns relating to road safety and non-compliance with Main Roads design guidelines and Driveways policy. (**Attachment 7**).

In addition to the issue of the conflict with the right of way, the following issues have been identified with the revised Transport Impact Statement.

Vehicle trips

The information provided regarding the trips generated and attracted to the development is not based on evidence or survey data, with traffic generation information presented within the document being inconsistent with previously

presented versions. No supporting information has been provided for the reduction in traffic attracted and generated by the site in the current version.

Future traffic volumes

Future traffic volume considerations have not been provided.

Crash information

The revised Transport Impact Statements provides MRWA crash data information for the period from 2017 to 2022. This should be updated with the current MRWA crash data information for 2020-2024.

Minimum sight distance

The revised Transport Impact Statement specifies that the desirable minimum sight distance is 248m and that this sight distance is achievable on both sides of the driveway. A desktop assessment suggests that the actual sight distance provided is approximately 156m. MRWA advised the Department of Planning, Lands and Heritage on 14 November 2025 that a Safe Intersection Sight Distance (SISD) of 156m would represent a SISD fail.

Left-in left-out access

The proposed mountable kerb is not sufficient to enforce left-out only vehicle movements.

Alternative access

It is noted that the revised Transport Impact Statement details that:

Furthermore, it is questionable whether the existing ROW could have a direct access to a Primary Distributor with rising traffic volumes without major improvements to the connection; similar to what was achieved with the proposed crossover.

In this regard, the potential for the right of way intersection to be constructed to accommodate B-triple road trains has not been demonstrated.

Conclusion:

Insufficient information has been provided to demonstrate adequate provision can be made for the access to and egress from the site onto Thomas Road. Further it is unclear if the proposed development can be achieved at Lot 32 (No. 1324) Thomas Road, Oakford, for the following reasons:

- Thomas Road is under the care and control of MRWA and MRWA has not provided support for the application as the proposed accessway and crossover does not comply with Main Roads Driveway Policy and raises safety concerns;
- a right of way would be required to be closed to facilitate the proposed accessway/crossover. There is a significant possibility that an application to close this right of way would not be supported by the Minister for Lands and Main Roads have advised permanent closure may compromise future access arrangements and limits flexibility for growth;

- a potential alternative intersection location with Thomas Road that does not conflict with the right of way, and that is supported by MRWA, has not been demonstrated; and
- should the proposal be redesigned to remove direct vehicle access onto Thomas Road, and for vehicles to use the right of way, the right of way would be required to be constructed. Construction of the intersection of the right of way with Thomas Road would be required to be approved by MRWA. There is no certainty that MRWA would support construction of this intersection. Further, the potential for the right of way intersection to be constructed to accommodate B-triple road trains has not been demonstrated.

For these reasons the application is recommended to be refused.