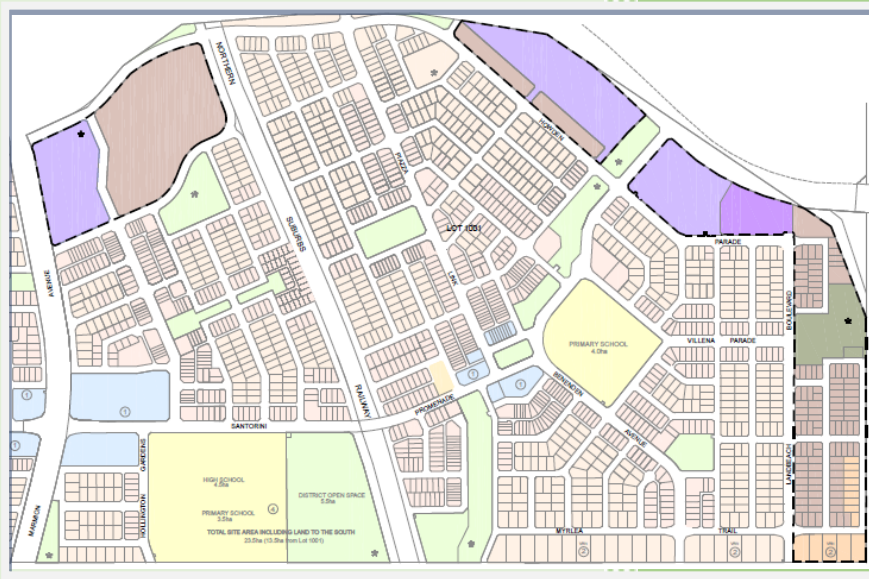


## PART 2 – EXPLANATORY REPORT Amendment 3

### Amendment 3 to Agreed Structure Plan No 60 Lots 1001 & 1002 Marmion Avenue, Alkimos



The Amendment to the Agreed Structure Plan is prepared under the provisions of Part 9 of the City of Wanneroo District Planning Scheme No. 2

## TABLE OF CONTENTS

1.0	INTRODUCTION .....	1
2.0	AGREED STRUCTURE PLAN NO 60 – OVERVIEW .....	1
2.1	Local Structure Plan No 60 – Amendments 1 and 2 .....	1
2.2	Local Structure Plan No 60 – Amendment No 3 .....	2
2.3	Current Design Concept .....	2
2.4	Road Structure and Pedestrian Network .....	3
2.4.1	District Road Network .....	3
2.4.2	Internal Road Network .....	3
2.4.3	Pedestrians, Cyclists and Public Transport .....	3
2.5	Landuses .....	4
2.5.1	Residential .....	4
2.5.2	Commercial / Retail .....	4
2.5.3	Mixed Use .....	4
2.5.4	Education .....	4
2.5.5	Public Open Space .....	5
2.6	Employment .....	5
3.0	PROPOSED AMENDMENT NO. 3 TO ASP 60.....	5
4.0	EXISTING ENVIRONMENT .....	6
4.1	Landform and Soils .....	6
4.2	Quindalup Dunes .....	6
4.3	Spearwood Dunes.....	6
4.4	Karstic Features .....	7
4.5	Acid Sulphate Soils .....	7
4.6	Ground Water.....	7
4.7	Surface Water .....	7
4.8	Flora and Vegetation .....	7
4.8.1	Vegetation Complexes and Types .....	8
4.8.2	Vegetation Condition .....	8
4.8.3	Flora.....	8
4.8.4	Fauna.....	8
5.0	STRATEGIC PLANNING BACKGROUND.....	9
5.1	Jindalee Enquiry by Design Workshop and the Butler Charrette .....	9
5.2	Butler Jindalee District Structure Plan .....	10
5.3	Butler Jindalee District Structure Plan Amendment 1 .....	11
5.4	Butler Ridgewood Agreed Local Structure Plan No. 27 (Brighton) .....	12
5.5	Alkimos Eglinton District Structure Plan.....	12
6.0	PROPOSED AMENDMENT 3 TO AGREED STRUCTURE PLAN .....	13
6.1	Extension of Northern Neighbourhood Connector Road Structure.....	14
6.1.1	Traffic and Movement Network Technical Report .....	15
6.2	Define the extent of ‘Service Industrial’ .....	16
6.2.1	Accessibility .....	16
6.2.2	Existing and Proposed Service/Light Industrial Land Use .....	16
6.2.2.1	BJDSP & AEDSP .....	16
6.2.1.2	Meridian Park.....	17
6.3	Replace the eastern area identified as ‘Service Industrial’ with Residential .....	18
6.3.1	Interface Issues .....	18
6.4	Proposed Business Zones.....	19
6.4.1	Landuse Suitability and Compatibility.....	19
6.4.2	Romeo Road Business Zone .....	20
6.4.3	Marmion Avenue Business Zone .....	20
6.5	Employment Assessment.....	21

7.0	REVISED DEVELOPMENT CONCEPT PLAN.....	22
7.1	Neighbourhood Connectors.....	22
7.2	Zones.....	23
7.2.1	Service Industrial Zone.....	23
7.2.2	Business Zone.....	23
7.2.3	Residential Zone.....	24
7.3	Indicative Lot Yield.....	24
7.4	Public Open Space.....	24
7.4.1	Public Open Space Provision.....	24
7.4.2	Landscape Strategy.....	25
7.4.3	Theming.....	25
7.5	Service Infrastructure.....	25
7.5.1	Water Management Strategy.....	25
8.0	ACOUSTIC ASSESSMENT.....	27
9.0	SUMMARY.....	28

## LIST OF FIGURES

Figure 1	-	Butler Jindalee District Structure Plan
Figure 2	-	Adopted Local Structure Plan No. 60 (2010)
Figure 3	-	Amendment 2 to Adopted Local Structure Plan No. 60 (as advertised)
Figure 4	-	Amendment 2 to Adopted Local Structure Plan No. 60 (endorsed)
Figure 5	-	Amendment to the Butler Jindalee District Structure Plan
Figure 6	-	Proposed Amendments to Agreed Structure Plan No. 60 (summary)
Figure 7	-	Development Concept Plan (accompanied Amendment 2)
Figure 8	-	Summary of Amendment 3
Figure 9	-	Landforms
Figure 10	-	Butler Charrette
Figure 11	-	Butler Jindalee District Structure Plan (BJDSP)
Figure 12	-	Amendment 1 to BJDSP
Figure 13	-	Alkimos Eglinton District Structure Plan (AEDSP)
Figure 14	-	Amendment 3 Plan
Figure 15	-	Amendment 3 Zoning Plan
Figure 16	-	Amendment 3 Density Plan
Figure 17	-	North Neighbourhood Connector Extension
Figure 18	-	Engineering Requirements North Neighbourhood Connector Extension
Figure 19	-	Meridian Park
Figure 20	-	Comparison of Business zone area and Service Industrial area
Figure 21	-	Development Concept Plan (Amendment 3)
Figure 22	-	Road Hierarchy and Streetscape Masterplan
Figure 23	-	Pedestrian and cyclist facilities
Figure 24	-	Path Network Masterplan
Figure 25	-	Dwelling Estimates Plan
Figure 26	-	Public Open Space Schedule
Figure 27	-	Public Open Space Masterplan
Figure 28	-	Catchment Plan

## LIST OF ATTACHMENTS

Attachment 1	Typical Cross Section (45 metre rail and road crossing)
Attachment 2	Department of Education advice
Attachment 3	DEHWA advice
Attachment 4	Traffic and Movement Network Report
Attachment 5	Economic Assessment of Amendment 3 to LSP 60
Attachment 6	Addendum to Economic Assessment of Amendment 3 to LSP 60
Attachment 7	Local Water Management Strategy 2014
Attachment 8	Transportation Noise Assessment (Freeway)
Attachment 9	Transportation Noise Assessment (Railway)

## TABLES

Table 1	Job Comparison (Amendment 3)
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Job Reference NC1  
Revision: Amendment 3 to Local Structure Plan

The following table is for document control by Gray & Lewis Landuse Planners:

Report file name	Report Status	Date Printed	Authorised
NC1 Alkimos/ Amendment 3 to LSP 60/ Version 1 Explanatory Report Part 2 October 2014 LB	Lodgement	16 October 2014	

## 1.0 INTRODUCTION

Local Structure Plan No. 60 for Lots 1001 and 1002 was adopted for final approval by the Western Australian Planning Commission (WAPC) in November 2009 and endorsed by the City of Wanneroo on the 27 January 2010 – [Figure 1](#).

The Agreed Structure Plan (ASP) was based on the broader landuse planning established under the Butler Jindalee District Structure Plan (BJDSP) - [Figure 2](#). The ASP defines the road structure and land uses, urban form and residential densities, pedestrian network, public open space, community facilities, and also addresses the Council's specific requirements in respect to community development, employment strategies, 'smart growth' objectives, landscaping, drainage, nutrient management and sustainability objectives.

## 2.0 AGREED STRUCTURE PLAN NO 60 – OVERVIEW

### 2.1 Local Structure Plan No 60 – Amendments 1 and 2

Amendment 1 to LSP No. 60 was only a text change introducing variations to the Residential Design Code provisions for R20 and R30 front loaded lots. Amendment 1 was endorsed by the Western Australian Planning Commission on the 19 September 2011.

Amendment 2 to the Local Structure Plan initially proposed to:

- Realign neighbourhood connectors
- Consolidate the western activity centre and surrounding residential area
- Introduce a new Business zone east of Marmion Avenue
- Replace the 'service industrial' zone on the east boundary with residential west of the Freeway and a 'Business' zone south of Romeo Road – [Figure 3](#).

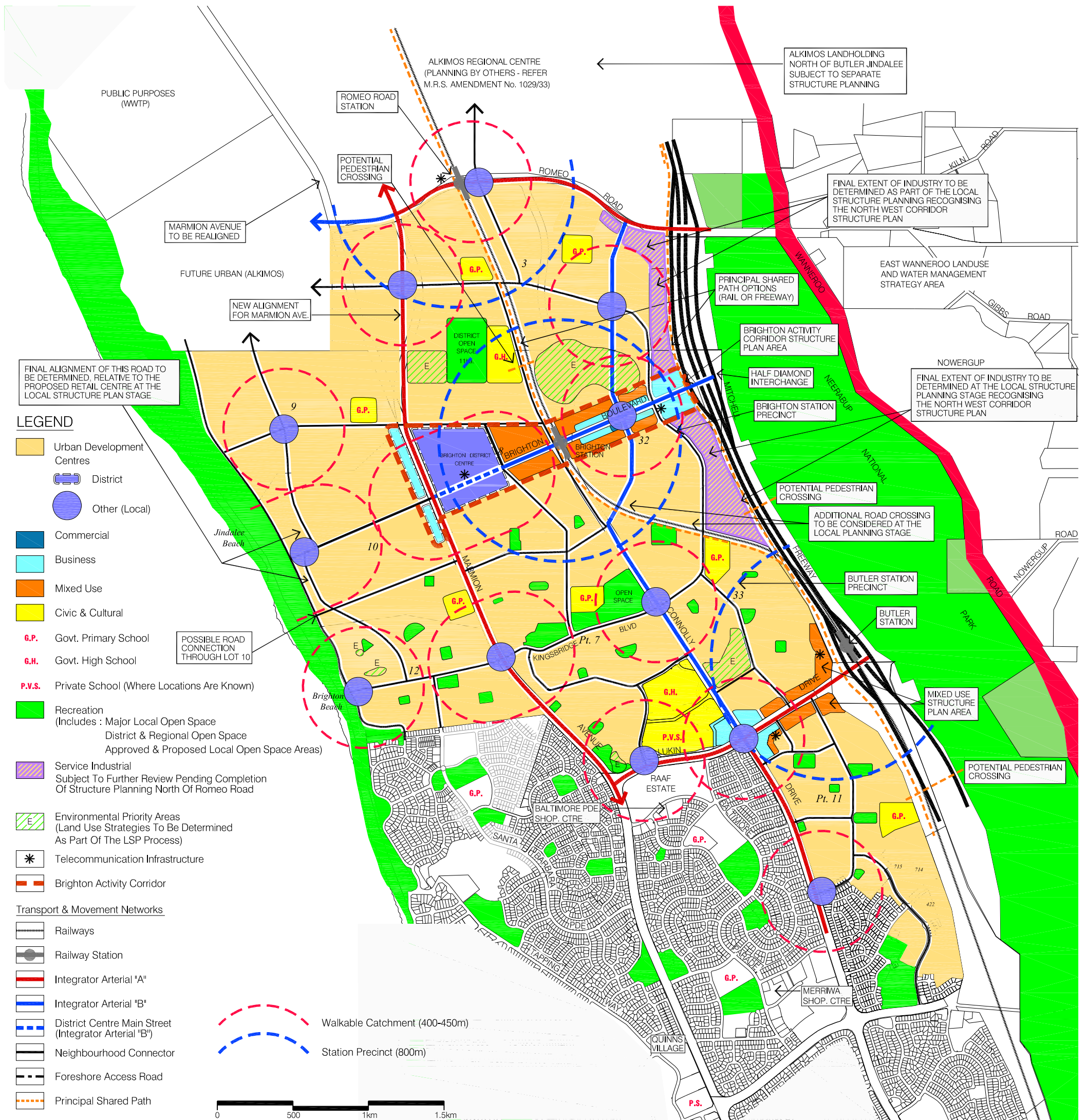
The City of Wanneroo and Department of Planning did not support Amendment 2 as proposed and advised that the new Business zones warranted an amendment to the BJDSP.

Amendment 2 proceeded in a modified form and areas planned to include employment generating activities were retained as 'subject to further planning' as required by the City and Department of Planning.

The City of Wanneroo approved a revised Amendment 2 to Agreed Structure Plan No 60 (ASP) in May 2014. Amendment 2 has been approved by the Western Australian Planning Commission on the 4 July 2014 subject to modifications (WAPC Reference: SPN/0238M - 1/1). The only plan modification required was minor to identify the new intersection with Marmion Avenue as a left in and left out configuration – [Figure 4](#).

A separate Amendment No. 1 to the BJDSP was formally lodged with the City of Wanneroo on the 5 September 2014. The purpose of Amendment 1 to the BJDSP is to reflect the existing adopted Local Structure Plan No 60; replace a portion of the 'Service Industrial' zone with residential west of the Freeway and Business zone south of Romeo Road; and introduce a new 'Residential' and 'Business zone' east of Marmion Avenue - [Figure 5](#). A refined consolidated Service Industrial zone will be retained in the north east portion of Lot 1001.

The District Structure Plan amendment is being pursued in order to facilitate Amendment 3 to ASP 60.



**NOTES**

- Final location of the Alkimos Regional Centre to be determined as part of the review of the North West Corridor Structure Plan & MRS Amendment.
- The final locations and configurations of the government schools depicted on this Structure Plan will occur at the local structure planning stage through landowner consultation with the Department of Education and Training and the Department for Planning & Infrastructure. Locations depicted are notional and approximate to reflect catchment requirements.
- Further study will be required to identify appropriate pedestrian/cycle crossing locations once final levels along the rail are known.
- All Centre retail floorspace allocations to be determined through reference to the Metropolitan Centres Policy, the City Of Wanneroo Retail Strategy and the Shrapnel Urban Planning Retail Assessment included within the District Structure Plan report.
- Concerning public open space this Structure Plan depicts;
  - Regional Open Space
  - The nominated District Open Space site
  - Major local open space areas
  - Other local open spaces either approved or proposed as part of lodged subdivision plans.
- Each of the study area superlots shall provide at least 8% public open space in accordance with Liveable Neighbourhoods with the distribution to be determined at the local structure plan and subdivision phases. Land set aside for District Public Open Space will count towards the 8% requirement.
- The Structure Plan nominates a Brighton Activity Corridor, extending from the Mitchell Freeway to Marmion Avenue, encompassing the Station and District Centre Precinct. This area will require a separate amendment to the Butler Ridgewood local structure plan which pursues an adaptable and flexible urban framework to facilitate higher residential densities and mixed use development once the railway and other major transit infrastructure is in place.
- The structure plan nominates a Mixed Use Area extending from the future Butler Station, along Lukin Drive to Connolly Drive. This area will require a separate amendment to the Butler Ridgewood local structure plan to establish the extent of mixed use development, residential densities and built form provisions to ensure appropriate development in close proximity to the station.

**FIGURE 1 - AGREED STRUCTURE PLAN NO 39  
BUTLER JINDALEE DISTRICT STRUCTURE PLAN  
ADOPTED CITY OF WANNEROO 29 NOV 2005  
ENDORSED WAPC 20 OCT 2006**





**FIGURE 2**

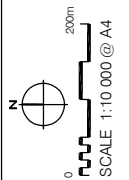
<b>LEGEND</b>	LAND WITHIN PART 1 STRUCTURE PLAN BOUNDARIES
<b>PRECINCTS</b>	ACTIVITY CENTRE (Commercial, Retail, Mixed Use & Higher Density Residential)
	RESIDENTIAL (Low to Medium Density)
	ENVIRONMENT RESPONSE HOUSING
	EDUCATIONAL AND DISTRICT OPEN SPACE

**AGREED LOCAL STRUCTURE PLAN - Endorsed City of Wanneroo : 27 Jan 2010**  
**LOTS 1001 & 1002 MARMION AVENUE, ALKIMOS**  
**AGREED LOCAL STRUCTURE PLAN**  
**PLAN 2**

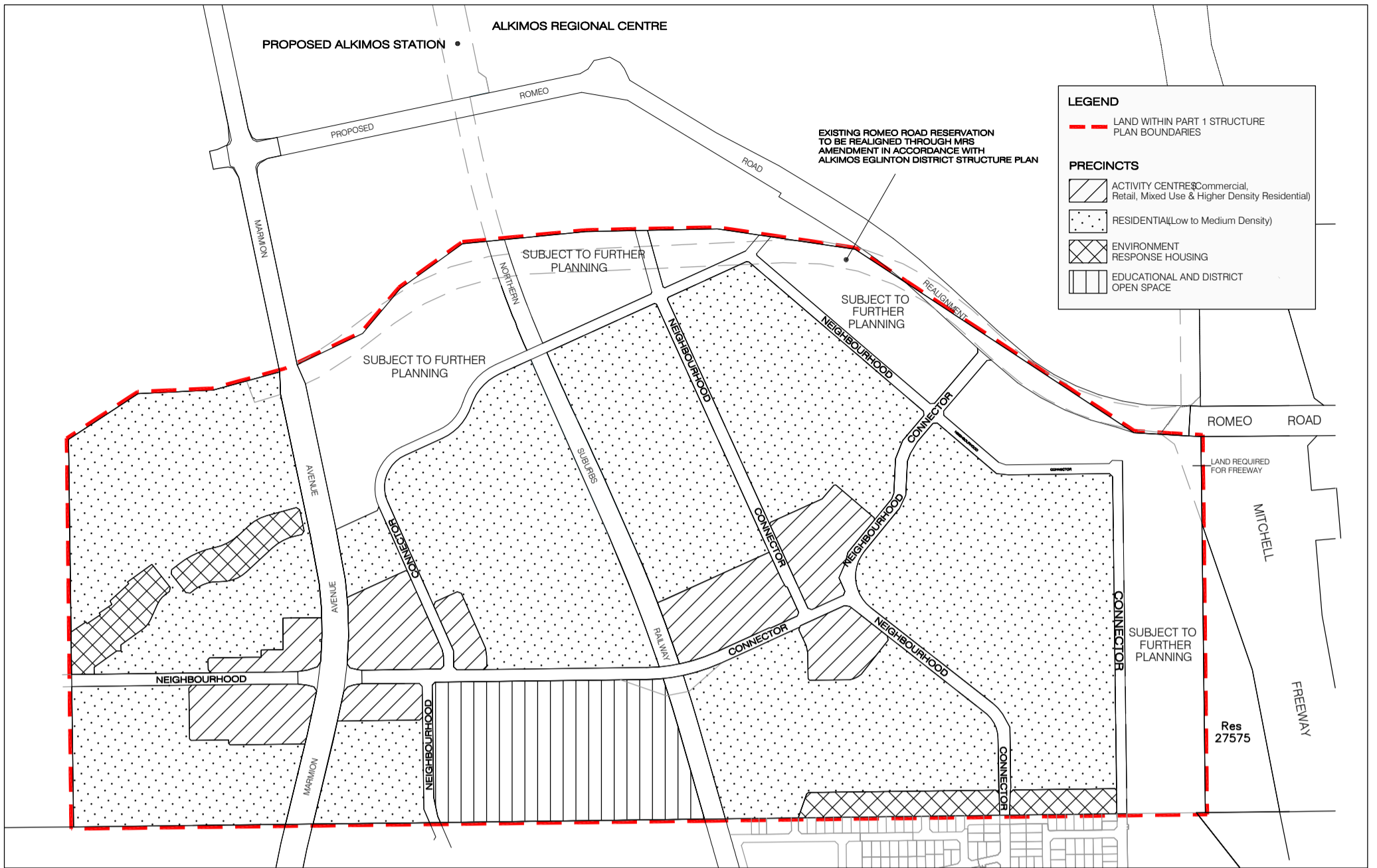


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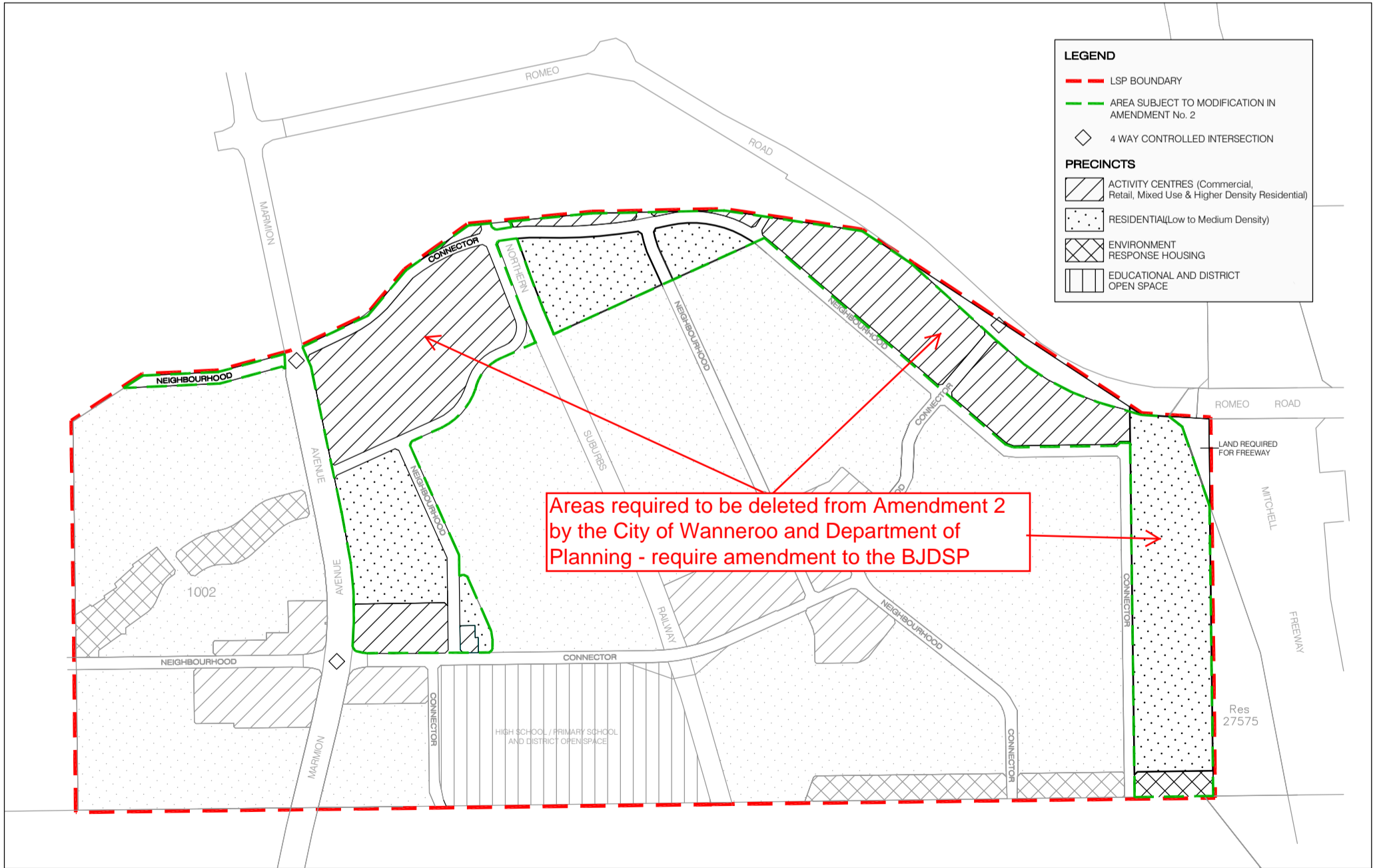
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EXISTING AGREED LOCAL STRUCTURE PLAN



ADVERTISED COPY OF AMENDMENT 2 TO AGREED LOCAL STRUCTURE PLAN - NOT ADOPTED

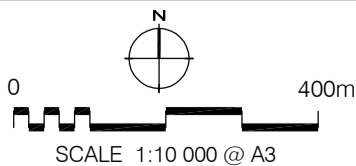
FIGURE 3

AMENDMENTS TO  
AGREED LOCAL STRUCTURE PLAN

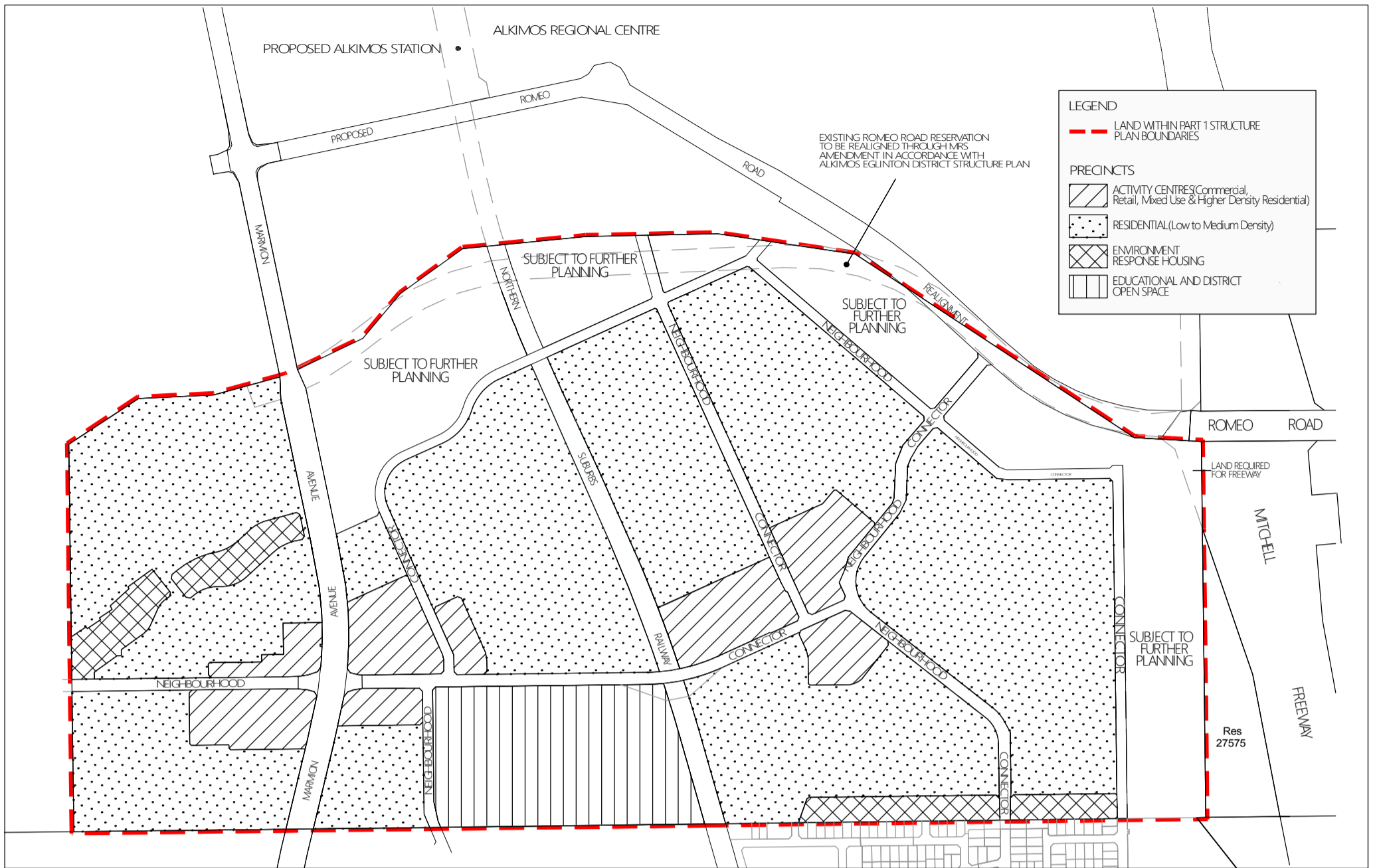
PLAN 2

5th March 2013

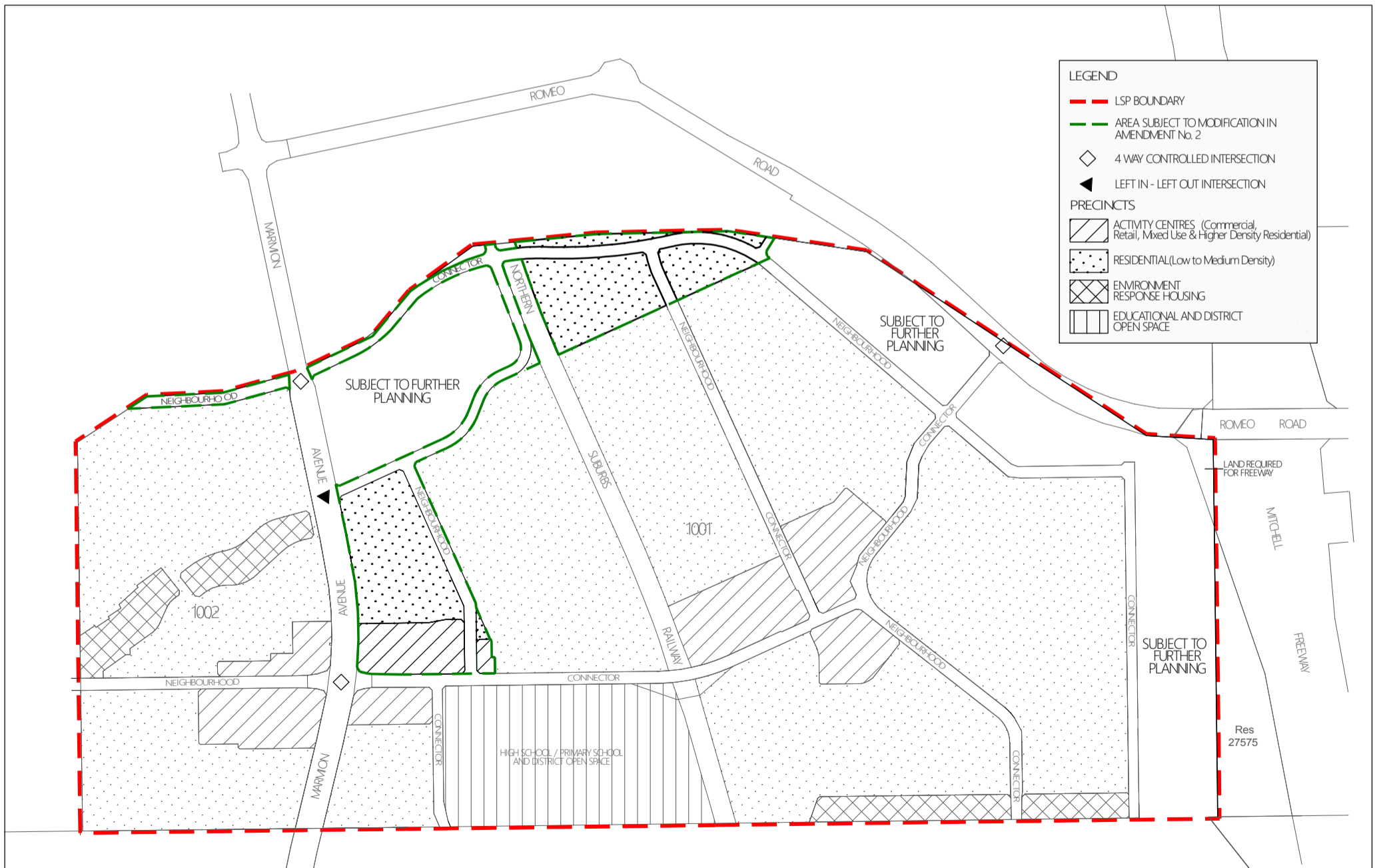
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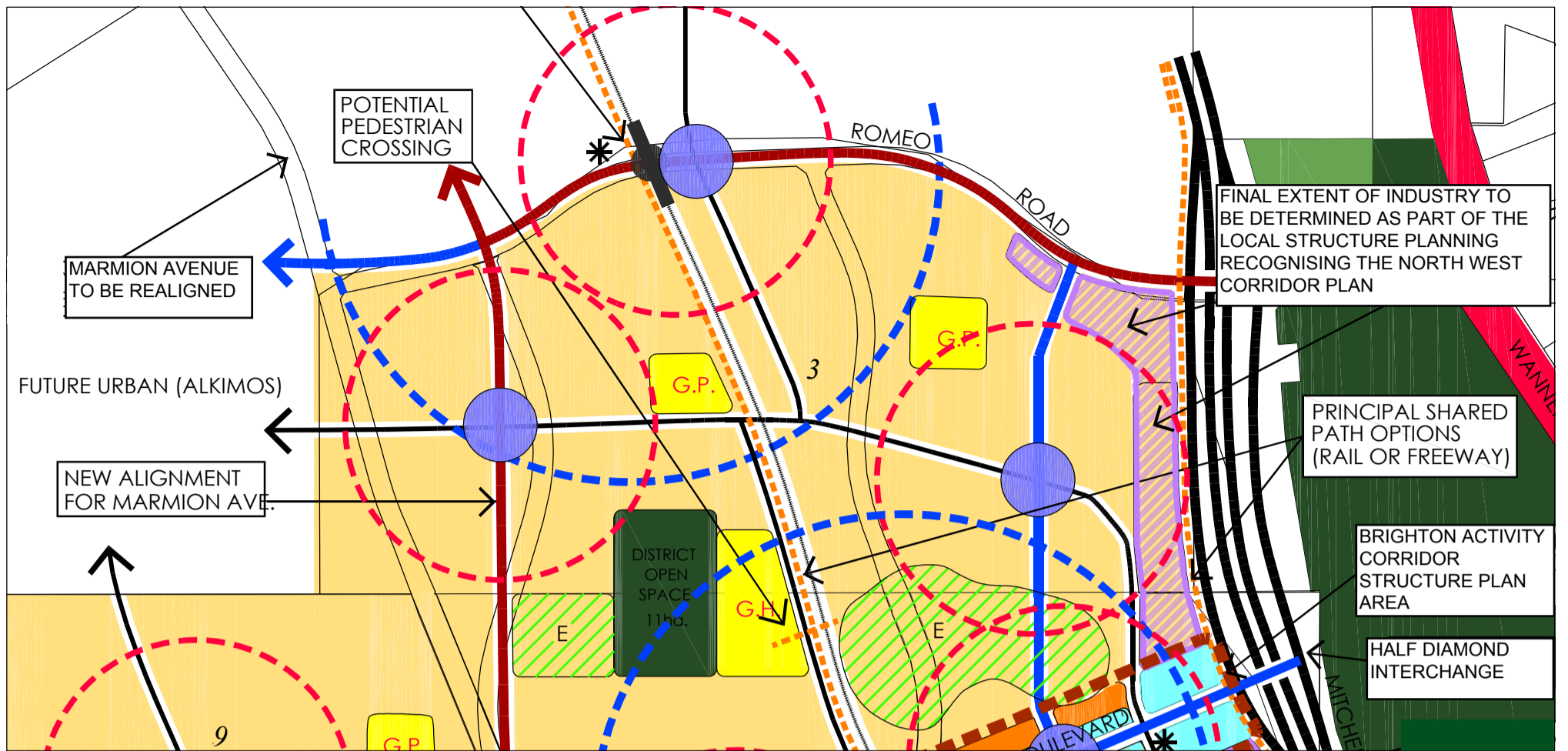
AGREED LOCAL STRUCTURE PLAN (ORIGINAL 2010)



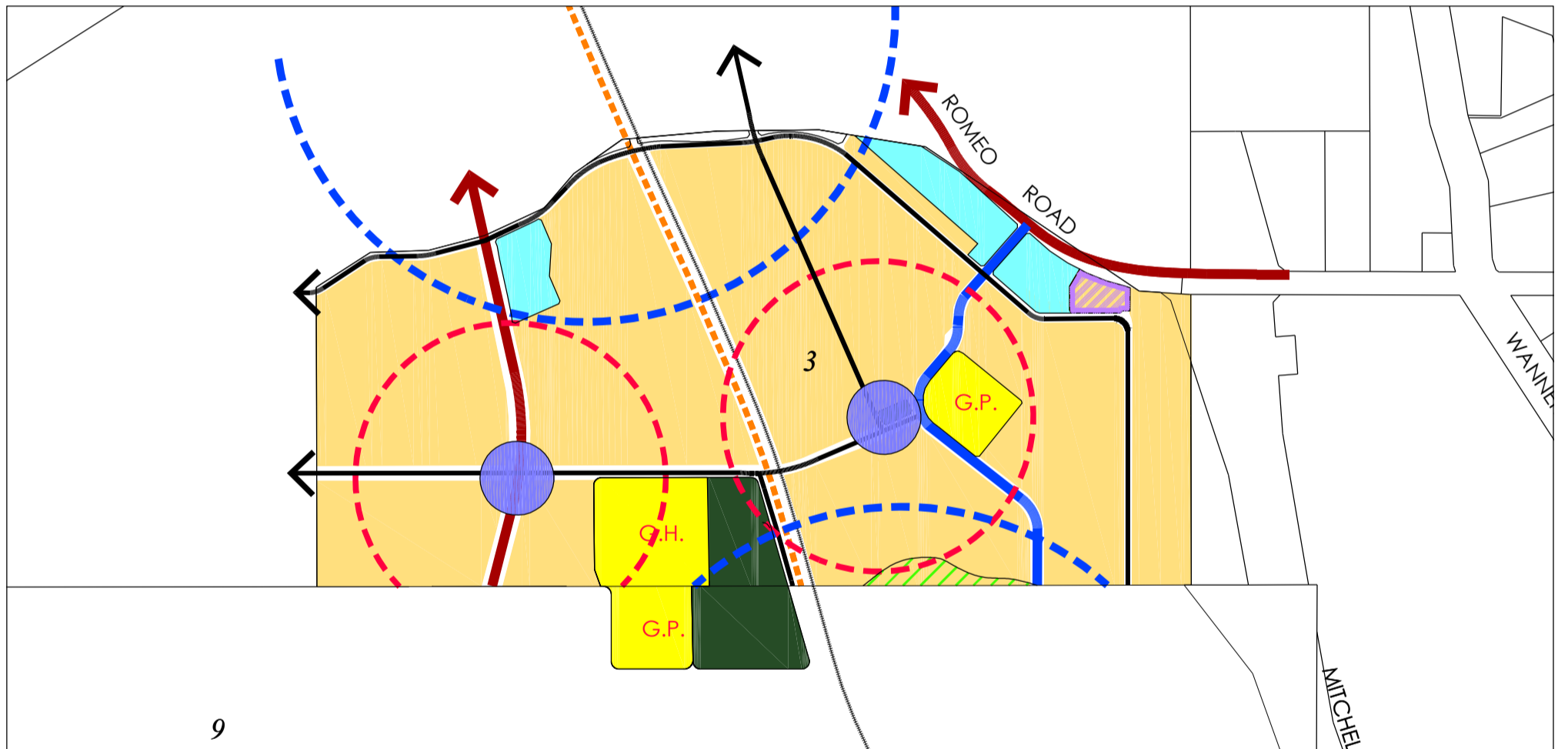
AGREED LOCAL STRUCTURE PLAN (WITH AMENDMENT 2)

FIGURE 4

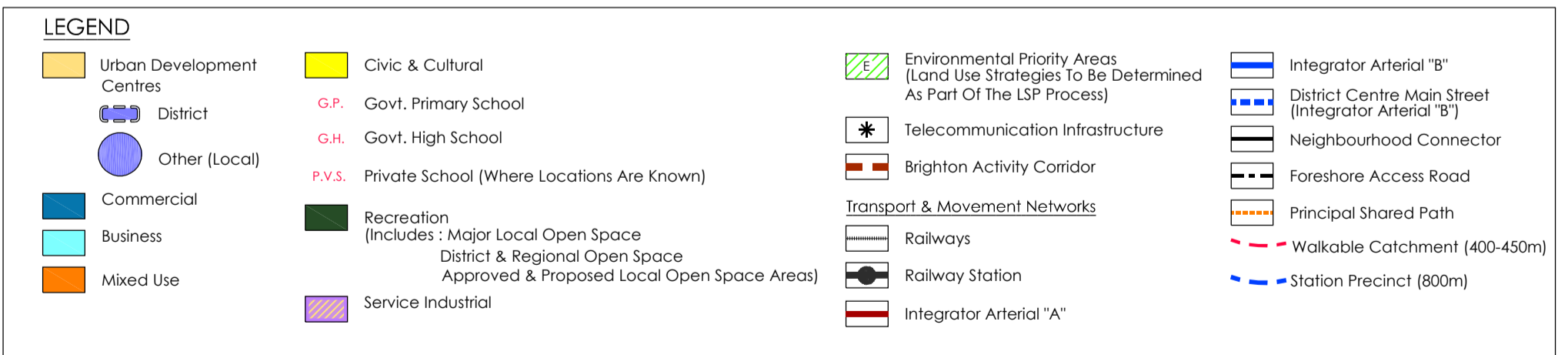




AGREED BUTLER - JINDALEE DISTRICT STRUCTURE PLAN



PROPOSED AMENDMENT No. 1 TO AGREED BUTLER - JINDALEE DISTRICT STRUCTURE PLAN



AMENDMENT 1  
 BUTLER - JINDALEE DISTRICT STRUCTURE PLAN  
 LOTS 1001 & 1002 MARMION AVENUE, ALKIMOS  
 LOTS 2966 & 8210 HALESWORTH PARADE, BUTLER

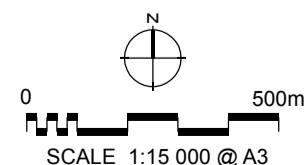


FIGURE 5

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## **2.2 Local Structure Plan No 60 – Amendment No 3**

The proposed Amendment No 3 to ASP 60 is bring the ASP into conformity with the proposed amendment to the BJDSP.

The amendment essentially completes the Local Structure planning over the areas previously excluded from Amendment No 2 that are subject to the BJDSP Amendment No 1.

Amendment 3 to Agreed Structure Plan No 60 therefore will:

- Zone the areas defined as ‘subject to further planning’ described below:
  - An area east of Marmion Avenue and south of a neighbourhood connector to ‘Residential’ and ‘Business’ zone.
  - An area south of Romeo Road to ‘Business’ and ‘Service Industrial’ Zone.
  - An area west of Mitchell Freeway to Residential zone with extension of ‘environment response housing’ to the east.
- Extend a north south neighbourhood connector in the northern part.

There is a separate ‘Part 1 – Statutory Report’ for Amendment 3 which introduces new statutory provisions for the Business and Service Industrial Zone with appropriate landuse controls.

This Local Structure Plan amendment is consistent with the proposed amendment to the BJDSP – [Figure 6](#).

## **2.3 Current Design Concept**

The location of the proposed major transport corridors (the Northern Suburbs Railway and Marmion Avenue), together with the existing landform and environmental attributes of the site have strongly influenced the structure plan design.

Under the existing Local Structure Plan, four distinct landuse precincts are identified:

- Residential (Low to Medium Density);
- Activity Centre (Commercial, Retail, Mixed Use & Higher Density Residential);
- Environment Responsive Housing; and
- Education and District Open Space.

The areas of uncertainty where landuse interface issues were still to be resolved particularly along the northern and eastern boundaries of Lot 1001 were denoted as “subject to further planning”.

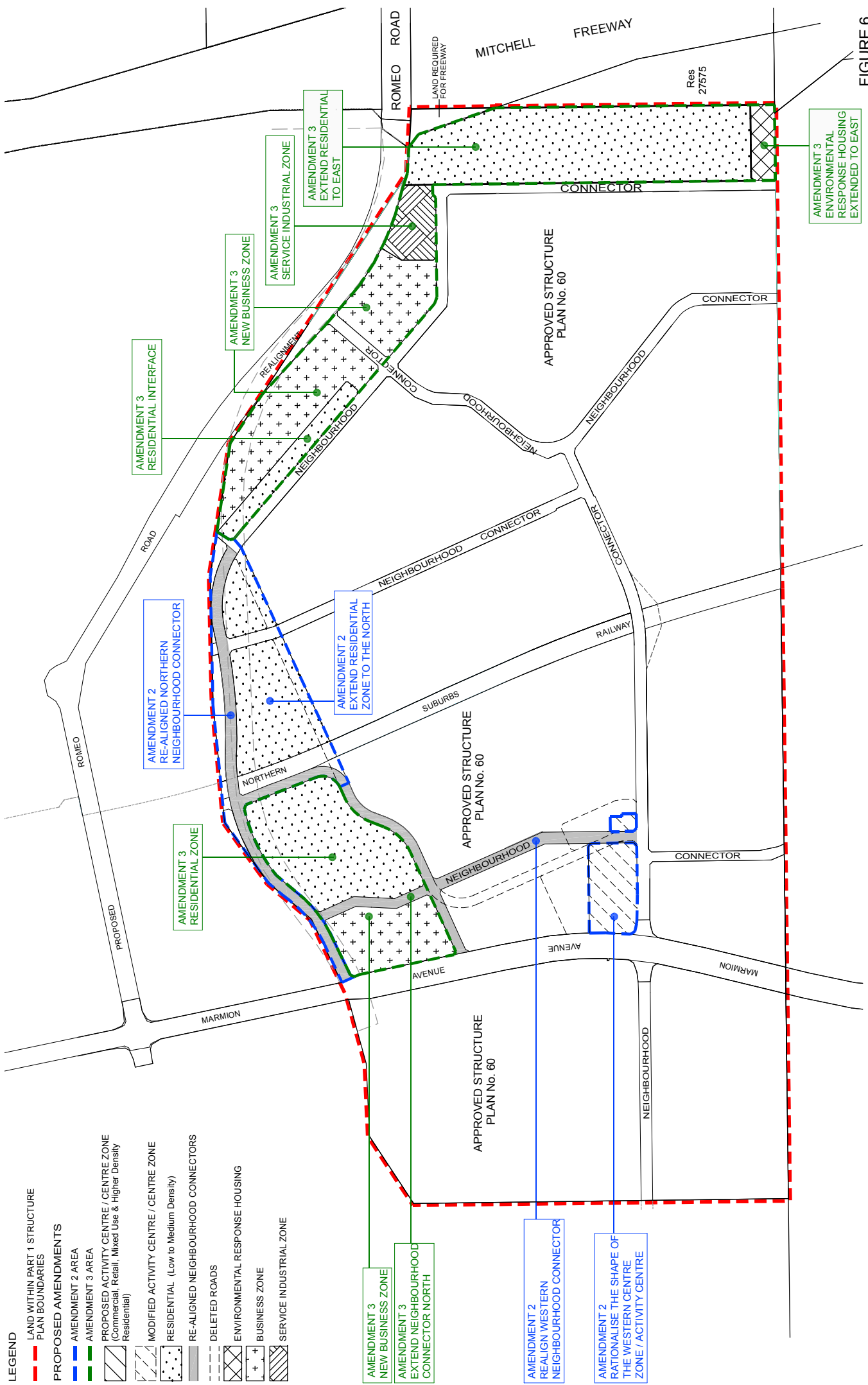
Under this Amendment they are identified for Business Zone(s), Service Industrial and Residential with Environment Responsive Housing. The new Business and Service Industrial Zones will be additional distinct landuse precincts.

The original Development Concept Plan provided the road layout, landuses and residential density, and formed the basis for the individual subdivision plans and coding plans. Individual stages of subdivision have been progressed over the last 4 years based upon the original Development Concept Plan.



**LEGEND**

- LAND WITHIN PART 1 STRUCTURE
- PLAN BOUNDARIES
- PROPOSED AMENDMENTS
- AMENDMENT 2 AREA
- AMENDMENT 3 AREA
- PROPOSED ACTIVITY CENTRE / CENTRE ZONE  
(Commercial, Retail, Mixed Use & Higher Density Residential)
- MODIFIED ACTIVITY CENTRE / CENTRE ZONE  
RESIDENTIAL (Low to Medium Density)
- RE-ALIGNED NEIGHBOURHOOD CONNECTORS
- DELETED ROADS
- ENVIRONMENTAL RESPONSE HOUSING
- BUSINESS ZONE
- SERVICE INDUSTRIAL ZONE
- AMENDMENT 3 NEW BUSINESS ZONE
- AMENDMENT 3 EXTEND NEIGHBOURHOOD CONNECTOR NORTH
- AMENDMENT 2 REALIGN WESTERN NEIGHBOURHOOD CONNECTOR
- AMENDMENT 2 RATIONALISE THE SHAPE OF THE WESTERN CENTRE ZONE / ACTIVITY CENTRE



**FIGURE 6**

**SUMMARY OF PROPOSED AMENDMENTS TO AGREED STRUCTURE PLAN No. 60  
LOTS 1001 & 1002 MARMION AVENUE  
ALKIMOS**



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The Development Concept Plan was updated in support of the most recent Amendment No 2 – Figure 7.

## **2.4 Road Structure and Pedestrian Network**

### **2.4.1 District Road Network**

The district road network comprises:

- Mitchell Freeway;
- Marmion Avenue; and
- Romeo Road.

### **2.4.2 Internal Road Network**

The internal road hierarchy is based on the guidelines set out in Liveable Neighbourhoods (Edition 4). The residential cells contained within the regional road structure are served by an internal road network comprising of neighbourhood connectors and access roads.

### **2.4.3 Pedestrians, Cyclists and Public Transport**

Pedestrian and cycle network systems need to be integrated into neighbourhood designs to provide linkages between residences, open space, community facilities and neighbourhood connectors. The lower order category access roads will form the basis of a safe and attractive pedestrian and cyclist system, with links through open space corridors.

The Path Network Masterplan was prepared for Lots 1001 and 1002 Marmion Avenue to identify the location of dual use paths in street verges, together with the location of regional dual use paths along Marmion Avenue, Romeo Road / Mitchell Freeway, and the Northern Suburbs Railway.

- **Public Transport/ Railway Reservation**

Public transport planning has been undertaken in the Butler Jindalee District Structure Plan. The proposed public transport bus routes within the subject land include Marmion Avenue, the east west neighbourhood connector (Santorini Promenade), and the north south neighbourhood connector (Benenden Avenue). The majority of the subject land is within 250 metres of a bus service.

The Northern Suburbs Railway is located to the east of Marmion Avenue. A station is proposed to the north of Lot 1001 and will provide a major benefit to the transport needs of the community at Trinity.

It should be noted that the railway reservation at the Santorini Promenade crossing is 45 metres as reflected in current subdivision approvals for the area. The Public Transport Authority provided a typical cross section depicting a 45 metre railway reservation for a railway at a road crossing when Amendment 2 to ASP 60 proceeded. As the City of Wanneroo required the cross section to be included in the Amendment 2 Explanatory Report it is re-produced as [Attachment 1](#) in this report for ease of reference.

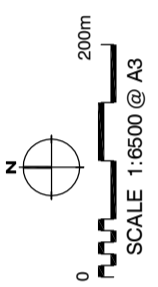
In accordance with this design, the northern neighbourhood connector bridge will be required to be widened to 45 metres, or any other width as required by PTA to be determined at subdivision stage.



Figure 7

**TRINITY ALKIMOS  
DEVELOPMENT CONCEPT PLAN (as amended)  
LOTS 1001 & 1002 MARMION AVENUE  
ALKIMOS**

25th JULY 2011



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## **2.5 Landuses**

### **2.5.1 Residential**

In accordance with the City of Wanneroo's Local Housing Strategy, the Local Structure Plan provides for a range of dwelling types with densities from R20 through to R60, catering for different household and lifestyle needs.

The Local Structure Plan predominantly caters for families by creating a more traditional suburban estate with increased densities around the Village Centres and along the main traffic routes. It is proposed that various forms of housing be provided within the higher density urban cores, including more cottage lots with rear laneway access and group housing, including apartment buildings in strategic locations.

- **Densities**

The residential density graduates from R20 to R30 along main road spines as the distance from the village centre increases. A number of R30 areas are also focused on open space corridors and local parks providing casual surveillance of these public community recreation areas.

Higher density (R60) areas are focused around the main activity centres (village and mixed use areas), with even higher densities to R100 within the commercial core areas.

### **2.5.2 Commercial / Retail**

Local Structure Plan No. 60 identified two centres consistent with the City of Wanneroo Centres Strategy, one on Marmion Avenue, and the second in the eastern area. This second centre is referred to as Agora Village and is located in the Stage 1 subdivision of Lot 1001. The total retail floorspace within Agora Village centre shall not exceed 1,500m<sup>2</sup> NLA.

The retail floorspace in the western centre shall not exceed 2,600m<sup>2</sup> NLA. The majority of the retail shopping area is proposed on the eastern side of Marmion Avenue within the Western Activity Centre site.

The vision for the commercial precincts is to create a pedestrian-friendly intimate village providing a small yet diverse range of land uses within an attractive setting, serving as a focus for both the eastern and western precincts of Alkimos, and a meeting place and point of identify for the community.

### **2.5.3 Mixed Use**

Mixed Use activities will also be accommodated within the Activity Centre precincts, as defined on the Development Concept Plan.

The mixed use areas will complement the commercial / retail areas and provide a transition to adjacent medium density housing areas.

### **2.5.4 Education**

The BJDSP originally proposed two government primary schools and a separate government high school within Lot 1001. The location of school sites has been refined through consultation with the Department of Education and the Local Structure Plan process - [Attachment 2](#).



The Development Concept Plan identifies two government primary school sites and half of a public high school site within the subject land. The BJDSP is being amended to reflect the refined school site locations.

### **2.5.5 Public Open Space**

Western Australian Planning Commission policy requires 10% of the net developable area to be provided as public open space which may comprise passive and active areas.

The main component of the public open space provision within the subject property (original Lots 1001 & 1002) is the Butler North District Open Space (5.5 ha or 50% of the 11 ha site). The City of Wanneroo has recently undertaken a design study to identify the facilities to be incorporated within the District Open Space and co-located Butler North High School and Primary School sites.

The balance of the public open space provision is made up by the linear spines and a series of smaller parks which have been carefully located having regard to specific landform or vegetation protection objectives.

The provision of public open space is slightly in excess of the 10% required within the developable area. Adjustments can be made to the provision of public open space in the area west of Marmion Avenue during later detailed planning to maintain the required 10% provision of public open space.

## **2.6 Employment**

The subject land is excellently placed to provide a substantial contribution of local residents to work in the future employment centres of Alkimos Regional Centre and the Brighton (Jindalee) District Centre. The current Agreed Structure Plan satisfied the 40% ESS (Employment Self Sufficiency) target set in the City of Wanneroo Smart Growth Strategy.

## **3.0 PROPOSED AMENDMENT NO. 3 TO ASP 60**

The purpose of Amendment No. 3 to ASP No. 60 is to complete the planning over the areas previously nominated as 'subject to further planning'. These will be denoted as Business zone(s), Service Industrial zone and Residential with Environment Responsive Housing.

The area designated for 'Service Industrial' under the BJDSP will be partially replaced by Residential. A refined Service Industrial zone will be accommodated adjacent to Romeo Road.

Employment opportunities will be increased with two new better located Business zones. An existing neighbourhood connector will be extended in the northern portion of the Structure Plan area.

**Figure 8** clearly summarises the changes proposed under Amendment 3 in the areas previously nominated as 'subject to future planning'.

- LEGEND**
- LAND WITHIN PART 1 STRUCTURE
  - PLAN BOUNDARIES
  - PROPOSED AMENDMENTS
  - AMENDMENT 3 AREA
  - RESIDENTIAL (Low to Medium Density)
  - RE-ALIGNED NEIGHBOURHOOD CONNECTORS
  - ENVIRONMENTAL RESPONSE HOUSING
  - BUSINESS ZONE
  - SERVICE INDUSTRIAL ZONE
  - OPEN SPACE

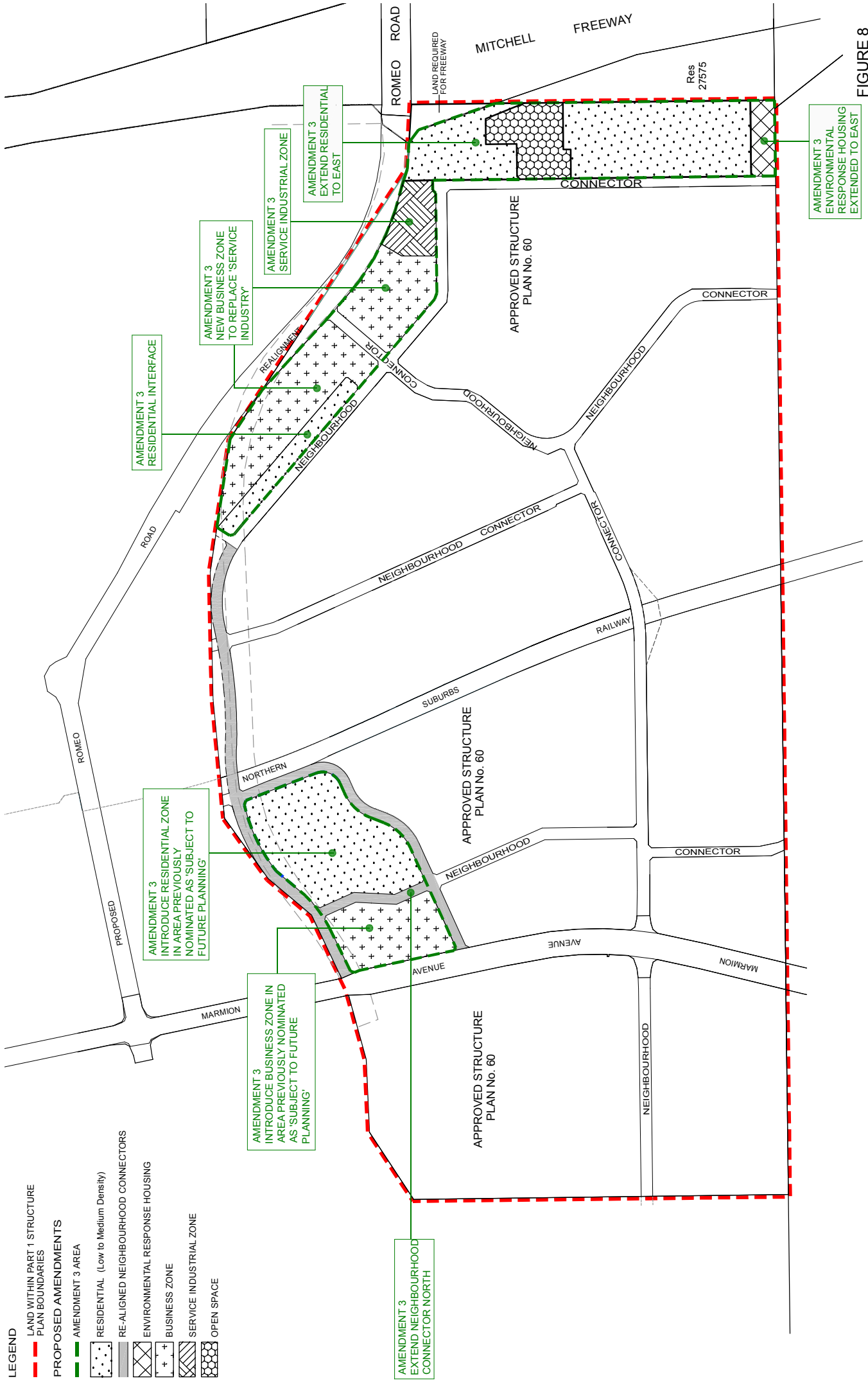


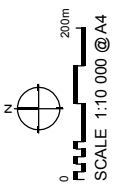
FIGURE 8

SUMMARY OF PROPOSED AMENDMENT 3 TO AGREED STRUCTURE PLAN No. 60  
 LOTS 1001 & 1002 MARMION AVENUE  
 ALKIMOS

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## **4.0 EXISTING ENVIRONMENT**

The proposed landuse and road structure amendment over the 'subject to further planning' areas should be reviewed having regard to the broader environmental context.

### **4.1 Landform and Soils**

The Structure Plan area consists of two major landforms that are common on the western side of the Coastal Plain, being the Spearwood Dune System and Quindalup Dune System.

Lot 1001 predominantly consists of the Spearwood Dune System which is characterised with low hilly to undulating terrain with a core of sandy limestone capped by secondary calcite, overlain by siliceous sand. The soil types are freely draining and suitable for managing stormwater through infiltration methods.

The western section and extending along the northern boundary to a point approximately 300 metres east of the Northern Suburbs Railway is comprised of the Quindalup Dune System.

A geotechnical investigation undertaken by GHD in March 2010 was an appendix to the original 2010 Explanatory Report for Structure Plan No 60. It indicated that majority of the Lot 1001 is underlain by residual Tamala Sand. Additional geotechnical reports continue to be undertaken for each stage of approved and future subdivision.

### **4.2 Quindalup Dunes**

The soils of the Quindalup Dunes are comprised of Safety Bay Sands. These are white to grey, unconsolidated calcareous sands that are part of an extensive parabolic dune that has migrated almost 4km from the coast. They would have been deposited on the coast by wave action and blown inland to form part of the dunes. These dunes have been stabilised by native vegetation.

The northern dunal ridge is only secondary and contains no feeding habitat for Carnaby's Black Cockatoo.

### **4.3 Spearwood Dunes**

The Spearwood Dunes are the older of the two dune systems and consists of Tamala Limestone and residual sandy soils – [Figure 9](#).

The dominant soil type on the Spearwood Dunes in Lots 1001 and 1002 is Karrakatta sand (yellow phase), which typically exhibits a grey-brown sandy surface passing into bright yellow sand (often several metres deep over the limestone).

Some areas have shallow brown sandy soils over limestone with some visible occurrences of limestone at the surface. The soil types are freely draining and suitable for managing stormwater by infiltration methods.

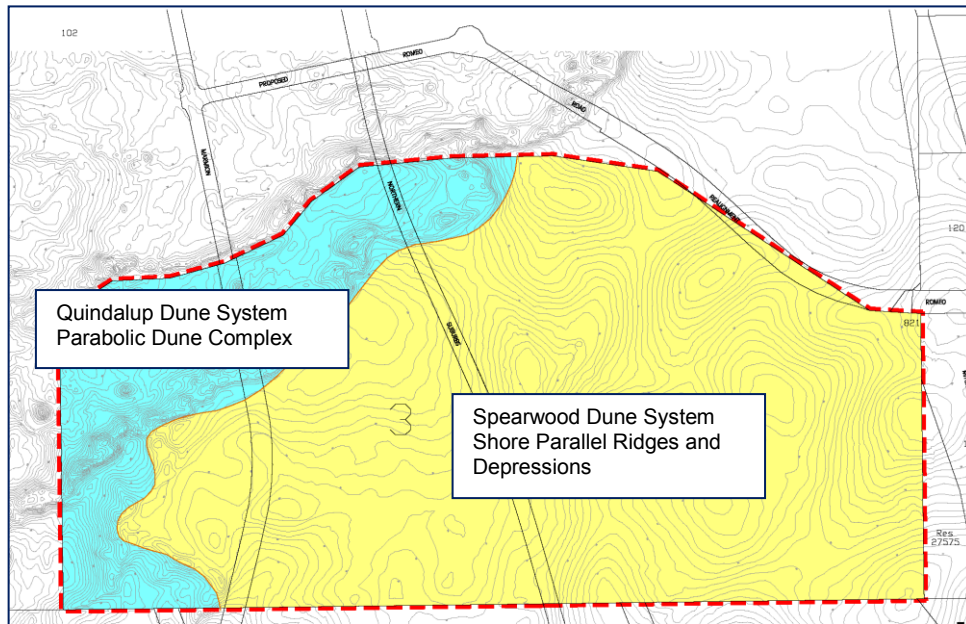


Figure 9 Landforms

#### 4.4 Karstic Features

Karstic topography is typically characterised by sinkholes, caves and underground drainage. Available data suggest that there is a very low possibility of karstic features being located on the subject property.

No obvious signs of karst were identified by GHD Engineers during the preliminary geotechnical investigations that were undertaken to support the current Local Structure Plan No 60.

#### 4.5 Acid Sulphate Soils

The Western Australian Planning Commission Bulletin No. 64 identifies this site as a 'Class 3' in its risk mapping - low to no risk rating of Acid Sulphate Soils occurring at depths less than 3 metres.

#### 4.6 Ground Water

Groundwater was not encountered during the geotechnical investigation of the site. This corresponds with the Perth Groundwater Atlas which indicates existing groundwater levels at around RL 1.0 m to RL 4.0 m. This is well below the natural surface level.

Issues caused by high groundwater levels are therefore not anticipated.

#### 4.7 Surface Water

There are no surface water features within the structure plan area.

#### 4.8 Flora and Vegetation

A comprehensive flora and vegetation survey was undertaken by ATA Environmental – (now Coffey Environments) in 2006 as part of the original explanatory report for Local Structure Plan No 60.



#### **4.8.1 Vegetation Complexes and Types**

At the broad level of mapping there are two main vegetation complexes across the whole Structure Plan area - Cottesloe and Quindalup, with the majority of the land being comprised of the Cottesloe vegetation complex. This is a broad unit which comprises many different vegetation types including Eucalypt woodlands (*Tuart and Jarrah*), *Banksia* woodlands and heathlands on limestone soils.

#### **4.8.2 Vegetation Condition**

The Condition of the vegetation has been assessed according to the rating scale of Bush Forever.

Some of the vegetation within the structure plan area is in excellent condition, although it has not been identified in Bush Forever as being of regional significance requiring protection.

#### **4.8.3 Flora**

A total of 185 plant species were recorded in the original survey of Lots 1001 and 1002. The plant species consisted of 149 native species and 36 introduced species. This is comparable to the results of other surveys conducted in bushland near the subject land.

The amendment area does not have any particular species of significance that only occurs in that location.

#### **4.8.4 Fauna**

A comprehensive Vertebrate Fauna Assessment was compiled by Coffey Environments – as part of the explanatory Local Structure Plan No 60 approved in 2010.

Of the species identified, the most significant is the Carnaby's Cockatoo (*Calyptorhynchus latirostris*), which is a Schedule 1 species under the *Wildlife Conservation Act 1950* and listed as Endangered under the *Environmental Protection Biodiversity Conservation (EPBC) Act 1999*.

Referral action has already been undertaken by the proponent in respect to any clearing which significantly impacts on feeding habitat for Carnaby's Black Cockatoo over the whole of the subject property and approval was granted by the Department of the Environment, Water, Heritage and the Arts (DEWHA) on 11 September 2009 – [Attachment 3](#).

Apart from some land offset arrangements there was also a requirement to create some larger lots along portion of the southern boundary of Lot 1001.

This amendment includes an eastward extension of the larger environment responsive housing over the area previously nominated as 'subject to further planning area' in the south east portion of the Structure Plan.

In summary, apart from the requirement to provide the small area of environment responsive housing in the south east, there are no other environmental or engineering constraints that will influence the structure plan design.

## 5.0 STRATEGIC PLANNING BACKGROUND

In order to understand the rationale for the landuses proposed, particularly in relation to the replacement of the service industrial use identified under the BJDSP adjacent to the eastern boundary of Lot 1001, it is important to review the broader planning context for the area.

### 5.1 Jindalee Enquiry by Design Workshop and the Butler Charrette

The then Department for Planning and Infrastructure conducted a Jindalee Enquiry by Design Workshop (Charrette) in 1996 and this formed the basis of the subsequent Brighton Jindalee District Structure Plan.

The Charrette was used to test and measure the Liveable Neighbourhoods design code which was still being developed.

The exercise was used to develop a range of design options focusing on the clustering of neighbourhoods around a town centre, anchored by a rail station at one end and a major arterial road at the other. Many of the principles identified from the Workshop were included in Edition 1 of Liveable Neighbourhoods.

The Butler Charrette identified a narrow band of Service Industrial use within Lots 1001 and 1002 extending along the southern side of Romeo Road for a distance of approximately 400m from the eastern boundary of the property – Figure 10.

It is noted that the industrial land use does not extend down the eastern boundary of Lot 1001 on the Charrette plan.

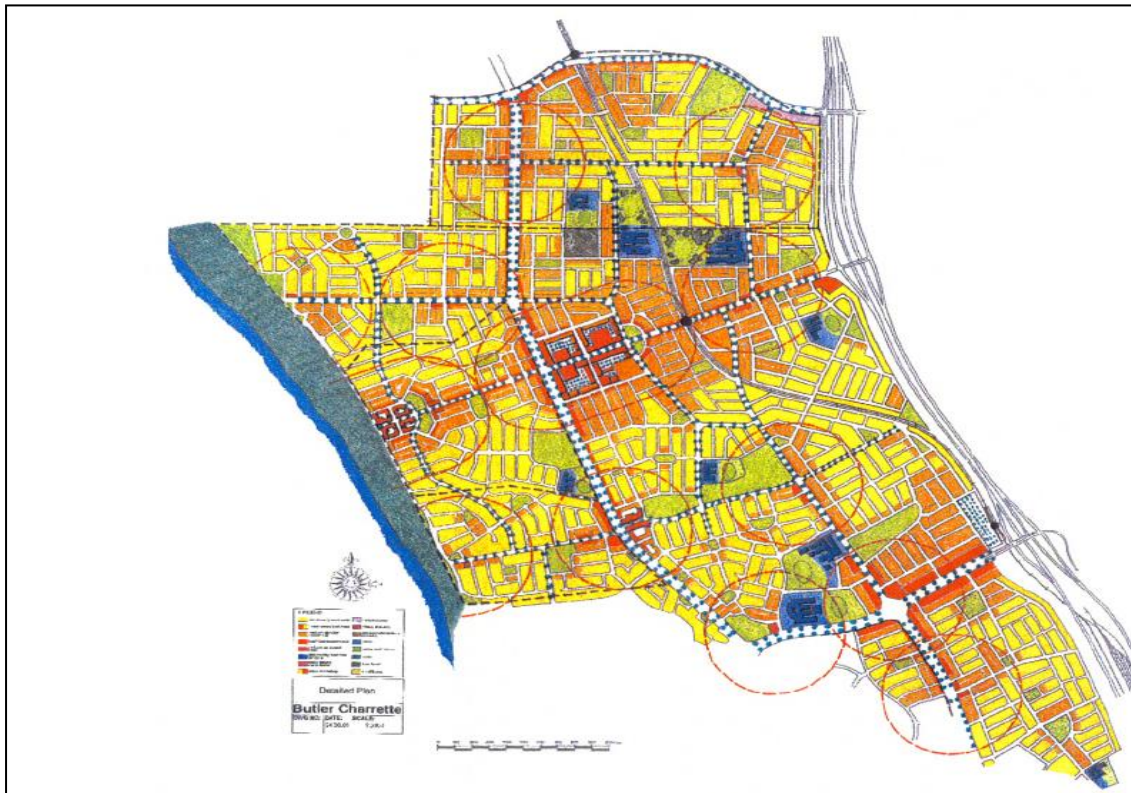


Figure 10 - The Butler Charrette

## 5.2 Butler Jindalee District Structure Plan

The Butler Jindalee District Structure Plan was prepared by Chappell & Lambert Town Planners in April 2003 and finally adopted by the Western Australian Planning Commission in October 2006 – Figure 11.

The Structure Plan incorporated Lots 7, 8, 11, 31, 32 and 33 Butler and Ridgewood, Lots 1001 and 1002 Alkimos and Lots 9, 10 and 12 in Jindalee.

The Structure Plan provides the broad district level planning framework for development in the Structure Plan area. It incorporates landuse, major roads, rail and other community infrastructure.

The District Structure Plan does not depict zonings, residential density codes and detailed development standards and requirements. It identifies broad landuse classifications, general density principles and framework, and lists matters to be considered in preparation of Local Structure Plans.

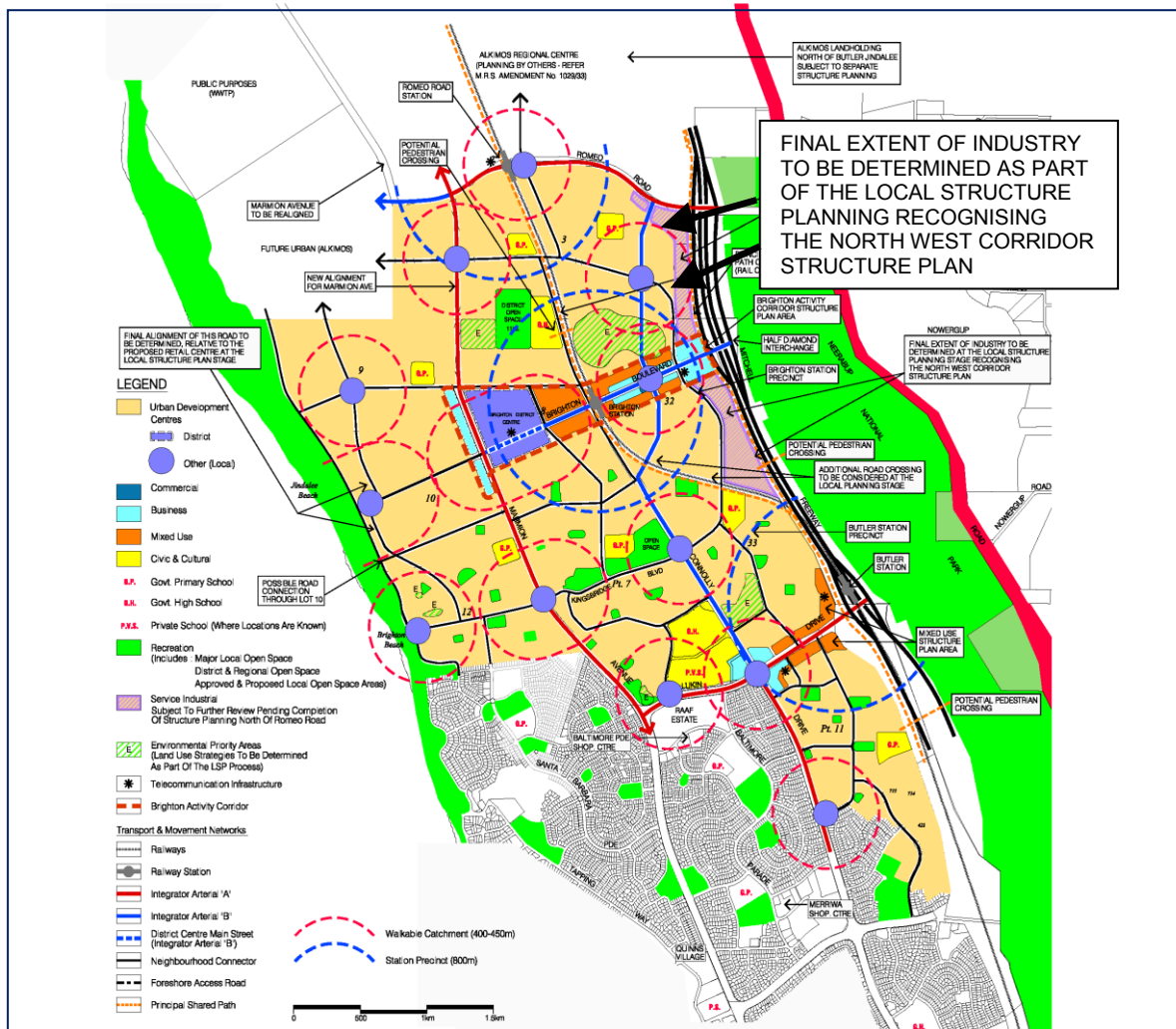


Figure 11 – Butler Jindalee District Structure Plan (Service Industries)

In respect to Lots 1001 and 1002, the Butler Jindalee District Structure Plan depicts the majority of the land as residential with a service industrial corridor along the eastern boundary of the lot; two primary school sites; portion of a high school site (4ha) and district open space (5.5 ha); two local centres; the major road structure including Marmion Avenue and the northern suburbs railway running north south through the property.

Some elements of the Butler Jindalee District Structure Plan in relation to Lots 1001 and 1002 have been superseded by subsequent planning, in particular, the removal of the Romeo Road railway station and relocation of Romeo Road north in accordance with the recently adopted Alkimos Eglinton District Structure Plan.

The Butler Jindalee District Structure Plan depicted a more extensive area of service industrial use over a band 200m – 300m wide adjacent to the eastern boundary of Lot 1001 and the Brighton land holdings extending from Romeo Road south to the future railway alignment.

The notation on the Butler Jindalee District Structure Plan stated *“Final extent of Industry to be determined as part of the Local Structure Planning recognising the North-West Corridor Structure Plan”*.

### 5.3 Butler Jindalee District Structure Plan Amendment 1

A separate Amendment No 1 to the BJDSP is being pursued concurrent to this Local Structure Plan Amendment to recognise district level changes such as the removal of the Romeo Road station. The two main changes most relevant to Amendment 3 is replacement of part of the previously nominated ‘Service Industrial’ with a Residential and Business zone west of the Freeway, and introduction of a second Business zone east of Marmion Avenue – Figure 12.

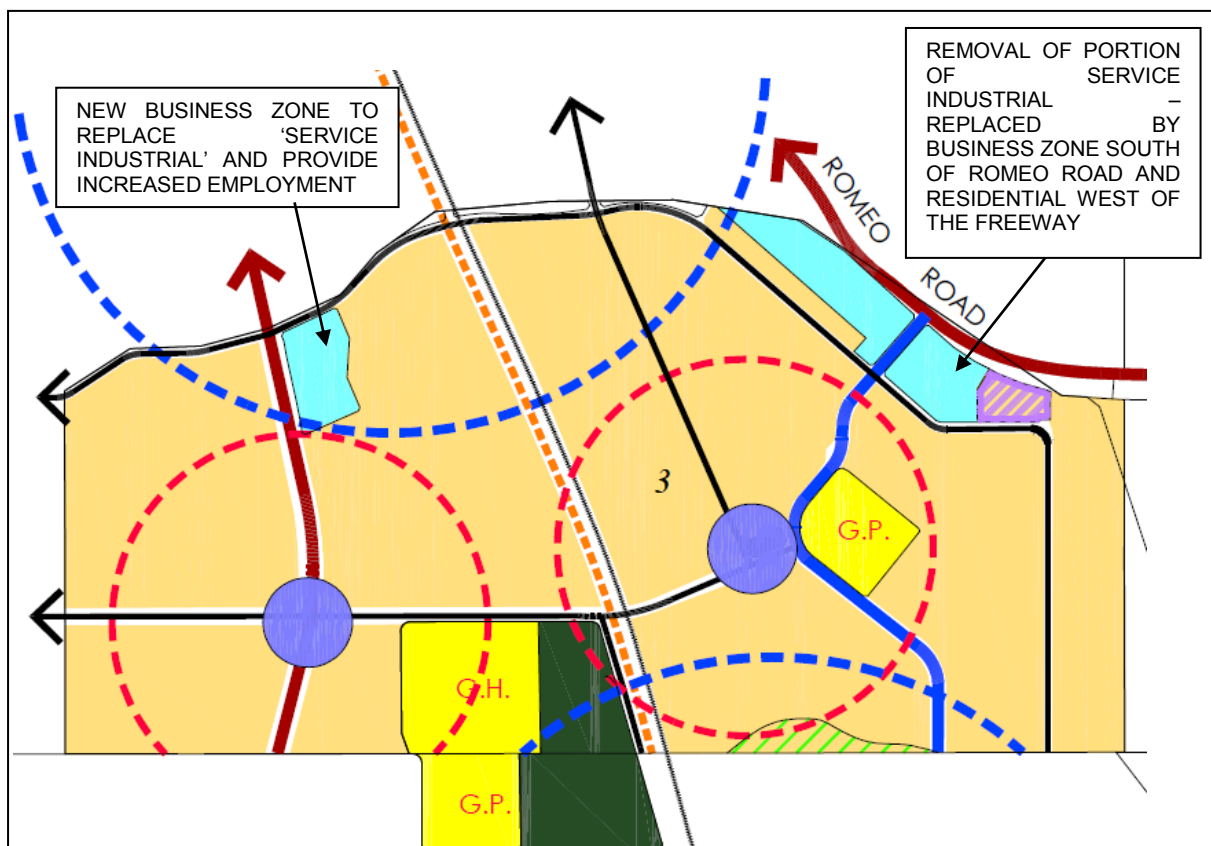


Figure 12 – Proposed Amendment 1 to the BJDSP



This Local Structure Plan amendment aligns with the proposed District Structure Plan amendment to define and consolidate the extent of the Service Industrial zone, replace a portion of the previously notional Service Industrial area west of the Freeway with residential, and introduce a western and eastern Business zone (to maximise employment diversity and opportunities).

#### **5.4 Butler Ridgewood Agreed Local Structure Plan No. 27 (Brighton)**

The Butler Ridgewood Agreed Local Structure Plan was prepared by Chappell, Lambert and Everett and was endorsed by the Western Australian Planning Commission on 4 June 2002.

The Butler Ridgewood Agreed Local Structure Plan provides for a 22,000m<sup>2</sup> retail NLA Brighton District Centre at the intersection of Jindalee Boulevard and Marmion Avenue, 1km south of Lots 1001 and 1002, which will provide for a range of retail and mixed use businesses and Activity Corridor along Jindalee Boulevard which is proposed for a mix of service commercial uses.

The Butler Ridgewood Local Structure Plan identifies two areas on either side of Jindalee Boulevard as service industrial, adjacent to the connection to the Freeway.

#### **5.5 Alkimos Eglinton District Structure Plan**

The Alkimos-Eglinton District Structure Plan was prepared on behalf of the combined landowners north of Lots 1001 and 1002 Marmion Avenue to provide an overall district framework for the area north of the Butler Jindalee District Structure Plan – [Figure 13](#).

The Plan covers an area of approximately 2,626 hectares with 7.5 kilometres of coastal frontage, located to the north of Lots 1001 and 1002. The major road structure includes Marmion Avenue and the east-west connection to the Freeway. The alignment of the northern suburbs railway (and stations) is also identified.

Alkimos Eglinton will include two major mixed use town centres. The Alkimos Regional Centre is proposed directly to the north of Lots 1001 and 1002 with an indicated potential GLA of 65,000m<sup>2</sup>. The Eglinton District Centre is identified on Marmion Avenue approximately 6 kilometres north of Lots 1001 and 1002. It has an indicated potential of 15,000m<sup>2</sup> to 20, 000m<sup>2</sup> NLA.

The AEDSP incorporates two large service industrial areas as follows:

- Area 1 : Between the Alkimos Regional Centre and the Eglinton District Centre an area of approximate 150 hectares of service industrial use is proposed adjacent to the Freeway.
- Area 2 : Approximately 100 ha of land is located in the eastern portion of the Alkimos Regional Centre area adjacent to Mitchell Freeway directly north of Romeo Road. Area 2 has significant buffers and separation between the service industrial area and residential areas as it is located east of the Eglinton District Centre and south of regional open space.

These areas will provide for essential localised employment opportunities – to service the planned residential areas, and have been strategically located between the Railway and Mitchell Freeway to maximise accessibility and proximity to truck routes.

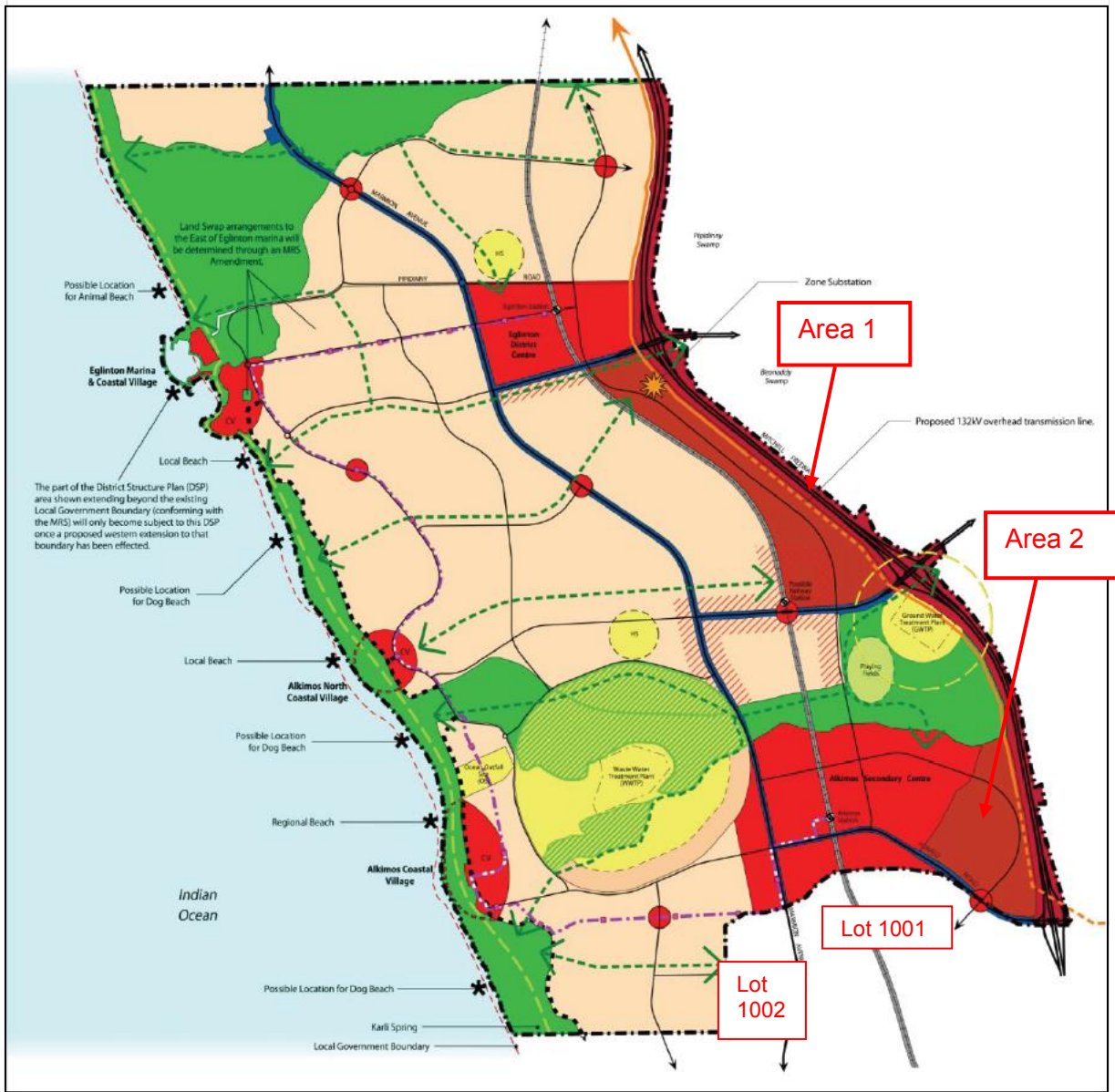


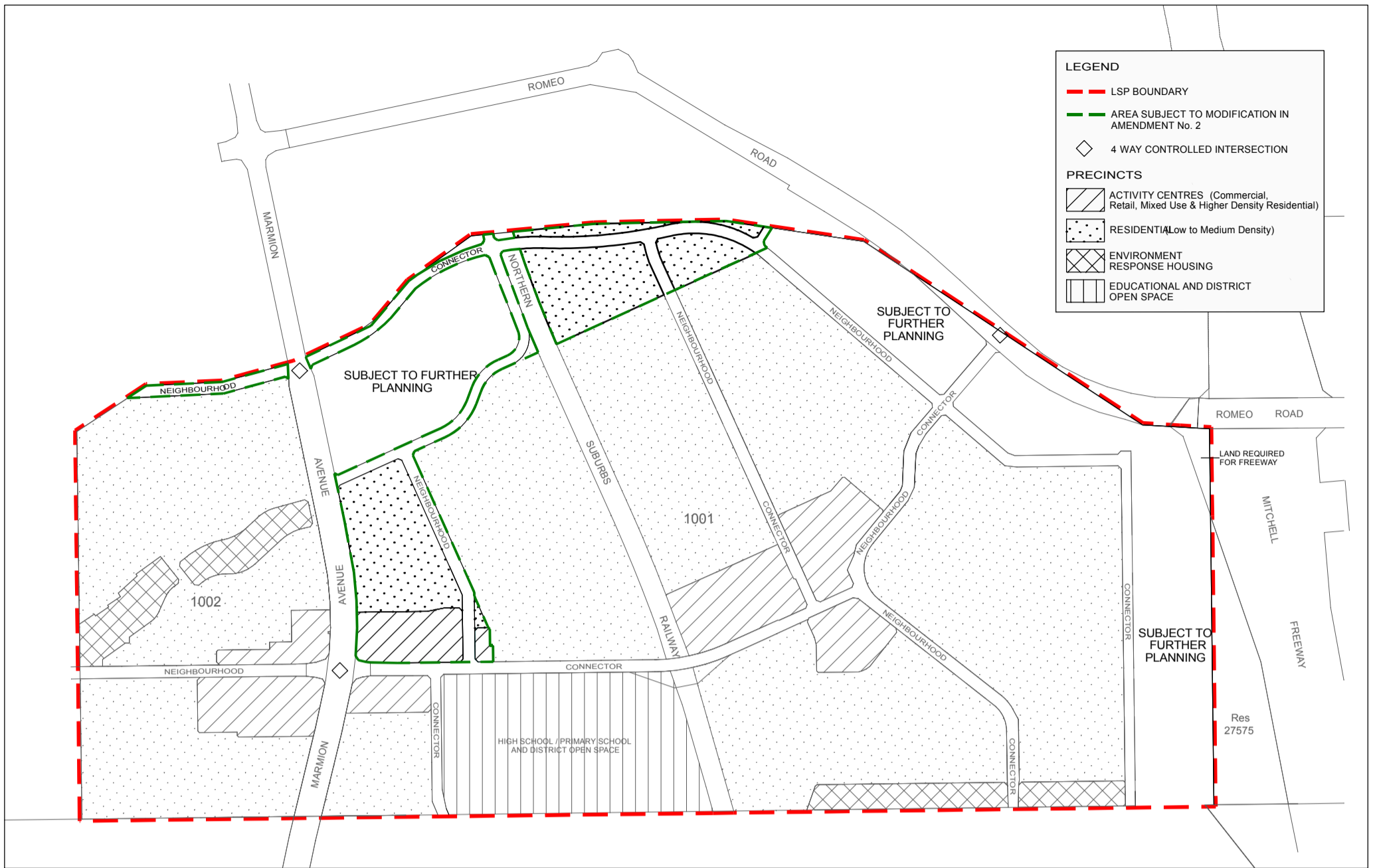
Figure 13 – Adopted Alkimos Eglinton District Structure Plan (service industrial areas)

These two areas of service industrial could provide for many hundreds of thousands of square metres of Service Industrial floorspace in direct competition with the area identified within Lot 1001 under the BJDSP.

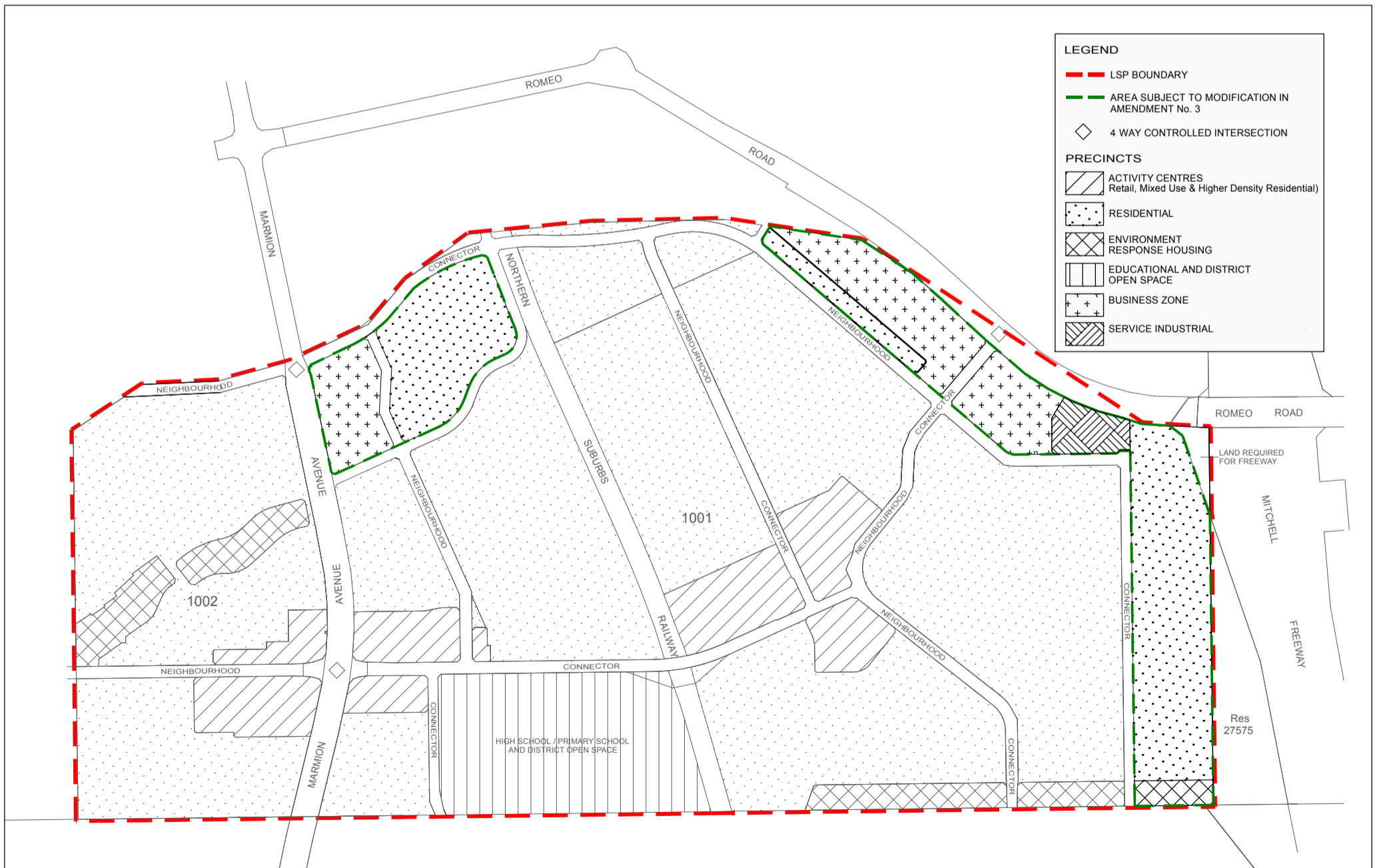
The defined Service Industrial Zone combined with the proposed Business Zones under Amendment 3 to LSP NO. 60 will better maximise employment diversity in the locality and result in increased employment self-sufficiency. Service Industries are already well catered for under regional structure plans therefore a reduced Service Industrial zone will be sufficient to cater for local resident’s needs.

## 6.0 PROPOSED AMENDMENT 3 TO AGREED STRUCTURE PLAN

The Local Structure Plan Map outlines the planned pattern of development for the Structure Plan area and depicts the Neighbourhood precincts. As already explained there is a separate ‘Part 1 – Statutory Report’ which includes an amendment plan, zoning plan and density plan – Figures 14, 15 and 16.



AGREED LOCAL STRUCTURE PLAN WITH AMENDMENT 2



PROPOSED AMENDMENT 3 LOCAL STRUCTURE PLAN

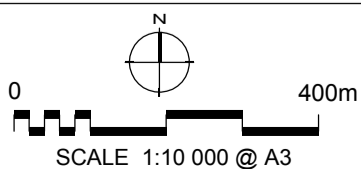
FIGURE 14

PROPOSED AMENDMENTS TO  
AGREED LOCAL STRUCTURE PLAN

PLAN 2

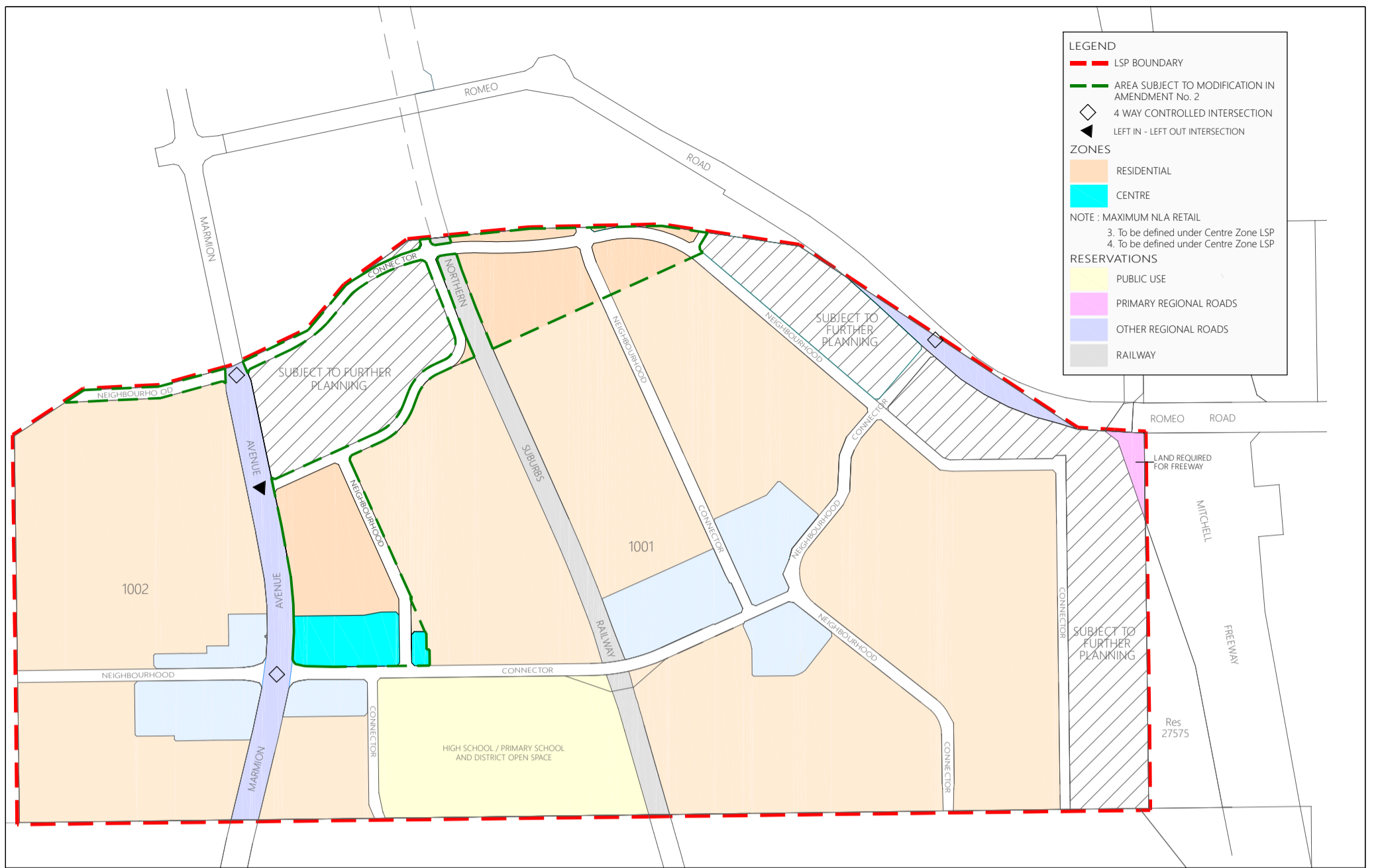
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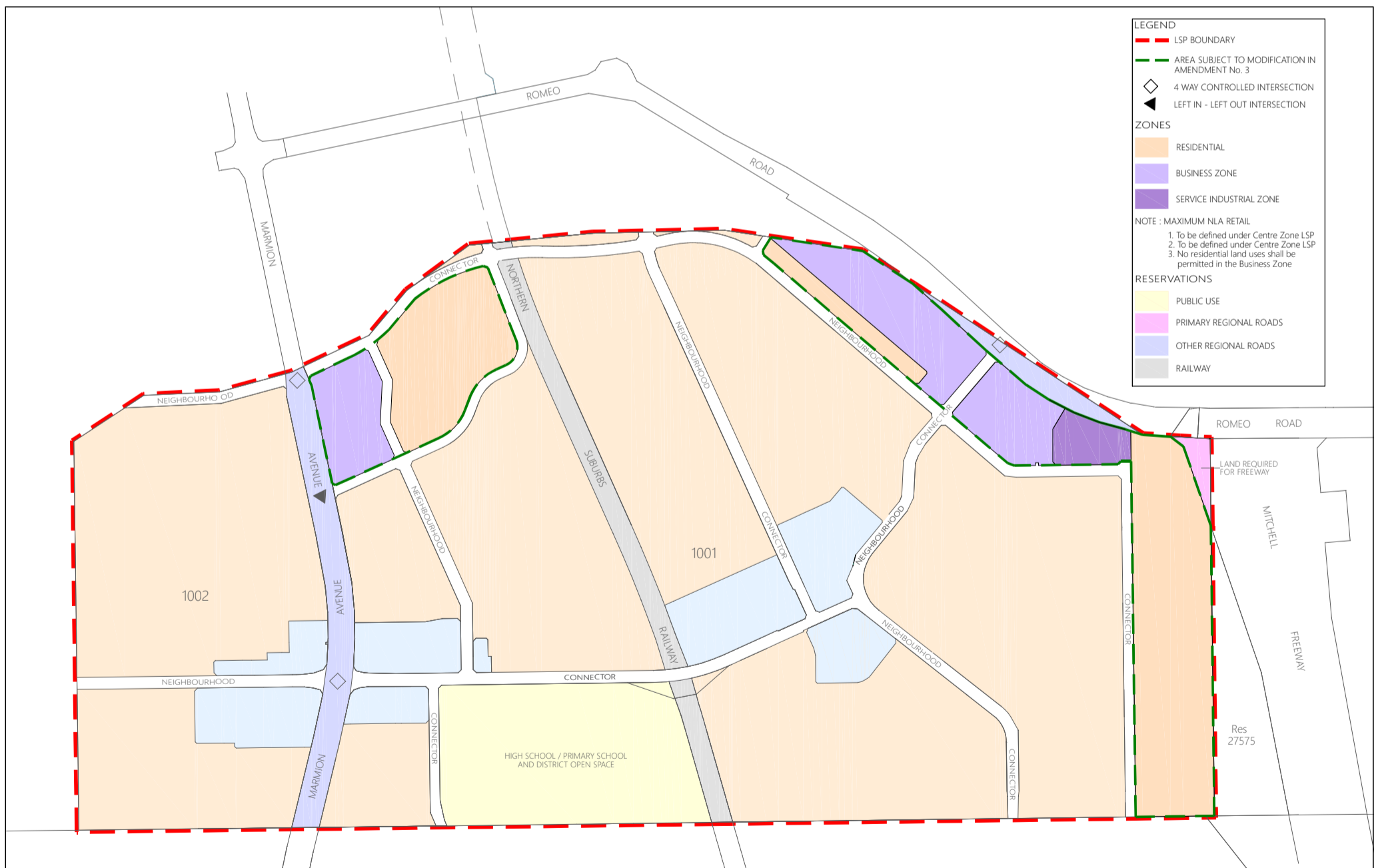


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AGREED LOCAL STRUCTURE PLAN WITH AMENDMENT 2 - EXISTING ZONING PLAN



AMENDMENT 3 LOCAL STRUCTURE PLAN - PROPOSED ZONING PLAN

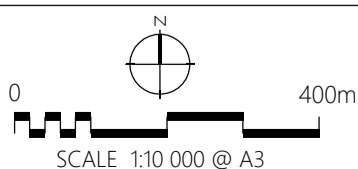
FIGURE 15

PROPOSED AMENDMENT 3 TO  
AGREED LOCAL STRUCTURE PLAN 60

PLAN 3 - ZONING PLAN

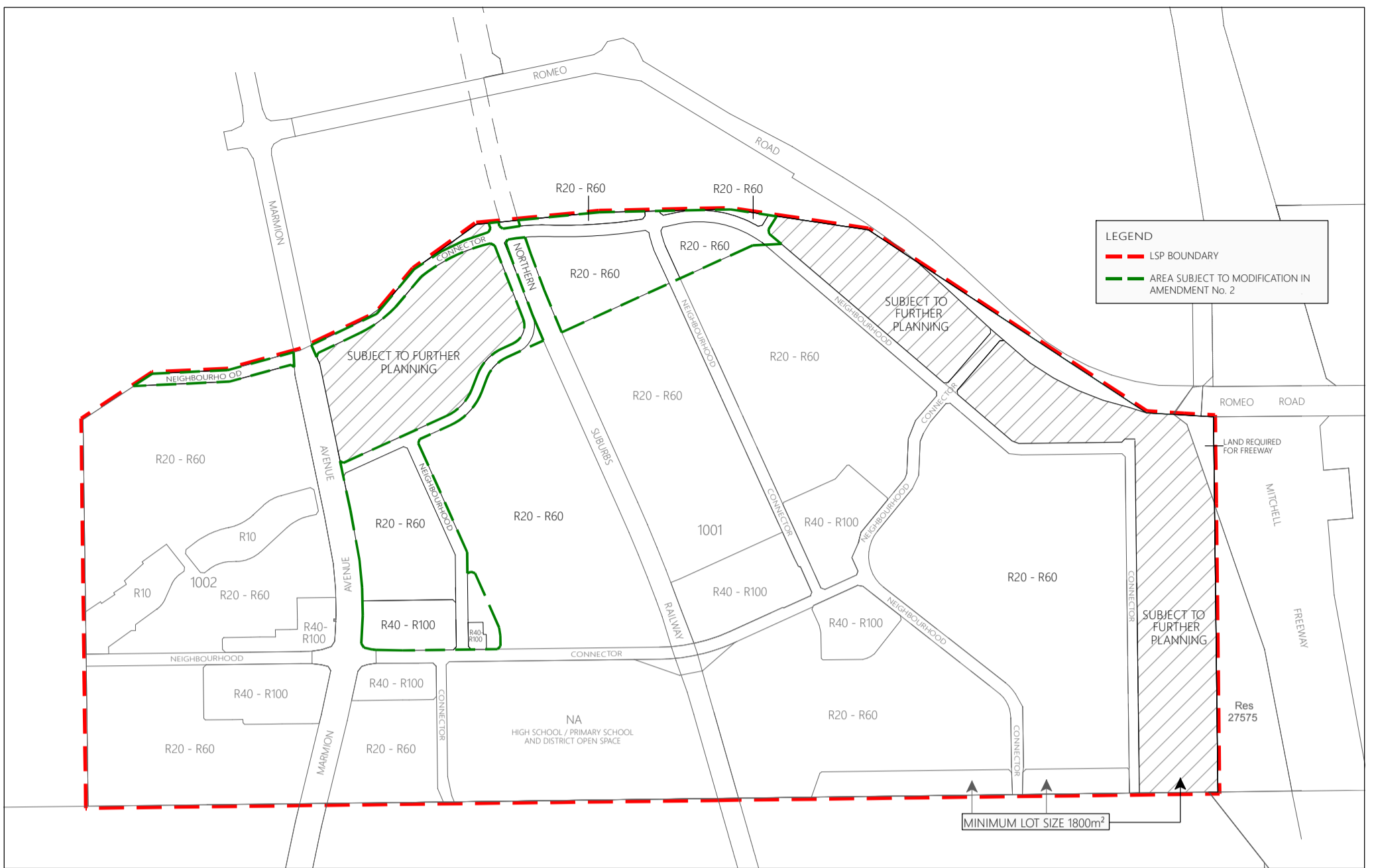
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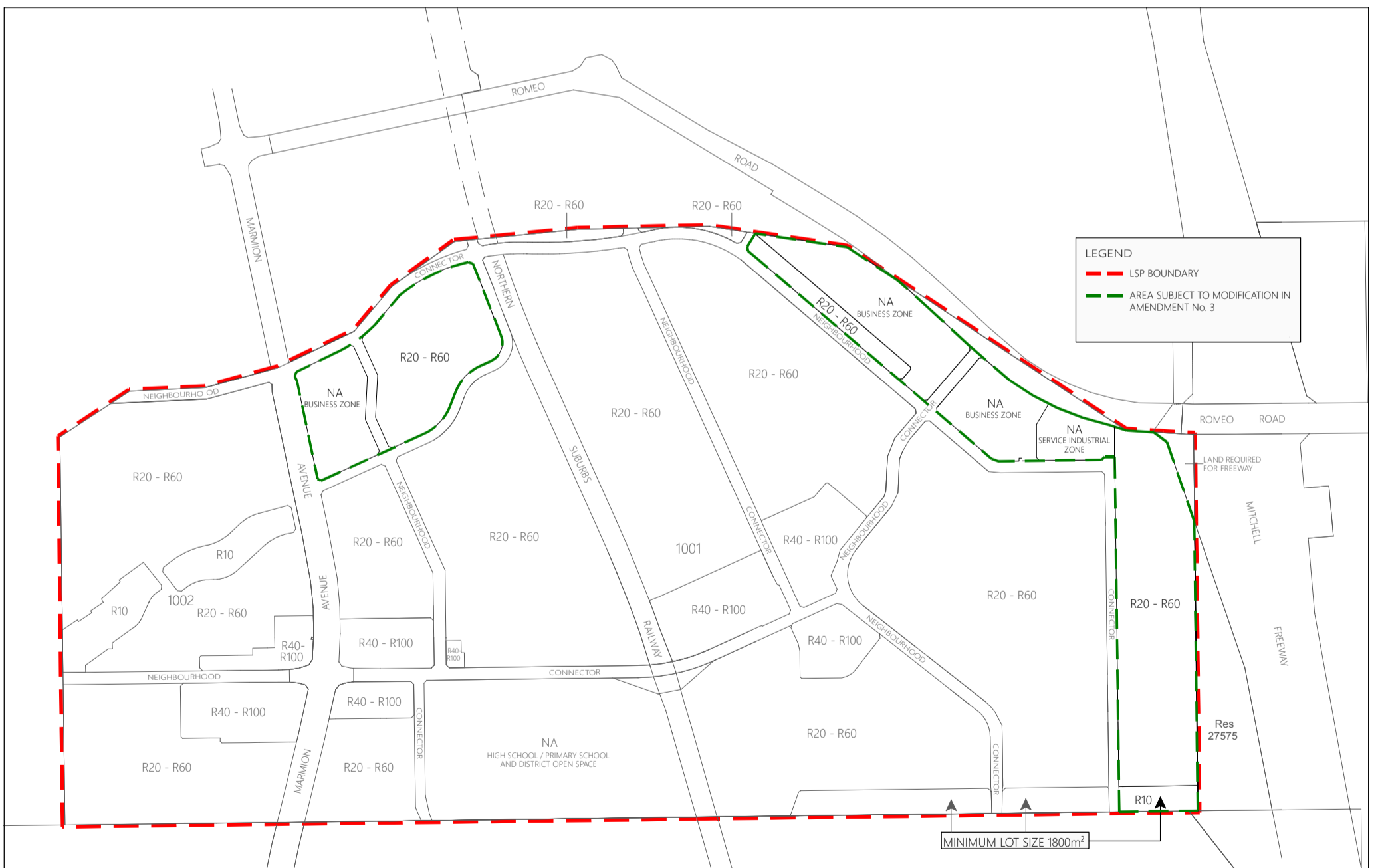


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AGREED LOCAL STRUCTURE PLAN WITH AMENDMENT 2 - EXISTING RESIDENTIAL DENSITY CODE PLAN



AMENDMENT 3 LOCAL STRUCTURE PLAN - PROPOSED RESIDENTIAL DENSITY CODE PLAN

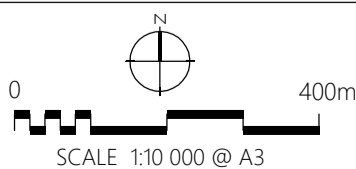
FIGURE 16

PROPOSED AMENDMENT 3 TO  
AGREED LOCAL STRUCTURE PLAN

PLAN 4 - DENSITY CODES

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Amendment 3 provides for the following:

1. Extension of northern neighbourhood connector;
2. A consolidated and refined Service Industrial zone adjacent to Romeo Road.
3. Extension of Residential to the east of Landbeach Boulevard with 'environmental responsive housing' on the southern boundary.
4. Introduction of two Business Zones to increase employment diversification in lieu of the more extensive notional 'service industrial' planned under the BJDSP.

This Explanatory Report explains each modification to ASP 60 in detail below. It also provides the rationale, justification and context of Amendment 3.

### 6.1 Extension of Northern Neighbourhood Connector Road Structure

At the time of preparation of LSP No. 60 some 4 years ago, due to the absence of any detailed planning over the northern portion of Lot 1001 and the uncertainty of the planning proposals for the Alkimos Eglinton District Structure Plan area to the north, the neighbourhood connector road structure was incomplete.

As the more detailed planning has evolved, particularly over the land to the north of Lot 1001, the neighbourhood connector road structure has been refined through Agreed Structure Plan No 60 (under Amendment 2).

Amendment 3 only proposes a minor modification to the neighbourhood connector north of Santorini Promenade that runs parallel and west of Marmion Avenue.

The north south running neighbourhood connector will be extended north for increased connectivity and to provide separation between the proposed Residential and Business zone in the north west portion of Lot 1001 - refer Figure 17.

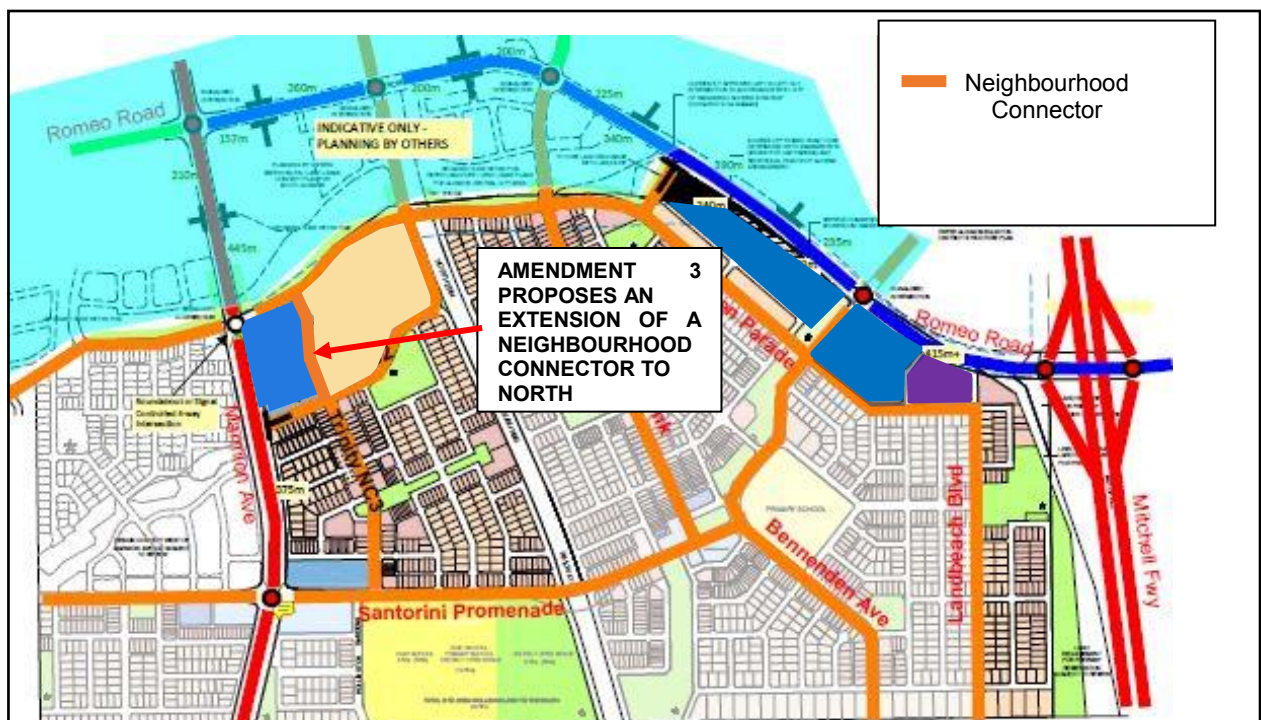


Figure17: Proposed extended northern neighbourhood connector under Amt. 3





## **6.2 Define the extent of 'Service Industrial'**

The BJDSP identified a notional area of Service Industrial along the eastern boundary of Lot 1001 however clearly identified that the extent of the zone would be refined at the Local Structure Plan stage.

This amendment provides a consolidated Service Industrial zone that can cater for local service industries, and recognises that employment diversity will be better achieved through a combination of both Service Industrial and Business Zones.

This amendment recognises that employment self-sufficiency can be increased with a reduced well planned Service Industrial zone, and that Service Industries are already well catered for in other more advantageous locations.

The extent of planned service industrial use on Lot 1001 as nominally shown on the BJDSP is not considered practical or feasible due to a combination of reasons including competition with other service industrial areas, potential landuse conflict with residential use; vehicular access limitations; and the timing of the Freeway construction.

A small Service Industrial zone as proposed in this Amendment can provide for any light industries that may be needed to provide services at a local level, convenient to residents in the immediate catchment.

These issues are further emphasized below.

### **6.2.1 Accessibility**

Any significant service industrial area requires good access to the regional transport network. It is considered unlikely that the development of the entire narrow band of land on the eastern boundary of Lot 1001 for service industrial activity will be viable given the sites' relatively poor accessibility.

Clearly, no direct access to the proposed service industrial area will be allowed off the Freeway when it is finally constructed. The nearest access would be from the intersection of Benenden Avenue and Romeo Road some 450m west of the Freeway/Romeo Road interchange. Such connection would be extremely indirect and also result in heavy vehicles being forced back through the residential area to access the proposed service industrial area.

Given that the Freeway will not be constructed for at least another 20 years, the connection to the regional road structure is limited and would make it very difficult to establish any extensive service industrial area, particular those related to transport distribution.

Only smaller service industries are likely to be justifiable however these will rely on local consumers. The proposed Service Industrial area will sufficiently cater for small businesses such as mechanical repairs.

### **6.2.2 Existing and Proposed Service/Light Industrial Land Use**

#### **6.2.2.1 BJDSP & AEDSP**

The service industrial area planned under the BJDSP was an indicative area and the location within Lot 1001 is not the most advantageous for any extensive service industrial zone given the significant concentration of such land uses in more accessible locations.

As indicated from the landuse proposals outlined for the BJDSP and the AEDSP, any development of the land for service industrial activity would face considerable competition from the significantly larger service industrial area planned to the north and to the south of the subject property.

Whilst viability is not a planning consideration, the practicalities of the location and suitability for any large scale service industrial use is relevant in the context of land supply. There are already substantial land areas available that can accommodate service industries in the immediate locality.

There is over 250 hectares available to accommodate service industrial landuses within the Alkimos-Eglinton District Structure Plan immediate north of Lot 1001.

**6.2.1.2 Meridian Park**

Apart from the land immediately to the north and south, there will be significant service industrial land supply from Meridian Park, currently being developed some 8kms south of Lots 1001 and 1002.

Meridian Park is located approximately 30 km north of the Perth City Centre, and 4 kilometres north east of the Joondalup City Centre - [Figure 19](#).

It will be the largest strategic industrial area in the North West Corridor of Perth, containing over 1.5 million sqm of general industrial, service industrial and business floor space across 400 hectares, and accommodating up to 20,000 jobs at full development.

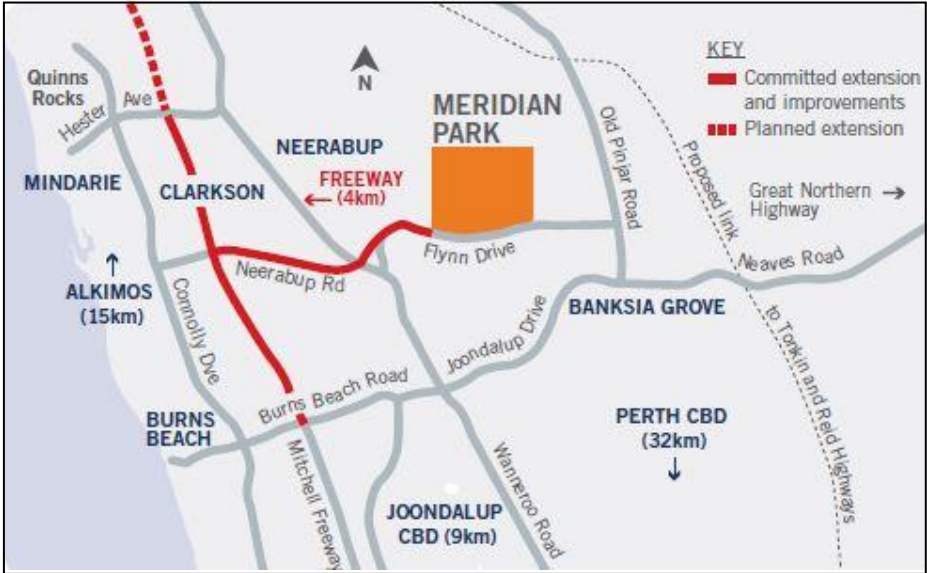


Figure 19 : Location Plan Meridian Park

Service Industries will be well catered for within Meridian Park which has specifically been designed as a high profile quality industrial estate. The Service Industrial Zone within Meridian Park is generally located adjacent to Flynn Drive and the major internal spine roads connecting to Flynn Drive, to take advantage of the greater exposure in these locations.

Meridian Park has superior locational and design qualities more suitable for service industrial than within Lot 1001 due to the following:

- The estate has been designed for B-double trucks, and has easy access to major roads including the proposed Mitchell Freeway extension, construction of Neerabup Road and realignment of Flynn Drive.
- Located 10 minutes from Mitchell Freeway and 30 minutes from the Perth CBD.
- The estate already contains a number of high profile anchor tenants, including One Steel Reinforcing, Bunnings Trade, Appliances Online and Trackspares.
- The estate caters for an adaptable and wide range of lot size needs ranging from 1,535sqm to 1ha with flexibility to create larger lots. Fully serviced lots are currently available for sale within Meridian Park.
- Comprehensive Design Guidelines have been developed to ensure quality design and architecture is achieved throughout the Estate.
- The estate is close to northern residential growth area but is solely dedicated to industrial development. This provides certainty for industrial uses that there will not be any landuse conflict as there are buffers to residential areas.

Meridian Park is expected to meet the industrial land supply needs in the region for the next 20 years.

Given that there is a significant amount of planned service industrial land it is considered that employment opportunities within Lots 1001 and 1002 would be more successful with a flexible Business zone that can accommodate landuses that are compatible with the predominantly residential area. Service Industries that may simply cater for local residents needs can be provided for in the north west portion of Lot 1001.

### **6.3 Replace the eastern area identified as ‘Service Industrial’ with Residential**

As noted previously, under the Butler Jindalee District Structure Plan, the extent of the service industrial land use was to be defined as part of the Local Structure Plan process.

This amendment proposes to effectively replace the original planned ‘Service Industrial’ zone along the eastern boundary with a Residential zone.

The planned service industrial use on Lot 1001 to the extent shown on the BJDSP is not considered practical due to a combination of reasons including competition with existing and planned adjacent service industrial landuse, potential landuse conflict with residential use; vehicular access limitations; and the timing of the Freeway construction.

Service industries are already provided for in existing planned industrial areas as outlined in Section 5.0 of this report.

#### **6.3.1 Interface Issues**

The extent of the encroachment of the original service industrial use into the residential area is not considered desirable in terms of residential amenity. It has the potential to create heavy vehicle traffic conflicts, noise and interface issues with the residential properties located to the west.

It is for this reason that the Service Industrial zone is being consolidated into a contained area that can cater for local demand for light and small scale service industries.

It is proposed to designate the eastern portion of Lot 1001 previously identified for service industrial on the BJDSP with a more compatible and viable use - Residential under this amendment to ASP No. 60.

## 6.4 Proposed Business Zones

The original BJDSP Explanatory Report identified the need for integrated Business Centres that '*synergistically combine superior locations for different types of activities*'. The need for local employment generation and job self-sufficiency were clearly identified at the district structure plan level, to avoid unsustainable reliance on long distance commuting between residential areas and workplaces.

In discussion with the City of Wanneroo and Department of Planning officers, it has generally been accepted that if a portion of the Service Industrial zone is to be removed, it should be replaced with an equivalent land area of job creating landuse activities elsewhere within ASP 60.

The area of Service Industrial identified on the BJDSP was approximately 9.28 ha (deducting POS), therefore, an equivalent area of employment generating landuse needs to be identified with opportunity to maximise use of better locations with greater accessibility and lesser impact upon adjoining residential areas.

As a substitute for the removal of a portion of the service industrial area and associated employment opportunities, it is proposed to accommodate a combination of commercial and service industrial uses along:

- The Romeo Road frontage in the north east portion of Lot 1001 (7.38 hectares) in a Business and Service Industrial zone and;
- West of Marmion Avenue (2.9 hectares) in a Business zone – [Figure 20](#).

In addition to a well contained and defined Service Industrial zone, this amendment proposes two Business zones in better locations to maximise future success of a wider range of employment generating activities.

### 6.4.1 Landuse Suitability and Compatibility

The planned 'Service Industrial' area under the BJDSP is not ideally located and has potential to cause landuse conflict with approved residential areas within ASP 60.

It is maintained that any form of industrial activity would be more appropriately located within the Alkimos sub regional centre to the north which has substantial areas set aside for such uses that are also buffered from residential areas by regional open space and public purpose reservations.

Therefore, the types of employment generating activities proposed for Lots 1001 and 1002 should be less intrusive and more 'commercial' related as opposed to 'Industrial' related activities. Light Industries and small businesses can be catered for in the retained Service Industrial zone.

With Romeo Road being realigned further to the north it is logical to create Business zones within Lot 1001 with focus on exposure to Marmion Avenue and Romeo Road.

Given the amount of land already available for service industrial uses, the inclusion of a Business zones within Lot 1001 will widen the employment base opportunities in the area and create flexibility to cater for a wide range of landuses.





#### **6.4.2 Romeo Road Business Zone**

The first area where such commercial type activities could be accommodated that has good direct access to a regional road and which could be integrated to minimise its impact on the surrounding residential areas is along the frontage to Romeo Road.

The City's desire is to create a vibrant commercial edge on both sides of Romeo Road from the Freeway leading towards the Alkimos sub regional centre. This is interpreted as showroom / warehouse type activities (for example, Freedom Furniture, Beds Plus etc.). These activities can be accommodated in a Business zone so landuses are controlled through 'Table 1: The Zoning Table' of the City of Wanneroo District Planning Scheme No 2.

The intention is for something similar to the service commercial areas along Balcatta Road in Balcatta, Scarborough Beach Road in Osborne Park or Albany Highway, Cannington but with far more controlled access / egress and carparking arrangements off Romeo Road. The application of reciprocal rights of access and easements in gross to control the access arrangements is supported in principle by the City where they comply with the requirements of Liveable Neighbourhoods and the City's Local Planning Policy 3.8.

It is proposed to sleeve in some residential lots backing onto the Business zone to minimise any residential interface issues with the adjoining land to the south and also restrict truck movements into the local road network. No residential uses will be permitted in the Business zone.

The portion of Lot 1001 fronting Romeo Road that could be used for showroom / warehouse activities is approximately 6.01 hectares. Combined with the retained 1.35 hectares of Service Industrial, this leaves a shortfall of approximately 1.9 hectares to match the previously identified 9.28 ha of service industrial land under the BJDSP.

#### **6.4.3 Marmion Avenue Business Zone**

The second area where such commercial / employment generating activities could be accommodated is in the north western corner of Lot 1001 fronting Marmion Avenue.

The benefit of having a signalised intersection as defined in the City of Wanneroo Marmion Avenue Access Strategy at the intersection of the realigned neighbourhood connector to Marmion Avenue and being bound by three neighbourhood connectors makes this site an ideal location for a major Business zone site. The commercial exposure to passing traffic on Marmion Avenue would be advantageous to any Business zone and likely to attract showrooms with larger land requirements.

As depicted on [Figure 20](#) the Marmion Avenue site comprises an area of approximately 2.9 hectares. The proposed Business zone under Amendment 3 combined with the Service Industrial zone results in an overall increased employment generating land area of approximately one hectare (10.26 hectares compared to BJDSP 9.28 hectares).

The extension of a neighbourhood connector to the north will separate the Marmion Avenue Business zone from the planned residential zone to the immediate east. Future development will incorporate landscaped buffers.

The proposed Business zones will provide more employment opportunities than would otherwise be generated if the structure plan only included a service industrial zone. This issue is addressed further under Section 6.5.

## 6.5 Employment Assessment

In order to justify the replacement of some of the service industrial area with alternative employment generating land uses, it is important to demonstrate that at least an equivalent number of jobs will be created.

Urbis has assessed the employment impacts of the amendment and formed the view that the businesses in a broad 'service industrial' area designated under the current BJDSP would struggle due to lack of visibility from any major roads, and strong competition from larger and better located commercial/industrial areas to the north and south – [Attachment 5](#).

Originally the (draft) amendment proposed full replacement of the Service Industrial zone with Business zones, and Urbis was engaged to examine the impact on employment self-sufficiency. Urbis prepared an addendum to their July 2014 report in September 2014 to examine the impact of the Department of Planning request that a portion of the Service Industrial zone be retained in this amendment to cater for local demand – [Attachment 6](#).

The assessment identifies how the amended Local Structure Plan No. 60 aligns with the strategic economic and employment objectives for the region as defined by the City of Wanneroo and the Western Australian Planning Commission (WAPC).

The employment generating land use area under this amendment is larger than the original planned 'Service Industrial' area under the current BJDSP (10.28 hectares compared with 9.28 hectares). The 10.28 hectares is comprised of both a Service Industrial zone and two Business zones.

The Service Industrial zone will be consolidated into a 1.35 hectare area and cater for small local businesses compatible with residential development.

The first Business zone logically takes advantage of good direct access to a regional road allowing more commercial and showroom uses to establish along the frontage to Romeo Road.

The second area where such commercial / employment generating activities will be accommodated is in the north western corner of Lot 1001 fronting Romeo Road.

The types of employment generating activities proposed for the Business zones in Lot 1001 should be less intrusive and more 'commercial' related as opposed to 'Industrial' related activities.

There is a significantly higher level of employment associated with service commercial uses / bulky goods/ showrooms compared with service industries.

Urbis estimates that the Service Industrial zone combined with the new Business zones will accommodate approximately 703 jobs compared with 455 jobs for the Service Industrial designated under the current BJDSP.

Urbis Australia has calculated that the employment uses within the amended LSP No. 60 are expected to generate an additional 225 jobs as a result of increased bulky goods/ showroom uses and decreased reliance on service industries as a main employment source – refer [Table 1](#).

The BJDSP amendment is expected to achieve an Employment Self Sufficiency (ESS) ratio of 54% compared 43% under the original BJDSP. This is in line with the City of Wanneroo ESS target objective of 60% as outlined in the Smart Growth Strategy.

<b>TABLE 1 : JOB COMPARISON - IMPACT OF AMENDED LOCAL STRUCTURE PLAN</b>		
Employment Use	Original BJDSP	Amdt 1 BJDSP & Amdt 3 ASP
Service industry/ commercial/ bulky goods/ showroom	455	703
Retail	205	205
Primary schools	100	70
High school	35	62
Child Care	44	44
Gymnasium	11	11
Commercial office	100	100
Weekend markets	5	5
Home based	371	352
<b>Total Jobs</b>	<b>1,327</b>	<b>1,552</b>
<b>Nett Difference</b>		<b>225</b>

Source: Urbis Employment Assessment - Addendum Report September 2014)

It is recognised that Lots 1001 and 1002 will likely accommodate businesses which cannot afford to locate in larger centres. It is unlikely to be commercially viable to provide any larger area of employment floor space than currently proposed under the BJDSP amendment within Lots 1001 and 1002 due to the location between the Brighton Regional Centre and Alkimos Regional Centre.

The proposed amendment will result in better located employment generating activities in locations more attractive to businesses (with increased exposure), and clearly will achieve increased employment and a higher ESS ratio than achievable under the existing Butler Jindalee District Plan. The combination of Service Industrial and Business zones maximises employment diversity.

Given the size and close proximity, the commercial centres surrounding the site, particularly Brighton (Jindalee) District Centre and Alkimos Regional Centre, will also provide significant sources of employment for residents of Lots 1001 and 1002. This is reflected in the BJDSP and AEDSP which note that there is capacity to achieve ESS rates of up to 80% and 70% in the respective regions covered by these plans.

## **7.0 REVISED DEVELOPMENT CONCEPT PLAN**

A revised Development Concept Plan has been developed to include the areas in Amendment 3, and to reflect the more refined design that has eventuated as detailed subdivision has progressed, particularly in the central portions of Lot 1001 - [Figure 21](#).

### **7.1 Neighbourhood Connectors**

A Revised Development Concept Plan has been developed as part of Amendment 3 to LSP No 60 and includes a minor northern extension of a neighbourhood connector which will separate the proposed residential and business zone in the western portion of Lot 1001.

A revised road hierarchy and streetscape Masterplan has been prepared by PlanE to align streetscape considerations and landscaping with the revised northern neighbourhood connector – refer [Figure 22](#).

**LEGEND**

**PRECINCTS**

- ① ACTIVITY CENTRES (Commercial, Retail, Mixed Use & Higher Density Residential)
- ② RESIDENTIAL (Low to Medium Density)
- ③ ENVIRONMENT RESPONSE HOUSING
- ④ EDUCATIONAL AND DISTRICT OPEN SPACE

Note: All areas not denoted as Precincts 1, 3 or 4 are Precinct 2

**LAND USE**

- TRH TERRAIN RESPONSIVE HOUSING (R10)
- VRH VEGETATION RESPONSIVE HOUSING (R10)
- AMENDMENT 3 AREA

- RESIDENTIAL R20 / R25
- RESIDENTIAL R30 - R60
- GH GROUP HOUSING
- COMMERCIAL
- MIXED USE
- BUSINESS ZONE
- SERVICE INDUSTRIAL

**RESERVES**

- SCHOOL SITES
- PUBLIC OPEN SPACE/ DISTRICT OPEN SPACE



DRAINAGE

NOTE:

FOR POS SCHEDULE REFER TO FIGURE 14

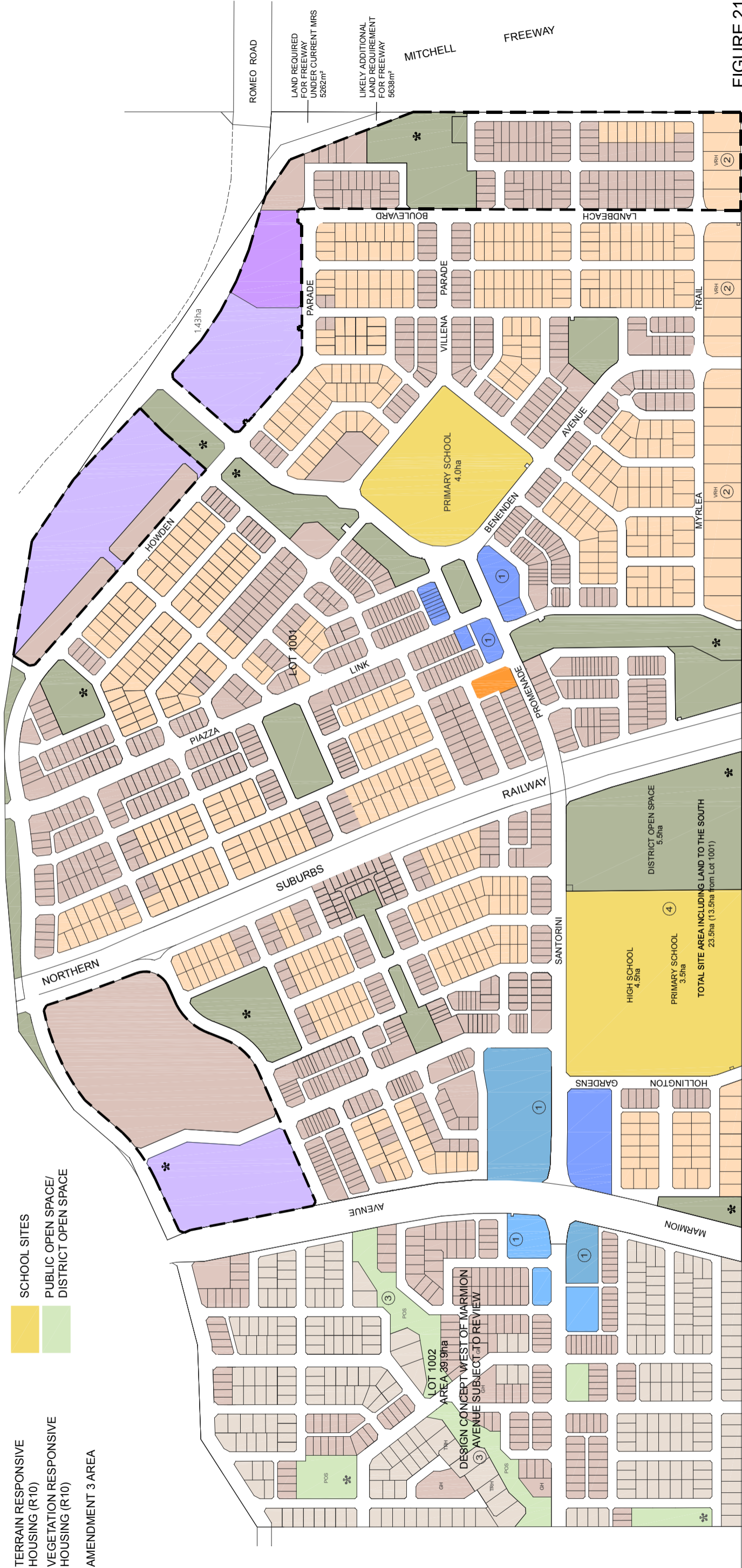


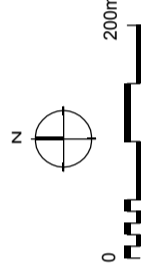
FIGURE 21

**TRINITY DEVELOPMENT CONCEPT PLAN - AS AMENDED LOTS 1001 & 1002 MARMION AVENUE ALKIMOS**

DATE: 2nd OCTOBER 2014

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\* DENOTES DRAINAGE SWALE WITHIN POS (Other areas of POS 100% unconstrained)







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# LEGEND

-  24m (W) ENTRY ROAD/NEIGHBOURHOOD CONNECTORS  
(STREET TREE PLANTING WITH VERGE AND MEDIAN PLANTING)
-  22-20m (W) NEIGHTBOURHOOD CONNECTORS  
(STREET TREE PLANTING WITH VERGE AND/OR MEDIAN PLANTING)
-  18-24m (W) GREEN CONNECTORS  
(STREET TREE PLANTING WITH VERGE AND MEDIAN PLANTING)
-  POS / RAIL LINE BUFFER PLANTING  
(TREE & SHRUB PLANTING IN VERGE)

ALL OTHER ROADS TO HAVE STREET TREE PLANTING ONLY WITH MULCHED VERGES, REFER TO STREET TREE MASTERPLAN FOR TREE SPECIES

**NOTE:** There are typical sections for roads which are labeled Plan 2 (CD-25) to Plan 7 (CD-31) by PLAN E LANDSCAPE ARCHITECTURE in the 'Traffic and Movement Network Report' (Attachment 1)

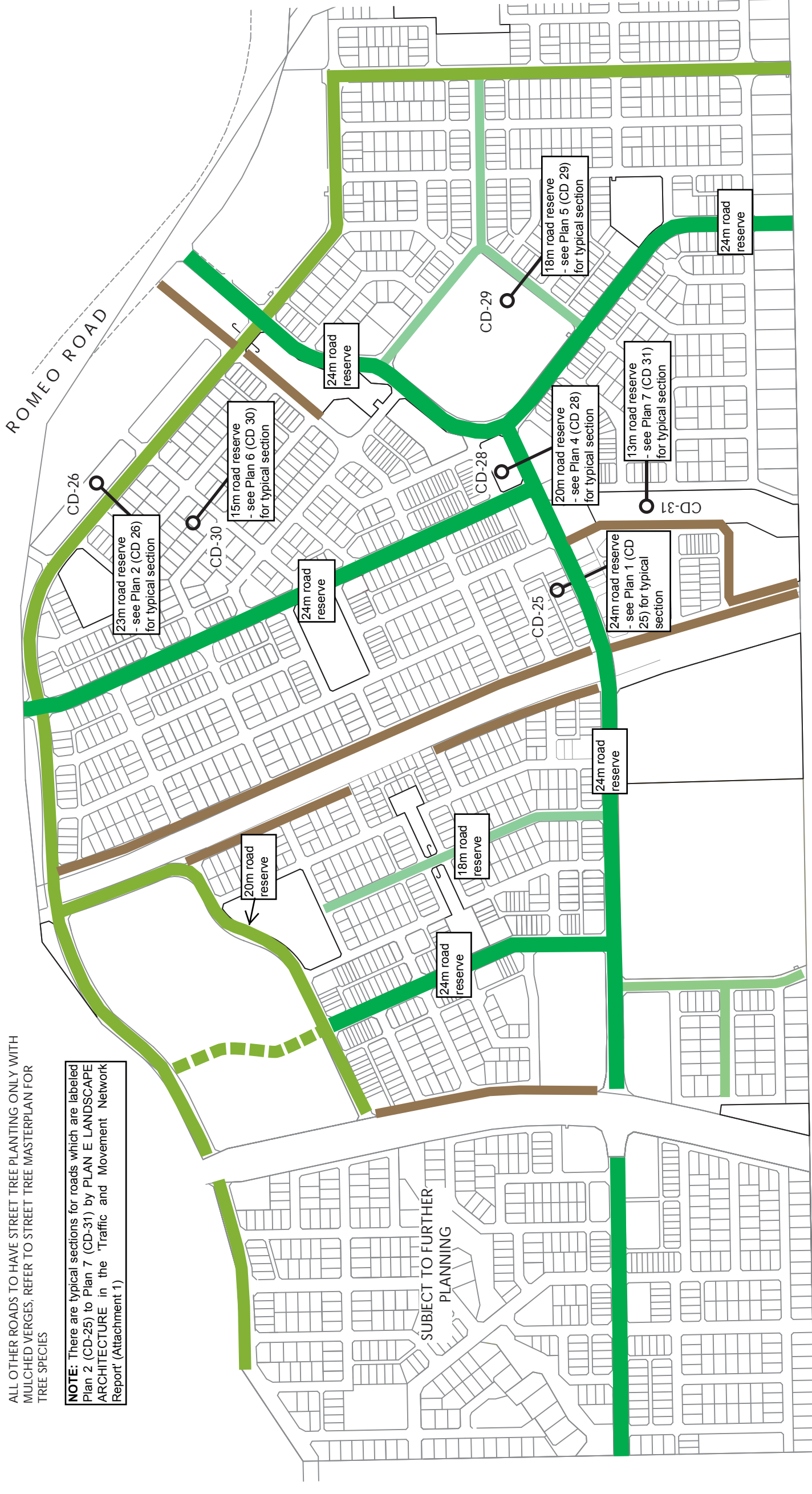


FIGURE 22



MITCHELL FREEWAY

ROMEO ROAD

SUBJECT TO FURTHER PLANNING

The Masterplan and cross sections form part of the Traffic and Movement Network Report and demonstrate how quality landscaping and street tree planting in the verge will be achieved with the revised road layout.

A Pedestrian and Cyclist facilities plan and Path network Materplan (based on the revised road hierarchy) are shown as – refer [Figure 23 and 24](#).

## **7.2 Zones**

A zoning plan is included in a separate ‘Part 1 – Statutory’ report and as [Figure 15](#) in this Explanatory Report.

### **7.2.1 Service Industrial Zone**

In accordance with the BJDSP the extent of the Service Industrial zone has been defined as part of this Local Structure Plan amendment.

The size of the Service Industrial zone has been refined in recognition of the need to provide wider employment opportunities and diversified employment generating activities through a combination of Service industrial and Business zones.

The Service Industrial zone is of a scale more compatible with surrounding residential landuses and is more realistic in context of extensively planned Service Industrial areas in more advantageous locations to the north and south.

The City of Wanneroo District Planning Scheme No 2 (‘the Scheme’) contains comprehensive objectives, landuse and development controls for the Service Industrial zone. Future development will be guided by zoning provisions already contained in the City’s Scheme.

It is anticipated that the Service Industrial zone will cater for small businesses such as mechanical repairs and service the needs of local residents within Lots 1001 and 1002.

### **7.2.2 Business Zone**

As previously identified, two new employment generating areas have been introduced to replace a section of the previously identified service industrial areas under the BJDSP. The two areas have good commercial exposure to the district road structure, Romeo Road, an ability to capitalise on passing trade and good connections to land to the south.

In order to maintain flexibility in landuse over the proposed Romeo Road employment areas, they have been identified as Business zones. Flexibility is essential to cater for emerging new businesses, respond to local demand, service the local and broader community, and to provide potential for future residents to live and work in the same area.

The City of Wanneroo District Planning Scheme No 2 (‘the Scheme’) contains comprehensive objectives, landuse and development controls for the Business zone. The proposed Business zone enables future development to be guided by zoning provisions already contained in the City’s Scheme.

The Scheme allows zones under a Local Structure Plan to apply as if those areas are zoned under the Scheme. Provisions for development to be controlled by the Schemes’ Business zone are contained in the separate ‘Part 1 – Statutory Report’.



On Road Cycle Lanes/ Paved Shoulders

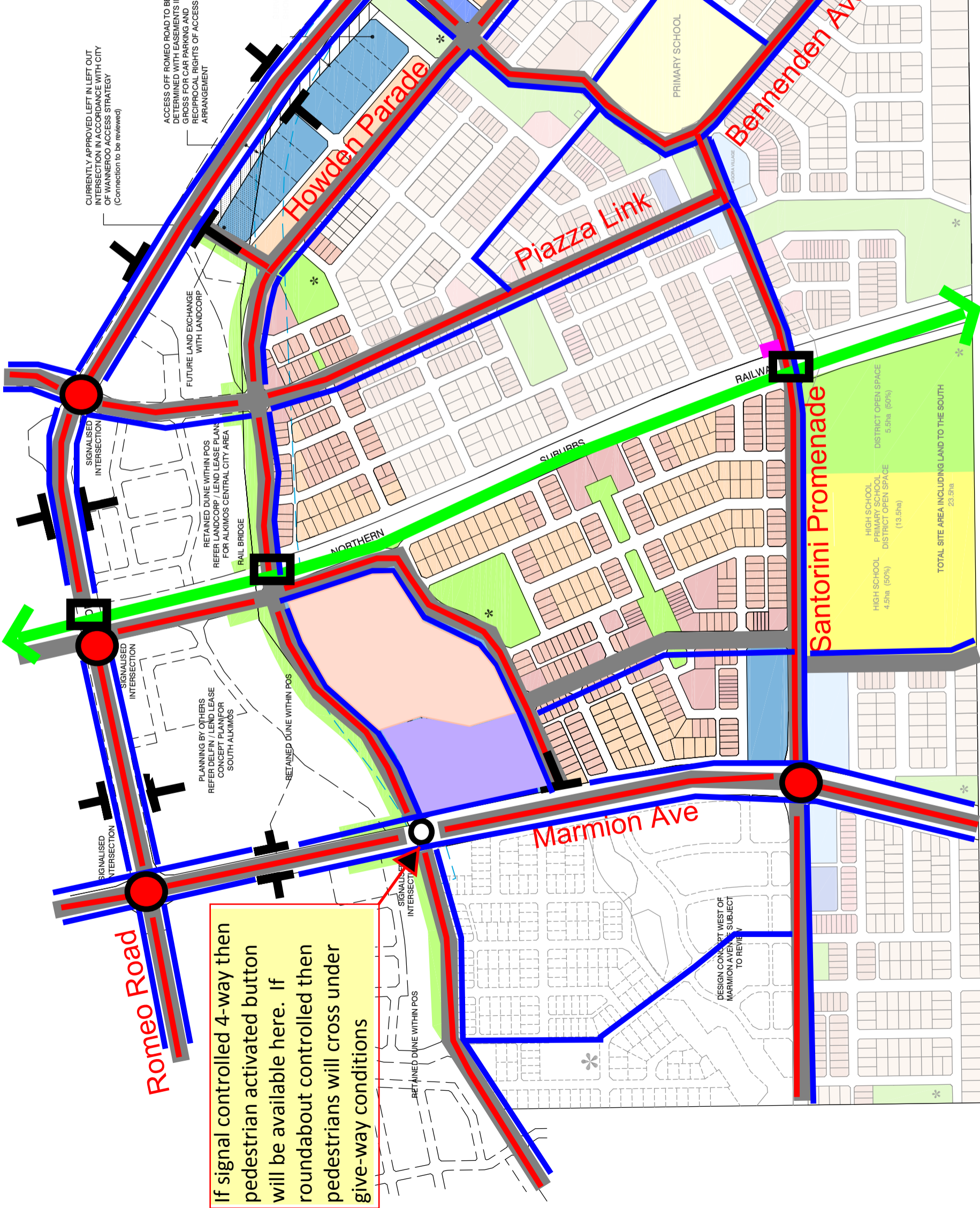
Shared Path (footpath opposite side where shared path shown one side only)

Signals with Pedestrian Activated Button

Principal Shared Path (PSP)

PSP Road Underpass (as part of rail)

Note: All Access Streets to have footpath on at least one side.



If signal controlled 4-way then pedestrian activated button will be available here. If roundabout controlled then pedestrians will cross under give-way conditions






FIGURE 23

Trinity Alkimos LSP Amendment  
 Bruce Aulabaugh Traffic Engineering & Transport Planning

Pedestrian & Cyclist Facilities  
 Base Plan: Gray & Lewis Land Use Planners



**LEGEND**

-  DUP IN VERGE (2100mm W)
-  DUP IN VERGE (2400mm W)
-  REGIONAL DUP ALONG MARMION AVE (3000mm W)
-  REGIONAL DUP ALONG NORTHERN SUBURBS RAILWAY LINE (3000mm W)
-  REGIONAL DUP ALONG ROMEO ROAD/ MITCHELL FREEWAY



**NOTES:**  
 1. ALL STREETS TO HAVE FOOTPATH TO BOTH SIDES, MIN 1500mm UNO.  
 2. PATH CONNECTION THOUGH POS AREAS TO BE DETERMINED DURING DESIGN STAGE FOR EACH INDIVIDUAL POS  
 3. PATH NETWORK WEST OF MARMION AVE INDICATIVE ONLY AND SUBJECT TO CHANGE WITH FUTURE PLANNING



**FIGURE 24**





Whilst it is expected that the Business zone in the north west of Lot 1001 will accommodate businesses that have larger land requirements, the north east activity centre will likely have wider scope to accommodate some smaller businesses, showroom and ancillary retail development.

**7.2.3 Residential Zone**

The Residential zone has been extended in an easterly direction between Landbeach Boulevard and the Freeway in the area previously identified for potential service industrial.

The larger 1,800m<sup>2</sup> lots now created along the southern boundary in the Agora main precinct extend east to accommodate additional environment responsive housing in accordance with the DEWHA approval.

**7.3 Indicative Lot Yield**

Approved Structure Plan No. 60 predominantly consists of densities ranging from R20 – R60, and a range of R40 - R100 in and around activity centres.

The amendment proposes a consistent approach with the approved Structure Plan, and simply extends the approved R20 - R60 residential areas to the north and east. The north west and north east activity centre zones will maintain a R40 - R100 density to apply to any residential development within the zone.

Final lot yield will be determined at the subdivision stage however, indicative approximated lot yields are as follows:

- R10	40
- R20/25	1049
- R30/60	300
- R30	674
- R40	78
- R50	150
- R60	314

Indicative lot yields for the western, central and eastern cell on Lots 1001 and 1002 are included as [Figure 25](#). The estimated total number of dwellings is 2,605.

**7.4 Public Open Space**

**7.4.1 Public Open Space Provision**

In accordance with the Western Australian Planning Commission ‘Liveable Neighbourhoods’ an application for a structure plan approval must be accompanied by a public open space schedule identifying the total site area, less deductions, the gross subdivisible area, the 10 percent public open space contribution and the restricted use public open space allocation.

A public open space (POS) schedule for the provision of POS within the Structure Plan has been completed in order to plan for future open space within the new residential areas in the north and east of Lot 1001 - [Figure 26](#).

The Public Open Space provision is made up by the linear spines and a series of smaller parks as depicted on the Public Open Space Masterplan - [Figure 27](#).

R10 - 15  
R20/25 - 165  
R30 - 30  
210 Dwellings

R20/25 -  
R30 - 90  
R50 - 25 including GH  
Dwellings  
115 Dwellings

R60 - 200 Dwellings

R20-R25 - 220  
R30 - 150  
R30-R60 - 25  
GH Dwellings - 40  
435 Dwellings

R20/25 - 60  
R30 SR - 95  
R60 SR - 60  
R30 - R60 GH Dwellings - 20  
235 Dwellings

R10 - 20  
R20/25 - 260  
R30 - 145  
R40-R60 GH Dwellings - 40  
465 Dwellings



R20/25 - 119  
R30 - 36  
R60 - 25  
180 Dwellings

R20/25 - 35  
R30 - 10  
R40 - 15  
60 Dwellings

R20/25 - 125  
R30 - R60 - 215  
GH Dwellings - 100  
440 Dwellings

R30 - 45  
R60 - 30 including GH  
Dwellings  
75 Dwellings

R30 - 21  
R60 - 24 including GH Dwellings  
45 Dwellings

R10 - 5  
R20/25 - 65  
R30 - 52  
GROUPED DWELLINGS - 23  
145 Dwellings

TOTAL DWELLINGS  
WESTERN CELL: 505

TOTAL DWELLINGS  
CENTRAL CELL: 700

TOTAL DWELLINGS  
EASTERN CELL: 1400

TOTAL  
DWELLINGS: 2605

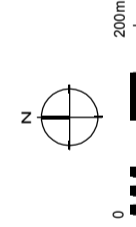
TRINITY ALKIMOS  
DWELLING ESTIMATES PLAN  
LOTS 1001 & 1002 MARMION AVENUE  
ALKIMOS

DATE: 28th SEPTEMBER 2014

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LEGEND

- RESIDENTIAL R20 / R25
- RESIDENTIAL R30 - R60
- SERVICE INDUSTRIAL
- ACTIVITY CENTRE
- SCHOOL SITES
- PUBLIC OPEN SPACE



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**FIGURE 25**  
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**PUBLIC OPEN SPACE SCHEDULE LOTS 1001 & 1002**  
**SITE AREA LOT 1001 - 181.14ha**  
**SITE AREA LOT 1002 - 39.9ha**  
**221.04ha**

**POS PROVISION**

**DISTRICT OPEN SPACE 5.5ha (UNRESTRICTED)**

LOCAL POS	Site Area	Unrestricted POS	Restricted POS
POS 1 -	3082m <sup>2</sup>	3082m <sup>2</sup>	0m <sup>2</sup>
* POS 2 -	1.87ha	1.7073ha	1627m <sup>2</sup>
POS 3 -	9786m <sup>2</sup>	9786m <sup>2</sup>	0m <sup>2</sup>
POS 4 -	6927m <sup>2</sup>	6927m <sup>2</sup>	0m <sup>2</sup>
* POS 5 -	1.88ha	1.6381ha	2419m <sup>2</sup>
* POS 6 -	6700m <sup>2</sup>	4330m <sup>2</sup>	2370m <sup>2</sup>
POS 7a -	1.10ha	9733m <sup>2</sup>	1267m <sup>2</sup>
POS 7b -	5119m <sup>2</sup>	5119m <sup>2</sup>	0m <sup>2</sup>
* POS 8 -	7168m <sup>2</sup>	5098m <sup>2</sup>	2070m <sup>2</sup>
* POS 9 -	9162m <sup>2</sup>	9162m <sup>2</sup>	0m <sup>2</sup>
* POS 10	1.36ha	1.0544ha	3056m <sup>2</sup>
* POS 11 -	7339m <sup>2</sup>	7339m <sup>2</sup>	0m <sup>2</sup>
* POS 12 -	4250m <sup>2</sup>	2984m <sup>2</sup>	1266m <sup>2</sup>
POS 13a -	1435m <sup>2</sup>	1435m <sup>2</sup>	0m <sup>2</sup>
POS 13b -	4623m <sup>2</sup>	4223m <sup>2</sup>	400m <sup>2</sup>
POS 13c -	1705m <sup>2</sup>	1705m <sup>2</sup>	0m <sup>2</sup>
POS 13d -	305m <sup>2</sup>	305m <sup>2</sup>	0m <sup>2</sup>
POS 14 -	3830m <sup>2</sup>	2509m <sup>2</sup>	1321m <sup>2</sup>
POS 15 -	2151m <sup>2</sup>	2151m <sup>2</sup>	0m <sup>2</sup>
POS 16 -	1524m <sup>2</sup>	825m <sup>2</sup>	649m <sup>2</sup>
POS 17 -	1.79ha	1.79ha	0m <sup>2</sup>
POS 18 -	4343m <sup>2</sup>	4343m <sup>2</sup>	0m <sup>2</sup>
POS 19 -	3323m <sup>2</sup>	1289m <sup>2</sup>	2034m <sup>2</sup>
	16.2772ha	14.4243ha	1.8479ha
<b>TOTAL</b>		<b>19.9243ha</b>	<b>1.8479ha</b>

- DEDUCTIONS**
- 4.5 ha HIGH SCHOOL
  - 7.5ha PRIMARY SCHOOLS
  - 1.09ha PRIMARY REGIONAL ROAD (FREEWAY)
  - 1.43ha OTHER REGIONAL ROAD (ROMEO ROAD)
  - 4.98ha RAILWAY RESERVE
  - 1.12ha RESTRICTED POS NOT INCLUDED IN POS CONTRIBUTIONS
  - 1.0ha OTHER APPROVED CONTINGENCIES (SEWER PUMP STATION, PAD MOUNT SITES ETC)
  - 13.62ha PROPOSED COMMERCIAL AND OTHER NON RESIDENTIAL USES
  - 35.24ha
  - GROSS SUBDIVISIBLE AREA - 185.80ha
- PUBLIC OPEN SPACE AT 10% - 18.58ha**  
**MAY COMPRISE: MINIMUM 80% UNRESTRICTED POS (i.e. 14.864ha)**  
**MAXIMUM 20% RESTRICTED POS (i.e. 3.716 ha)**

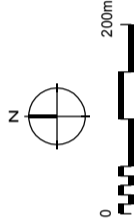


**AGREED STRUCTURE PLAN No. 60 - AMENDMENT No. 3**  
**PUBLIC OPEN SPACE SCHEDULE**  
**LOTS 1001 & 1002 MARMION AVENUE**  
**ALKIMOS**

DATE: 16th OCTOBER 2014

Note: POS calculations to be in accordance with the Western Australian Planning Commission's Development Control Policy 2.3 Public Open Space in Residential Areas and Liveable Neighbourhoods policy. The POS Schedule identifying the drainage details is to be submitted at the subdivision application stage.

\* DENOTES DRAINAGE SWALE WITHIN POS



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FIGURE 26

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### COASTAL VILLAGE

#### POS 13 - VILLAGE CENTRE

INTIMATE, URBAN FEEL, STRONGLY DEFINED BY THE SURROUNDING BUILT FORM. A FORMAL DESIGN INCORPORATING A SERIES OF INTERLINKED PAVED AND GRASSED SPACES DEFINED AND CONTAINED BY A GRID OF TREES AND FORMAL GARDEN BEDS, AND CONTAINING SHADE STRUCTURES, ARBORS AND PUBLIC ART, WHICH WILL PROVIDE A FOCUS AND HEART FOR THE WESTERN PRECINCT.

#### POS 14

SMALL NEIGHBOURHOOD PARK. PREDOMINANTLY LAWN AND TREES WITH SOME GARDEN BED AREAS, INCORPORATING PATHS, BENCH SEATING, A LANDSCAPED DRAINAGE BASIN, AND POSSIBLE SHADE STRUCTURE AND PLAY FACILITIES.

#### POS 15 & 16

RECREATED DUNE AND COASTAL HEATH OPEN SPACE CORRIDOR THAT FORMS A NATURAL NORTHERN EDGE TO THE RESIDENTIAL DEVELOPMENT. THE DESIGN WILL BUILD ON THE SITES INTRINSIC COASTAL CHARACTER, AND PROVIDE A VISUAL BUFFER TO THE DEVELOPMENT IN THE NORTH. THE PARK WILL INCLUDE WALKING TRAILS AND INTERPRETIVE INFORMATION ABOUT THE SIGNIFICANCE OF THE NATURAL LANDSCAPE, PROVIDING AN EDUCATIONAL TOOL FOR THE COMMUNITY.

#### POS 17

LARGE NEIGHBOURHOOD PARK COMPRISING PREDOMINANTLY OF LAWN AND TREES WITH SOME NATIVE GARDEN BED AREAS. INCORPORATING PATHS, BENCH SEATS, A LANDSCAPED DRAINAGE BASIN, AND POSSIBLY SHADE STRUCTURES AND PLAY FACILITIES. THE DESIGN WILL PROVIDE FOR INFORMAL PASSIVE AND ACTIVE RECREATION.

### CENTRAL VILLAGE

#### POS 10

LARGE NEIGHBOURHOOD PARK COMPRISING OPEN LAWN AREAS FOR INFORMAL PASSIVE AND ACTIVE RECREATION, AS WELL AS REINSTATED BUSHLAND AREAS, INCORPORATING A LARGE DRAINAGE BASIN, PATHS, SEATS, PICNIC FACILITIES, SHADE STRUCTURE, PLAY FACILITIES, AND ARTWORKS.

#### POS 11 A,B,C

IMPORTANT OPEN SPACE FOCUS IN THE CENTRAL VILLAGE, FORMING A MAJOR EAST-WEST GREEN SPINE THAT IS MORE FORMAL IN CHARACTER. THE DESIGN INCORPORATES A SERIES OF INTERLINKED PAVED AND GRASSED SPACES/ROOMS DEFINED BY GRIDS OF TREES AND FORMAL GARDEN BEDS, WITH ARBORS/SHELTERS, PLAY AREAS, ARTWORKS, AND POSSIBLE WATER FEATURES.

#### POS 12

SMALL GREEN SPACE ADJACENT MARMION AVENUE THAT WILL INCORPORATE A LANDSCAPED DRAINAGE BASIN PLANTED WITH ENDEMIC NATIVE SPECIES.

### AGORA VILLAGE

#### POS 1

AGORA VILLAGE SQUARE HAS AN INTIMATE AND FORMAL DESIGN WITH A CENTRAL GRASS SPACE DEFINED AND CONTAINED BY LOW WALLING, PAVED AREAS, GRIDS OF TREES AND GARDEN BEDS. THE DESIGN INCORPORATES A LARGE SHELTER AND LOW AMPHITHEATRE SEATING ALLOWING FOR COMMUNITY EVENTS, FAIRS, MARKET DAYS AND OUTDOOR PERFORMANCES AND CONCERTS.

#### POS 2

SMALL VILLAGE PARK WITH LAWN, TREES, GARDEN BEDS, ARBOR AND PAVED AREAS THAT REFLECT THE VILLAGE SQUARE AND FUTURE VILLAGE CENTRE. INCLUDED IN THE PARK IS A SMALL PLAYGROUND THAT INCORPORATES NATURAL ELEMENTS TO INTEGRATE WITH RETAINED BUSH EDGE OF POS 3.

#### POS 3,6,7a,7b

MAJOR NORTH-SOUTH GREEN SPINE FORMING A CORRIDOR OF RETAINED PRISTINE BANKSIA WOODLAND AND TUART GROVES. THESE PARKS INCLUDE DRAINAGE BASINS WHICH WILL BE FULLY PLANTED TO INTEGRATE INTO THE RETAINED BUSHLAND, A BUSHLAND TRAIL WHICH WILL RUN FROM THE SOUTHERN BOUNDARY TO THE NORTHER BOUNDARY WITH INTERPRETIVE INFORMATION AND ARTWORKS AT SIGNIFICANT LOCATIONS, AND POSSIBLE EXERCISE EQUIPMENT NODES.

#### POS 5

LARGE NEIGHBOURHOOD PARK COMPRISING PREDOMINANTLY OF REINSTATED BUSHLAND WITH A FULLY LANDSCAPED DRAINAGE BASIN TO INTEGRATE WITH THE REINSTATED BUSHLAND. A PORTION OF THE PARK WILL INCLUDE PATHS, BENCH SEATS, SHADE STRUCTURES, PLAY FACILITIES, TREE, NATIVE GARDEN BED AREAS AND TURF PROVIDING FOR INFORMAL PASSIVE AND ACTIVE RECREATION.

#### POS 4 & 8

SMALL NEIGHBOURHOOD PARKS COMPRISING PREDOMINANTLY OF LAWN AND TREES WITH SOME NATIVE GARDEN BED AREAS, INCLUDING PATHS, BENCH SEATS, SHADE STRUCTURES, AND PLAY FACILITIES. PROVIDING FOR INFORMAL PASSIVE AND ACTIVE RECREATION. POS 8 ALSO INCLUDES A DRAINAGE BASIN.

#### POS 9

HILL TOP PARK ON A LARGE RECREATED DUNE COMPRISING PREDOMINANTLY OF REINSTATED BUSHLAND, INCORPORATING PATHS, SEATING, ARBOR, BOARDWALK LOOKOUT AND POSSIBLE ARTWORKS.

#### POS 18,19,20,21

REVEGETATED DUNE FACE TO BE RETAINED, INCORPORATING LOW WALLS AND REVEGETATION WORKS AS REQUIRED TO BLEND INTO THE EXISTING DUNE TO THE NORTH.



SUBJECT TO FURTHER PLANNING

TRINITY @ ALKIMOS

PREPARED FOR NORTHERN CORRIDOR DEVELOPMENTS LTD.

LANDSCAPE MASTERPLAN  
PUBLIC OPEN SPACE PLAN

FILE LOCATION: L:\PROJECTS\2006 PROJECTS\06032-01 STRUCTURE PLAN\PROJECT DRAWINGS\CONCEPTS\06032-01 PUBLIC OPEN SPACE MASTER PLAN REV F.DWG

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SEP 2014

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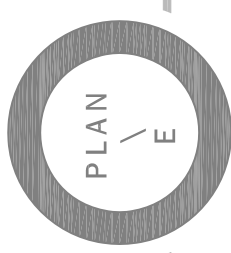


FIGURE 27



The Masterplan has been extended to incorporate the northern areas and identifies areas to contain retained or revegetated bushland in accordance with the DEWHA approval.

Drainage, including identification of swale areas to be excluded from the POS calculations, will be in accordance with the Western Australian Planning Commission's Policy 2.3 'Public Open Space in Residential Areas' and Liveable Neighbourhood policy.

The provision of public open space is slightly in excess of the 10% required within Lot 1001 and adjustments can be made to maintain the required 10% provision of public open space at subdivision stage.

#### **7.4.2 Landscape Strategy**

The landscape strategy for the areas of public open space was addressed as part of the current Structure Plan No 60. The Landscape Strategy included broad Concept Plans for different stages of subdivision which will in turn establish the criteria for landscape construction drawings to be lodged at a later date with the City of Wanneroo.

The landscape strategy has been carefully developed taking into consideration the context of the site and its key elements and features.

The site is strongly defined by distinct character zones consisting of the coastal village western cell, central village cell and eastern cell (Agora Village).

#### **7.4.3 Theming**

The inspiration for landscape theming is derived from the existing site character and environment including the following key elements:

- the strong coastal influence, particularly in the western sector;
- the diverse vegetation communities on the site; and
- the sands and limestone underlying the site.

Plant species endemic to the site inspires both the planting palette for the development and may also provide the inspiration for artworks and other motifs.

The proposed landscape character will reflect the coastal location, with the use of materials and colours complimentary to the area.

### **7.5 Service Infrastructure**

All lots will be provided with necessary service infrastructure, including reticulated water, sewer, stormwater drainage, underground electricity, gas and telecommunication services. All service infrastructure can be readily provided from extension to the services currently being constructed within the existing subdivision in the structure plan area.

#### **7.5.1 Water Management Strategy**

A Local Water Management Strategy was initially prepared by GHD Pty Ltd in February 2007 as part of the Local Structure Plan for Lots 1001 and 1002, then known as Lot 3 Romeo Road, Alkimos.

In December 2012, GHD prepared Amendments to the overall Local Water Management Strategy (LWMS) in support of Amendment 2 to the Agreed Structure Plan.

A new Addendum to the approved Local Water Management Strategy has been prepared in November 2014 to support Amendment 3 to the ASP presenting an up to date surface water management strategy, and outlining key changes to the water management strategy – [Attachment 7](#).

All of the preliminary design and calculations have been updated to represent current subdivision planning.

- **Amendments to the LWMS**

Updates in the Structure Plan have resulted in the following revisions:

- **Catchment delineation:** the shape and number of catchments has been altered to include parts of the LSP that have undergone further planning since the 2007 LWMS and to reflect the minor changes in road and lot layout throughout the remainder of the site.
- **Basin location and sizes:** the location and size of proposed detention basins have been altered according to the revised catchments for the site.

In addition, the following differences between the 2007 LWMS and this water management strategy relate to:

- **Modelling method:** updated software was employed to carry out detailed design work for the site;
- **Catchment parameters:** a runoff co-efficient of 0.9 was adopted for stormwater modelling in the 2007 LWMS. This water management strategy adopts a runoff coefficient of 0.8 in accordance with part WD5.06 of *Stormwater Drainage Design, Development Design Specification WD5* (City of Wanneroo 2003).
- **Basin dimensions:** The basin side slope adopted in the 2007 LWMS was 1 in 6. This has been revised to 1 in 8, in accordance with part WD5.30 of *Stormwater Drainage Design, Development Design Specification WD5* (City of Wanneroo 2003).

- **Stormwater Management Network**

The stormwater management network will comprise the following components:

- The minor system will include an underground piped drainage network designed to carry the 5-year ARI event generated within the road reserves. Lot drainage will be contained on site by use of soakwells.
- As this site is located on generally free draining sand is well above the existing water table, water sensitive design principles will include consideration to discharging water into the ground at the high end of the catchments by use of in line soakwells, open bottomed drainage pits and discharge to infiltration basins in the POS area using current best management practices.

Infiltration basins located in the POS areas will be designed to accommodate the 10-year ARI storm event with a water depth less than 900mm and 100-year ARI storm event with a water depth of less than 1200 mm – in accordance with part WD5.30 of

*Stormwater Drainage Design, Development Design Specification WD5* (City of Wanneroo 2003). In locations where space for drainage infrastructure may be limited, consideration will be given to the use of underground storage/infiltration systems to cater for the 1-year ARI storm event.

- The major system will include the design of overland flow paths to carry the 100-year ARI storm event using the road system to direct flows to the infiltration basins.

- **Stormwater Quantity**

The sizing of infiltration basins located in POS areas is based upon modelling performed using the Drains software. Estimated storage requirements are summarised in Table 1 of the amended water management strategy report.

The locations of the infiltration basins are shown on [Figure 28](#). These infiltration basins will be landscaped, and are subject to further detailed design.

## **8.0 ACOUSTIC ASSESSMENT**

Transportation noise is assessed against the Western Australian Planning Commission's *State Planning Policy 5.4: Road and Rail Transport Noise and Freight Considerations in Land Use*.

Lloyd George Acoustics has prepared a series of acoustic reports on the assessment of road and rail noise from the future Mitchell Freeway, Marmion Avenue and the Northern Suburbs Railway to ensure that the noise impacts can be satisfactorily managed through the use of acoustic barriers where practicable, and quiet house design measures coupled with Notifications on Titles of noise affected lots.

The objectives of the SPP 5.4 are for noise at all houses to be no more than the *Limit* and preferably no more than the *Target*. Where the *Target* is achieved, no further controls are required; where the *Limit* is achieved or noise levels are within the margin (Between *Limit* and *Target*), further controls are necessary (building façade packages and or noise walls in some areas).

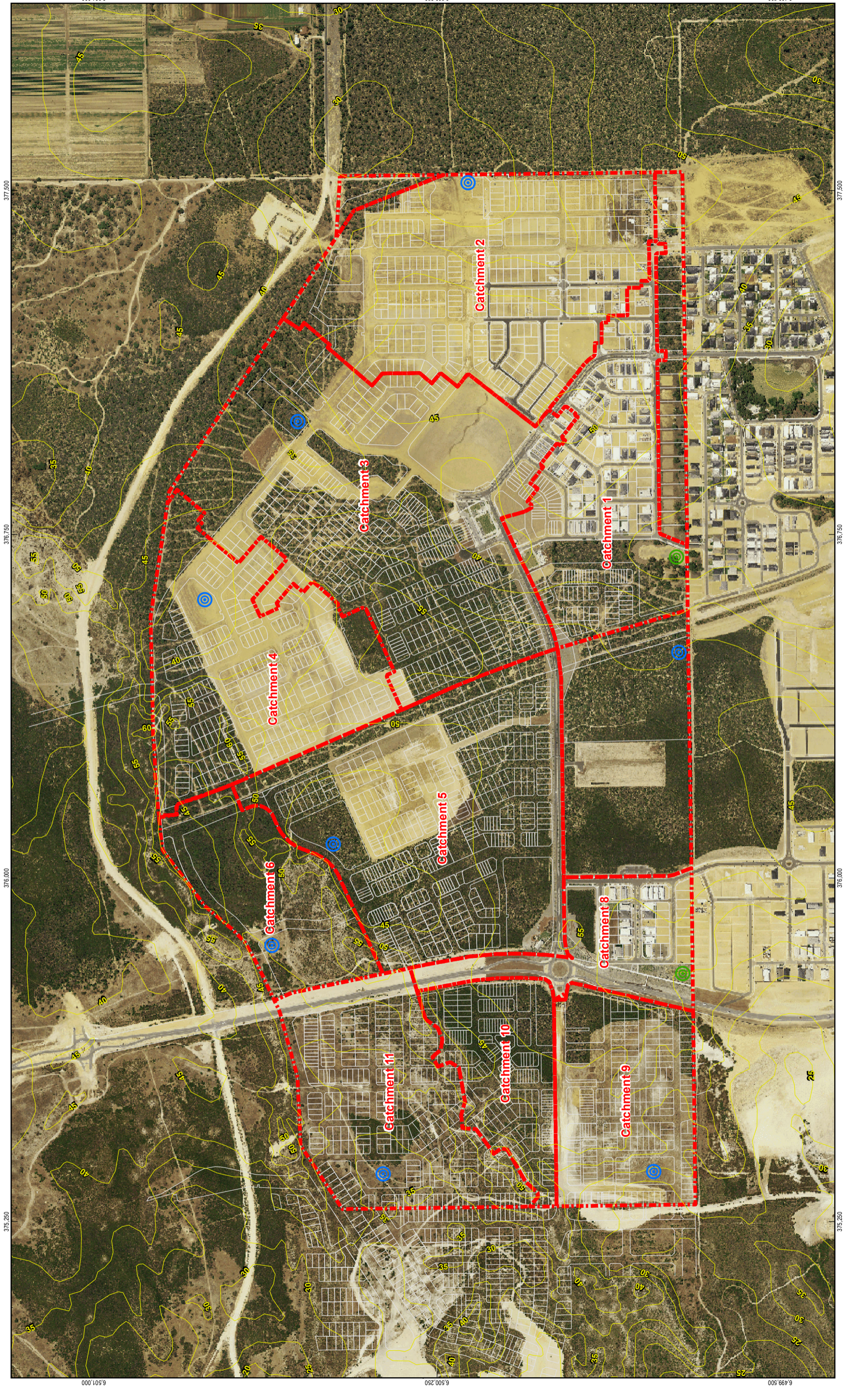
In earlier stages of subdivision west of the Freeway, separate Acoustic Reports were prepared to reflect the final subdivision designs and lot layout. A Transport Noise Assessment (road noise) was lodged as part of the subdivision proposal for the Freeway Cell – [Attachment 8](#).

Individual Acoustic Reports have also been prepared and lodged as part of early subdivision stages for land east of the railway which reflected specific lot layout.

As the subdivision design has become more certain, a comprehensive holistic Acoustic Report has been prepared by Lloyd George Acoustics in August 2013 to assess the noise impacts on either side of the Northern Suburbs Railway - [Attachment 9](#).

This report recommends sections of noise walls be constructed in specific locations coupled with building façade packages.





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 Revision 1  
 Date 22 Sep 2014

LWP Property Group  
 Lot 3 Romeo Road, Alkimos



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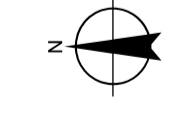


## Stormwater Drainage

### FIGURE 28

**LEGEND**

- 5m Contours
- Site Layout
- Catchment
- Existing / Built
- Proposed



1:7,500 (at A3)

Map Projection: Transverse Mercator  
 Horizontal Datum: Geocentric Datum of Australia 1994  
 Grid: Map Grid of Australia, Zone 50

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 © 2014. Whilst every care has been taken to prepare this map, GHD, LWP Property Group and Gray & Lewis and Landgate make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.  
 Data source: LWP Property Group and Gray & Lewis, Drainage Basin - 20140915; Catchment - 20120723; Site Layout - 20140817; Landgate - 5m Contours - 20121204; Metro North 2012 Mosaic. Created by: Iyong, mczekaj, serwards

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## **9.0 SUMMARY**

Significant time has passed since development of the Butler Jindalee District Structure Plan (BJDSP) in 2006 and whilst it has played an important guiding role for subdivision in the area, the regional planning context of the locality has changed within that period.

Whilst the BJDSP proposed a service industrial use along the eastern edge of Lot 1001 it is clear that this use is already well catered for in surrounding areas and the extent of the zone was to be defined at the Local Structure Plan stage.

The overarching planning consideration is to ensure that Agreed Structure Plan No 60 provides sufficient employment opportunities.

Replacement of a portion of the service industrial with two new Business Zones on Lot 1001 will increase employment self sufficiency, provide more flexibility to accommodate a range of business needs, and will be better located to ensure new businesses are successful with optimal commercial exposure. The defined retained Service Industrial zone will cater for local needs and has a more advantageous location adjacent to the eastern Business zone.

Proposed Amendment 3 to ASP No. 60 is consistent with Amendment 1 to the BJDSP (being pursued separately).