Woodsome Management

Eglinton District Centre Precinct Structure Plan - Central Precinct Amendment

Transport Impact Assessment

September 2026

Project Code: 10154

Document Reference: TP_RP_0001

PJA
Suite 34, Level 2
160 St Georges Terrace
Perth WA 6000
Australia
pja.com.au

Version Control and Approval

Version	Date	Main Contributor	Issued by	Approved by
A – Draft	20 August 2026	RD	RD	SD
B – Final Address client comments	10 September 2026	RD	RD	SD
C – Final Address further comments	30 September 2026	RD	RD	RD

Prepared for

Adam D'Alessandro
Senior Project Manager
Woodsome Management
Office 1
20 Altona Street
West Perth WA 6005
AUSTRALIA

Contents

Section		Page
1	Introduction	1
1.1	Background	1
1.2	Purpose of the Report	1
2	Site Context	2
2.1	Proposed Eglinton District Centre Activity Centre – Central Precinct Amendment	2
2.2	Eglinton District Centre Precinct Structure Plan – Previous Approvals	3
2.3	North Eglinton Local Structure Plan (LSP)	5
2.4	Mitchell Freeway Extension	5
3	Existing Situation	6
3.1	Subject Site & Surrounds	6
3.2	Existing Land Use and Access Arrangements	6
3.3	Existing Road Network	6
3.4	Traffic Volumes	8
3.5	Existing Cycle Network	8
3.6	Existing Public Transport Access	9
4	Proposed Development	11
4.1	Overview	11
4.2	Access Arrangements	12
4.3	Car Parking	14
4.4	Bike Parking	16
4.5	Active Transport Network	18
4.6	Public Transport	20
4.7	Traffic Management	21
5	Traffic Volumes and Traffic Impact	22
5.1	Forecast Volumes	22
5.2	Road Typologies and Daily Traffic Per Road Type	27
5.3	Intersection Performance	31
6	Active Transport	36
6.1	Overview	36
6.2	Pedestrian Access/Facilities	36

6.3 Cycle Access/Facilities 36

7 Safety Issues 38

8 Summary and Conclusions 40

List of Tables

Table 3-1: Existing Road Network Classification and PSL Summary 7
Table 4-1: Proposed Access Points and Junction Types 12
Table 4-2: PSP Amendment Car Parking Supply 16
Table 4-3: Suggested PSP Amendment Bike Parking Supply 17
Table 5-1: Peak Hour Traffic Flow Differences 23
Table 5-2: Daily Traffic Flow Differences 24
Table 5-3: Road Typologies and Vehicles Per Day 28

List of Figures

Figure 2-1: Eglinton District Centre Precinct Structure Plan and Amendment Site 2
Figure 2-2: Eglinton District Centre Precinct Structure Plan – 2021 4
Figure 2-3: Eglinton District Centre Precinct Structure Plan – 2023 Subdivision 4
Figure 2-4: North Eglinton Local Structure Plan Site 5
Figure 3-1: Subject Site & Current Surrounds 6
Figure 3-2: Existing Road Network 7
Figure 3-3: Cycle Facilities 9
Figure 3-4: Local Bus Routes between Eglinton and Alkimos Stations 10
Figure 4-1: Proposed Amendment Site Plan 11
Figure 4-2: Site Access Arrangements 13
Figure 4-3: Key Active Transport Network 19
Figure 5-1: Forecast Daily Volumes 25
Figure 5-2: Bridge Removal 26
Figure 5-3: Road Cross Sections 27
Figure 5-4: Proposed Road Hierarchy 30
Figure 5-5: Original Subdivision Assessed Intersection Performance 32
Figure 5-6: Modelled Road Network 33
Figure 5-7: 2031 AM Peak Network Performance 34
Figure 5-8: 2031 PM Peak Network Performance 34
Figure 6-1: Proposed Cycleway Links through the site (Orange Lines) 37
Figure 7-1: Crash Locations 2021-2025 38

1 Introduction

1.1 Background

1.1.1 PJA has been commissioned by Woodsome Management to undertake and prepare a Transport Impact Assessment update for a site at Eglinton which is proposed to be an amendment to the currently permitted Eglinton District Centre Precinct Structure Plan as part of the Eglinton Activity Centre.

1.1.2 This report has been prepared in line with the Western Australian Planning Commission (WAPC) Transport Impact Assessment Guidelines Volume 2 – Structure Plans (2016).

1.2 Purpose of the Report

1.2.1 Western Australian Planning Commission Transport Assessment Guidelines (WAPC Guidelines) provide direction on the level of assessment which is necessary to be carried out with respect to the likely traffic impact of a development proposal. Typically, any development which is expected to have a 'high' traffic impact, that is, generating more than 100 trips in the peak hour is satisfied by a Traffic Impact Assessment (TIA) of which this document provides the assessment of the amendment site at Eglinton.

1.2.2 In accordance with the WAPC Guidelines, this TIA outlines:

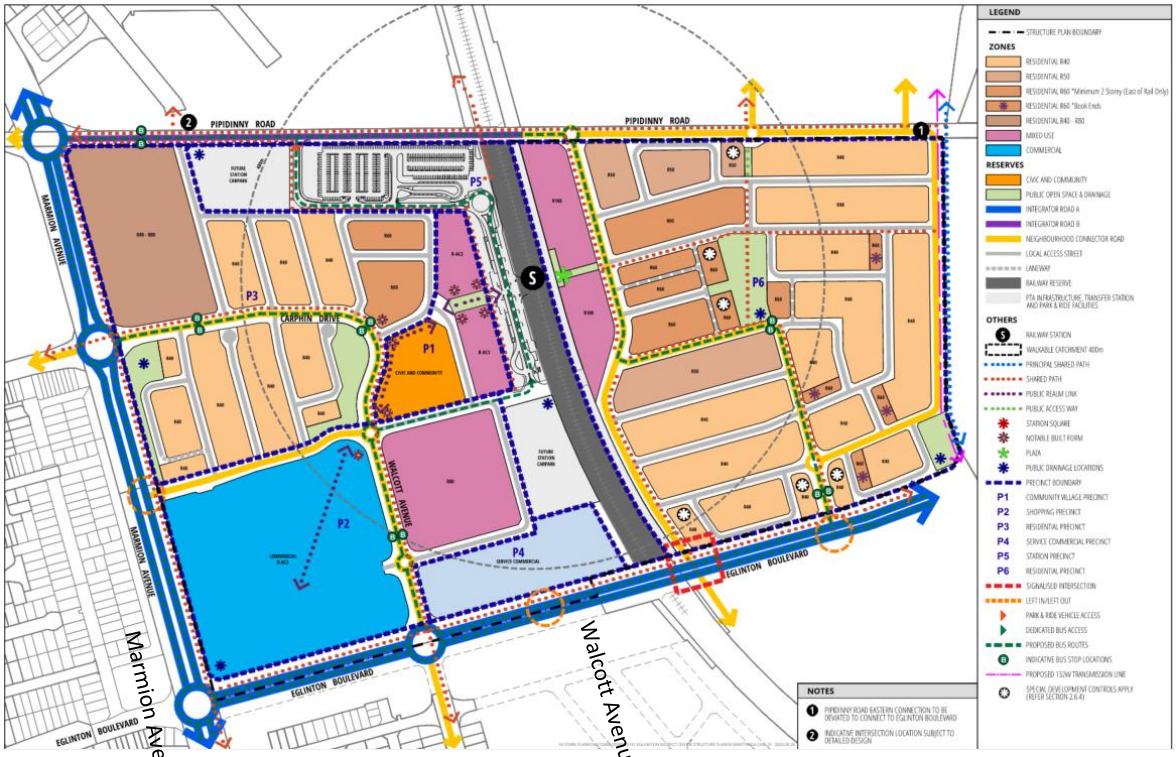
- The site context and its proximity to adjacent sites.
- Existing transport conditions proximate to the site.
- The proposed site – internal road network, connections and changes to the external road network.
- Analysis of the internal road network and connections to the external road network.
- Safety.
- Summary and conclusions.

2 Site Context

2.1 Proposed Eglinton District Centre Activity Centre – Central Precinct Amendment

2.1.1 The proposed amendment site to the Eglinton District Centre Activity Centre is located on the north-east corner of the intersection of Marmion Avenue and Eglinton Boulevard, running along the eastern side of Marmion Avenue from Eglinton Boulevard to Pipidinny Road as shown in Figure 2-1. The proposed site lies within the previously approved Precinct Structure Plan.

Figure 2-1: Eglinton District Centre Precinct Structure Plan and Amendment Site



Source: Rowe Group September 2026

2.1.2 Land uses proposed as part of this amendment, include 36,000m^2 of commercial floorspace and residential dwellings based on the following:

- Residential (single) ~409 dwellings
- Residential (grouped) ~88 dwellings
- Residential (units/apartments) ~148 dwellings
- Bulky Goods 4,600m^2
- Retail 20,000m^2
- Non-retail 11,400m^2

The residential dwelling yield is noted to total 645 dwellings. For assessment of the impacts of the PSP a higher intensity yield has been adopted, this reflecting about 875 dwellings. This higher intensity yield density/yield is unlikely to be delivered within the structure plan timeframe with ultimate traffic impacts likely to be less than shown in this report.

2.2 Eglinton District Centre Precinct Structure Plan – Previous Approvals

The first part of the proposed Eglinton Precinct Structure Plan was the District Centre site shown in Figure 2-2, which was granted approval in 2021 for the proposed mixed development of commercial, residential and retail located around the newly opened Eglinton Rail station on the Yanchep Line. The whole site was granted subdivision approval in 2023 as shown in Figure 2-3. The Eglinton DC site also includes a Park and Ride facility adjacent to the station car park with provision of 428 spaces.

2.2.1 The originally approved PSP proposed the following land uses within it, with identical commercial 36,000m^2 floorspace:

- Residential 589 dwellings
- Education 1,220 students
- Bulky Goods 4,600m^2
- Retail 20,000m^2
- Non-retail 11,400m^2

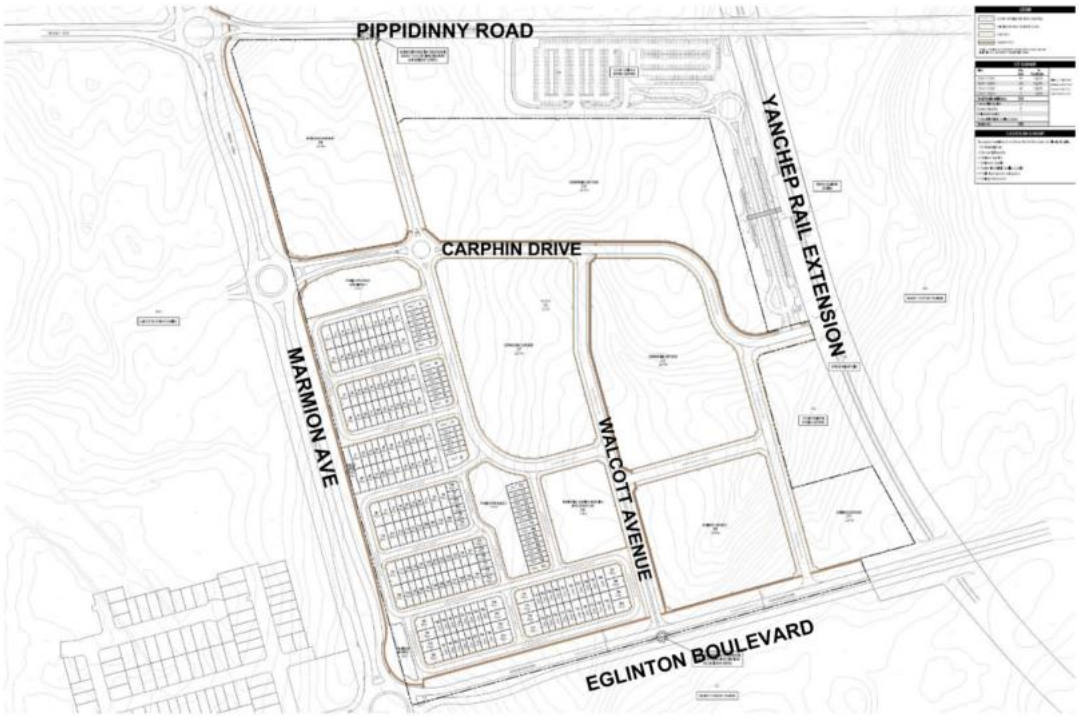
2.2.2 The previously approved school site within the eastern precinct east of the railway line now comprises approximately 150 single lot dwellings. These dwellings and their approval are included in the TIA for the Eastern Precinct Amendment to the PSP, currently in the approvals process and likely to be approved shortly.

Figure 2-2: Eglinton District Centre Precinct Structure Plan – 2021



Source: Eglinton Activity entre Plan - Transport Assessment TIA (ARUP, March 2019)

Figure 2-3: Eglinton District Centre Precinct Structure Plan – 2023 Subdivision

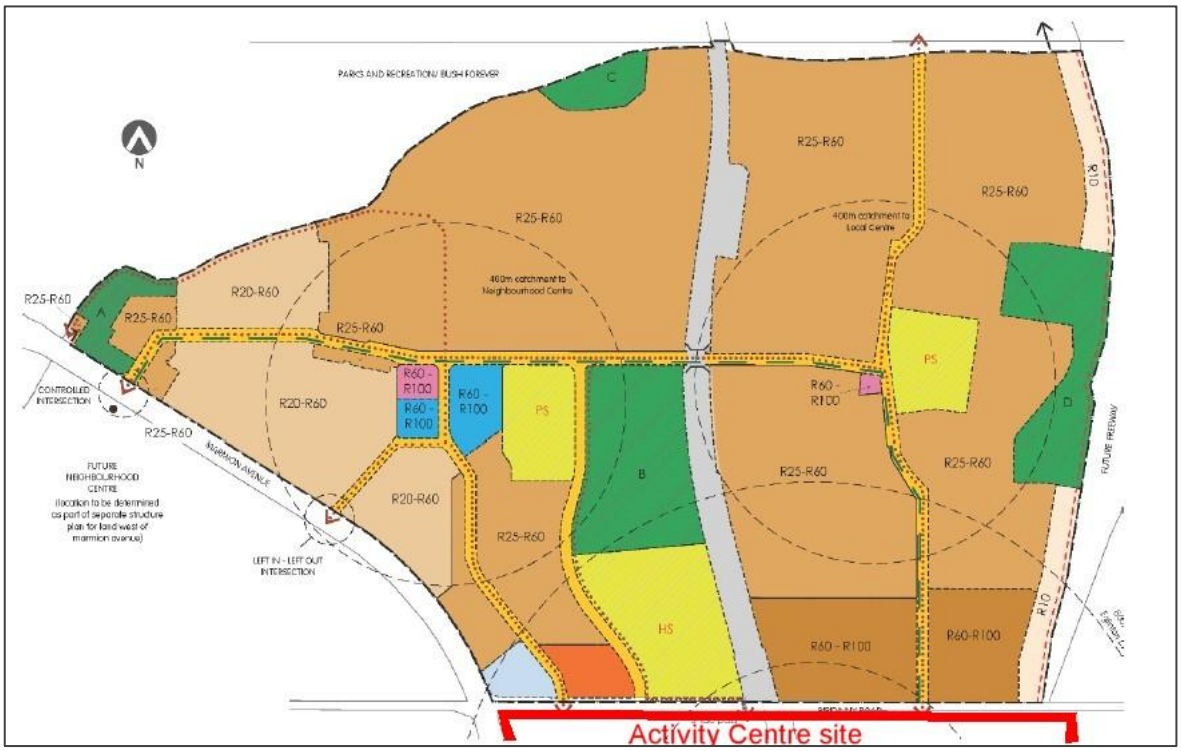


Source: Subdivision TIA (ARUP, April 2023)

2.3 North Eglinton Local Structure Plan (LSP)

2.3.1 The North Eglinton Local Structure Plan lies north of the amendment site, to the north of Pipidinny Road. The North Eglinton LSP site is shown in Figure 2-4 below in relation to the Activity Centre Site, including the amendment site.

Figure 2-4: North Eglinton Local Structure Plan Site



2.4 Mitchell Freeway Extension

2.4.1 To the east of the amendment site is land secured to deliver the planned extension to the Mitchell Freeway which will run between Romeo Road to the south of the site and Yanchep to the north.

3 Existing Situation

3.1 Subject Site & Surrounds

3.1.1 The subject site is located to the west of the Yanchep railway line and is bounded by Pipidinny Road to the north, the railway line to the east, Marmion Avenue to the west and cleared land under development to the south. The site is currently bushland with trails transecting the site.

Figure 3-1: Subject Site & Current Surrounds



Source: Google Maps

3.2 Existing Land Use and Access Arrangements

3.2.1 The site is currently unoccupied bushland and is private property with no public access.

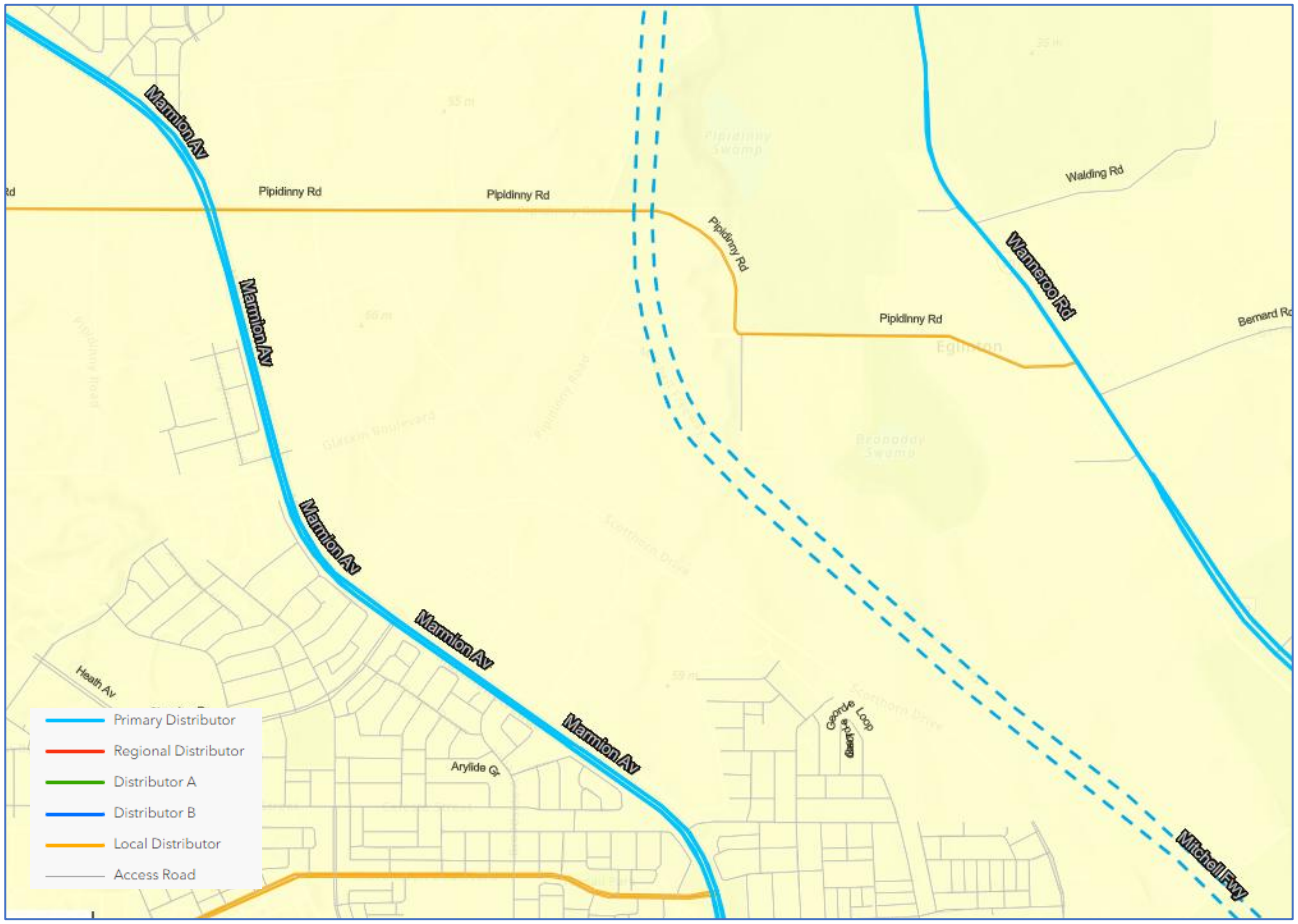
3.3 Existing Road Network

3.3.1 A summary of the road classifications and speed limits on the surrounding road network is provided in Table 3-1 overleaf with Figure 3-2 showing the road hierarchy network.

Table 3-1: Existing Road Network Classification and PSL Summary

Road Name	Network Type	Road Classification	Posted Speed Limit
Pipidinny Road	Local Road	Local Distributor	80 km/hr (east of Marmion Ave) 50k m/hr (west of Marmion Ave)
Marmion Avenue	State Road	Primary Distributor	80 km/hr
Mitchell Freeway (proposed)	State Road	Primary Distributor	TBA
Wanneroo Road	State Road	Primary Distributor	90 km/hr

Figure 3-2: Existing Road Network



Source: Main Roads Information Mapping System

Pipidinny Road

3.3.2 Pipidinny Road is a one-lane two-way road, classified as local distributor road under the Main Roads WA functional road hierarchy and subject to a 50km/h speed limit west of Marmion Avenue and 80km/hr east of Marion Avenue. It is approximately 6m wide with no footpaths adjacent to the site. Once the Mitchell Freeway is developed, Pipidinny Road will be a cul-de-sac on both sides of the freeway, i.e. no access will be provided through to Wanneroo Road.

Marmion Avenue

3.3.3 Marmion Avenue is a two-lane dual carriageway, classified as a Primary Distributor Road under the Main Roads WA functional road hierarchy and subject to the speed limit of 80km/h. It is a line marked and sealed road with a carriageway of approximately 10m wide in each direction.

Wanneroo Road

3.3.4 Wanneroo Road is a two-lane dual carriageway, linking Joondanna and Yokine in the south with Wanneroo and Yanchep in the north. It is classified as a Primary Distributor Road under the Main Roads WA functional road hierarchy and is subject to a speed limit of 70km/h. It is a line marked and sealed road with a carriageway of approximately 10m wide in each direction.

Mitchell Freeway Extension

3.3.5 The proposed Mitchell Freeway extension will run north-south on safeguarded land to the east of the amendment site. The freeway will be a Primary Distributor with two lanes in both directions.

3.4 Traffic Volumes

3.4.1 Existing traffic volumes have been obtained from Main Roads (WA) and this shows there were approximately 17,500vpd (with 7.0% heavy vehicles) on Marmion Avenue in the vicinity of Pipidinny Road in 2024/25. This has increased from 14,140vpd in 2021/22 at an annual rate of about 1,120vpd additional traffic per year.

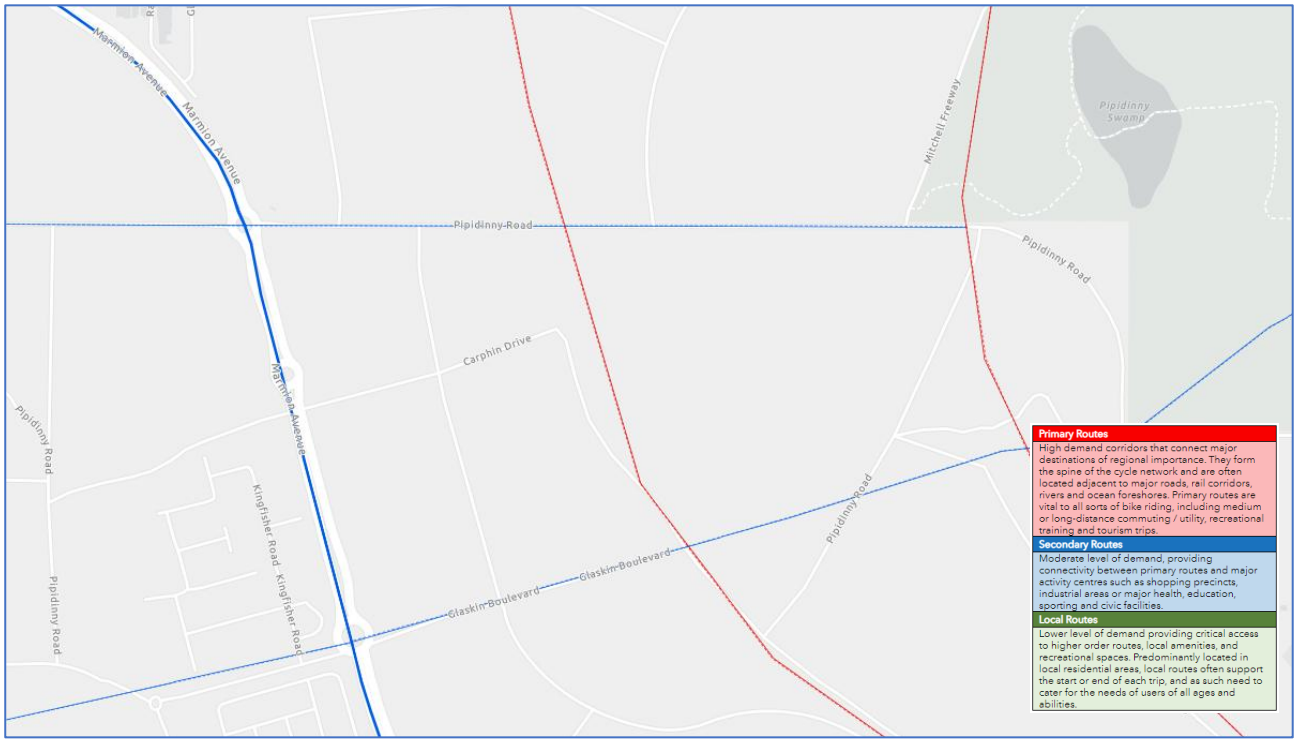
3.5 Existing Cycle Network

3.5.1 There are cycling facilities within the vicinity of the site as per the Perth and Peel Long-Term Cycle Network (LTCN) which are shown on Figure 3-3 and are described as follows:

- Secondary Route along Marmion Avenue connecting towards Yanchep in the north, and towards Alkimos in the south.
- Secondary route along Pipidinny Road running between Marmion Avenue to the west and the future Mitchell Freeway to the east.
- Secondary route running between Marmion Avenue to the west and the future Mitchell Freeway to the east along the southern border of the Activity Centre site.

It should be noted the Primary Route shown along the alignment of the Yanchep rail line is indicative only as the Principal Shared Path within the rail corridor terminates at Alkimos and does not extend further northwards. The intent is for cyclist to find alternate routes or a developer to offer alternatives.

Figure 3-3: Cycle Facilities



Source: Department of Transport LTCN for Perth and Peel
(https://dot-wa.maps.arcgis.com/apps/webappviewer/index.html?id=1e739953bbee461f81ffe3a8157894b5)

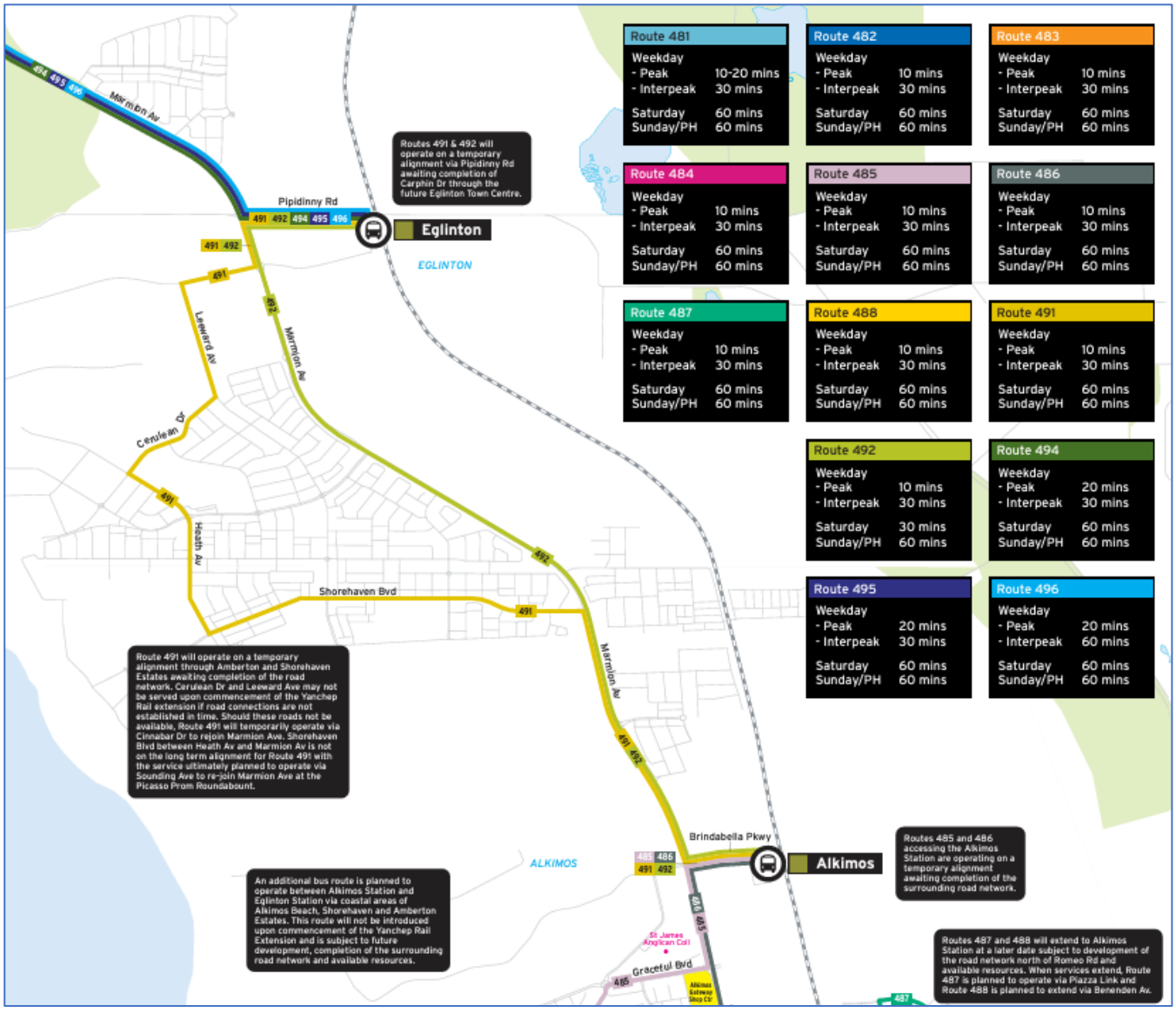
3.6 Existing Public Transport Access

Eglinton Station

3.6.1 Eglinton Station provides rail journeys to Yanchep to the north and Alkimos/Perth to the south. The station has provision for 428 car parking spaces and is also served by the bus services 491, 492, 494, 495 and 496 which provide 10-minute frequencies within the peak hour and travel along Marmion Avenue between Alkimos Station and Eglinton Station.

3.6.2 The local bus network is shown in Figure 3-4 below, the network shows the frequency and connectivity between Eglinton and Alkimos stations with connectivity to Yanchep to the north.

Figure 3-4: Local Bus Routes between Eglinton and Alkimos Stations



Source: www.mysaytransport.wa.gov.au

4 Proposed Development

4.1 Overview

4.1.1 The proposed amendment site development is shown in Figure 4-1 below and is comprised of 33.706ha of residential, commercial and mixed-use development comprising differing densities as well as allowance for public open space and a future community purpose identified as a future library and community centre.

Figure 4-1: Proposed Amendment Site Plan



4.1.2 Land uses proposed as part of this amendment, include the following:

- Residential (single) ~409 dwellings
- Residential (grouped) ~88 dwellings
- Residential (units/apartments) ~148 dwellings
- Education Nil
- Bulky Goods 4,600m^2
- Retail 20,000m^2
- Non-retail 11,400m^2

As noted previously, the above residential yield is an expecetd yield that should be delivered across the PSP. The higher intensity yields have been used in this report to assess the transport impacts, even though it may be unlikely.

4.2 Access Arrangements

4.2.1 Access arrangements for the proposed development will be provided in five locations:

- one from Pipidinny Road (with connection further north into the Allara development north of Pipidinny Road, likely to be a roundabout)
- two from the future Eglinton Boulevard (one an intersection and the other a LILO direct into the service commercial super lots); and
- two from Marmion Avenue.

The form and function of the proposed access points and intersections are listed in Table 4-1 below and shown in Figure 4-2.

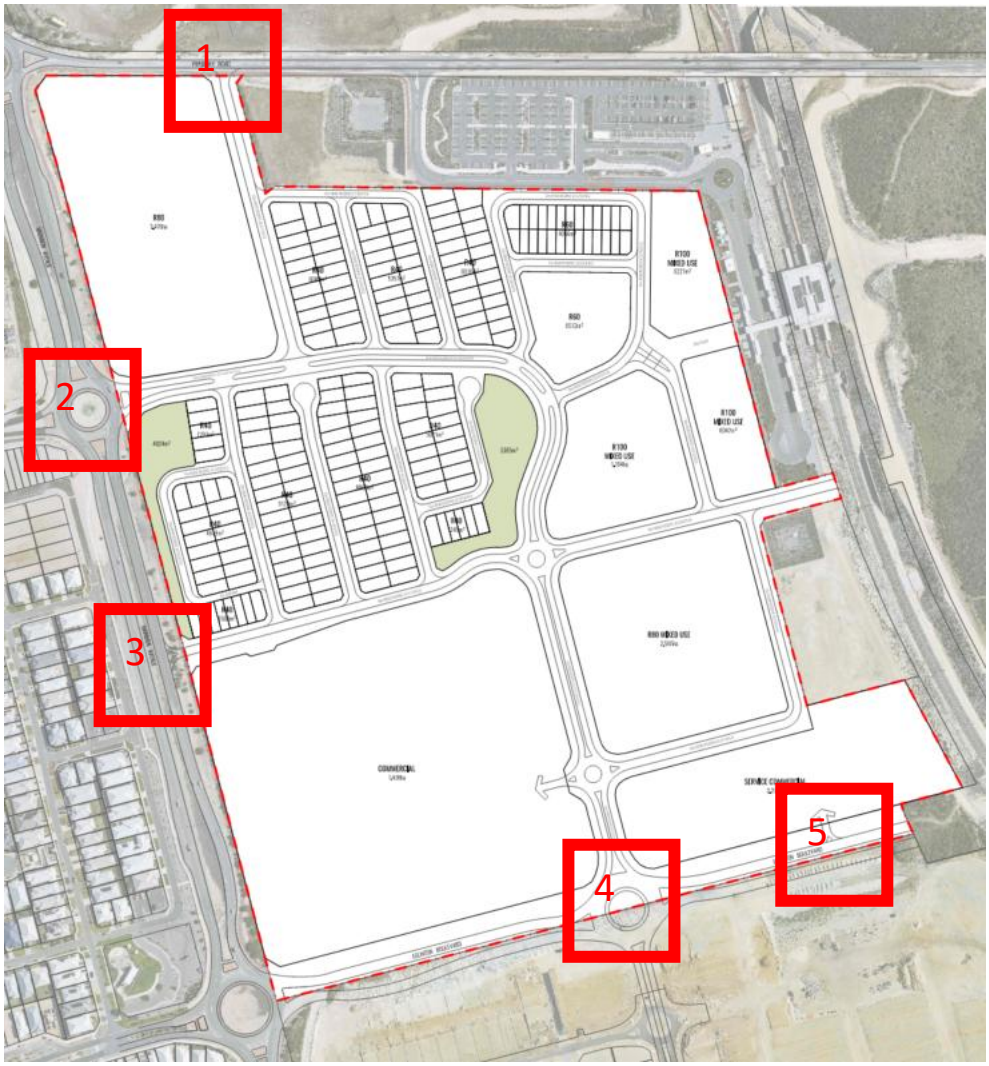
Table 4-1: Proposed Access Points and Junction Types

No.	Access Point	Junction Type	Connecting Road	No. of Lanes
1	North	Roundabout	Pipidinny Road	2
2	Carpin Drive	4-way roundabout	Marmion Avenue	2
3	West	Left in/left out	Activity Centre	2
4	South	4-way roundabout	Eglinton Boulevard	2
5	South	Left in/left out	Eglinton Boulevard	2

These access arrangements are similar to the previously approved PSP with the following noted differences:

- The future bridge over the railway line is proposed to be removed
- The proposed LILO on Eglinton Boulevard (access 5) is to be direct into the service commercial lots and not a public road
- There is proposed to be an additional LILO between the Carphin Drive and Eglinton Boulevard roundabouts (access 3).

Figure 4-2: Site Access Arrangements



4.2.2 The future bridge over the railway line was originally proposed to support the now removed future private high-school within the precinct east of the railway. This vehicle connection across the railway is not required and is proposed to removed noting pedestrian connection across the railway is available at the railway station, Pipidinny Road bridge and the Eglinton Boulevard road bridge.

4.2.3 The provision of a roundabout at the intersection of Eglinton Boulevard and Walcott Avenue (Intersection 4) would ultimately be subject to assessment by Main Roads as part of a TSAP application. The roundabout will prove the best traffic flows at this intersection. It should be noted that Eglinton Boulevard will have a median, and pedestrians will be able to cross in two separate movements with the median providing centre of road storage.

4.3 Car Parking

4.3.1 The Eglinton Activity Centre amendment site has been resolved to a high level and further planning will be required in order to resolve details regarding on and off-street parking and servicing for the centre. This will be applicable to portions west of the railway line as the proposed amendment site will be residential development with some on-street parking required and likely to be provided around POS for example.

4.3.2 The DSP established principles for Urban Design and Open Space Design. This included a principle to create improved accessibility through:

> *A well-designed place is more walkable, is safe for pedestrians, is compatible with public transit, reduces need for cars and parking, is a more efficient use of time and money for residents and visitors and has a greater connection between uses.*

Source: Alkimos Eglinton District Structure Plan March 2016 (Part 2, Explanatory Section).

4.3.3 The largely residential and mixed-use component across the majority of the site, should provide parking in accordance with Residential Design Codes application for the zoning. Land uses within the R60 zones and below should provide parking as per Volume 1 of the RDCs and R80 in line with Volume 2:

- R60 and below Single house
  - minimum of 1 space per dwelling provided on-site for residents. No provision required for visitor on-site with visitors assumed/allowed to park on-street/driveway
- R60 Grouped dwelling site
  - minimum of 1 space per dwelling provided on-site for residents plus provision for 8 visitor spaces for the 36 possible dwellings

- R80 Grouped dwelling site (in NW corner)
  - This may be possibly subdivided with about 78 individual lots and a balance grouped housing lot
  - minimum of 1 space per individual lot provided on-site for residents. No provision required for visitor on-site with visitors assumed/allowed to park on-street/driveway
  - for the balance grouped dwelling site, a minimum of 0 for 1- or 2-bedroom dwellings or 1 space per 3+ bedroom dwelling provided on-site for residents plus provision for 8 visitor spaces for the 30-35 possible grouped dwellings within the grouped dwelling lot.
- Mixed use sites (near station)
  - minimum of 0.75 to 1 space per dwelling provided on-site for residents plus provision for 22 visitor spaces for the 148 possible dwellings
- Mixed use site (Shopping Precinct)
  - minimum of 0.75 to 1 space per dwelling provided on-site for residents plus provision for 25 visitor spaces for 187 possible dwellings

4.3.4 The parking required for visitors could be provided through a combination of on-street and on-site parking, depending on use of the on-street parking. For example, within the mixed use zone, the residential and non-retail/civic on-street parking could co-exist on a reciprocal basis.

4.3.5 The TIA for the previous subdivision of the Central Precinct and the adopted Structure Plan stated that for non-residential uses there should be parking provided for 1,320 cars within the PSP area, plus provision for parking for appropriate loading areas for commercial uses. This was based on:

- 5 bays per 100m^2 for all non-residential land uses except for below
- 2 bays per 100m^2 for the bulky goods/service commercial/showroom/office land uses

4.3.6 The above rates are proposed to be retained within the Structure Plan area and required parking noted below. This is the same as the approved subdivision.

Table 4-2: PSP Amendment Car Parking Supply

Land Use	Estimated Floorspace NLA (m^2)	Parking Rate	Required Parking Supply
Non-Retail/Civic in Mix Use Precinct	11,400	2 per $100m^2$	228
Service Commercial in Service Commercial Precinct	4,600	2 per $100m^2$	92
Commercial within an PSP Precinct	20,000	5 per $100m^2$	1,000
Total	**36,000**	**Avg. Rate ~1 per 27.3m^2**	**1,320**

4.3.7 This parking supply should be mostly provided through on-site parking supply, but with the PSP nature of the development and the provision of embayed on-street parking, some of this provision can also be provided through the use of on-street parking.

4.3.8 The above parking is noted as a minimum requirement. Parking ratios may exceed these ratios (i.e. more parking) during the establishment phase of structure plan area and subdivision, whilst the Precinct is still maturing. This will allow flexibility to ensure the centre remains convenient during the early years of development.

4.4 Bike Parking

4.4.1 For bike parking, this is suggested to be provided consistent with the previously assessed rates as per the TIA for the previous subdivision:

- For residential developments: in accordance with R-codes. Suggested that resident parking be provided in secure bicycle storage within the building and visitors within the public realm. For the R60 and R80 Superlots this may involve on-site racks accessible from the street via private internal roadways. For the Mix Use Superlots this may involve bike racks being provided on-street near the building entrances.
- Non-residential developments less than $500m^2$ NLA: Minimum 2 bicycle parking rack spaces for employees and customers.

- For building employees: Secure bicycle storage bays at a rate of 1 bay per 500m^2 NLA. EOT facilities are required where 10 or more secure bicycle bays are required for an individual development, with a minimum of 1 locker per bay, and a minimum of 2 showers (1 male, 1 female) for each block of 10 bays, to a maximum of 10 total showers. EOT facilities should be secure and conveniently located.
- For customers: Bicycle parking rack spaces are to be provided at a rate of 1 bay per 750m^2 NLA and located near building entrances.

4.4.2 Adoption of parking rates from the R-codes, suggests the following parking for bikes, all within the public realm:

- R60 site with about 58 dwellings — Nil
- R80 site with about 110 dwellings (78 being single) — 3 spaces in the grouped housing lot
- Mixed use sites with about 335 dwellings — 34 spaces

4.4.3 Based on these rates for commercial uses the following parking should be provided within each sub precinct within the PSP.

Table 4-3: Suggested PSP Amendment Bike Parking Supply

Land Use	Estimated Floorspace NLA (m^2)	Employee Parking Rate	Customer Parking Rate	Employee Parking Supply (secure)	Customer Parking Supply (public realm)
Non-Retail/Civic in Mix Use Precinct	11,400	1 per 500m^2	1 per 750m^2	23	15
Service Commercial in Service Commercial Precinct	4,600	1 per 500m^2	1 per 750m^2	9	6
Commercial within an PSP Precinct	20,000	1 per 500m^2	1 per 750m^2	40	27
Total	**36,000**	**1 per 500m^2**	**1 per 750m^2**	**~70**	**~50**

4.4.4 With some overlaps in uses within the mixed used precinct, which are encouraged and expected/acceptable, there may be opportunities to reduce the total bike parking provisions of the residential and non-residential land uses.

4.5 Active Transport Network

4.5.1 The proposed amendment site will have a comprehensive active transport network throughout the site connecting it to existing provision through Carphin Drive and to future provision along Pipidinny Road and Eglinton Boulevard. The active travel network will permeate the site and provide good connections from the residential blocks to retail/commercial blocks and the train station. Footpaths are suggested to be located on at least one side of the street on residential streets and proposed to be on both sides of the street along the neighbourhood connector (with the one side to be a shared path) and on both sides of the street on streets surrounding the mixed-use lots (except for the community facility site where the footpath may be provide within the facility), commercial lots and service commercial lots.

4.5.2 There is proposed to be a west to south shared path along Carphin Drive and Walcott Avenue connecting Marmion Avenue at Carphin Drive to Eglinton Boulevard at Walcott Avenue. This link is in line with the original PSP approvals

4.5.3 There is also proposed to be a Key Pedestrian link from the railway station to the shared path on the Carphin Drive/Walcott Avenue neighbourhood connector. This will provide a high standard linkage into the Eglinton Station forecourt area. Whilst this is detail beyond structure planning, the path is provided in the road network to encourage safe cycling and connectivity through the precinct to and from the railway station.

Figure 4-3: Key Active Transport Network



4.5.4 The designs for these streets adopt current best practice, including NOT having unprotected bikes lanes within the roadway and having traffic lanes at 3.2m width on the neighbourhood connector to avoid squeezing of bikes should they ride within the roadway and this approach is endorsed by DTMI. 3.2m wide lanes are accepted by the PTA.

4.6 Public Transport

4.6.1 The proximity of Eglinton Station provides the site with a public transport system that is accessible by walking from the development and will likely be utilised by future residents in favour of their car. Furthermore, bus services that run to the station provide routes to adjacent districts such as Alkimos and Yanchep.

4.6.2 The current bus routes to and from the Eglinton Station are on a temporary alignment along Pipidinny Road as noted in Figure 3-4. Once the Eglington PSP western precinct is developed, these routes are proposed to access the station along Carphin Drive and enter the station via the southern end of the station busway. The proposed street network of the amendment site comprises a Neighbourhood Connector street and this street will facilitate any future expansion of the bus services into or through the amendment site with wider 3.2m traffic lanes along the Neighbourhood Connector A street and 3.5m along the Neighbourhood Connector B street between Carphin Drive and the station southern entry.

4.6.3 The bus routes through the amendment area will likely only ever be connector/feeder services for the train station using the amendment area roads to traverse to and from Eglinton Drive. 100% of the PSP area is within an 800m/10-min catchment in accordance with Liveable Neighbourhood requirements. The bus route would add only complementary service for people who may not want to walk to the station.

4.6.4 Details as to how bus stops will be positioned along Neighbourhood Connector streets and located in proximity to crossovers can be provided in the subdivision drawings. It is standard practice that bus stops can be provided on Neighbourhood Connector streets in the form of nibs with buses stopping in the traffic lane as per Liveable Neighbourhoods. Neighbour Connector B roads (NCB) allow for buses in this manner.

4.7 Traffic Management

4.7.1 The level of detail required to demonstrate the specific traffic calming measures and road design treatments necessary to achieve the target operating speeds identified in Table 6 of *Liveable Neighbourhoods* is not considered appropriate at the structure planning stage.

4.7.2 The Structure Plan establishes the overall movement network and urban structure, with detailed road design, intersection treatments, speed management measures and traffic calming devices to be developed and assessed during subsequent subdivision and engineering design stages. These later stages will provide the necessary level of detail to demonstrate compliance with the applicable *Liveable Neighbourhoods* operating speed requirements.

4.7.3 With respect to the suggestion of implementing a 40km/h speed zone throughout the structure plan area, the appropriateness of speed zoning will be determined through detailed traffic engineering assessment and in consultation with the relevant road authorities during future planning and design stages. The proposed movement network has been designed to support a highly walkable and cyclable environment, particularly given the site's proximity to the station and the internal proximity of residential and commercial zones, however the establishment of statutory speed limits falls outside the scope of the Structure Plan Amendment.

5 Traffic Volumes and Traffic Impact

5.1 Forecast Volumes

Traffic volumes have been based on the extracted information from the Eglinton Precinct Structure Plan Transport Assessment (ARUP 2019) and the subsequent Eglinton District Centre Subdivision Transport Impact Assessment (ARUP 2023). Peak hour generated trips for the approved PSP Amendment (including the school site) based on the 36,000m^2 proposed floor space were estimated at approximately 2,200 trips in the AM peak and 2,350 in the PM peak period. The approved PSP had a 1,200 student school on the original eastern portion of the PSP site. This current amendment has the same commercial floorspace, more residential dwellings with no school, which is no longer included in the PSP. This school was assessed as generating 1,200 trips in the AM peak and 800 in the PM peak period and included assessment as part of the separate amendment for the eastern precinct compared to equivalent residential development over the same area generating about 180 trips in each of the AM and PM peaks.

5.1.1 With the removal of the school, the PSP Amendment area is expected to have approximately 50% less generated trips compared with the previously approved site in the AM peak and approximately 30% less in the PM peak, refer to Table 5-1 below, this is a significant reduction in the anticipated traffic flow for the Amendment site and will only improve the performance of the local and wider network in comparison to the originally approved PSP assessment. The traffic generation rate for the amendment is noted as being less than assessed under the original PSP assessment, as a range of generation rates has been used from 0.4 trip per dwelling in the AM/PM peak for apartments up to 0.8 trips per single residential dwelling. The original PSP assessment used a blanket 0.8 trips for all dwelling types. The range of generation rate is considered more appropriate given that apartments and grouped dwellings will typically have less parking spaces compared to traditional singled residential dwellings with double car garages and driveways.

Table 5-1: Peak Hour Traffic Flow Differences

Land Use	Estimated yield	Approved AM Volumes (vph)	Approved PM Volumes (vph)	Amendment AM Volumes (vph)	Amendment PM Volumes (vph)
Residential	Appr. ~590 Amd. ~875 (high intens. Yield)	435	435	450	450
Non-Retail/Civic in Mix Use Precinct	11,400m^2	230	230	230	230
Service Commercial in Service Commercial Precinct	4,600m^2	105	105	105	105
Commercial within an PSP Precinct	20,000m^2	250	800	250	800
School/Equiv Resi	Appr. 1,200 students Amd. 150 dwellings	1,200	800	120	120
Total		**2,220**	**2,350**	**1,155**	**1,705**

5.1.2 Across an entire day, the amended PSP is expected to generate approximately 14,300 trips per day compared to the approved PSP across the same site with about 15,600 trips per day, this again as a result of the deletion of the school, refer to Table 5-2. Allowing for internal trip linkages (essentially between residential areas and commercial areas), it is expected to be about 13,000 external trips per day generated by the PSP and distributed onto the external road network. This represents a decrease of about 10% between the approved PSP and this proposed PSP amendment, this primarily as a result of the deletion of the school site and replacement of residential development instead.

Table 5-2: Daily Traffic Flow Differences

Land Use	Previous Estimated yield	Previous Assessed Daily Volumes (vpd)	Current Estimated high intensity yield	Current Assessment Amendment (vpd)	Difference (vpd)
Residential	~590	4,330	~875	4,475	+145
Non-Retail/Civic in Mix Use Precinct	11,400m^2	2,280	11,400m^2	2,280	0
Service Commercial in Service Commercial Precinct	4,600m^2	1,060	4,600m^2	1,060	0
Commercial within an PSP Precinct	20,000m^2	5,250	20,000m^2	5,250	0
School/Equiv Resi	1,200 students	2,700	150 dwellings	1,200	-1,500
Total		**15,620**		**14,265**	**-1,355**

5.1.3 Modelling (ARUP 2019) for the approved PSP was set at a 2031 time horizon. This same horizon model was used for the assessment of the first stage Eglinton District Centre Subdivision (ARUP 2023). Thus, the same horizon has been used as the basis for the amendment assessment to maintain consistency across previous assessments and approvals.

5.1.4 Daily traffic volumes for the proposed site at full build out have been calculated based on the proposed yields through the site and TIA analysis for adjacent sites submitted as part of their assessments. Figure 5-1 below shows the forecast daily flows on the major links through the site. Note, local streets with traffic volumes of less than 1,000vpd are generally not shown.

Figure 5-1: Forecast Daily Volumes



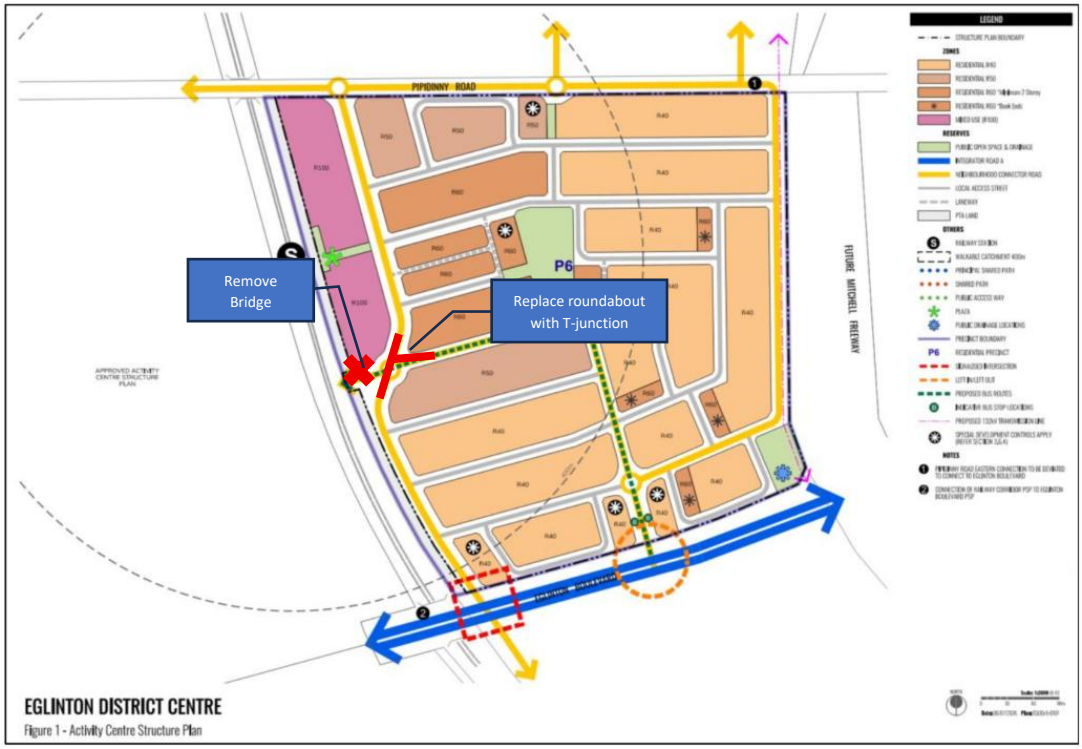
5.1.5 The removal of the proposed Carphin Drive bridge will cause traffic movements between the east and west precincts to use either Pipidinny Road or Eglinton Drive via "NS2" which runs parallel to the eastern side of the railway to access the Eglington Town centre and vice versa. This will result in the traffic flows on NS2 north of Eglington Drive to increase to approximately 7,000vpd (was estimated at 6,000vpd in the original eastern amendment report) and thus a NCA type cross section will still suffice for NS2.

5.1.6 The northern section of NS2 near Pipidinny Road is expected to remain much the same as traffic from Allara Estate entering the town site would use Pipidinny Road to head further west. The eastern precinct area traffic is expected to use a combination of Pipidinny Road and Eglinton Boulevard to gain access to and from the western precinct.

5.1.7 There is thus no need to provide this traffic bridge to provide for traffic flows as the bridge crossings at Pipidinny Road and Eglinton Boulevard can provide this function. Indeed, the bridges over the railway at Pipidinny Road and Eglinton Boulevard are spaced at approximately 650m which is a relatively short span for vehicle bridges across a railway without the originally proposed mid-block crossing noting a midblock pedestrian crossing is available at Eglinton railway station.

5.1.8 With the deletion of the bridge the proposed intersection of the NS2 road and the eastern section of Carphin Drive east of the railway would not then need to be a roundabout. This intersection would revert to a 3-way junction (compared to the 4-way intersection with the bridge in place) similar to other intersections proposed along NS2 within the eastern precinct of the Eglinton District Centre. Traffic volumes on the eastern portion of Carphin Drive are expected to be in the order of 1,000vpd and this section of road will be providing a local access function for properties along this road. The intersection of Carphin Drive and the NS2 road can then be designed as a 3-way junction, in similar fashion to other intersection nearby on NS2. Refer to Figure 5-2 below.

Figure 5-2: Bridge Removal



5.2 Road Typologies and Daily Traffic Per Road Type

5.2.1 The table below sets out the proposed road typologies for the amendment site and includes the likely vehicles per day estimates for each of those road types. The cross sections are available within the landscaping design drawings. Refer to Figure 5-3 below for these street locations.

Figure 5-3: Road Cross Sections

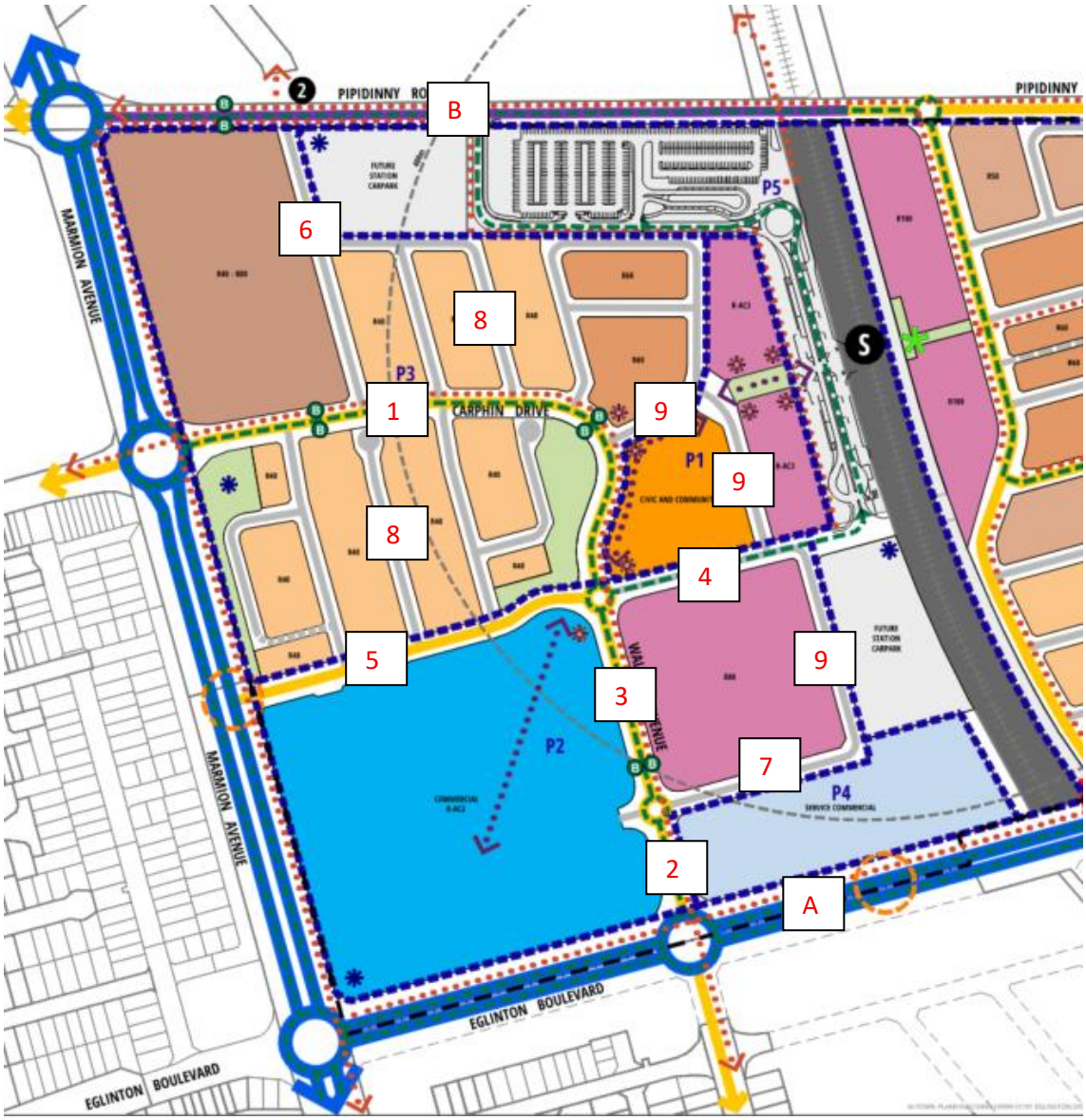


Table 5-3: Road Typologies and Vehicles Per Day

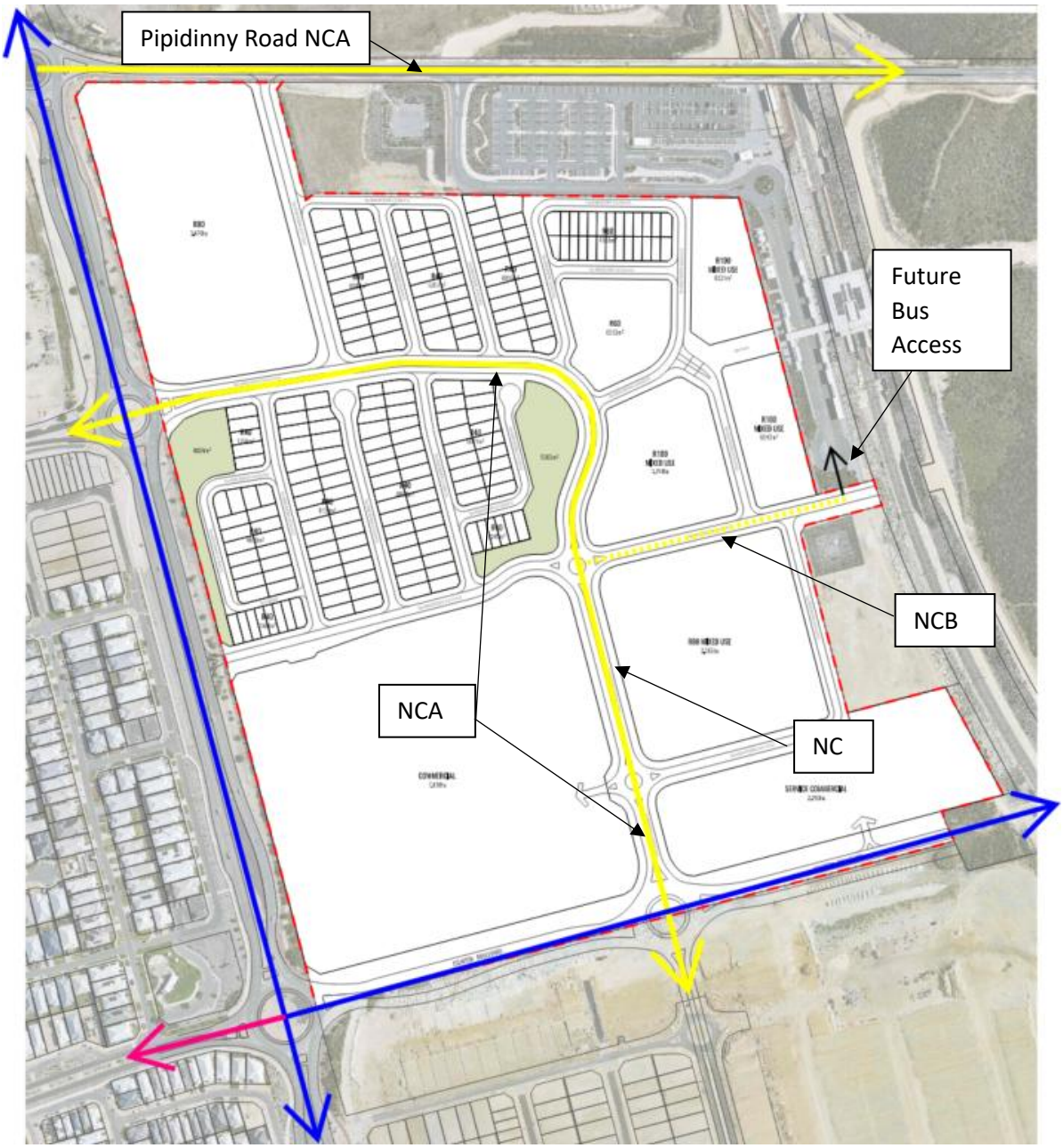
Location	Road Name	Model LN Road Type Base	Forecast VPD	LN indicative vpd	Proposed indicative Road Reserve Width	LN indicative road reserve width	Reason for Difference
A	Eglinton Boulevard	Integrator A	33,000	35,000	53.0m	52.6m	Previously agreed
B	Pipidinny Road near railway	Neighbourhood Connector A	7,300	7,000	23.0m	24.4m	Previously agreed
1	Carphin Drive	Neighbourhood Connector A	3,800	7,000	24.4m	24.4m	Previously agreed at 20m. Additional width to allow for increased landscaping/amenity opportunities.
2	Walcott Avenue	Neighbourhood Connector A	5,300	7,000	24.4m	22.4m	Previously agreed at 20m. Additional width to allow for increased landscaping/amenity opportunities.
3	Walcott Avenue (between internal roundabouts)	Neighbourhood Connector A/B	4,000	3,000	21.6m	22.4-24.4m 18.0-19.4m	Previously agreed at 20m. Additional width to allow for increased landscaping/amenity opportunities No direct property access proposed and twin roundabouts at either end to allow turn manoeuvres
4	EW Street from Carphin Dr/Walcott Ave to railway	Neighbourhood Connector B	1,200	3,000	18.0m	18.0-19.4m	Indented parking allows 18.0m in LN with 7.0m wide pavement for buses
5	EW Street from LILO to Carphin Drive	Access Street B	2,300	3,000	17.0m	16.5-17.9m	Indented parking allows 16.5m in LN and including 7.0m wide roadway for service vehicle access. Road reserve may widen out further subject to detailed design of the LILO treatment from Marmion Avenue and entry into the Commercial site.
6	NS Street from Pipidinny Road	Access Street C	1,200	3,000	16.0m	14.4-15.4m	Additional width to allow for increased landscaping opportunities.
7	Service Commercial Rear Road	Access Street B	1,000	3,000	16.5m	16.5-17.9m	Indented parking allows 16.5m with 5.5m roadway, 7.0m proposed for commercial vehicle access with no parking on south side
8	Residential Streets	Access Street D	<1,000	1,000	13-15.0m	14.2m	To allow for wider paths in 4.5m wide verges and reduction near POS
9	Mixed Use Streets	Access Street B	<1,000	3,000	16.0m	16.5-17.9m	Slightly narrower verges in “town” streets
10	Laneway	Laneways	<100	300	6.0m	6.0m	No change to LN

5.2.2 Road classification and cross sections are not strictly dictated by traffic volumes but also the end function and parking demands of the street. The traffic volumes indicated in Liveable Neighbourhoods are indicative flows only and the predicted traffic flow is not significantly more that the noted indicative flows.

5.2.3 In the case of Walcott Street between the internal roundabouts, the proposed cross section shows a 7m wide roadway with no median. This special design is considered appropriate as the roundabouts at either end of this section of street will allow for U turn movements and there is expected to be no right turn movements along this section of street and traffic flows are expected to be no more than 4,000vpd. Consistent with Figure 17 of Liveable Neighbourhoods, the median may be omitted in some circumstances. The proposed embayed parking provides visual narrowing of the carriageway consistent with the guidance for NCA sections where a median is not provided. The road environment remains constrained by the roundabouts at either end, which assists speed management and reinforces low-speed neighbourhood connector operation. The absence of intermediate access points also reduces conflict opportunities along the road segment. The proposed variation is therefore considered to achieve the movement, access management, safety and streetscape objectives of the Neighbourhood Connector while avoiding an unnecessary median on a short road section. The variation is consistent with the flexibility provisions of Liveable Neighbourhoods for alternative street cross-sections supported by site-specific design justification.

5.2.4 The hierarchy of the proposed road network is shown below in Figure 5-4.

Figure 5-4: Proposed Road Hierarchy



5.3 Intersection Performance

5.3.1 Given the significant 50% reduction in traffic flows in the AM and 30% in PM peak periods for the amendment area with the removal of the school site and replacement with residential lots, this will improve the previously approved performance for the intersections surrounding the Eglinton PSP area in the AM peak with previous assessed performance in the PM peak being similar to assessed in the original Eginton PSP.

5.3.2 There was no requirement for the Eglinton DSP PSP assessment (ARUP 2019) to assess the future access with the Mitchell Freeway extension, so there is no need for such an assessment required as part of this amendment.

5.3.3 The amendment will have less peak hour traffic generated and thus less impact than the previously assessed and approved PSP, so there is considered to be little benefit undertaking this assessment.

5.3.4 No baseline assessment was undertaken as part of the original Eglinton PSP and the results of any assessment undertaken now would only serve to show that with less traffic generated by the PSP amendment the performance would be an improvement compared to the originally approved Eglinton PSP, if that had been assessed at that time.

5.3.5 Previous assessments of the Marmion Avenue intersections at Pipidinny Road, Carphin Drive and Eglinton Boulevard had shown that each of these intersections were likely to fail at full development of the original PSP yields, this based on the current roundabouts at these locations. These results are shown on the following page.

5.3.6 This assessment at the time of the original approval of the PSP and then the subdivision, revealed that signalisation of these intersections may be a better option as modelled performance had shown improvement compared to the roundabouts.

Figure 5-5: Original Subdivision Assessed Intersection Performance

Table 2: Summary Results of the Sensitivity Analysis using SIDRA

Intersection	Item	Description	AM Peak			PM Peak		
			LOS	LOS (worst approach)	DOS	LOS	LOS (worst approach)	DOS
Pipidinny Road/ Marmion Avenue	1.1	Existing roundabout configuration	F	F	158%	F	F	206%
	1.2	Proposed signalised intersection	C	E	75%	D	E	92%
Carphin Drive/ Marmion Avenue	2.1	Existing roundabout configuration	F	F	125%	F	F	124%
	2.2	Proposed signalised intersection	C	E	91%	D	E	91%
Eglinton Drive/ Marmion Avenue	3.1	Existing roundabout configuration	F	F	221%	F	F	345%
	3.2	Proposed roundabout configuration	F	F	184%	F	F	225%
	3.3	Proposed signalised intersection	D	D	95%	E	E	99%

Source: ARUP TN (262620-00, Feb 2021).

5.3.7 For the now proposed Eglinton PSP amendment, the intersection performance of the surrounding road network has been assessed in SIDRA Intersection 10. The road network layout set up in SIDRA is shown in **Figure 5-6** and the results are provided in **Figure 5-7** and **Figure 5-8**.

5.3.8 Two critical areas for the proposed Eglinton amendment is the operation of Walcott Avenue near Eglinton Boulevard and the operation of the LILO at Marmion Avenue. These two are important to ensure that any queuing from these intersections back into the internal street network does not block access to the commercial zone at the internal roundabout on Walcott Avenue or the proposed access point on the EW street near the Marmion Avenue LILO.

Figure 5-6: Modelled Road Network

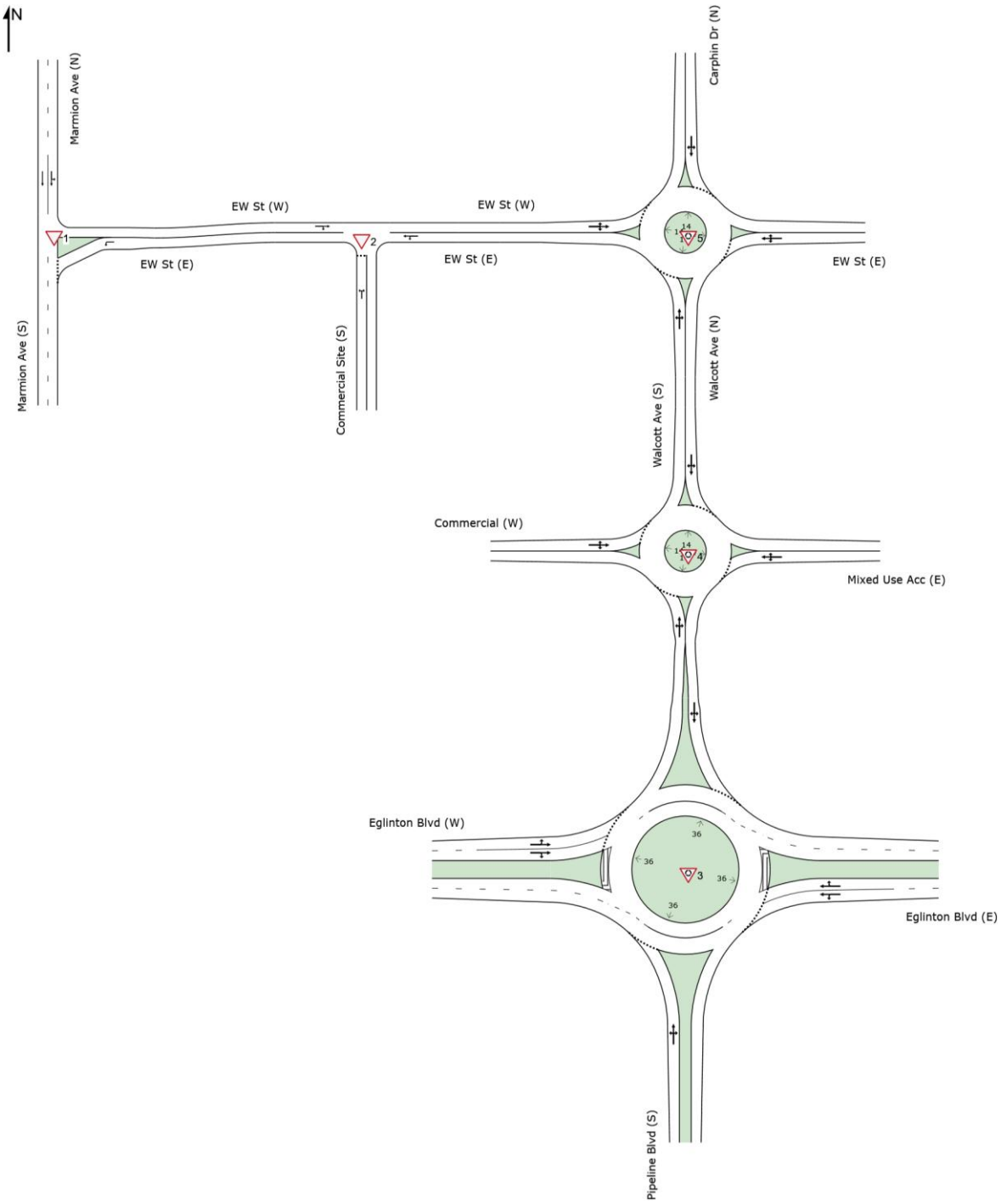


Figure 5-7: 2031 AM Peak Network Performance

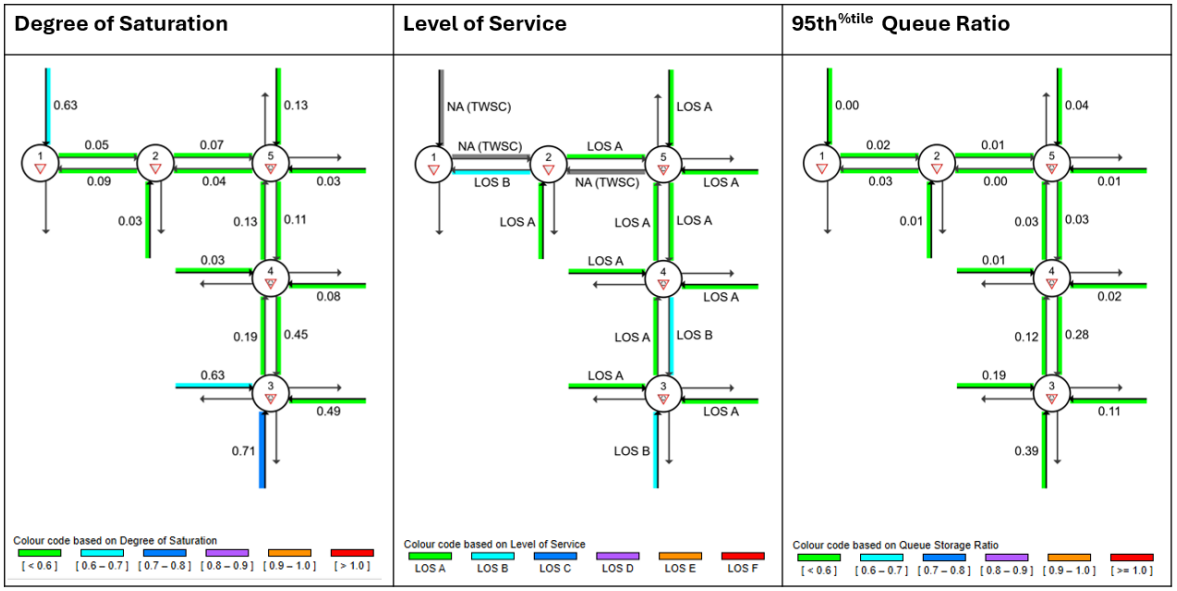
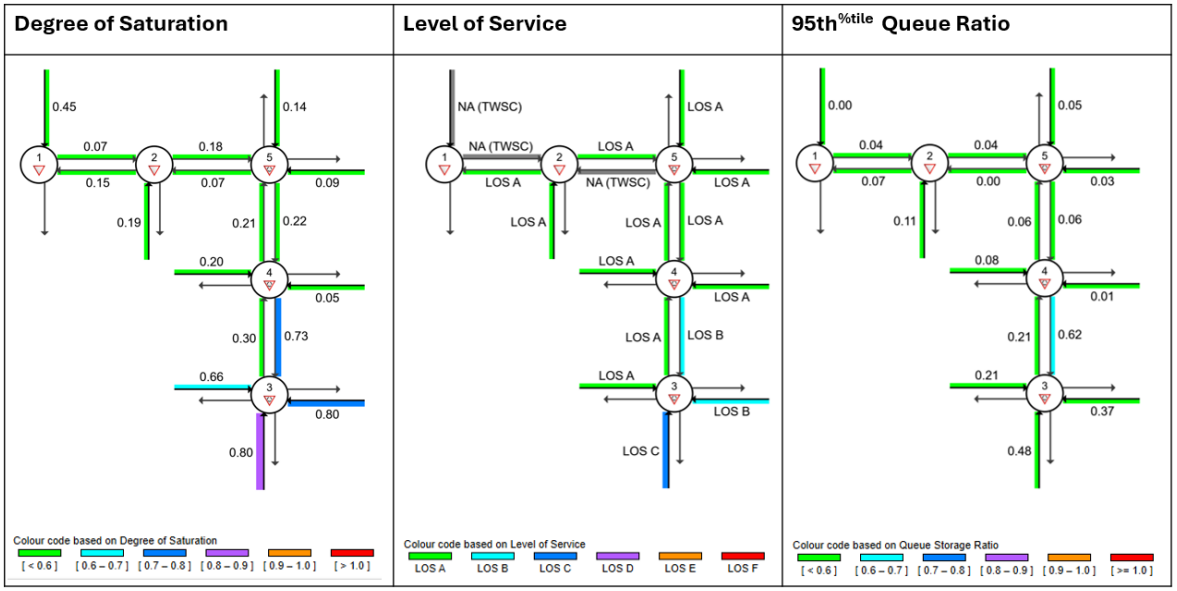


Figure 5-8: 2031 PM Peak Network Performance



5.3.9 The results of the outputs above shown that there is expected to be acceptable queuing internally and this will not queue back to block the entries to the commercial zone on either of Walcott Avenue or the EW street near the Marmion Avenue LILO.

5.3.10 The key impacts are expected at the roundabout at the intersection of Walcott Avenue and Eglinton Boulevard. This roundabout is expected to operate at a Degree of Saturation 0.71 in the AM peak and 0.80 in the PM peak with Level of Service A/B in the AM peak and B/C in the PM peak.

5.3.11 Conversely, for the Walcott Avenue approach to the internal roundabout north of Eglinton Boulevard, there is expected to be acceptable queuing, with no queue back onto Eglinton Boulevard, leading to the blockage of the roundabout at Eglinton Boulevard.

6 Active Transport

6.1 Overview

6.1.1 Active travel within the amendment site will roughly align with the network proposed as part of the original PSP transport assessment. Active travel will also provide direct links from the amendment site to the Eglinton rail station and adjacent planned long-distance routes.

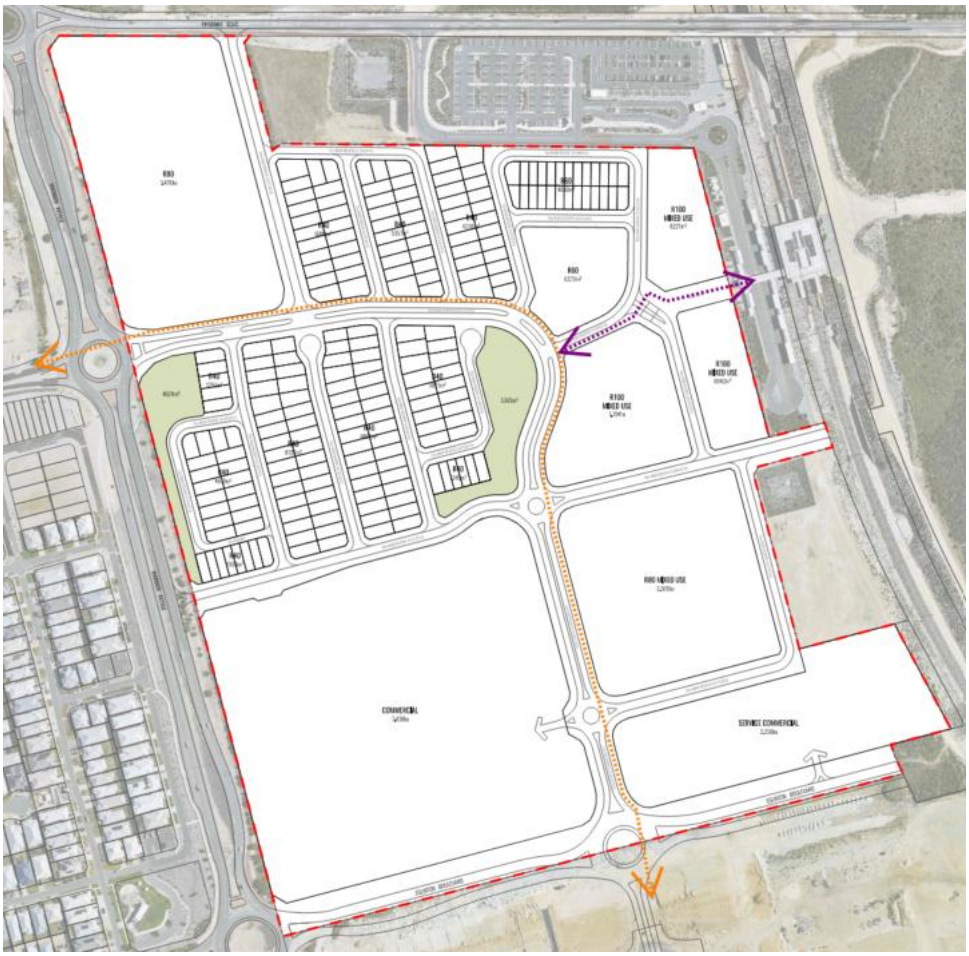
6.2 Pedestrian Access/Facilities

6.2.1 Pedestrian infrastructure will be provided throughout the amendment site with footpath connections linking residential areas to the station and adjacent commercial areas. Informal and formal crossings will be provided where there is a desire line or intersection. Figure 6-1 below shows the proposed cycle links for the site which will also include pedestrian footpaths along these lines as well.

6.3 Cycle Access/Facilities

6.3.1 The proposed cycle infrastructure will take the form of shared cycle/pedestrian footpath with consideration of segregation in areas of higher densities of dwellings. Figure 6-1 below shows the main cycle routes that will connect the amendment site to the rail station, the future planned cycleway adjacent to the Mitchell Freeway and to the future Eglinton Boulevard.

Figure 6-1: Proposed Cycleway Links through the site (Orange Lines)

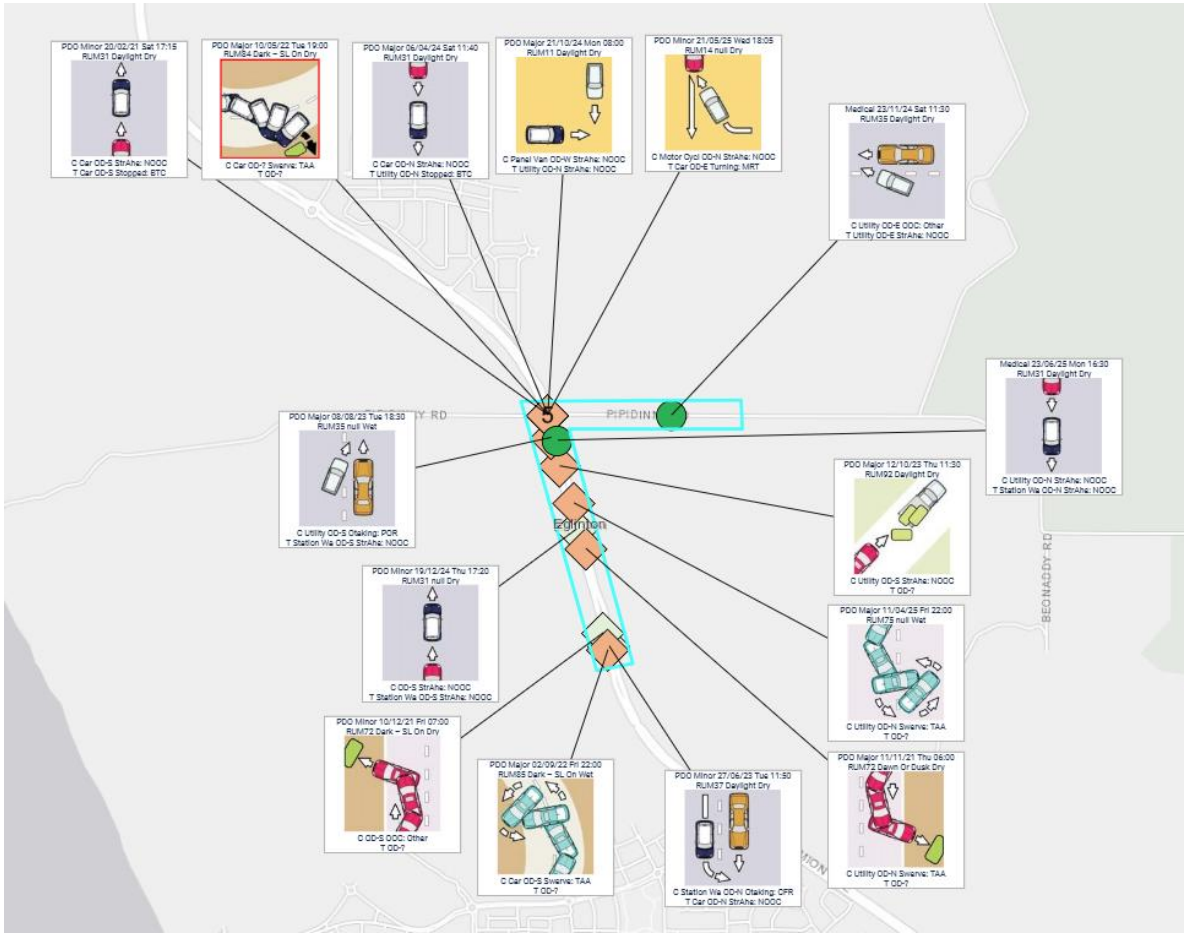


7 Safety Issues

7.1.1 The road network is yet to be truly developed in the vicinity of the site with all roads being new, with the exception of Pipidinny Road. This road will remain with a cul-de-sac head on both sides of Mitchell Freeway, although in a modified format as it becomes more of an urban street compared to its current rural road format.

7.1.2 On the section of Pipidinny Road north of the amendment site, there has been one recorded crash in the 5 years to the end of 2025. Refer to Figure 7-1 below.

Figure 7-1: Crash Locations 2021-2025



7.1.3 At the intersection of Pipidinny Road and Marmion Avenue there have been five recorded crashes all being property damage only with three as a result of rear end or loss of control and the other two right-angle type crashes

7.1.4 At the intersection of Marmion Avenue and Carphin Drive there has been a single crash resulting in property damage only. This a single vehicle losing control on the roundabout.

7.1.5 Near the intersection of Marmion Avenue and Eglinton Boulevard there has been three recorded crashes all resulting in property damage only. Two involved losing control on/exiting the roundabout and the other was a side swipe crash.

7.1.6 There have been a further five crashes Marmion Avenue related to side swipes, rear end and hitting objects.

7.1.7 Ultimately when the Mitchell Freeway is extended beyond Eglinton Boulevard, traffic will travel to and from Mitchell Freeway further to the north of the Eginton DC and traffic volumes will likely be in the same order as they are now. Until that time, it is expected that traffic flows will increase on Marmion Avenue with a slight jump when the freeway is extended to Eglinton Drive as any future staged extension occurs in this area.

8 Summary and Conclusions

PJA have prepared this TIA addendum for the Eglinton Central Precinct Amendment site which outlines the proposed road layout, access points, active travel provisions and likely traffic levels for the site.

The likely traffic volumes expected on the amendment site are significantly less than levels of traffic that have been previously predicted for the activity centre site, this provides an excellent comparative analysis for the site.

Planning for the amendment site will see active travel provision throughout the site connecting residential and mixed-use / commercial areas to the station and local footpaths/cycleways for people walking and people riding.

Subsequent detailed planning of the amendment site will be undertaken to establish further details of the movement network within the site, including street cross sections, pedestrian crossings, car parking both on-street and off, servicing and vehicular access.