AMENDMENT NO.16

TO THE

EAST WANNEROO CELL 5

AGREED STRUCTURE PLAN NO.7

This Amendment to the Agreed Structure Plan has been prepared under the provisions of the City of Wanneroo District Planning Scheme No. 2

RECORD OF AMENDMENTS MADE TO THE EAST WANNEROO CELL 5

AGREED STRUCTURE PLAN NO.7

Amendment No.	Summary of the Amendment	Date approved by WAPC
16	Modifies land use classifications of various portions of land shown as 'Neighbourhood Community Centre' within Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to 'Residential R40' as shown on Attachment 1 – Proposed Structure Plan Map. Modifies the road layout over Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to include a new north/ south link through the former 'Community Neighbourhood Centre', a new connection to Rangeview Road, and removes the Harrogate Vista connection to Rangeview Road, as shown on Attachment 1 – Proposed Structure Plan Map. Modifies the zoning of various portions of land zoned 'Centre' zone within Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to 'Residential Precinct' as shown on Attachment 2 – Proposed Zoning Plan. Modifies the zoning of various portions of land zoned 'Centre' zone within Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to 'Mixed Use' zone as shown on Attachment 2 – Proposed Zoning Plan. Modifies Schedule 1: Retail Floorspace Provision to remove the Cell 5 Neighbourhood Centre (South).	

AMENDMENT NO.16 TO THE
EAST WANNEROO CELL 5 AGREED STRUCTURE PLAN NO.7

The City of Wanneroo, pursuant to its District Planning Scheme No. 2, hereby amends the above Agreed Structure Plan by:

1. Modifying the land use classifications of various portions of land shown as 'Neighbourhood Community Centre' within Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to 'Residential R40' as shown on Attachment 1 – Proposed Structure Plan Map.
2. Modifying the road layout over Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale as shown on Attachment 1 – Proposed Structure Plan Map.
3. Modifying the zoning of various portions of land zoned 'Centre' zone within Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to 'Residential Precinct' as shown on Attachment 2 – Proposed Zoning Plan.
4. Modifying the zoning of various portions of land zoned 'Centre' zone within Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to 'Mixed Use' zone as shown on Attachment 2 – Proposed Zoning Plan.
5. Modifying Schedule 1: Retail Floorspace Provision to remove the Cell 5 Neighbourhood Centre (South).

PROPOSED STRUCTURE PLAN MAP

To modify the Structure Plan Map as follows:

1. Modify the land use classifications of various portions of land shown as 'Neighbourhood Community Centre' within Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to 'Residential R40' as depicted on Attachment 1 – Proposed Structure Plan Map.

2. Modify the road layout over Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to include a new north/south link through the former 'Community Neighbourhood Centre', a new connection to Rangeview Road, and remove the Harrogate Vista connection to Rangeview Road, as shown on Attachment 1 – Proposed Structure Plan Map.

This Structure Plan Amendment is prepared under the provisions of the City of Wanneroo District Planning Scheme No. 2

IT IS CERTIFIED THAT THIS STRUCTURE PLAN AMENDMENT NO.16TO THE EAST WANNEROO CELL 5 AGREED STRUCTURE PLAN NO.7

WAS APPROVED BY

RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON

……

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

…….. Date of Expiry

PART 2 - EXPLANATORY REPORT

AMENDMENT NO.16 TO THE

EAST WANNEROO CELL 5 AGREED STRUCTURE PLAN NO.7

1. INTRODUCTION

This amendment to Agreed Structure Plan No.7 (ASP7) proposes to modify the land use classifications of Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale (the subject land) depicted as 'Residential R40', 'Neighbourhood Community Centre' and 'Public Open Space' under ASP7. It is envisaged that the proposed amendment will facilitate 'Residential R40' development over various portions of the site currently classified as 'Neighbourhood Community Centre'. The amendment also includes modifications to the Zoning Plan.

The proposed amendment seeks to reduce the size of the 'Neighbourhood Community Centre' and increase the amount of 'Residential R40' land. This amendment is necessary as the 'Neighbourhood Community Centre' will not be able to attract a major supermarket tenant required to anchor such a centre and provide viability to other smaller tenants given the centres size and close proximity to other local centres. The proposed 'Residential R40' classification is considered to take greater advantage of the sites location, in close proximity to POS, major arterial routes and schools.

It should be noted 3,005m^2 of the 'Neighbourhood Community Centre' identified as a 'Community Purpose Site' is intended to be retained and developed as Public Open Space (POS). The proposed POS area will provide the City with the flexibility to consider the provision of future infrastructure over the site in support of activities and events intended to be held on the POS.

Additionally, a portion (approximately 5,000m^2) of the 'Neighbourhood Community Centre' site, on which the existing Child Care Centre is located, is to be retained.

1.1 SITE DETAILS

The subject land encompasses a total land area of 4.3807ha and abuts the north side of Landsdale Road.

The subject land is legally described as:

- Lot 61 on Diagram 19511 Volume 1220 Folio 796
- Lot 62 on Diagram 19511 Volume 1605 Folio 463

A copy of each Certificate of Title can be found attached in Appendix 2.

1.2 PROPONENT

This amendment to ASP7 has been prepared on behalf of the respective landowners Summerbreeze Developments Pty Ltd (Lot 61), and Messrs Sam and Steve Filippou (Lot 62).

2. PLANNING FRAMEWORK

2.1 METROPOLITAN REGION SCHEME

The subject land is zoned 'Urban' under the Metropolitan Region Scheme (MRS).

2.2 DISTRICT STRUCTURE PLAN NO.2 (DPS2)

The subject land is zoned 'Urban Development' under the City of Wanneroo District Planning Scheme (DPS2).

2.3 Planning and Development (Local Planning Schemes) Regulations 2015

Part 4 clause 29 of the deemed provisions (Schedule 2) specify:

'A structure plan may be amended by the Commission at the request of the local government or a person who owns land in the area covered by the plan.'

As such, the proposed amendment is within the bounds of the planning framework.

2.4 AGREED STRUCTURE PLAN NO.7 (ASP7)

The subject land is included within ASP7 and is identified as 'Residential R40', 'Neighbourhood Community Centre' and 'Public Open Space'. ASP7 has been adopted by the City and was endorsed by the WAPC.

Zoning

The ASP7 Zoning Plan designates the majority of the site (being the southern portion of Lot 62 that currently accommodates a child care centre, and the central portion of land) as 'Centre Zone'. The 'Centre Zone' is intended to accommodate, among other uses, a 5,000m^2 'Community Purpose Site' (refer Schedule 3 of ASP7). The balance of the site is zoned 'Residential Precinct'.

Under DPS2 Clause 3.13.2 the objectives of the 'Centre Zone' are as follows:

(a) provide for a hierarchy of centres from small neighbourhood centres to large regional centres, catering for the diverse needs of the community for goods and services;

(b) ensure that the City's commercial centres are integrated and complement one another in the range of retail, commercial, entertainment and community services and activities they provide for residents, workers and visitors;

(c) encourage development within centres to create an attractive urban environment;

(d) provide the opportunity for the coordinated and comprehensive planning and development of centres through an Agreed Structure Plan process.

Under DPS2 Clause 3.4.3 the objectives of the 'Residential Zone' are as follows:

(a) maintain the predominantly single residential character and amenity of established residential areas;

(b) provide the opportunity for grouped and multiple dwellings in selected locations so that there is a choice in the type of housing available within the City;

(c) provide the opportunity for aged persons housing in most residential areas in recognition of an increasing percentage of aged residents within the City; and

(d) provide for compatible urban support services.

2.5 ACQUISITION AND DEVELOPMENT OF COMMUNITY PURPOSE SITES POLICY

The site is subject to the provisions of this policy given 5,000m^2 of land is classified as a 'Community Purpose Site' under ASP7.

Community Purpose Sites are defined as land which is ceded free of cost to the City for the specific development of local community infrastructure

The purpose of the policy is to:

- *Provide a framework and set of guidelines to assess the proposed location of community purpose sites within draft district and local structure plans to ensure maximum benefit to the local community.*

- *Provide benchmark criteria to ascertain the feasibility, required catchment area, purpose, funding, development timeframe and design of future community facilities.*

2.6 LOCAL PLANNING POLICY 4.3 PUBLIC OPEN SPACE

The purpose of this policy is to:

- Ensure that POS is delivered to optimise community benefit;

- Provide local interpretation of the WAPC Liveable Neighbourhoods policy; and

- Guide Council, its officers and applicants in considering the planning of POS in new urban areas.

2.17 The inclusion of community purpose sites as part of the public open space contribution may be acceptable subject to:

- *The community purpose site being located adjacent to another parcel of POS and a function of the community purpose site relating to that POS (e.g. a community centre with facilities to support the active use of the POS);*

- *The allocation being subject to the provision requirements of restricted open space (See Clauses 1.9 – 1.11); and,*

- *Discussion and approval of the City of Wanneroo.*

<u>Approval Requirements for the Development of POS</u>

6.1.1 Where subdivision applications propose the creation of open space, the City shall in its response to the Western Australian Planning Commission, request that a condition be imposed requiring the applicant to develop the open space to the minimum standard defined in Schedule 8 of this policy.

2.7 LIVEABLE NEIGHBOURHOODS

Liveable Neighbourhoods is the WAPC's operational policy prepared to implement the objectives of the State Planning Strategy, which aims to guide the sustainable development of Western Australia in to the future.

LN addresses design aspects, covering:

- Community Design
- Movement Network
- Lot Layout
- Public Parkland
- Urban Water Management
- Utilities
- Activity Centres and Employment, and
- Schools

The proposed scheme amendment is consistent with the overarching aims and goals of Liveable Neighbourhoods. The proposed 'Residential Precinct' zoning with a designated R40 density provides an opportunity for infill development within an existing residential area.

2.8 DRAFT LOCAL PLANNING POLICY 3.1: LOCAL HOUSING STRATEGY IMPLIMENTATION(2016)

LPP 3.1 provides a framework to guide the planning and development of increased housing density in existing suburbs in the City of Wanneroo.

LPP 3.1 states that *'where the land concerned is the subject of an approved Structure Plan approved under DPS 2, the application for amendment of that Structure Plan must include an assessment of how the proposal:*

i. is appropriate within the broader planning framework provided by the Structure Plan;
ii. satisfies the criteria in Table 3 of this Policy relating to infill development and increased density; and
iii. supports the objectives and recommendations of the Local Housing Strategy.

The proposed amendment is not considered to be an application for increased density rather a rezoning to facilitate residential development consistent with the surrounding zoning. As such, the criterion specified in Local Planning Policy 3.1 (LPP3.1) does not apply to this amendment.

3. AMENDMENT PROPOSAL

The amendment proposes to modify land use classifications over various portions of Lot 61 Landsdale Road and Lot 62 Rangeview Road, Landsdale shown as 'Neighbourhood Community Centre' to 'Residential R40'(refer Attachment 1 – Proposed Structure Plan Map).The proposed modification will allow for residential subdivision to be undertaken within the new 'Residential R40' boundaries, and residential and commercial development within the 'Neighbourhood Community Centre' area.

The amendment also proposes to modify the zoning over various portions of Lot 61 Landsdale Road and Lot 62 Rangeview Road, Landsdale shown as 'Centre' to 'Residential Precinct' and 'Mixed Use' as depicted in Attachment 2 – Proposed Zoning Plan.

Under ASP7 the maximum net lettable area (NLA) for the Cell 5 Neighbourhood Centre (south) located on Lots 61 and 62 is 1,100m^2. It is unlikely that a centre of this size could attract a major supermarket necessary to anchor other smaller retail and commercial tenants. As such, the proposed amendment seeks to reclassify the land to 'Residential R40' to reduce the amount of NLA on the site. It should be noted, the amendment will retain a portion (approximately 5,000m^2) of the land identified as 'Community Purpose Site' on which the existing Child Care Centre is located (refer Attachment 3 – Modification Comparison Plan).

The amendment proposes to modify the road layout as shown on Attachment 1 – Proposed Structure Plan Map. The proposed road layout includes a new north/south link through the former 'Community Neighbourhood Centre' and the removal of the Harrogate Vista connection to Rangeview Road. A new connection to Rangeview Road is also proposed, approximately 50m north of the former Harrogate Vista connection.

Schedule 1: Retail Floorspace Provision

The amendment proposes to modify the text in Schedule 1: Retail Floorspace Provision to delete the Cell 5 Neighbourhood Centre (South) retail floorspace provision.

3.1 RATIONALE FOR AMENDMENT

The size of the 'Neighbourhood Centre' is not viable, as there are other local and district centres within the local catchment that provide for the main daily and weekly household shopping and community needs (refer Attachment 4 – Retail Sustainability Assessment).

The subject site is located 1.6km south of Landsdale Forum Shopping Village, Landsdale Child Care Centre, and veterinary centre; 1.4km north of Alexander Heights Shopping Centre and The Heights Medical Centre; and 4km east of Kingsway Shopping Centre. This amendment proposes to modify the land use classification to reduce the size of the 'Neighbourhood Community Centre'.

The 'Neighbourhood Community Centre' classification and associated 'Mixed Use' zoning over a portion of the site is proposed to ensure appropriate sized business and other employment generating activities will be situated locally. This land use classification and zoning will also provide the flexibility to develop both residential and commercial land uses over a portion of the subject land.

It should be noted that 3,005m^2 of the 'Neighbourhood Community Centre' over Lot 61 Landsdale Road has not been modified. The City's Coordinator of Community Facilities has advised that the 'Community Purpose Site' is not required for community facilities and

will subsequently be developed as Public Open Space (POS). The proposed POS area will allow the City flexibility to consider the provision of future infrastructure to support the activities and events held on the POS. The standards for the POS are required to be in accordance with the City's Local Planning Policy 4.3 Public Open Space.

The proposed amendment reflects orderly and proper planning given that it will facilitate additional residential development within an existing urban area that can be adequately serviced by public transport, community facilities and public open space areas. The subject land is located adjacent to future Neighbourhood POS and is approximately 150m east of a future Primary School. The site is also situated in close proximity to Hepburn Avenue, Mirrabooka Avenue and Alexander Drive. All three roads are reserved as 'Other Regional Roads' under the Metropolitan Region Scheme (MRS) and provide good regional access to and from the subject land.

3.2 FUTURE DEVELOPMENT PROPOSAL

The proposed Structure Plan Amendment will facilitate the future subdivision of the subject site into green title lots approximately 300-400m^2 in area, adhering to the proposed R40 Residential zoning. A copy of the concept subdivision plan (Attachment 5) is appended to the Structure Plan Amendment for information purposes.

4. TRANSPORT STATEMENT

A Transport Statement prepared by Flyt has been prepared to comply with the WAPC Transport Assessment Guidelines for Developments (August 2006) Volume 2 – Subdivisions (refer Attachment 6 – Transport Statement). A summary of the report is provided below.

Changes to the road network are proposed, with the inclusion of a new north south link through the former Community Neighbourhood Centre and the removal of the Harrogate Vista connection to Rangeview Road. A new connection to Rangeview Road is proposed, approximately 50m north of the former Harrogate Vista connection.

SIDRA intersection performance for the roundabout controlled intersections of Mirrabooka Avenue/Kingsway, Kingsway/ Rangeview Road, and Rangeview Road/ Landsdale Road has shown that there is no perceptible difference to intersection operation between the APS 7 build out scenario and the scenario with full build out with amended zoning. In both cases, intersection performance was at LOS A/B.

It is estimated that the proposed rezoning will result in a small decrease in peak hour traffic when compared to the build out of APS 7 (largely due to the reduction in size of the Neighbourhood Community Centre).

5. CONCLUSION

The amendment proposes to modify the land use classifications of various portions of land classified as ‘Neighbourhood Community Centre’ on Lot 61 Landsdale Road, and Lot 62 Rangeview Road, Landsdale to ‘Residential R40’ as shown on Attachment 1 – Proposed Structure Plan Map.

The amendment also proposes to modify the zoning of various portions of land classified as ‘Centre’ zone to ‘Residential Precinct’ zone as shown on Attachment 2 – Proposed Zoning Plan.

The proposed amendment for seeks to reduce the size of the ‘Neighbourhood Community Centre’ and increase the amount of Residential ‘R40’ land. The amendment recognises the suitability of the subject site for intensified residential development to take advantage of the location adjacent to future Neighbourhood POS; and close access to public transport, education and community facilities.

A Transport Statement has been prepared by FLYT in support of this amendment request. This statement demonstrates that the subject land can be developed at Residential ‘R40’ density with no perceptible difference to intersection operation between the APS 7 build out scenario and the scenario with full build out with proposed zoning. In both cases, intersection performance was at LOS A/B.

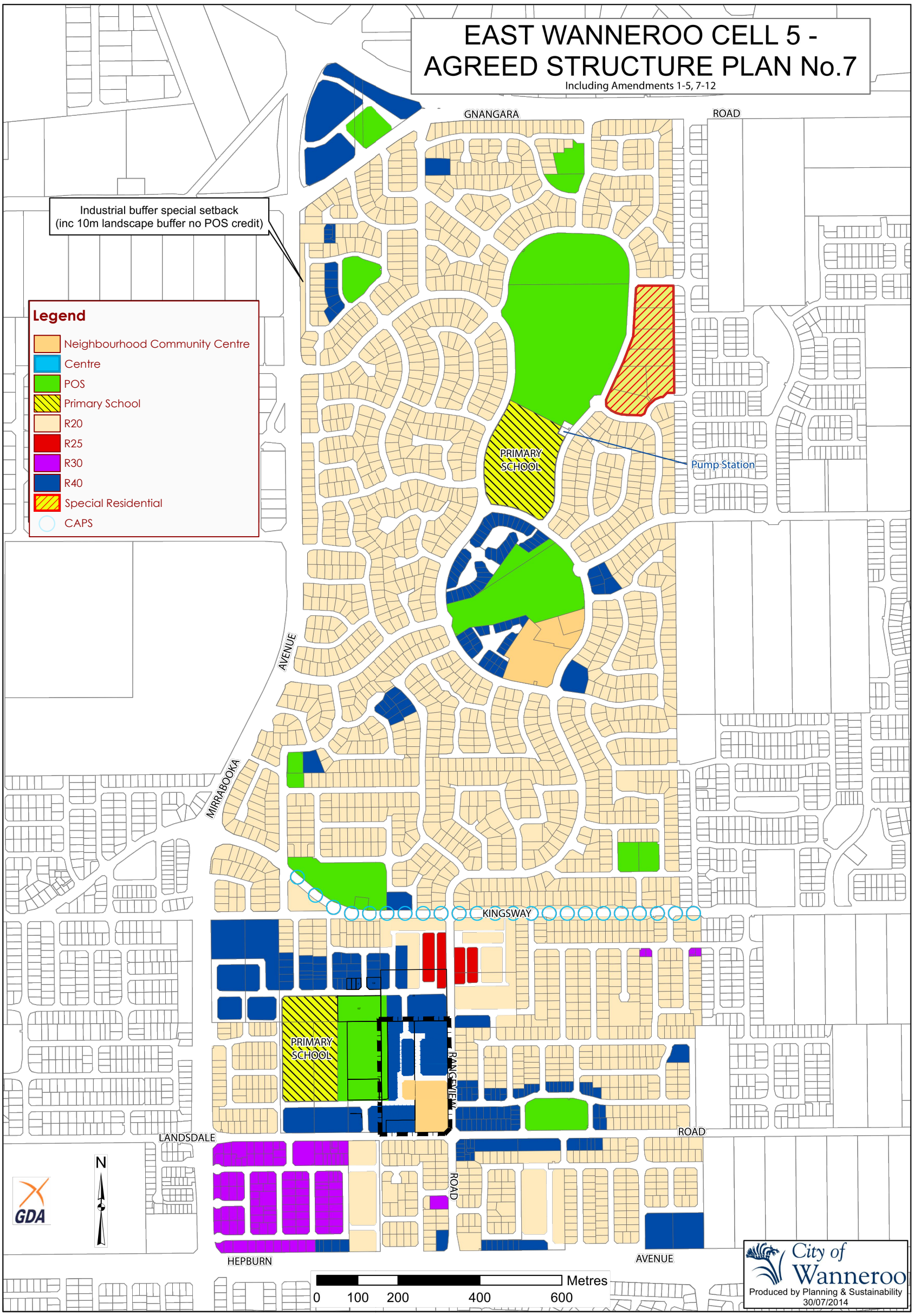
Overall, the proposed amendment reflects the orderly and efficient use of land and infrastructure. As such, we respectfully request the City's favourable assessment and adoption of our proposed amendment to the East Wanneroo Cell 5 Agreed Structure Plan No.7 at its earliest possible convenience.

ATTACHMENT 1

PROPOSED STRUCTURE PLAN MAP

EAST WANNEROO CELL 5 - AGREED STRUCTURE PLAN No.7

Including Amendments 1-5, 7-12



LEGEND

SUBJECT LAND
(LOTS 61 & 62 RANGEVIEW RD, LANDSDALE)

NORTH

0 50 100 150 200 250m

SCALE 1:10,000 (A3)

PROPOSED MODIFIED EAST WANNEROO CELL 5 AGREED STRUCTURE PLAN

LOTS 61 & 62 RANGEVIEW ROAD, LANDSDALE

LANDSDALE

BURGESS DESIGN GROUP
TOWN PLANNING + URBAN DESIGN
PO Box 8779, Perth Business Centre 6849
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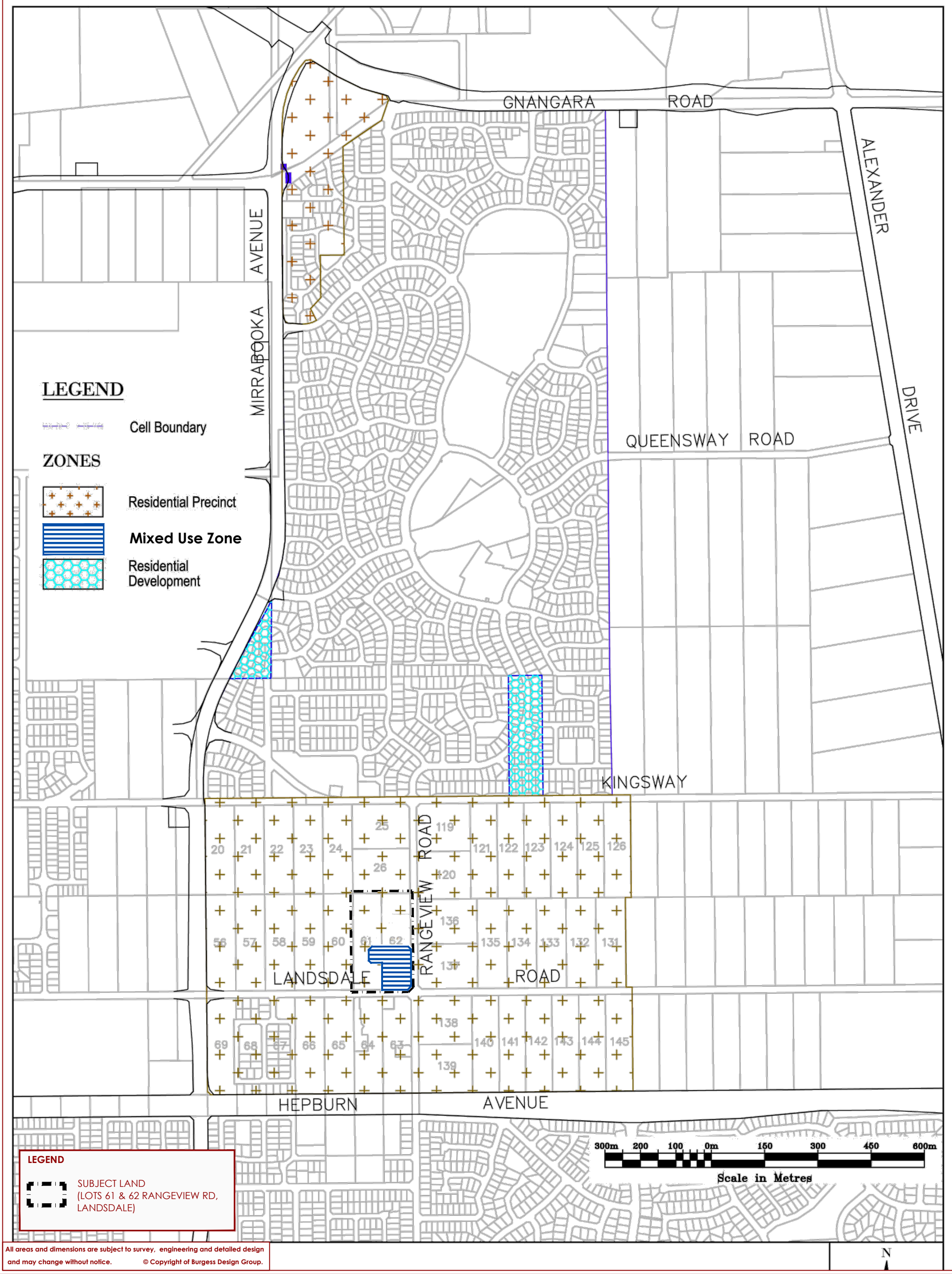
P (08) 9328 6411
F (08) 9328 4062

Plan No: FIL LAN 9-01a
Date: 24.08.15
Client: FILIPPOU
Planner: ZM

CITY OF WANNEROO

ATTACHMENT 2

PROPOSED ZONING PLAN



NORTH

0 50 100 150 200 250m

SCALE 1:10,000 (A3)

PROPOSED EAST CELL 5 ZONING PLAN
LOTS 61 & 62 RANGEVIEW ROAD, LANDSDALE
LANDSDALE

BURGESS DESIGN GROUP
TOWN PLANNING + URBAN DESIGN
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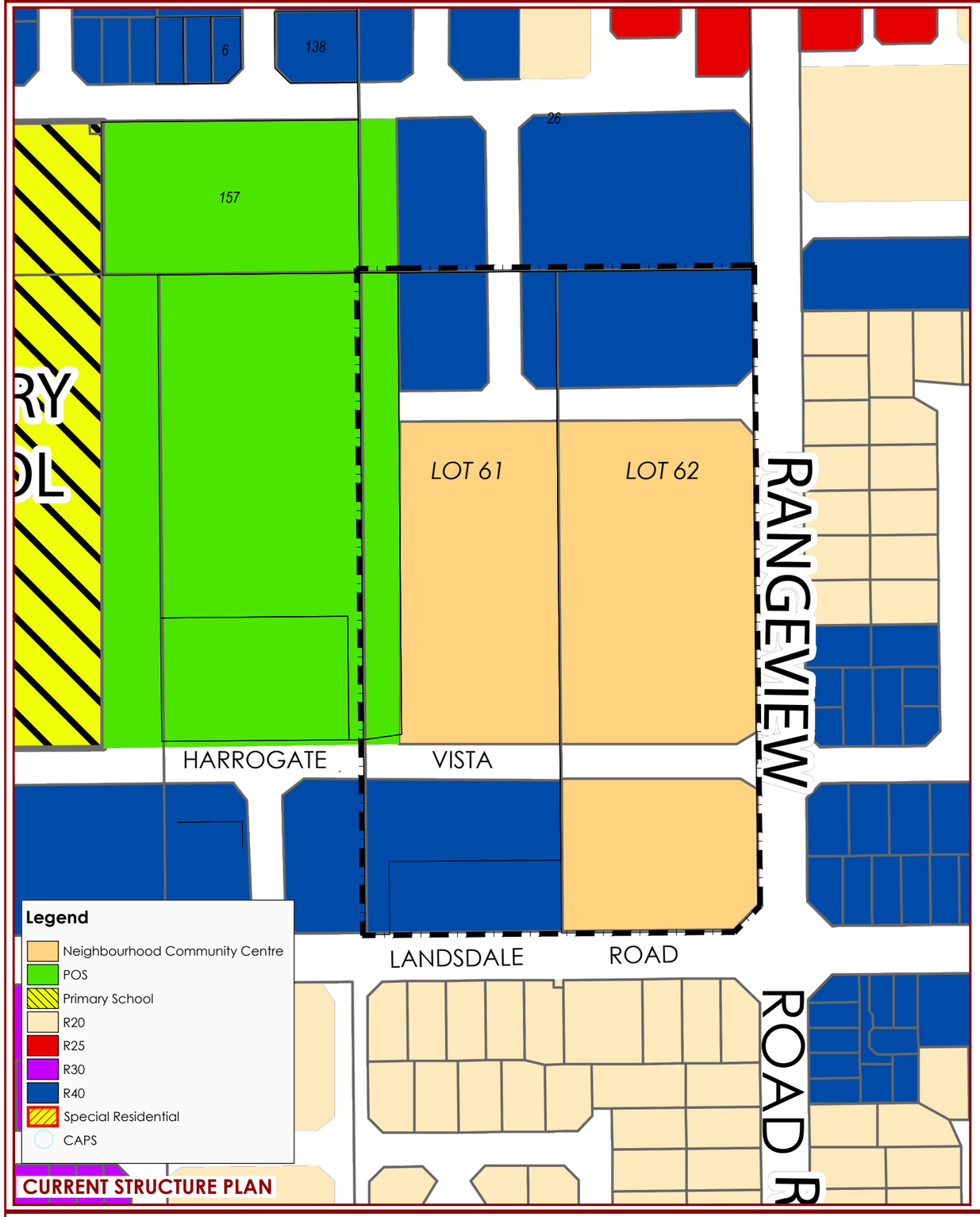
P (08) 9328 6411
F (08) 9328 4062

Plan No: FIL LAN 9-01a
Date: 25.11.16
Client: FILIPPOU
Planner: ZM

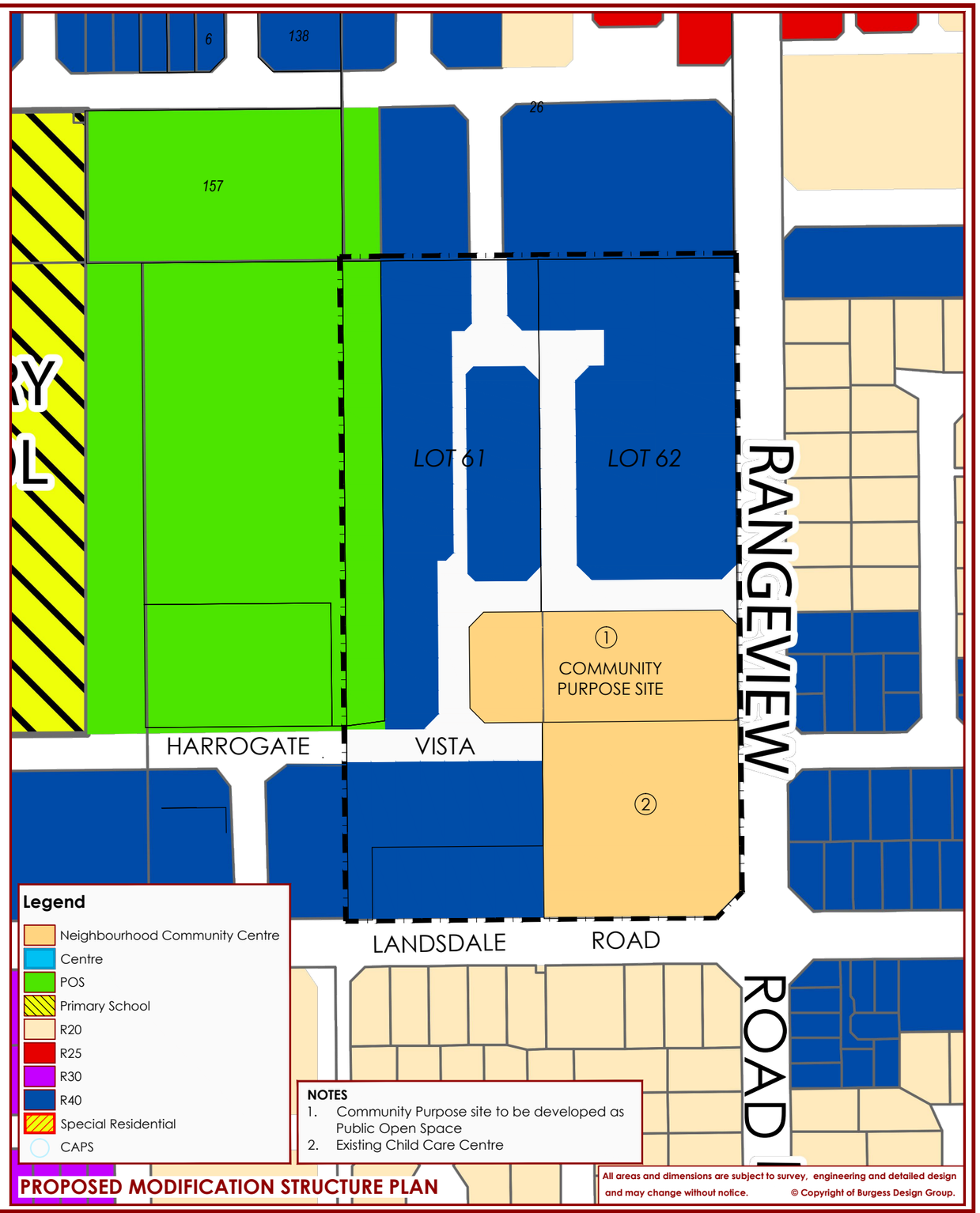
CITY OF WANNEROO

ATTACHMENT 3

MODIFICATION COMPARISON PLAN



CURRENT STRUCTURE PLAN



PROPOSED MODIFICATION STRUCTURE PLAN

LEGEND

SUBJECT LAND
(LOTS 61 & 62 RANGEVIEW RD, LANDSDALE)

NORTH

0 20 40 60 80 100m

SCALE 1:2000 (A3)

MODIFICATION COMPARISON PLAN
PROPOSED MODIFIED EAST WANNEROO CELL 5 AGREED STRUCTURE PLAN
LOTS 61 & 62 RANGEVIEW ROAD, LANDSDALE
LANDSDALE

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Plan No: FIL LAN 9-01a
Date: 24.08.15
Client: FILIPPOU
Planner: ZM

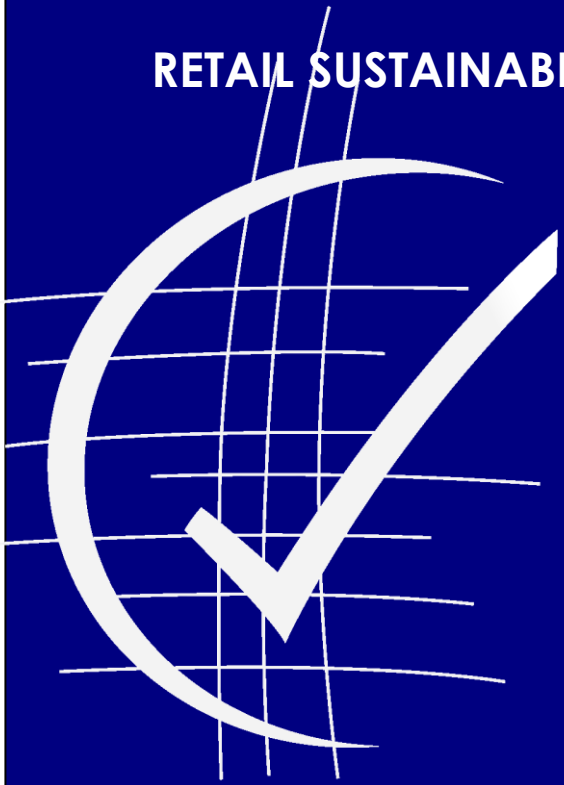
CITY OF WANNEROO

ATTACHMENT 4

RETAIL SUSTAINABILITY ASSESSMENT

Taktics4
Lot 61 Landsdale Road
Lot 62 Rangeview Road
(Rangeview Road Centre Zone)

RETAIL SUSTAINABILITY ASSESSMENT



Burgess Design Group
August 2016
1610

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Version Control

Document Name	Date	Description	Prepared
1610-Landsdale-T4 RSA-Final 01a	August 2016	First Draft	GD

Distribution Control

Document Name	Date	Distribution	Format	Delivery
1610-Landsdale-T4 RSA-Final 01a	August 2016	ZMc - BDG	PDF	email

Disclaimer

CONTENTS

1 INTRODUCTION

1.1 Purpose

This Retail Sustainability Assessment assesses the potential market demand for retail activity currently planned on the corner of Landsdale Road and Rangeview Road in Landsdale, Perth. The site is located approximately 15 km north of Perth and 12 km south east of Joondalup in the City of Wanneroo. The site is contained within East Wanneroo Cell 5 - Agreed Structure Plan No.7.

1.2 History/Background

The East Wanneroo Cell 5 Local Structure Plan established a centre zone at the Rangeview Road site with an allocated retail floor space limit of 1,100 sqm.

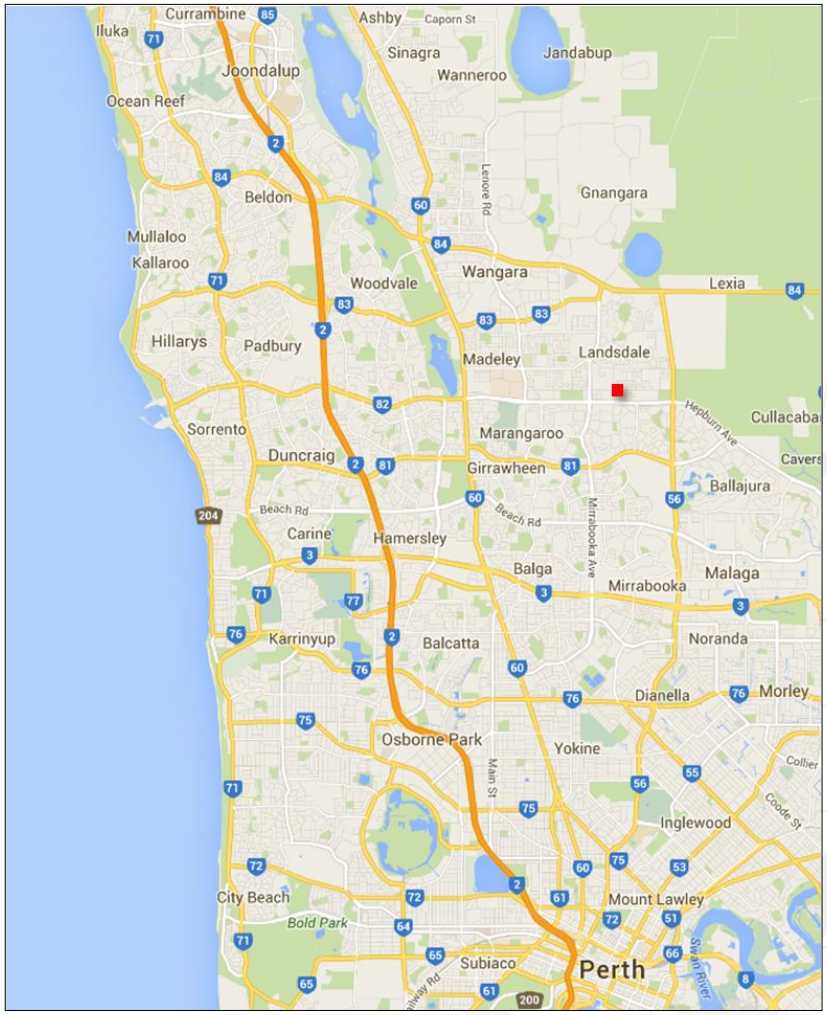
Taktics4 has previously prepared a document in support of a Local Structure Plan which confirmed the demand for retail activity / centre zone on the subject site. That report was completed in February 2008 and was based on development assumptions and policy direction current at the time of the reporting. The owners of the site have since requested a review of that report based on recent developments trends, planning policy and initiatives. It is considered that the centre zone may now be redundant.

1.3 Approach

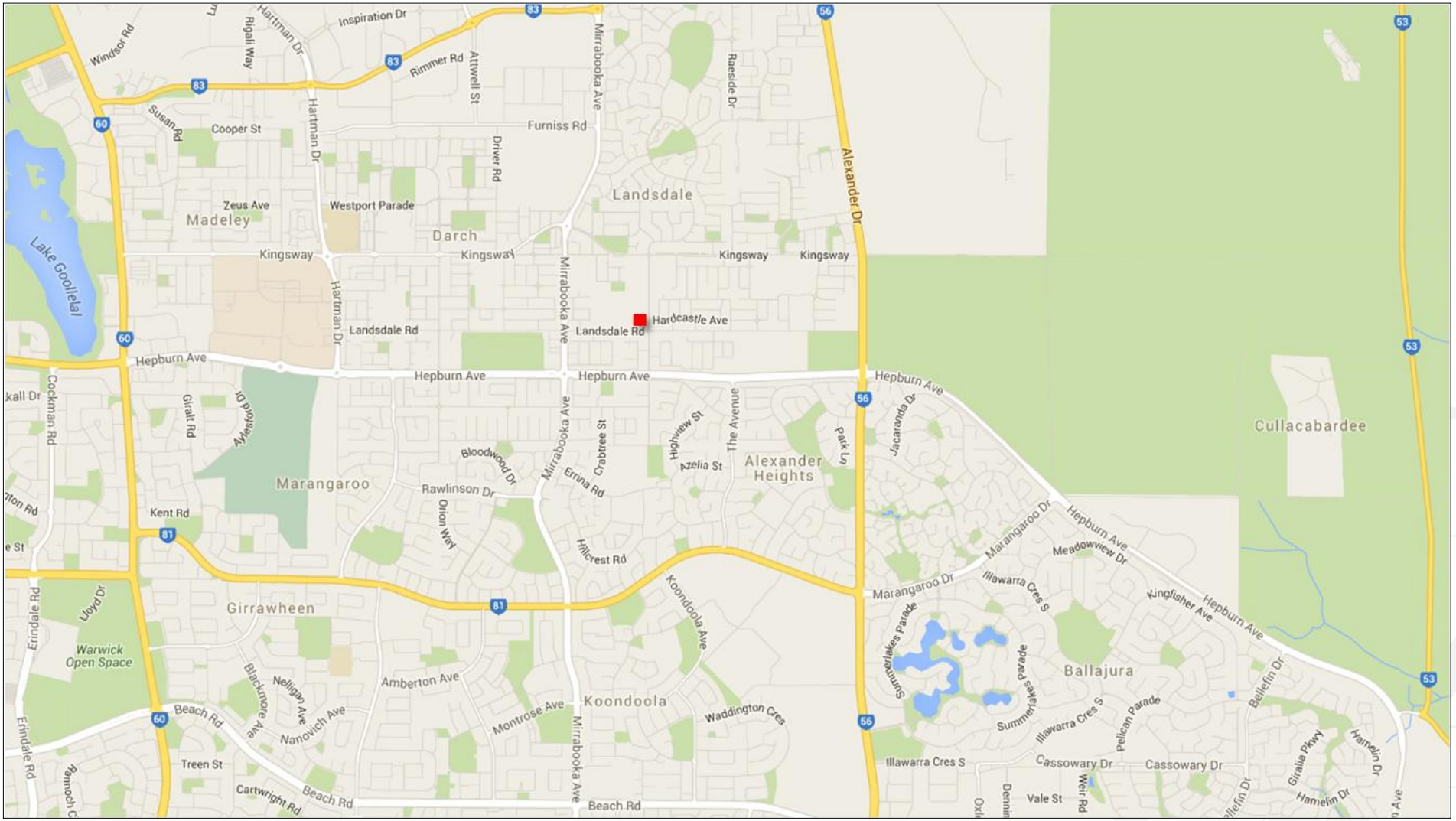
This Retail Sustainability Assessment considers the future demand for the site by assessing the:

- The size, nature and needs of the intended catchment and markets of planned retail activity
- The competition / duplication created by planned retail activity
- The implication of retail activity on the surrounding infrastructure
- Distribution of local/neighbourhood centre dealt with at a local strategy level

REGIONAL CONTEXT



LOCALITY MAP



2 POLICY/STRATEGY

Planning for the Rangeview Road Centre site was established under the guidance of the following policy and strategies responsible for delivery of retail activity in the City of Wanneroo.

2.1 WAPC State Planning Policy 4.2

The report has been prepared in accordance with WAPC SPP4.2 (August 2010). It replaced the Metropolitan Centres Policy which was the prevailing coordinating document when the initial planning of the centre was established.

The main purpose of SPP4.2 is to specify broad planning requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres in Perth and Peel. It is mainly concerned with the distribution, function, broad land use and urban design criteria of activity centres, and with coordinating their land use and infrastructure planning.

SPP4.2 is focused primarily on higher order centres and whilst it makes provision for the design criteria and principles associated with smaller centres it provides for the location and nature of these centres to be largely coordinated through local planning schemes and local structure planning processes.

The size and intended nature of the local centre planned for the Rangeview Road site is not sufficient to be dealt with within the direction of SPP 4.2.

2.2 Local Planning Policy 3.2: Activity Centres

The purpose of City of Wanneroo Local Planning Policy 3.2: Activity Centres is to provide a network of connected, vibrant, robust and dynamic activity centres that form part of an established and long term Activity Centres Hierarchy. LPP 3.2 predominantly focuses on the delivery of the Regional and District centres designated within SPP 4.2 within the City of Wanneroo. LPP 3.2 directs that all Neighbourhood Centres, Local Centres, Coastal Villages and Corner Stores locations and sizes within the City of Wanneroo are to be identified in District Planning Scheme No. 2 and agreed structure plans.

The planned Rangeview Road site is listed as a local or neighbourhood centre and is therefore established as part of the Structure Planning process. The site is contained within the East Wanneroo Cell 5 Structure Plan.

2.3 East Wanneroo Cell 5 - Agreed Structure Plan No.7.

The East Wanneroo Cell 5 LSP was adopted in November 2002. It established the provision of a 5,000sqm Centre zone site on Lots 61 and 62. The centre zone was created to facilitate retail based activity of up to 1,100sqm of retail floor space.

The East Wanneroo Cell 5 LSP also established the provision of the Lansdale Shopping centre (north) with a total floor space of 3,000sqm.

EXTRACT OF RETAIL SCHEDULE

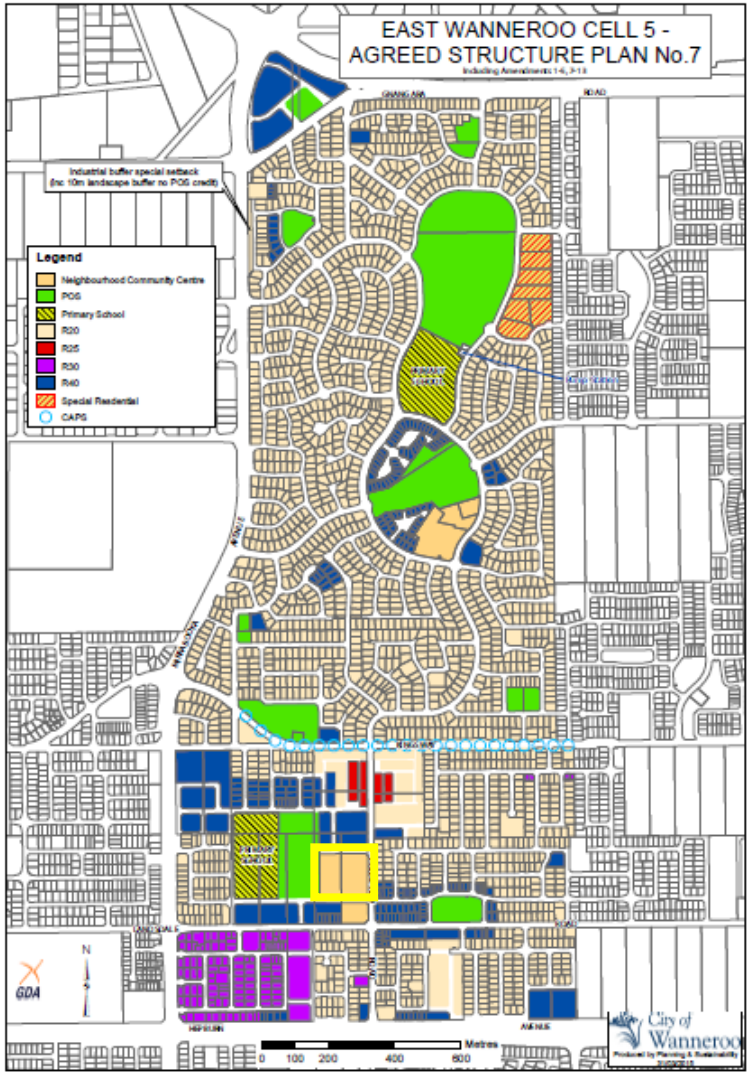
3. RETAIL FLOORSPACE (NLA)

Retail floorspace (NLA) for the Structure Plan will be in accordance with Schedule 1.

SCHEDULE 1: RETAIL FLOORSPACE PROVISION

NEIGHBOURHOOD CENTRE	MAXIMUM NETT LETTABLE AREA (ROUNDED TO THE NEAREST 50m²)
Cell 5 Neighbourhood Centre (North)	3000m²
Cell 5 Neighbourhood Centre (South)	1100m²

EAST WANNEROO CELL 5 LOCAL STRUCTURE PLAN



3 COMPETITIVE ENVIRONMENT/CONTEXT

This section considers the potential influences on the market demand for retail activity in the planning area, and subsequently delineates the likely extent of the resident catchment available to major tenants as the basis for determining the retail market demand in the area.

3.1 Philosophy

Regardless of whether we like it or not, a number of major tenants dominate the retail landscape in Australia. Retailers such as major supermarket chains and Discount Department Stores capture a significant share of overall retail sales. They therefore underpin visitor traffic for our shopping centres and generate the exposure necessary for smaller specialty shops to survive. A shopping centres commercial viability is severely reduced without having an anchor tenant to drive the foot traffic for these smaller specialty shops. If the major tenant or tenants are able to generate sufficient sales from a particular catchment then the remaining specialty shops are generally in a position to capitalise on their success. To this end analysis in this report focuses on understanding the market demand for these major tenants in order to ascertain the overall demand and sustainability for a centre.

3.2 Networks and Distribution Pattern

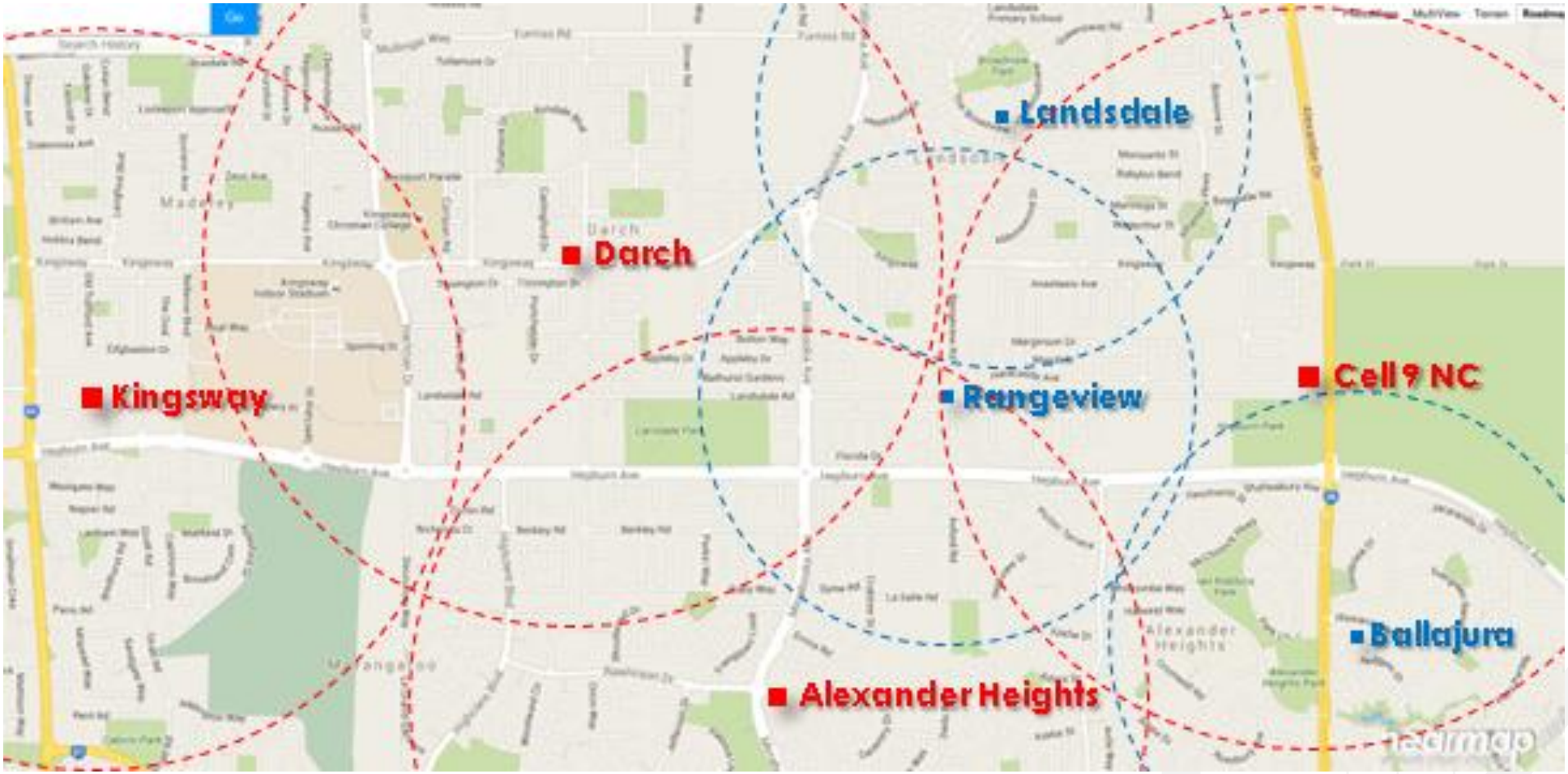
The distribution network for major supermarkets throughout urban Australia generally highlights that a supermarket requires a dedicated residential catchment of at least 1.5km. Smaller supermarkets require a smaller catchment. The distribution pattern for Discount Department Stores throughout urban Australia suggests these larger stores require a dedicated catchment of 3.5km.

The future sustainability of the planned Rangeview Road centre will be influenced by the proximity of a range of existing and planned centres as highlighted on the following map.

INFLUENCING CENTRES

Centre Name	Centre Classification	Major Tenants	Centre Size
Madeley (Kingsway)	Existing District Centre	BigW, Coles and Woolworths	15,000 sqm
Alexander Heights	Existing District Centre	Coles & Woolworths	12,000 sqm
Landsdale	Existing Neighbourhood Centre	IGA	3,000 sqm
Darch	Existing Neighbourhood Centre	Supa IGA	3,500 sqm
Ballajura	Existing Neighbourhood Centre	IGA	3,000 sqm
East Wanneroo Cell 9	Proposed Neighbourhood Centre	1 x supermarket tbd	3,700 sqm

COMPETITIVE ENVIRONMENT



3.3 Madeley District Centre (Kingsway Shopping Centre)

Kingsway is an existing district centre located on Wanneroo Road and Hepburn Avenue approximately 3.5km west of the Rangeview site. It contains 20,000sqm in retail floor space and comprises a BigW, and both full line Coles and Woolworths supermarkets (3,800sqm each) It is designed to cater to a broader district catchment than a neighbourhood centre and would typically have a catchment that extends beyond a 3.5km radius which incorporates the Landsdale community.

MADDELY DISTRICT CENTRE

3.4 Alexander Heights

The Alexander Heights Shopping centre is located 1.4 km south of the Rangeview site on Mirrabooka Avenue. It contains over 12,000sqm of retail floor space and including a Woolworths supermarket (3,500sqm) and a Coles Supermarket (3,000sqm). It is a designated District centre in SPP4.2 despite it relatively small allocation of retail specie and its lack of a Discount department Store. Its lack of a DDS limits its catchment size, but it will still serve the majority of the planned South Landsdale Community.

ALEXANDER HEIGHTS DISTRICT CENTRE

3.5 Landsdale Neighbourhood Centre

The Landsdale Neighbourhood centre is located approximately 1km north of the Rangeview Road site on the Broadview. It is a small 3,000sqm neighbourhood centre comprising a 1,500 sqm IGA supermarket. Its smaller supermarket size is expected to limit its primary catchment to a 1km - 1.5km radius. Its catchment incorporates much of the Lansdale community.

LANDSDALE NEIGHBOURHOOD CENTRE

3.6 Darch Neighbourhood Centre

The Darch Neighbourhood Shopping Centre is located on the corner of Kingsway and Ashdale Boulevard approximately 1.5km west of the Rangeview site. It was developed in Dec 2010 and comprises 3,500sqm of retail floor space including a 2,500sqm Sup IGA
Its larger supermarket size creates a catchment more consistent with the full line offering of Coles and Woolworths. The site has been developed pursuant to Darch Neighbourhood Centre Structure Plan 51 (adopted on November 2004).

DARCH NEIGHBOURHOOD CENTRE

3.7 Ballajura Marketplace

The Ballajura Marketplace is a small local centre anchored by an IGA approximately 2km east of the Rangeview Road site.
It incorporates a disparate cluster of buildings across two sites and includes a Tavern and takeaway food outlets. The total size of all retail buildings is approximately 3,000 sqm. It is primarily situated to serve the West Ballajura community however its proximity to Alexander Drive means that it has the potential to serve part of the Landsdale South community.

BALLAJURA NEIGHBOURHOOD CENTRE

3.8 East Wanneroo Cell 9 - Neighbourhood Centre

East Landsdale Cell 9 - Local Structure Plan no. 57 (As amended) (adopted November 2015) and it's supporting Economic and Employment Strategy (Syme 2008) provides for an additional centre to be located less than 1.5km east of the planned Rangeview Road site. The 2.5Ha site allocated to centre zone in this cell is located on the corner of Alexander Drive and Lansdale Road. It will be capable of supporting a neighbourhood centre.

The strategy findings within this report support a centre of 6,900sqm including 3,700sqm of retail floor space. This overall centre size is significantly larger than both of the existing Darch and Landsdale Neighbourhood Centres although the retail space allocated to the site is consistent with the size of both existing neighbourhood centres.

3.9 Summary

The community of South Landsdale is currently well catered for by retail activity. Most residents have access to at least 2 -3 supermarket based centres within a 1.5km travel distance.

The recent introduction of Darch Neighbourhood Centre west of the planned location provides a significant option for shoppers in Landsdale. Whilst, the planned introduction of a further neighbourhood centre immediately east of the planned Rangeview Road site will further enhance access to local and neighbourhood retail and community activity for the Lansdale community.

This development would result in the South Landsdale Community being served by as many as 3 to 4 supermarket based centres.

EAST WANNEROO CELL 9 LOCAL STRUCTURE PLAN
NEIGHBOURHOOD CENTRE

4 CATCHMENT PROFILE

4.1 Population

Population forecasts for the City of Wanneroo are estimated by id consulting and available on the City of Wanneroo web site. Population is forecast across a range of statistical sub areas. The City of Wanneroo is expected to grow from a population of 195,350 in 2016 to a total of 354,050 by 2036.

The two smallest statistical boundaries relevant to the Rangeview Road site include Darch and Landsdale. These two areas currently contribute 19,750 residents. These two areas are forecast to grow to 25,900 residents by 2036.

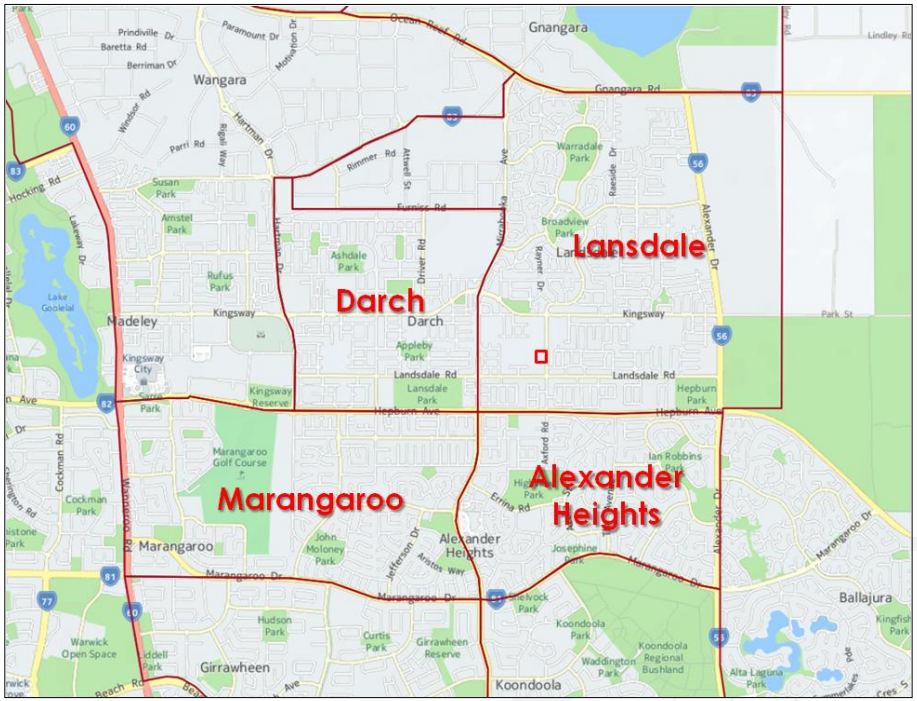
Id CONULTING POPULATION FORECASTS

Statistical Area	2016	2036	2016-36 actual	% growth 2016-36
Darch	7,800	9,300	1,500	19%
Landsdale	11,950	16,600	4,650	39%
All	19,750	25,900	6,150	31%
City of Wanneroo	*195,350*	*354,050*	*158,700*	*81%*

id consulting/City of Wanneroo (2015)

Based on the location and nature of the existing and planned centres within close proximity, the Rangeview Road centre would predominantly be expected to serve a catchment already shared by many of the existing and proposed centres. Its catchment could expect to be limited to a small population base within a 750 metre radius of the site.

ID CONSULTING STATISTICAL AREAS



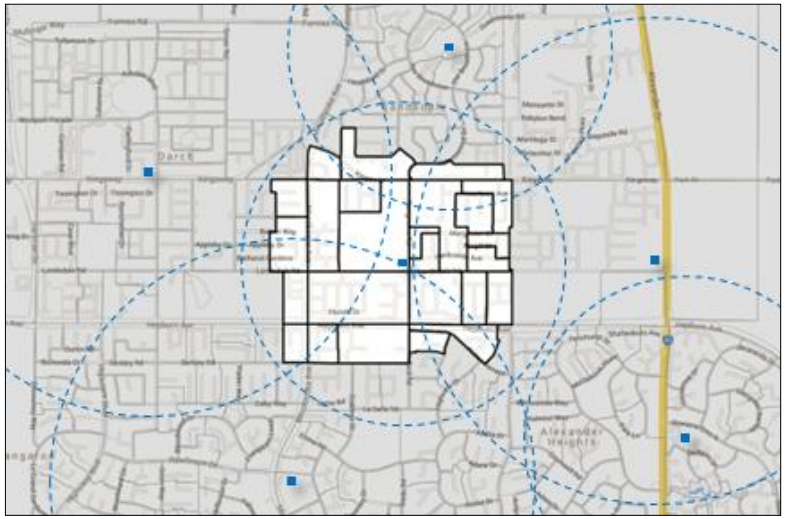
This catchment was estimated to contain a total resident population of just over 3,200 in the last population and household census conducted by the Australian Bureau of Statistics in August 2011. Dwelling developments within the catchment over the five years since the last census are estimated to have added an additional 1,125 residents to the catchment bringing the current total resident population to over 4,300. Continued residential development within the catchment is expected to introduce an additional 1,330 residents in to the catchment, bringing the forecast ultimate population in the catchment to nearly 5,700.

CURRENT AND FORECAST CATCHMENT POPULATION

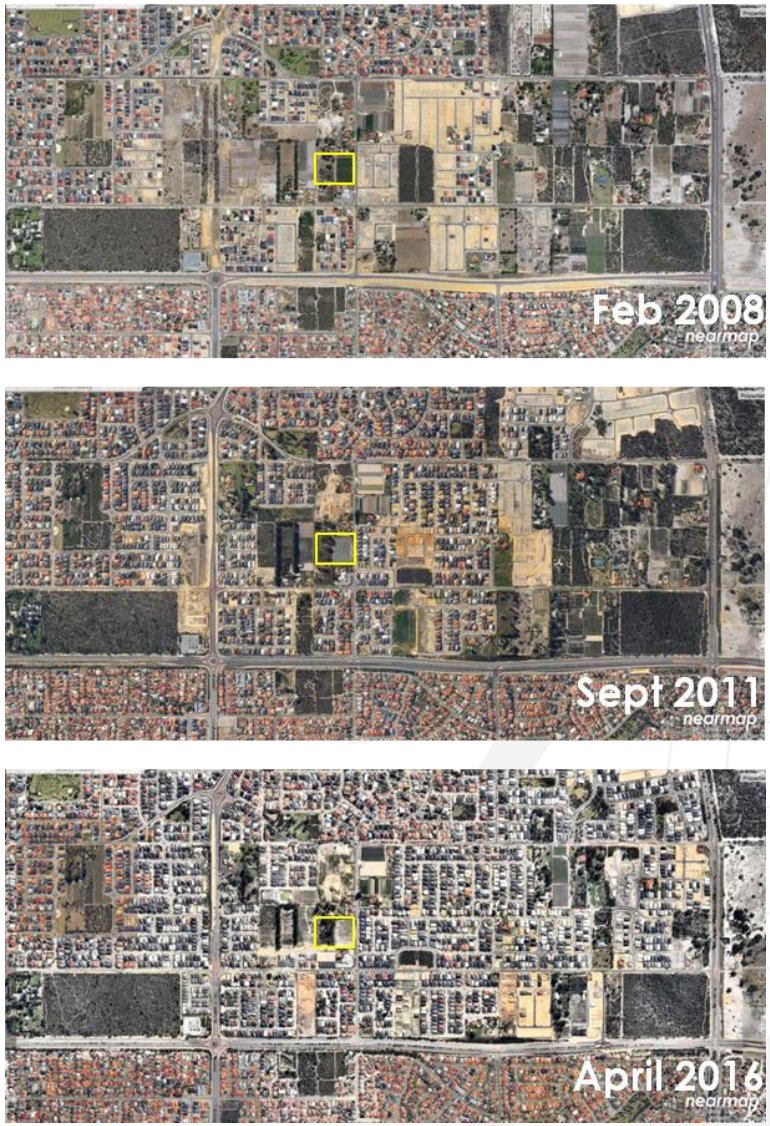
Year	Resident population	Increase in population
2011	3,218	-
2016	4,344	1,126
Ultimate	5,660	1,315

Id consulting/ABS 2011

RANGEVIEW POTENTIAL CATCHMENT



DWELLING GROWTH



4.2 Demographics

The population base within the catchment was still evolving during the last census in 2011, and will continue to evolve over coming years. The statistical suburb of Landsdale includes a considerable area comprising 7,100 residents which has been established for a considerable period. The statistical suburb of Darch immediately west of the Rangeview Road site had a population base of 6,100 residents but has been more recently developed and therefore appears to better represent the community profile for the to the intended catchment in South Landsdale.

The current population for Darch (and therefore the forecast profile or the South Landsdale) community is characterised by:

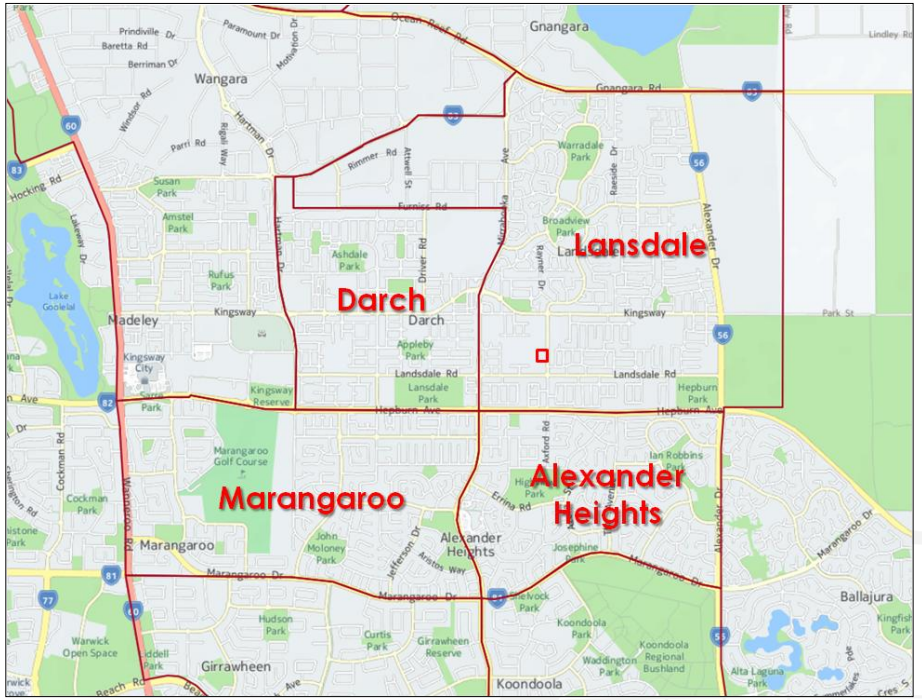
- Younger population
- Larger household sizes
- Higher personal incomes
- Even higher household incomes - indicating more employed persons per household
- Higher proportion of mortgaged homes
- Higher mortgage repayments
- Higher rent payments

KEY CATCHMENT CHARACTERISTICS

Characteristic	Darch	WA	Actual Difference	%
average age (years)	30	36	- 6	-17%
average persons / household	3.4	2.6	1	31%
personal income	$768	$662	$106	16%
household income	$2,019	$1,415	$604	43%
owned with mortgage	71%	38%	34%	89%
median rent	$440	$300	$140	47%
median mortgage repayments	$2,305	$1,950	$355	18%

Population and Household Census (ABS 2011)

STATISTICAL SUBURB OF DARCH



4.3 Retail Spending Profile

Average retail spending per capita figures by store type is derived by comparing retail sales by the ABS against estimated population projections per state and Region.

The demographics in the community indicate an average retail spending of $4,275/person p.a. This is consistent with the West Australian retail spending average.

The high average household size in the catchment (30% above average) improves the available capacity for supermarket spending in the catchment.

4.4 Supermarket Spending Capacity

The population in the Rangeview Road catchment is currently estimated to be generating up to $18.5 M p.a. that is being captured by supermarkets/grocers. Population growth in the catchment will see the ultimate supermarket spending capacity grow to $24.2M p.a.

SUPERMARKET SPENDING CAPACITY in CATCHMENT

	Annual Supermarket Sales ($M p.a.)
2011	$13,758,225
2016	$18,573,604
Ultimate	$24,196,605

Retail Sales/ABS 2016

5 MARKET DEMAND

5.1 Rangeview Road Centre Sales Potential

The Rangeview Road site has been allocated 1,100 sqm of retail floor space. This size centre would typically be developed around a configuration including a 750 sqm supermarket and up to 4-6 shops of between 75 sqm and 100 sqm. Industry averages highlight a demand for a supermarket to be capable of attracting an average sales productivity of $8,000/sqm p.a. in order to be sustainable. Achieving sales productivity of $8,000/sqm p.a. for a 750 sqm supermarket would generate sales of $6M p.a.

5.2 Required Market Share

These sales required by Rangeview Road to be sustainable therefore represent 32% of current 2016 spending capacity ($18M p.a.) and 25% of the ultimate annual supermarket spending capacity ($24M p.a.) available within the catchment.

5.3 Escape Expenditure

The proximity and size of the surrounding centres will be responsible for some of the supermarket spending capacity available in the catchment to be captured by the surrounding supermarkets.
The surrounding supermarkets are expected to capture sales of $145M p.a. in 2016 (not counting the planned Cell 9 centre). The introduction of the Cell 9 supermarket in the future would bring total supermarket sales from surrounding centres to $169M p.a.

The surrounding centres are estimated to be capturing a combined total of at least $13M p.a. of the supermarket spending capacity from within the designated Rangeview Road catchment in 2016. The introduction of a supermarket at Rangeview Road capturing $6M p.a. would result in sales from the catchment needing to deliver $19M p.a. in 2016. This is $0.5M p.a. over the available spending capacity within the catchment.

SUPERMARKET ESCAPE EXPENDITURE
(2016 POPULATION AND CELL 9 CENTRE NOT DEVELOPED))

	Supermarket floor space (sqm)	Potential Sustainable Sales ($M p.a.)	Coverage of Rangeview Catchment	Market share from Rangeview catchment	Potential sales captured from Rangeview catchment
Kingsway	7,600	$61	100%	25%	$4.64
Darch	2,500	$20	40%	35%	$2.60
Alexander Heights	5,500	$44	40%	60%	$4.46
Cell 9 NC	3,000	-	-	-	-
Landsdale	1,500	$12	50%	15%	$1.39
Ballajura	1,000	$8	0%	15%	$0.00
All centres	**18,100**	**$145**			**$13.09**
Rangeview Road	750	$6.00	100%	33%	$6.04
				Required sales from catchment	**$19.13**
				Available spending within catchment	$18.57
				Shortfall in catchment	**-$0.56**

Taktics4

Upon full development of the resident catchment and when the Cell 9 Centre were fully developed the total sales captured by surrounding centres from within the catchment would need to be $21.3M p.a. adding Rangeview Road sales of $6M p.a. would create a short fall of $3.15M p.a. from the catchment spending capacity.

SUPERMARKET ESCAPE EXPENDITURE
(ULTIMATE POPULATION AND CELL 9 CENTRE DEVELOPED)

	Supermarket floor space (sqm)	Potential Sustainable Sales ($M p.a.)	Coverage of Rangeview Catchment	Market share from Rangeview catchment	Potential sales captured from Rangeview catchment
Kingsway	7,600	$61	100%	25%	$6.05
Darch	2,500	$20	40%	35%	$3.39
Alexander Heights	5,500	$44	40%	60%	$5.81
Cell 9 NC	3,000	$24	50%	35%	$4.23
Landsdale	1,500	$12	50%	15%	$1.81
Ballajura	1,000	$8	0%	15%	$0.00
All centres	**21,100**	**$169**			**$21.29**
Rangeview Road	750	$6.00	100%	25%	$6.05
				Required sales from catchment	**$27.34**
				Available spending within catchment	$24.19
				Shortfall in catchment	**-$3.15**

Taktics4

Without a sustainable supermarket operator, the remaining floor space and tenancies planned for the centre would not be sustainable, as they rely primarily on the extent and frequency of the foot traffic generated by supermarket operator to develop the exposure necessary to sell their services.

6 POLICY AND PLANNING IMPLICATIONS

The findings delivered from the analysis of the surrounding centres, catchments characteristics of the community, highlights that the planned Rangeview Road centre established in the East Wanneroo Cell 5 LSP is not sustainable and should be removed from the structure plan.

The attempt to deliver a retail centre on the site in the current development trends and conditions would likely result in the

- in equitable distribution of retail floor space
- Inefficient duplication of commercial infrastructure
- a poor and ineffective planning outcome for the area

Inequitable Distribution

The current and planned provision of retail activity in surrounding locations provides an equitable distribution of retail activity to the surrounding communities. South Landsdale community will have access to four supermarket operators within 1.5km at Darch, Landsdale, Alexander Heights and the Cell 9 NC.

Commercial Inefficiency

The introduction of a centre on Lansdale and Rangeview roads would effectively duplicate the provision of the Lansdale centre to the north and be smaller and less effective than the larger centre planned in Cell 9.

The proximity of surrounding centres has been responsible for a lack of interest from operators and suppliers for IGA and other operators to establish a store in this location citing concerns over the cannibalisation or competitiveness of existing operators.

IGA have adopted a policy not to establish the same store type within a designated distance of existing stores to ensure maintenance of trading potential for its existing operators. It is typically willing to develop different store types within designated distances if the market demand is available. Given the existing provision of a Supa IGA at Darch and IGA at Lansdale, the only option available to IGA would be an IGA express.

An IGA express model is typically 100-400sqm in size and is better suited to the inner city, higher density suburbs. In outer suburban areas the IGA express model store is typically catered for by the petrol filling station convenience store. These are generally located on major traffic routes and cater to passing trade to supplement the limited catchment offer. The site is not suited to an IGA express site.

Ineffective Planning

Failure to delete the centre zone will create uncertainty among surrounding retailers and developers and may lead to the deferred delivery of centres or the development of smaller centres due to the perceived threat of another supermarket or centre being developed in the future.

Impact on Policy

The ‘Centre’ zone currently incorporates the existing Child Care Centre; and the ‘Community Purpose Site’ (which is intended to be retained and developed as Public Open Space). Both of these sites/facilities may be retained within the ‘Centre’ zone.

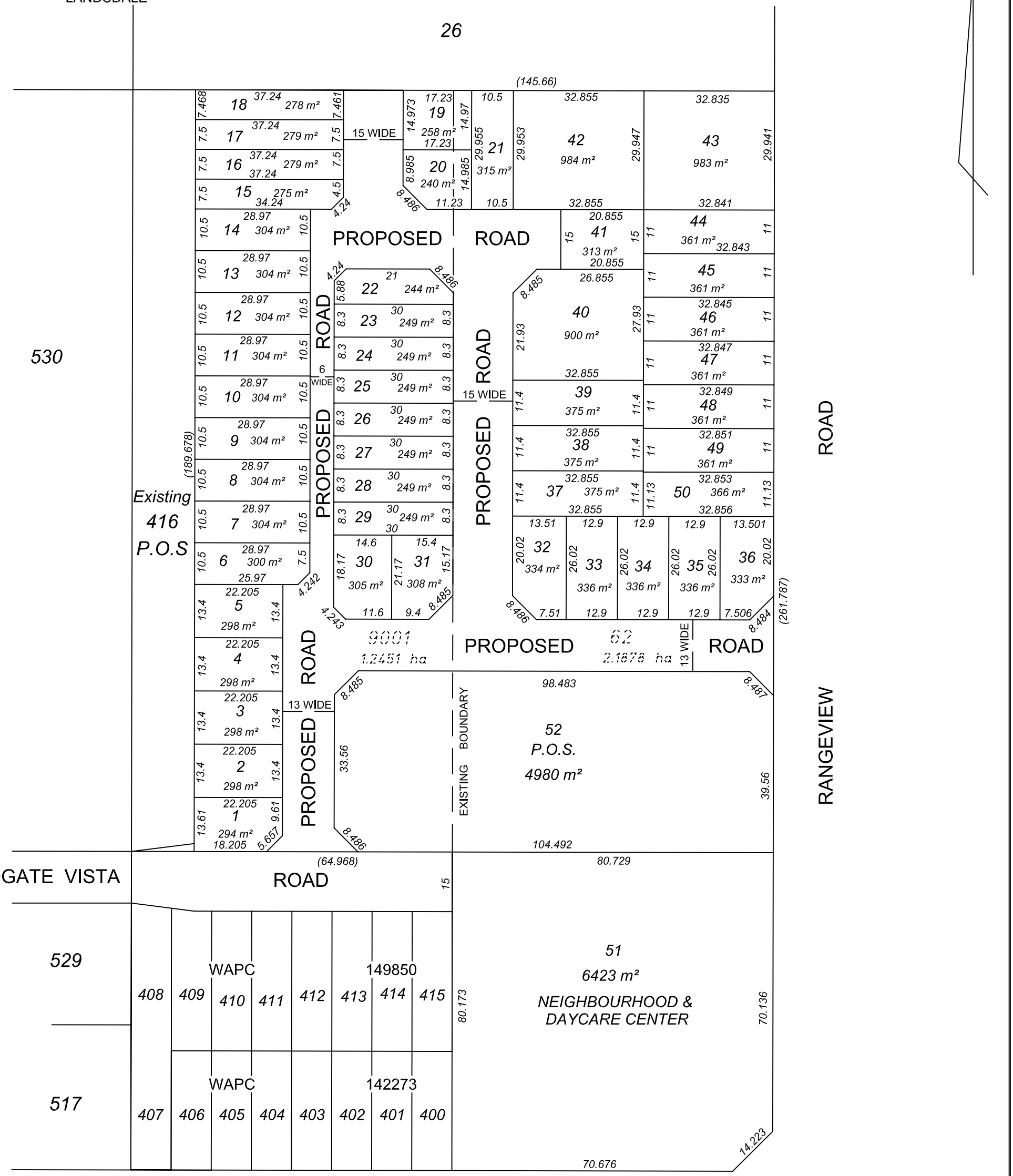
Removing a portion of the ‘Centre’ zone (related to the planned retail centre) would not require changes to State Planning Policy 4.2 or the City of Wanneroo Local Planning Policy 3.2 – Activity Centres.

The East Wanneroo Cell 5 Local Structure Plan would need to be amended to replace a portion of the centre zone with another land use. This report does not purport to suggest the preferred zoning for the site.

ATTACHMENT 5

CONCEPT SUBDIVISION PLAN

LOCAL AUTHORITY: CITY OF WANNEROO
LOCALITY: LANDSDALE



REV.	DESCRIPTION	BY	DATE

0m 10m 20m 30m 40m 50m

PRECAL OF PROPOSED SUBDIVISION OF
LOT 62 ON DIAGRAM 19511 & LOT 9001 ON WAPC 149850
28 RANGEVIEW ROAD & 197K LANDSDALE ROAD,
LANDSDALE

SCALE 1:1000
JUNE 2015
D'SOUZA
PRECAL

SCANLAN SURVEYS PTY LTD
LICENSED SURVEYORS
P O BOX 429 MIDLAND 6936
PH: 08 9250 2261 FAX: 08 9274 6206
Email : bill@scanlansurveys.com.au

DRAWING (A3): 6597/10/8
REVISION:
DRAWN BY : LF
APPROVED : WS

ATTACHMENT 6

TRANSPORT STATEMENT

Transport Statement

LOTS 61 & 62 RANGEVIEW ROAD LANDSDALE

email: info@flyt.com.au twitter.com/flytplan web: www.flyt.com.au

PROJECT	81113-110 Lot 61 & Lot 62 Rangeview Road, Landsdale			
Revision	**Description**	**Originator**	**Review**	**Date**
A	First Draft	CXS	CAS	21/08/2015
0	Issued	CXS	CAS	24/08/2015

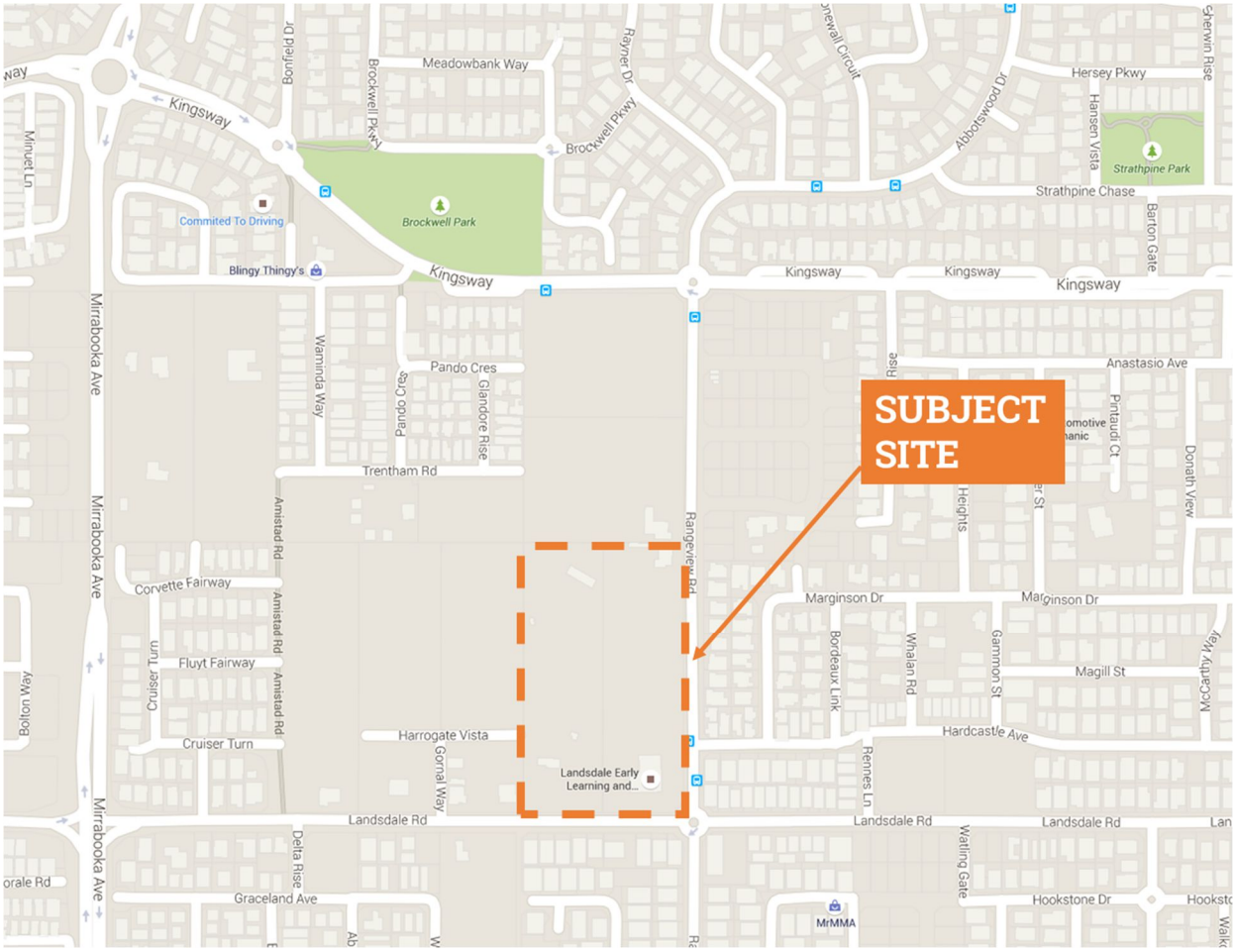
Contents

1. INTRODUCTION

1.1 Transport Statement

This Transport Statement has been prepared in support of the proposed amendment of the East Wanneroo Cell 5 Agreed Structure Plan No. 7 (ASP 7) over Lots 61 & 62 Rangeview Road, Landsdale. The location of the proposed development site is shown in Figure 1 with an aerial image shown in Figure 2.

Figure 1 - Site location (source: nearmap.com)



This Transport Statement has been prepared to comply with the *WAPC Transport Assessment Guidelines for Developments (August 2006) Volume 2 – Subdivisions* as requested by the City of Wanneroo (CoW).

The East Wanneroo Cell 5 ASP 7, covering the Landsdale locality between Gnangara Road in the north and Hepburn Road to the south, has previously been subject to more detailed sub-regional assessment. That assessment is not referenced within this Transport Statement as the original documentation is not available.

Figure 2 – Site aerial image (source: nearmap.com)

The proposed amendment for Lots 61 & 62 Rangeview Road seeks to reduce the size of the Neighbourhood Community Centre and increase the amount of R40 residential. A comparison of the East Wanneroo Cell 5 ASP 7 and the proposed zoning is described in Table 1, and shown in Figure 3.

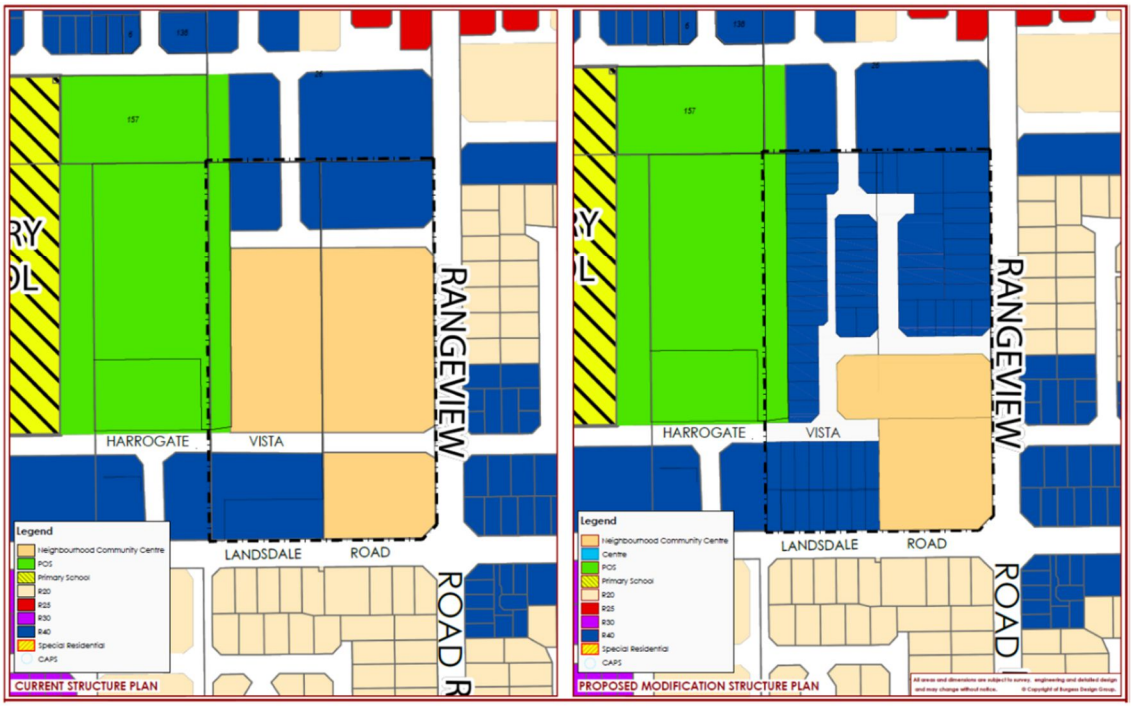
Table 1 – Change to Development Yields

Existing Zoning	Proposed Zoning
Child care centre (in operation)	Child care centre (in operation)
Neighbourhood Community Centre – 3,087m^2	Neighbourhood Community Centre – 1,000m^2
R40 – 38 dwellings	R40 – 72 dwellings

The proposed rezoning could see an additional 34 dwellings, with a significant reduction in size to the Neighbourhood Community Centre.

Changes to the road network are also proposed, with the inclusion of a new north south link through the former Community Neighbourhood Centre and the removal of the Harrogate Vista connection to Rangeview Road. A new connection to Rangeview Road is proposed, approximately 50m north of the former Harrogate Vista connection.

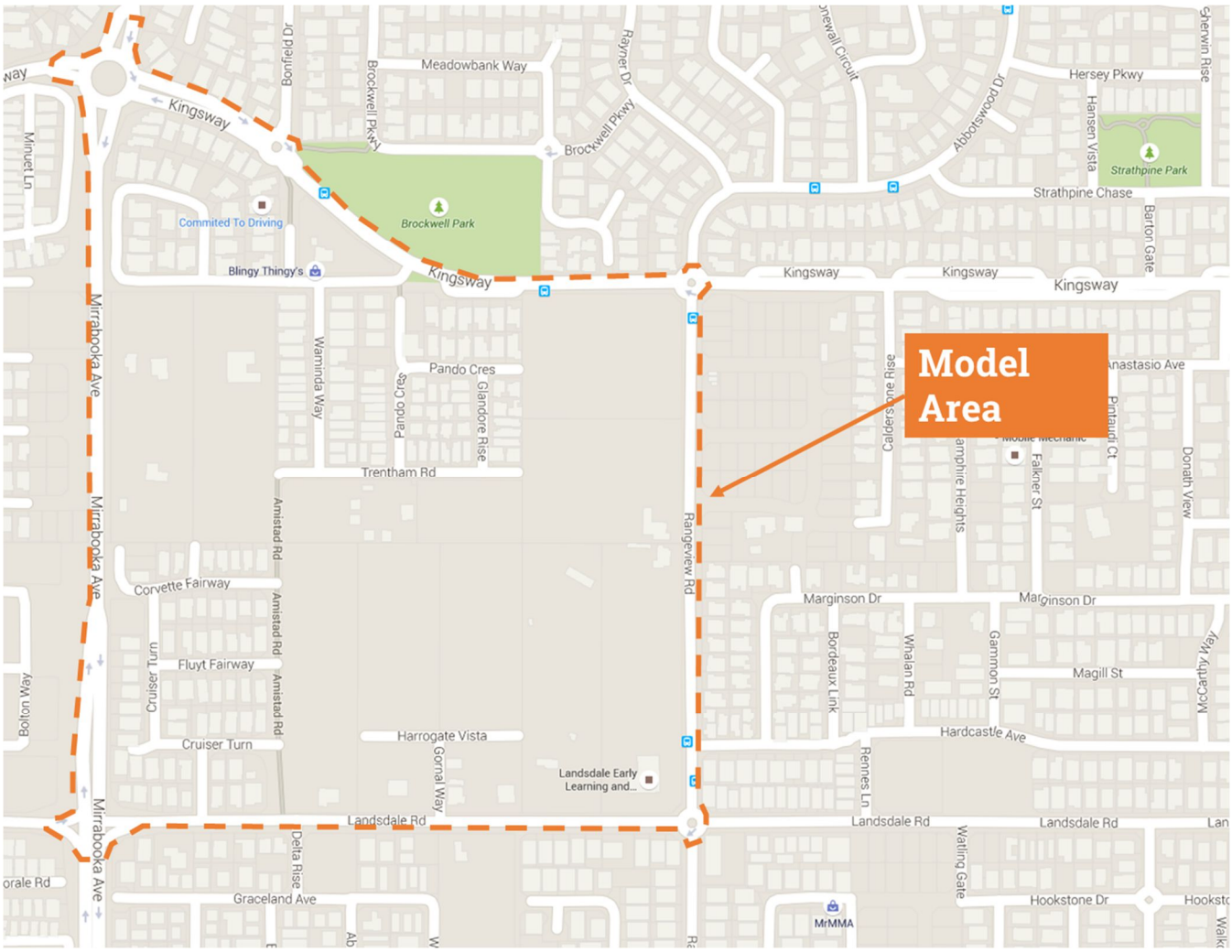
Figure 3 - Existing and proposed zoning plan (source: Burgess Design Group)



The *WAPC Transport Assessment Guidelines for Developments* require that the level of assessment is proportional on the extent of the traffic generation of the subject site. It is estimated that the proposed rezoning will result in a small *decrease* in peak hour traffic when compared to the APS 7 (largely due to the reduction in size of the Neighbourhood Community Centre), therefore a brief Transport Statement is the appropriate level of assessment. Notwithstanding this, in order to provide the CoW with relevant supporting information in respect of the rezoning, details of forecast traffic volumes and intersection performance is provided.

Flyt have developed a peak hour traffic model for the area bounded by Mirrabooka Avenue to the west, Kingsway to the north, Rangeview Road to the east and Landsdale Road to the south (extent of model shown in Figure 4). It is proposed to use this model to assess the impacts of the proposed zone amendments and determine the overall traffic volumes and intersection performance that will result.

Figure 4 – Extent of Flyt Landsdale Transport Model

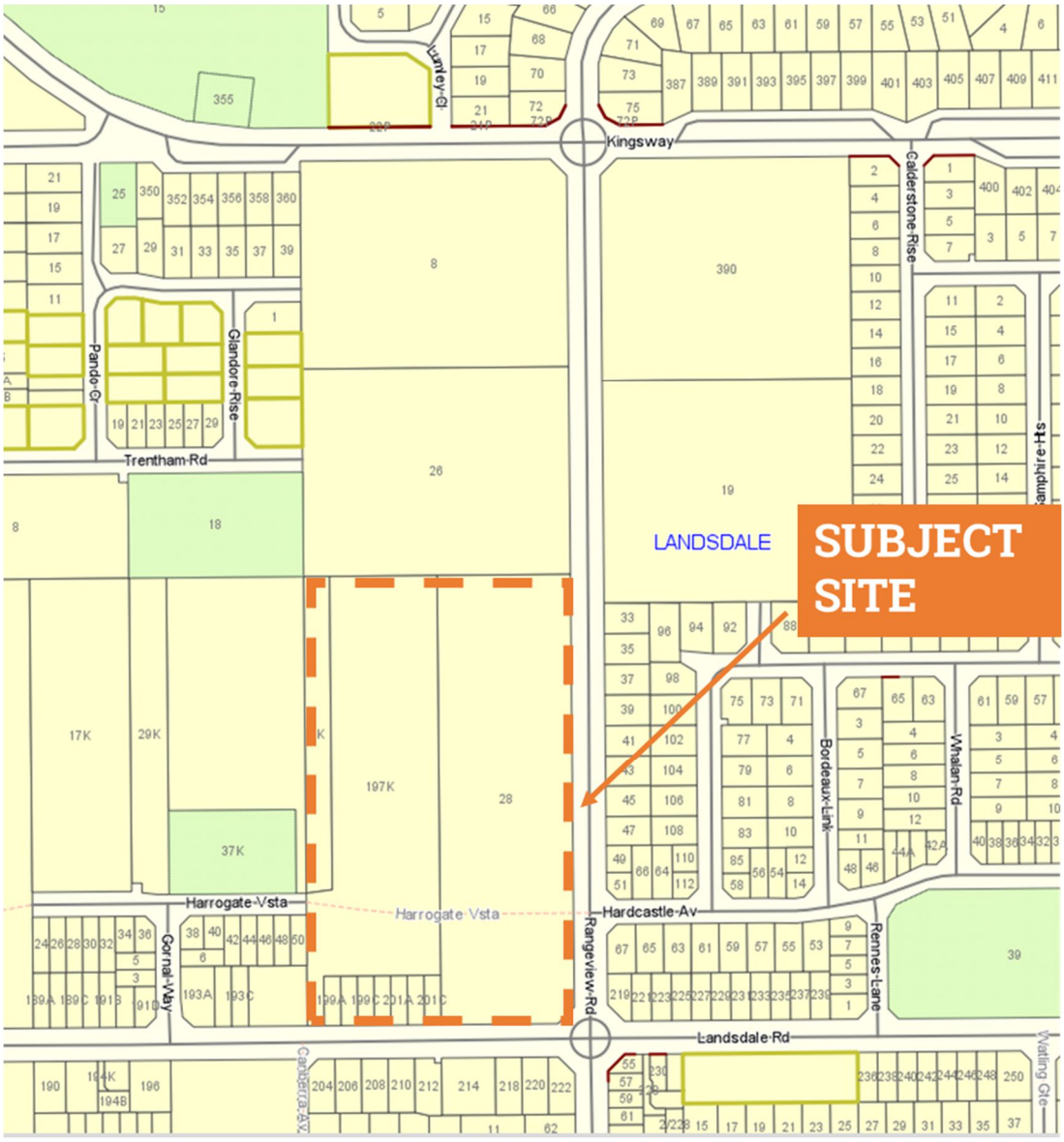


2. PROPOSED DEVELOPMENT

2.1 Site

The site of the proposed development at Lots 61 & 62 Rangeview Road is set out in Figure 1 and Figure 2, with the existing lot boundaries shown in Figure 5 (as extracted from the CoW IntraMaps website).

Figure 5 - Existing lot layout plan (source: CoW IntraMaps)



The site is zoned Urban Development under the CoW District Planning Scheme No.2 and (as shown in Figure 2) is generally vacant with the exception of a child care centre operating on the corner of Rangeview Road and Landsdale Road. The child care centre has one-way crossovers onto both Rangeview Road and Landsdale Road.

The proposed amendment for Lots 61 & 62 Rangeview Road seeks to reduce the size of the Neighbourhood Community Centre and increase the amount of R40 residential by 34 dwellings. Changes to the road network are also proposed, with the inclusion of a new north south link through the former Community Neighbourhood Centre and the removal of the Harrogate Vista connection to Rangeview Road. A new connection to Rangeview Road is proposed, approximately 50m north of the former Harrogate Vista connection.

2.2 Adjoining Development

The ASP 7 is set out in Figure 6. Immediately adjacent to the site, land use is predominantly residential. There are two areas of POS and a Primary School site all within short walking distance. Wider area development is ongoing in the Landsdale locality in accordance with structure planning, as shown in Figure 7.

Flyt have previously assessed the traffic impacts of the proposed rezoning of other landholdings within East Wanneroo Cell 5 (specifically Lots 25, 26 & 120 Rangeview Road and Lot 119 Kingsway, Landsdale). This rezoning proposes an increase to the residential density, in the order of 44 additional dwellings.

Figure 6 - CoW Agreed Structure Plan No.7 (source: CoW)

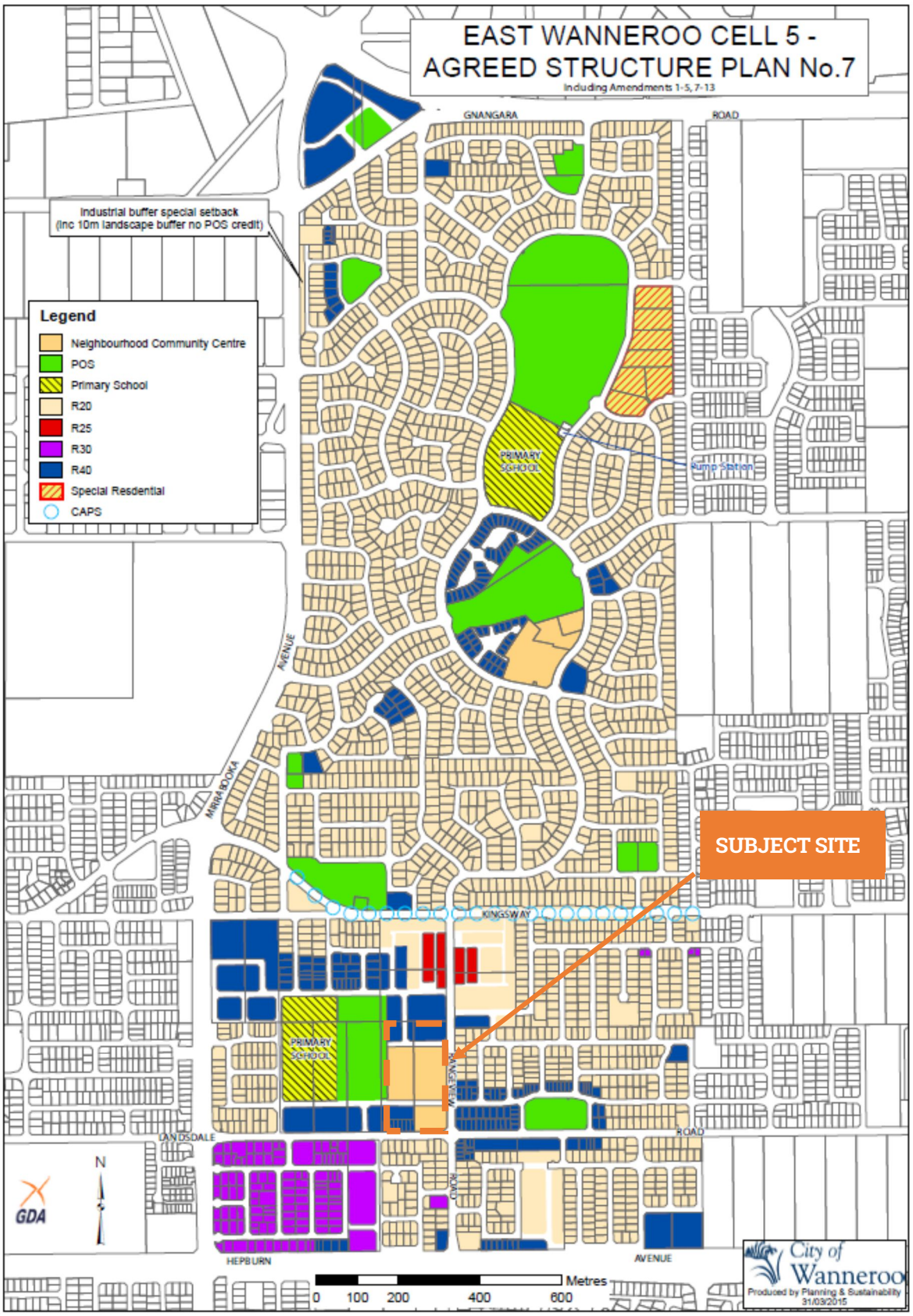


Figure 7 - Aerial of adjoining development (source: neamap.com)

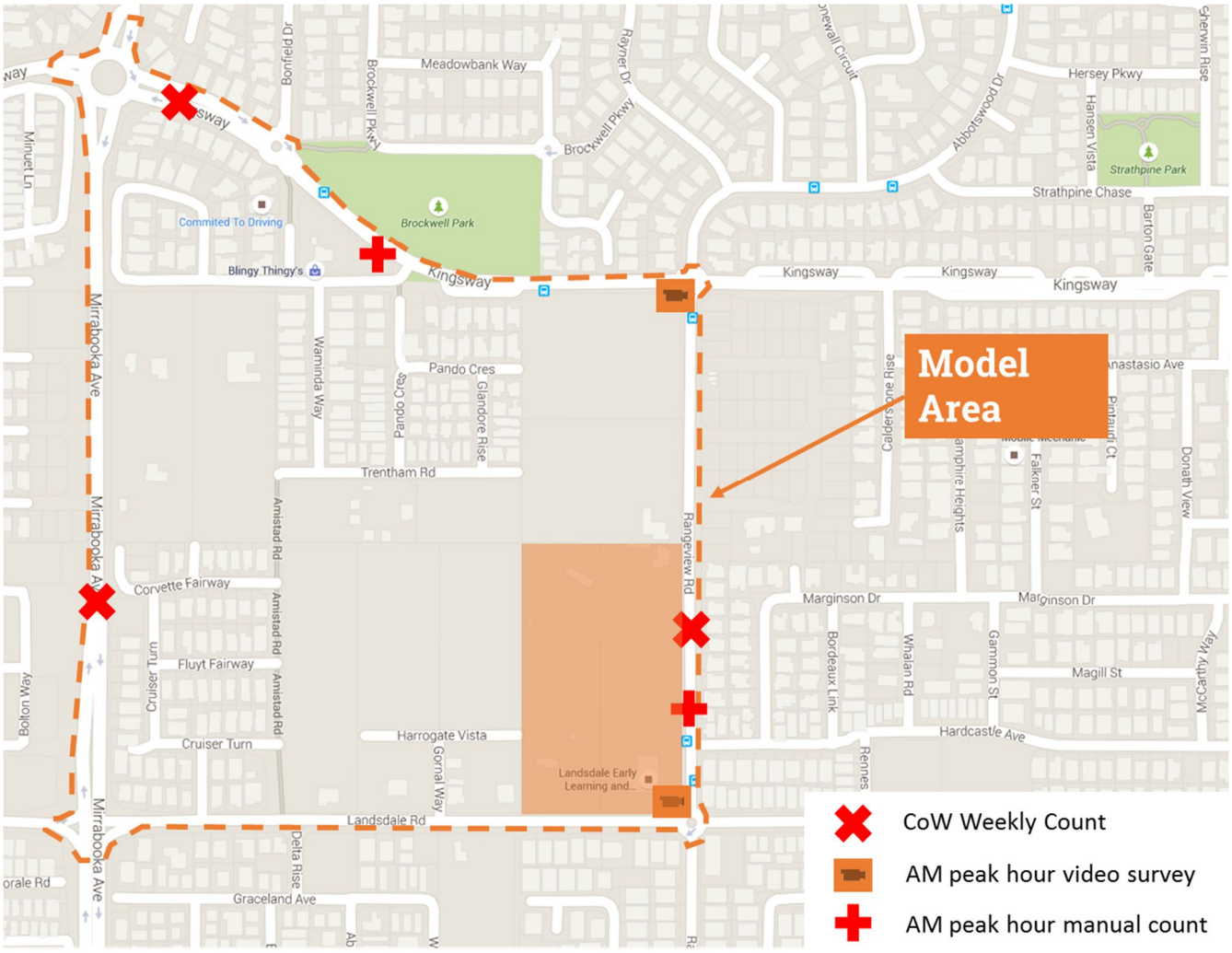
3. TRAFFIC VOLUMES

3.1 Existing Traffic Volumes

In order to inform this Transport Statement, two separate sources of traffic volume data information were used, as follows (also shown in Figure 8):

- On-site traffic observations were undertaken by Flyt on 16 September 2014 and 1 July 2015 during the morning peak hour (between 7.30am and 8.30am). The observations included video surveys at the roundabout controlled intersections of Rangeview Road with Kingsway and Landsdale Road, and manual surveys at the intersections of Rangeview Road/ Hardcastle Road and Kingsway/ Debham Gardens. Data was collected in 15 minute intervals.
- Metrocount data for 3 locations, provided by the CoW. These include Mirrabooka Avenue, north of Landsdale Road, between 19 February and 27 February 2015, Rangeview Road, north of Landsdale Road, between 29 June and 7 July 2011, and Kingsway, east of Mirrabooka Avenue, from 30 June 2014 to 4 July 2014.

Figure 8 – Sources of Traffic Data



The Metrocount information provides hourly, daily and weekly traffic volumes for the duration of each count. Average AM peak hour and daily traffic volumes are summarised in Table 2. This data enables the

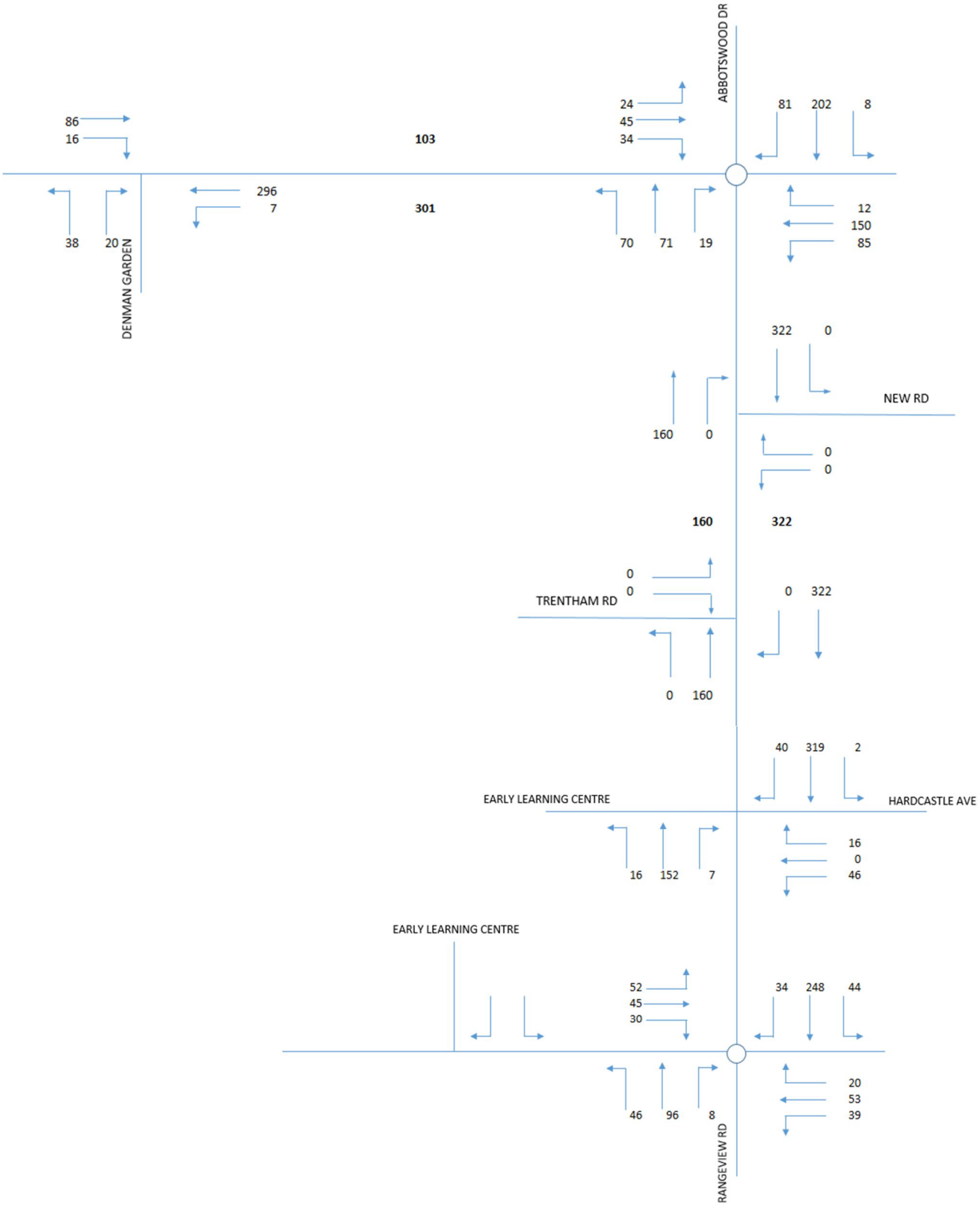
determination of the ratio of AM peak hour to daily volumes, where the average ratio was found to be 12.70. This ratio is used to estimate daily traffic volumes from the AM peak hour traffic model.

Table 2 - Observed values – AM peak hour and 24 hour ratio

Site	Recorded Value	24 Hour	AM Peak as ratio of 24 Hour
Mirrabooka Ave two-way (7:00 – 8:00)	1489	17660	11.86
Mirrabooka Ave two-way (8:00 – 9:00)	1382	17660	12.78
Kingsway Eastbound (7:00 – 8:00)	188	2798	14.88
Kingsway Westbound (7:00 – 8:00)	244	2955	12.11
Rangeview Rd two-way (7:00 – 8:00)	265	3775	14.25
Rangeview Rd two-way (8:00 – 9:00)	365	3775	10.34
Average of sites			12.70

The existing AM peak hour turning movements in the vicinity of Lots 61 & 62 Rangeview Road, as determined from the on-site surveys, are shown in Figure 9. The volumes indicate the clear dominance of the southbound movement along Rangeview Road towards Hepburn Avenue (and the wider area regional road network and Freeway) as well as east to west movements along Kingsway to access Mirrabooka Avenue. More than 50 vehicle trips were attracted by the existing child care centre on Rangeview Road and a general increase in traffic was observed during the later stages of observations, consistent with morning school drop off. Other turning movements were minor.

Figure 9 – Existing Traffic Volumes AM peak hour



4. TRAFFIC MODEL DEVELOPMENT

4.1 Introduction

A peak hour traffic model was developed to understand the potential transport impacts of the build out of the ASP 7 in Landsdale. The timeframe for the model build out is 10 years (2025). The following peak hour models were developed in the Commuter microsimulation package to understand the network implications:

- 2015 base year model;
- 2025 forecast year model with ASP 7 build out; and
- 2025 forecast year model with amended zoning build out (which includes proposed amendments to Lots 61 & 62 Rangeview Road and amendments to landholdings to the north of the subject site).

The AM peak was selected as the representative peak hour as traffic volume data provided by Council indicated this period was the busiest on the local network.

4.2 2015 Base Year Model

The 2015 AM peak hour base year model was developed to provide a calibrated base year model from which to examine future potential impacts. The details that were used in the model build were:

- Road network configurations and dimensions from Nearmap images as of 28 June 2015 and confirmed by site observations; and
- Manual observations conducted by Flyt in 2014 and 2015, along with Metrocount details for relevant locations provided by the CoW.

The model extents are set out in Figure 10.

Figure 10 – Commuter model extents

4.3 2025 Forecast Year ASP 7 Build Out

The 2025 AM peak hour Forecast Year ASP 7 build out model covered the same network area as shown in Figure 6. In addition to the base details, the following information was utilised in terms of assumptions for the model build:

- Build out density of the remaining land uses in the cell areas were based on the ASP 7.
- The existing day care centre, and its trip generation, was retained as part of the Neighbourhood Centre.
- The Primary School Site was proposed to be fully developed. The number of students was based on the nearby Landsdale Primary School of 750 students.
- An overall background traffic growth rate of 1% per annum was applied to the through routes (Kingsway, Mirrabooka Avenue, Rangeview Road and Landsdale Road) but not to internal road where traffic growth will result from the build out of land uses within the ASP 7).
- 8 vehicle trips per dwelling per day were applied as per CoW advice on 12 March 2015.
- Distribution of residential traffic was taken from observations which reflects existing user patterns. Inbound and outbound movements reflected the distribution observed at Denham Gardens in 2014.
- Distribution of traffic for the Primary School site was taken as being within the local catchment in an area bounded by Mirrabooka Avenue, Hepburn Avenue, Kingsway and Alexander Drive (this replicates in part the Landsdale Primary School catchment). The potential distribution was split in these areas based on the overall % of developable area and where vehicle trips were likely to be generated from.
- The trip generation for the school site was based on observed values taken from Mary McKillop Primary School in Ballajura and the WAPC Guidelines – Appendix 5. The WAPC guidelines estimate that 70% of children are driven to school with an average occupancy of 1.4-1.5 children per car. This equates to 0.5 trips per enrolled student in the AM peak hour resulting in a total of 375 vehicle trips. The profile of arrivals (given an 8.45am start) was based on the arrival profile observed at Mary McKillop Primary School with return trips included.
- Trip generation for the 3000m^2 Neighbourhood Centre site was taken from the NSW RTA Guidance and the WAPC Guidelines. The split of uses on the site was estimated based on the location of a 1500m^2 supermarket, 900m^2 of speciality shops and 600m^2 of medical consulting rooms as an indicative mix. The trip generation rates applied were based on the WAPC guidelines which are 2.5 trips per 100m^2 in the AM peak using an 80/20 split. Medical consulting rooms used a 2 trips per 100m^2 in the AM with the same split as retail. The total trips generated for this site in the AM peak was 74.
- Trip distribution for the neighbourhood centre used the proportional distribution of existing 2015 base year demands.

4.4 2025 Forecast Year with Amended Zoning Build Out

The 2025 AM peak hour Forecast Year with Amended Zoning Build Out model covers the same network area as shown in Figure 10 and included the same assumptions as the 2025 AM peak hour Forecast Year ASP 7 build out model set out in the previous section. The only changes to this model in comparison to the 2025 AM peak hour Forecast Year Amended Zoning build out were:

- The land use changes associated with Lots 61 & 62 Rangeview Road, Landsdale of an additional 34 R40 dwellings and a reduction of approximately 2,000 m^2 in Neighbourhood Community Centre.
- Flyt have previously assessed the traffic impacts of the proposed rezoning of other landholdings within East Wanneroo Cell 5 (specifically Lots 25, 26 & 120 Rangeview Road and Lot 119 Kingsway, Landsdale). This rezoning proposes an increase to the residential density, in the order of 44

additional dwellings. This increase has been included when assessing the forecast traffic volumes for the amended zoning scenario.

4.5 Trip Generation

Details of trip generation rates applied for the individual land uses has been set out above. For completeness, the trip generation used for the study area as a whole is set out in Table 3.

Table 3 - Trip generation rates applied

Land Use	2025 Existing Density Trip Generation Rates Applied
School site	WAPC Guidelines – Appendix 5 - 70% of children are driven to school with an average occupancy of 1.4-1.5 children per car. 0.5 trips per child enrolled at School.
Neighbourhood Centre	WAPC guidelines - 2.5 trips per 100m^2 in the AM peak using an 80/20 inbound/outbound split. Medical consulting rooms - 2 trips per 100m^2 in the AM using an 80/20 inbound/outbound split.
Child Care Centre	As observed in 2014.
Residential	As per CoW advice – 8 vehicle trips per day.

4.5.1 Trip Generation 2025 ASP 7 Build Out

Applying the rates set out in the previous section, trip rates for this scenario are set out in Table 4.

Table 4 - Trip generation 2025 existing density

Land Use	Trip Generation Rates	Yield	AM Arrivals	AM Departures
School site	0.5 vehicle trips per enrolment	750 enrolments	375	375
Neighbourhood Centre	2.5 trips per 100m^2 in the AM peak using an 80/20 arrival/departure split. Medical consulting rooms - 2 trips per 100m^2 in the AM using an 80/20 arrival/departure split	3087m^2	59	15
Residential	8 vehicle trips per dwelling per day, 8% in the AM peak using a 25/75 split between arrivals and departures	438 dwellings	70	210
Background Growth	1% per year from 2015 to 2025	Additional 160 AM peak hour trips		

4.5.3 Trip Generation 2025 Amended Zoning Build Out

The same trip rates used for the 2025 existing density scenario were applied in this scenario, in addition to the increased residential density and the reduction in size of the Neighborhood Community Centre. The amended trip generation for Lots 61 & 62 Rangeview Road is set out in Table 5. The increased residential density proposed within another amendment of landholding to the north of the subject site was also included in this model.

Table 5 - Trip generation 2025 Amended Zoning Build Out

Land Use	Trip Generation Rates	Yield	AM arrivals	AM departures
Lots 61 & 62 Residential	8 vehicle trips per dwelling per day, 8% in the AM peak using a 25/75 split between arrivals and departures	+34 dwellings	6	16
Lots 61 & 62 Neighbourhood Community Centre	2.5 trips per 100m^2 in the AM peak using an 80/20 arrival/departure split. Medical consulting rooms - 2 trips per 100m^2 in the AM using an 80/20 arrival/departure split	-2,000m^2	-39	-10
Total Lots 61 & 62			-33	6

The proposed rezoning associated with Lots 25, 26 & 120 Rangeview Road and Lot 119 Kingsway, Landsdale, add a further 44 dwellings, which are forecast to contribute 28 AM peak hour trips; 7 arrivals and 21 departures.

5. TRANSPORT ASSESSMENT

5.1 Forecast Volumes

5.1.1 Forecast Peak Hour Volumes

2025 forecast AM peak hour turning volumes resulting from full build out of the APS 7 land uses are shown in

in

Figure 11, while forecast intersection turning volumes from the full build of the amended zoning for Lots 61 & 62 Rangeview Road are shown in Figure 12.

Figure 11 – 2025 APS 7 Build Out Forecast Traffic Volumes AM Peak Hour

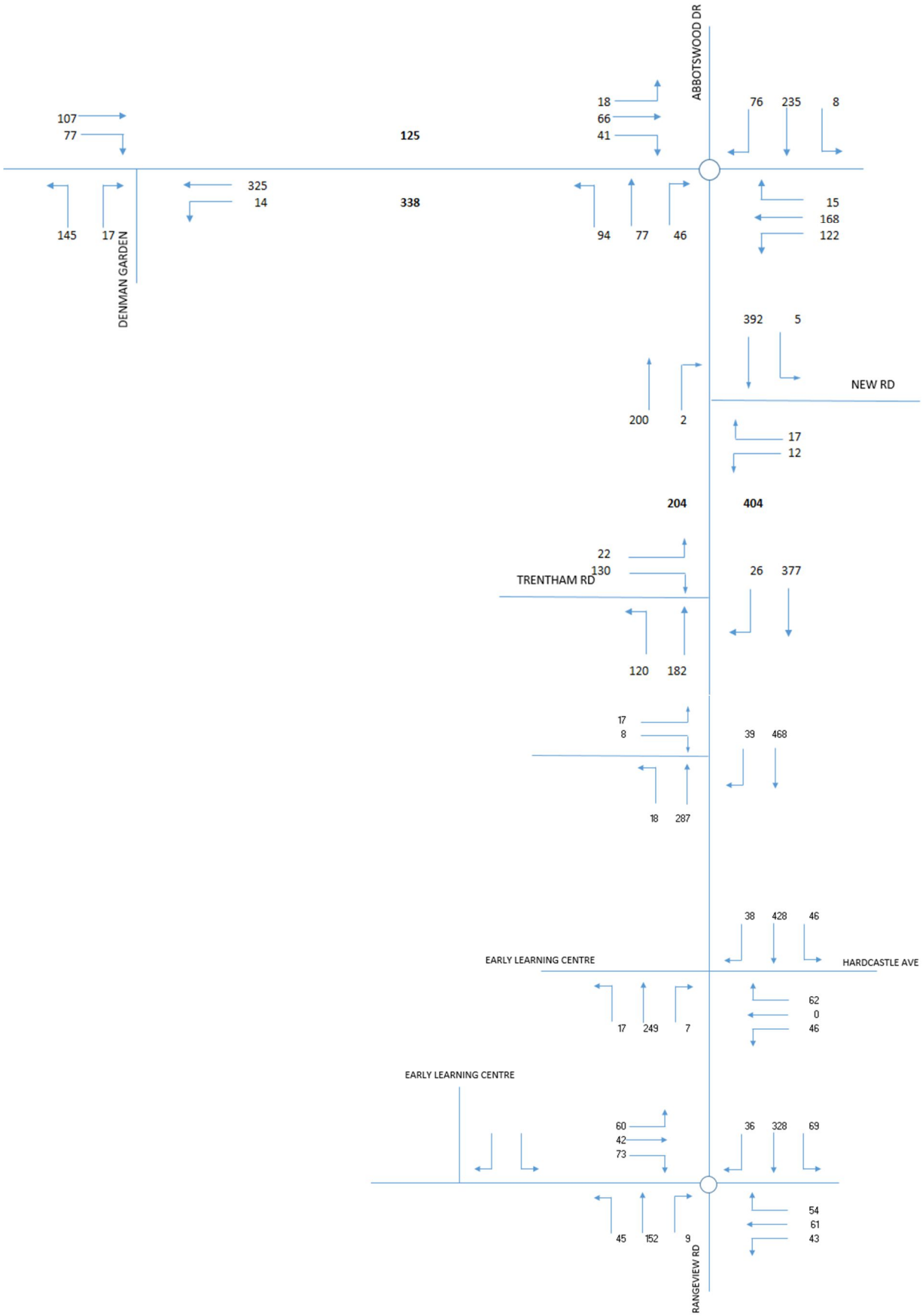
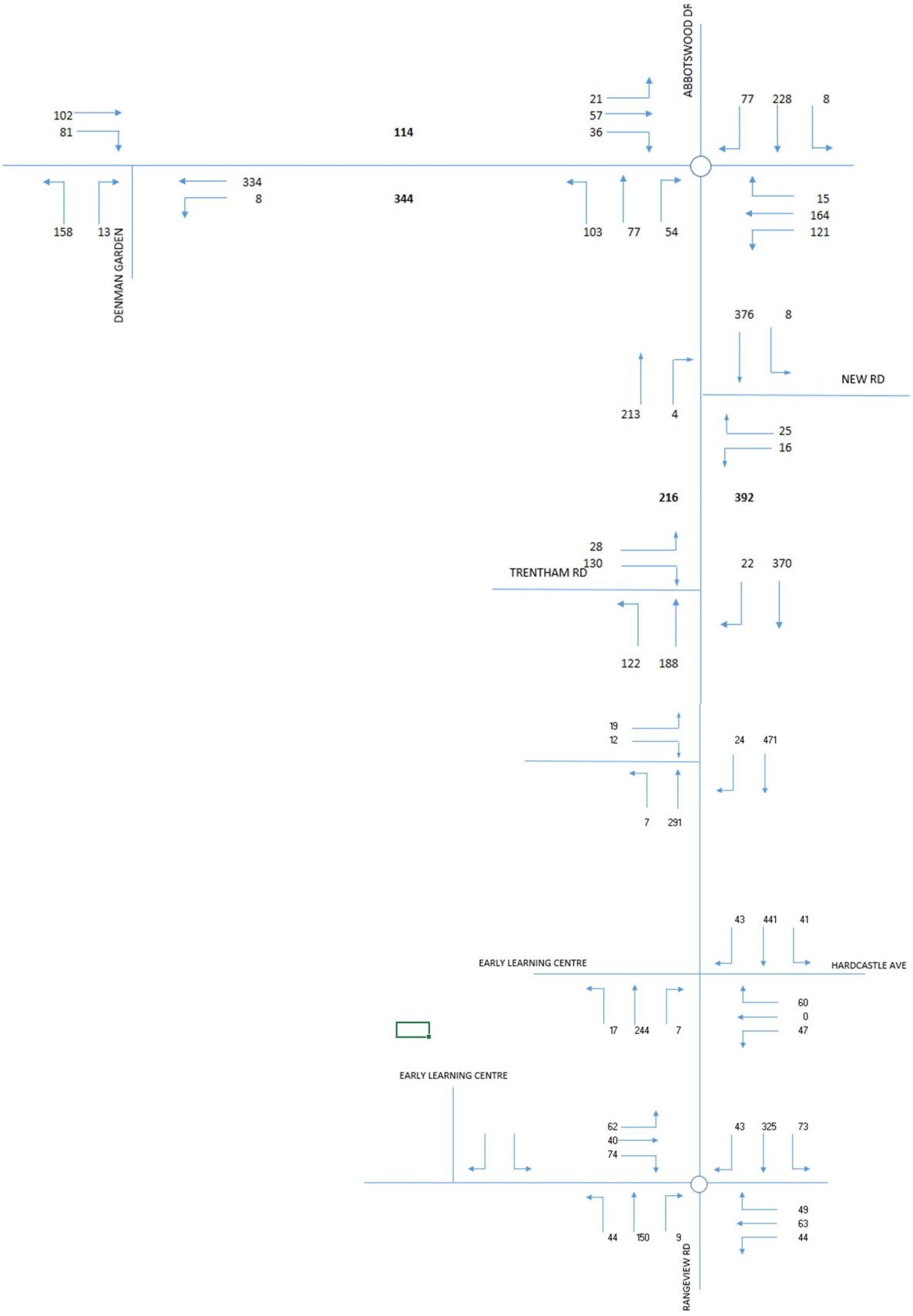


Figure 12 – 2025 Amended Zoning Build Out Forecast Traffic Volumes AM Peak Hour



5.1.2 Forecast Daily Volumes

Forecast daily traffic volumes from the full build of the amended zoning for Lots 61 & 62 Rangeview Road are shown in Figure 13. A comparison of forecast volumes with existing volumes is summarised in Table 6.

Figure 13 – 2025 Amended Zoning Build out Daily Traffic Forecast Volumes

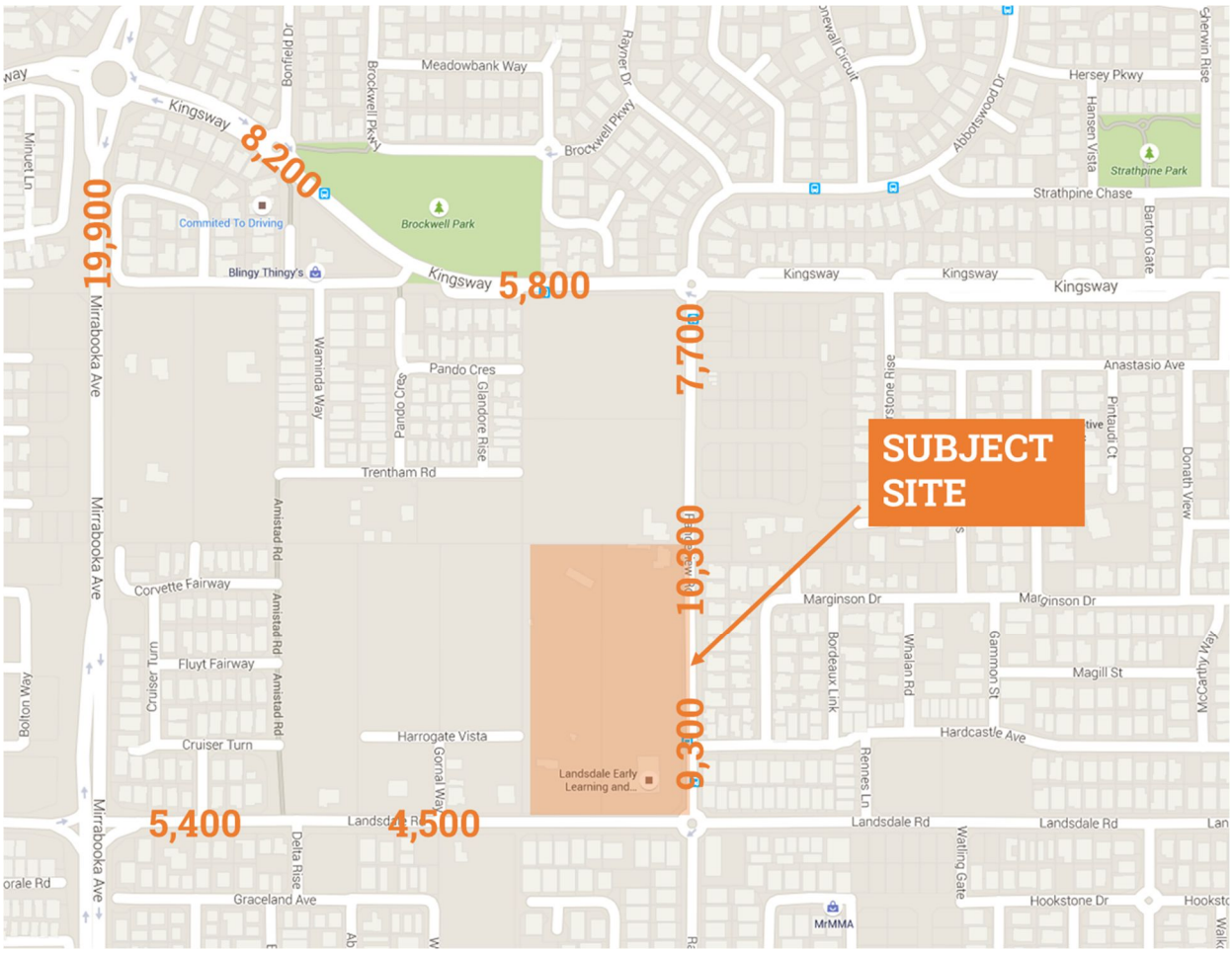


Table 6 – Comparison of Existing and Forecast Daily Traffic Volumes

Road	2015 Daily Volumes	2025 Forecast Volumes (Amended Zoning Lots 61 & 62 Rangeview Rd)
Mirrabooka Ave	17,660	19,900
Kingsway	5,750	5,800 – 8,200
Rangeview Rd	3,780	7,700 – 10,300
Landsdale Rd	-	4,500 – 5,400

The forecasts for Mirrabooka Avenue require a four-lane road while volumes forecast for Kingsway and Rangeview Road can be accommodated within a widened two-lane road with treatments such as a central median. Forecast traffic volumes for Landsdale Road can be accommodated within the existing road treatment.

5.2 Intersection Assessment

Upon completion of the modelling assessment, the forecast turning volumes were extracted for the three main intersections in the modelled area and a SIDRA assessment completed for the AM peak hour. The three intersections examined were:

- Mirrabooka Avenue and Kingsway – two lane roundabout;
- Kingsway and Rangeview Road – single lane roundabout; and
- Rangeview Road and Landsdale Road – single lane roundabout.

The intersection assessment compares the degree of saturation (a measure of intersection capacity, with 0.9 practical capacity and 1.0 at capacity) and level of service (LOS) for each intersection movement over the 3 model scenarios; 2015 base, 2015 APS 7 build out, and 2015 Amended Zoning for Lots 61 & 62 Rangeview Road.

5.2.1 Mirrabooka Avenue and Kingsway

The SIDRA outputs for this intersection are set out for the three scenarios in Table 7. These results demonstrate that, despite the relatively high flows at the intersection, SIDRA predicts a good level of service and no issues with either capacity or delay.

The main increase in impact is experienced by the Kingsway arm from the east which is expected given the higher flows on Mirrabooka Avenue and the increased number of trips from the east. This arm moves from a LOS B to an LOS C in the forecast year scenarios. Full SIDRA outputs are included in Appendix A.

Table 7 – Mirrabooka Avenue and Kingsway AM peak SIDRA results

Intersection Approach		Base 2015 AM		2025 APS 7 Build Out AM		2025 Amended Zoning Build Out AM	
		Deg. Satn. v/c	LOS	Deg. Satn. v/c	LOS	Deg. Satn. v/c	LOS
Mirrabooka Ave South	Left	0.255	A	0.322	A	0.327	A
	Through	0.255	A	0.322	A	0.327	A
	Right	0.255	B	0.322	B	0.327	B
Kingsway East	Left	0.755	B	0.822	B	0.866	B
	Through	0.755	B	0.822	B	0.866	C
	Right	0.755	C	0.822	C	0.866	C
Mirrabooka Ave North	Left	0.312	A	0.375	A	0.375	A
	Through	0.312	A	0.375	A	0.375	A
	Right	0.312	B	0.375	B	0.375	B
Kingsway West	Left	0.275	A	0.363	A	0.365	A
	Through	0.275	A	0.363	A	0.365	A
	Right	0.275	A	0.363	A	0.365	A

5.2.2 Kingsway and Rangeview Road

The SIDRA outputs for this intersection are set out for the three scenarios in Table 8. These results demonstrate that in both the base year and forecast year scenarios SIDRA predicts a high level of service and no issues with either capacity or delay.

The main increase in impact is experienced by the Kingsway arm from the east which is expected given the higher flows resulting from background traffic growth combined within increased trip generation from the proposed development. Full outputs are included in Appendix A.

Table 8 - Rangeview Road and Kingsway AM peak SIDRA results

Intersection Approach		Base 2015 AM		2025 APS 7 Build Out AM		2025 Amended Zoning Build Out AM	
		Deg. Satn. v/c	LOS	Deg. Satn. v/c	LOS	Deg. Satn. v/c	LOS
Rangeview Road South	Left	0.166	A	0.230	A	0.247	A
	Through	0.166	A	0.230	A	0.247	A
	Right	0.166	A	0.230	A	0.247	A
Kingsway East	Left	0.274	A	0.352	A	0.343	A
	Through	0.274	A	0.352	A	0.343	A
	Right	0.274	A	0.352	B	0.343	B
Rangeview Road North	Left	0.243	A	0.289	A	0.281	A
	Through	0.243	A	0.289	A	0.281	A
	Right	0.243	A	0.289	A	0.281	A
Kingsway West	Left	0.092	A	0.116	A	0.107	A
	Through	0.092	A	0.116	A	0.107	A
	Right	0.092	A	0.116	A	0.107	A

5.2.3 Rangeview Road and Landsdale

The SIDRA outputs for this intersection are set out for the three scenarios in Table 9. These results demonstrate that in both the base year and forecast year scenarios SIDRA predicts a good level of service and no issues with either capacity or delay.

The right hand turn from Landsdale Road to the east will increase from an A to a B which still provides an excellent level of service and minimal delay. Full outputs are included in Appendix A.

Table 9 - Rangeview Road and Landsdale Road AM peak SIDRA results

Intersection Approach		Base 2015 AM		2025 APS 7 Build Out AM		2025 Amended Zoning Build Out AM	
		Deg. Satn. v/c	LOS	Deg. Satn. v/c	LOS	Deg. Satn. v/c	LOS
Rangeview Road South	Left	0.133	A	0.193	A	0.191	A
	Through	0.133	A	0.193	A	0.191	A
	Right	0.133	A	0.193	A	0.191	A
Landsdale Road East	Left	0.123	A	0.198	A	0.196	A
	Through	0.123	A	0.198	A	0.196	A
	Right	0.123	A	0.198	B	0.196	B
Rangeview Road North	Left	0.264	A	0.371	A	0.377	A
	Through	0.264	A	0.371	A	0.377	A
	Right	0.264	A	0.371	A	0.377	A
Landsdale Road West	Left	0.115	A	0.175	A	0.175	A
	Through	0.115	A	0.175	A	0.175	A
	Right	0.115	A	0.175	A	0.175	A

5.3 Public Transport Access

The site has three separate bus services which provide connections to locations in the south and west. The existing bus route map is shown in Figure 14, with bus stops in close proximity (servicing routes 376, 352 and 450) shown in Figure 15. The location and number of bus stops would be expected to increase as the Lots abutting Rangeview Road are developed.

Route 376 provides a connection between Landsdale, the Mirrabooka Town Centre and the Mirrabooka Bus Station. Route 352 provides a connection between Landsdale and Whitfords Train Station while route 450 provides a connection between Landsdale and Warwick Train Station via Kingsway City Shopping Centre.

Figure 14 - Transperth network map (source: Transperth)

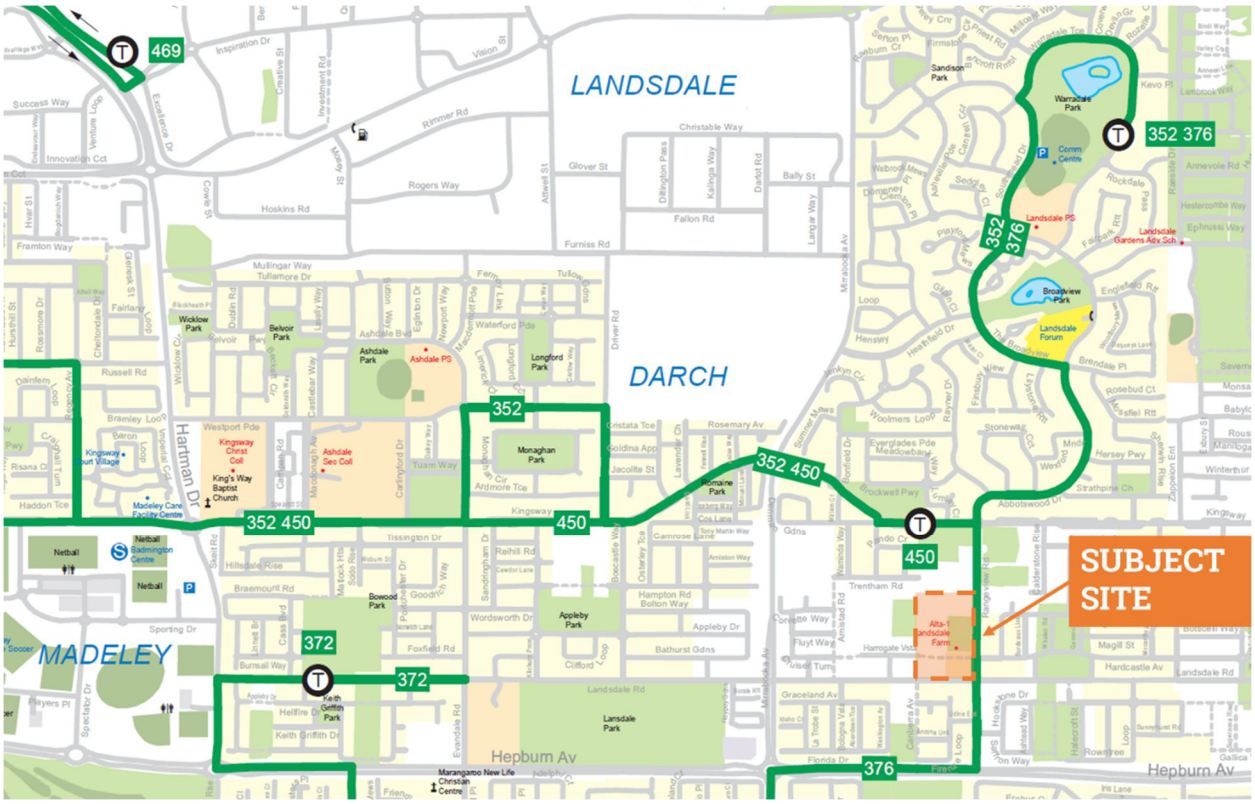
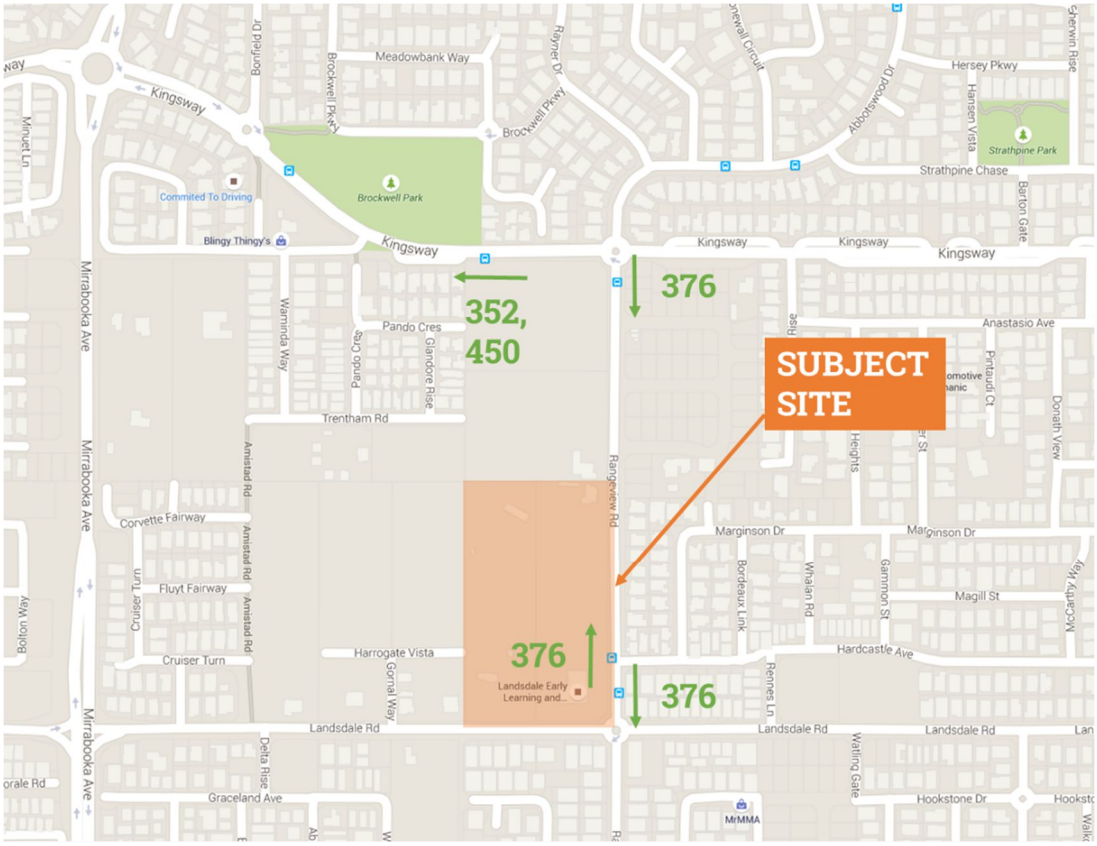


Figure 15 - Location of bus stops (source: Transperth)



The total number of weekday services for each route is set out in Table 10. Each weekday there are a total of 88 services to the site and 80 from the site, providing access to the wider Transperth public transport network and a range of locations and facilities.

Table 10 - Transperth bus services

Route No.	Direction	No. of Services	First Service	Last Service
450	From Warwick Station	35	7.01am	9.03pm
450	To Warwick Station	34	5.32am	8.30pm
352	To Whitfords Station	16	6.25am	4.32pm
352	From Whitfords Station	20	8.19am	7.02pm
376	To Mirrabooka	30	5.34am	9.01pm
376	From Mirrabooka	33	7.01am	7.34pm

5.4 Cycle Access

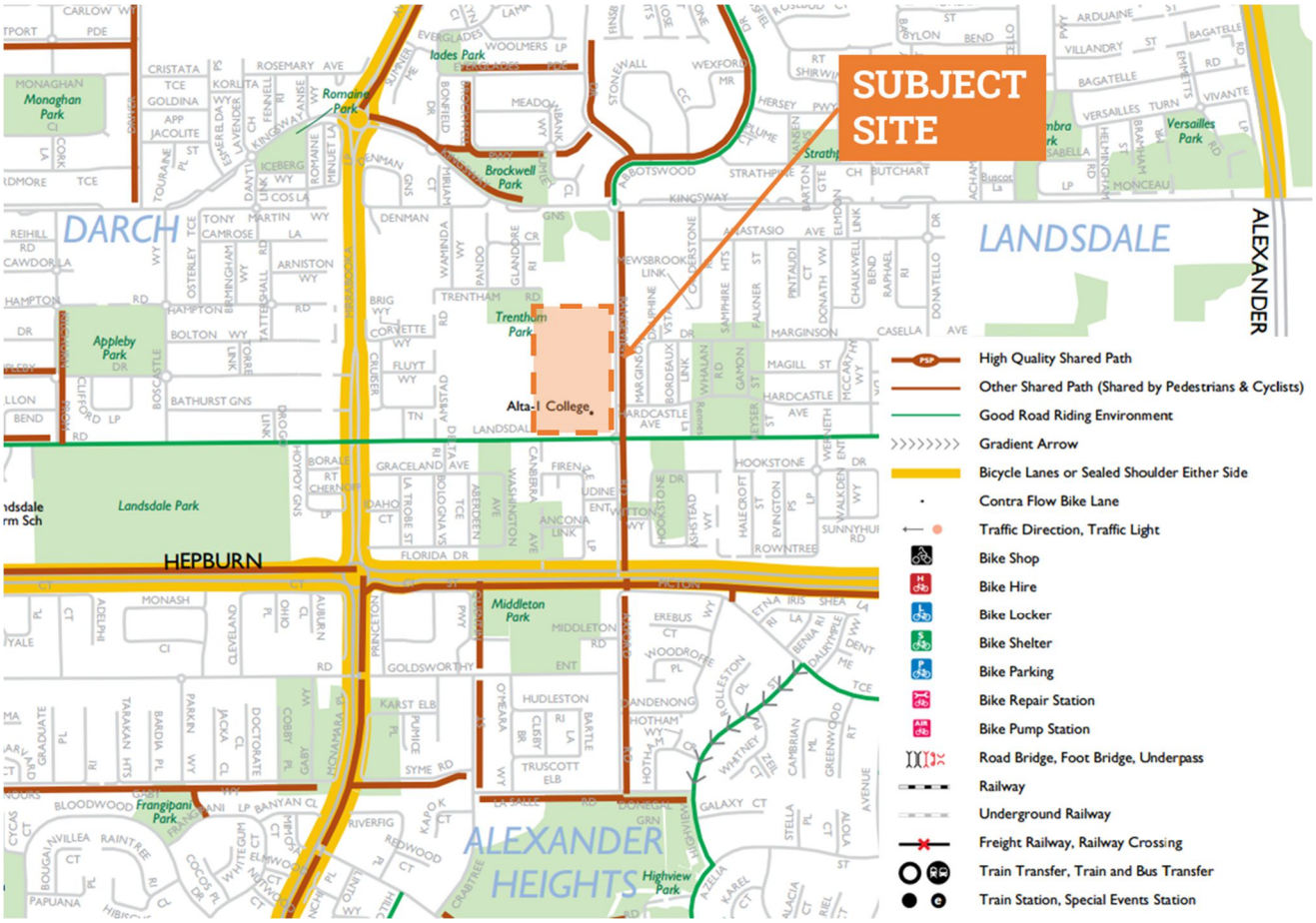
The bicycle network surrounding Lots 61 & 62 Rangeview Road is shown in in Figure 16. In close proximity to the site is a shared path along the eastern side of Rangeview Road, while Landsdale Road is described as having a good on-road riding environment. There is a shared path along the northern side of Kingsway, and Mirrabooka Avenue has on-road bicycle lanes.

The proposed rezoning of Lots 61 & 62 Rangeview Road will provide connections Rangeview Road, to access the wider area cycle and shared use path network.

5.5 Pedestrian Access

In addition to the shared path network as shown in Figure 16, there is a finer grained network of footpaths. Within the proposed rezoned Lots 61 & 62 Rangeview Road, pedestrian movements will be provided for through internal connections to existing and future paths along Kingsway, Rangeview Road, Harrogate Vista and Trentham Road.

Figure 16 - Cycle network (source: Department of Transport)



6. CONCLUSIONS

6.1 Transport Statement Conclusions

This Transport Statement has been prepared in support of the proposed amendment of the East Wanneroo Cell 5 Agreed Structure Plan No. 7 (ASP 7) over Lots 61 & 62 Rangeview Road, Landsdale, as requested by the CoW.

The proposed rezoning could see an additional 34 R40 dwellings, with a 2,000m^2 reduction in size to the Neighbourhood Community Centre.

Changes to the road network are also proposed, with the inclusion of a new north south link through the former Community Neighbourhood Centre and the removal of the Harrogate Vista connection to Rangeview Road. A new connection to Rangeview Road is proposed, approximately 50m north of the former Harrogate Vista connection.

It is estimated that the proposed rezoning will result in a small *decrease* in peak hour traffic when compared to the build out of APS 7 (largely due to the reduction in size of the Neighbourhood Community Centre).

AM Peak hour modelling has been used to produce peak hour turning and daily midblock traffic forecasts for the year 2025 (when full build out is considered to be likely). The model has produced forecasts for the APS 7 zoning and the amended zoning for Lots 61 & 62 Rangeview Road. These models have also included general background traffic growth to through roads.

The 2025 traffic forecasts for Mirrabooka Avenue require a four-lane road while volumes forecast for Kingsway and Rangeview Road can be accommodated within a widened two-lane road with treatments such as a central median. Forecast traffic volumes for Landsdale Road can be accommodated within the existing road treatment.

SIDRA intersection performance for the roundabout controlled intersections of Mirrabooka Avenue/ Kingsway, Kingsway/ Rangeview Road, and Rangeview Road/ Landsdale Road has shown that there is no perceptible difference to intersection operation between the APS 7 build out scenario and the scenario with full build out with amended zoning for Lots 61 & 62 Rangeview Road. In both cases, intersection performance was at LOS A/B.

The site is well served by existing bus routes with three separate services providing access to Mirrabooka, Whitfords Station and Warwick Station.

The site has excellent pedestrian and cycle connections, both locally and wider area connections through shared use paths and on-road facilities.

APPENDIX A – SIDRA OUTPUTS

MOVEMENT SUMMARY

Site: Mirrabooka Ave Kingsway 2015 AM

Mirrabooka Ave and Kingsway
2015 Base Year
AM Peak Hour
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mirrabooka Ave											
1	L2	45	1.0	0.255	5.5	LOS A	1.8	12.9	0.57	0.51	58.4
2	T1	548	7.0	0.255	5.7	LOS A	1.8	12.9	0.57	0.52	62.1
3	R2	12	0.0	0.255	12.6	LOS B	1.6	12.0	0.58	0.54	62.2
Approach		605	6.4	0.255	5.8	LOS A	1.8	12.9	0.57	0.52	61.8
East: Kingsway											
4	L2	45	1.0	0.755	11.8	LOS B	6.0	42.8	0.88	1.18	45.9
5	T1	123	5.0	0.755	17.9	LOS B	6.0	42.8	0.88	1.18	28.0
6	R2	183	1.0	0.755	23.9	LOS C	6.0	42.8	0.88	1.18	40.6
Approach		352	2.4	0.755	20.2	LOS C	6.0	42.8	0.88	1.18	38.3
North: Mirrabooka Ave											
7	L2	25	1.0	0.312	5.0	LOS A	2.0	14.7	0.43	0.45	54.0
8	T1	760	8.0	0.312	5.1	LOS A	2.0	14.7	0.44	0.48	63.7
9	R2	58	0.0	0.312	12.0	LOS B	1.9	14.0	0.45	0.51	36.9
Approach		843	7.2	0.312	5.5	LOS A	2.0	14.7	0.44	0.48	62.0
West: Kingsway											
10	L2	48	1.0	0.275	3.4	LOS A	1.1	7.5	0.51	0.63	50.6
11	T1	75	5.0	0.275	2.7	LOS A	1.1	7.5	0.51	0.63	43.1
12	R2	146	1.0	0.275	9.0	LOS A	1.1	7.5	0.51	0.63	59.2
Approach		269	2.1	0.275	6.3	LOS A	1.1	7.5	0.51	0.63	55.2
All Vehicles		2069	5.5	0.755	8.2	LOS A	6.0	42.8	0.56	0.63	57.9

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Mirrabooka Ave Kingsway 2025 APS 7 AM

Mirrabooka Ave and Kingsway
2025 APS 7 Build Out
AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mirrabooka Ave											
1	L2	45	1.0	0.322	6.3	LOS A	2.5	18.4	0.73	0.58	57.2
2	T1	597	7.0	0.322	6.6	LOS A	2.5	18.4	0.73	0.61	61.1
3	R2	11	0.0	0.322	13.6	LOS B	2.2	16.6	0.73	0.64	61.1
Approach		653	6.5	0.322	6.7	LOS A	2.5	18.4	0.73	0.61	60.9
East: Kingsway											
4	L2	28	1.0	0.822	15.7	LOS B	9.3	66.5	0.97	1.35	44.3
5	T1	191	5.0	0.822	19.8	LOS B	9.3	66.5	0.97	1.35	26.3
6	R2	269	1.0	0.822	25.8	LOS C	9.3	66.5	0.97	1.35	38.8
Approach		488	2.6	0.822	22.9	LOS C	9.3	66.5	0.97	1.35	35.4
North: Mirrabooka Ave											
7	L2	71	1.0	0.375	5.3	LOS A	2.6	19.3	0.51	0.48	53.3
8	T1	840	8.0	0.375	5.4	LOS A	2.6	19.3	0.52	0.51	63.2
9	R2	60	0.0	0.375	12.3	LOS B	2.5	18.2	0.54	0.54	36.6
Approach		971	7.0	0.375	5.8	LOS A	2.6	19.3	0.52	0.51	61.4
West: Kingsway											
10	L2	49	1.0	0.363	4.0	LOS A	1.6	11.6	0.61	0.67	50.3
11	T1	119	5.0	0.363	3.3	LOS A	1.6	11.6	0.61	0.67	42.7
12	R2	156	1.0	0.363	9.6	LOS A	1.6	11.6	0.61	0.67	59.0
Approach		324	2.5	0.363	6.4	LOS A	1.6	11.6	0.61	0.67	54.1
All Vehicles		2436	5.4	0.822	9.5	LOS A	9.3	66.5	0.68	0.73	56.0

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Mirrabooka Ave Kingsway 2025 Amd Zoning AM

Mirrabooka Ave and Kingsway
2025 Build Out Amended Land Use
AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mirrabooka Ave											
1	L2	44	1.0	0.327	6.4	LOS A	2.6	19.0	0.75	0.60	57.1
2	T1	595	7.0	0.327	6.7	LOS A	2.6	19.0	0.75	0.62	61.0
3	R2	7	0.0	0.327	13.8	LOS B	2.3	17.1	0.75	0.65	61.0
Approach		646	6.5	0.327	6.8	LOS A	2.6	19.0	0.75	0.62	60.8
East: Kingsway											
4	L2	32	1.0	0.866	19.6	LOS B	11.3	80.5	0.99	1.47	42.1
5	T1	197	5.0	0.866	23.8	LOS C	11.3	80.5	0.99	1.47	24.0
6	R2	286	1.0	0.866	29.8	LOS C	11.3	80.5	0.99	1.47	36.2
Approach		515	2.5	0.866	26.9	LOS C	11.3	80.5	0.99	1.47	33.0
North: Mirrabooka Ave											
7	L2	71	1.0	0.375	5.3	LOS A	2.6	19.4	0.51	0.48	53.3
8	T1	843	8.0	0.375	5.3	LOS A	2.6	19.4	0.52	0.51	63.2
9	R2	59	0.0	0.375	12.3	LOS B	2.5	18.3	0.53	0.54	36.6
Approach		973	7.0	0.375	5.8	LOS A	2.6	19.4	0.52	0.51	61.4
West: Kingsway											
10	L2	51	1.0	0.365	4.0	LOS A	1.7	11.9	0.62	0.68	50.2
11	T1	117	5.0	0.365	3.4	LOS A	1.7	11.9	0.62	0.68	42.6
12	R2	156	1.0	0.365	9.6	LOS A	1.7	11.9	0.62	0.68	58.9
Approach		323	2.4	0.365	6.5	LOS A	1.7	11.9	0.62	0.68	54.0
All Vehicles		2457	5.3	0.866	10.6	LOS B	11.3	80.5	0.69	0.76	55.0

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Rangeview Kingsway 2015 AM

Rangeview Rd and Kingsway
2015 Base Year
AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rangeview Road											
1	L2	74	2.0	0.166	4.7	LOS A	1.0	7.3	0.51	0.55	44.2
2	T1	75	2.0	0.166	4.6	LOS A	1.0	7.3	0.51	0.55	44.5
3	R2	20	2.0	0.166	8.9	LOS A	1.0	7.3	0.51	0.55	43.0
Approach		168	2.0	0.166	5.2	LOS A	1.0	7.3	0.51	0.55	44.2
East: Kingsway											
4	L2	89	2.0	0.274	5.5	LOS A	1.8	12.7	0.60	0.61	40.4
5	T1	158	2.0	0.274	5.4	LOS A	1.8	12.7	0.60	0.61	45.2
6	R2	13	2.0	0.274	9.7	LOS A	1.8	12.7	0.60	0.61	44.2
Approach		260	2.0	0.274	5.6	LOS A	1.8	12.7	0.60	0.61	43.9
North: Rangeview Road											
7	L2	8	2.0	0.243	3.6	LOS A	1.6	11.6	0.34	0.47	42.9
8	T1	213	2.0	0.243	3.6	LOS A	1.6	11.6	0.34	0.47	44.7
9	R2	85	2.0	0.243	7.9	LOS A	1.6	11.6	0.34	0.47	46.4
Approach		306	2.0	0.243	4.8	LOS A	1.6	11.6	0.34	0.47	45.2
West: Kingsway											
10	L2	25	2.0	0.092	3.6	LOS A	0.6	3.9	0.32	0.48	45.1
11	T1	47	2.0	0.092	3.6	LOS A	0.6	3.9	0.32	0.48	45.6
12	R2	36	2.0	0.092	7.9	LOS A	0.6	3.9	0.32	0.48	45.6
Approach		108	2.0	0.092	5.0	LOS A	0.6	3.9	0.32	0.48	45.5
All Vehicles		843	2.0	0.274	5.2	LOS A	1.8	12.7	0.45	0.53	44.7

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Rangeview Kingsway 2025 APS 7 AM

Rangeview Rd and Kingsway
2025 APS 7 Build Out
AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rangeview Road											
1	L2	99	2.0	0.230	4.9	LOS A	1.5	10.7	0.55	0.59	43.8
2	T1	81	2.0	0.230	4.9	LOS A	1.5	10.7	0.55	0.59	44.0
3	R2	48	2.0	0.230	9.2	LOS A	1.5	10.7	0.55	0.59	42.3
Approach		228	2.0	0.230	5.8	LOS A	1.5	10.7	0.55	0.59	43.6
East: Kingsway											
4	L2	128	2.0	0.352	6.0	LOS A	2.5	17.5	0.67	0.67	40.0
5	T1	177	2.0	0.352	5.9	LOS A	2.5	17.5	0.67	0.67	44.8
6	R2	16	2.0	0.352	10.2	LOS B	2.5	17.5	0.67	0.67	43.8
Approach		321	2.0	0.352	6.1	LOS A	2.5	17.5	0.67	0.67	43.3
North: Rangeview Road											
7	L2	8	2.0	0.289	4.1	LOS A	2.0	14.1	0.44	0.51	42.6
8	T1	247	2.0	0.289	4.1	LOS A	2.0	14.1	0.44	0.51	44.3
9	R2	80	2.0	0.289	8.4	LOS A	2.0	14.1	0.44	0.51	46.1
Approach		336	2.0	0.289	5.1	LOS A	2.0	14.1	0.44	0.51	44.8
West: Kingsway											
10	L2	19	2.0	0.116	3.9	LOS A	0.7	5.1	0.39	0.50	44.8
11	T1	69	2.0	0.116	3.8	LOS A	0.7	5.1	0.39	0.50	45.4
12	R2	43	2.0	0.116	8.1	LOS A	0.7	5.1	0.39	0.50	45.4
Approach		132	2.0	0.116	5.2	LOS A	0.7	5.1	0.39	0.50	45.3
All Vehicles		1017	2.0	0.352	5.6	LOS A	2.5	17.5	0.53	0.58	44.1

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Rangeview Kingsway 2025 Amd Zoning AM

Rangeview Rd and Kingsway
2025 Build Out Amended Land Use
AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rangeview Road											
1	L2	108	2.0	0.247	4.9	LOS A	1.6	11.6	0.56	0.60	43.7
2	T1	81	2.0	0.247	4.9	LOS A	1.6	11.6	0.56	0.60	43.9
3	R2	57	2.0	0.247	9.2	LOS A	1.6	11.6	0.56	0.60	42.2
Approach		246	2.0	0.247	5.9	LOS A	1.6	11.6	0.56	0.60	43.5
East: Kingsway											
4	L2	127	2.0	0.343	5.8	LOS A	2.4	16.9	0.66	0.66	40.1
5	T1	173	2.0	0.343	5.8	LOS A	2.4	16.9	0.66	0.66	44.9
6	R2	16	2.0	0.343	10.1	LOS B	2.4	16.9	0.66	0.66	43.9
Approach		316	2.0	0.343	6.0	LOS A	2.4	16.9	0.66	0.66	43.3
North: Rangeview Road											
7	L2	8	2.0	0.281	4.1	LOS A	1.9	13.6	0.43	0.50	42.6
8	T1	240	2.0	0.281	4.0	LOS A	1.9	13.6	0.43	0.50	44.3
9	R2	81	2.0	0.281	8.3	LOS A	1.9	13.6	0.43	0.50	46.2
Approach		329	2.0	0.281	5.1	LOS A	1.9	13.6	0.43	0.50	44.9
West: Kingsway											
10	L2	22	2.0	0.107	3.9	LOS A	0.7	4.7	0.39	0.50	44.9
11	T1	60	2.0	0.107	3.9	LOS A	0.7	4.7	0.39	0.50	45.4
12	R2	38	2.0	0.107	8.2	LOS A	0.7	4.7	0.39	0.50	45.4
Approach		120	2.0	0.107	5.2	LOS A	0.7	4.7	0.39	0.50	45.3
All Vehicles		1012	2.0	0.343	5.6	LOS A	2.4	16.9	0.53	0.57	44.1

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Rangeview Landsdale Rd 2015 AM

Rangeview Rd and Kingsway
2015 Base Year
AM Peak Hour
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rangeview Road											
1	L2	48	2.0	0.133	3.7	LOS A	0.8	5.8	0.34	0.42	45.0
2	T1	101	2.0	0.133	3.6	LOS A	0.8	5.8	0.34	0.42	45.6
3	R2	8	2.0	0.133	7.9	LOS A	0.8	5.8	0.34	0.42	44.3
Approach		158	2.0	0.133	3.9	LOS A	0.8	5.8	0.34	0.42	45.4
East: Landsdale Road											
4	L2	41	2.0	0.123	5.1	LOS A	0.7	5.2	0.54	0.58	40.4
5	T1	56	2.0	0.123	5.1	LOS A	0.7	5.2	0.54	0.58	45.1
6	R2	21	2.0	0.123	9.4	LOS A	0.7	5.2	0.54	0.58	44.1
Approach		118	2.0	0.123	5.8	LOS A	0.7	5.2	0.54	0.58	43.7
North: Rangeview Road											
7	L2	46	2.0	0.264	3.5	LOS A	1.8	13.1	0.32	0.42	43.6
8	T1	261	2.0	0.264	3.5	LOS A	1.8	13.1	0.32	0.42	45.4
9	R2	36	2.0	0.264	7.8	LOS A	1.8	13.1	0.32	0.42	47.0
Approach		343	2.0	0.264	3.9	LOS A	1.8	13.1	0.32	0.42	45.4
West: Landsdale Road											
10	L2	55	2.0	0.115	3.8	LOS A	0.7	4.9	0.35	0.48	45.3
11	T1	47	2.0	0.115	3.7	LOS A	0.7	4.9	0.35	0.48	45.9
12	R2	32	2.0	0.115	8.0	LOS A	0.7	4.9	0.35	0.48	45.9
Approach		134	2.0	0.115	4.8	LOS A	0.7	4.9	0.35	0.48	45.6
All Vehicles		753	2.0	0.264	4.4	LOS A	1.8	13.1	0.36	0.46	45.2

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Rangeview Landsdale Rd 2025 APS 7 AM

Rangeview Rd and Kingsway
2025 APS 7 Build Out
AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rangeview Road											
1	L2	47	2.0	0.193	4.0	LOS A	1.3	9.0	0.43	0.46	44.6
2	T1	160	2.0	0.193	4.0	LOS A	1.3	9.0	0.43	0.46	45.1
3	R2	9	2.0	0.193	8.3	LOS A	1.3	9.0	0.43	0.46	43.7
Approach		217	2.0	0.193	4.2	LOS A	1.3	9.0	0.43	0.46	44.9
East: Landsdale Road											
4	L2	45	2.0	0.198	6.2	LOS A	1.2	8.9	0.66	0.69	38.7
5	T1	64	2.0	0.198	6.2	LOS A	1.2	8.9	0.66	0.69	43.8
6	R2	57	2.0	0.198	10.5	LOS B	1.2	8.9	0.66	0.69	42.5
Approach		166	2.0	0.198	7.7	LOS A	1.2	8.9	0.66	0.69	42.2
North: Rangeview Road											
7	L2	73	2.0	0.371	4.0	LOS A	2.9	20.7	0.45	0.47	43.1
8	T1	345	2.0	0.371	3.9	LOS A	2.9	20.7	0.45	0.47	44.8
9	R2	38	2.0	0.371	8.2	LOS A	2.9	20.7	0.45	0.47	46.5
Approach		456	2.0	0.371	4.3	LOS A	2.9	20.7	0.45	0.47	44.7
West: Landsdale Road											
10	L2	63	2.0	0.175	4.5	LOS A	1.1	7.7	0.48	0.58	44.4
11	T1	44	2.0	0.175	4.5	LOS A	1.1	7.7	0.48	0.58	44.8
12	R2	77	2.0	0.175	8.8	LOS A	1.1	7.7	0.48	0.58	44.8
Approach		184	2.0	0.175	6.3	LOS A	1.1	7.7	0.48	0.58	44.7
All Vehicles		1023	2.0	0.371	5.2	LOS A	2.9	20.7	0.48	0.52	44.4

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: Rangeview Landsdale Rd 2025 Amd Zoning AM

Rangeview Rd and Kingsway
2025 Build Out Amended Land Use
AM Peak Hour
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rangeview Road											
1	L2	46	2.0	0.191	4.1	LOS A	1.2	8.8	0.43	0.47	44.6
2	T1	158	2.0	0.191	4.0	LOS A	1.2	8.8	0.43	0.47	45.1
3	R2	9	2.0	0.191	8.3	LOS A	1.2	8.8	0.43	0.47	43.6
Approach		214	2.0	0.191	4.2	LOS A	1.2	8.8	0.43	0.47	44.9
East: Landsdale Road											
4	L2	46	2.0	0.196	6.3	LOS A	1.2	8.8	0.66	0.69	38.7
5	T1	66	2.0	0.196	6.3	LOS A	1.2	8.8	0.66	0.69	43.9
6	R2	52	2.0	0.196	10.6	LOS B	1.2	8.8	0.66	0.69	42.6
Approach		164	2.0	0.196	7.6	LOS A	1.2	8.8	0.66	0.69	42.3
North: Rangeview Road											
7	L2	77	2.0	0.377	4.0	LOS A	3.0	21.2	0.45	0.47	43.0
8	T1	342	2.0	0.377	3.9	LOS A	3.0	21.2	0.45	0.47	44.8
9	R2	45	2.0	0.377	8.2	LOS A	3.0	21.2	0.45	0.47	46.5
Approach		464	2.0	0.377	4.4	LOS A	3.0	21.2	0.45	0.47	44.7
West: Landsdale Road											
10	L2	65	2.0	0.175	4.4	LOS A	1.1	7.7	0.47	0.57	44.4
11	T1	42	2.0	0.175	4.4	LOS A	1.1	7.7	0.47	0.57	44.8
12	R2	78	2.0	0.175	8.7	LOS A	1.1	7.7	0.47	0.57	44.8
Approach		185	2.0	0.175	6.2	LOS A	1.1	7.7	0.47	0.57	44.7
All Vehicles		1027	2.0	0.377	5.2	LOS A	3.0	21.2	0.48	0.52	44.4

Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement
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Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.