URBIS

FOREST LAKES DISTRICT CENTRE

Precinct Structure Plan

Prepared for
GREENPOOL CAPITAL
30 October 2023

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Ray Haeren
Associate Director	David Congdon
Senior Consultant	Jackson Tomich
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This Precinct Structure Plan is prepared under the provisions of the City of Gosnells Local Planning Scheme No. 6.

IT IS CERTIFIED THAT THIS PRECINCT STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

12 November 2024

Signed for and on behalf of the Western Australian Planning Commission:

an officer of the Commission duly authorised by the Commission pursuant to section 24 of the *Planning and Development Act 2005* for that purpose, in the presence of:

Witness 

Date **13 November 2024**

Date of Expiry **13 November 2034**

TABLE OF AMENDMENTS

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved by WAPC

EXECUTIVE SUMMARY

The Forest Lakes Precinct Structure Plan (FLPSP) will facilitate further consolidation and improvement of the established Forest Lakes district centre for local community and surrounding suburbs.

This FLPSP is made pursuant to the City of Gosnells Local Planning Scheme No. 6 (LPS 6), including the deemed provisions of the *Planning and Development (Local Planning Schemes) Regulations 2015* (the deemed provisions).

The FLPSP provides for:

- A District Centre that can ultimately grow to 21,314sq.m shop/retail floorspace by 2033, accommodating supermarkets and associated speciality stores.
- Active pedestrian connections linking the district centre and surrounding public open space.
- Highly legible, well-designed pedestrian linkages to connect all parts of the activity centre, as well as with surrounding areas and beyond.
- Suitable provisions to allow flexibility for the centre to transition over time.

The vision for the Forest Lakes Precinct Structure Plan is provided below.

> *The Forest Lakes District Centre is a defined and connected community centre that brings a strong attachment to the community and a wide service offering. The retail core offers a diverse retail contribution for a variety of needs to the locality and wider Gosnells' region. The retail core transitions to a commercial edge where secondary services provide for the daily and weekly needs of the community.*
>
> *The Forest Lakes District Centre is honest in its offering and reaffirms the sense of community within the locality.*

Future development within the FLPSP shall align with the following objectives:

- Protect the core retail function of the district centre and support further expansion and diversification of service offerings.
- Provide for a legible street network with an integrated use of public and private spaces, utilising the existing established transport infrastructure and opportunities presented through proximity to the future METRONET Nicholson Road Train Station.
- Provide strong and safe pedestrian and cyclist connections throughout the district centre and its surrounds.
- Support development at an appropriate scale, inspired landmarks, civic elements, and an identity unique to its locality.

Table 1 - Precinct Plan Overview

Item	**Data**		**Section No.**
Precinct Structure Plan Area	7.762 hectares		Part 1, Section 1.4
District Centre Zone	7.762 hectares		Part 2, Section 3.1.1
	2023	**2033**	
Estimated commercial floor space (including retail)	15,404m^2	25,000m^2	Part 2, Sections 2.4, 2.5, and 2.6
Estimated gross lettable area retail (GLAR)	14,788m^2	16,500m^2	

PART 1 – IMPLEMENTATION

1. PRECINCT STRUCTURE PLAN AREA AND OPERATION

This Precinct Structure Plan (PSP) has been prepared for the Forest Lakes District Centre, being the land contained within the inner edge of the line denoting the Forest Lakes Precinct Structure Plan (FLPSP) boundary. The FLPSP has a total area of 7.762 hectares and is spatially shown in **Figure 1**.

This Precinct Structure Plan commences operation on the day it is approved by the Western Australian Planning Commission (WAPC), the date of which is outlined on the endorsement page. As per the deemed provisions of the Planning and Development (Local Planning Schemes) Regulations 2015, this PSP is to have effect for a period of 10 years from the date of endorsement, unless otherwise determined by the WAPC.

Unless otherwise specified, the words and expressions used in this PSP shall have the respective meanings given to them in the City of Gosnells Local Planning Scheme No.6 (LPS 6).

Nothing in this PSP is to be interpreted as limiting clause 4.5 of LPS 6 which allows for variations to site and development standards and requirements. Nothing in this PSP is to be interpreted as limiting Part 4 clause 27 of the deemed provisions that outlines that a decision-maker for an application for development approval or subdivision approval in an area that is covered by a PSP is to have due regard to, but is not bound by, the PSP when determining the application.

Figure 1 - Precinct Plan Boundary

2. PURPOSE

Future development within the FLPSP shall align with the following objectives:

- Protect the core retail function of the district centre and support further expansion and diversification of service offerings.
- Provide for a legible street network with an integrated use of public and private spaces, utilising the existing established transport infrastructure and opportunities presented through proximity to the future METRONET Nicholson Road Train Station.
- Provide strong and safe pedestrian and cyclist connections throughout the District Centre and its surrounds.
- Support development at an appropriate scale, inspired landmarks, civic elements, and an identity unique to its locality.
- Incorporate site and development standards to ensure the buildings and streets are urban in form and provide for passive surveillance of streets and public spaces.

3. STAGING

All components of the Precinct Structure Plan can be implemented following approval by the WAPC.

4. SUBDIVISION AND DEVELOPMENT REQUIREMENTS

When considering an application for subdivision, due regard shall be given to:

- The intended function of the land and the activities carried out on it.
- The intended character of the area.
- The intended amenity of the area.
- Built form implications associated with subdivision.
- The established scale and grain of development.
- Implications on vehicle access and servicing.

Subdivision applications to the WAPC shall demonstrate that the subdivision would not prejudice the built form outcomes of this Precinct Structure Plan.

4.1. LAND USE ZONES AND RESERVES

4.1.1. Zones and Precincts

The FLPSP is divided into two Sub-Precincts, these being the **Shopping Precinct** and the **Murdoch Commercial Precinct**. The location of these Sub-Precincts are demonstrated in **Figure 2**.

4.1.1.1. Shopping Precinct

The Shopping Precinct is the core of the Forest Lakes Precinct Structure Plan adjacent to the Murdoch Commercial Precinct. This precinct will comprise the main retail and community hub, including a casual dining area as an interface linking existing and future development within the precinct. It will accommodate the majority of shop-retail activity, with a mix of retail, commercial and service-based tenancies.

The objectives of the **Shopping Precinct** are to:

- Provide a convenient district shopping centre environment, with a focus on servicing the daily and weekly needs of the local community.
- Provide for a mix of complementary retail and commercial uses that activate the wider FLPSP area.
- Provide safe and pleasant connections between existing and future development within the FLPSP area.
- Ensure any future development minimises potential negative impacts on adjacent precincts.
- Provide the most activation and activity within the FLPSP, and support land uses that are significant generators of employment.
- Provide an articulated built form that captures interest and frames the public realm with appropriate use of height.

4.1.1.2. Murdoch Commercial Precinct

The Objectives of the **Murdoch Commercial Precinct** are to:

- Provide for uses that are complementary to the Shopping Precinct and are important for the overall function and success of the centre but not necessarily suited to a shopping centre environment.
- Provide for a wide range of large format civic, retail, service and other commercial uses, including entertainment, bulky goods, fast food and service station.
- Provide uses that generate some employment and on-street activity. However, some commercial uses will attract more vehicle, rather than pedestrian trips.
- Provide safe and pleasant connections between existing and future development within the FLPSP.
- Ensure building facades facing Murdoch Road and Forest Lakes Drive incorporate areas of activation, passive surveillance, and permeability where appropriate.

Figure 2 - Sub- Precinct Plan

4.2. DENSITY AND DEVELOPMENT

4.2.1. Density and R-Codes

Figure 6 designates the R-Codes applicable to subdivision and development in the structure plan area.

The FLPSP is divided into two (2) precincts as previously identified in **Figure 2**. The following sections identify the objectives, land use and development requirements for each precinct. The precinct boundaries are not intended to be rigid and are subject to refinement through detailed design through the development application process.

Should there be any inconsistency between the provisions of this FLPSP and the provisions of the Residential Design Codes and/or any Local/State Planning Policy, the provisions of the FLPSP will prevail.

4.2.2. General Development Standards

Two categories of development standards apply to the FLPSP, General Development Standards and Precinct Development Standards, as detailed in sections **4.2.3 to 4.2.4.**

General Development Standards, as shown in **Table 2**, apply to both precincts within the FLPSP. Precinct Development Standards apply to individual precincts within the FLPSP. Should there be any inconsistency between the General Development Standards and the Precinct Development Standards, provisions of the Precinct Development Standards shall prevail.

Table 2 - Development Requirements

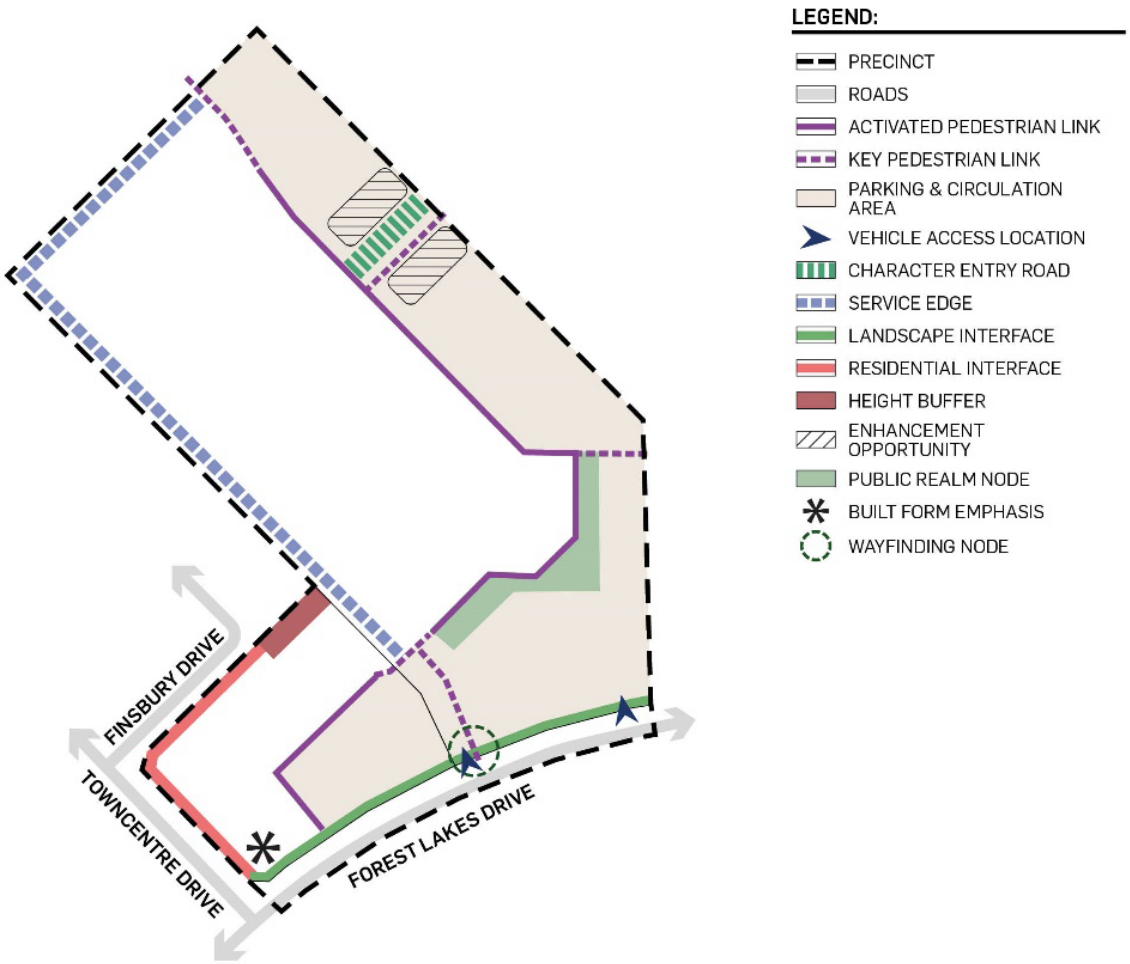
Element	Requirement
Plot Ratio	• Plot ratio shall be in accordance with the requirements of the applicable R-Code as shown on the Precinct Structure Plan Map (**Figure 6**)
Building Height	• Building height for all land within the Precinct Structure Plan Area is to be in accordance with the Scheme, including non-residential development.
Setbacks	• Street setbacks are to be in accordance with the Scheme. • • Residential side and rear boundary setbacks should be in accordance with the applicable R-codes. • Commercial (non-residential) side and rear boundary setbacks are to be in accordance with the Building Code of Australia.
Built Form	• Building façades to incorporate variations in depth, height, colour, texture and/or materials as well as openings (windows and doors) where practicable to create interest and surveillance and avoid visual monotony and blank walls to the public realm. • External fixtures (e.g. utilities, plant, equipment, infrastructure) are to be a similar colour to the building to which they are affixed and adequately screened so as not to be visually obtrusive when viewed from the road reserve(s) or public realm. • Building façades, including entries, glazing and signage, to incorporate building articulation and be oriented toward and clearly visible from the street where practicable to create interest and surveillance and avoid blank walls and inactivity to the public realm.
Materials and Finishes	• Buildings must be constructed of high-quality materials including (but not limited to) stone, concrete, brick, timber, and glass. Materials should be durable and suited to their surroundings.
Landscaping	• Landscape areas shall be designed for high water efficiency using waterwise plantings and demonstrate use of water sensitive design principles. • Planting species should respond to the local context and reflect the existing landscape character of nearby parks and reserves. • The provision of landscaping should be consistent with the Landscape Precinct Plan (**Appendix B**)
Public Realm and Street Interface	• Residential development adjacent to open space shall be orientated to provide passive surveillance. • Bin store areas shall be contained and screened to minimise visual impact on adjacent properties and internal streets.
Vehicle Parking and Access	• Residential car parking, including visitor parking, is to be provided in accordance with the Scheme. • Non-residential car parking is to be provided in accordance with the Scheme. • Non-residential access shall be limited to the access points shown in the vehicle movement network plan (**Figure 13**). • Existing access arrangements to the District Centre to be maintained, with no new additional crossovers to the local street network permitted.

Element	Requirement
Signage and Wayfinding	• Submission of a detailed Signage and Wayfinding Strategy is required as part of any retail expansion greater than 500m^2 within the District Centre.

4.2.3. Precinct 1 – Shopping Precinct Development Standards

The Shopping Precinct is the core of the Forest Lakes Precinct Structure Plan adjacent to the Murdoch Commercial Precinct. This precinct will comprise the main retail and community hub, including a casual dining area as an interface linking existing and future development within the precinct. It will accommodate most of the shop-retail activity, with a mix of retail, commercial and service-based tenancies.

Figure 3 - Precinct 1 - Shopping Precinct



4.2.3.1. Land Use

Land use permissibility to be in accordance with the relevant City of Gosnells Local Planning Scheme.

4.2.3.2. Building Typology

- Prioritise the retention of a singular retail shopping centre to provide an anchor for the District Centre. Future development to incorporate smaller tenancies along the external frontages of building to encourage greater façade activation.
- Development of a single building of one to two storeys fronting Towncentre Drive. Building(s) to be orientated to achieve a suitable interface with adjacent residential properties.
- A landmark feature is to be provided at the corner of Forest Lakes Drive and Town Centre Drive.

4.2.3.3. Setbacks

- Default nil building setback to primary street. Building setbacks may be supported where desirable to promote improved interface with existing or future residential development, or where impacted by easements.
- Where a nil primary street setback is proposed, clear glazing (to be maintained at all times shall be provided to enable passive surveillance of the adjacent street to the satisfaction of the local government.

4.2.3.4. Building Height

- Building height shall be at the discretion of the Council. Heights shall be subject to considerations such as overshadowing, landmark or gateway status and the impact on important views and view corridors.
- Maximum building height of two storeys at the street interface. Additional storeys may be supported where setback further to create a clear separation of building forms and to not detract from pedestrian scaled street environment, solar access, and view lines.
- Minimum ground floor to ceiling height of 3.6 metres. Minimum façade height of 5.2 metres to create a sense of enclosure for the pedestrian environment.

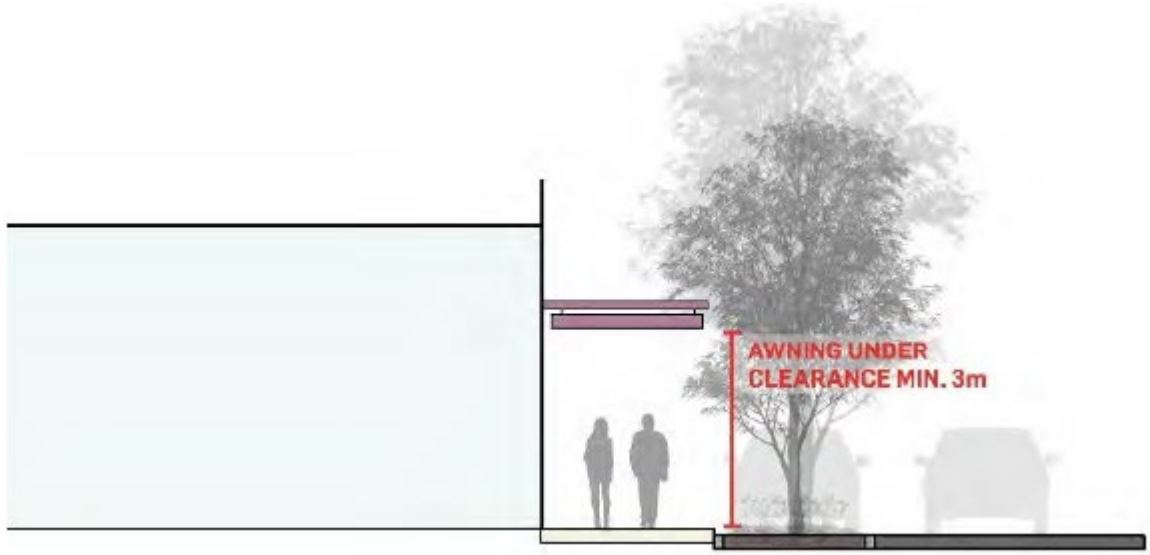
4.2.3.5. Building Facades

- Building facades to be continuous where possible. Exceptions include to provide for access or other public spaces and facilities where desirable.

4.2.3.6. Awnings

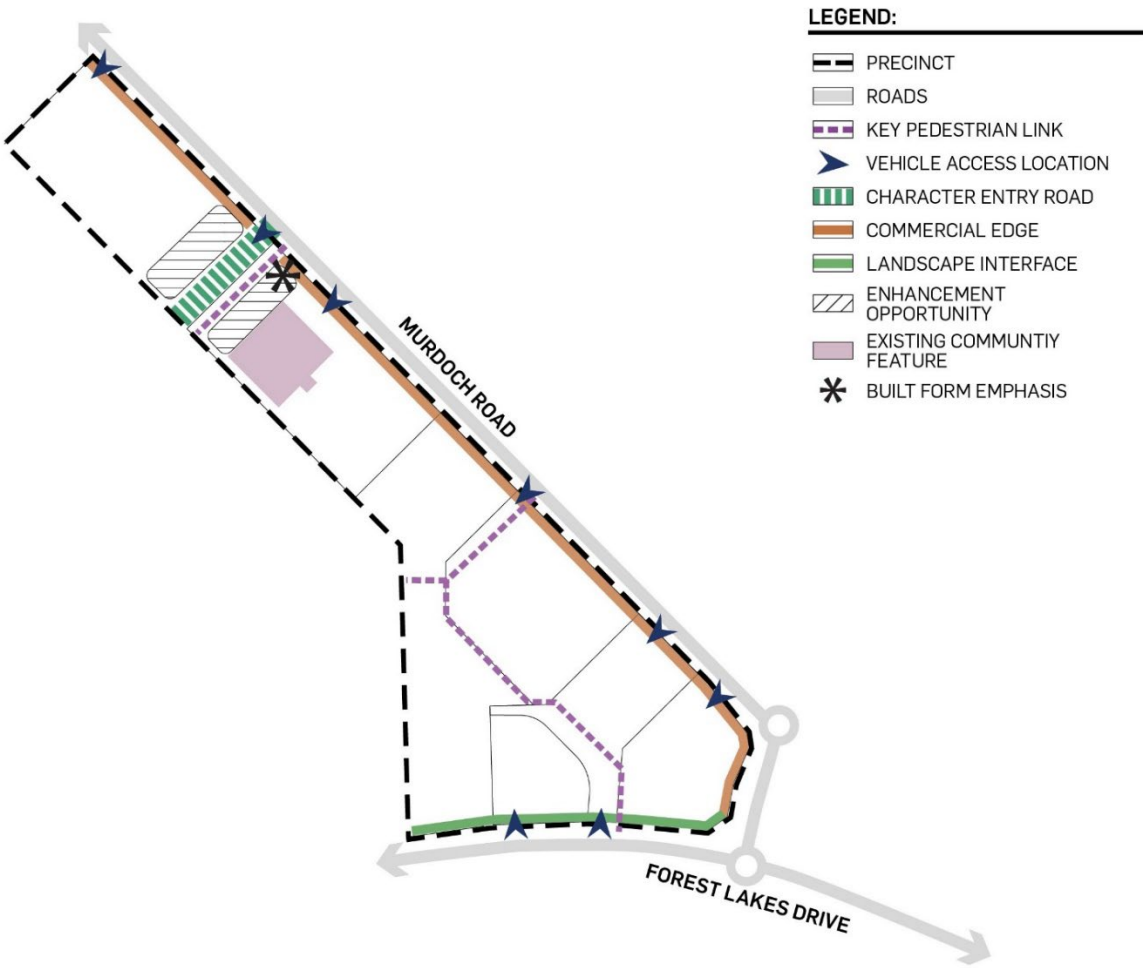
- Awnings to be provided along at least 80% of each building frontage facing Murdoch Road and Forest Lakes Drive.
- Awnings to have a minimum 3m under clearance and be wide enough to provide shelter to pedestrians without impeding surveillance (**Figure 4**).

Figure 4 - Awning Clearance



4.2.4. Precinct 2 – Murdoch Commercial Development Standards

Figure 5 - Precinct 2 - Murdoch Commercial



4.2.4.1. Building Typology

- The Don Russell Performing Art Centre and associated land is to be utilised for Civic purposes. Intended building typologies are to establish ground floor integration with the Shopping Precinct.
- Development of free-standing buildings, incorporating one to two tenancies per building.
- Buildings to be orientated to maximise passive surveillance to surrounding car park, buildings, and non-activated areas.

4.2.4.2. Setbacks

- Default nil building setback to primary street.
- Where a nil setback is proposed, clear glazing (to be maintained at all times) shall be provided to enable passive surveillance of the adjacent street to the satisfaction of the local government.

4.2.4.3. Building Height

- Building height shall be at the discretion of the local government. Heights shall be subject to consideration such as over shadowing, landmark or gateway status and the impact on important views and view corridors.

4.2.4.4. Awnings

- Awnings to be provided to the primary entry of each building.

- Awnings to have a minimum 3 metres under clearance and be wide enough to provide shelter to pedestrians without impeding surveillance.

4.2.5. Precinct Development Layout

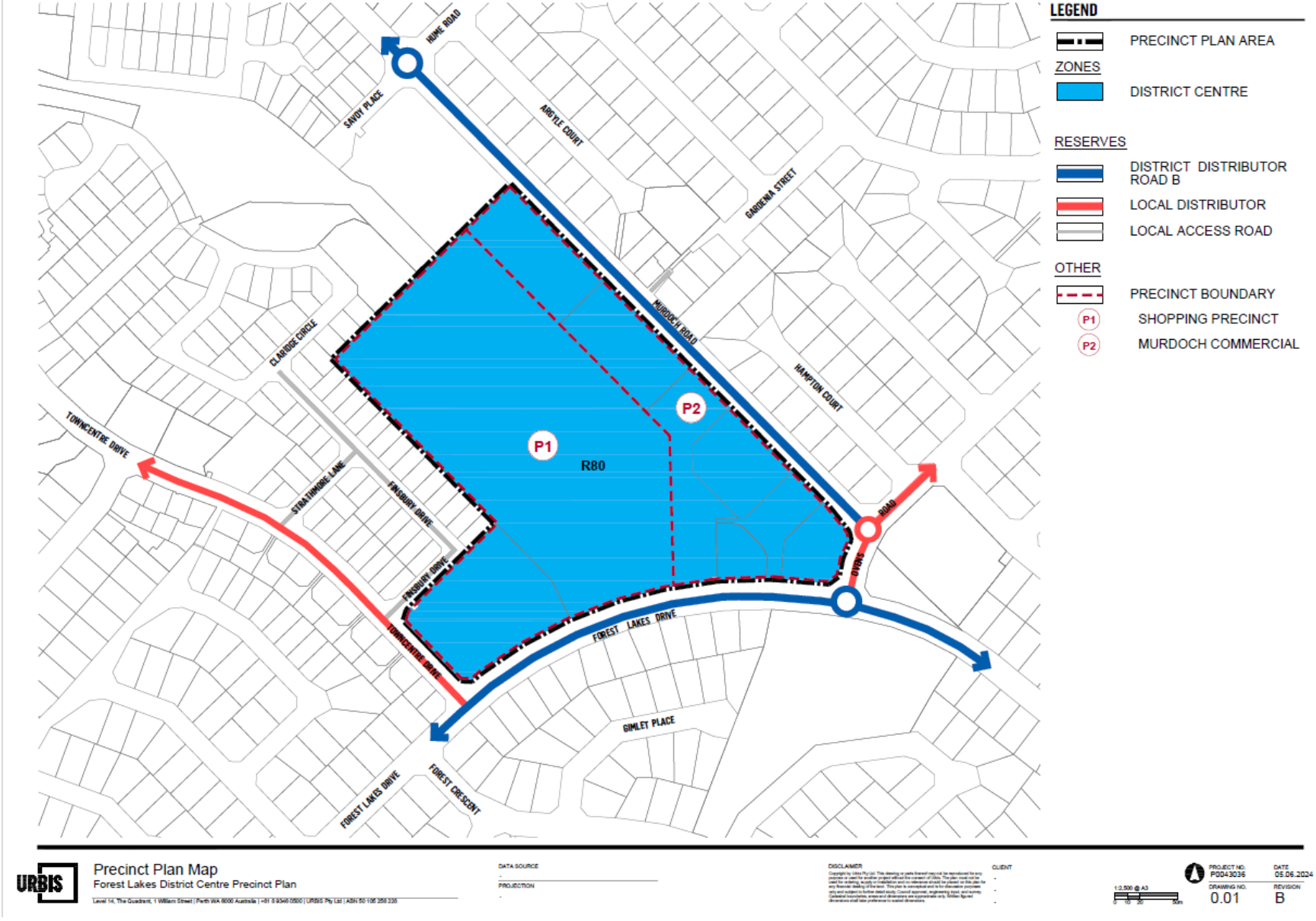
Due to the established nature of the Forest Lakes District Centre, future development is limited to the existing built form layout. Future development will need to improve the efficiency of the undeveloped/vacant land portions (including surface car parking) whilst also redeveloping the existing built form being the Main Centre. The location of the site within an established residential area further constrains the spatial layout of the centre. This is due to inability of large-scale land administration and subdivision, with the overall District Centre shape clearly defined.

The Main Centre will be retained as the retail core, in which future development will compliment its services and offerings. Greater development controls through the PSP will ensure that future development will be more outwards focussed, building upon the existing built form to re-activate the existing and proposed public realm.

4.2.6. Interface with Adjoining Areas

The FLPSP is solely applicable to the already zoned District Centre Land. As such, the integration with the adjoining areas is well defined. Notwithstanding, **Section 5.7 (Part 2)** of this report details the preferred strategy with regards to the planning and development of the adjoining land in the future.

Figure 6 - Precinct Structure Plan Map



5. ADDITIONAL DETAILS

As an established and operational District Centre, additional information to support future development will be determined on an 'as needed' basis. Notwithstanding, the table below outlines information that may be required to accompany future subdivision and/or development applications.

Table 3 - Additional Information Requirements

Additional Information	Purpose	Approval Stage	Consultation Required
Transport Impact Assessments	To undertake the traffic analysis associated with individual development proposals. To be in accordance with WAPC guidelines.	When deemed necessary for subdivision and/or development applications.	City of Gosnells.
Crime Prevention Through Environmental Design Report	To demonstrate proposed development supports CPTED principles.	When deemed necessary for development applications.	City of Gosnells.
Urban Water Management Plan	Detailing the specific drainage requirements for future development.	Development application or as a condition of subdivision.	City of Gosnells.
Environmental / Acoustic Report	To ensure development will not result in any undue impacts to current or future sensitive uses.	Development application technical reporting.	City of Gosnells

PART TWO – EXPLANATORY REPORT

1. INTRODUCTION AND PURPOSE

The Forest Lakes District Centre is a well performing centre located centrally within the suburb of Thornlie on the corner of Forest Lakes Drive and Ovens Road. The centre essentially functions as a super neighbourhood centre, with a focus on convenience and weekly needs for the catchment with the three main supermarket chains (Coles, Woolworths and ALDI) and a fresh food market operating from the centre.

The purpose of the Precinct Structure Plan is to enable some limited growth of the centre, with a focus on the development of the adjoining site (Lot 201) for services and offices uses to complement the existing centre.

Initially the FLPSP was developed for the centre and the associated frame with a view for this to be enabled under the new City of Gosnells Scheme 24. The new scheme is now understood to be delayed, limiting the scope and capacity of the plan. On this basis the plan is focused on the areas zoned District Centre under Local Planning Scheme 6.

Originally developed in the early 1990's, Forest Lakes district centre consisted of a Coles supermarket and small number of speciality shops, the Don Russell preforming arts centre, and a tavern. In the late 1990's the shopping centre expanded to accommodate a Woolworths supermarket, and in the mid-2000's a major expansion of the centre occurred with the NLA almost doubling in size and commercial development undertaken to the outer carpark area. In 2018, the district centre further expanded to accommodate an Aldi supermarket.

The FLPSP has access to all essential service infrastructure, including power, reticulated water, sewer, gas, and telecommunications. Accordingly, future development will not be constrained from a servicing perspective.

As the majority of the district centre is owned by a single landholder, future expansion and development is able to occur in a coordinated manner and will provide the community with access to retail offerings and services that respond to market demand.

It is likely that future development within the FLPSP will be staged over time, as has occurred in the past (refer to **Figure 7**), with development within the district centre occurring prior to further residential development.

Accordingly, the FLPSP has been prepared based upon a clear understanding of the overall feasibility of delivering the proposed development over time, while also responding to the site and surrounding context, precinct vision and stakeholder expectations. It seeks to balance the long-term vision of the precinct plan and the economic and socio-economic realities of the locality.

Figure 7 - Historical Aerial Photographs of FLPSP (source: Landgate)

December 1989

February 1995

December 2005

December 2018

2. SITE AND CONTEXT ANALYSIS

2.1. PHYSICAL CONTEXT

Forest Lakes Precinct Structure Plan (FLPSP) comprises an area of 7.762ha and is located 15km south-east of the Perth CBD in the City of Gosnells. An aerial photograph of the FLPSP and surrounding context is provided in **Figure 8**.

Initially developed in the 1980's, Forest Lakes district centre includes a shopping centre, tavern, and community preforming arts centre. The shopping centre has expanded over time and now includes three (3) supermarkets (ALDI, Coles and Woolworths) and over 30 speciality stores offering fresh food, leisure and community services.

The district centre reflects historical planning practices with a traditional big box style shopping centre, surrounded by large areas of at-grade car parking. The Lakers Tavern, Don Russell Preforming Arts Centre and several free-standing commercial developments (including fast food outlets and a service station) are located adjacent to Murdoch Road. The carpark contains a relatively high amount of landscaping and provides a fairly high level of amenity compared to other suburban district centres. Lot 201 located within the FLPSP is earmarked for further residential, commercial or mixed-use development.

The district centre is surrounded by low to medium density residential development. A plan showing the existing zoning and densities of the FLPSP and surrounding is provided in **Figure 11**. Public open space containing water bodies are located immediately north and south of the FLPSP, providing increased amenity and pedestrian connectivity to and from the district centre. Given the level of land fragmentation and recent medium density development that has occurred to the west of the district centre, the key opportunities for future development within the FLPSP are:

- Lot 102 Forest Lakes Drive
- Lot 201 Forest Lakes Drive

Accordingly, this FLPSP has been prepared to respond to the distinctive character of the area and allow for future development to integrate into its setting.

2.2. TENURE AND OWNERSHIP

Table 4 provides details of the land holdings comprising the FLPSP.

Table 4 - Land Ownership

Lot	Plan	Proprietor	Description
Lot 102	42800	Forest Lakes No. 2 Pty Ltd	Shopping Centre
Lot 101	42800	The Trust Company (Australia) Ltd	Tavern
Lot 107	53733	Strata Plan 60006	Fast Food outlet
Lot 8	77732	Forest Lakes No. 2 Pty Ltd	Fast Food outlet
Lot 108	53733	Forest Lakes No. 2 Pty Ltd	Service Station
Lot 201	55226	Forest Lakes No. 2 Pty Ltd	Vacant
Lot 13	18002	City of Gosnells	Cinema / Theatre (Don Russell Preforming Arts Centre)

Figure 8 - Forest Lakes Precinct Structure Plan Aerial Imagery

2.3. COMMUNITY CONTEXT

The demographic of Thornlie is largely reflective of the greater Perth average, however there is a higher proportion of people aged 55 years and above. This older demographic also reflects a slightly higher proportion of residents who own their own home outright, compared to the greater Perth average.

Thornlie is characterised by a high proportion of blue-collar workers (41%) in comparison to the greater Perth average (31%). Key occupations for Thornlie residents include machinery operators, technicians, trades and labourers. Thornlie has an average annual household income of $101,900.

Thornlie contains a high proportion of low to medium density separate dwellings. Accordingly, there are limited redevelopment opportunities in the locality. Development opportunities within the FLPSP will provide opportunities for increased diversity of land uses.

Demographic data for Thornlie and greater Perth is contained in **Tables 5** and **6**.

Table 5 - Demographic Analysis of Thornlie

DEMOGRAPHIC ANALYSIS		THORNLIE (SUBURB)	GREATER PERTH
	Population	23,665	2,116,647
Age	Aged 55-64	12%	11%
	Aged 65+	17%	16%
Household Metrics	Average Household Size	2.7	2.5
	Average Household Income	$101,900	$125,900
Occupation	Blue Collar Workers	41%	31%
	Machinery Operators and Drivers	11%	7%
	Technicians and Trades Workers	18%	15%
	Labourers	12%	9%
Tenure Type and Landlord Type	Owned Outright	34%	29%
	Owned with a Mortgage	44%	43%
	Renting	22%	27%
Dwelling Structure	Separate House	86%	71%
	Semi-detached and Units	7%	13%
	Apartments	1%	7%
Household and Family Composition	Couple Family with Children	35%	33%
	One Parent Family	12%	11%

Source: Based on ABS Census 2021

Table 6 - Thornlie Population Growth Projection

AREA	2023	2036	AVERAGE GROWTH P.A	TOTAL POPULATION GROWTH
Thornlie (West)	7,925	8,130	0.2%	2.6%
Thornlie (Central)	11,195	11,815	0.4%	5.5%
Thornlie East	5,723	5,758	0.0%	0.6%
Total	**24,843**	**25,703**	**0.3%**	**3.5%**

Source: Forecast.Id

2.4. PLANNING AND GOVERNANCE CONTEXT

The FLPSP is informed by several State and local government policies and strategies that are relevant to the study area. The FLPSP is principally informed by State Planning Policy 4.2: Activity Centres for Perth and Peel (SPP 4.2), which provides a framework and guidelines for activity centre planning in Western Australia. SPP 4.2 identifies Forest Lakes Shopping Centre as a District Centre.

Other key planning instruments relevant to the FLPSP are outlined below in **Table 7**.

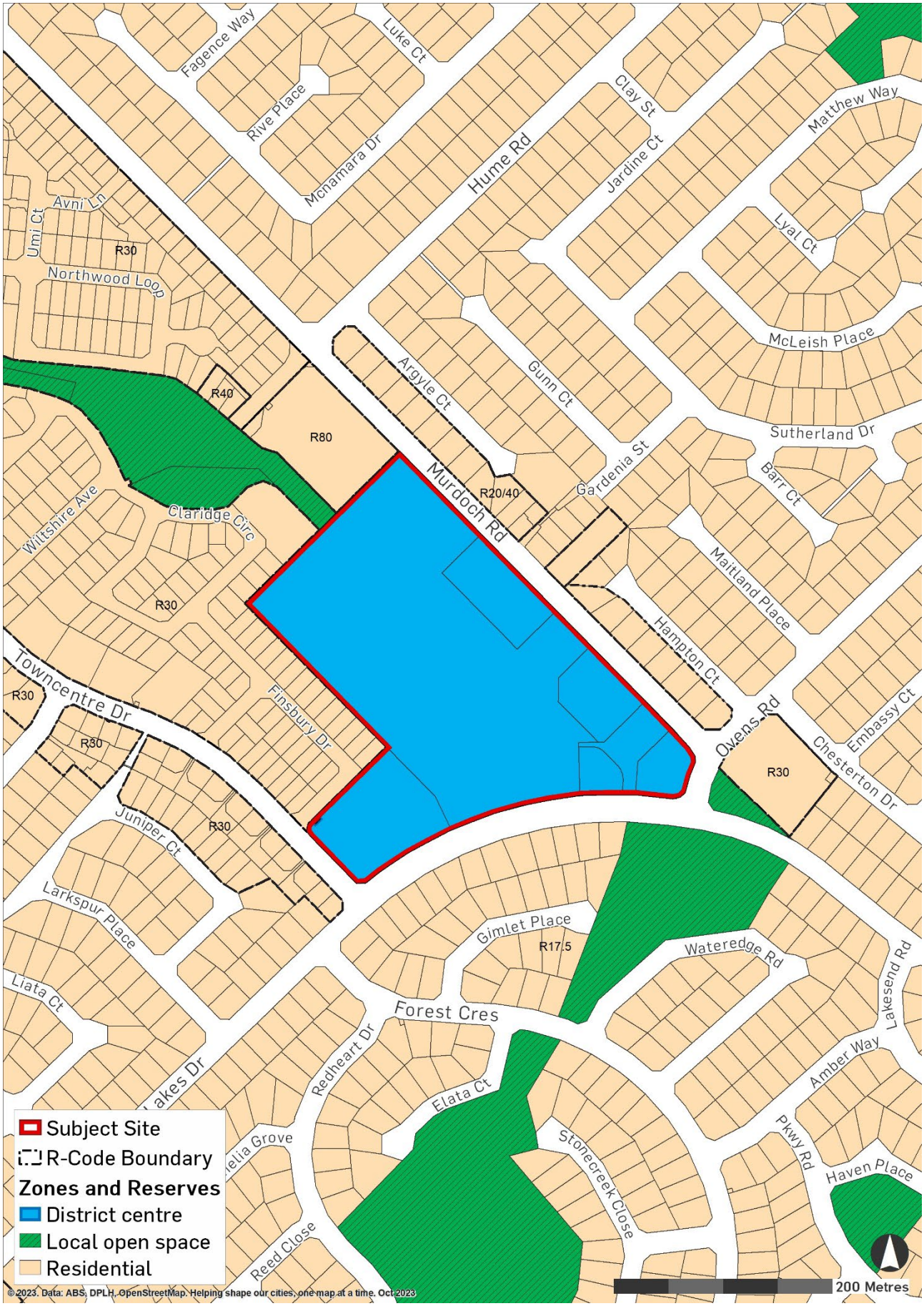
Table 7 – Key Planning Documents

Document	Key Provisions
Metropolitan Region Scheme	The site is zoned 'Urban' under the MRS. Existing and future development is consistent with the Urban zoning.
City of Gosnells LPS 6	Forest Lakes is zoned 'District Centre' under LPS 6 (refer Figure 11) with an applicable residential density code of R80. Land holdings surrounding the District Centre are zoned Residential, with density codes ranging from R30 to R80. The zoning shown within the FLPSP is consistent with LPS 6.
Draft City of Gosnells LPS 24	LPS 24 was endorsed by the City in 2021 and is currently awaiting approval by the WAPC which was anticipated by the first half of 2024, however, has now been delayed and timing is uncertain. Forest Lakes is zoned 'District Centre' under LPS 24 with an applicable residential density code of R80. The zoning shown within the FLPSP is consistent with LPS 24. ***The delay in LPS 24 has required the contraction of the PSP area based upon implementation requirements being contained within the scheme which timing is currently uncertain***.
City of Gosnells Local Planning Strategy 2019	The City's Local Planning Strategy advocates incorporating higher residential densities in activity centres and within their walkable catchments. Existing residential densities were reviewed to better align with contemporary planning practices, with the Strategy recommending R40 – R60 density codes within a 400m walkable catchment. Opportunities exist for the PSP to support increased residential densities surrounding District Centre zone following the delivery of LPS 24.
City of Gosnells Activity Centres Planning Strategy 2019	This document provides guidance to assist with future planning of activity centres across the City and applies to all activity centres including Forest Lakes District Centre.

Document	Key Provisions
	The Strategy notes the main role of District Centres is to provide a greater focus on the daily and weekly needs of residents. Their relatively smaller scale catchment enables them to have a greater local community focus and provide services, facilities and job opportunities that reflect the particular needs of their catchment. Modelling informing the strategy predicts retail floor space for Forest Lakes District Centre will increase from 13,855m^2 (2019) to 16,000m^2 by 2031. The FLPSP is consistent with the objectives of the City of Gosnells Activity Centre Planning Strategy.
Draft City of Gosnells Local Housing Strategy	The City's Local Housing Strategy seeks to create a more compact and energy efficient form of urban development by increasing residential densities based on proximity to commercial centres, public transport nodes and/or community facilities. It acknowledges that population growth will drive demand for additional retail floor space in existing centres and advocates increasing the residential density to R40 to areas around Forest Lakes District Centre. Further, potential opportunities for an enhanced dining precinct or offering are also acknowledged. The FLPSP is consistent with the objectives of the City of Gosnells Local Housing Strategy, although density changes cannot be contained with PSP until LPS 24 is enacted.
LPP 3.7 – Precinct Plans	LPP 3.7 seeks to ensure that any subdivision or development within precincts requiring Precinct Plans does not compromise the longer-term planning for those areas. This policy requires a precinct plan to be prepared for the Forest Lakes District Centre, and established provisions in which development may be considered in the absence of a Precinct Plan.
LPP 4.1 – Public Consultation	LPP 4.1 establishes the requirements to be undertaken for all planning applications and proposals that are required to be advertised for public comment. This policy requires all structure plans to be referred to the owners and occupiers within 150m of the site and publicly advertised for a 42-day period.
LPP 4.11 Public Art	This policy applies to all applications for Development Approval for residential, commercial or mixed-use developments. Where the estimated cost of development exceeds $2 million, public art contributions to the value of 1% of the estimated cost of the development are required, to a maximum contribution of $250,000. Public art is to be provided onsite, unless otherwise approved by the City, where a cash in lieu contribution may occur.
SPP 4.2 – Activity Centres	SPP 4.2 – Activity Centres (SPP 4.2) outlines broad requirements for activity centre development and renewal. The policy seeks to ensure planning and development adequately considers the distribution, function and broad land use considerations for activity centres, and that development proposals are consistent with the classification of the activity centre in both function and hierarchy.

Document	Key Provisions
	The policy identifies Forest Lakes as a District Centre. The FLPSP has been prepared to accord with the requirements of this policy and SPP 4.2 Implementation Guidelines.
SPP 7.0 – Design of the Built Environment	SPP 7.0 – Design of the Built Environment (SPP 7) is the lead policy underpinning quality design, and sets out the principles, processes and considerations applicable to the design of the built environment across all levels of planning and development in Western Australia. It is anticipated future development will need to demonstrate compliance with the design principles detailed in this policy.
SPP 7.2 – Precinct Design	SPP 7.2 – Precinct Design (SPP 7.2) seeks to ensure that precinct planning and design processes accommodate growth in a coordinated manner and deliver good quality built environment outcomes that provide social, economic and environmental benefits. The FLPSP has been prepared to accord with the measures of this policy and its associated guidelines.

Figure 9 - LPS 6 Zoning Plan



3. OPPORTUNITIES AND CONSTRAINTS ANALYSIS

A review of the site in its context has identified a number of opportunities and constraints for the site and its future development.

Key Opportunities identified include:

- Established and well-functioning shopping centre servicing large residential catchment.
- Adjoining vacant site under same ownership.
- Existing Performing Arts Centre.
- Vacant residential site to north (opportunity for sensitive interface).
- Opportunities for some additional density and mixed use along Murdoch Road (double frontage properties).
- Good pedestrian and open space linkages.

Constraints include:

- Newly developed and small lot development to west (no redevelopment short to medium term).
- Limited public transport services.
- Not located on major road network.
- Another District Centre nearby (Thornlie Square).
- Existing easements dealing with access to be accommodated.

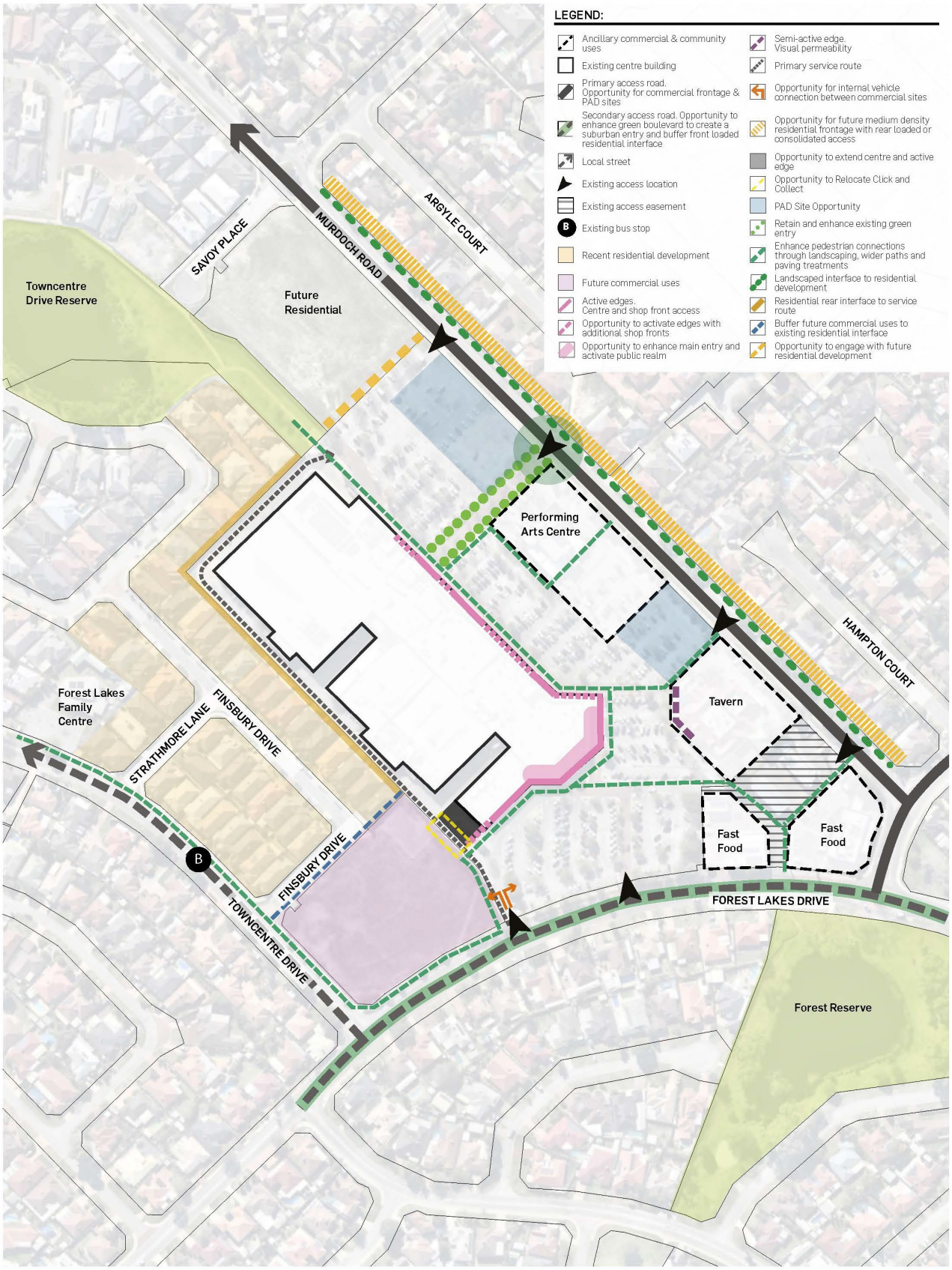
These factors result in the plan being about evolution and infill rather than fundamental redevelopment. The opportunities in the surrounding frame will need to be considered as part of a future amendment which must await the gazettal of the new City of Gosnells LPS 24.

The plan and its provisions focus on the enhancement of the existing centre with some infill on vacant areas which must complement and respect the existing centre. Similarly, the Forest Lakes Drive frontage must respect the residential interface and exposure.

Developed will be staged over a series of developments on the site, including the reconfiguration of the carpark as part of the enhancements to the main centre.

Figure 10 on the overleaf provides a summary of the key opportunities and constraints affecting the precinct.

Figure 10 - Opportunities and Constraints Plan



4. STAKEHOLDER AND COMMUNITY ENGAGEMENT

This FLPSP has been informed by a range of stakeholder consultation, including:

- A site tour with the City of Gosnells to identify opportunities and constraints within the Forest Lakes precinct and refine the precinct vision.
- Inception workshop with the City of Gosnells to discuss future expansion of the district centre, the local governments strategic objectives and intent for the centre, existing built form and setting, technical assessments required to inform the FLPSP, interface with adjacent properties and the assessment pathway.
- Meeting with the Department of Planning, Lands and Heritage to confirm the future intent for expansion of the district centre, identify DPLH's objectives and drivers, integration of future development with existing development, technical assessments required to inform the FLPSP, the interface of future development with adjacent properties, stakeholder engagement and improved public transport opportunities to service the centre.
- Meetings with the City of Gosnells to resolve public parking and access easement restricting future development from occurring in accordance with the FLPSP.
- Meeting with the City of Gosnells Manager of Development Services and Mayor to provide an overview of the FLPSP and associated future development opportunities.
- Consultation with the City of Gosnells and Department of Planning, Lands and Heritage to refine the Forest Lakes Precinct Structure Plan boundary based on the relevant planning framework.

5. VISION

The vision for each FLPSP sub-precinct is detailed below:

Shopping Precinct:

The Shopping Precinct aims to be a dynamic retail and community hub, integrated with the adjacent Murdoch Commercial Precinct. This precinct will serve as a district shopping centre, catering to the daily and weekly needs of the local community.

It will foster a diverse mix of retail, commercial, and service-based tenancies, activating the wider FLPSP area. Prioritising safety and pleasant connectivity, it will bridge existing and future developments within the FLPSP area. The precinct will maximise internal activation and employment opportunities with minimal negative impact on adjacent precincts.

Murdoch Commercial Precinct:

The Murdoch Commercial Precinct will support the overall function and success of the centre with uses not typically suited to a shopping centre environment. This precinct will host a diverse range of large format civic, retail, service, and other commercial uses, including entertainment, bulky goods, fast food, and service stations.

While generating employment and on-street activity, it acknowledges that some commercial uses will attract more vehicle-based than pedestrian trips. The Murdoch Commercial Precinct is committed to providing safe connections between existing and future developments within the FLPSP. Ensuring building facades facing Murdoch Road and Forest Lakes Drive incorporate areas of activation, passive surveillance, and permeability, it will create an engaging and accessible environment."

6. DESIGN RESPONSE

6.1. URBAN ECOLOGY

Table 8 - Urban Ecology Deisgn Element Objectives

Objective	Considerations
O1.1: To protect, enhance and respond to the ecological systems of the precinct.	C1.1.1 Identify and respond to the topography and landscape of the precinct and its surrounding area.
	C1.1.2 Identify opportunities to develop and/or enhance the extent, connectivity, and quality of the green network
	C1.1.3 Consider the total water cycle and how any proposed management responds to the hydrological system, the site and its development context.
	C1.1.4 Identify opportunities to support habitat protection and enhancement in the precinct.
O1.2: To enhance sense of place by recognising and responding to Aboriginal, cultural and built heritage.	C1.2.1 Acknowledge and incorporate local Aboriginal knowledge, concepts, and stories of place.
	C1.2.2 Consider and integrate the cultural heritage of the area into the precinct design.
	C1.2.3 Identify and incorporate unique built features, including built heritage, into precinct design.
O1.3 To reduce the environmental and climate change impacts of the precinct development.	C1.3.1 Identify opportunities to retain existing trees and enhance the tree canopy through new planting.
	C1.3.2 Consider the influence of the precinct design on energy demand and review the potential for precinct scale energy generation, distribution, and storage.
	C1.3.3 Prioritise consideration of waste management at the relevant scale in line with low-waste, circular economy objectives.
	C1.3.4 Promote water conservation including water reuse and recycling.
	C1.3.5 Evaluate the performance of precinct development proposals against leading Australian sustainability performance standards.

The FLPSP is an established urban area and has undergone extensive urbanisation over time. Part of this urbanisation process has included the planting of trees within the district centre, public open spaces and to the surrounding road network. Many of these trees are now well established and contribute to the local amenity. As a result, the locality has an established green network of linked parklands within the surrounding catchment. These areas provide access to nature as well as serving a district drainage function.

No significant changes are proposed to the existing topography or drainage arrangements. Future development within the FLPSP will need to ensure that all stormwater is able to be contained on-site or appropriately treated and connected to the local drainage system. Furthermore, finished ground levels at the boundaries of any new lots will be required to match or coordinate with the existing and/or proposed finished ground levels of the land abutting.

An opportunity exists to increase the tree canopy within the FLPSP. A Landscape Master Plan prepared for the FLPSP identifies existing trees to be retained, areas where new trees can be planted and opportunities to increase the overall tree canopy. An extract of the proposed tree canopy is contained in **Figure 11**.

The Landscape Master Plan also identifies plant species to guide future landscaping within the FLPSP. The planting scheme proposes plant species endemic to the locality to assist with emphasising a distinct sense of place. The endemic plant species are considered appropriate to the local environment and are expected to tolerate local environmental conditions. This will assist to ensure survival and better growth of plants, support the already established habitats, as well as reducing ongoing irrigation and maintenance requirements.

Native street plantings are identified to complement the existing vegetation and contribute towards the parkland environment surrounding the centre. Exotic tree species may be used where appropriate to strengthen existing plantings and should be selected to provide appropriate amenity, provide shade and improve growth. Deep soil zones surrounding the site may support significant vegetation which will further contribute to canopy cover at maturity.

Future development should seek to establish sustainable waste management objectives, including utilising low-waste materials, support circular economy objectives, as well as water reuse and recycling. In addition, future development should also incorporate recommendations of the Landscaping Master Plan.

Figure 11 - Proposed Tree Canopy Extract

6.2. URBAN STRUCTURE

Table 9 - Urban Structure Design Element Objectives

Objective	Considerations
O2.1 To ensure the pattern of blocks, streets, buildings and open space responds and contributes to a distinct, legible precinct character.	C2.1.1 Design the urban structure in response to the existing or intended future precinct character
	C2.1.2 Create blocks and lots of the appropriate size, proportion, and orientation to support the intended character and functions of the precinct.
	C2.1.3 Identify existing key landmarks to create view corridors and highlight destinations and focal points within the urban structure.
O2.2 To promote an urban structure that supports accessibility and connectivity within and outside the precinct.	C2.2.1 Design a legible, interconnected, and functional urban structure that supports ease of movement to and through the precinct.
	C2.2.2 Develop an urban structure that gives priority to safe walking and cycling, with a focus on achieving 400m and 800m walkable catchments around nodes of activity and public transport hubs
	C2.2.3 Identify opportunities to create new or enhance existing connections to and through the precinct.
O2.3 To ensure the urban structure supports the built form, public realm and activity intended for the precinct.	C2.3.1 Provide block configurations that support the function and amenity of the precinct.
	C2.3.2 Design lots (size and configuration) that can support intended retail, commercial and mixed-use development.
	C2.3.3 Design lot layouts to respond to local climate, topography, and existing natural features, while supporting intended built form
	C2.3.4 Design an urban structure that can accommodate lots for large format uses outside the precinct core where desired.
	C2.3.5 Create an urban structure that contributes to the development of accessible, safe, and well-located public spaces.
O2.4 To ensure an adaptable urban structure that can respond to and facilitate change within a precinct.	C2.4.1 Develop a street block pattern that can accommodate change over time
	C2.4.2 Identify long-term strategic opportunity/catalyst sites and detail how they are to be protected from under-development.
	C2.4.3 Illustrate the relationship between the proposed urban structure and precinct staging.

As the Forest Lakes District Centre and surrounding residential development is largely established, there are limited opportunities to alter the urban structure and lot layout of the locality. Accordingly, the FLPSP seeks to enhance the existing urban structure by focusing on areas suitable for future development.

Due to the existing urban structure, the main opportunities to enhance connectivity throughout the precinct are via activated pedestrian links located within the district centre. As most of the district centre is held under

single ownership, development of the pedestrian links can occur without the coordination and consent of multiple landowners. Activated pedestrian links are shown in **Figure 12**.

The FLPSP identifies opportunities to increase the public realm and activate appropriate areas of the precinct through the inclusion of hard and soft landscaping element, and the development of casual dining areas. Casual dining areas have been identified to areas with high pedestrian traffic adjacent existing and/or proposed active land uses and will contribute to activation and passive surveillance of non-activated areas during daytime and the evening.

The greatest opportunities to improve the urban structure within the FLPSP are on Lot 201 Finsbury Drive and Lot 102 Murdoch Road. This precinct structure plan identifies site specific built form controls and appropriate land uses to ensure that future development occurs in a way that is integrated with the wider surrounds and does not prejudice further future development.

6.3. PUBLIC REALM

Table 10 - Public Realm Design Element Objectives

Objective	Considerations
O3.1 To ensure the public realm is designed to promote community health and wellbeing	C3.1.1 Provide a range of public spaces that support and contribute to the community's health and wellbeing, in response to identified community need
	C3.1.2 Design public spaces for multiple uses, to efficiently accommodate a range of functions and activities
	C3.1.3 Consider year-round user comfort in the design of the public realm
O3.2 To enable local character and identity to be expressed in public realm design to enhance sense of place	C3.2.1 Public realm design should incorporate local natural topography, habitats and vegetation to enhance sense of place.
	C3.2.2 Demonstrate appropriate interpretation of Aboriginal knowledge, history and heritage within public realm design.
	C3.2.3 Design the public realm to reflect the heritage significance of the precinct and support the precinct's intended character and identity.
O3.3 To ensure that key environmental attributes are protected and enhanced within the public realm.	C3.3.1 Integrate environmental features of the precinct within the public realm.
	C3.3.2 Ensure the public realm contributes to creating and/or improving the urban tree canopy within the precinct and its surrounds.
	C3.3.3 Incorporate waterwise species into the green network and public realm where appropriate.
	C3.3.4 Incorporate water sensitive urban design into the public realm.
	C3.3.5 Provide opportunities for urban greening, such as community gardens and rooftop gardens.
O3.4 To ensure the public realm is designed to be inclusive, safe, and accessible for	C3.4.1 Develop legible routes and intersections, connected by identifiable landmarks to aid navigation through the public realm.
	C3.4.2 Accommodate and promote inclusion and accessibility for people of all ages and abilities in the public realm.

Objective	Considerations
different users and people of all ages and abilities.	C3.4.3 Design the public realm according to the principles of Crime Prevention through Environmental Design (CPTED).
O3.5 To ensure public realm design is integrated with the built form, movement network and landscape of the precinct.	C3.5.1 Design well-proportioned and appropriately scaled public spaces and streets.
	C3.5.2 Consider and enhance relationships between the public realm and surrounding land uses and activities to create mutual benefit.
	C3.5.3 Design the public realm as a series of well-connected, legible spaces.
	C3.5.4 Integrate services and utilities to minimise impact on function and amenity of public spaces, streets and surrounding built form.

A successful high quality and functional public realm is central to the FLPSP and requires a considered approach to urban ecology, urban structure and movement, and appropriate land use and built form outcomes.

The existing public realm within the FLPSP is very much car dominated and focused on the vehicle movement network and people traversing through the precinct. As a result, the district centre and surrounding areas are disconnected and lack functionality at a pedestrian level. Examples of this occurring include the interface between the district centre and homes located along Murdoch Road, as well as the disconnected nature of development within the district centre itself.

This FLPSP seeks to benefit from opportunities to improve the public realm by providing increased focus on active pedestrian linkages and providing casual and informal spaces to sit, rest and play within the district centre. Inclusion of soft and hard landscaping will improve the visual amenity of the public realm, whilst inclusion of casual outdoor dining spaces will contribute to the overall activation of the public realm and improve visitor experience. These spaces will provide visitors with a place to remain before or after completing their primary purpose for visiting the centre and assist with contributing towards the centre's overall success.

There are three key principles for the enhancement of the public realm; Sense of Community, Integrated Green Space and Connected Precinct. The Landscape Master Plan discusses these in detail, with a summary of each principle provided below.

6.3.1. Sense of Community

Forest Lakes District Centre is in an ideal location to service the surrounding residential areas and has the opportunity to provide high public amenity for its catchment. In order to provide an active sense of community, the centre should encourage connection, dialogue and engagement.

Through the development of the public realm surrounding the centre, resilient and vibrant community spaces are created that allow uses within the centre to flow outwards towards the street, contributing to the activation of the public realm.

Alfresco dining spaces will employ elements of form, scale, texture, and colour that will promote social interaction, foster a sense of identity, and enhance the quality of life within the local community.

6.3.2. Integrated Green Space

A Green Link through the precinct contributes to the surrounding amenity and provides a range of benefits, including enhanced connectivity, additional shade canopy and contributions to sustainability.

The link provides an environmentally positive community contribution that benefits the existing ecosystems, helps to mitigate urban heat island effects and reduces the impact of urbanisation.

The Green Link within the precinct aligns with the City of Gosnells Strategy which states the focus for Activity Centres will be to enhance sustainability and improve connectivity.

6.3.3. Connected Precinct

The precinct promotes an accessible and community-oriented destination that caters to a wide variety of people. The enhanced pedestrian access network will encourage visitation and ensure a complementary relationship between the Centre and City of Gosnells community.

The Landscape spaces within the precinct will help to shape community gathering, providing for a range of people, and a variety of different social activities, interest groups and sizes.

External seating is provided and integrated within landscape spaces providing spaces for community gathering throughout the day and into the night.

Figure 12 - Landscape Masterplan Extract

6.4. MOVEMENT

Table 11 - Movement Design Element Objectives

Objective	Consideration
O4.1 To ensure the movement network supports the function and ongoing	C4.1.1 Address the current and future access needs of the precinct through an integrated transport planning and land use assessment process.
	C4.1.2 Design the movement network in balance with place considerations, local access and neighbourhood/ district/regional access requirements for travel to, through and around the precinct.

Objective	Consideration
development of the precinct.	C4.1.3 Develop a movement network that enables convenient and comfortable travel and access for users of all ages and abilities.
	C4.1.4 Design transport infrastructure that provides a safe network for all users.
O4.2 To ensure a resilient movement network that prioritises affordable, efficient, sustainable and healthy modes of transport.	C4.2.1 Prioritise walking, cycling, public transport and shared mobility, to minimise car dependency.
	C4.2.2 Establish mode share targets for the precinct.
O4.3 To enable a range of transport choices that meet the needs of residents, workers and visitors.	C4.3.1 Prioritise provision of direct and legible pedestrian routes within the precinct and to adjacent areas.
	C4.3.2 Provide a bicycle network within the precinct that integrates with the broader cycle network and connects safely and conveniently to key destinations.
	C4.3.3 Identify public transport services and infrastructure to be upgraded or established to improve coverage, frequency, connection and user choice
	C4.3.4 Design public transport infrastructure to integrate with and be appropriate for the intended mode share, patronage and place character of the precinct.
	C4.3.5 Consider access requirements for service vehicles and logistical freight movements within the precinct.
	C4.3.6 Design the movement network to allow for private vehicle access and movement that is appropriate to the precinct function.
O4.4 To ensure the quantity, location, management and design of parking supports the vision of the precinct.	C4.4.1 Provide the minimum amount of car parking appropriate for the precinct.
	C4.4.2 Manage and locate car parking to prioritise access according to the needs of different user groups
	C4.4.3 Design parking to be integrated with the urban form.
	C4.4.4 Design parking for adaptability over time to accommodate potential future change of use.
	C4.4.5 Consider parking requirements and end of trip facilities for other transport modes.

As the FLPSP is located within an established suburban context, no changes are proposed to the existing road network. The Precinct benefits from an established hierarchy of roads that service the commercial and retail components of the centre, as well as the nearby provision of a Future Train Station (Nicholson Road) through METRONET.

A Transport Impact Assessment has been undertaken to inform the FLPSP and confirms the proposed expansion of the district centre is able to occur without any significant impact on the surrounding road network. At ultimate development, the precinct will generate approximately an additional 240 two-way vehicle trips in a Thursday PM peak period and 230 in a Saturday peak period, with some additional pass-by trips

deviated to use the fast-food establishments. These trips would quickly dissipate across the local street network and are not forecast to have a significant impact at any location.

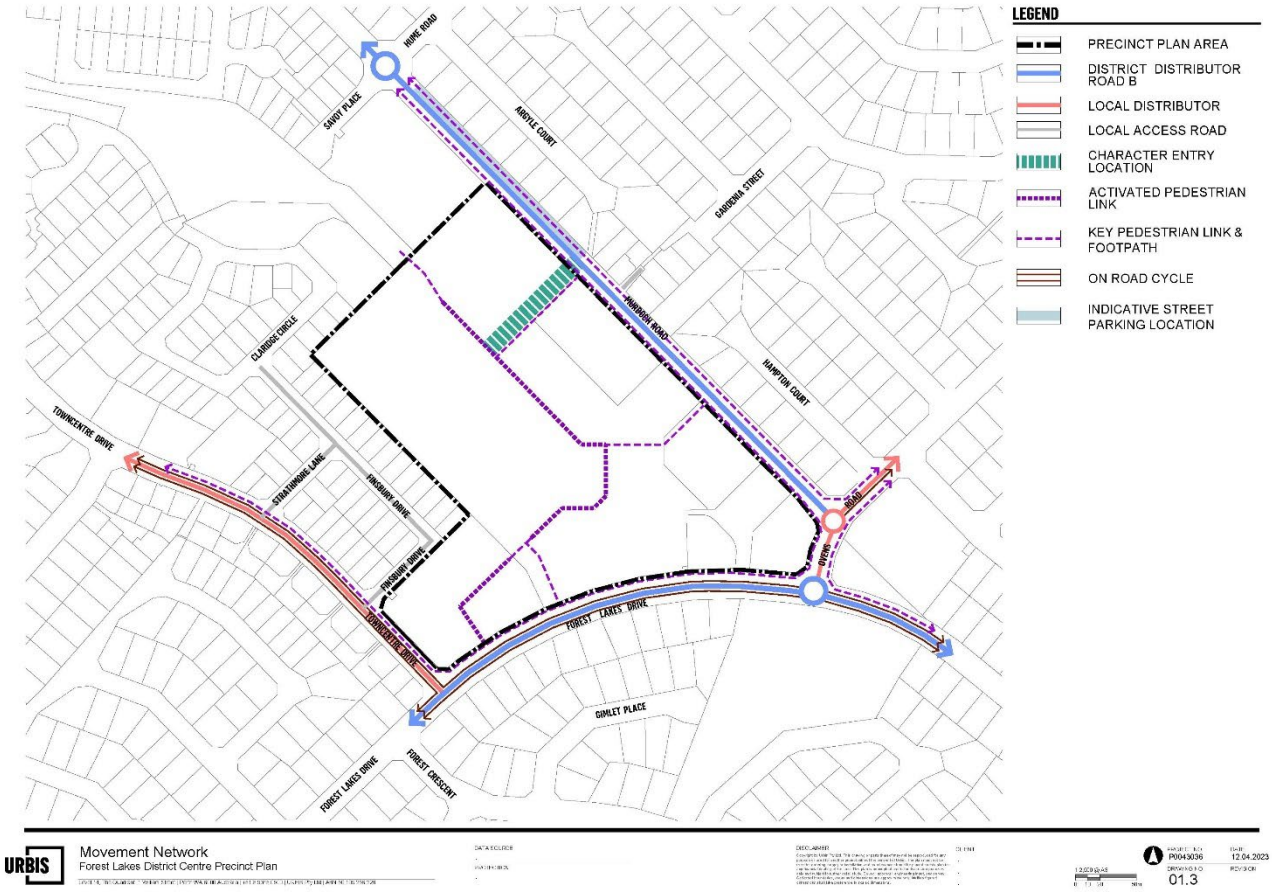
The following table provides a summary of the proposed movement network and associated features and principles relating to the district centre.

Table 12 - Movement Network Features and Principles

Mode/Issue	Features and Principles
PUBLIC TRANSPORT 	The centre will be provided with greater access to Public Transport through the construction of Nicholson Road Train Station, 1.2km northwest of the FLPSP. The new train station will provide direct transit access to the Perth CBD and support increased regional connectivity to the centre. Two bus routes service the FLPSP, with only one stopping within the FLPSP boundary (Route 223). Route 223 is a low frequency route and does not support the wider use of the centre. Its primary objective is to service local schools. The primary bus route servicing the FLPSP is route 212, however it does not stop within the precinct boundaries. Whilst providing a high frequency of service, opportunities exist to increase public transport connectivity to the district centre. Development of the Nicholson Road Train Station and the Thornlie-Cockburn Link (TCL) will increase regional public transport connectivity and provide opportunities to consider improved bus services to the Forest Lakes district centre.
WALKING AND CYCLING 	Opportunities have been investigated to improve the existing active transport infrastructure in order to create a more connected District Centre. High quality shared paths are located along Murdoch Road and Forest Lakes Road with dedicated cycle lanes located along Forest Lakes Drive, Ovens Road and Towncentre Drive. Cycle infrastructure in the immediate vicinity is extensive, with unprotected cycle lanes along most of the main roads in the locality. Forest Lakes Shopping Centre has a Walk Score1 of 57, which indicates that the area around the shopping centre is somewhat walkable and implies that some errands can be accomplished without requiring a motor vehicle. Perimeter pedestrian and cycling facilities are located along Murdoch Road, Forest Lakes Drive, Ovens Road, and Towncentre Drive, with the PSP looking internally to increase cross visitation within the Centre. An activated pedestrian link is proposed that will connect the northern edge of the precinct through to the southern edge. Specifically, this link provides a greater integration of the surrounding parkland to the centre and shifting the internal amenity from being car orientated to a shared space. This activated pedestrian link will be serviced by secondary pedestrian paths and linkages connecting to the perimeter roads.
CARS AND PARKING	No significant changes are proposed to the existing vehicle movement network throughout the FLPSP area. The TIA informing the FLPSP

Mode/Issue	Features and Principles
	confirms future development will not have a significant impact on the existing road and vehicle movement network. The precinct plan anticipates an increase of 240 two-way vehicle trips in a Thursday PM peak period and 230 two-way vehicle trips in a Saturday peak period, with some additional pass-by trips deviated to use the fast-food establishments. These trips will quickly dissipate across the local street network and are not forecast to have a significant impact at any individual location. As part of the proposed redesign of the parking areas to achieve a more efficient layout (at development application stage), traffic calming methods to improve vehicle and pedestrian safety will be implemented subject to the findings and recommendations of a Traffic Impact Statement and/or Road Safety Audit.
SERVICING 	Commercial development, particularly that of Shopping Centre typologies, require adequate loading and service areas. These are to meet the needs of tenants as well as increase the efficiency of centres operation. Existing servicing of the commercial components of the Precinct utilise both formal access ways and individual ad hoc delivery methods. The Forest Lakes Shopping Centre located within Precinct 1 (Shopping Precinct) has a dedicated service lane at the rear of the shopping centre which will be retained.

Figure 13 - Movement Network Plan



6.5. LAND USE

Table 13 - Land Use Design Element Objectives

Objective	Considerations
O5.1 To ensure current and planned land uses respond to the needs and expectations of the community.	C5.1.1 Review existing zonings and land uses within and adjacent to the precinct to identify gaps and determine the appropriate zones and land use mix.
	C5.1.2 Consider the current and future need for services, utilities, and social infrastructure, including community, civic and cultural facilities.
	C5.1.3 Identify locations for staged land use transition to meet changing community needs.
O5.2 To ensure the planned land use types contribute positively to the precinct character and amenity.	C5.2.1 Co-locate land uses that have a mutual, positive benefit.
	C5.2.2 Locate and distribute land uses to manage amenity impacts such as noise, visual and air pollution.
	C5.2.3 Distribute land uses across the precinct to support and benefit from the movement network.
	C5.3.1 Determine the appropriate land use mix for the precinct.

Objective	Considerations
O5.3 To achieve a mix of land uses and activity that supports the precinct vision.	C5.3.2 Determine the appropriate distribution of residential density to support the intended character and function of the precinct.
	C5.3.3 Provide for land uses that appropriately activate and promote safety in the public realm.
	C5.3.4 Identify a land use mix that supports local employment and the local economy.

6.5.1. Existing Land Uses

Existing land uses within the FLPSP include:

- Retail
- Non-Retail Commercial
- Civic Uses

Due to the established nature of the above land uses, this FLPSP has been prepared to support their continued growth and ensure future complementary development within the precinct. No significant changes to the existing future land uses are proposed within the precinct area that would result in land use conflict.

An overview of each existing land use and their development considerations is provided below.

6.5.1.1. Retail

The PSP Area is built around the Forest Lakes Shopping Centre retail core. The Shopping Centre has a wide and established catchment due to its diverse retail offering and numerous anchor Supermarket tenants. Forest Lakes Shopping Centre was developed with the greenfield residential expansion that occurred in the late 1980s and early 1990s. A variety of large-scale retail tenancies are located within the Shopping Centre as well as a range of speciality tenancies.

Further development of the Shopping Centre is anticipated to occur in a staged manner to improve its communal offering whilst also ensuring its current strengths and provisions are maintained.

6.5.1.2. Non-Retail Commercial

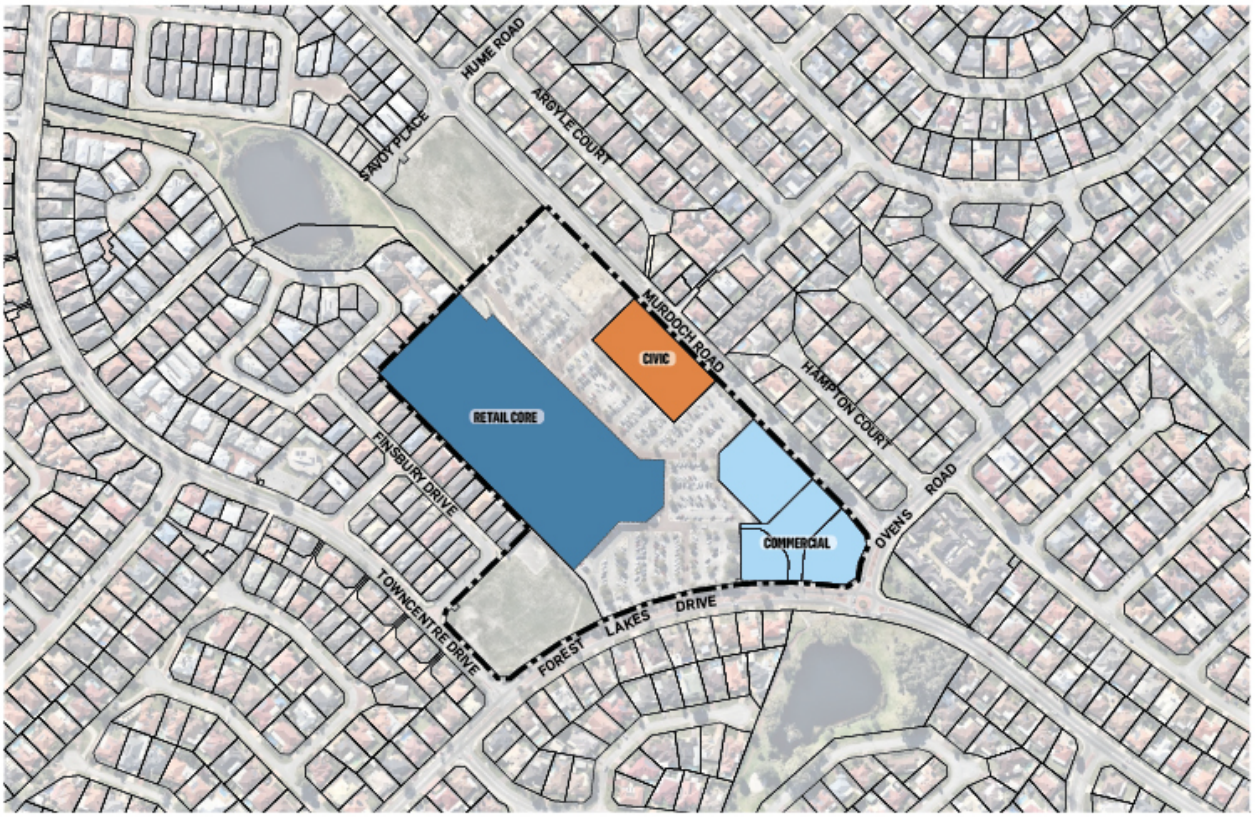
Numerous non-retail commercial land uses are present within the PSP Area. These are predominantly located along the southern and eastern ‘middle ring’ of the PSP, within Precinct 2 (Murdoch Commercial). Fast Food Restaurants, Private Recreation, a Service Station and Tavern have been developed as pad sites to the outer carpark and provide additional and complementary offerings to the centre.

This area has the largest scope for immediate development, with numerous sites fronting Murdoch Road and Forest Lakes Drive identified to accommodate additional pad sites and commercial (office, childcare, gym, veterinary, automotive and health care) uses.

6.5.1.3. Civic

Civic and community purpose sites are present in the PSP area and provide ongoing community benefits to the surrounding catchment. The Don Russell Performing Arts Centre (PAC) is centrally located within Lot 13 Murdoch Road which is a large landholding within the FLPSP. The PAC is owned and operated by the City of Gosnells and is a 235-seat venue that attracts around 14,000 patrons (approx.) a year. Further development of this site in its current form and ownership is limited, with the FLPSP supporting both its retention as a Civic asset or redevelopment for complementary purposes.

Figure 14 - Existing Land Use Plan



6.5.2 Future Land Uses

To support the above-mentioned current land uses, the following details must be considered for any future development.

6.5.2.1 Retail

Future development of the retail core, the Forest Lakes Shopping Centre, should focus on enhancing its communal offerings while preserving its current strengths. This could involve introducing new specialty stores or expanding existing ones, improving customer amenities, or modernising the centre's design. Any development should occur in a staged manner to minimise disruption to the centre's operations and its customers.

6.5.2.2 Non-Retail Commercial

The Murdoch Commercial Precinct presents significant opportunities for immediate development. Future considerations should include the introduction of a diverse range of commercial uses such as offices, childcare centres, gyms, veterinary clinics, automotive services, and healthcare facilities. Development should aim to complement the existing offerings and contribute to the overall vibrancy and functionality of the precinct.

6.5.2.3 Civic

Civic and community purpose sites, like the Don Russell Performing Arts Centre, provide essential community benefits. Future development considerations should focus on either retaining these sites as civic assets or redeveloping them for complementary purposes. Any redevelopment should aim to enhance the community benefits these sites provide, whether through expansion, modernisation, or the introduction of new facilities.

6.5.2.4 Land Use Permissibility

Future land use permissibility shall be in accordance with the corresponding District Centre zone under the scheme.

6.5.3 Residential Density

The residential density applicable to the area is R80 from a perspective of scale and its relation to the Scheme.

6.5.4 Shop/Retail Floorspace and Employment

All development applications proposing an increase in gross lettable area (GLA) of retail/shop space beyond 16,000 m^2 (as set out in the City's Activity Centre Planning Strategy) will require a Net Benefit Test to justify any potential impacts of the expansion.

The Precinct Structure Plan area is anticipated to contribute 0.076% (202 jobs) of the total additional jobs required to meet the employment self-sufficient targets under the *South Metropolitan Peel Sub-regional Planning Framework*.

6.6. BUILT FORM

Table 14 - Built Form Element Objectives

Objective	Considerations
O6.1 To ensure that the built form is responsive to the purpose, context and intended character of the precinct.	C6.1.1 Address how the precinct's built form will respond to the physical and cultural characteristics of the precinct.
	C6.1.2 Manage the built form transitions between and within the precinct.
	C6.1.3 Promote a diversity of built form types appropriate to the precinct
	C6.1.4 Identify buildings with potential for retention and adaptive reuse (including temporary use) with a priority on heritage buildings and buildings that contribute to place character.
O6.2 To ensure building placement, scale and massing is appropriate for the intended precinct and streetscape character.	C6.2.1 Set height controls to ensure buildings within a precinct have a positive impact on the surrounding streetscape and public spaces.
	C6.2.2 Develop setback controls in consideration of the intended relationship between buildings, and between buildings and the street.
	C6.2.3 Apply built form envelopes to define the streetscape and reinforce the precinct character.
	C6.2.4 Determine plot ratio controls appropriate for the existing or intended future character of the precinct, where relevant.
O6.3 To ensure that built form design reduces	C6.3.1 Locate and arrange buildings to optimise solar access to buildings and the public realm.

Objective	Considerations
energy demand across the precinct by facilitating climate-responsive design.	C6.3.2 Consider the placement and layout of buildings to optimise natural ventilation and minimise wind impact at street level and on adjoining properties and public spaces and streets.
O6.4 To ensure that built form design is responsive to the streetscape and contributes to a safe and comfortable public realm.	C6.4.1 Design and setback buildings to enable passive surveillance and outlook to the street.
	C6.4.2 Design for weather protection for pedestrian priority streets and public spaces, where appropriate.

The FLPSP contains an established district centre, with the intensity, scale and form of built form reflecting its context and designation in the activity centre hierarchy. Accordingly, future development of the centre will generally be in accordance with the existing scale, intensity and form, albeit more reflective of a more contemporary nature.

The Forest Lakes Shopping Centre and surrounding commercial development shapes the built environment with higher intensity development located within the precinct core. This being the main attractor to the precinct is to be intensified to support accessibility to services and activity.

The existing Commercial Interface, outlined in the Landscape Precinct Plan, sets the context for proposed built form controls. The Permeable Edge encourages design that promotes accessibility and interaction, while the Active Edge requires integrated structures. The Semi-Active Edge reflects a balanced scale of activation, influencing the need for diverse built form. The Aesthetic Edge shapes appealing elements, and the Passive Edge, being a quieter area, necessitates designs that foster reduced traffic and a buffer between more active zones. As outlined throughout this FLPSP, urban form across the precinct will differ according to the individual precinct, with each precinct serving a distinct and separate role and function.

The desired urban form will be driven by a number of different features and provisions including:

- Street frontage standards.
- Key public spaces and features.
- Requirements for residential density.
- Landscaping.

6.7. FUTURE PRECINCT BOUNDARY AND FORM

The FLPSP was initially proposed for a wider precinct based upon the principles of SPP 7.2 Precinct Design, however this was not able to proceed based upon the lack of suitable implementation mechanisms based upon the delay of LPS 24.

The agreed path forward was to limit the plan to the District Centre zone and ensure compliance with the current scheme provisions. Upon the gazettal of the new Scheme a review of the PSP precinct is to be considered based upon the boundary identified below (**Figure 15**).

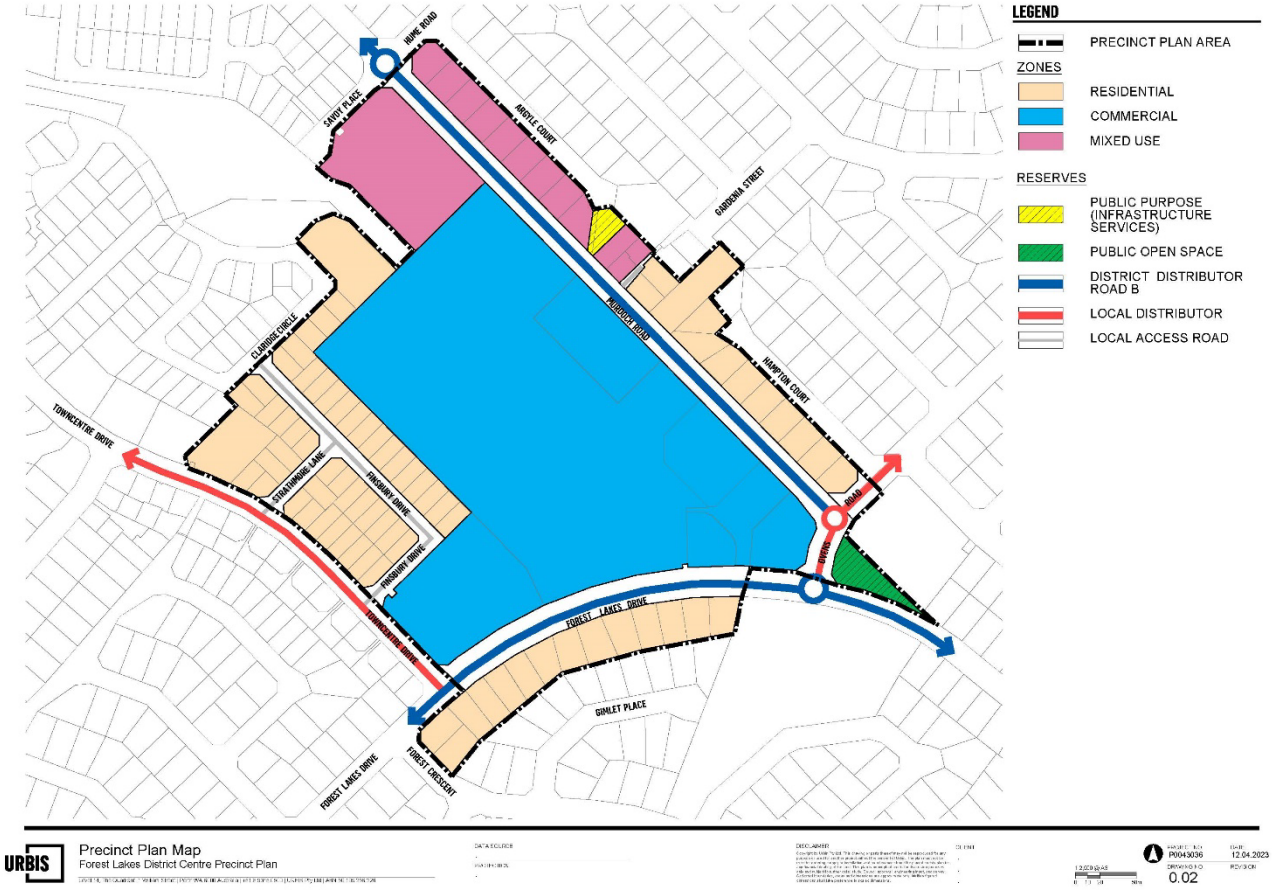
Figure 15 - Future Precinct Plan Boundary

Consideration should be given for increased density and mixed-use capability, particularly along Murdoch Road which is currently dominated by the rear boundaries of residential lots. This double frontage offers a particular opportunity to improve housing density, choice and provide site repair and increased amenity. Any non-residential uses in the periphery of the centre should not detract from the centre itself, but rather provide complimentary uses the increase the diversity of commercial offering.

Consideration should be given to dual zoning with higher density associated with larger lot size to promote consolidation and more integrated development.

The density and age of stock to the west is unlikely to enable any redevelopment in the short to medium term, however lot size and dwelling age to the south should consider a level of increased density. A contextual plan in shown in **Figure 16** below.

Figure 16 - Future Precinct Plan Map



7. TECHNICAL STUDIES AND APPENDICES INDEX

This PSP incorporates the following technical studies and appendices:

Table 15 - Technical Studies and Appendices Index

Appendix	Title	Date and Author
A	Traffic Impact Assessment	PJA, 2023
B	Landscape Precinct Plan	Urbis, 2023

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APPENDIX A TRANSPORT IMPACT ASSESSMENT

Greenpool Capital

Forest Lakes Shopping Centre Precinct Plan

Transport Impact Assessment

April 2023

Project Code: 07085

PJA
Level 27
St Martins Tower
44 St Georges Terrace
Perth
WA 6000
Australia
pja.com.au

Version Control and Approval

Version	Date	Main Contributor	Issued by	Approved by
A – Draft	06 April 2023	Rodney Ding	Rodney Ding	Tim Judd
B – Revised Draft	14 April 2023	Rodney Ding	Rodney Ding	Tim Judd
B – Final	26 April 2023	Rodney Ding	Rodney Ding	Tim Judd

Prepared for

Gareth Barrett
Managing Director
Greenpool Capital
c/o Projective DM
18 Cowper Road
SORRENTO WA 6020

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1 Introduction

1.1 Background

This Transport Impact Assessment (TIA) has been prepared by PJA for Greenpool Capital in relation to a proposed expansion to the Forest lakes Shopping Centre precinct, within the City of Gosnells.

The proposed expansion includes a new mixed-use development on Lot 201 Finsbury Drive with four new pad sites located on Lot 102 Murdoch Road. This work will also involve the modification to existing parking areas on Lot 102 and the provision of a new parking area on Lot 201. The site location is shown in Figure 1-1.

Figure 1-1: Site Location

Source: Nearmap

Lot 102 and 201 are included in the wider termed Forest lakes Shopping Centre Precinct. This includes the adjacent Recreation Centre, Lakers Tavern, 7-Eleven, Subway and McDonald's Restaurant.

1.2 Purpose of this report

The *Western Australia Planning Commission Transport Assessment Guidelines* (WAPC Guidelines) sets out what level of assessment is necessary, based on the expected traffic impact of a proposed development. This specifies that where a development is forecast to generate more than 100 trips per hour in the peak operational hours, a Transport Impact Assessment (TIA) is required. Where this is not the case a Transport Impact Statement (TIS) would suffice. A TIA has a greater focus on the external traffic impact resulting from the development than a TIS.

Based on the proposed scale of development, it can be expected that more than 100 trips per hour would be generated, and therefore the impact would be 'high' and a TIA is required.

1.3 Transport Assessment objectives

In line with the WAPC Guidelines, this TIA seeks to demonstrate that the proposed development will:

- *"provide safe and efficient access for all modes;*
- *be well integrated with the surrounding land uses;*
- *not adversely impact the surrounding areas; and*
- *not adversely impact the surrounding transport networks or the users of those networks."*

This TIA considers all transport modes, including public transport, walking and cycling, as well as private motor vehicles and freight.

1.4 Layout of this report

The remaining chapters of this TIA cover the following:

- **Chapter 2** sets out details of the proposed development.
- **Chapter 3** provides details of the existing situation.
- **Chapter 4** sets out changes proposed to external transport networks.
- **Chapter 5** demonstrates how the development will integrate with the surrounding area.
- **Chapter 6** analyses the external transport networks.
- **Chapter 7** includes a review of safety issues.
- **Chapter 8** concludes the TIA.

2 Development Proposal

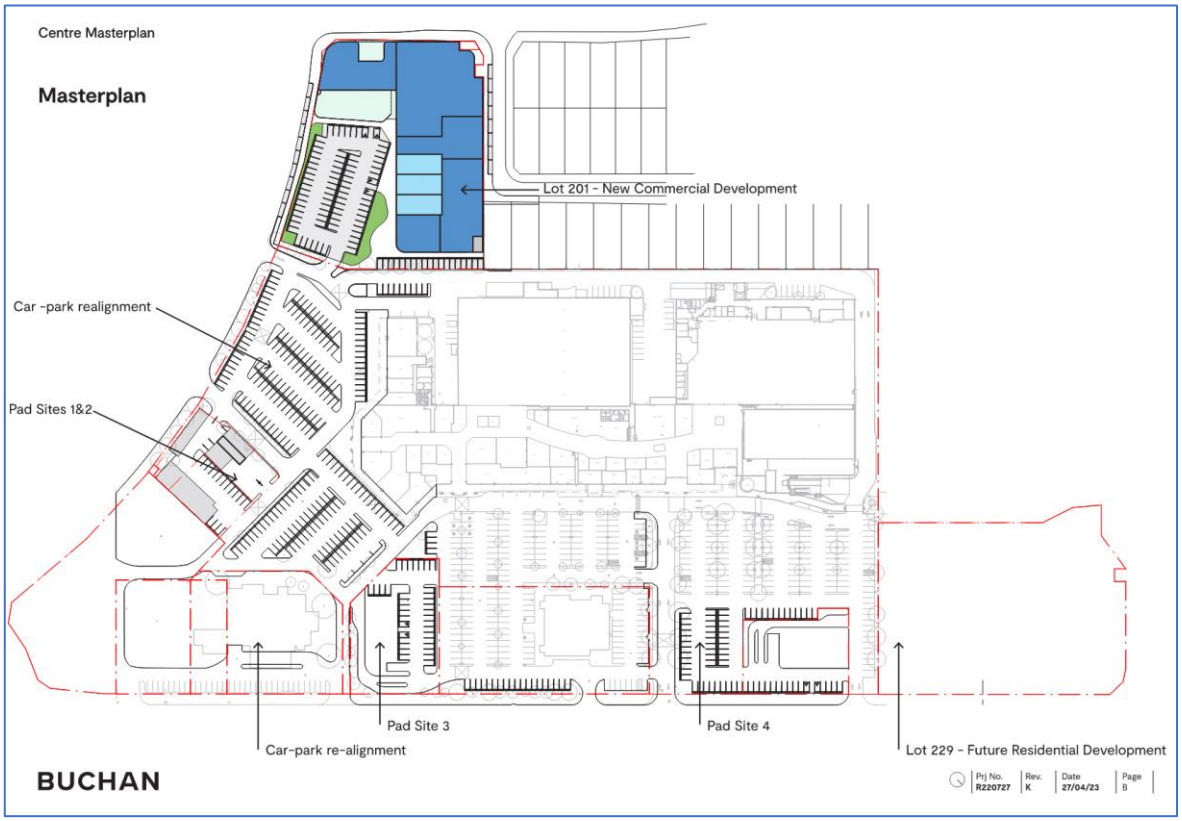
2.1 Proposed Land Uses

Proposed is an expansion of the existing Forest Lakes Shopping Centre both on the parent lot (Lot 102) and the adjacent Lot 201. The redevelopment includes the following changes:

- New mixed-use development on Lot 201 consisting of childcare, gym, medical tenancy.
- Four new pad sites located on Lot 102.
- Modification of car park areas on Lot 102 to accommodate the new pad sites.

Figure 2-1 shows the ground floor plan of the Site. Large versions of the plans are provided within Appendix A.

Figure 2-1: Ground Floor Plan



Source: Buchan

2.2 Site Accesses

The existing Site accesses are summarised below and illustrated in Figure 2-2.

1 Northeast of the Site, full movement to and from Murdoch Road
2 Northeast of the Site, full movement to and from Murdoch Road
3 Northeast of the Site, full movement to and from Murdoch Road
4 East of the Site, full movement to and from Murdoch Road
5 East of the Site, full movement to and from Murdoch Road
6 South of the Site, full movement to and from Forest Lakes Drive
7 South of the Site, full movement to and from Forest Lakes Drive
8 South of the Site, full movement to and from Forest Lakes Drive
9 South of the Site, full movement to and from Forest Lakes Drive

Figure 2-2: Existing Site Accesses

Source: Nearmap

- Access 1 – Murdoch Road
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Murdoch Road
  - Serves as the main access for service vehicles, loading and delivery trucks
  - Shared with passenger vehicles accessing the northern car park end of the site
- Access 2 – Murdoch Road
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Murdoch Road
  - Passenger vehicles access to the northern car park end of the site

- Access 3 – Murdoch Road (primary access for the Don Russell Performing Arts Centre, DRPAC)
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Murdoch Road
  - Passenger vehicles access to the middle car park end of the site and primary access for the DRPAC
- Access 4 – Murdoch Road
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Murdoch Road
  - Passenger vehicles access to the middle and southern car parks and access to the tavern site
- Access 5 – Murdoch Road
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Murdoch Road
  - Passenger vehicles access to the tavern, 7-Eleven, McDonald's and Subway
- Access 6 – Forest Lakes Drive
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Forest Lakes Drive
  - Passenger vehicles access to the 7-Eleven, McDonald's and Subway
- Access 7 – Forest Lakes Drive
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Forest Lakes Drive
  - Passenger vehicles access to Subway
- Access 8 – Forest Lakes Drive
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Forest Lakes Drive
  - Passenger vehicles access to the southern car parks

- Access 9 – Forest Lakes Drive
  - Location of the access remains unchanged
  - Remain as full movement access, to and from Forest Lakes Drive
  - Serves as the main exit for service vehicles, loading and delivery trucks
  - Passenger vehicles access to the southern car parks and the proposed development on Lot 201

2.3 Parking Requirement

The current parking provision across the site (inclusive of Lot 102, Lot 201, DRPAC, tavern, 7-Eleven and Subways site has been assessed as 813 parking spaces as described below in Table 2-1

Table 2-1: Current Parking Provision

Location	Provision
Northern car Park	209
Central Car park	200
DRPAC	117
Tavern and 7-Eleven	31
Angle Parking near Tavern	56
Southern car park	159
Rear on Site	41
Total	813

The current Gross Leasable Area Retail (GLAR) across the site including the current shopping centre, tavern and 7-Eleven, but excluding the DRPAC (as it is not retail) has been assessed at approximately 16,223m^2 thus the current parking provision is at a rate of approximately 5.01 spaces per 100m^2 GLAR.

The Department of Transport suggests a parking provision rate of 4.2 bays/100m^2. This rate has been applied consistently across large shopping centres in Perth in an effort to minimise the excessive parking supply, as described in the Parking Guidelines for Large Shopping Centres.

The Department of Transport also expect that demand for private vehicles will be less in the future, where majority of the transport mode share will shift to public transport, as projected by the document, Perth and Peel 3.5 million, approved by the Department of Planning.

Given the strategic goals of the Department of Transport, PJA has undertaken a detailed parking demand assessment for the existing and proposed development areas, to determine a representative supply requirement under business-as-usual conditions.

2.4 Parking Survey and Assessment for Existing Site

PJA undertook a parking survey to determine the parking behaviour of the existing shopping centre. This survey was conducted on the 23rd March, 2023 (Thursday) between 4pm and 6pm and 25th March, 2023 (Saturday) between 11am to 1pm at time periods identified from traffic count data as the peak parking periods across both days.

It was observed that all parking demand was serviced within the site with ample spare parking spaces on the Thursday and the Saturday as described below.

The results of the Shopping Centre occupancy survey are summarised below:

- Thursday - peak parking occupancy observed at 5pm (368 cars parked, approximately 46% of supply)
- Saturday - peak parking occupancy observed at 12pm (550 cars parked, approximately 72% of supply)

To determine a representative parking demand on the design day (for the determination of an appropriate parking provision at full build out), the above parking numbers were normalised to a design day chosen to be consistent with best-practice (the 15th busiest day of the year).

Based on this assessment technique, a scaling factor of 2.5% (representing the uplift in observed parking to derive the 15th busiest day) was added to the Saturday observation to calculate a peak design day occupancy of 564 bays.

Given that the existing shopping centre and other development nearby (7-Eleven and tavern) has a floor area of 16,223m^2 GLAR (and was noted that three tenancies in the main centre totalling approximately 400m^2 were vacant), this corresponds with an unconstrained peak design day parking demand rate of approximately 3.56 bays/100m^2 for the currently occupied floor space. This is noted as slightly less than the target of the Department of Transport.

2.5 Future Parking Provision

It can be expected that as the Shopping Centre is developed, the parking demand rate will be reduced. This effect has been observed across numerous studies and is embodied in best practice parking rates included in ITE's Parking Guidelines 4th Edition. To reflect this effect the demand rate for the retail component of the proposed development could reduce

The proposed development of Lot 201 is proposed to include the provision of 117 new bays on the site with on-street parking provided adjacent to the site (10 indented bays on Forest Lakes Drive and 8 on Finsbury Drive). With the provision of 4 pad sites and a reconfiguring of parking spaces within the current car parking areas there is proposed to be 932 bays as summarised below in Table 2-2.

Table 2-2: Proposed Parking Provision

Location	Provision
Northern car Park	208
Central Car park	146
DRPAC	136
Tavern and 7-Eleven	31
Angle Parking near Tavern	91
Southern car park	162
Rear on Site	41
Lot 201	117
Total	932

Applying the current normalised peak parking rate for the site (3.56 bays/100m^2) for the expected total floor area with the additional pad sites and development on Lot 201, this has been assessed at approximately 22,755m^2 GLAR. This would lead to the requirement of 846 parking spaces. However, good practice in parking provision says that the number of parking spaces should be about 10% greater than the peak demand on the 15th busiest day of the year. Applying this factor, a total of 930 parking spaces should be provided. The proposed development has a proposed 932 spaces, and thus a surplus of 2 parking spaces. If the current parking rate was discounted 5% to reflect reduced parking rates as the centre size increases, then the 930 parking spaces required would reduce to 888 parking spaces resulting in a 44 car bay surplus.

It is concluded, the amount of parking spaces proposed are expected to more than required to meet the expected future demand.

2.6 Specific Issues

There are no specific transport issues that were initially identified in relation to the proposed development, prior to this assessment.

2.7 Provision for Service Vehicles and Delivery Vehicles

The current loading operations of the current main centre will not change from its current operations. Delivery vehicles will enter the northernmost driveway on Murdoch Road, Access 1, access one of the loading docks at the rear of the site and then exit the site via the western most driveway on Forest lakes Drive, Access 9.

The proposed development on Lot 201 is not expected to have delivery vehicles larger than a delivery van. These can park in one of the 117 parking spaces proposed on and around the Lot 201 development site.

The assessment of the pad sites will be undertaken as part of the development applications for these individual sites. Again, the largest vehicles are expected to be up to service vehicles and the design of the sites will need to cater for these types of vehicles, or as required depending on the development which may occur on the pad site in question.

3 Existing Situation

3.1 Site Location

The Site is located at Lot 201 Finsbury Drive and Lot 102 Murdoch Road, in the suburb of Thornlie under the municipality of City of Gosnells. The Site is bounded by Murdoch Road to the north, Forest Lakes Drive to the south and Towncentre Drive/Finsbury Drive to the west, existing residential developments generally surround the site with some complementary development located at the southeast corner near the intersection of Ovens Road and Murdoch Road and Forest Lakes Drive.

An aerial image of the Site is shown in Figure 3-1.

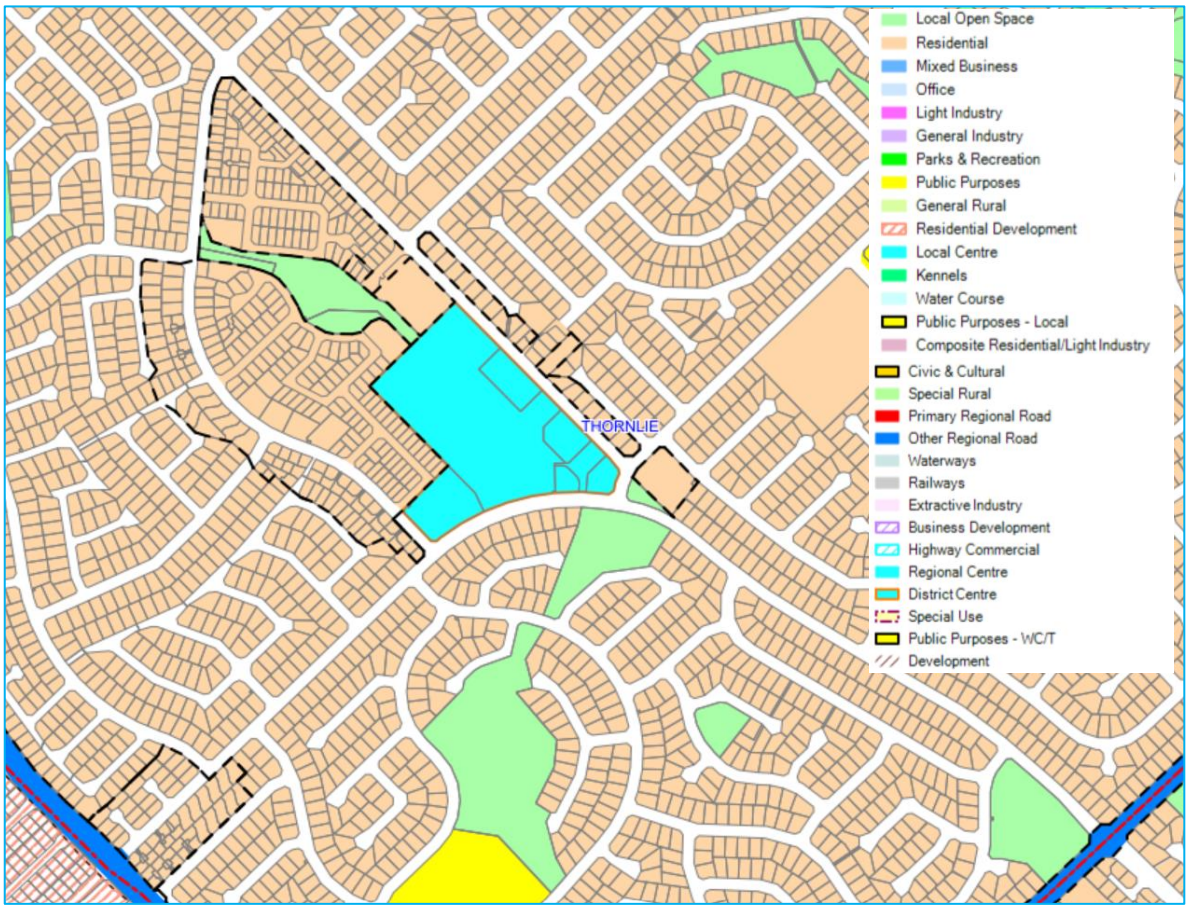
Figure 3-1: Site Aerial Image

Source: Nearmap

3.2 Existing (2023) Land Uses

According to the **City of Gosnells Town** Planning Scheme No.6 **(TPS6)**, the Site is zoned District Centre. A detailed zoning map showing the land uses around the Site within the **City of Gosnells** is shown in Figure 3-2. Land uses around the Site are mainly residential **with some** public open space.

Figure 3-2: Local Planning (TPS6) Scheme Map

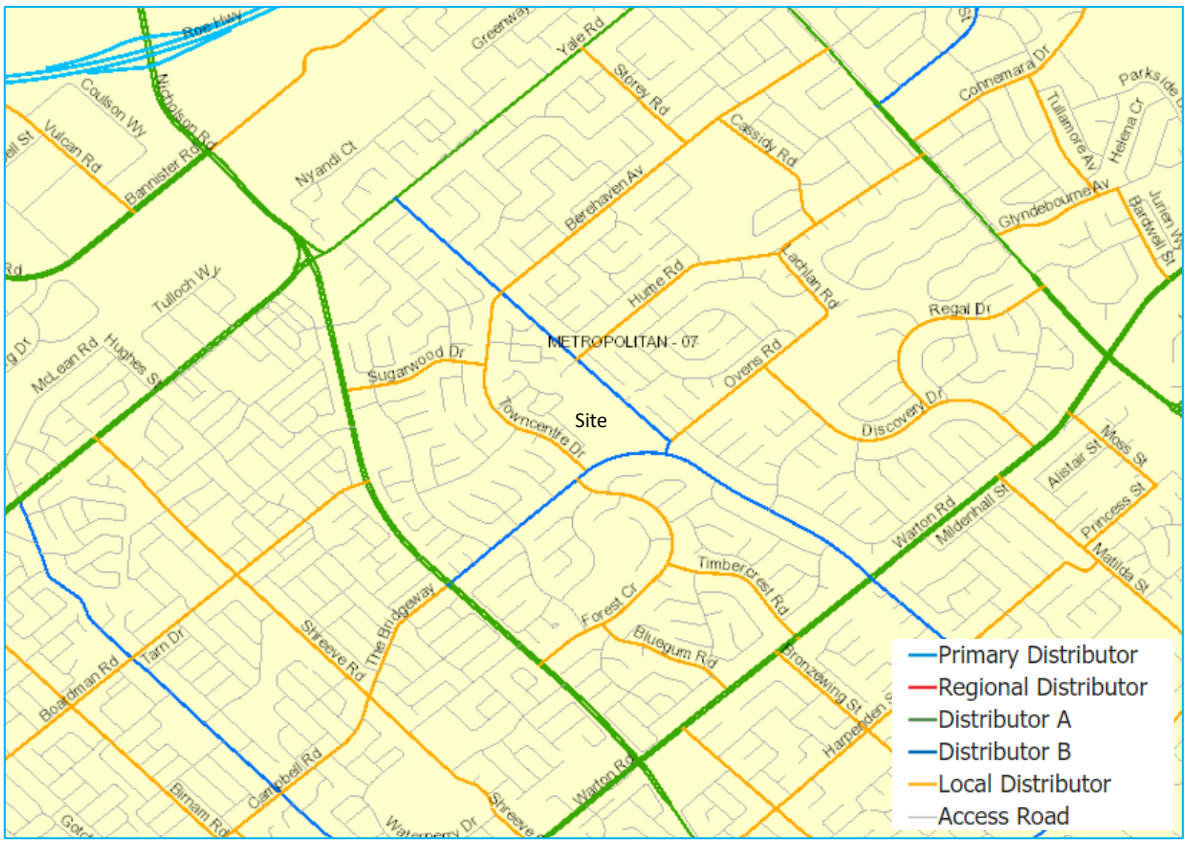


Source: City of Gosnells Intramaps

3.3 Existing (2023) Road Network

The layout and classification of the rounds in the vicinity of the Site is shown in Figure 3-3

Figure 3-3: Road Classification



Source: MRWA Road Information Mapping

The characteristics of the surrounding road network are presented in Table 3-1

Table 3-1: Road Network Characteristics

Road Name	Road Hierarchy	Jurisdiction	No. of Lanes	No. of Footpaths	Reserve Width (m)	Road Width (m)	Speed Limit
Murdoch Road	Distributor B	City of Gosnells	2	2	20m	10m	60
Forest Lakes Drive	Distributor B	City of Gosnells	2	1	25m	3.5m + 1.5m bike lane x2 5m median	60
Ovens Road	Distributor B	City of Gosnells	2	2	22.5m	4.4 x 2 4m median	50
Towncentre Drive	Local Distributor	City of Gosnells	2	1	20m	3.1m + 1.2m bike lane x 2 1.2m painted median	50
Finsbury Drive	Access Road	City of Gosnells	2	1	14.2m	6m	50

3.4 Existing Intersections

3.4.1 Murdoch Road / Ovens Road

This intersection is located at the eastern end of the site and has recently been converted from a T-junction (with Murdoch Road as the terminating road) to a 3-way single lane roundabout. The new existing intersection layout is shown below in Figure 3-4.

Figure 3-4: Intersection of Murdoch Road and Ovens Road

Source: Nearmap

3.4.2 Forest Lakes Drive / Ovens Road

This intersection is located at the south eastern corner of the site and is a 3-way single lane roundabout. The existing intersection layout is shown below in Figure 3-5.

Figure 3-5: Intersection of Forest Lakes Drive and Ovens Road

Source: Nearmap

3.4.3 Forest Lakes Drive / Towncentre Drive

This intersection is located at the southwestern corner of the site and is a 3-way T-junction with Towncentre Drive the terminating road under Give Way control. The existing intersection layout is shown below in Figure 3-6.

Figure 3-6: Intersection of Forest Lakes Drive and Towncentre Drive

Source: Nearmap

3.5 Existing Traffic Flows

Traffic count data has been obtained from Main Roads WA Traffic Map and from recent traffic surveys in March 2023, where available. This is shown in Table 3-2.

Table 3-2: Traffic Data

	Average Monday to Friday two-way	AM Peak		PM Peak	
		Eastbound/ Northbound	Westbound/ Southbound	Eastbound/ Northbound	Westbound/ Southbound
Murdoch Drive – Drive derived from Nov. 2022 video surveys @ Yale Rd	13,315	735	370	390	795
Forrest Lakes Drive derived from SCATS 2022 @ Garden St	8,970	330	295	305	455

Whilst no traffic count data is available for the roads in the immediate vicinity of the site, these are Distributor B roads and it can therefore be expected that the flows are generally in the order of 6,000 to 8,000vpd and in keeping with their function and form (Main Roads WA's Road Hierarchy for Western Australia), although traffic flows higher or lower than this can be found on roads of this classification.

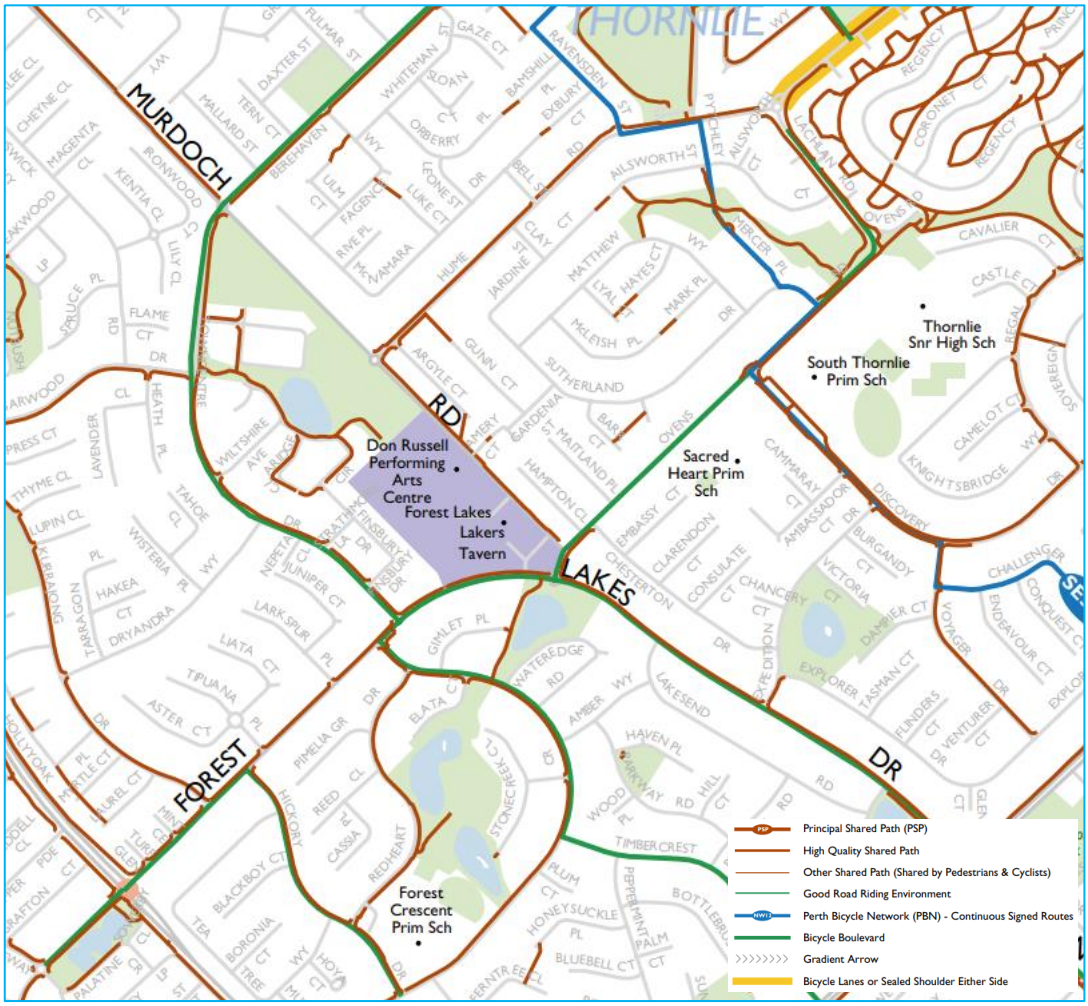
3.6 Existing Pedestrian and Cycle Provision

The cycle network in the vicinity of the site is extracted from Department of Transport, Canning and Armadale: Perth Bike Map. As shown in Figure 3-7 , high quality shared paths are available along Murdoch Road and Forest Lakes Road with Bike Boulevards along Forest Lakes Drive, Ovens Road and Towncentre Drive and they provide excellent cycling access to and from the Site. Other major roads around the Site are also noted as good riding environment.

Forest Lakes Shopping Centre has a Walk Score[1] of 57. This indicates that the area around the shopping centre is somewhat walkable which implies that some errands can be accomplished on foot.

[1] https://www.walkscore.com/score/101-forest-lakes-dr-thornlie-wa-australia

Figure 3-7: Cycle Network in the vicinity of the Site



Source: Department of Transport – Canning & Armadale Bike Map

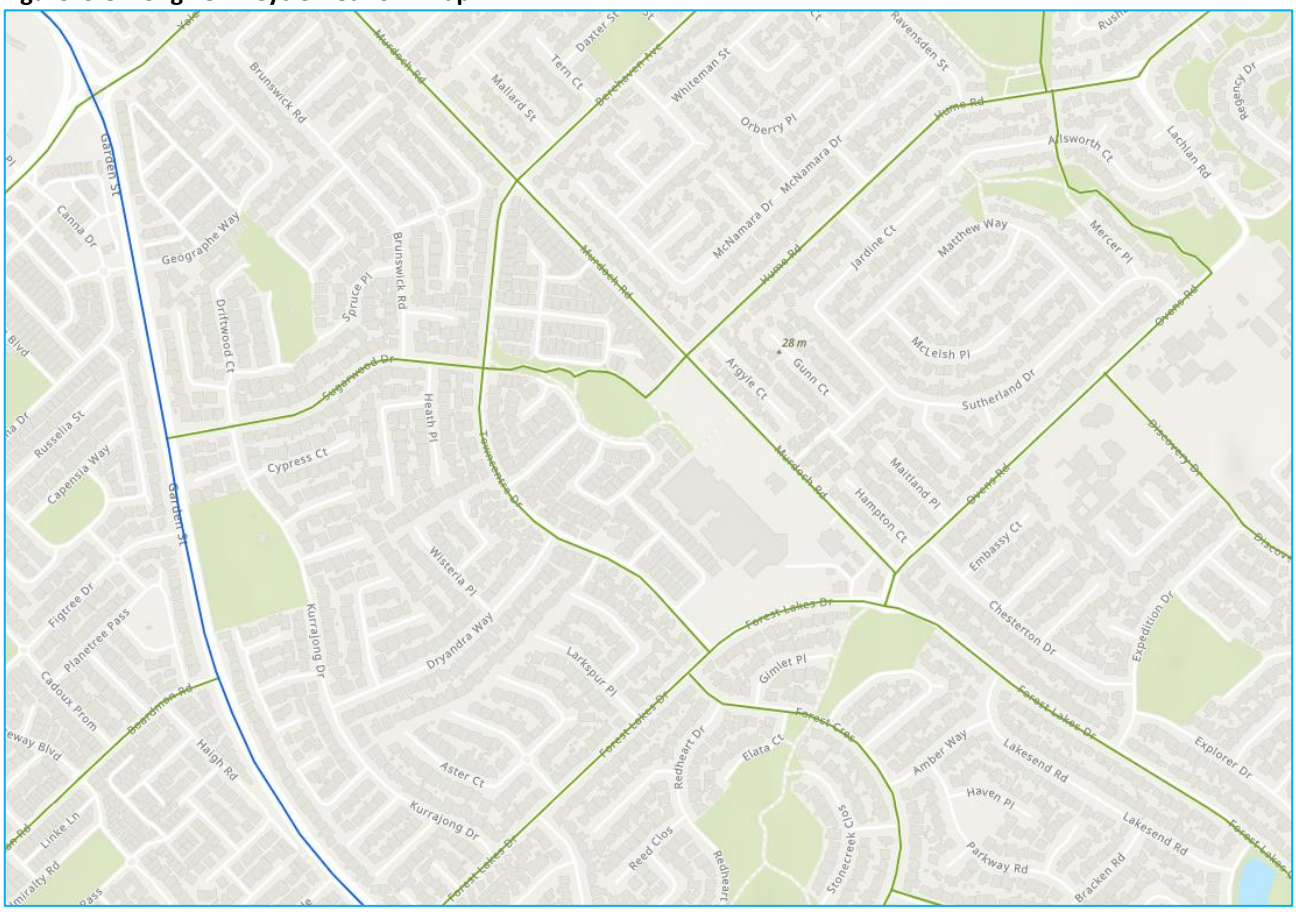
Overall, the site benefits from cycling facilities with good connections to other major locations in the vicinity of the Site.

The roads within the vicinity of the site have some footpath provision, with a footpath located on at least one side of each street. These provide an interconnecting pedestrian route through the nearby residential areas.

Cycle provision in the vicinity of the site is extensive, with unprotected cycle lanes along most of the main roads. The Perth Long Term Cycle Network (LTCN) has the majority of bike routes classified as Local Routes with connectivity out towards Garden Street allowing linkages to the future Metronet Station at Nicholson Road, approximately 2km away or a 7-min ride.

Details of these routes are shown below in Figure 3-8 .

Figure 3-8: Long Term Cycle Network Map



Source: Department of Transport – LTCN

3.7 Existing Public Transport Provision

The site is located on both Murdoch Road and Forest Lakes Drive with bus stops in immediate proximity.

The provision of bus routes appears to be adequate (albeit with low standard bus stops), with several bus routes serving the site and providing connections to other parts of Perth. The routes are operated by Transperth, the public transport provider for the Perth metropolitan area, and run at various frequencies throughout the day.

Route 204, for example, provides a direct connection between the shopping centre and the Perth CBD, with frequent service during peak hours. Routes 205, 206, and 207 also connect the shopping centre to other areas of Perth, with varying levels of frequency.

In more detail, these bus routes are:

- Route 204: This route connects Forest Lakes Shopping Centre with the Perth CBD via Cannington, East Victoria Park, and Victoria Park. The bus runs every 15 minutes during peak hours and every 30 minutes during off-peak hours.
- Route 205: This route connects Forest Lakes Shopping Centre with the Perth CBD via Queens Park, Welshpool, and Carlisle. The bus runs every 30 minutes during peak hours and every 60 minutes during off-peak hours.
- Route 206: This route connects Forest Lakes Shopping Centre with the Perth CBD via Maddington, Kenwick, Beckenham, and Cannington. The bus runs every 15-30 minutes during peak hours and every 60 minutes during off-peak hours.
- Route 207: This route connects Forest Lakes Shopping Centre with the Perth CBD via Langford, Lynwood, Riverton, and Parkwood. The bus runs every 15-30 minutes during peak hours and every 60 minutes during off-peak hours.
- Route 517: This route connects Forest Lakes Shopping Centre with the Murdoch University campus via Thornlie and Canning Vale. The bus runs every 60 minutes during peak and off-peak hours.

3.8 Crash Assessment

A search of the Main Roads WA Reporting Centre for crash data was undertaken for the period of 1 January 2017 to 31 December 2021. Crashes occurred in the vicinity of the Site are plotted in a map shown in Figure 3-9 .

Overall, there have been 39 recorded crashes with 18 of those being at the intersection of Forest Lakes Drive with Towncentre Drive and Ovens Road and the intersection of Murdoch Road and Ovens Road. The intersection of Murdoch Road and Ovens Road is being modified to a roundabout and this should reduce the number of crashes at that intersection.

There have been 12 crashes on Forest Lakes Drive, located at 3 of the 4 driveways of the shopping centre. Forest Lakes Drive has a wide 5m median and a single lane in each direction, so it provided the best option for movements to and from the shopping centre.

Murdoch Road is a wide 10m pavement with no channelisation at driveways. It is not clear to drivers exiting these driveways if vehicles will stop on Murdoch Road as there is sometimes space for cars on Murdoch Drive to pass cars waiting to turn into the shopping centre.

Figure 3-9: Crash Locations in the vicinity of the Site

Source: MRWA CrashMap

4 Changes to Surrounding Area

4.1 Road Network

Apart from the roundabout currently nearing completion at the intersection of Murdoch Road and Ovens Road there are no significant changes proposed to the surrounding road network that is likely to impact the development.

4.2 Intersection Controls

Apart from the above-mentioned roundabout, no significant changes proposed to the surrounding road network intersection controls that would be likely to impact the development.

4.3 Pedestrian/Cycle Networks

There are no significant changes proposed to the surrounding path / cycle network that is likely to have an impact on the development.

4.4 Public Transport Services

PJA contacted the Public Transport Authority and were advised of no immediate changes, with the potential for re-routing of buses to the new Nicholson Road train station in the future.

This may provide the opportunity to relocate bus routes to Forest Lakes Drive and/or Murdoch Road to improve public transport access to and from the precinct and the Nicholson Road station.

The new Nicholson Road train station will be within 1.8km of the Forest Lakes Shopping Centre and offers which could provide direct connections to a wider area.

5 Integration with Surrounding Area

5.1 Surrounding Attractors / Generators

The area in the vicinity of the site is mostly mature residential development.

Sacred Heart Primary School, South Thornlie Primary School and Thornlie Senior High School are approximately 400 to 800m from the McDonald's store on the corner of Murdoch Road and Ovens Road. This may be a key attraction for school aged children.

There are additionally a number of parks and play areas in the vicinity of the site, including Forest Reserve to the immediate south of the site of the site and Towncentre Drive Reserve north of the site.

5.2 Travel Desire Lines

5.2.1 Pedestrian / Cycling

The travel desire lines between the site and the major attractors (schools, parks and residential areas) will mainly be via the current path network that connect back to the proposed development.

The existing pedestrian and cycle provision while not designed to current best practice, requires no remedial measures as a result of this development. There are traffic islands/medians in Forest Lakes Drive and that frontage is well provided for. Murdoch Road has a single traffic island just south of Access 3 and then there is the splitter island for the roundabout at Ovens Road. Traffic flows on Murdoch Road are not at a level to necessitate the provision of traffic islands and neither have there been pedestrian crashes. However, the width of Murdoch Road does present an impediment for less able-bodied pedestrians to cross.

5.2.2 Motor Vehicle

The development will be accessed from Murdoch Road to the north and Forest Lakes Drive to the south. There will be no new direct connections of the development to either Murdoch Road or Forest Lakes Drive. These multiple connection points will distribute traffic amongst these streets and further afield and not overload the traffic carrying capacity for the street network.

The existing surrounding street network is deemed to be acceptable, except for the Murdoch Road interface due to the 10m wide carriageway.

5.2.3 Public Transport

There are currently no future public transport services being planned within the redevelopment.

As mentioned previously in Section 3.7 and 4.4, the redevelopment has good access to existing public transport services and with the new Nicholson Road station opening up this presents opportunities for re-routing or additional bus services.

The existing public transport provision requires no remedial measures as a result of this redevelopment.

6 Analysis of Transport Networks

6.1 Scope of Assessment

Traffic surveys were undertaken at all nine driveways and at the intersection of Ovens Road with Murdoch Road and Forest Lakes Drive in March 2023 and these form the basis of this traffic impact assessment.

The development is estimated to be fully developed by approximately 2025. This brings the 10 years post build out scenario to 2035 and to accord with strategic road network forecast scenarios, the traffic impact assessment analyses have been based on a 2036 timeframe to align as close as possible to a Main Roads WA ROM24 year:

- Scenario 1: 2023 Existing Traffic without development
- Scenario 2: 2025 Future base case (i.e. "without development") operation of the subject intersections for the purposes of comparison
- Scenario 3: 2025 Future "with development" operation of the intersections for the anticipated year of development opening
- Scenario 5: 2036 Future base case (i.e. "without development") operation of the subject intersections for the purposes of comparison at the nominal 11-year design horizon
- Scenario 6: 2036 Future "with development" operation of the intersections for the anticipated year of development opening and nominal 11-year design horizon

The assessment of the time periods is to be undertaken on a typical PM Thursday peak period and Midday Saturday Peak Period. Both of these periods were chosen as these periods were representative of the busiest periods of the adjacent road network as identified in traffic counts sourced from Main Roads TrafficMap and surveys undertaken.

6.2 Development Traffic Generation

The predicted vehicle trips to be generated by the proposed development have been determined based on the rates outlined in Table 6-1 (based on WAPC Guidelines and ITE generation rates).

Table 6-1: Typical Land Use Vehicle Trip Rates

Land Use	Unit	PM peak hour trip rate			Sat peak hour trip rate		
		In	Out	Total	In	Out	Total
Child Care	Children	0.39	0.43	0.82	0	0	0
Gym	100m^2	2.17	1.63	3.80	2.17	1.63	3.80
Allied Health	Practitioner	1.78	2.00	3.78	0	0	0
Vet	Practitioner	1.84	2.88	4.72	1.84	2.88	4.72
Radiography	Practitioner	1.78	2.00	3.78	0	0	0
Medical Centre	Practitioner	1.78	2.00	3.78	1.78	2.00	3.78
Workshop	100m^2	1.82	1.82	3.64	1.82	1.82	3.64
Car Cleaner	Stall	2.77	2.77	5.54	2.77	2.77	5.54
Fast food	100m^2	18.94	17.48	36.43	18.94	17.48	36.43

There are proposed to be the quantum of land uses as shown in Table 6-2 for the additional development on Lot 201 and the additional four pad sites. A pass by reduction factor of 55% and trip linking reduction factor of 20% (based on typical rates adopted by ITE) has been applied to the fast-food trip generation to reflect that some trips will be diverted from passing traffic and also associated with shoppers. An assumed trip linking reduction factor of 25% has been applied to the trips expected to be generated by Lot 201 (childcare to medical centre in the table below) as there is expected to be trips between the two sites, likely to be on foot. The numbers below are thus the expected additional trips generated by the proposed development on the site on the adjacent road network.

Table 6-2: Additional Network Trips Summary

Land Use	Unit	PM peak hour trips			Sat peak hour trips		
		In	Out	Total	In	Out	Total
Child Care	85 children	25	28	52	0	0	0
Gym	1500m^2	24	18	43	24	18	43
Allied Health	3 practitioners	4	5	9	0	0	0
Vet	3 practitioners	4	6	11	4	6	11
Radiography	3 practitioners	4	5	9	0	0	0
Medical Centre	4 practitioners	5	6	11	5	6	11
Workshop	319m^2	6	6	12	6	6	12
Car Cleaner	6 bays	17	17	34	17	17	34
Fast food	656m^2	31	29	60	62	57	119
Total		**120**	**119**	**239**	**118**	**111**	**229**

From the vehicle trip rates in Table 6-2, the Thursday PM peak hour vehicle trips predicted to be generated by the additional development are 120 inbound and 119 outbound respectively and the Saturday peak hour vehicle trips in and out are 118 and 111 respectively.

To calculate the number of additional vehicles actually entering and exiting the driveways the 55% pass by rate applied to the fast-food pad sites is added back. Thus the total additional trips spread across all driveways are as summarised below in Table 6-3.

Table 6-3: Additional Driveway Trips Summary

Land Use	Unit	PM peak hour trips			Sat peak hour trips		
		In	Out	Total	In	Out	Total
Child Care	85 children	25	28	52	0	0	0
Gym	1500m^2	24	18	43	24	18	43
Allied Health	3 practitioners	4	5	9	0	0	0
Vet	3 practitioners	4	6	11	4	6	11
Radiography	3 practitioners	4	5	9	0	0	0
Medical Centre	4 practitioners	5	6	11	5	6	11
Workshop	319m^2	6	6	12	6	6	12
Car Cleaner	6 bays	17	17	34	17	17	34
Fast food	656m^2	99	92	191	199	184	382
Total		**188**	**182**	**370**	**255**	**237**	**492**

6.3 Trip Distribution

For the purposes of estimating vehicle movements, the directional distributions shown in Table 6-4 have been based on the observational surveys undertaken in March 2023.

Table 6-4: Trip Distribution

External Route to/from	Percentage Distribution
Murdoch Road North	50% of PS3/4
Ovens Road	50% of PS3/4
Forest Lakes Drive West	50% of Lot 201 & PS1/2
Forest Lakes Drive South	50% of Lot 201 & PS1/2

Applying these distribution proportions with the trip generation in Table 6-5 results in the following anticipated traffic flows on the surrounding external roads.

Table 6-5: Resulting Trips Distributed (not including pass by and linked trips)

External Roads	PM peak hour trips		Sat peak hour trips	
	In	Out	In	Out
Murdoch Road North	15	15	30	30
Ovens Road	15	15	30	30
Forest Lakes Drive West	36	37	20	18
Forest Lakes Drive South	36	37	20	18

6.4 SIDRA Analysis

The operation of each intersection has been analysed using SIDRA Intersection (Version 9.1). The key outputs of SIDRA are summarised below:

- **Degree of Saturation (DOS)** is the ratio of the volume of traffic observed making a particular movement compared to the maximum capacity for that movement.
- The **95th Percentile (95th %ile) Queue** represents the maximum queue length that can be expected in 95% of observed queue lengths in the peak hour.
- **Average Delay** is the delay time that can be expected over all vehicles making a particular movement in the peak hour.
- **Level of Service (LOS)** is a qualitative valuation of the Average Delays, ranging from A (Excellent) to F (Very Poor).
- **Queue Storage Ratio** is a ration of the 95th %ile back of queue to the available storage distance, be it the distance between intersections in a network of the available length of a short lane.

The WAPC Guidelines indicate an average delay for each vehicle passing through an intersection to be less than 55 seconds for a signalised intersection as a whole and 35 seconds for a priority intersection on the non-priority arm, typically the leg under Give Way or Stop control. This corresponds to a LOS no worse than D. Also, the Queue Storage Ratio should be less than 1.0.

As the 9 access and two nearby intersections were modelled as a network the SIDRA results for the accesses and intersections for the estimated future volumes is presented in the various figures in Appendix B.

For the assessments it has been assumed that the current geometry of the intersections will remain unchanged.

The main finding is that there is expected to be little noticeable difference in how the adjacent road network will operate with the additional traffic flows due to the proposed additional development on Lot 201 and the four pad sites, compared to the scenario with no development.

The Levels of Service and Degrees of Saturation are typically A and less than 0.6, both reflecting the excellent performance of the accesses and intersections up to 2036 with full development and background traffic growth on both Murdoch Road and Forest Lakes Drive. There is some Queue Storage Ratios expected to be greater than 1.0 , this on the Murdoch Road approach to the Ovens Road roundabout and the Ovens Road approach to the Forest Lakes Drive roundabout, both in the PM peak. However, this is expected to occur without the development traffic and thus is considered acceptable in the case with the development added as the development is not expected to make this any worse.

7 Safety Issues

As discussed in Section 3.8 there have been a number of crashes at or near the current driveways on both Forest Lakes Drive and Murdoch Road. The majority of these have been property damage only.

Crash history for the most recent five-year period (2017 to 2021) has been reviewed from the Main Roads WA Crash Information map on streets in the vicinity of the development site.

The collisions located within the identified study area can be summarised as follows:

- Murdoch Road Access 1
  - There was a single crash resulting in medical attention as a car hit another car waiting to turn right into the driveway. This was a rear end crash.
- Murdoch Road Access 2
  - There was a single crash resulting in property damage as a car travelling south on Murdoch Road hit another car turning right from the driveway. This was a right-angle crash.
- Murdoch Road Access 3
  - There were two crashes resulting in property damage only as a car hit another car waiting to turn right into the driveway. They were both rear end crashes.
- Murdoch Road Access 4
  - There was a single crash resulting in property damage as a car travelling north on Murdoch Road hit another car turning right from the driveway. This was a right-angle crash.
- Murdoch Road Access 5
  - There was a single crash resulting in property damage as a car travelling north on Murdoch Road hit another car turning left from the driveway. This was a right-angle crash.
- Intersection of Murdoch Road and Ovens Road
  - The had been 5 crashes at this intersection including one requiring hospitalisation and another medical attention. All 5 crashes were right angle crashes. This intersection has recently been modified to a roundabout from a T-junction with funding from the Blackspot program
- Intersection of Forest Lakes Drive and Ovens Road
  - This intersection is presently a roundabout and has had 9 crashes. One of these required hospitalisation and two others medical attention. Six of the 9 crashes were found to be right angle crashes and the other three rear end crashes. The high occurrence of right angle crashes appear to be as a result of high entry speed into the roundabout, this as a result of the 60km/h speed limit on Forest Lakes Drive and the lack of pre0deflection on the Forest

Lakes approach and angle of entry into the roundabout. This pre-existing condition, could be improved with the addition of pre-deflection on the Forest Lakes Drive approaches and modification of approach angle into the roundabout.

- Forest Lakes Drive Road Access 6
  - There were three crashes resulting in property damage only. They were two right angle crashes with cars exiting the driveway being hit from cars approaching from the west and the other was a right turn-through crash.
- Forest Lakes Drive Road Access 7
  - There have been no crashes recorded and this driveway.
- Forest Lakes Drive Road Access 8
  - There were four crashes resulting in property damage only. They were two right angle crashes with cars exiting the driveway being hit from cars approaching from the west and the other two were rear end crashes turning into the driveway from the east.
- Forest Lakes Drive Road Access 9
  - There were three crashes resulting in property damage only. They were three right angle crashes with cars exiting the driveway being hit from cars approaching from the west.

From a safety perspective, the car park exits and right turn entries from both Forest Lakes Drive and Murdoch Road may, if assessed under the Safe System Assessment Framework, be deemed an "Important" issue to address with an associated "High" crash likelihood given the traffic volumes on Forest Lakes Drive and Murdoch Drive. Of concern would be pedestrian movements across both Murdoch Road and Forest Lakes Drive, likewise would have similar ratings. Suggested actions to address this are discussed below.

With the cluster of crashes on Forest Lakes Drive, involving almost all movements approaching from the west) and the number of crashes at the intersection of Forest Lakes Drive and Ovens Road, it suggests that the west to east movement along Forest Lakes Drive might currently be undertaken at speeds greater than the posted 60km/h. This should be raised with the City of Gosnells for them to investigate and address as appropriate. To better reinforce the requirement to Give Way exiting the car park areas on Forest Lakes Drive, it is suggested that the controls for the car park exit be changed to Give Way sign control with associated modified line marking.

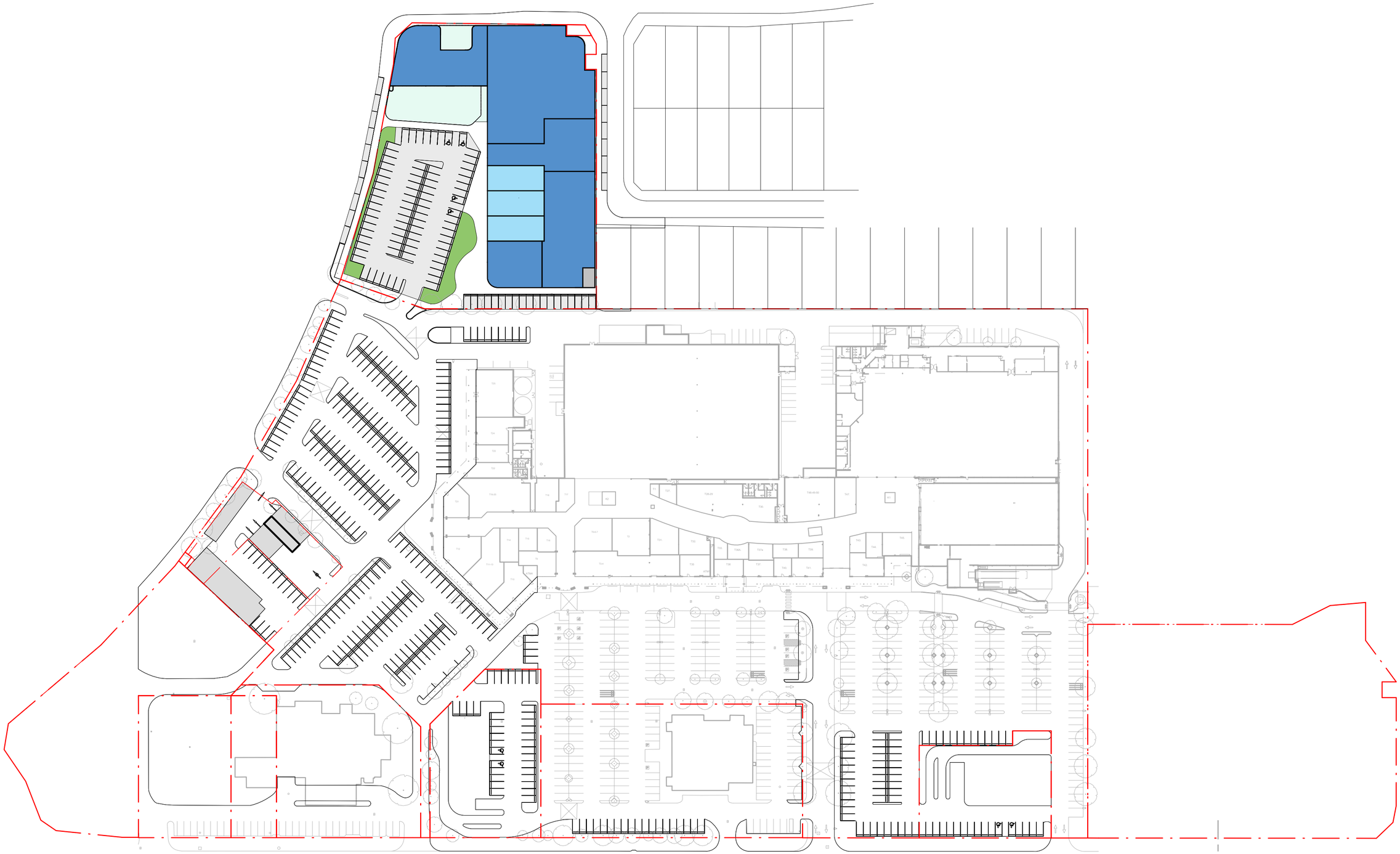
Assessing the cross section of Forest Lakes Drive having narrower lanes and wide median compared to the single 10m wide carriageway of Murdoch Road, it would be prudent to approach the City of Gosnells to investigate the possibility of narrowing Murdoch Road between Ovens Road and Yale Road. The 10m wide road is not appropriate for residential areas, this width is more appropriate in industrial areas, as it encourages high speed and is unsafe for pedestrians to cross, when compared to more typical narrower 6.0 to 7.2m roadway widths. In similar fashion to the Forest Lakes Drive

driveways, the Murdoch Drive driveways could have the signage and line marking changed to signed Give Way control to reinforce the need to stop and watch for gaps in traffic in Murdoch Road.

8 Conclusion

- This TIA has been prepared by PJA on behalf of Greenpool Capital in relation to a proposed development at Forest lakes Shopping Centre, within the City of Gosnells. The overall site will be developed along the lines of an integrated precinct.
- The redevelopment would generate approximately an additional 240 two-way vehicle trips in a Thursday PM peak period and 230 in a Saturday peak period, with some additional pass-by trips deviated to use the fast-food establishments. These trips would quickly dissipate across the local street network and are not forecast to have a significant impact at any location.
- Within the site, additional traffic is expected to be limited to Lot 201 and near the proposed fast-food pad sites on Murdoch Road.
- Footpaths will be provided alongside the roads, which will link to existing provision. Cyclists can utilise the network of cycle paths and lanes in the area, with potential for longer distance cycling to and from the proposed Nicholson Road train station.
- The development benefits from being within walking distance of nearby schools and within walking distance nearby residential areas.
- The Levels of Service and Degrees of Saturation are typically A and less than 0.6, both reflecting the excellent performance of the accesses and intersections up to 2036 with full development and background traffic growth on both Murdoch Road and Forest Lakes Drive. Thus, the traffic generated by the proposed development will not have a significant impact on the surrounding road network.
- The proposed development will provide sufficient parking bays to allow for peak demands and good traffic circulation and is expected to result in a surplus of at least 2 parking spaces.

Appendix A Proposed Layout



Rev.	Date	Description	Iss.	Appr.
D	15/03/2023	CENTRE PLAN - ISSUED FOR INFORMATION	BUC	PDM, URBIS, PJA
E	29/03/2023	CENTRE PLAN - ISSUED FOR INFORMATION	BUC	PDM, PJA, URBIS
F	27/04/2023	CENTRE PLAN - ISSUED FOR INFORMATION	BUC	PJA, Urbis

Keyplan

ZONE 4	ZONE 3	ZONE 2	ZONE 1

File
Autodesk
Docs://220727-R22-Forest_Lake_Activity_Centre/FLAC-BUC-R22-ARCHITECTURE.rvt

Project
FOREST LAKES SHOPPING CENTRE
101 Forest Lakes Dr, Thornlie WA 6108

Project Number
220727

Status

Date Plotted 27/04/2023 2:08:00 PM

Date Issued

Scale 1 : 1000 @A2

0 5 10 20 30 40M

Drawing Title

Proposed Site Plan

Drawing Number
ACP-ASK-00001

Revision
F

BUCHAN

Melbourne Studio
+ 61 3 9329 1077 / **buchangroup.com.au**

Appendix B Sidra Intersection Network Plots

DEGREE OF SATURATION

Ratio of Arrival Flow to Capacity, v/c ratio per lane

Network: N101 [Current PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

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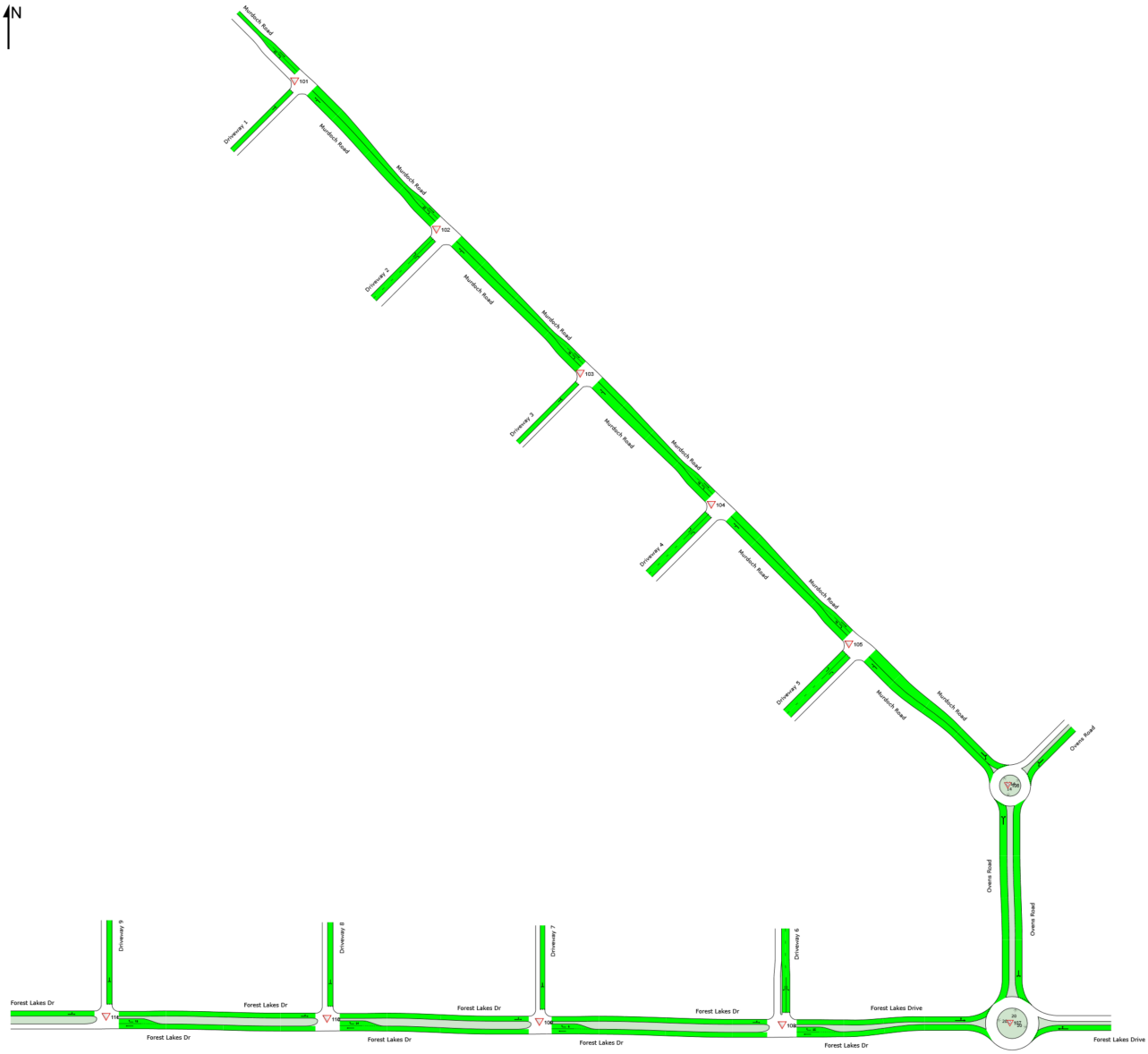

Colour code based on Degree of Saturation

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Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

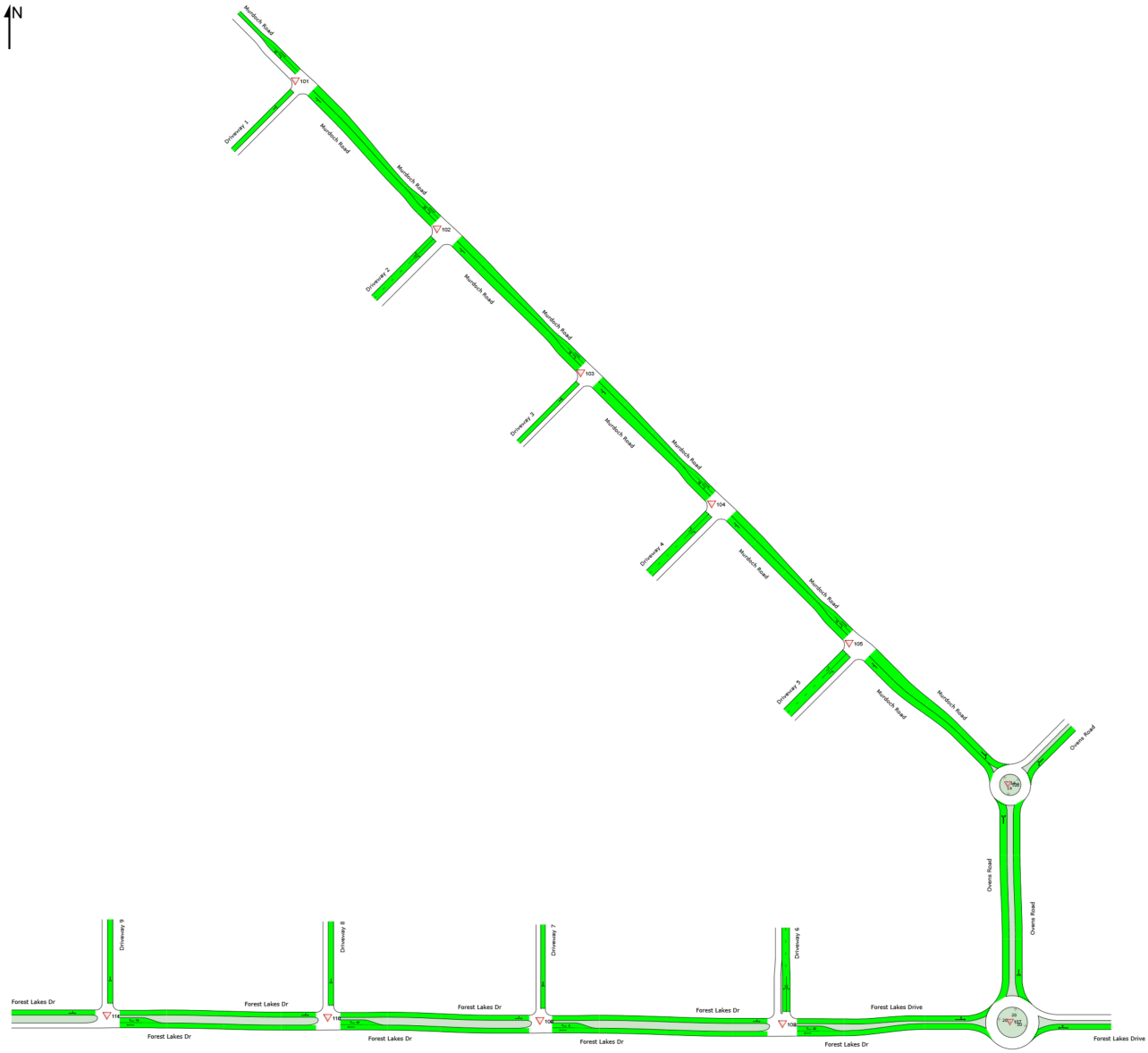
LEVEL OF SERVICE

Lane Level of Service

Network: N101 [Current PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

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

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 3:05:53 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

QUEUE STORAGE RATIO (PERCENTILE)

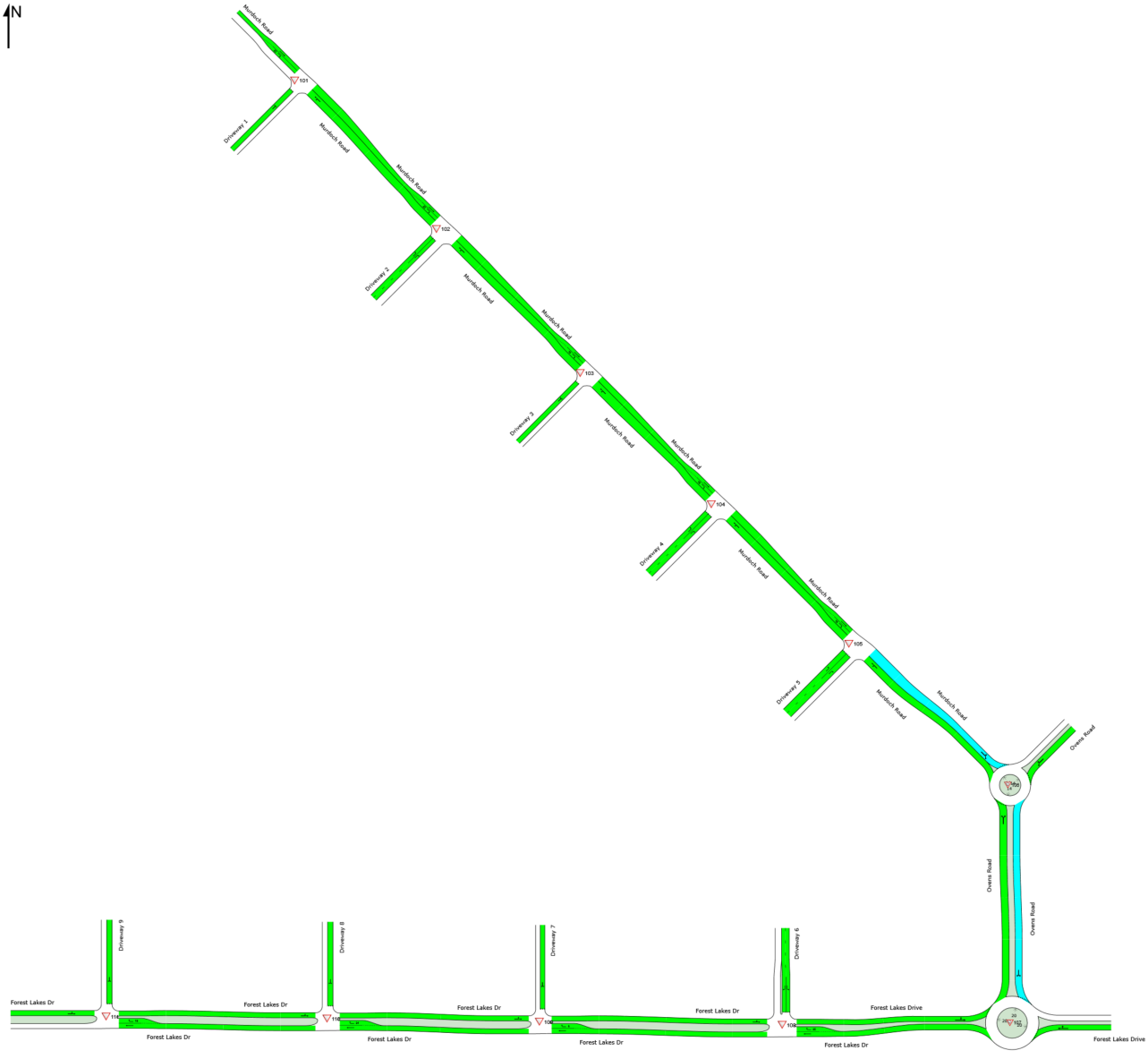
Ratio of the 95% Back of Queue Distance to the available queue storage distance per lane

Network: N101 [Current PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)

Short Lanes are not included in determining Queue Storage Ratios.



Colour code based on Queue Storage Ratio

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Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

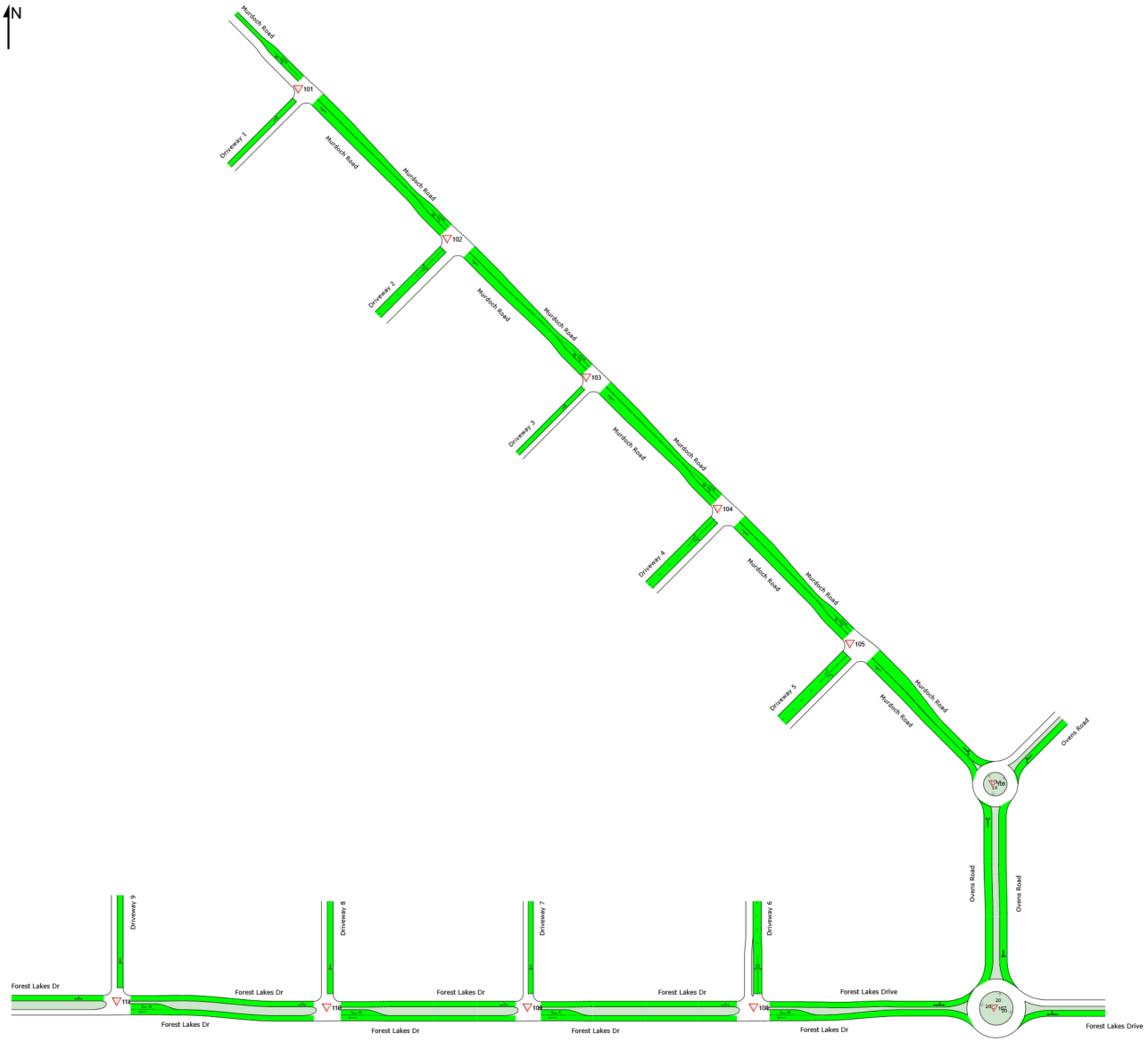
DEGREE OF SATURATION

Ratio of Arrival Flow to Capacity, v/c ratio per lane

Network: N101 [Current Sat (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)



Colour code based on Degree of Saturation

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Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

LEVEL OF SERVICE

Lane Level of Service

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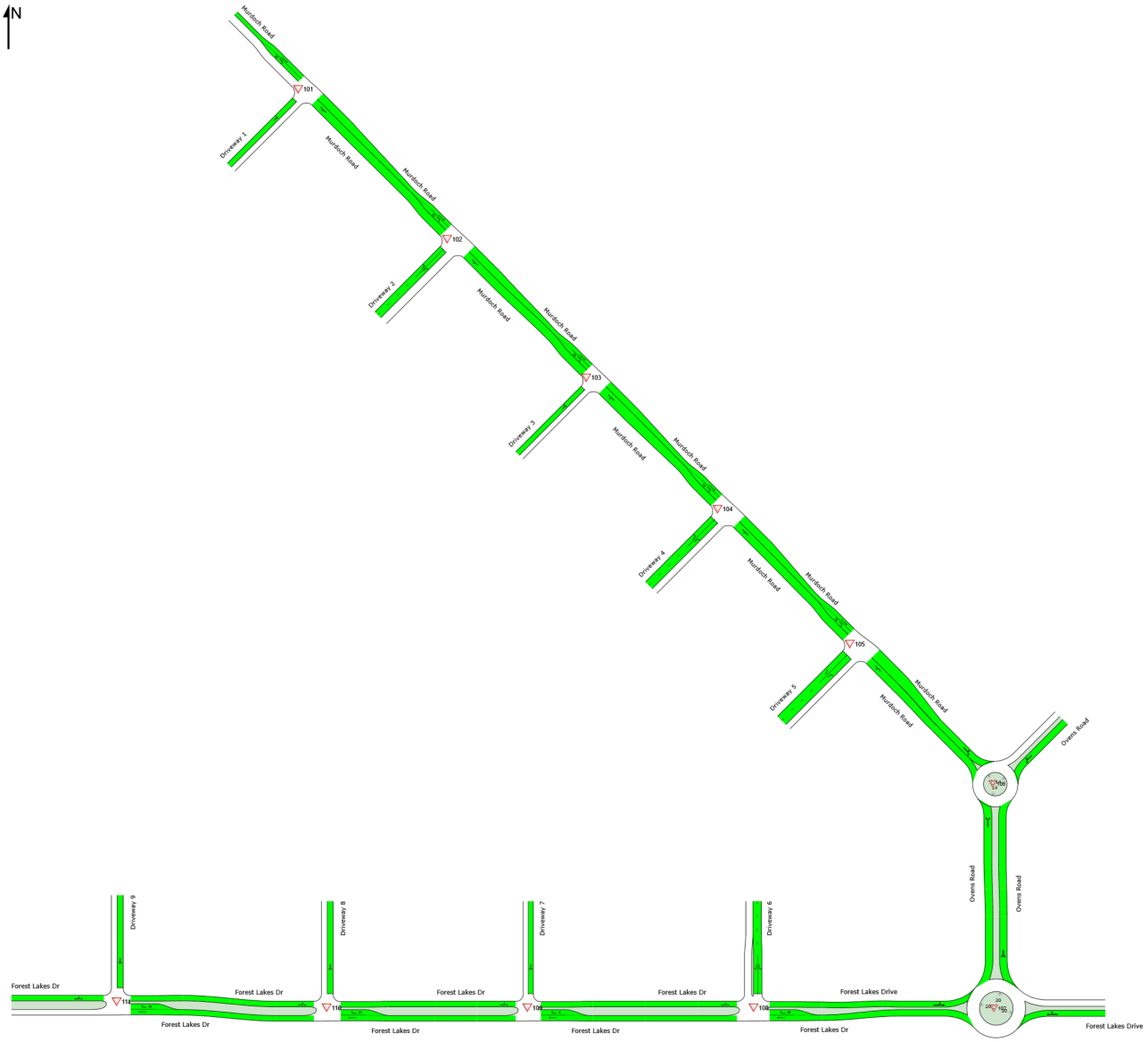
Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

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

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 3:08:05 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

QUEUE STORAGE RATIO (PERCENTILE)

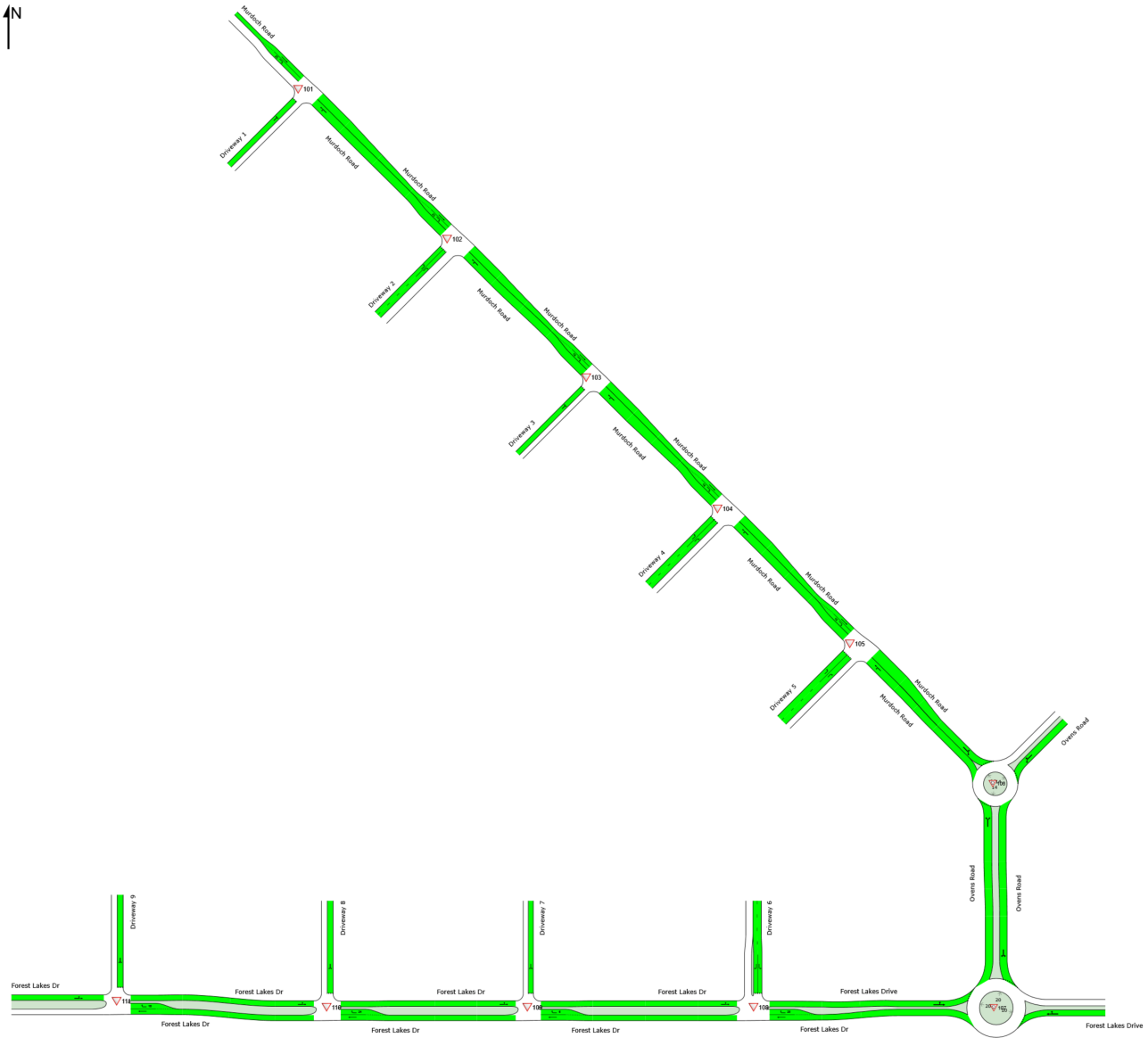
Ratio of the 95% Back of Queue Distance to the available queue storage distance per lane

Network: N101 [Current Sat (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)

Short Lanes are not included in determining Queue Storage Ratios.



Colour code based on Queue Storage Ratio

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Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 3:08:05 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

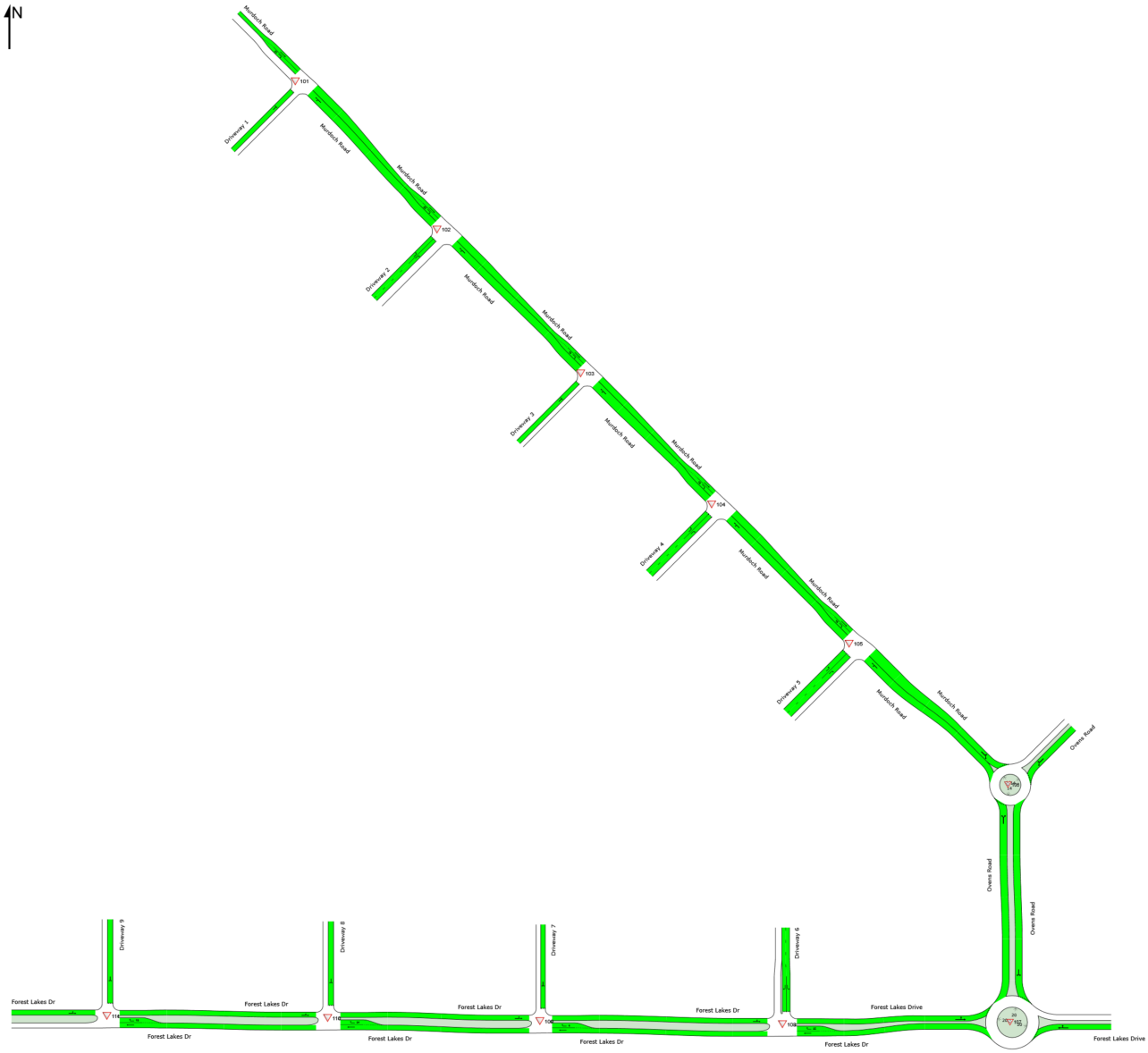
DEGREE OF SATURATION

Ratio of Arrival Flow to Capacity, v/c ratio per lane

Network: N101 [Current PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



Colour code based on Degree of Saturation

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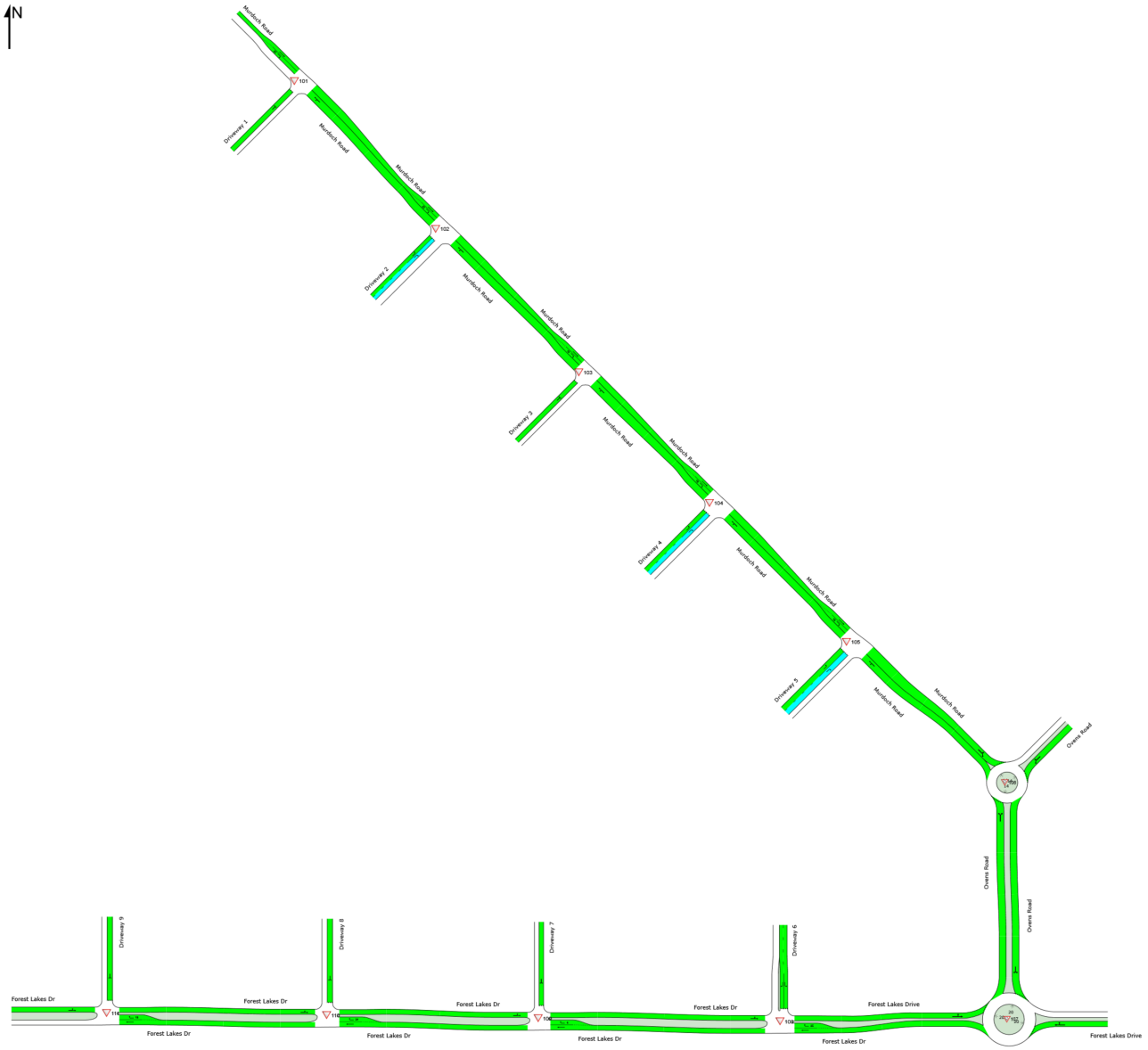
LEVEL OF SERVICE

Lane Level of Service

Network: N101 [Current PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

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

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QUEUE STORAGE RATIO (PERCENTILE)

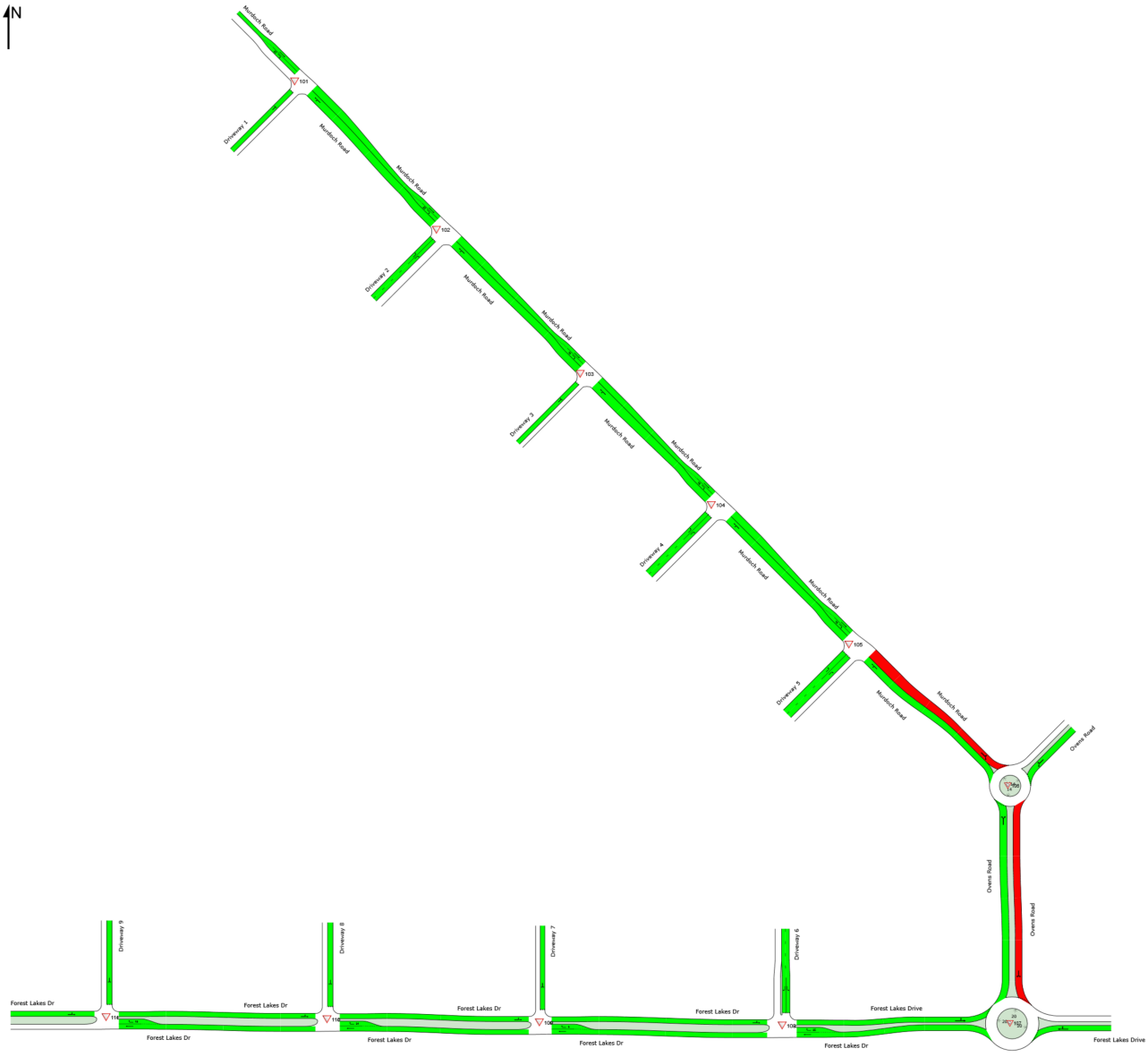
Ratio of the 95% Back of Queue Distance to the available queue storage distance per lane

Network: N101 [Current PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13

Short Lanes are not included in determining Queue Storage Ratios.



Colour code based on Queue Storage Ratio

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Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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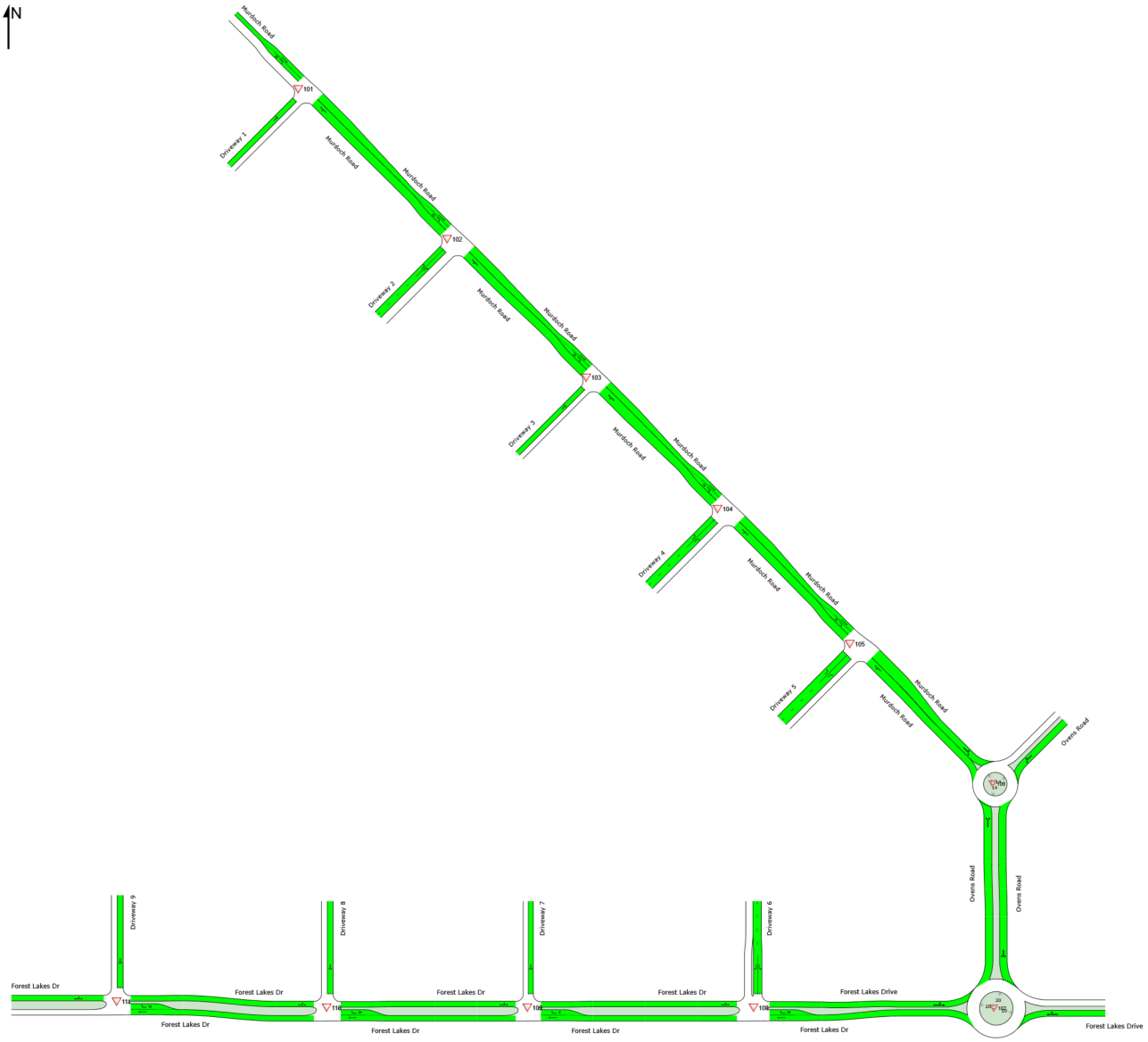
DEGREE OF SATURATION

Ratio of Arrival Flow to Capacity, v/c ratio per lane

Network: N101 [Current Sat (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



Colour code based on Degree of Saturation

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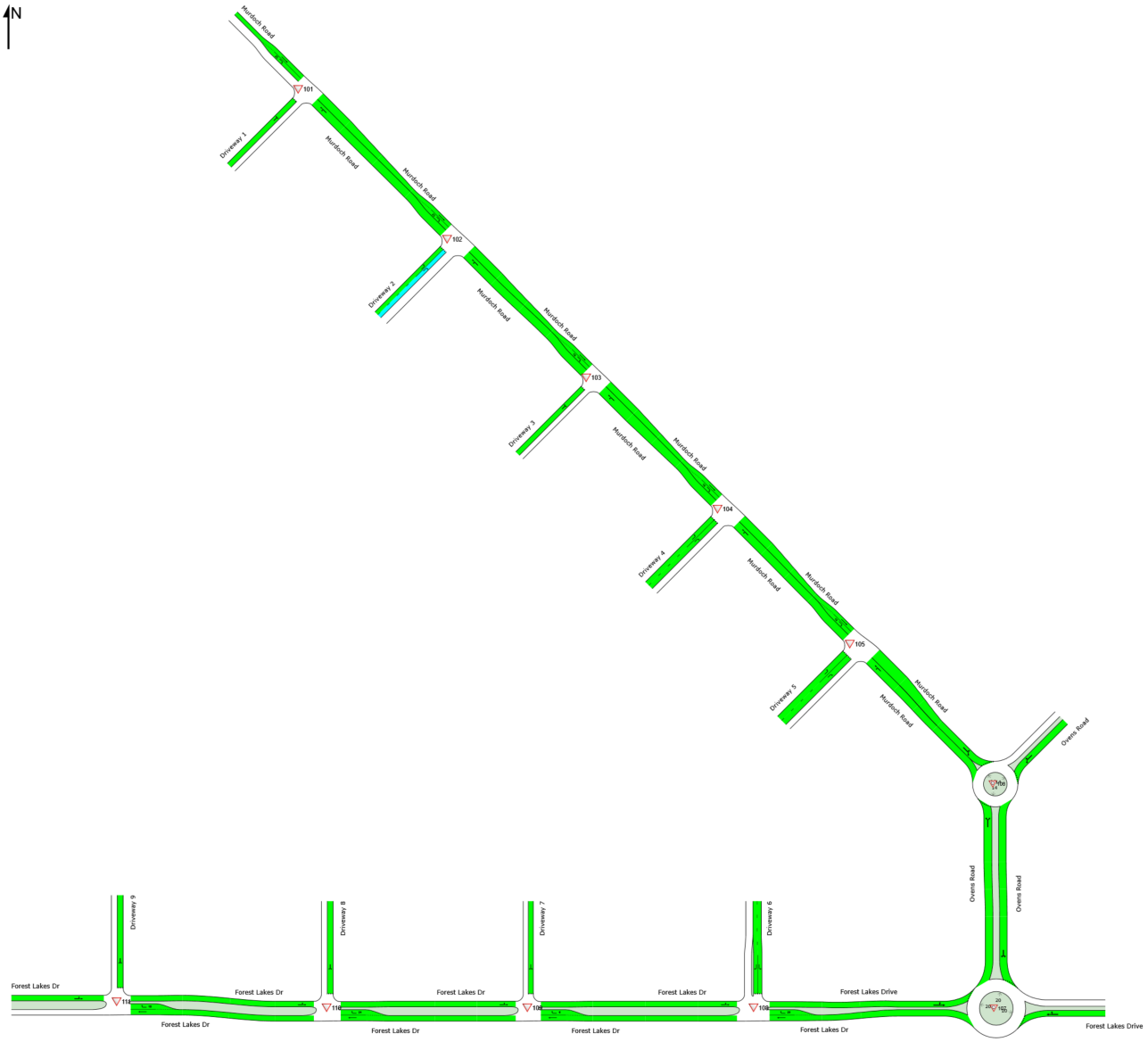
LEVEL OF SERVICE

Lane Level of Service

Network: N101 [Current Sat (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

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

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 12:15:54 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

QUEUE STORAGE RATIO (PERCENTILE)

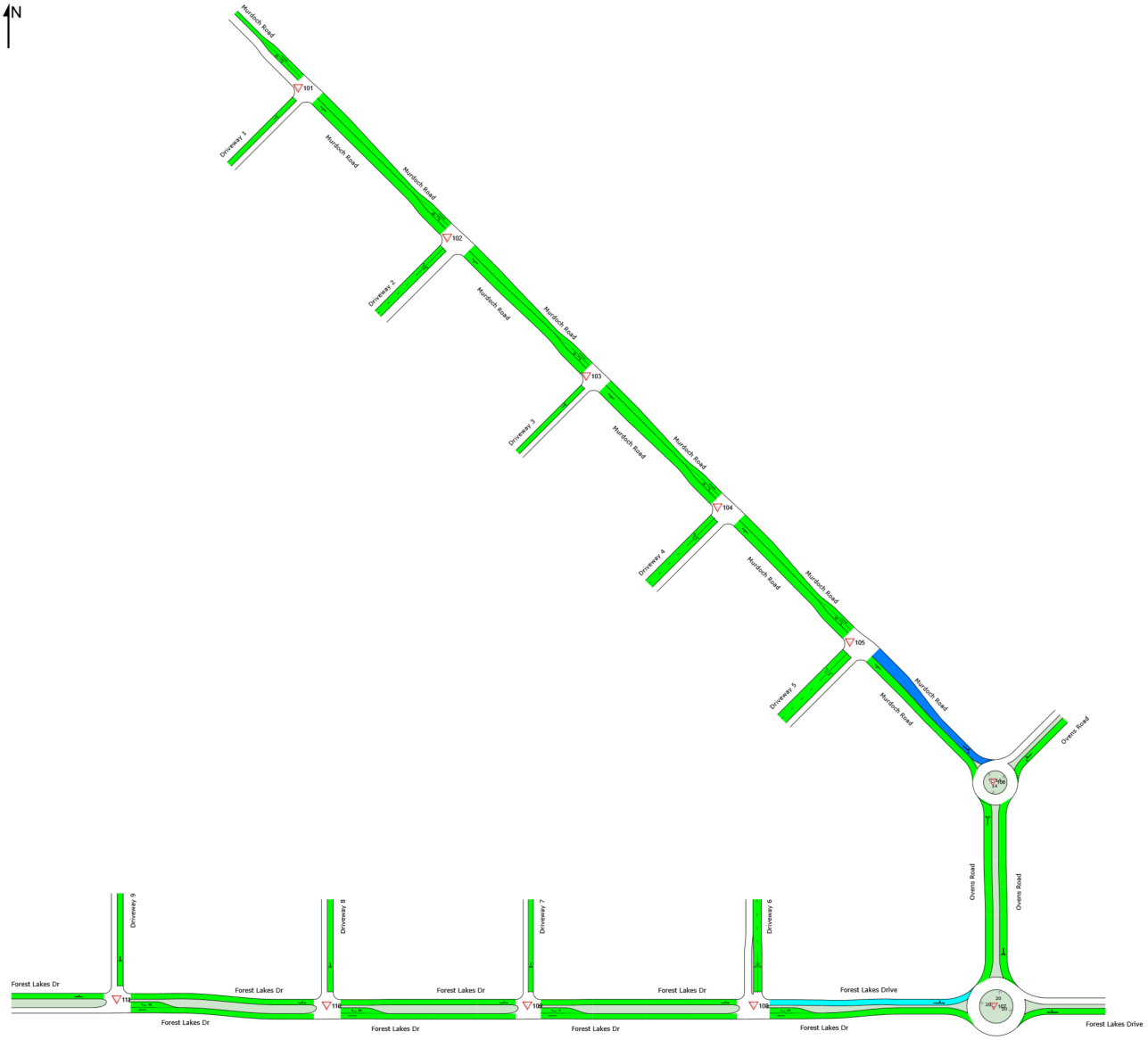
Ratio of the 95% Back of Queue Distance to the available queue storage distance per lane

Network: N101 [Current Sat (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13

Short Lanes are not included in determining Queue Storage Ratios.



Colour code based on Queue Storage Ratio

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Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 12:15:54 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

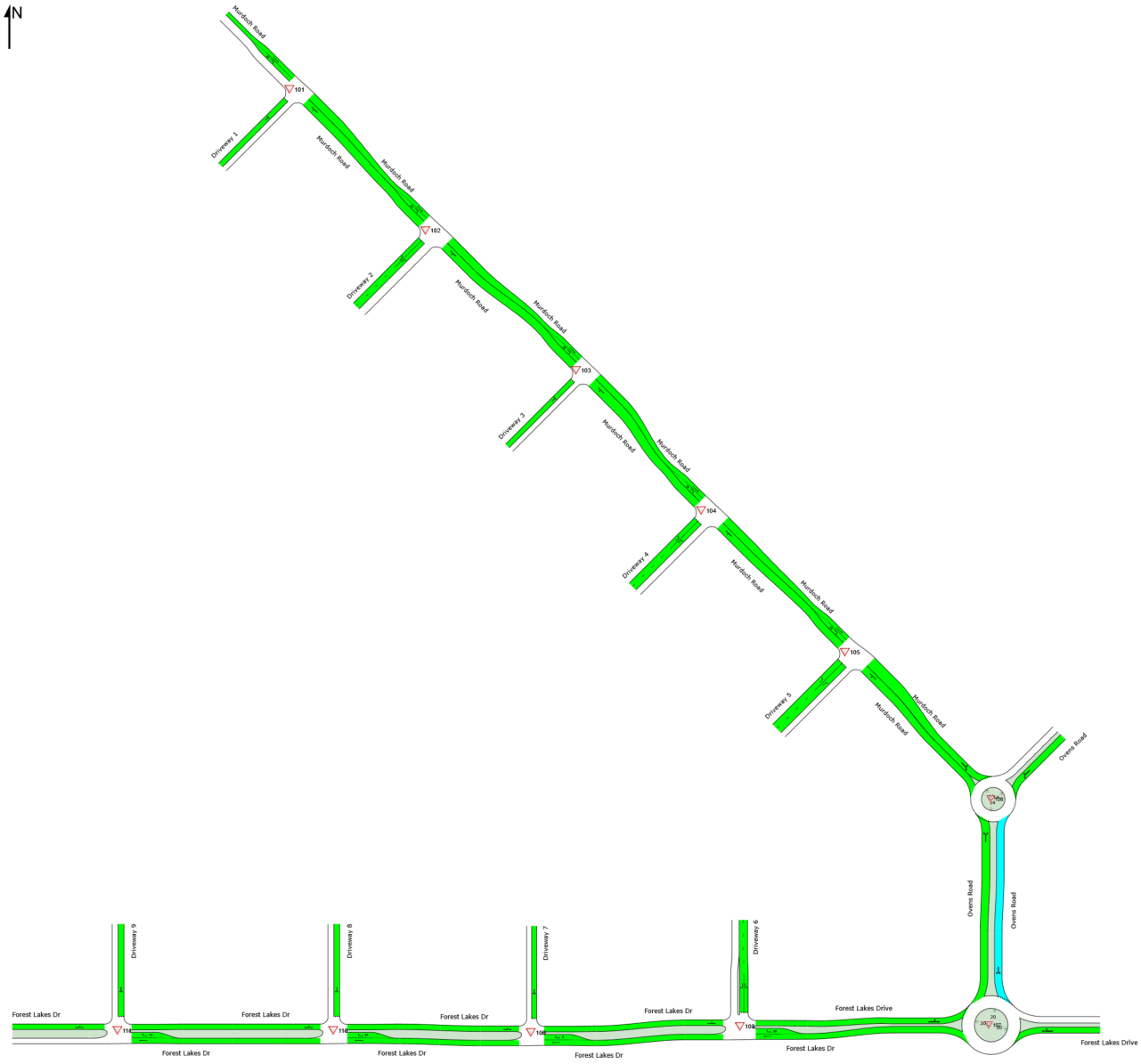
DEGREE OF SATURATION

Ratio of Arrival Flow to Capacity, v/c ratio per lane

Network: N101 [With Dev PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



Colour code based on Degree of Saturation

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Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 2:03:58 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

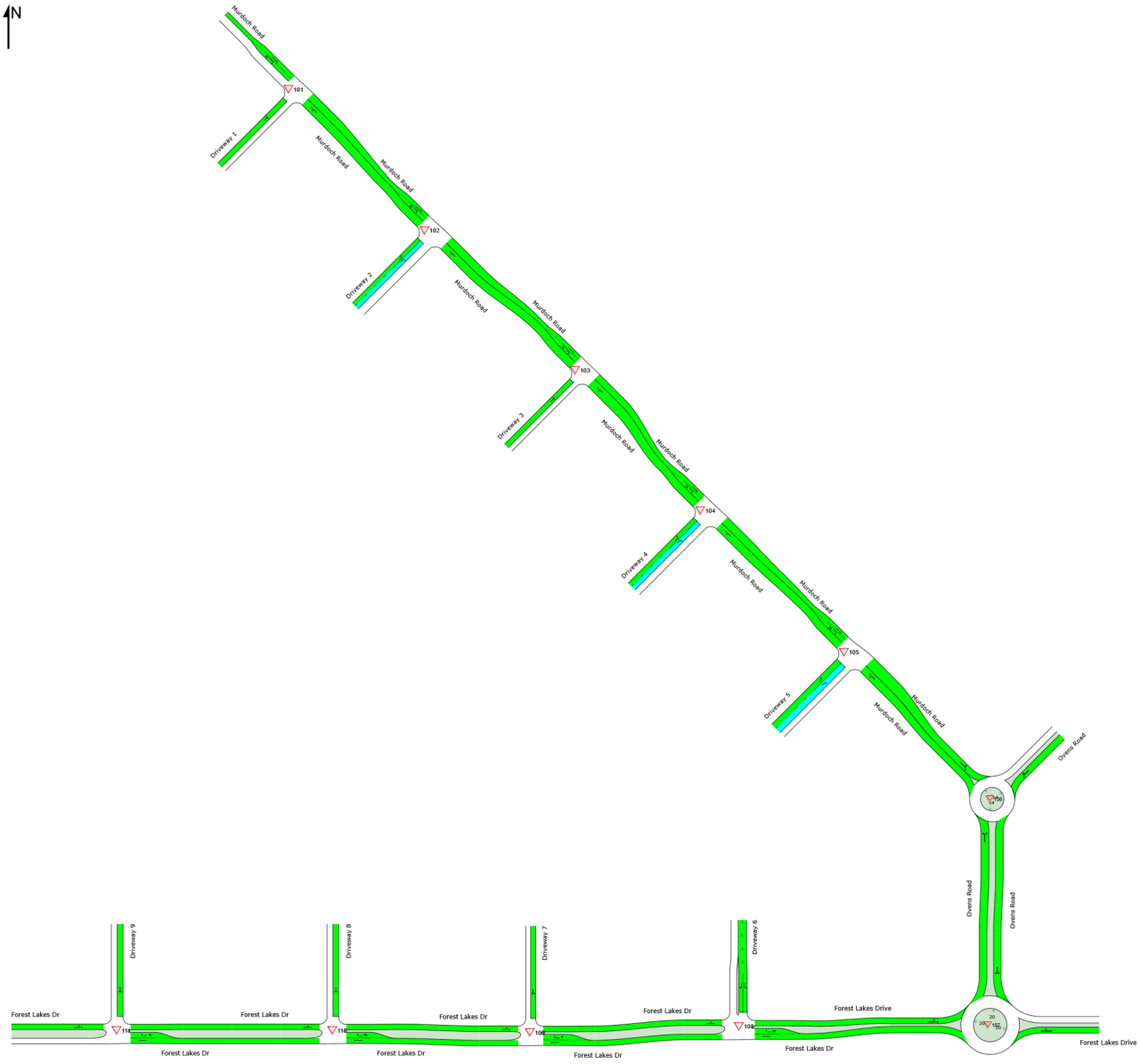
LEVEL OF SERVICE

Lane Level of Service

Network: N101 [With Dev PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

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

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 2:03:58 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

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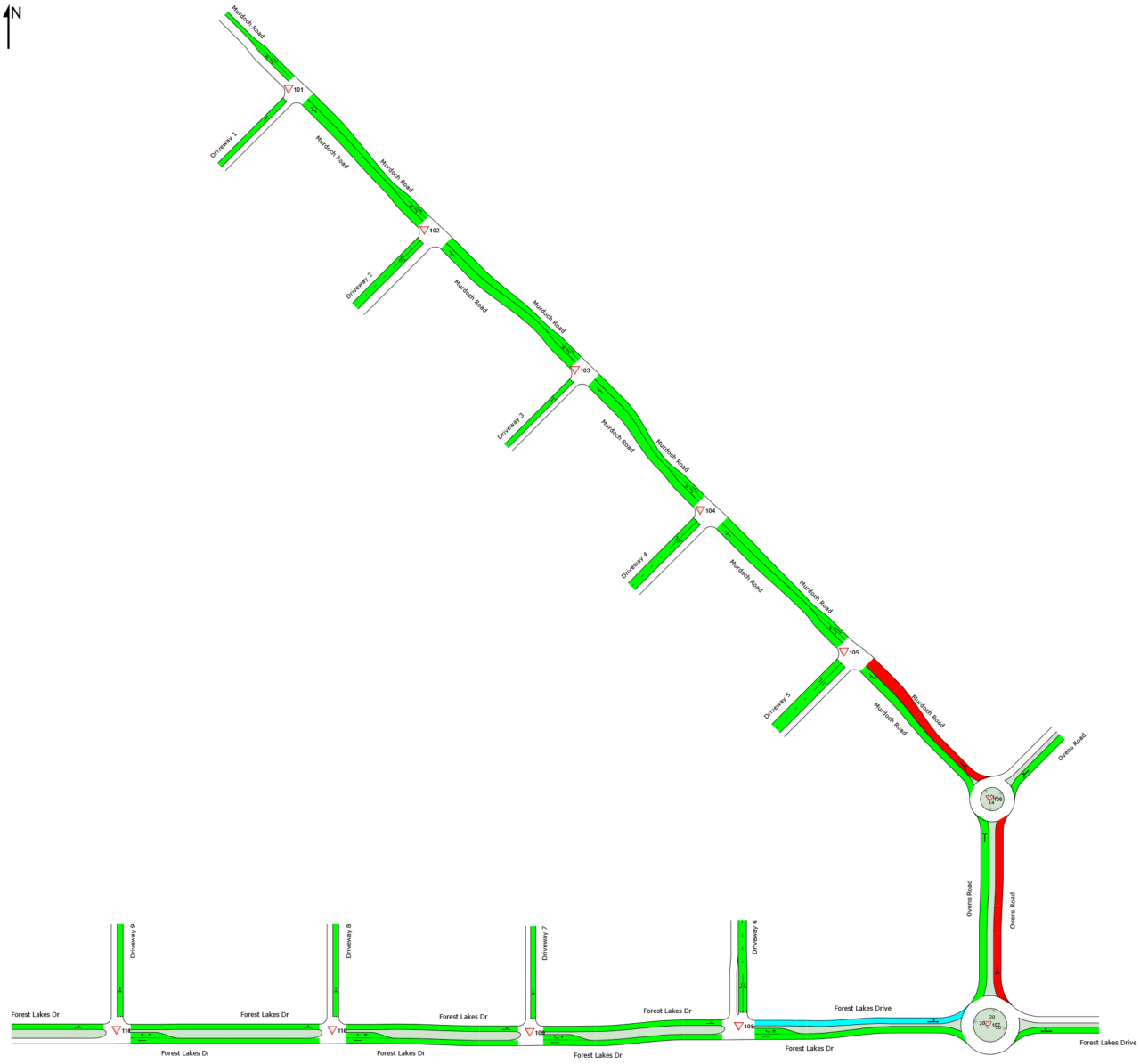
Network: N101 [With Dev PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13

Short Lanes are not included in determining Queue Storage Ratios.



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Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 2:03:58 PM
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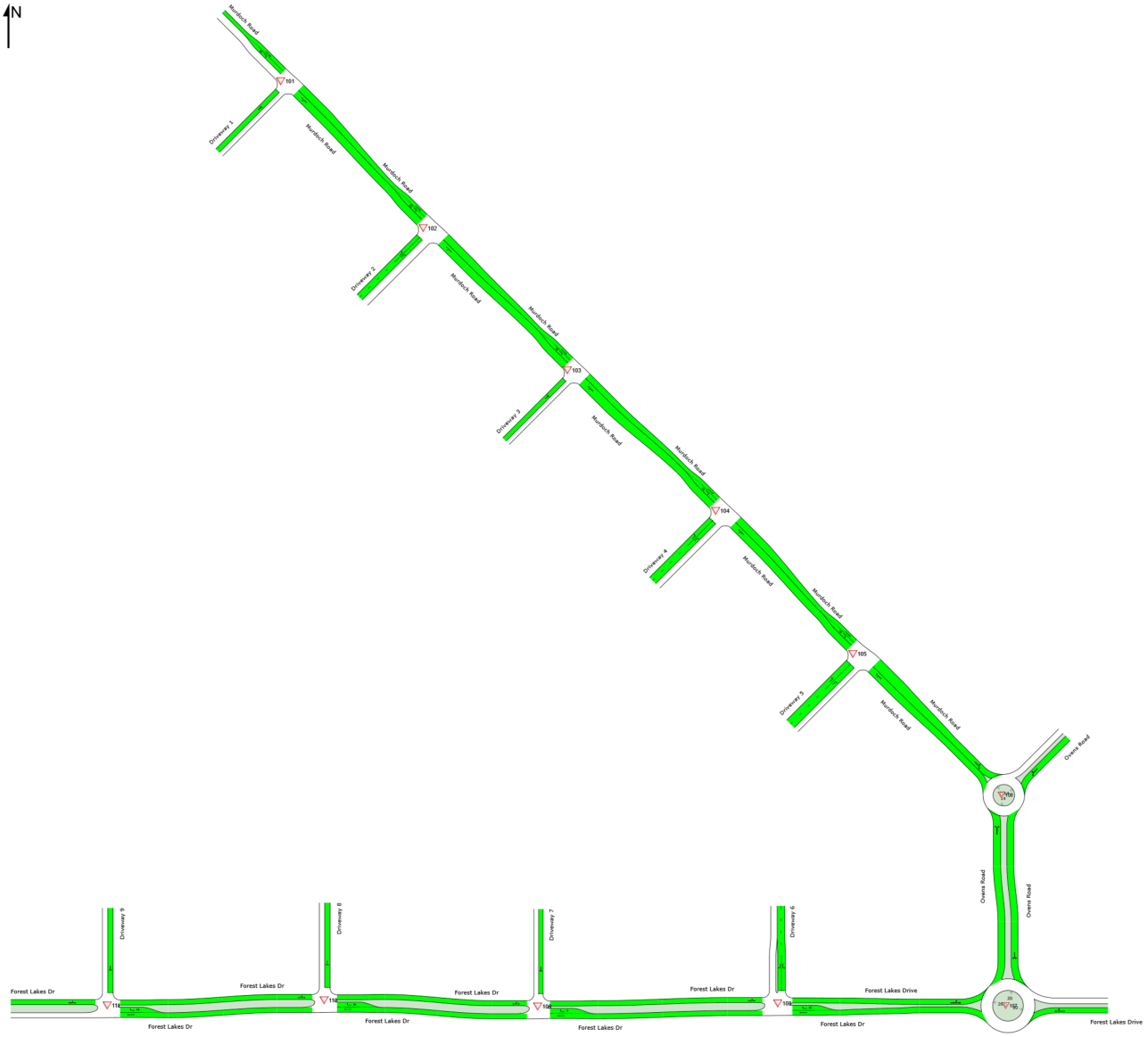
DEGREE OF SATURATION

Ratio of Arrival Flow to Capacity, v/c ratio per lane

Network: N101 [With Dev Sat (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



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Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 2:04:09 PM
Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

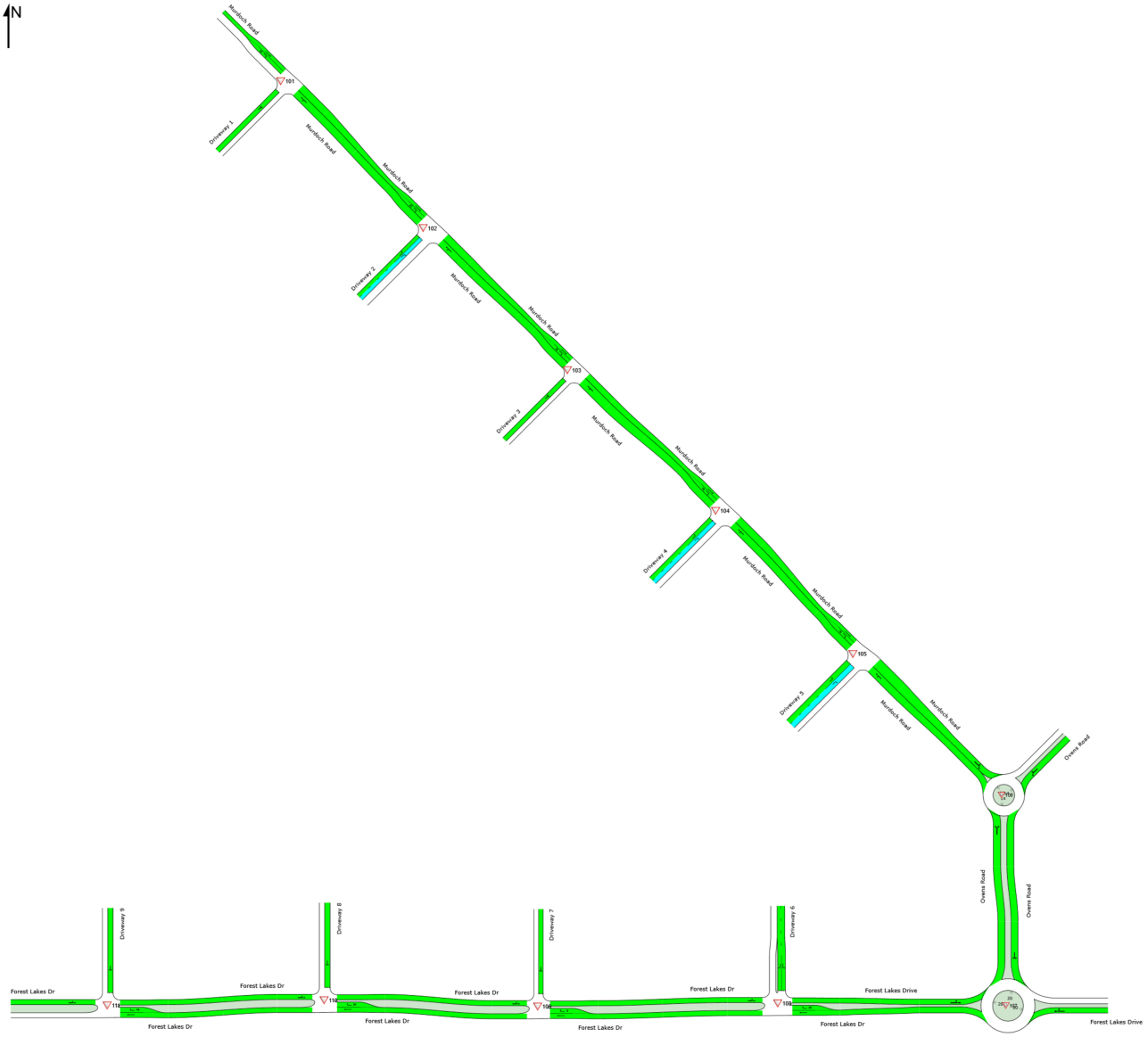
LEVEL OF SERVICE

Lane Level of Service

Network: N101 [With Dev Sat (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

New Network
Network Category: (None)
Design Life Analysis: Constant Number of Years = 13



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

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

Organisation: PJA HOLDINGS (AUSTRALIA) PTY LTD | Licence: NETWORK / 1PC | Processed: Tuesday, 11 April 2023 2:04:09 PM
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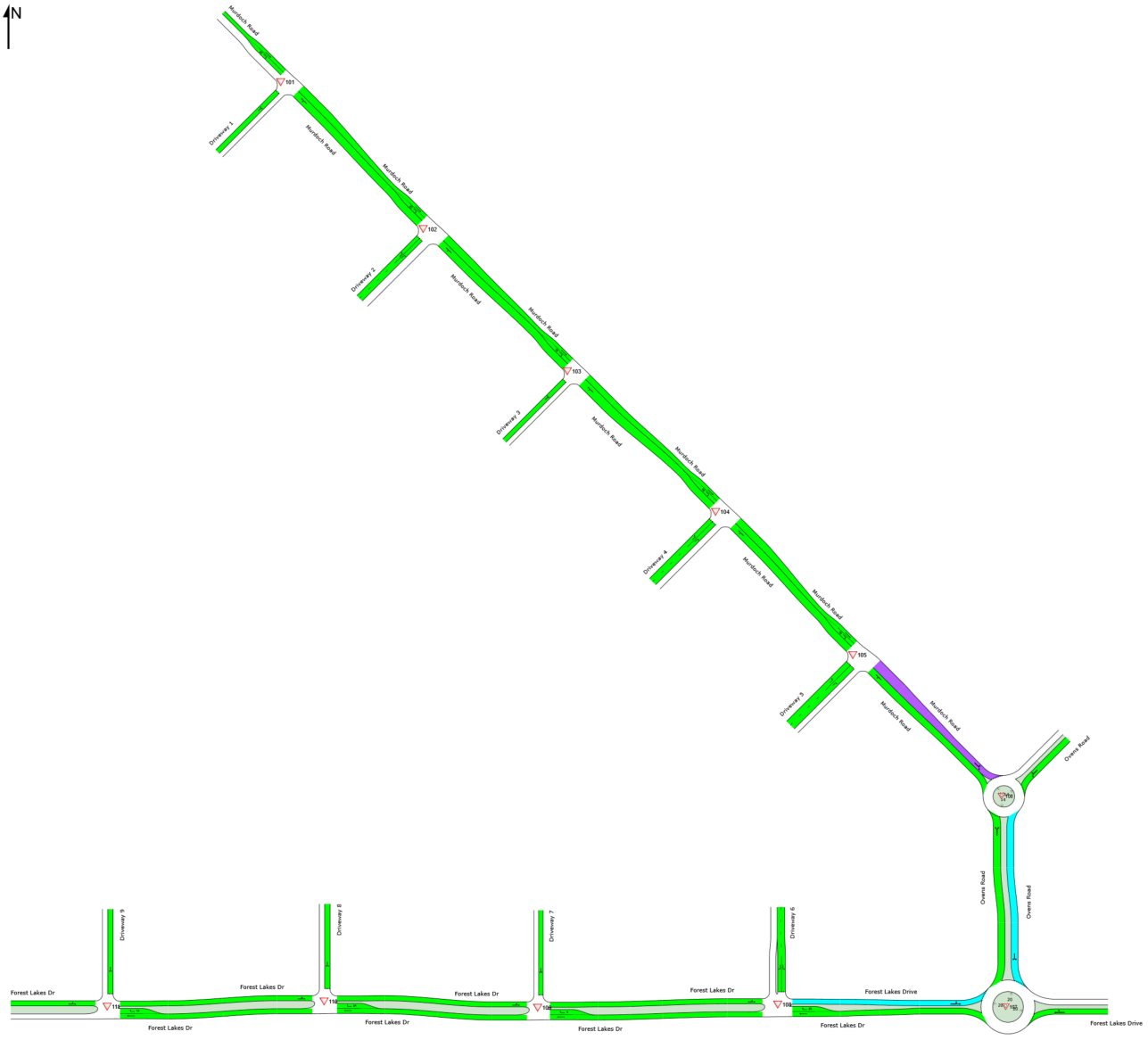

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Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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Project: C:\PJA\Phil Jones Associates\SharedData - 07085 Forest Lakes SC Activity Plan\4. Technical\4.3 Analysis\4.3.1 Transport\FLSC PP Sidra Assessments.sip9

Appendix C WAPC Guideline - TIA for Individual Development Checklist

Item	Provided	Comments/Proposals
Summary	Y	
Introduction / Background		
name of applicant and consultant	Y	
development location and context	Y	
brief description of development proposal	Y	
key issues	Y	
background information	Y	
Existing Situation		
existing site uses (if any)	Y	
existing parking and demand (if appropriate)	Y	
existing access arrangements	Y	
existing site traffic	Y	
surrounding land uses	Y	
surrounding road network	Y	
traffic management on frontage roads	Y	
traffic flows on surrounding roads (usually AM and PM peak hours)	Y	
traffic flows at major intersections (usually AM and PM peak hours)	Y	
operation of surrounding intersections	Y	
existing pedestrian/cycle networks	Y	
existing public transport services surrounding the development	Y	
crash data	Y	
Development Proposal		
regional context	Y	
proposed land uses	Y	
table of land uses and quantities	Y	
Access arrangements	Y	
Parking provision	Y	
end of trip facilities	Y	
any specific issues	Y	
road network	Y	
intersection layouts and controls	Y	
pedestrian/cycle networks and crossing facilities	Y	
public transport services	Y	

Integration with surrounding area		
surrounding major attractors/ generators	Y	
committed developments and transport proposals	Y	
proposed changes to land uses within 1200 metres	Y	
travel desire lines from development to these attractors/ generators	Y	
adequacy of existing transport networks	Y	
deficiencies in existing transport networks	Y	
remedial measures to address deficiencies	Y	
Analysis of transport networks		
assessment years	Y	
time periods	Y	
development generated traffic	Y	
distribution of generated traffic	Y	
parking supply and demand	Y	
base and 'with development' traffic flows	Y	
analysis of development accesses	Y	
impact on surrounding roads	Y	
impact on intersections	Y	
safe walk/cycle to school assessment (residential developments only)	NA	
impact on neighbouring areas	Y	
road safety	Y	
public transport access	Y	
pedestrian access/amenity	Y	
cycle access/amenity	Y	
analysis of pedestrian/cycle networks	Y	
safe walk/cycle to school (for residential and school site developments only)	NA	
traffic management plan (where appropriate)	NA	
Conclusions	Y	

APPENDIX B LANDSCAPE MASTER PLAN

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FOREST LAKES DISTRICT ACTIVITY CENTRE

FOREST LAKES, THORNLIE

LANDSCAPE PRECINCT PLAN

FOR PROJECTIVE PM

11/09/2024
REV [C]

This design report was created and prepared by the following people:

Peter Hillman	Director	Registered Landscape Architect	phillman@urbis.com.au
Hongxin Huang	Landscape Architect		hhuang@urbis.com.au

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URBIS ACKNOWLEDGES ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES AS THE TRADITIONAL CUSTODIANS OF ALL LANDS ON WHICH WE DO BUSINESS AND WE PAY OUR RESPECTS TO ELDERS, PAST AND PRESENT.

WE ACKNOWLEDGE THE IMPORTANT CONTRIBUTION THAT ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE MAKE IN CREATING A STRONG AND VIBRANT AUSTRALIAN SOCIETY.

INTRODUCTION

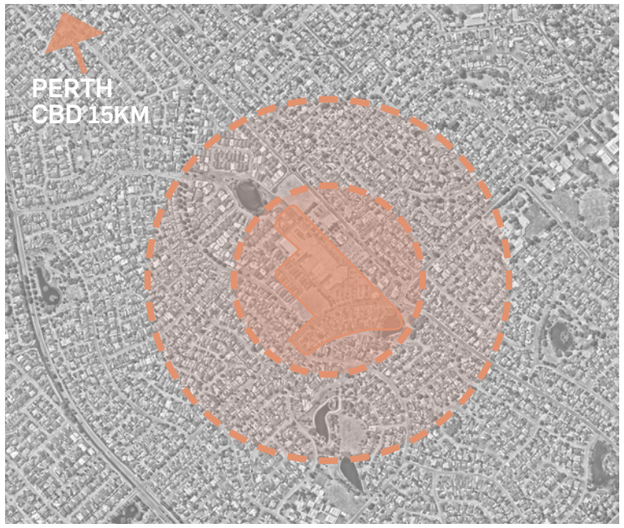
INTRODUCTION

Forest Lakes District Centre

The City of Gosnells define a district centre to serve the weekly household services and community needs. They serve a catchment of 20,000 to 50,000 persons which allows district centres to have a greater focus on civic, community and recreation facilities.

Forest Lakes District Centre currently contains 15,404m² of shop floorspace. The centre embodies the design of a traditional big box style shopping centre, and it is encircled by ground-level parking lots. The site also contains the Lakers Tavern and a performing arts centre. There are also several unoccupied plots of land designated for additional commercial or mixed-purpose construction. The centre currently has extensive greenery within the parking lots which is to be retained. It currently holds a higher amenity than other significant centres within the region.

THE SITE



OPPORTUNITIES

1 HIGH LANDSCAPE AMENITY

The tree lined entry and existing mature trees surrounding the precinct provide attractive amenity that links the precinct to neighbouring green spaces and parklands.

2 ACTIVATE THE PUBLIC REALM

Redevelopment of the shop-fronts to address the public realm will assist in activation of the precinct throughout the day and into the evening.

3 POTENTIAL FOR FUTURE DEVELOPMENT

The vacant land adjacent to and surrounding the centre is ideal for future development which will help to increase the residential population and activation of the precinct.

CONSTRAINTS

1 INWARD FOCUS - BIG BOX

The existing centre is a commercial development with an inward focus and does not currently contribute to the activation of the public realm within the precinct.

2 DISCONNECTION

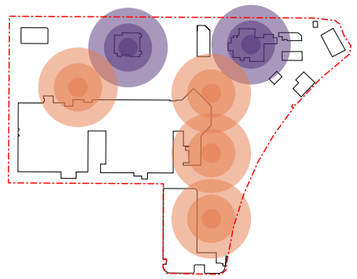
Destinations on the site are disconnected. They appear separated by distance, and vehicle barriers. This disconnection limits the communal nature of the precinct.

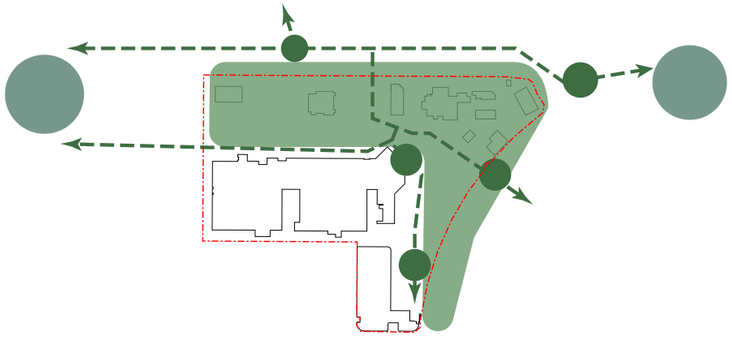
3 RESIDENTIAL INTERFACE

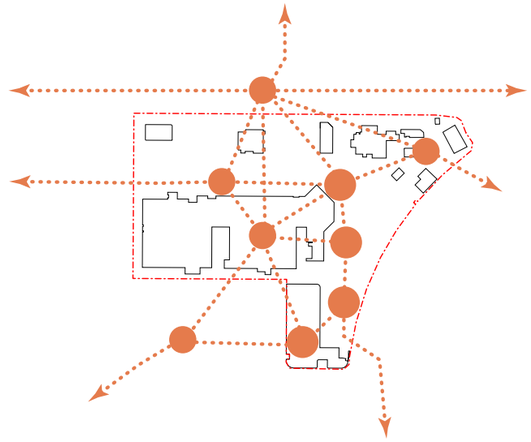
The existing public realm is coordinated/linked with adjacent residential developments. The rear and side interfaces are lacking in passive surveillance.

DESIGN DRIVERS

DESIGN DRIVERS







SENSE OF COMMUNITY

Forest Lakes District Centre is in an ideal location to service the surrounding residential areas and has the opportunity to provide high public amenity for its catchment. To provide an active sense of community the centre should encourage connection, dialogue and engagement.

Through the development of the public realm surrounding the centre, resilient and vibrant community spaces are created that allows the uses within the centre to flow outwards towards the street, contributing to the activation of the public realm.

Alferesco dining spaces will employ elements of form, scale, texture, and colour that will promote social interaction, foster a sense of identity, and enhance the quality of life within the local community.

INTEGRATED GREEN SPACE

A Green Link through the precinct contributes to the surrounding amenity and provides a range of benefits, including enhanced connectivity, additional shade canopy and contributions to sustainability.

The link provides an environmentally positive community contribution that benefits the existing ecosystems, helps to mitigate urban heat island effects and reduces the impact of urbanisation.

The Green Link within the precinct aligns with the City of Gosnells strategy which states the focus for Activity Centres will be to enhance sustainability and improve connectivity.

CONNECTED PRECINCT

The precinct will become an accessible and community-oriented destination that caters to a wide variety of people. The enhanced pedestrian access network will encourage visitation and ensure a complementary relationship between the Centre and City of Gosnells Community.

The Landscape spaces within the precinct will help to shape community gathering, providing for a range of people, and a variety of different social activities, interest groups and sizes.

External seating is provided and integrated within landscape spaces providing spaces for community gathering throughout the day and into the night.

PRECINCT MASTERPLAN

OVERALL MASTER PLAN AND SURROUNDING LAND STRATEGY

1:2000 @ A3 0 20 40 60 80 100

ZONING PLAN

1:2000 @ A3 0 20 40 60 80 100

P1 SHOPPING PRECINCT

The Shopping Precinct is the core of the Forest Lakes Precinct Structure Plan adjacent to the Murdoch Commercial Precinct. This precinct will comprise the main retail and community hub, including a casual dining area as an interface linking existing and future development within the precinct. It will accommodate the majority of shop-retail activity, with a mix of retail, commercial and service-based tenancies.

Precinct Objectives:

- Provide a convenient district shopping centre environment, with a focus on servicing the daily and weekly needs of local residents.
- Provide for a mix of complementary retail and commercial uses that activate the wider precinct.
- Provide safe and pleasant connections between existing and future development within the precinct.
- Ensure any future development minimises potential negative impacts on adjacent precincts.
- Provide the most activation and activity within the precinct, and support land uses that are significant generators of employment.
- Provide an articulated built form that captures interest and frames the public realm with appropriate use of height.

P2 MURDOCH COMMERCIAL

Precinct Objectives:

- Provide for uses that are complementary to Precinct 1 and are important for the overall function and success of the centre but not necessarily suited to a shopping centre environment.
- Provide for a wide range of large format civic, retail, service and other commercial uses, including entertainment, bulky goods, fast food and service station.
- Provide uses that generate some employment and on-street activity. However, some commercial uses will attract more vehicle, rather than pedestrian trips.
- Provide safe and pleasant connections between existing and future development within the precinct.
- Ensure building façades facing Murdoch Road and Forest Lakes Drive incorporate areas of activation, passive surveillance, and where appropriate permeability.

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COMMERCIAL INTERFACE

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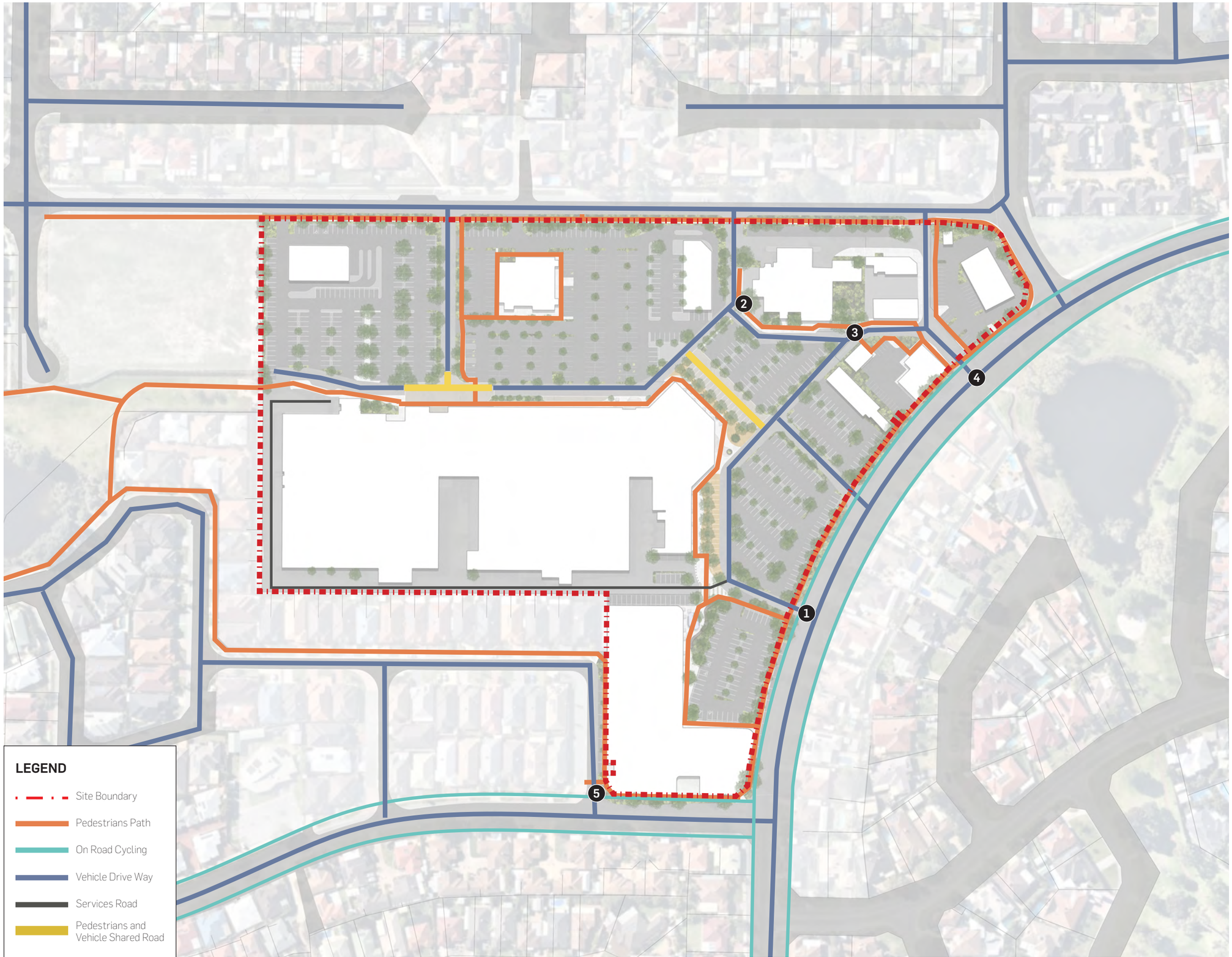

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MOVEMENT AND CONNECTIVITY

1:2000 @ A3 0 20 40 60 80 100


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2


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4


5

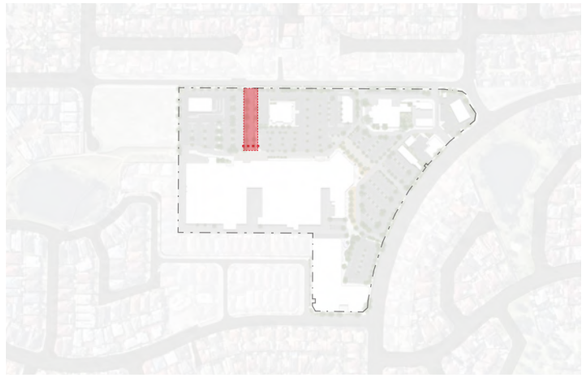
PRECINCT TREE CANOPY

1:2000 @ A3 0 20 40 60 80 100

PRECINCT ZONE CHARACTER

DESIGN DRIVERS

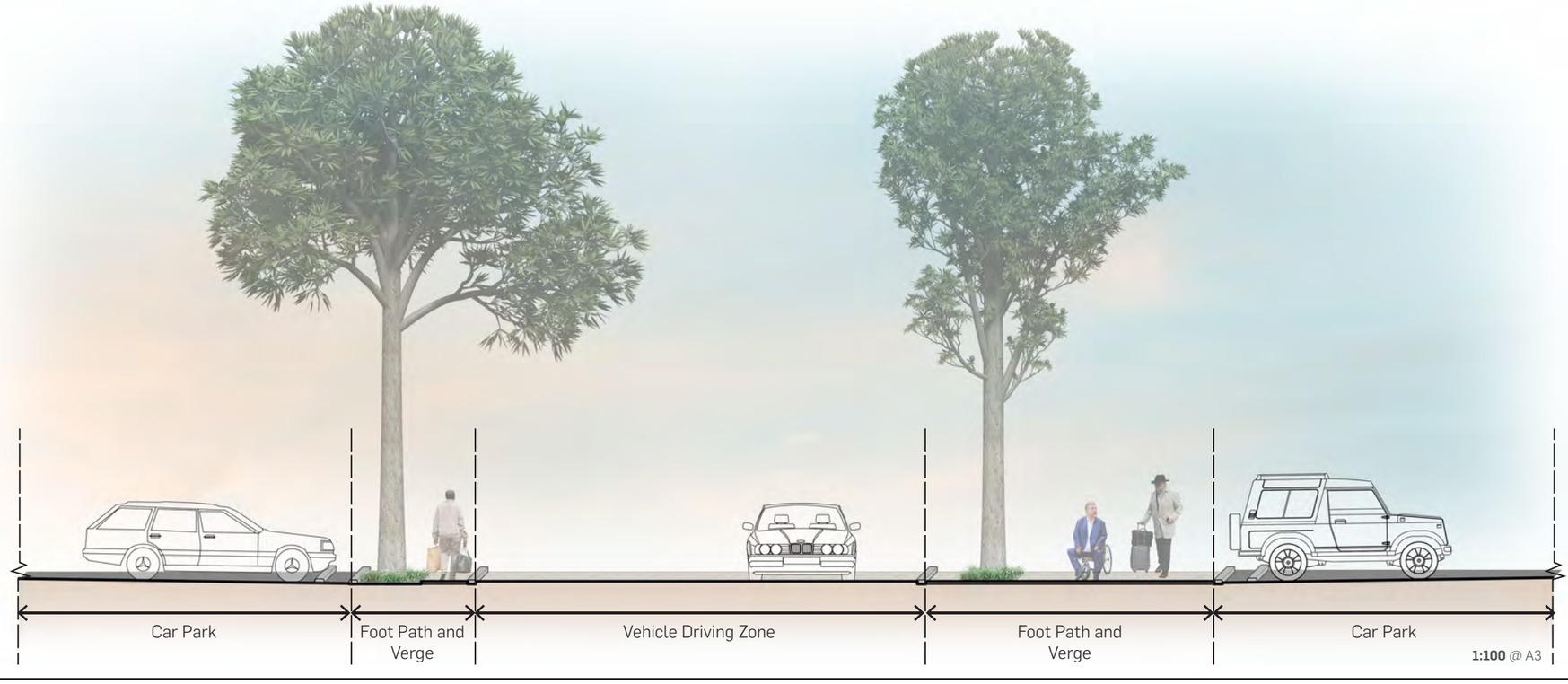
The existing tree lined entry to the centre will be retained to maintain a formal entry to the precinct and provide a distinct sense of place. The existing tree canopy will be enhanced with additional advanced tree and under story plantings as part of any future development. Proposed additional tree planting will be endemic species to complement the existing vegetation. The intent is to create a shady tree canopy surrounding the centre to provide an established parkland aesthetic and shade to pedestrians visiting the centre.



KEY PLAN A - TREE LINED BOULEVARD

DETAIL PLAN A - TREE LINED BOULEVARD

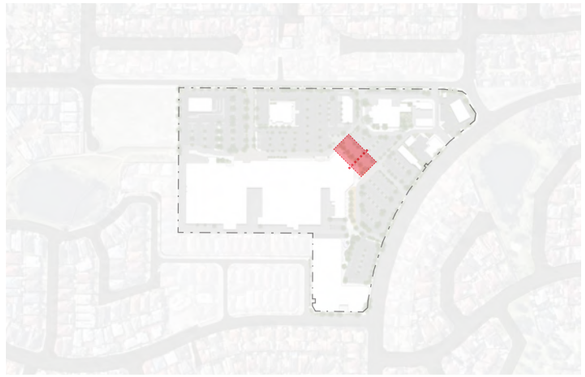
DETAIL PLAN A - TREE LINED BOULEVARD



TREE LINED BOULEVARD

DESIGN DRIVERS

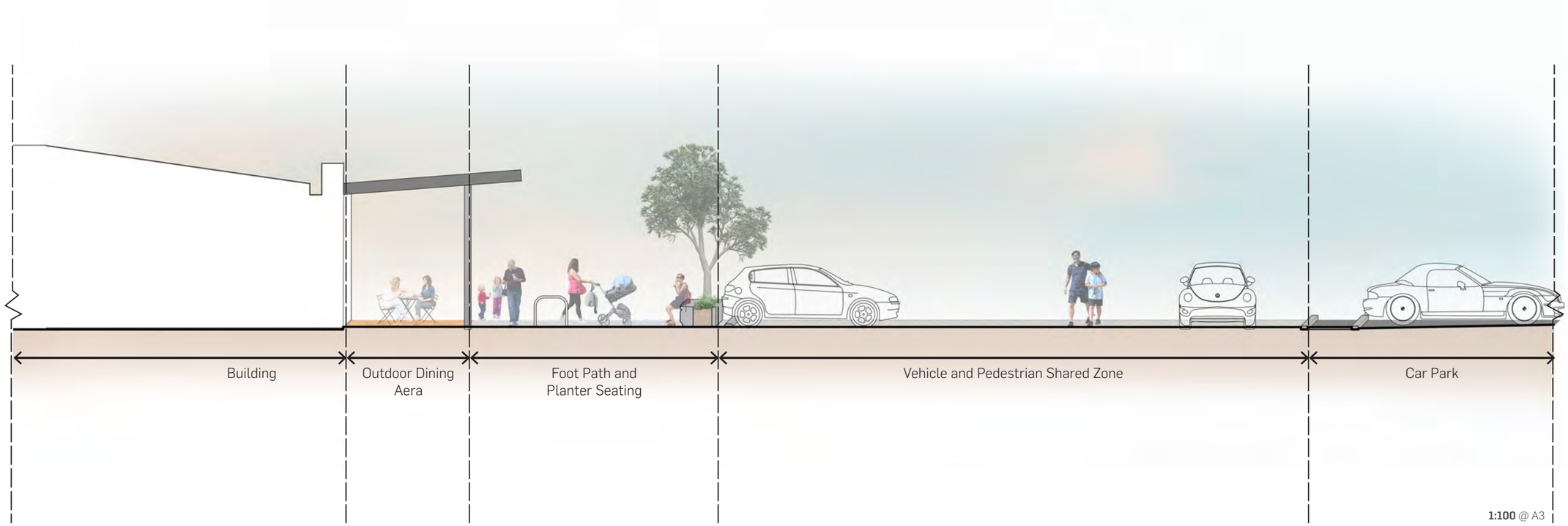
The shared space is designed as a pedestrian priority flexible space that is adaptive to a range of programs and functions and will support social and community interaction. Located in close proximity to the Lakers Tavern, it will provide visitors to the centre with a destination to interact, dine and enjoy the atmosphere. The shared space will be a welcoming place that functions during the day and night offering a safe and inclusive environment for all.



KEY PLAN B

DETAIL PLAN B -ALFRESCO DINING SHARED SPACE

DETAIL PLAN B - ALFRESCO DINING SHARED SPACE

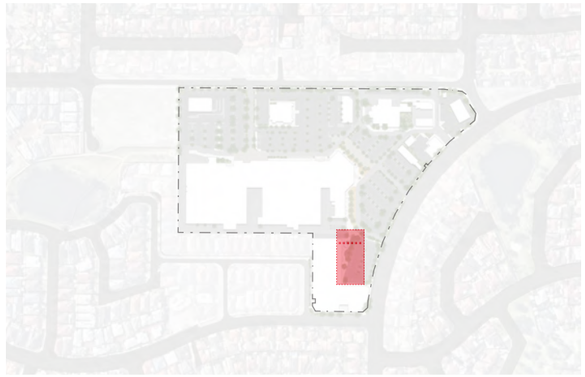


1:100 @ A3

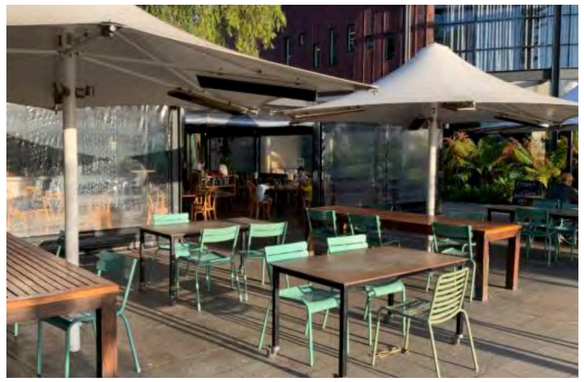
ALFRESCO DINING SHARED SPACE

DESIGN DRIVERS

The development of the proposed medical centre will provide a vibrant external space to the south of the centre which will support on-going activity within the parkland precinct. The public realm surrounding the medical centre will provide external amenity for visitors as well as enrich the broader precinct. Landscape spaces will complement the medical centre activities by providing places for rest, relaxation and dining throughout the day.

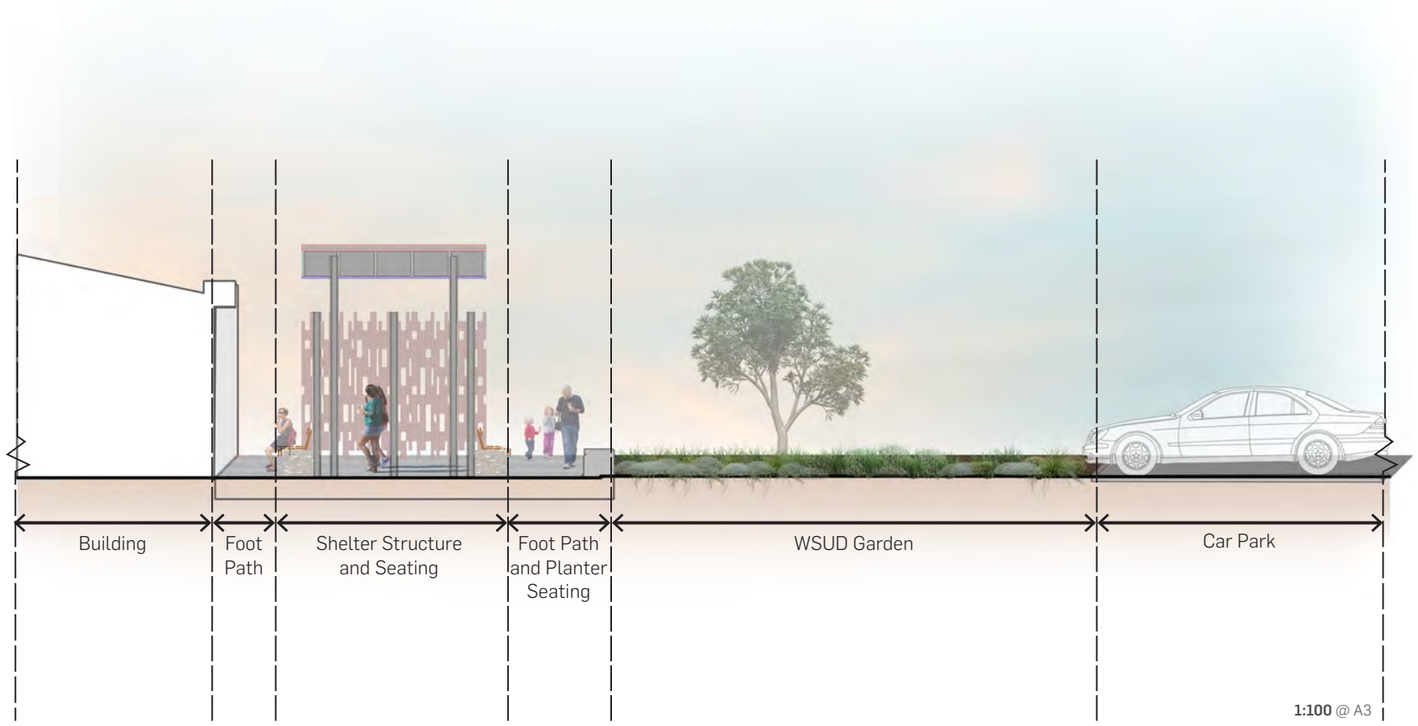


KEY PLAN C - MEDICAL CENTRE



INDICATIVE IMAGERY

DETAIL PLAN C - MEDICAL CENTRE



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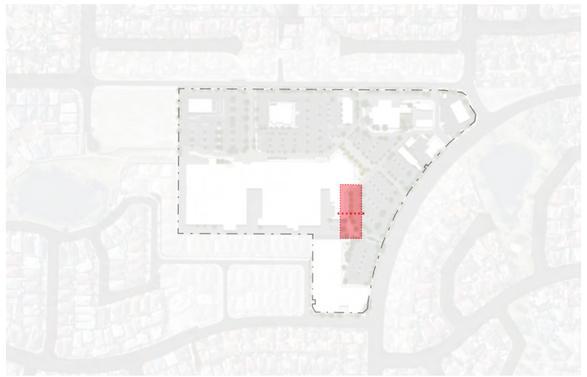
MEDICAL CENTRE

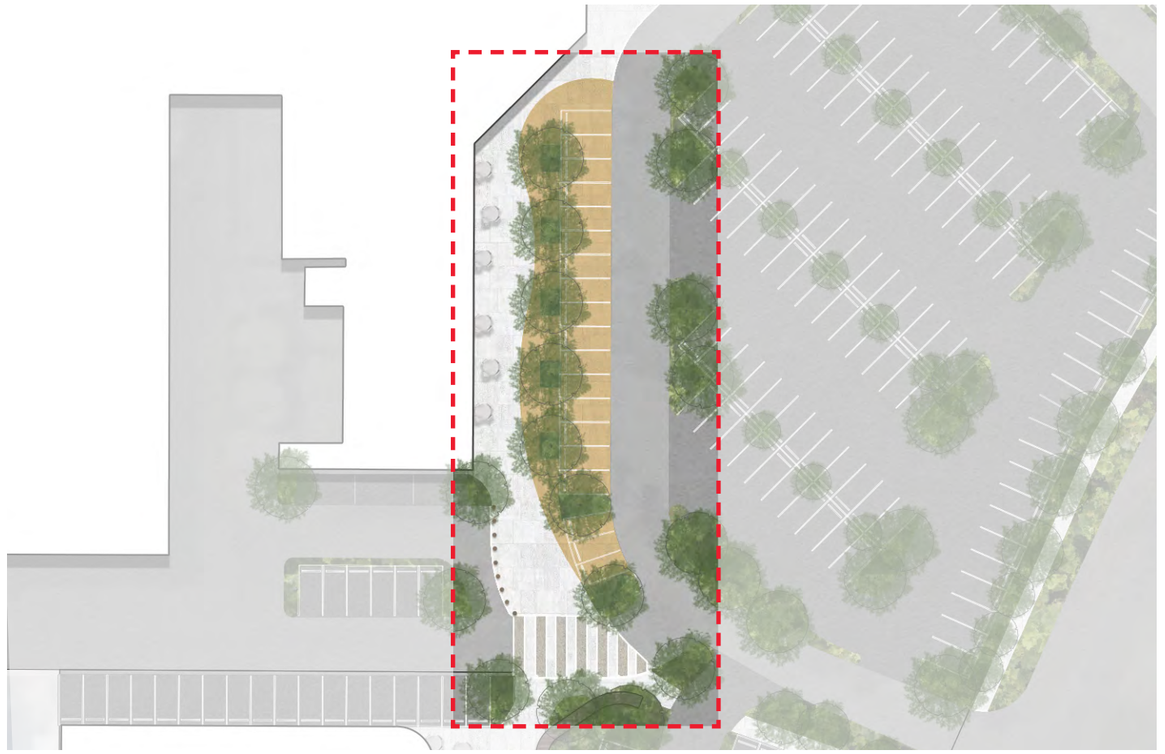
DESIGN DRIVERS

Together the internal centre and external dining precinct will develop a symbiotic relationship where the activity of one enriches the other. The concept plan for the public realm includes improved pedestrian links and enhanced landscape treatment to the internal car park spaces and roads. The landscape character will use a restrained palette of materials within a contemporary style. The materials and colours will be selected to complement the built form architecture and allow the tree canopy to be the dominant landscape feature on site.

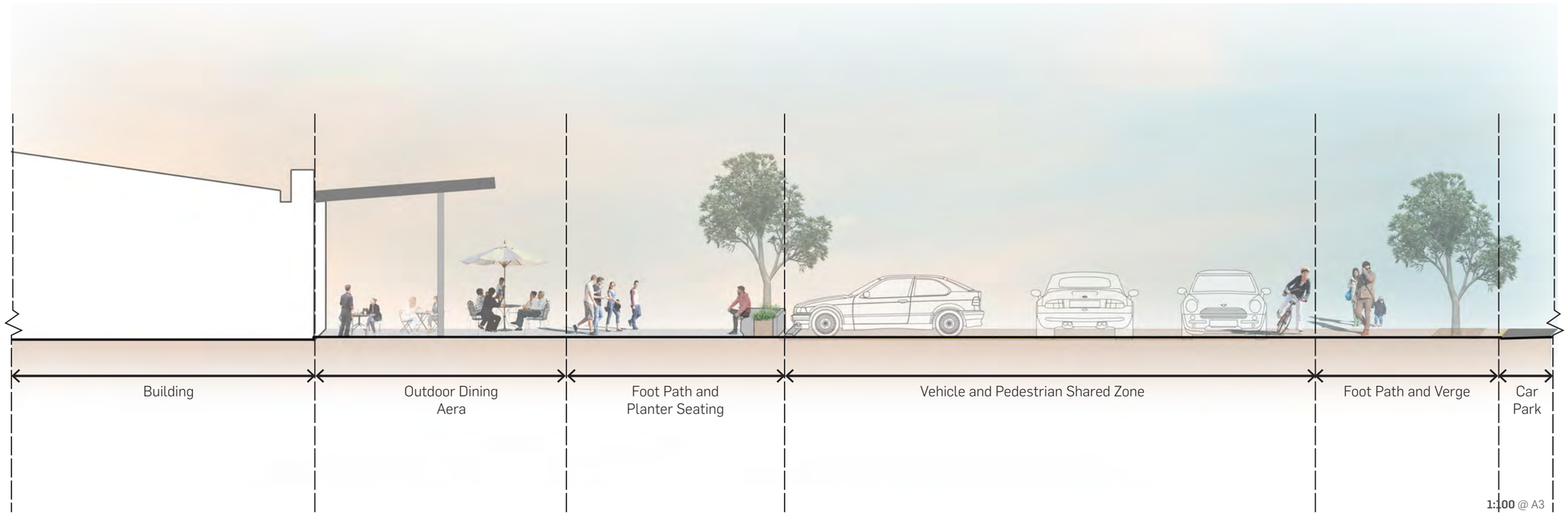


KEY PLAN D - DINING PRECINCT

INDICATIVE IMAGERY



DETAIL PLAN D - DINNING PRECINCT



1:100 @ A3

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DINING PRECINCT

PLANTING PRINCIPLES

PLANTING AS PER THE EAST COASTAL SERCUL GUIDELINES AS SPECIFIED BY THE CITY OF GOSNELLS

Forest Lakes - Proposed Plant Species

The planting scheme will be dominated by species endemic to the site, emphasising a distinct sense of place for the development.

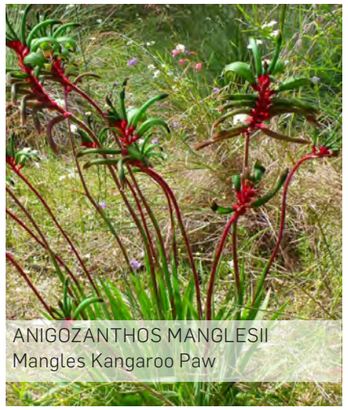
The endemic plant species are appropriate to the local environment and can be expected to be tolerant to local conditions, helping to ensure survival and better growth, as well as reducing ongoing irrigation and maintenance requirements.

Street planting will be native to complement the existing vegetation and create a parkland experience surrounding the centre. Exotic tree species will be used where appropriate to strengthen existing plantings and will be selected to provide appropriate amenity, strengthen existing plantings on site, and provide shade and better growth in the constructed environment.

Deep soil zones surround the site and enable planting of significant vegetation, which can grow to a mature size and provide a canopy within the precinct.

In addition to the deep soil zones a rootable soil zone, achieved through the use of structural cells and located under adjacent pavements can help improve the planting opportunities within hard surface spaces.


CORYMBIA-FICIFOLIA


ANIGOZANTHOS MANGLESII
Mangles Kangaroo Paw


GREVILLEA THELEMANNIANA
Spider Net Grevillea


CONOSTYLIS CANDICANS
Grey Cottonhead


ANIGOZANTHOS HUMILIS
Catspaw


HYPOCALYMMA ROBUSTUM
Swan River Myrtle


EUCALYPTUS TORQUATA
Coral Gum


DIANELLA REVOLUTA
Blue Flax-lily


MYOPORUM PARVIFOLIUM
Boobialla


GREVILLEA OBTUSIFOLIA
Grevillea

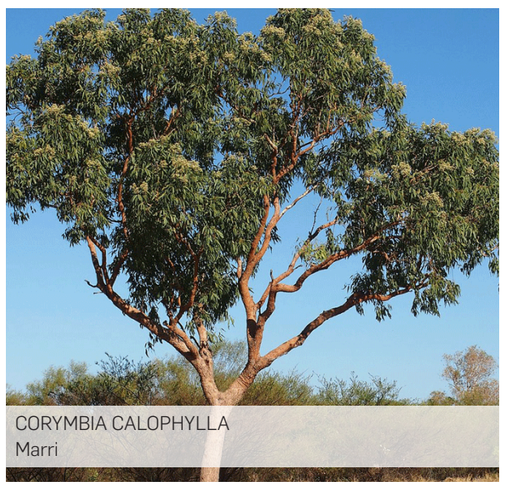

EREMOPHILA GLABRA 'ROSEWORTHY'
Emu Bush


PIMELEA ROSEA
Rice Flower

TREES

EUCALYPTUS TODTIANA
Prickly Bark

AGONIS FLEXUOSA
W.A. Peppermint

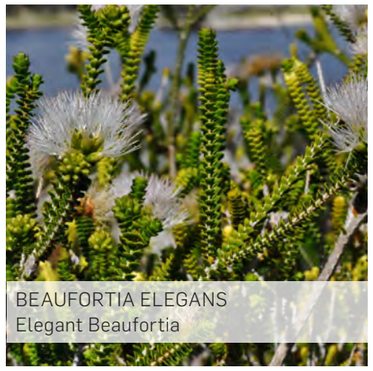


CORYMBIA CALOPHYLLA
Marri

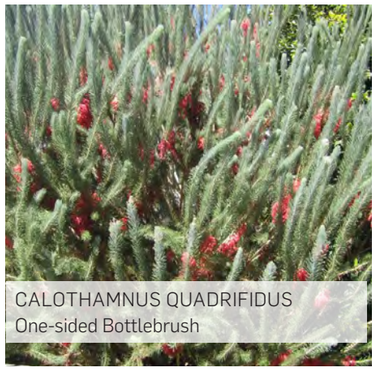
SHRUBS

MELALEUCA INCANA
Grey Honeymyrtle

MELALEUCA SERIATA



BEAUFORTIA ELEGANS
Elegant Beaufortia



CALOTHAMNUS QUADRIFIDUS
One-sided Bottlebrush

XANTHORRHOEA PREISSII
Grass Tree

REGELIA CILIATA

CALOTHAMNUS SANGUINEUS
Silky-Leaved Blood Flower

GROUNDCOVERS & DRAPERS

BILLARDIERA FUSIFORMIS
Australian Bluebell

BANKSIA DALLANNEYI
Couch Honeypot

HARDENBERGIA COMPTONIANA
Native Wisteria

ANIGOZANTHOS MANGLESII
Mangles Kangaroo Paw

ANIGOZANTHOS VIRIDIS
Green Kangaroo Paw

ANIGOZANTHOS HUMILIS
Catspaw

CONOSTYLIS CANDICANS
Grey Cottonheads

DIANELLA REVOLUTA
Flax Lily, Blueberry Lily

FICINIA NODOSA
Knotted Club Rush

HEMIANDRA PUNGENS
Snake Bush

KUNZEA RECURVA
Mountain Kunzea

PATERSONIA OCCIDENTALIS
Western Patersonia

PROPOSED PLANT SPECIES

URBIS

URBIS