

## PART 2 – EXPLANATORY REPORT Amendment 4

### Amendment 4 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

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## 1.0 INTRODUCTION

Agreed Structure Plan No. 60 ('ASP') 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**.

ASP 60 was based upon the Butler Jindalee District Structure Plan which was adopted by the WAPC for final approval in October 2006.

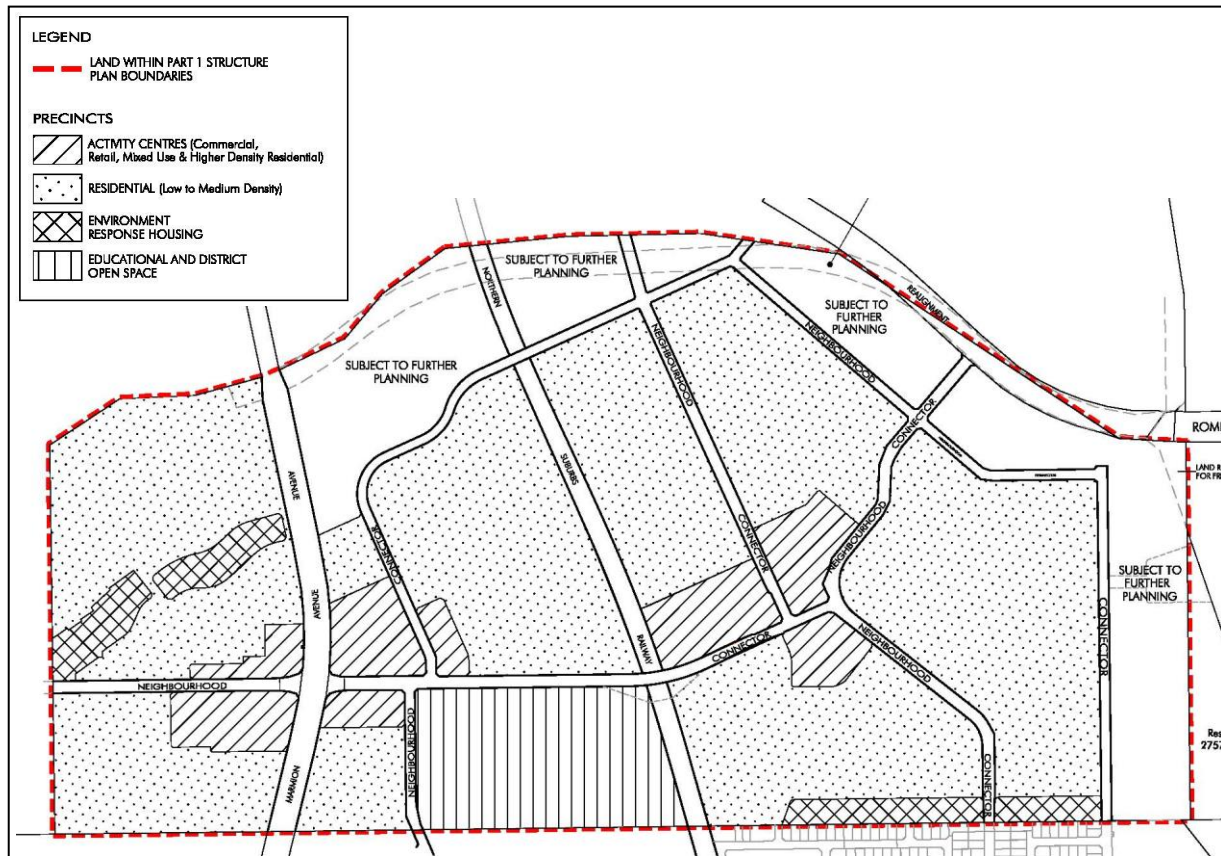


FIGURE 1 – AGREED STRUCTURE PLAN NO 60 (2009/2010)

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, landscaping, drainage, nutrient management and sustainability objectives.

The structure plan area that was 'subject to further planning' was not defined at the time due to the constraint of the existing Romeo Road regional reservation and uncertainty over district structure planning for the northern Alkimos Eglinton area.

Focus to date has been on the progression of subdivision in stages for land east of Marmion Avenue within Lot 1001. This eastern area has also been the subject of 3 amendments to ASP 60 as explained further below.

The ASP as it relates to Lot 1002, west of Marmion Avenue, has remained unchanged since the initial ASP was developed in 2009.

## 1.1 Amendment No 4

This Amendment (No. 4) relates to the refined planning for the western portion of the structure plan, and entails modification to 3 specific elements:

- (i) Removal of Environment Responsive Housing precinct and recoding;

The South Alkimos Local Structure Plan over the adjoining Landcorp / Lend Lease landholding does not provide for any continuation of the secondary dune ridge within Lot 1002 further to the west, however it does provide for the retention and restoration of the primary arm of the parabolic dune on the northern boundary of Lot 1002 as a substantive green link between the coast and the Alkimos Sub Regional Centre – refer **Figure 2**.

This Amendment recognises the impracticality of retaining an isolated portion of dunal ridge in the western portion of the structure plan, having regard to recently approved structure planning and physical subdivision now underway at Alkimos Beach.

Amendment 4 therefore proposes to remove the Environment Responsive Housing precinct and increase the residential density from 'R10' to 'R20/60'.

- (ii) Western Activity Centre boundary redefinition and rezoning;

It is proposed to introduce specific Commercial and Mixed Use zones for the western activity centre positioned around the Marmion Avenue and Santorini Promenade intersection in lieu of a broad Centre zone.

The reason for this modification is that there is now greater certainty over the location of the retail core and mixed use development sites, which allows zones to be appropriately designated as part of the parent ASP - as opposed to preparing a separate Centre zone structure plan. Landuse and development will be controlled through existing provisions of the City of Wanneroo District Planning Scheme No 2, as they apply to each zone.

The boundaries of the activity centre west of Marmion Avenue have also been adjusted to suit the revised Development Concept Plan.

- (iii) Minor realignment of the east west neighbourhood connector (Santorini Promenade)

The ASP amendment also provides for a minor deviation of the east west neighbourhood connector around a planned crescent shaped park to improve pedestrian safety through traffic calming, and provide for the possible relocation of the sculpture within the existing Marmion Avenue/ Santorini Promenade roundabout (or construction of a new iconic sculpture).

The road deviation will create a 'point of interest' to add to the local community's sense of place, and create a pedestrian friendly environment.

Detailed explanation of Amendment 4 is included throughout this report, and is supported with a revised Development Concept Plan and updated information on traffic, water management, servicing, environmental matters and landscape design concepts.

A summary of Amendment 4 is included below:

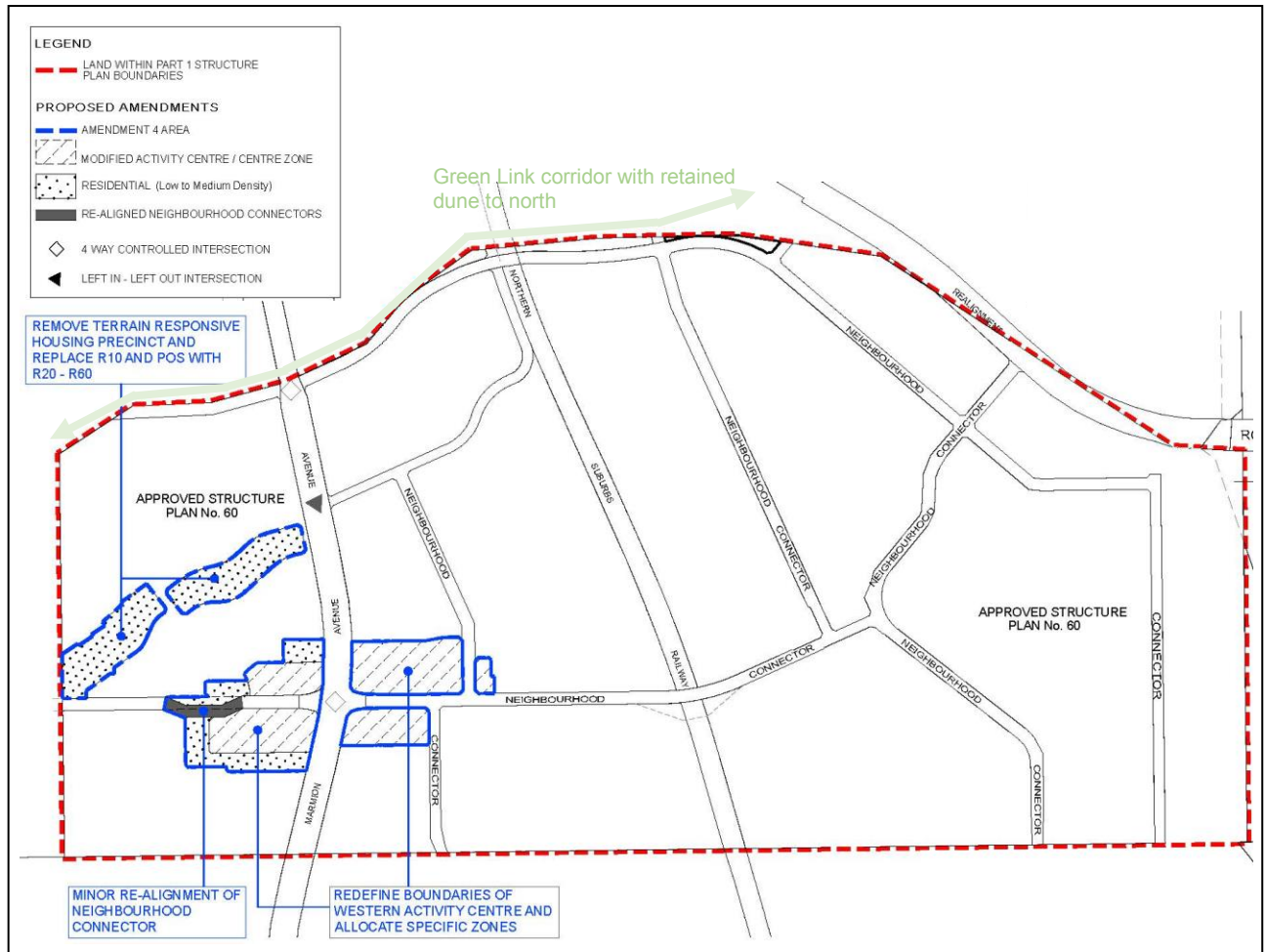


FIGURE 2 – SUMMARY OF AMENDMENT NO 4 TO ASP NO 60



## 2.0 AGREED STRUCTURE PLAN NO 60 – OVERVIEW

Subdivision within the eastern portion of the local structure plan area has progressed rapidly in stages over the last 4 years, with creation of over 1150 lots and the construction of more than 850 homes together with the development of a number of public open space areas.

Most of this development has taken place within the eastern most Agora village, with the central village – Atelier coming 'on stream' earlier this year – **Figure 3**.

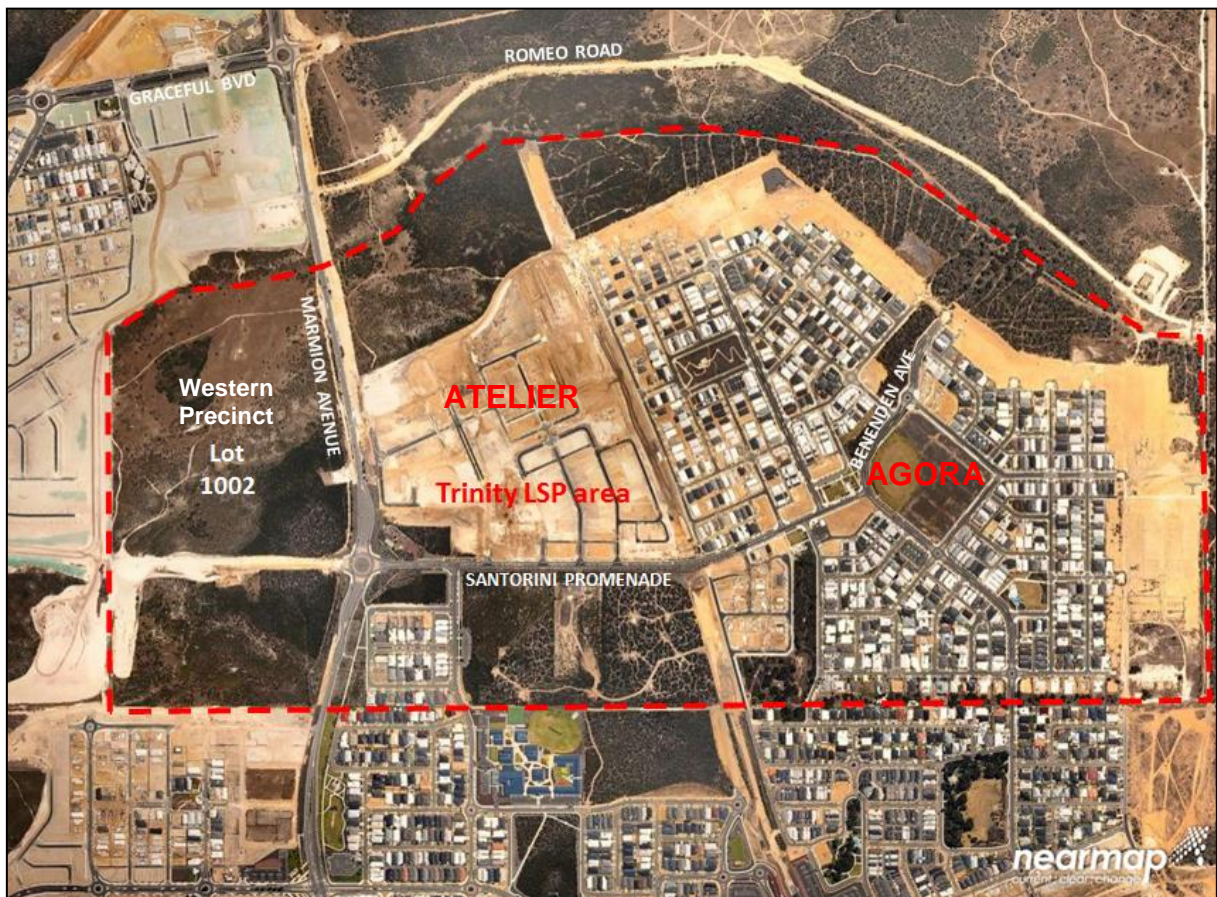


Figure 3 – Location Plan ASP No 60

With finalisation of the Alkimos Eglinton District Structure Plan and adoption of the South Alkimos Agreed Structure Plan No 72 for the land to the north and west, there is now opportunity to refine the structure planning and design for subdivision of Lot 1002, which is the focus of this Amendment.

An overview of the structure plan amendments that have been undertaken is outlined below to provide some background.

## 2.1 Agreed Structure Plan No 60 – Existing Amendments

There have been a number of amendments to the ASP however they primarily relate to the land east of Marmion Avenue within Lot 1001. Amendments to date include:

### 2.1.1 Amendment No 1

Amendment 1 to ASP No. 60 was only a text change introducing variations to the Residential Design Code provisions for R20 and R25 front loaded lots. Amendment 1 was endorsed by the Western Australian Planning Commission in September 2011.

### 2.1.2 Amendment No 2

Amendment 2 extended the Residential zone to the north and re-aligned the northern and western neighbourhood connector roads. Amendment 2 also rationalised the shape of the western activity centre east of Marmion Avenue - **Figure 4**.

The City of Wanneroo approved Amendment 2 to Agreed Structure Plan No 60 (ASP) in May 2014, and it has been endorsed by the Western Australian Planning Commission subject to minor modifications.

A number of areas within the eastern portion were retained as 'subject to further planning', pending an amendment to the Butler Jindalee District Structure Plan (BJDSP).

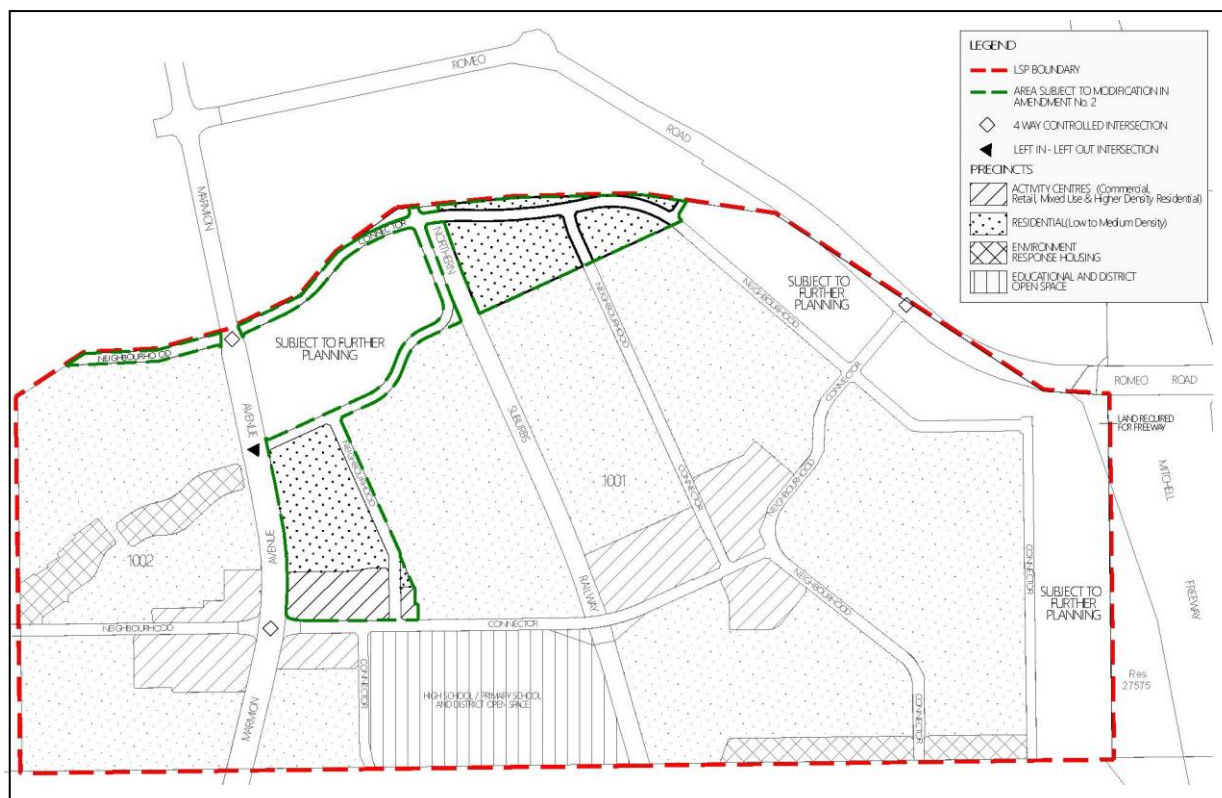


FIGURE 4 – AGREED STRUCTURE PLAN (AMENDMENT 2)



### 2.1.3 Amendment No 3

The most recent Amendment No 3 to ASP 60 was lodged with the City of Wanneroo in October 2014, and is being processed concurrently with a related Amendment No. 1 to the Butler Jindalee District Structure Plan (BJDSP) – **Figure 5**.

Amendment 1 to the BJDSP reflects the existing adopted Agreed Structure Plan No 60. It replaces a portion of the 'Service Industrial' zone with Residential west of the Freeway and Business zone south of Romeo Road; and introduces a new 'Residential' and 'Business zone' east of Marmion Avenue within areas previously identified as 'subject to further planning' - **Figure 6**.

The BJDSP Amendment No 1 is being advertised for public comment from the 25 November 2014 to the 13 January 2015.

Proposed Amendment No 3 to ASP 60 will bring the ASP into conformity with the proposed Amendment to the BJDSP.

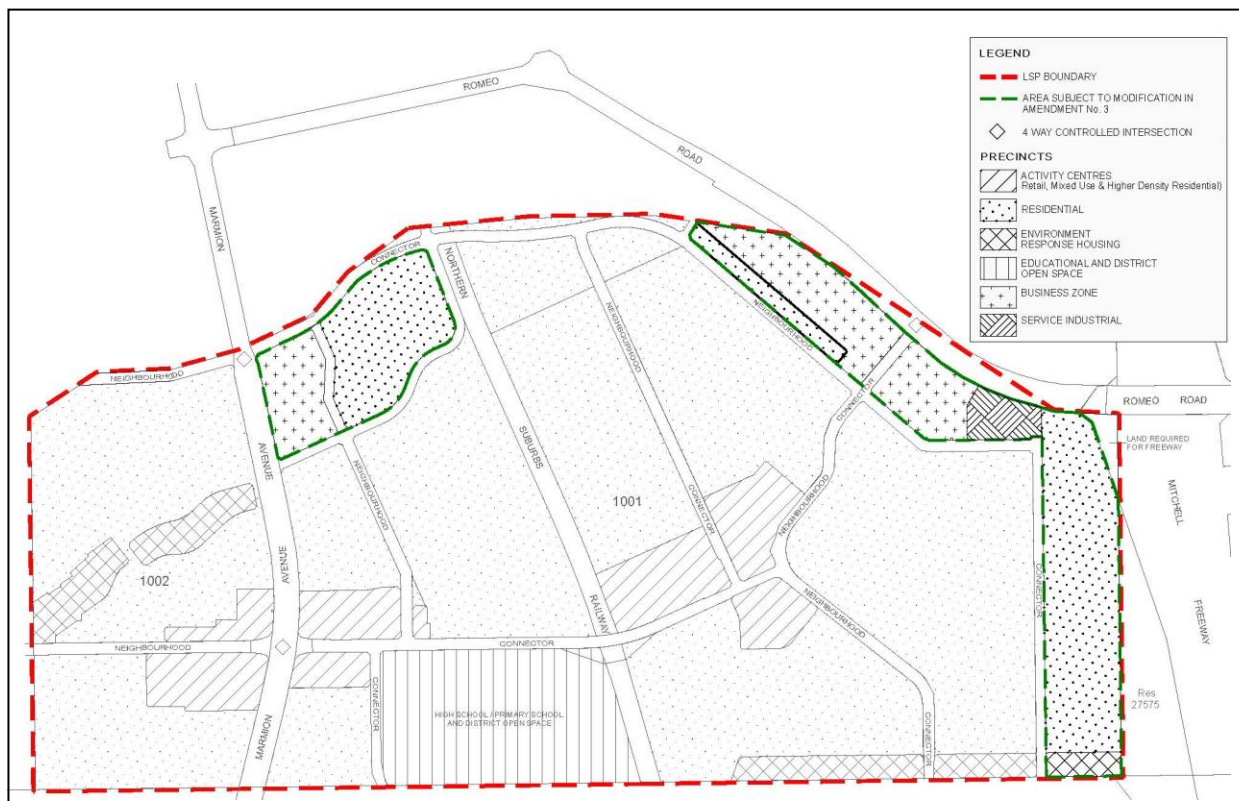
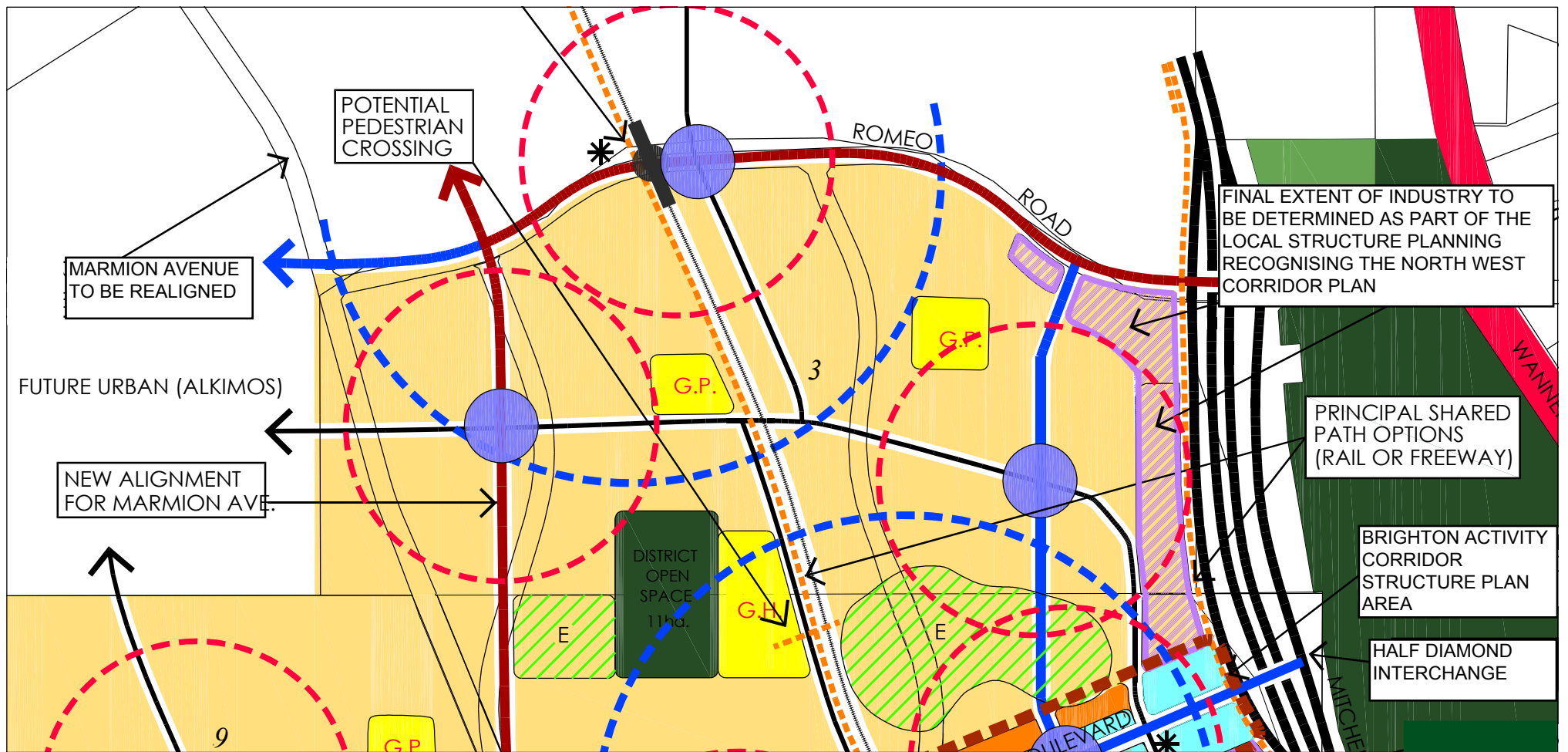
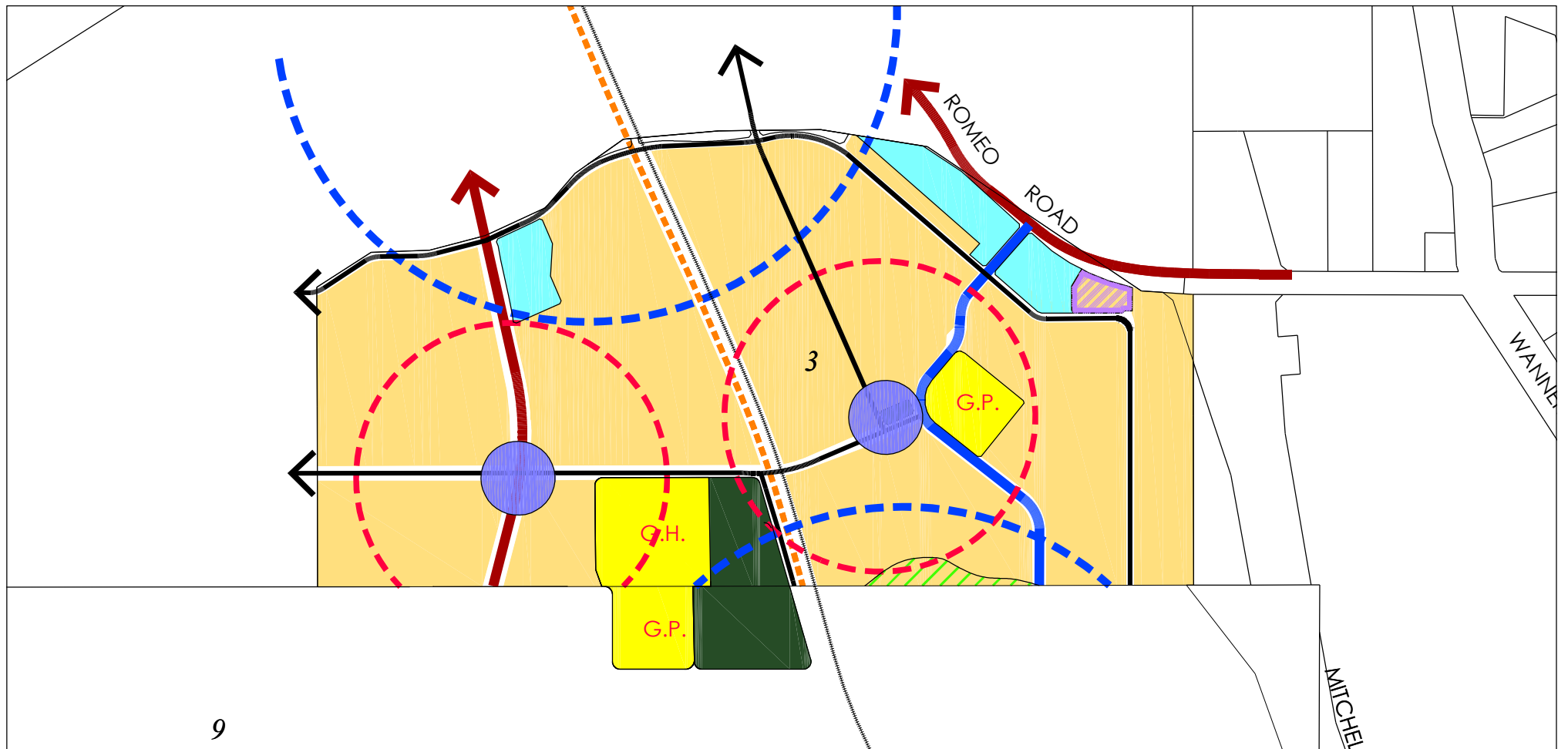


FIGURE 5 – PROPOSED AGREED STRUCTURE PLAN (AMENDMENT 3)

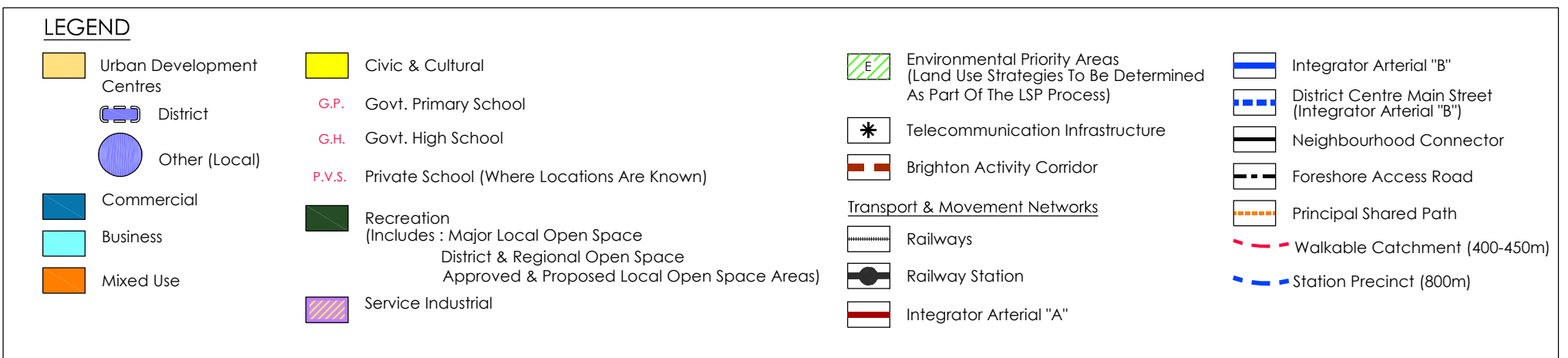
Advertising of Amendment No 3 is expected to commence in January 2015.



AGREED BUTLER - JINDALEE DISTRICT STRUCTURE PLAN



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

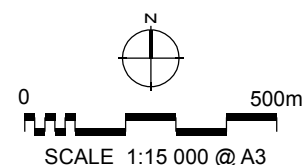


# AMENDMENT 1 BUTLER - JINDALEE DISTRICT STRUCTURE PLAN LOTS 1001 & 1002 MARMION AVENUE, ALKIMOS LOTS 2966 & 8210 HALESWORTH PARADE, BUTLER

FIGURE 6



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### **3.0 TRINITY DEVELOPMENT CONCEPT OVERVIEW**

Within the context of the surrounding northern corridor developments, Trinity is a relatively small development. This sets it apart from those neighbours; giving Trinity a greater sense of intimacy and individual character.

#### **3.1 Precincts**

Early site evaluation identified three distinct precincts within Trinity that were defined by both infrastructure and natural site characteristics.

- **Eastern Precinct**

The eastern and most inland precinct (east of the rail corridor), was characterised by a softer landscape with least coastal influence, sitting within a shallow and more protected valley and containing Banksia and Tuart woodland.

- **Central Precinct**

The central precinct (located between Marmion Ave and the rail corridor), was a transitional zone between these 2 precincts, also offering some ocean views.

This logical division of the development into 3 precincts led to the name "Trinity". The definition of Trinity is a group of 3; the state of being 3 fold or triple; where each Part or precinct is defined by a range of urban design elements and themes that are underpinned by the natural precinct divisions of the site. The precincts create a 'holistic' environment that support a diversity of people, lifestyles and uses based on interrelated but individual themes.

The natural environment is very much part of the overall vision for Trinity, consequently providing a 'softer' context for the buildings and residents. This 'soft urbanism' is immediately evident in the entry to Trinity from Marmion Avenue; ensuring a sense of uniqueness and belonging, for the local community.

- **Western Precinct**

The western and most coastal precinct offered the best ocean views and was defined by low coastal heath vegetation and dunal topography.

A more detailed description of each precinct is further described below. It is important to recognise that the theme and character of the individual precincts has become more clear and refined through the detailed planning subdivision design stages.

#### **3.2 Precinct Themes**

##### **3.2.1 Eastern Precinct - Agora Village**

The first precinct, within the eastern part of ASP No 60; was named 'Agora'. This neighbourhood was inspired by historic 'Market Towns', where life was centred on a local hub; that supported families and 'everyday' living.

The close proximity of this eastern end of the development to the market gardens of Wanneroo gave relevance to the 'Market Town' concept.

This part of the Trinity community revolves around the primary school and the smaller village square, plus playground; and is framed by generous landscape elements that provide a welcome habitat for bird life (as well as buffers to the surrounding suburbia).



AGORA LANDSCAPE AND PUBLIC ART IMAGES



With the exception of the northern and eastern fringes, most of Agora village has now been developed.

### 3.2.2 Central Precinct - Atelier Village

The central precinct, Atelier, takes its design cues from the underlying idea of the Arts Town. Supporting and reflecting the creative side of residents' lives, within the built form outcomes and drawing on local Fremantle references for important landscape and built form elements.

The contribution of Art and Artists, is recognised within the public art, street names and parks. This vibrant precinct will have a high school, District playing fields and a retail village centre at its core; focused around an 'urban square'.

The landscape within parks and roads, and the built form (houses, fences and walls) will reflect a more eclectic character and feel, similar to that seen in places like Fremantle, with a strong coastal influence in the selection of materials and colours.

The subdivision of the main portion of Atelier village is currently under construction including a new display village which will be opened in mid-2015. Construction of the commercial heart of Atelier village including a neighbourhood shopping centre and associated community facilities will commence in 2016.

The areas of public open space including the linear park will be completed in early 2015, together with installation of public art works in keeping with the 'arts town' theme.



PROPOSED ARTWORK WALL WITHIN ATELIER VILLAGE



### 3.2.3 Western Precinct

The third precinct or 'village' which is the focus of this Amendment is located west of Marmion Avenue.

At the time the original ASP 60 was prepared there was no clear theme for the coastal village other than recognition of the landform elements, particularly the site elevation above the surrounding areas west of Marmion Avenue and the premium views available towards the coast.

It is through the more detailed structure planning that the theme and character of the western village has evolved as described in Section 5.2.

The western village will have its own well defined character. In continuation of the theme of having a strong and legible identity for each of Trinity's precincts, this last village has been inspired by the Spa Towns of Europe.



TRINITY PUBLIC ART LOCATED IN WESTERN PRECINCT

## 4.0 REVIEW OF AGREED STRUCTURE PLAN – DEVELOPMENT CONCEPT PLAN

### 4.1 Current Development Concept Plan

As part of Amendments 2 and 3, the Development Concept Plan east of Marmion Avenue has been revised to infill the detail for the areas previously identified as 'subject to further planning'.

Lot 1002 was denoted as 'Design concept for land west of Marmion Avenue subject to further review' as part of the Amendment 2 and 3 documents – **Figure 7**.

The original design concept for land west of Marmion Avenue remained in accordance with the Development Concept Plan prepared in 2009.

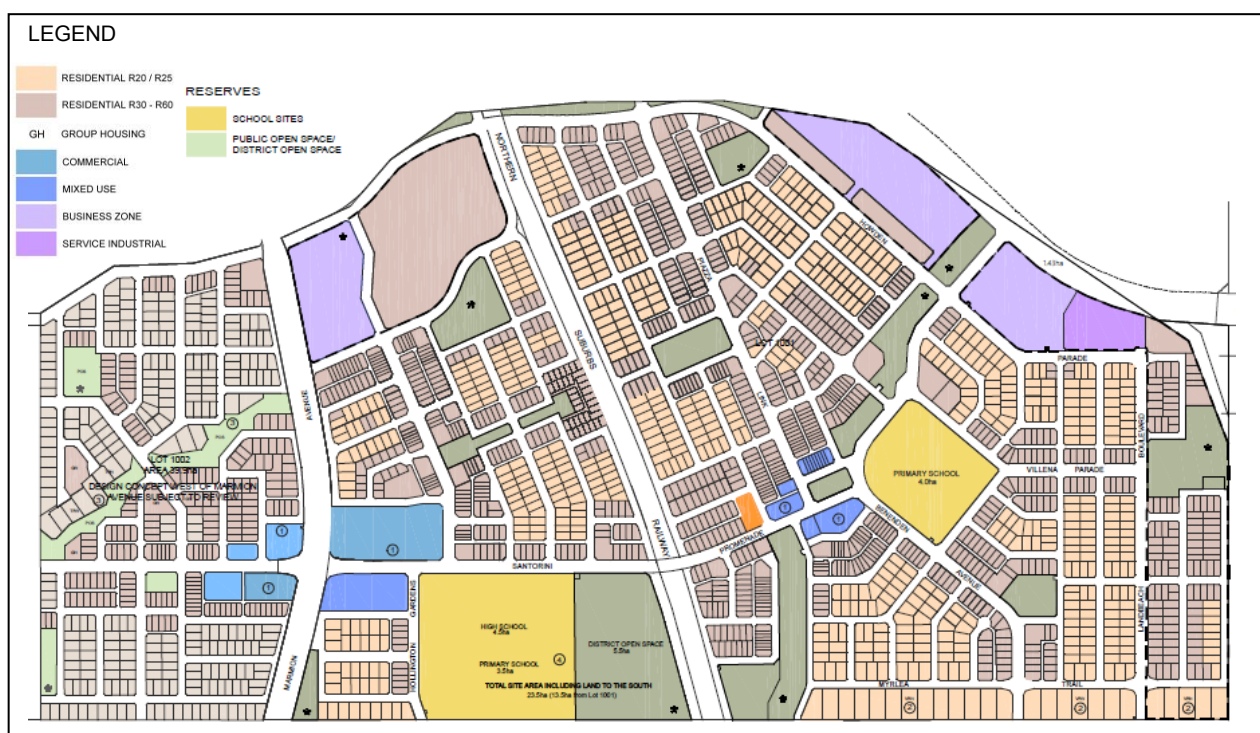


FIGURE 7 – DEVELOPMENT CONCEPT PLAN (AMENDMENT 3)

### 4.2 Original Development Concept Plan

The original Development Concept Plan as it relates to the whole property is depicted in **Figure 8**.

#### 4.2.1 Original Concept West of Marmion Avenue

At the time the original ASP was prepared it was proposed to retain the southern face of the secondary parabolic dune landform within Lot 1002 as public open space. It was to form part of a larger vegetation corridor with the expectation that the dunal ridge to the immediate west of Lot 1002 would also be retained.

The northern face was proposed to be retained through the creation of larger Environment Responsive Housing lots at an R10 density.

The western activity centre was proposed to span across Marmion Avenue and to the north and south of the east west connector (now known as Santorini Promenade) with the village being located on the hilltop adjacent to Marmion Avenue.

Higher residential densities were proposed adjacent to the neighbourhood connector and a pocket of land between linear public open space (retained dune) and Santorini Promenade.

The remainder of the public open space provision was made up with two larger areas on the lower lying land towards the western boundary of the lot which were also designated to accommodate stormwater drainage.

Apart from Santorini Promenade the only other neighbourhood connector proposed was one along the northern boundary of Lot 1002. The balance of the road structure was based on a modified grid of local roads.

At the time, the road connections and integration with the properties to the north, south and west were not 'fixed' due to the absence of detailed planning over the adjoining estates.

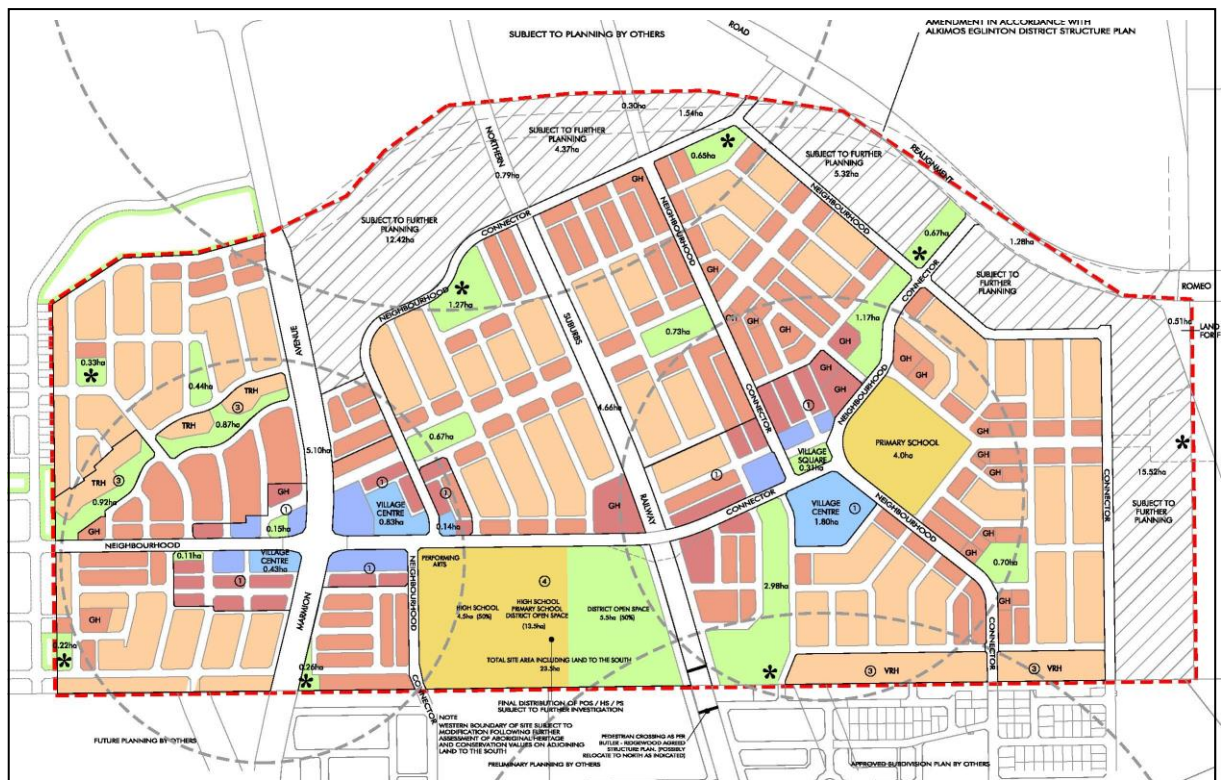


FIGURE 8 – ORIGINAL DEVELOPMENT CONCEPT PLAN (2009/2010) SHOWING PLANNING FOR THE WESTERN PRECINCT

#### 4.3 Design Review – West of Marmion Avenue

A number of factors and circumstances that influenced the design for the western precinct have significantly changed since initial adoption of the ASP in 2010.



#### 4.3.1 Review of Structure Planning over Adjoining Properties

Structure planning for adjacent land to the immediate north and west of Lot 1002 (South Alkimos and Eden Beach) has been finalised since the original ASP 60 was prepared.

The South Alkimos Local Structure Plan No 72 was approved by the City of Wanneroo in December 2013, and was endorsed by the Western Australian Planning Commission in January 2014.

The Jindalee North Local Structure Plan No 88 for Eden Beach was approved by the City of Wanneroo in May 2012, and was endorsed by the Western Australian Planning Commission in January 2013.

Subdivision of land to the immediate west and south is underway within adjoining estates. This has established the landuse and road connection points along the interface boundaries, which in turn has influenced this review of ASP 60 west of Marmion Avenue.

##### 4.3.1.1 Dunal Ridge Land Form and Green Link

The most significant aspect of the structure planning for South Alkimos in its impact upon the design review for Lot 1002 relates to the dunal ridge landform and location of a green link.

As previously explained, ASP No 60 proposed to retain the secondary arm of the parabolic dune landform extending from Marmion Avenue in a south west direction through Lot 1002. Originally it formed part of a larger dunal system that extended west into the land now being developed by Landcorp in partnership with Lend Lease at Alkimos Beach.

Initially it was anticipated that a revegetated green link corridor could be established along the west – east pedestrian and cycle link that was identified in the Alkimos Eglinton District Structure Plan – **Figure 9**.

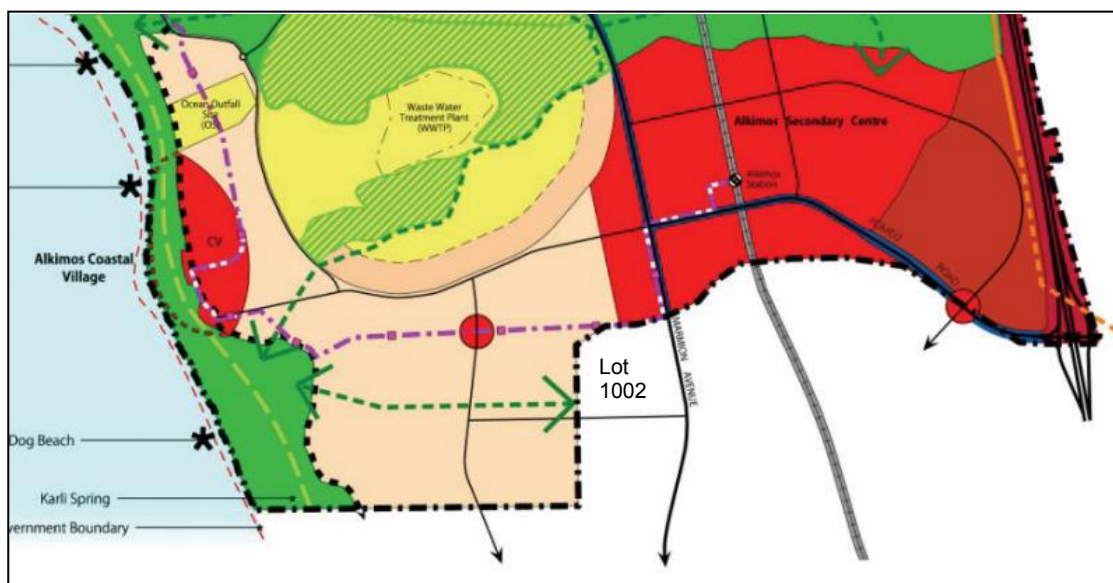


FIGURE 9 – ALKIMOS EGLINTON DISTRICT STRUCTURE PLAN

The link was proposed to extend from Lot 1002, continue through the land to the west, and ultimately connect to the coastal foreshore.

Since adoption of the original ASP No 60 planning for land to the west has been finalised and this 'green link' connection into Lot 1002 has effectively been discontinued.

The planned location of a strategic green link within Part Lot 9001 and 9002 to the west has changed, and a relocated link will be established to the north of Lot 1002 within the central portion of the South Alkimos Local Structure Plan No 72.

The relocated green corridor within the South Alkimos Beach Masterplan following the parabolic dune landform provides an important link between coastal foreshore reserve to the west, and the Alkimos Sub Regional Centre, and connects with a large conservation area west of the Freeway - **Figure 10**.



FIGURE 10 – SOUTH ALKIMOS BEACH MASTERPLAN



The dune immediately west of Lot 1002 has been removed as part of the South Alkimos subdivision earthworks, and the land has been levelled to provide for residential development, thus isolating the portion of secondary dune within Lot 1002.



VIEW LOOKING WEST FROM CENTRE OF LOT 1002 OVER ALKIMOS BEACH DEVELOPMENT

The alternative and relocated green link to the north includes a retained dune – **Figure 11.**



FIGURE 11 – SOUTH ALKIMOS BEACH MASTERPLAN  
ENLARGEMENT OF RETAINED DUNE TO NORTH OF LOT 1002

Given the change to the broader strategic planning in relation to the green link and landform features, there appears to be limited value in retaining the now isolated portion of secondary dune landform through Lot 1002, especially given the proximity to the retained dune to the north.

Furthermore, after examining bulk earthwork requirements for Lot 1002 it has been established that allowing for fill to raise the proposed lots above the level of Marmion Avenue, almost half of the landform feature would effectively 'disappear' with only the western half of the ridge within Lot 1002 remaining prominent.

The impact of bulk earthworks required for subdivision within the ASP area, combined with modified topography of land to the west and establishment of an improved relocated green corridor to the north leads to the conclusion that any dune landform retention within Lot 1002 represents an unnecessary constraint.

#### **4.3.1.2 Environmental Considerations**

Coterra Environment has prepared a report on environmental considerations that have been taken into account as part of refined planning for Lot 1002 – refer **Attachment 1**.

Coterra's Report includes copies of approvals granted under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC).

##### **4.3.1.2.1 Background**

Development of Lot 1001 and 1002 was originally referred to the Commonwealth Government in 2008 under the EPBC. The project was assessed as a Controlled Action, with approval granted in September 2009 (EPBC 2008/4601).

The Commonwealth Department of Environment approved changes to the wording of some of the approval conditions in September 2011.

There are no specific conditions that place any specific design constraints on planning for Lot 1002. Most of the general conditions that have relevance to the western precinct relate to the selection of plant species suitable for Carnaby's Black Cockatoo, planting schemes, revegetation, survey periods, plant survival rates and topsoil management.

Development of Atelier and Agora Village to the east of Marmion Avenue have successfully met all the conditional requirements, and there is a strong commitment to natural area enhancement through overall landscape design and theming within public open space and street tree planting. This same commitment to achieving a quality environmental outcome will continue to be applied to future development of Lot 1002.

##### **4.3.1.2.2 Vegetation**

The majority of the western precinct occurs on a Quindalup Dune System with vegetation within the Quindalup vegetation complex, as described by Heddle *et al* (1980). A portion of the site occurs within the Spearwood Dune System, which is within the Cottesloe complex – Central and South vegetation complex.

Approximately 1.08 hectares of the site has been historically cleared. There are no Threatened Ecological Communities or Declared Rare Flora within Lot 1002.

The vegetation condition within the Western Precinct has mostly been rated as 'Degraded to Completely Degraded', with the remainder being identified as being in 'Good to Very Good' condition.

The commonwealth referral and assessment considered removal of vegetation acceptable subject to comprehensive conditions. The revised structure planning for the western precinct will result in an increased area of public open space than planned for under the original design which was assessed as part of the commonwealth referral.

The revised structure plan for Lot 1002 will comply with EPBC conditions in terms of the amount and type of vegetation proposed, capable of providing foraging and habitat species suitable for the Carnaby's Black Cockatoo – refer **Table 1**.

**Table 1 – EPBC Comparison**

	<b>EPBC Approval</b>	<b>EPBC Masterplan (Western Precinct)</b>	<b>2014 LSP (Western Precinct)</b>
POS areas (turf, hardstand and gardens combined)	-	30,500m <sup>2</sup>	31,858m <sup>2</sup>
Turfed areas	-	5,737m <sup>2</sup>	13,828m <sup>2</sup>
Native Gardens	-	17,900m <sup>2</sup> (POS Areas 17 and 18)	35,551m <sup>2</sup>
Street Trees	6000 (Entire Development)	Never Modelled	810 Proposed
Additional Planting	36,784 (Entire Development)	Never Modelled	142,000 Proposed (based on a rate of 4 plants per m <sup>2</sup> )

#### 4.3.1.2.3 Fauna

A comprehensive Level 2 fauna survey of the Trinity Estate (Lot 3 Romeo Road, Alkimos) was completed by ATA Environmental/Coffey Environments in 2008. The findings of the report concluded that the study area does not contain habitat of high ecological significance from a faunal perspective, or any faunal assemblages that are ecologically significant.

One species of conservation significance (Carnaby's Black Cockatoo), listed under both the *Environment Protection and Biodiversity Conservation Act 1999* and *Wildlife Conservation Act 1950*, was recorded during the Level 2 survey.

Other conservation species previously recorded in the region (e.g. Chuditch, Rainbow Bee-eater, Peregrine Falcon, Western Brush Wallaby, Southern Brush-tailed Phascogale, Black-Striped Snake, Carpet Python, Southern Brown Bandicoot) were not recorded within the Trinity Estate (Lot 3 Romeo Road, Alkimos).

All clearing within the ASP area (including the Western Precinct') is undertaken in accordance with the requirements of the existing EPBC approval and conditions.

#### 4.3.1.2.4 Dunal Ridge Land Form

The linear open space areas proposed under the original structure plan for the western precinct posed significant challenges with regard to retaining the natural vegetation along the dunal ridge. These areas would have been undermined by edge effects from adjacent subdivision works such as road construction and installation of services required for South Alkimos. Engineering solutions required to batter and stabilise the area for adjacent development would compromise the natural integrity of the original public open space areas.

It would have been difficult to effectively manage weed invasion; revegetation and irrigation due to the constrained access.

Amendment 4 to ASP No 60 proposes to remove the dunal ridge landform and associated open space corridor in order to create functional open space areas fully revegetated with native plant species consistent with conditions imposed under the EPBC referral (2008/4601).

There is no justification for retaining the now isolated portion of secondary dune landform through Lot 1002, given the broader strategic planning changes to the green link and landform features, especially given the proximity to the retained dune to the north.

The east/west dune contained the vegetation unit consisting of *Melaleuca systema*; Low Open Shrubland over *Lomandra maritime*; Herbland. This vegetation unit is not classified or assessed as roosting or foraging habitat for the Carnaby's Black Cockatoo however, to enhance habitat value within the area and to create foraging linkages across the site, all species planted and integrated within future public open space, verges and street trees will be suitable to support Carnaby's Black Cockatoo.

#### 4.3.1.2.5 Compliance with EPBC

The public open space designs facilitated by Amendment 4 to ASP 60 offer significant advantages with regard to enhancement of usable natural spaces for community interaction. Whilst the dune landform in the western precinct offered a difference in topography and visual aspect it presented significant challenges with regard to revegetation and weed reduction.

The proposed open space areas will contribute to the planting of at least 142,000 plants with the majority of the species suitable as Carnaby's Black Cockatoo foraging habitat in accordance with conditions of the existing EPBC approval. In addition to planting and landscape design within public open space, the revised structure plan can accommodate a further 810 street trees also suitable as foraging habitat in accordance with the EPBC approval conditions.

The amended design for the western precinct increases the amount of open space and all conditions of the existing EPBC approval will still be met. As with Atelier and Agora Villages there will be continued dedication towards natural enhancement of the environment to actively encourage wildlife into the area.



## **4.4 Review of Opportunities and Constraints**

The key opportunities and constraints for Lot 1002 have been identified – **Figure 12**.

### **4.4.1 Opportunities**

#### **4.4.1.1 Topography – Ocean Views**

The elevation of the site above the land to the west and south in particular provides a significant opportunity to maximise ocean views. The development concept should be designed to ensure lots, where possible, can achieve such views. The southern and western boundaries will be set at levels above the adjoining estates and street blocks benched up from west to east.

The topography also presents certain engineering constraints as the land falls steadily from the east to west. There is a need to provide for stormwater drainage detention in the western part. However, with creative design to mitigate drainage components within specifically designed and landscaped areas of open space, this engineering constraint can become an opportunity.



SITE ELEVATION TOWARDS EDEN BEACH

#### **4.4.1.2 Green Link**

There is opportunity to take advantage of the retained dune green link on the northern boundary to establish pedestrian connections between the coast and the Alkimos Sub Regional Centre. This could be achieved through the structure plan design process to ensure a strong north south pedestrian connection is incorporated within Lot 1002.





OPPORTUNITIES AND CONSTRAINTS MAP  
LOT 1002 MARMION AVENUE AND ATELIER VILLAGE  
ALKIMOS

- NOTES: MARMION AVENUE  
\* INTERFERED WITH CONNECTION  
\* NO DIRECT LOT ACCESS TO MARMION  
\* AVENUE PERMITTED  
\* ACOUSTIC REPORT REQUIRED IN RESPECT  
TO TRAFFIC NOISE IMPACTS FROM  
MARMION AVENUE  
\* PRINCIPAL SHARED PATH TO BE LOCATED  
WITHIN MARMION AVENUE.

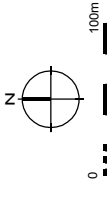


FIGURE 12



#### 4.4.1.3 Potential Sculpture Relocation – Marmion Avenue

The artwork feature located in the centre of the roundabout at the intersection of Marmion Avenue and Santorini Promenade has become a landmark feature defining 'Trinity'.



EXISTING SCULPTURE – MARMION AVENUE / SANTORINI PROMENADE

It is possible that the existing Marmion Avenue / Santorini Promenade intersection may become signalised in the future resulting in the removal of this sculpture.

An opportunity exists to plan for the possible relocation of this significant artwork further to the west within Lot 1002.

There is a clear view line that extends from the eastern hilltop park developed at the highest point in Agora Village through to a planned crescent shaped park within Lot 1002. A lookout has been developed in the eastern hilltop park with views to the ocean.

Figure 12 depicts a possible re-location at the intersection of the line of sight projected from the eastern hilltop park to the centreline of Santorini Promenade. Such artwork (or indeed a new artwork) would be situated as the focal point within an area of public open space.



VIEW FROM LOOKOUT AT EASTERN HILLTOP PARK IN AGORA VILLAGE TOWARDS THE WESTERN PRECINCT

A minor deviation of Santorini Promenade would be required to ensure the artwork is maintained in the direct sightline along Santorini Promenade.

#### **4.4.1.4 Lot design/ housing choice and variety**

In the past 5 years, since the original design concept was proposed, the housing market has significantly changed. There is increased demand for smaller lots and a wider variety of housing choice.

The standard traditional front loaded lot size in 2009 was 15 - 17 metre frontage by 30 metres depth (450 - 510m<sup>2</sup>), with some lots ranging up to 18 to 20 metre frontages.

In the current market, the lots most in demand are in the 12.5 to 15 metre range (375m<sup>2</sup> – 450m<sup>2</sup>).

There is also a strong demand for more compact / shallow depth lots (20m deep) but maintaining a traditional 15 metre frontage. These 300m<sup>2</sup> lots (marketed as 'Quattros' in Trinity) are highly sought after.

The size of the standard rear loaded lot has also come down from 12 metres to a range of frontages from 6 metres, 7.5 metres, 10 metres and 12 metres.



The opportunity in the structure plan process is to ensure that the design is robust enough to accommodate the range of lot sizes and housing choices.

#### **4.4.1.5 Creation of Community and Precincts**

There are a number of opportunities to create areas that the community can use for relaxation, healthy activities, socialising and to enhance wellbeing as part of the whole 'spa town' philosophy. These vary in function and include creation of an iconic park in form and shape upon which to 'build' the village theme. Other local parks with unique characteristics could be carefully designed to maximise community benefit.

An activity centre as identified in the original ASP shall become the main community hub within Lot 1002, with strong links to the neighbourhood centre planned in Atelier Village which in turn has strong connections to educational and district open space facilities east of Marmion Avenue.

The areas of open space, each with a different function, could form the basis for creation of individual precincts, each with their site specific character.

#### **4.4.2 Constraints**

##### **4.4.2.1 Environmental Constraints**

These elements have been discussed under Section 4.3.1.2.

##### **4.4.2.2 Statutory Planning Constraints**

- Density Coding – Environment Responsive Housing Precinct

The area that was originally proposed to be retained as an Environment Responsive Housing Precinct was coded R10. This lower density (1000m<sup>2</sup> lots) represents a significant statutory planning constraint.

- Centre Zone

Under the existing ASP a broad Centre zone was identified for the western activity centre extending either side of Marmion Avenue and to the north and south of Santorini Promenade.

With the more detailed planning that was undertaken for Atelier village as part of Amendment 2, the boundary of the Centre zone east of Marmion Avenue was adjusted to reflect the correlating boundary consistent with the revised Development Concept Plan.

As part of the review of the ASP west of Marmion Avenue there is an opportunity to further reconfigure the boundary of the activity centre to reflect any changes to the amended Development Concept Plan over Lot 1002.

Furthermore, the major statutory planning constraint of the Centre Zone is that there is a requirement to prepare a separate Centre zone structure plan.

Given the greater certainty that has evolved in the planning of Atelier village and through this ASP amendment process for the land west of Marmion Avenue, it is proposed to remove the constraint of the Centre zone by defining specific zones – Commercial and Mixed Use, thus removing the need for separate Centre zone structure planning.

The redefinition of the western activity centre boundaries and specific zonings is further addressed in Section 5.3.

- Retail Floorspace Cap

Under ASP 60 the maximum retail floorspace allowed within the entire western village was 2600m<sup>2</sup> Net Leasable Area (NLA).

Through detailed planning of Atelier village it was resolved to consolidate the majority (up to 2400m<sup>2</sup> NLA) of this retail floor space allocation into a neighbourhood shopping centre site on the north eastern corner of the Santorini Promenade / Marmion Avenue intersection.

Subdivision approval for the creation of this site was granted by the WAPC as part of subdivision application reference 149922 – **Figure 13**. A contract has since been entered into by a purchaser to develop this neighbourhood shopping centre site.

The effect of the retail cap and decision to allocate the majority of the retail floorspace to the neighbourhood centre site, is that there is limited scope to provide much more than approximately 200m<sup>2</sup> retail floorspace across the remainder of the activity centre to the west and east of Marmion Avenue.

West of Marmion Avenue the retail floorspace provision within Lot 1002 will be limited to approximately 100m<sup>2</sup> NLA. Therefore any other commercial type uses will be limited to non - retail and mixed use development.

Should it be established at a later stage that a greater provision of retail floorspace can be justified, a further amendment to ASP 60 may be considered.



## 5.0 REVISED DEVELOPMENT CONCEPT PLAN – LOT 1002

As a result of the review of the structure plans over the adjacent properties, and further examination of the opportunities and constraints, a revised Conceptual Structure Plan has been prepared for Lot 1002 – **Figure 14**.

This Conceptual Structure Plan will form the basis of the statutory amendment to ASP 60. The Conceptual Structure plan has been incorporated into an updated Development Concept Plan across the whole estate – **Figure 15**.

### 5.1 Design Objectives

The amended Conceptual Structure Plan incorporates the following design objectives.

- (i) The removal of the secondary dune landform (Environment Responsive Housing precinct – R10) and replacement with Residential R20-60 as per the balance of Lot 1002.
- (ii) Provide for a robust pedestrian link towards the retained dune to the north and the associated green corridor between the coast and Alkimos Sub Regional Centre, in lieu of retaining the dune within Lot 1002. This pedestrian link is achieved by the creation of an 18 metre wide road with an additional 5 metre wide public open space strip on the eastern side. The additional width allow for double tree canopies to create a shaded pedestrian friendly environment. This 23 metre wide corridor will provide for a safe and attractive pedestrian connection incorporating a dual use path on both sides.
- (iii) Provide for a minor deviation in the east west neighbourhood connector (Santorini Promenade) to potentially allow for the relocated sculpture in the future, or construction of a new iconic sculpture.

The deviation will also assist in traffic calming, improving pedestrian safety, and creating a pedestrian friendly environment. The road deviation forming the southern boundary of the crescent park will be a distinctive design feature that, combined with the open space and a commercial centre, will contribute towards a high quality urban and landscape design outcome.

- (iv) Design to accommodate engineering constraints and opportunities.

The natural grade of the site falling from the east to the west requires the creation of sites in the south west and north west to accommodate stormwater drainage. The drainage volumes and therefore size and capacity of these structures have been calculated by GHD as part of the Local Water Management Strategy.

Through creative engineering and landscape design the drainage function of the basins can be incorporated into public open spaces that can provide a landscape and urban design opportunity as opposed to an engineering constraint. The details of the form and function of these two western areas of public open space is described further in Section 5.2.1 and 5.8.2.



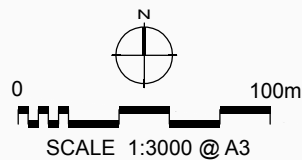
FIGURE 14

# CONCEPTUAL STRUCTURE PLAN LOT 1002 MARMION AVENUE ALKIMOS

JOB REFERENCE: NC1 DATE: 27th NOVEMBER 2014

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NOTE:  
1. LOT BOUNDARIES INDICATIVE ONLY.  
2. DARKER COLOURS DEPICT INCREASING DENSITY.



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## 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



## DRAINAGE

## LAND USE

- |     |                                     |
|-----|-------------------------------------|
| VRH | VEGETATION RESPONSIVE HOUSING (R10) |
|     | RESIDENTIAL R20 / R25               |
|     | RESIDENTIAL R30 - R60               |
|     | COMMERCIAL                          |
|     | MIXED USE                           |
|     | BUSINESS ZONE                       |
|     | SERVICE INDUSTRIAL                  |

## RESERVES

- SCHOOL SITES**
- PUBLIC OPEN SPACE/  
DISTRICT OPEN SPACE**



FIGURE 15

# TRINITY

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

DATE: 1st DECEMBER 2014

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The local road network has been designed on a modified north-south/west-east grid to take advantage of the site's elevation and natural fall. With careful engineering design in relation to lot retaining and benching ocean views should be maximised from as many lots as possible.

(v) Residential Landuse and Density

With the exception of the activity centre close to Marmion Avenue the landuse over the balance of the site will be residential. The density coding over the existing ASP for the residential areas is R20-60. This density will now extend over the previously identified R10 Environment Responsive Housing precinct.

The actual densities will be identified at the subdivision design stage through the adoption of a Coding Plan consistent with all previous applications. The colours depicted on the Conceptual Structure Plan indicate an increasing density from lighter to darker colour shades extending from R20-R25 further away from the activity centre and neighbourhood connectors (public transport routes) and community / activity centres to higher R30-R60 densities adjacent to higher amenity areas.

The Conceptual Structure Plan including the road layout is sufficiently robust and flexible to provide for a range of lot size and housing choices.

Adjacent to road entry points from the west and south it is proposed to create elevated and walled grouped housing sites to distinguish Trinity from the other estates. Other group housing sites will be provided throughout the site at strategic locations primarily opposite areas of public open space.

(vi) Western Activity Centre

The western activity centre will be retained as the focal point for the Development Concept Plan for Lot 1002. The western activity centre combined with quality open space will be the pivotal community gathering area for future residents.

## **5.2 Design Philosophy – Western Village**

The revised design for the western precinct has been inspired by the 'Spa Towns' of Europe. It reflects a place that people will be drawn to for health and relaxation benefits.

The concept for the western village mirrors key elements of one of Britain's great Spa towns, Bath. Where the central crescent, circus, public squares and promenades provided lively places for people to mingle and enjoy the positive experience of open air interaction.

The western village will include a crescent shaped public open space area which will be partially framed by mixed use / commercial and retail uses. The crescent shaped public space is inspired by the Royal Crescent Park in Bath.

Public open space areas in the western precinct will be designed to support family relaxation with facilities for picnics, walking, exploring and wild play activities within key local nodes. There will be a high level of focus on fitness, family gathering areas and a healthy relaxed lifestyle within the village.

Further detail of the landscape elements within the public open spaces is addressed in Section 5.8.

### **5.2.1 Core Design Precincts**

There are six core elements or sub precincts within the western village on Lot 1002 as identified on the Structure Plan Concept Plan - **Figure 16**.

Key characteristics of the Design Concept Plan are identified below:

#### **1. Gateway Precinct**

The Gateway is located on the south side of the retained dune on the northern boundary of Lot 1002. A green edge will be provided at the entry off Marmion Avenue between the residential lots and the neighbourhood connector.

Generally higher densities in the form of group housing development is proposed along the neighbourhood connector opposite the retained dune.

#### **2. The Square and Promenade Precinct**

The Square and Promenade are planned in the northern part of the western village. The public amenity has been created through a series of spaces; anchored by a public square at either end and linked by a linear trail between. This design will encourage a safe and interesting walking or play environment for local residents. It will be a place to practice skills, overlooked by surrounding houses.

The theme of water and coastal proximity will further be explored with planting species and the provision of drinking fountains.

The Celtic 'tri form' pattern will also be used as part of the landscaping treatment within this precinct, as a symbol of the "Trinity" story of 3 villages and balance within everyday life.

#### **3. Crescent Precinct**

The design includes a distinctive semicircular park which will be well integrated with surrounding homes, by the local road network and public access ways (PAW).

As explained in the background of this report, The Crescent is inspired by the Royal Crescent Park in Britain's spa town of Bath.

Vital shade will be provided by intensive tree planting and an encompassing shade structure. The main north/south road will have an extensive setback to



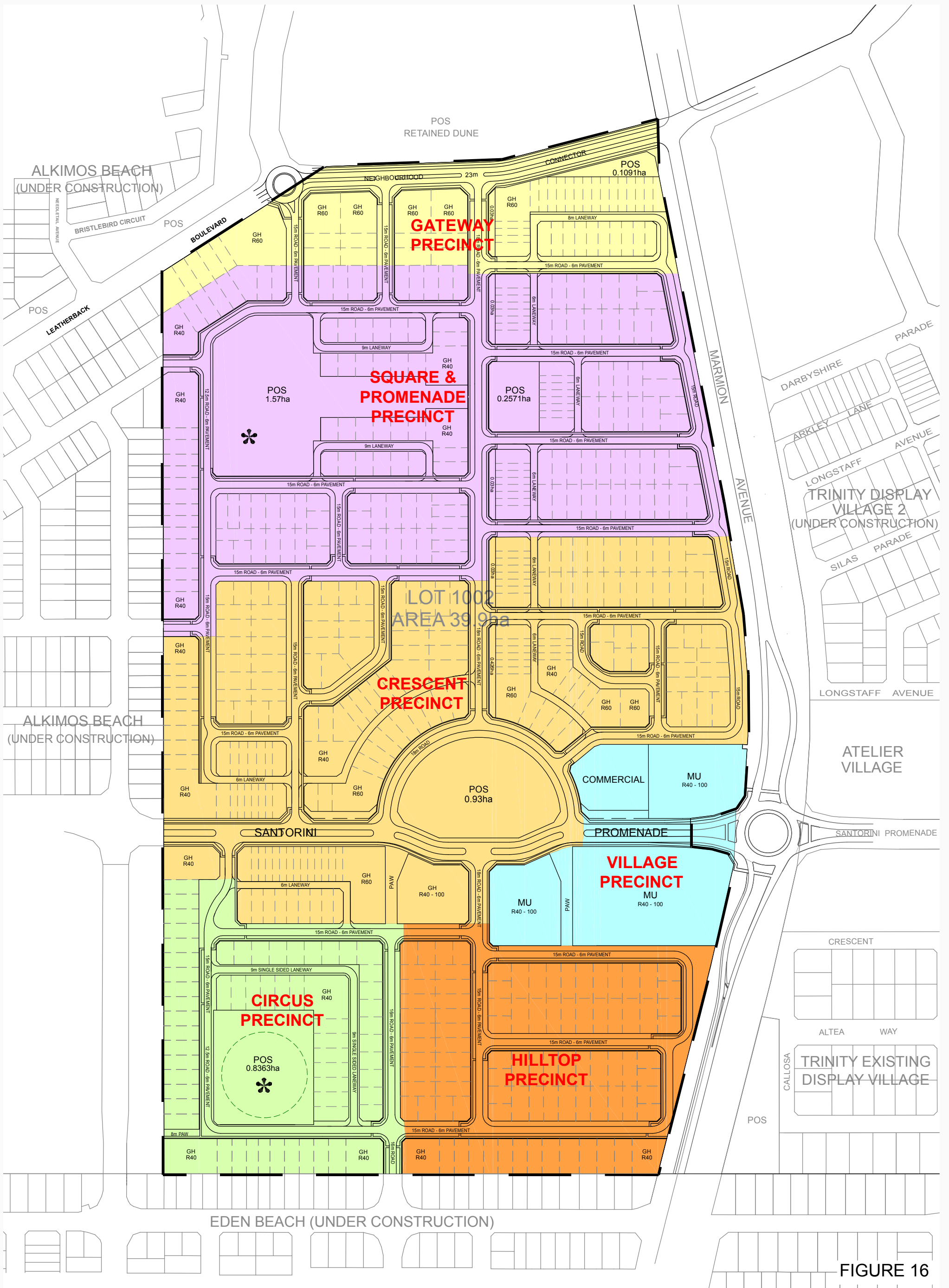
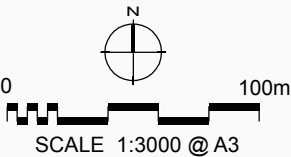


FIGURE 16

PRECINCT PLAN  
LOT 1002 MARMION AVENUE  
ALKIMOS

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one side, creating a natural 'green link' between the Crescent Park and the rest of the western precinct.

It is envisaged that a wide range of healthy outdoor activities be accommodated in this park such as yoga, HBF fitness or City of Wanneroo programs, which will create a very visible centre for the community.

Santorini Promenade has been gently diverted around The Crescent (along with traffic calming measures, such as raised paving or speed controls) to further enhance its prominence within the village as a 'People Place'.

A tall beacon-like public artwork at its centre point will form a significant visual focal element within the park, providing an important landmark for residents and visitors. This artwork will also be visible from other look out points to the east; thus enhancing a sense of connection across Trinity.

#### 4. Village Precinct

The western village within Lot 1002 will accommodate a small commercial component with a strong focus on mixed use development. The function of the local centre will be to cater for the needs of local residents.

The kind of activities being considered, like a private swimming school or flexible spaces for informal uses; will help to encourage a sense of 'belonging' within the western village.

A respect for the coastal landscape, as evidenced by the substantial planting to the east of Marmion Avenue, will also be continued at the 'foot steps' of this local centre with planted embankments and local species.

#### 5. The South West (Circus) Park

This south western sub-precinct focuses on the circular space formed by a smaller park, situated in the lower part of the site. The name derives from the Latin 'circus'; which means a ring, oval or circle.

Houses will surround, frame and overlook this park as well as have extensive views across to the western coastline. The Built Form envisaged within The Circus and all the precincts, will be guided by clear themes and objectives to create street activation and sustainable living (e.g. light roofs, utilize shade elements, etc).

#### 6. Hilltop Precinct

The hilltop precinct provides the best views to the south and west as the land falls quite steeply from Marmion Avenue towards Eden Beach and South Alkimos.

Apart from the premium lots surrounding the Crescent, the lots within the Hilltop precinct should be the most sought after not only because of ocean views but also due to the proximity to the village precinct and community activities within the Crescent park.

Lots will be carefully engineered to maximise views where possible. Terraced landscaping within wider road reserves will soften the edges adjacent to Marmion Avenue. A wide vegetated buffer to Marmion Avenue will form part of a continuous green edge to the western village and provide opportunity for seasonal planting to support local birdlife.

### **5.3 Western Activity Centre**

The western precinct comprises mainly residential development at a density range from R20 – R60 and areas of local open space. The other significant land uses are the proposed commercial and mixed use development sites associated with the activity centre fronting Marmion Avenue.

As explained in Section 4.4.2.2, a relatively large activity centre (Centre zone) was identified in the original ASP 60. This was due to the uncertainty at the time as to the scope and extent of potential land uses in the absence of structure planning for commercial activity to the north and south of Trinity. More detailed structure planning over Alkimos/Eglinton and Butler/Jindalee has now been completed in addition to the finalisation of detailed planning over Atelier Village east of Marmion Avenue, and as a result a more defined activity centre boundary and use types have been identified.

#### **5.3.1 Boundary Area Adjustment**

With the current maximum retail cap of 2,600m<sup>2</sup> for the entire western activity centre and approximately 2,400m<sup>2</sup> now allocated to the site at the north eastern corner of the Marmion Avenue/Santorini Promenade intersection, the potential for any retail activity west of Marmion Avenue is limited to approximately 100m<sup>2</sup>. The balance of the Commercial uses within the activity centre will therefore be limited to non-retail and other commercial mixed use, office and residential uses.

With the restriction on the allowable retail floorspace and relatively limited opportunities for non-retail and office type uses (especially given the activities proposed within the directly adjacent Alkimos Sub-Regional Centre and Jindalee District Centre), the size of the original activity centre west of Marmion Avenue has been reduced in area by approximately 1.2 hectares.

As demonstrated in Section 5.3.3, even with the reduction in the size of the activity centre west of Marmion Avenue, the projected employment numbers and the area of employment generating land is still consistent with the employment targets identified by the City of Wanneroo's strategic planning documents including the BJDSP and Smart Growth Strategy.

#### **5.3.2 Specific Land Use Zones**

With the specific boundaries of the activity centre now defined through the more detailed planning both east and west of Marmion Avenue, it is also possible to define the specific land use zones. It has already been established that the broad Centre zone will be replaced by specific zones to avoid the need for a further local (centre) structure plan.

As the existing western Centre zone extends east of Marmion Avenue, Amendment 4 overlaps into this area to define the zones within Atelier Village.

#### **5.3.2.1 Commercial Zones**

The Commercial zones are identified on the Western Activity Centre Concept Plan (**Figure 17**) comprising two sites east of Marmion Avenue and one site to the west as follows:

- (i) The neighbourhood shopping centre site of 2.17ha bound by Marmion Avenue, Santorini Promenade, Trethowan Promenade and Longstaff Avenue. This site will be developed as the neighbourhood shopping centre site and comprise a total retail floorspace of 2,400m<sup>2</sup> NLA, non-retail, mixed use and other uses permitted within the Commercial zone under the City of Wanneroo Town Planning Scheme No. 2.
- (ii) The smaller commercial site comprises an area of approximately 1,150m<sup>2</sup> on the corner of Santorini Promenade and Trethowan Promenade.
- (iii) On the western side of Marmion Avenue a commercial site comprising an area of approximately 3,350m<sup>2</sup> is located adjacent to the Crescent Park. This site may include a small deli/café and is likely to be limited to 100 – 150m<sup>2</sup> of retail floorspace but will include other non-retail commercial activities.

#### **5.3.2.2 Mixed Use Zones**

The Mixed Use zones are not proposed to include any retail use but will include a range of non-retail, office, community and residential uses.

Two Mixed Use zones are proposed east of Marmion Avenue and three to the west of Marmion Avenue, as depicted on the Western Activity Centre Concept Plan.

The final make up of uses has not yet been defined however, the types of uses considered compatible with the healthy living/lifestyle theme of the western village may include a gym/health club, consulting rooms, swim school etc.

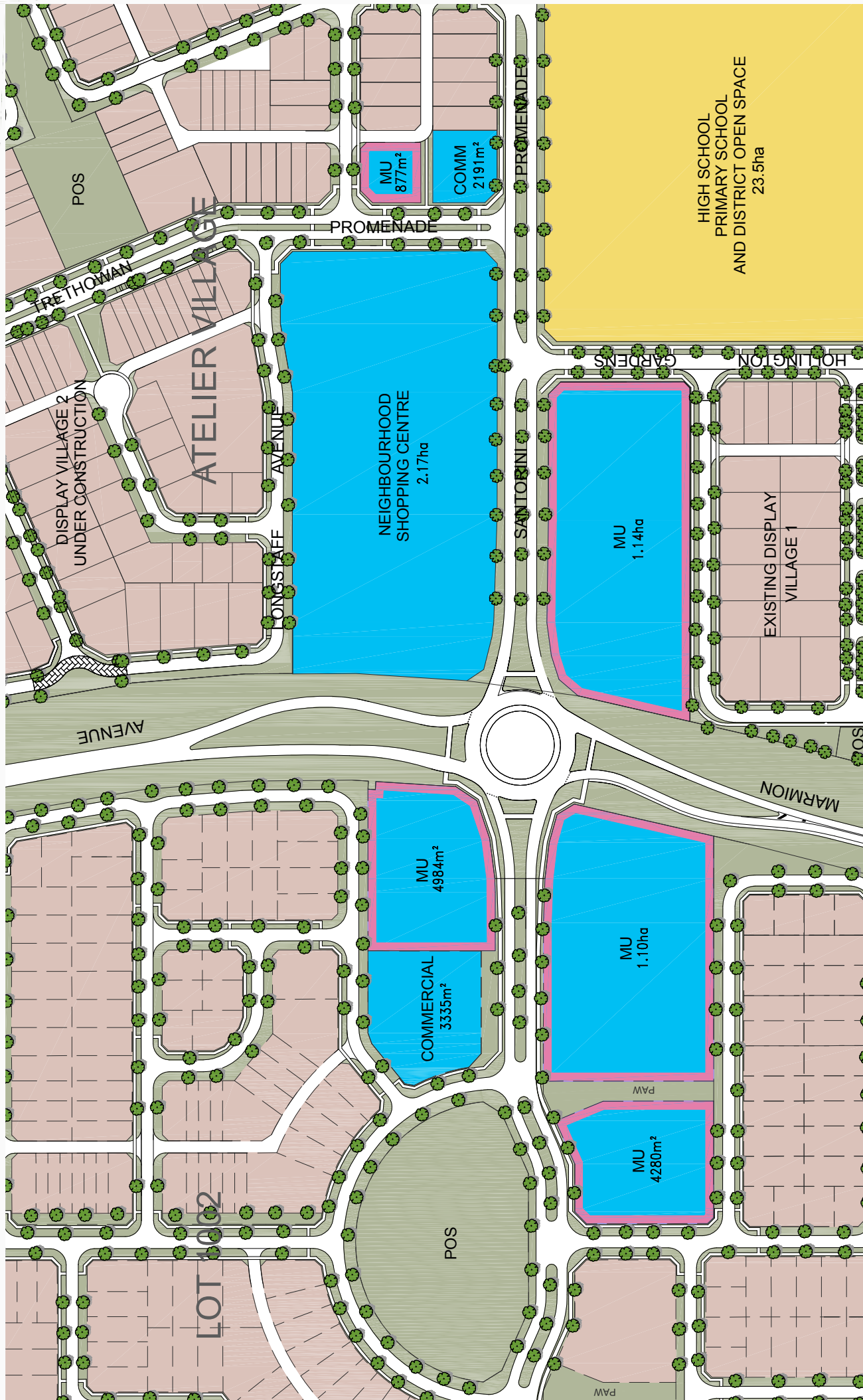
On the eastern side of Marmion Avenue the mixed use sites could provide for offices, higher density residential and community type uses with strong links to the adjacent educational institutions and district open space.

#### **5.3.3 Employment**

As part of Amendment 1 to the Butler Jindalee District Structure Plan (BJDSP) and Amendment 3 to ASP 60 an Employment Assessment was prepared by Urbis – **Attachment 2 and 3.**

Urbis identified 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).





**TRINITY**  
**WESTERN ACTIVITY CENTRE CONCEPT PLAN**  
**LOTS 1001 & 1002 MARMION AVENUE**  
**ALKIMOS**

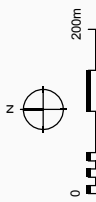
DATE: 4th DECEMBER 2014

NOTE: LOT DESIGN WEST OF MARMION AVENUE  
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**FIGURE 17**  
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Urbis calculated that the employment uses as defined under Amendment 1 to the BJDSP and LSP No. 60 (with Amendment 3) are expected to generate an additional 225 jobs compared to the employment projections based upon the original BJDSP. This increase in jobs is a result of increased bulky goods/ showroom uses – **Table 2**.

<b>TABLE 2 : 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

The highest level of job provision is identified within the areas of 'Service industry/ commercial/ bulky goods/ showroom'. The nominal area of Service Industrial zone identified under the Butler Jindalee District Structure Plan was approximately 9.28 hectares (deducting public open space).

The total area of employment generating activities is proposed to increase under Amendment 1 to the BJDSP, and concurrent Amendment 3 to ASP 60 to 10.28 hectares comprising of:

- 7.38 hectares in a Business and Service Industrial zone adjacent the Romeo Road frontage in the north east portion of Lot 1001 and;
- 2.9 hectares in a Business zone west of Marmion Avenue within Lot 1002.

Amendment 1 to the BJDSP and Amendment 3 to ASP No 60 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.

It is recognised that the size of the western activity centre will be reduced by just over 1 hectare under Amendment 4. The reduced size of the western activity centre is however offset by the one hectare increase of high generating employment landuses within the planned Business and Service Industrial zones under separate Amendment 3.

Therefore the net effect of Amendment No 4 will not result in any reduction of employment generating land use than what was originally envisaged under the BJDSP.

Furthermore any slight reduction in the western activity centre as proposed under Amendment No 4 should be considered in context of the 225 additional jobs created under Amendment No 3.

With an additional 225 jobs achievable under Amendment 3, the ASP with reduced western activity centre (Amendment 4) will still achieve a higher ESS ratio than envisaged under the original ASP No 60 proposed in 2009.

#### 5.4 Road Hierarchy and Traffic

A detailed transport report '*Trinity Alkimos Local Structure Plan Amendment Traffic & Movement Network Final Report*' was prepared by Bruce Aulabaugh for the overall ASP No 60. That report still reflects the planning for the LSP area east of Marmion Avenue within Lot 1001.

In support of the revised Development Concept Plan for Lot 1002, a Transport Addendum Report has been prepared by Transcore – **Attachment 4**.

The Traffic Addendum Report provides updated analysis for road planning west of Marmion Avenue with detailed information on road hierarchy, projected traffic volumes, public transport, pedestrian and cycling facilities, and demonstrates that the road network for future subdivision of Lot 1002 has been planned in accordance with WAPC Liveable Neighbourhood Guidelines to accommodate future traffic flows that will be generated within this western precinct.

Planned neighbourhood connectors within Lot 1002 remain substantially unchanged since the original ASP was prepared in 2010, with the exception of a minor deviation to the west – east neighbourhood connector to provide traffic calming and deviate around the planned crescent shaped park – **Figure 18**.

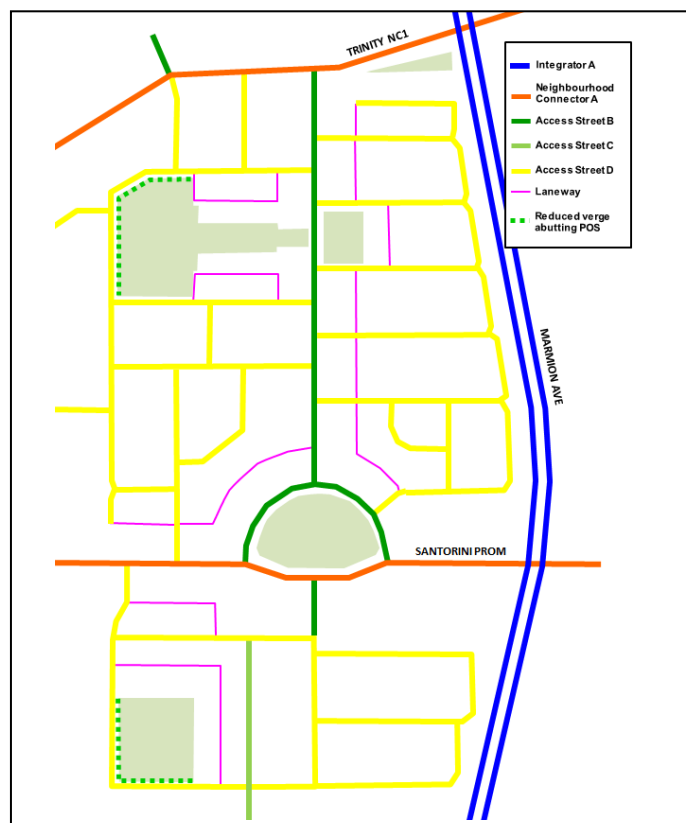


FIGURE 18 – ROAD HIERARCHY. SOURCE: TRANSPORT ADDENDUM REPORT

The western portion of the ASP is anticipated to generate traffic flows of approximately 5600 vehicles per day (vpd) associated with residential development, and traffic flows of around 1200vpd associated with the activity centre (including local traffic from residences within this local area).

The Traffic Report Addendum summarises key characteristics of the relevant road classifications generally based on Liveable Neighbourhoods guidelines - **Table 3**.

**Table 3: Road Hierarchy**

<b>Road Classification</b>	<b>Indicative upper volume (vpd)</b>	<b>Indicative road reserve width (m)</b>	<b>Indicative road pavement width (m)</b>
Integrator A	35,000	50m	2 x 8.5m (incl. cycle lanes), 6m median
Neighbourhood Connector A	7,000	23m to 24m	2 x 4.5m (incl. cycle lanes), 3m median and embayed parking
Access Street B	3,000	18m	6m and embayed parking where required
Access Street C	3,000	16m	7.2m (or 6m and embayed parking one side where required)
Access Street D	1,000	15m	6m
Laneway	300	6m to 9m	6m typical

Note: These road reserve widths are indicative and may be subject to further adjustment in consultation with the Department of Planning and City of Wanneroo during detailed subdivision design.

There will be two four-way intersection connections to Marmion Avenue that would need to be controlled by traffic signals or roundabouts. The current proposal for the western precinct proposes future upgrading of the existing roundabout at the Marmion Avenue / Santorini Promenade intersection to a two-lane roundabout, in lieu of a signalised intersection.

The report recommends a signalised pedestrian crossing approximately 160m south of the Santorini Promenade roundabout to provide a safe pedestrian and cycle route mainly associated with movement of students to and from the planned high school east of Marmion Avenue. This will be an important pedestrian friendly link between the school site west of Marmion Avenue and the planned western activity centre.

To the north, west and south the proposed ASP continues to provide connections to the planned local road network in the neighbouring landholdings and is consistent with current planning for those areas. The proposed plan also provides for a comprehensive network of shared paths and footpaths with direct connections to the neighbouring future residential areas to encourage and facilitate non-motorised local travel as well.



5.5 Access and Movement Network

A revised road hierarchy and streetscape Masterplan has been prepared by Plan E in consultation with Transcore to align streetscape considerations and landscaping with the revised neighbourhood connector road structure – refer **Figure 19**.

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 Masterplan (based on the revised road hierarchy) is shown as **Figure 20**. Supporting road sections are included as **Figures 21** and **22**.

5.6 Housing Diversity and Indicative Lot yield

Approximately 650 dwellings will be accommodated within Lot 1002 and the subdivision layout allows for a wide range of lot sizes and dwelling types, reflecting the increased diversity of the current housing market. The design caters for a mixture of terraced dwellings, villas, and town houses clustered around well planned parks and local amenities.

The design also accommodates potential for larger premium two storey dwellings completing the range of housing choice available for coastal living. The subdivision pattern will still cater for some affordable housing in the form of Maisonettes or cottage style lots.

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 surround the western activity centre and replace the previously nominated R10 area. The north west and north east activity centre precinct will maintain an R40 - R100 density to apply to any residential development within a Commercial or Mixed Use zone.

Final lot yield will be determined at the subdivision stage however, indicative approximated dwelling yields for Lot 1002 are as follows:

- R20/25	245
- R30/640	215
- R60	55
- Grouped dwellings	135
	<hr/>
	650

Indicative dwelling yields for the western, central and eastern cell on Lots 1001 and 1002 are included as **Figure 23**. The estimated total number of dwellings is 2,760.

LEGEND

- 23-24m (W) ENTRY ROAD/NEIGHBOURHOOD CONNECTORS  
(STREET TREE PLANTING WITH VERGE AND MEDIAN PLANTING)
- 22-20m (W) NEIGHBOURHOOD 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

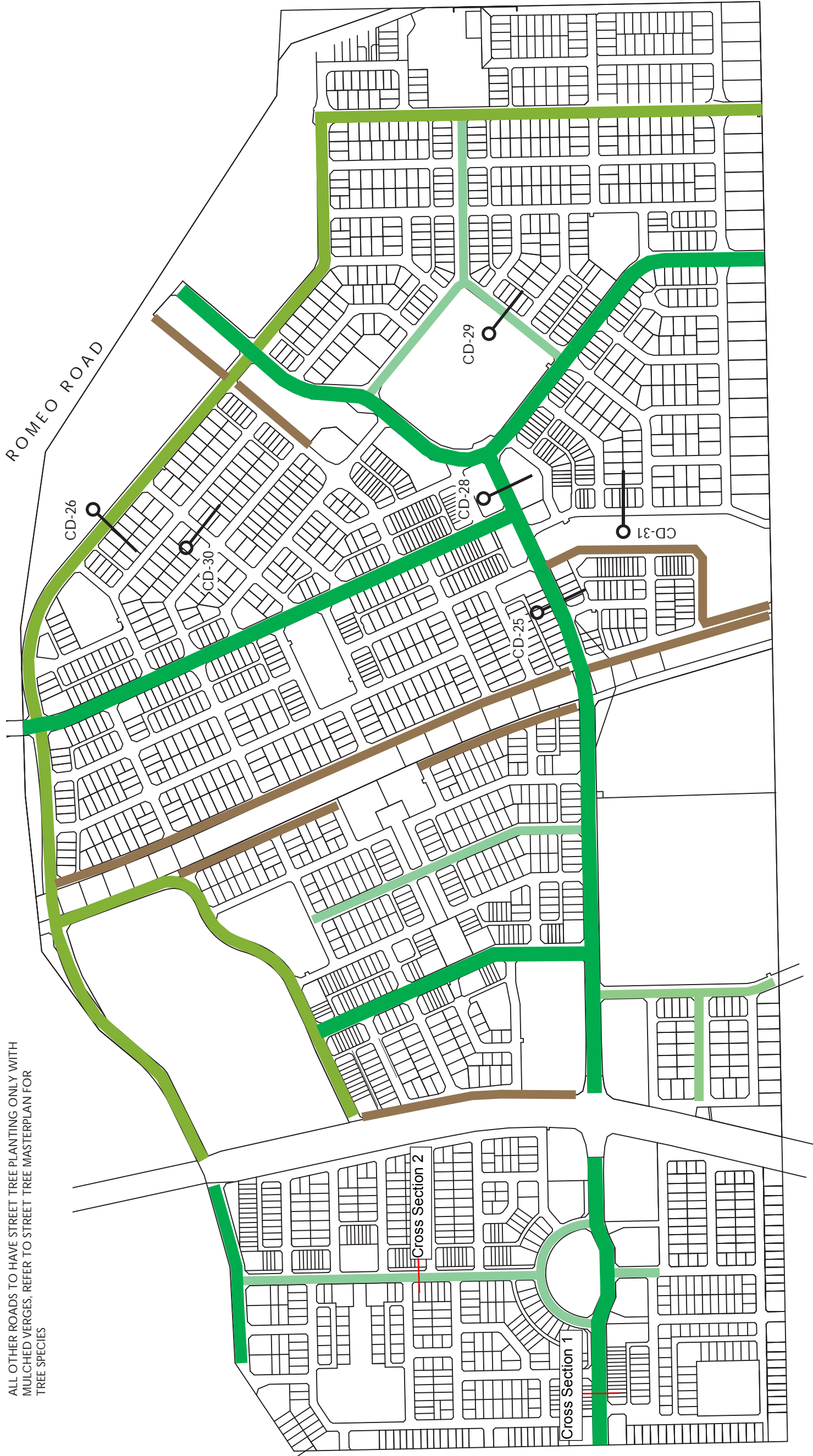


FIGURE 19



LEGEND

- DUP IN VERGE (2100 - 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 20





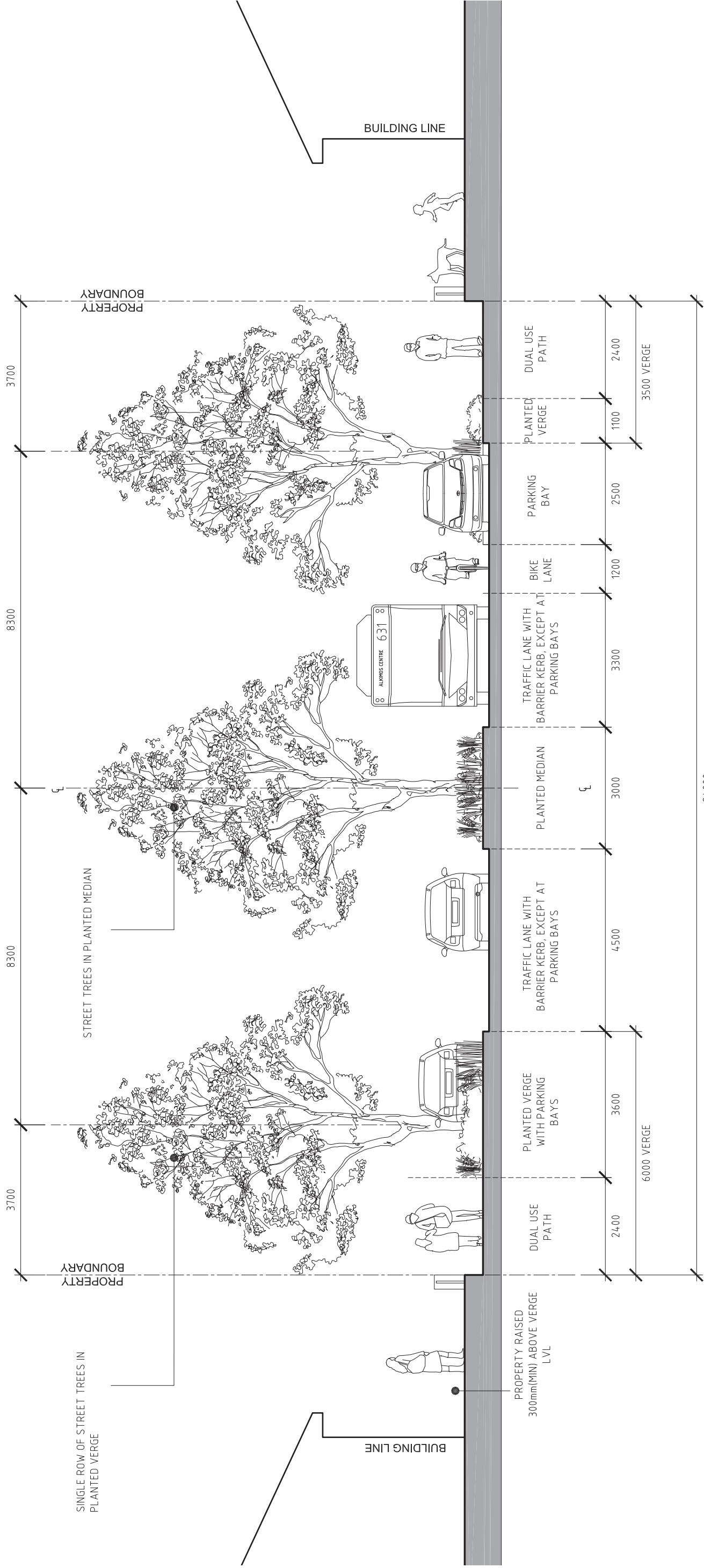


FIGURE 21





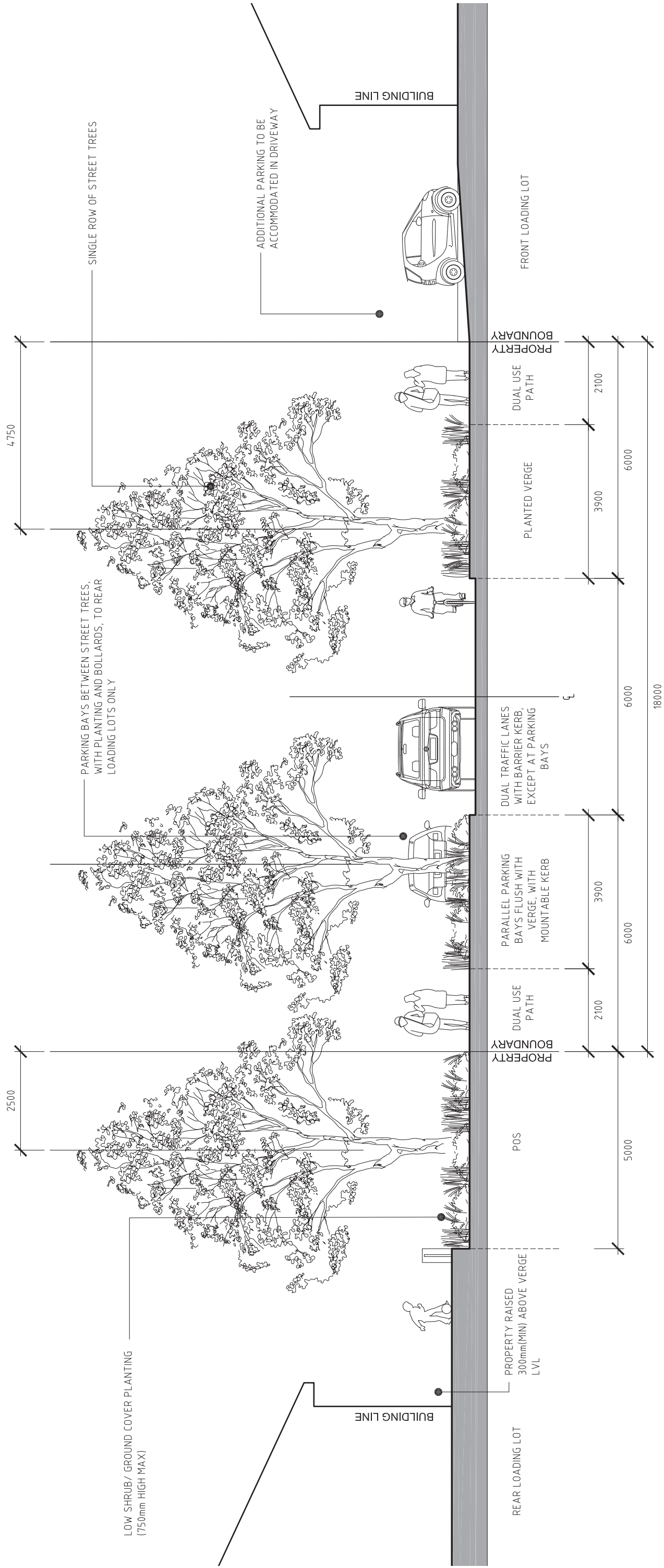


FIGURE 22





## **5.7 Public Open Space**

### **5.7.1 Public Open Space Provision**

The design aspirations for each planned open space area has already been explained in Section 5.2.1 of this report and further expanded in the Landscape Strategy section below.

Open space within the western precinct will include the central Crescent Park, the south west Circus Park as well as the northern Square and Promenade park.

In accordance with the Western Australian Planning Commission 'Liveable Neighbourhoods' a local structure plan must be accompanied by a public open space schedule to demonstrate the required 10 percent public open space contribution is provided.

Deductions for drainage structures (swales) within areas of public open space have been calculated in accordance with the Western Australian Planning Commission's Policy 2.3 'Public Open Space in Residential Areas' and Liveable Neighbourhoods Policy.

A public open space (POS) schedule has been completed demonstrating that there is an overprovision of 1.7 hectares of public open space - **Figure 24**.

## **5.8 Landscape Strategy**

### **5.8.1 Landscape Overview**

As explained in Section 5.2.1 there are a number of core design precincts within the western precinct which will be developed with a specific wellness and lifestyle theme, inspired by the spa towns of Europe, to give it a distinctive sense of place.

The landscape design responds to this theme by creating a series of parks linked with well defined walking routes.

The parks will be designed to provide a number of amenities and experiences that will encourage activity and use, in keeping with the 'mind, body and soul' theme of the western portion of the structure plan.

### **5.8.2 Landscape Masterplan**

A detailed Landscape Masterplan has been prepared and incorporates the refined public open space locations for Lot 1002 – **Figure 25**. A description of how each public open space will be developed and landscaped is included in **Figure 26**.

The overall Trinity Landscape Masterplan has been revised to incorporate the modified design for the western precinct – refer **Figure 27**.



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

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  
2.09ha RESTRICTED POS (1 year storm) NOT INCLUDED IN POS CONTRIBUTIONS  
1.0ha OTHER APPROVED CONTINGENCIES (SEWER PUMP STATION, PAD MOUNT SITES ETC)  
16.92ha PROPOSED COMMERCIAL AND OTHER NON RESIDENTIAL USES  
39.51ha  
GROSS SUBDIVISIBLE AREA - 181.53ha

PUBLIC OPEN SPACE REQUIRED AT 10% - 18.15ha  
MAY COMPRISE: MINIMUM 80% UNRESTRICTED POS (i.e. 14.52ha)  
MAXIMUM 20% RESTRICTED POS (i.e.3.63ha)

POS PROVISION

DISTRICT OPEN SPACE 5.5ha (UNRESTRICTED)

LOCAL POS POS No.	Site Area	POS less 1:1 Excluded Area	Restricted POS (Difference between 1:1 & 1:5)	Net POS
POS 1 -	3082m <sup>2</sup>	3082m <sup>2</sup>	0m <sup>2</sup>	3082m <sup>2</sup>
* POS 2 -	1.87ha	1.6829ha	347m <sup>2</sup>	1.6482ha
POS 3 -	9786m <sup>2</sup>	9786m <sup>2</sup>	0m <sup>2</sup>	9786m <sup>2</sup>
POS 4 -	6927m <sup>2</sup>	6927m <sup>2</sup>	0m <sup>2</sup>	6927m <sup>2</sup>
* POS 5 -	1.88ha	1.5981ha	423m <sup>2</sup>	1.5558ha
* POS 6 & 7a -	1.77ha	1.2806ha	529m <sup>2</sup>	1.2277ha
POS 7b -	5119m <sup>2</sup>	5119m <sup>2</sup>	0m <sup>2</sup>	5119m <sup>2</sup>
* POS 8 -	7168m <sup>2</sup>	4608m <sup>2</sup>	404m <sup>2</sup>	4204m <sup>2</sup>
POS 9 -	9162m <sup>2</sup>	9162m <sup>2</sup>	0m <sup>2</sup>	9162m <sup>2</sup>
* POS 10	1.36ha	1.0027ha	474m <sup>2</sup>	9553m <sup>2</sup>
POS 11 -	7339m <sup>2</sup>	7339m <sup>2</sup>	0m <sup>2</sup>	7339m <sup>2</sup>
* POS 12 -	4250m <sup>2</sup>	2838m <sup>2</sup>	290m <sup>2</sup>	2548m <sup>2</sup>
POS 13a -	1435m <sup>2</sup>	1435m <sup>2</sup>	0m <sup>2</sup>	1435m <sup>2</sup>
POS 13b -	4623m <sup>2</sup>	4623m <sup>2</sup>	0m <sup>2</sup>	4623m <sup>2</sup>
POS 13c -	1705m <sup>2</sup>	1705m <sup>2</sup>	0m <sup>2</sup>	1705m <sup>2</sup>
POS 13d -	305m <sup>2</sup>	305m <sup>2</sup>	0m <sup>2</sup>	305m <sup>2</sup>
POS 14 -	1019m <sup>2</sup>	1019m <sup>2</sup>	0m <sup>2</sup>	1091m <sup>2</sup>
* POS 15 -	1.57ha	1.3499ha	376m <sup>2</sup>	1.3123ha
POS 16 -	2571m <sup>2</sup>	2571m <sup>2</sup>	0m <sup>2</sup>	2571m <sup>2</sup>
POS 17 -	9300m <sup>2</sup>	9300m <sup>2</sup>	0m <sup>2</sup>	9300m <sup>2</sup>
* POS 18 -	8363m <sup>2</sup>	6811m <sup>2</sup>	318m <sup>2</sup>	6493m <sup>2</sup>
POS 19 -	1626m <sup>2</sup>	1626m <sup>2</sup>	0m <sup>2</sup>	1626m <sup>2</sup>
	16.828ha	14.747ha	3161m <sup>2</sup>	14.4309ha

TOTAL POS PROVISION - 5.5ha + 14.3693ha = 19.9309ha  
TOTAL OVER PROVISION OF POS - 1.7809ha



FIGURE 24

AGREED STRUCTURE PLAN No. 60 - AMENDMENT No. 4  
PUBLIC OPEN SPACE SCHEDULE  
LOTS 1001 & 1002 MARMION AVENUE  
ALKIMOS

DATE: 25th NOVEMBER 2014

THE DOCUMENT MAY ONLY BE USED FOR THE PURPOSE FOR WHICH IT WAS COMMISSIONED AND IN ACCORDANCE WITH THE TERMS OF ENGAGEMENT FOR THE COMMISSION. UNAUTHORISED USE OF THIS DOCUMENT IN ANY FORM WHATSOEVER IS PROHIBITED.

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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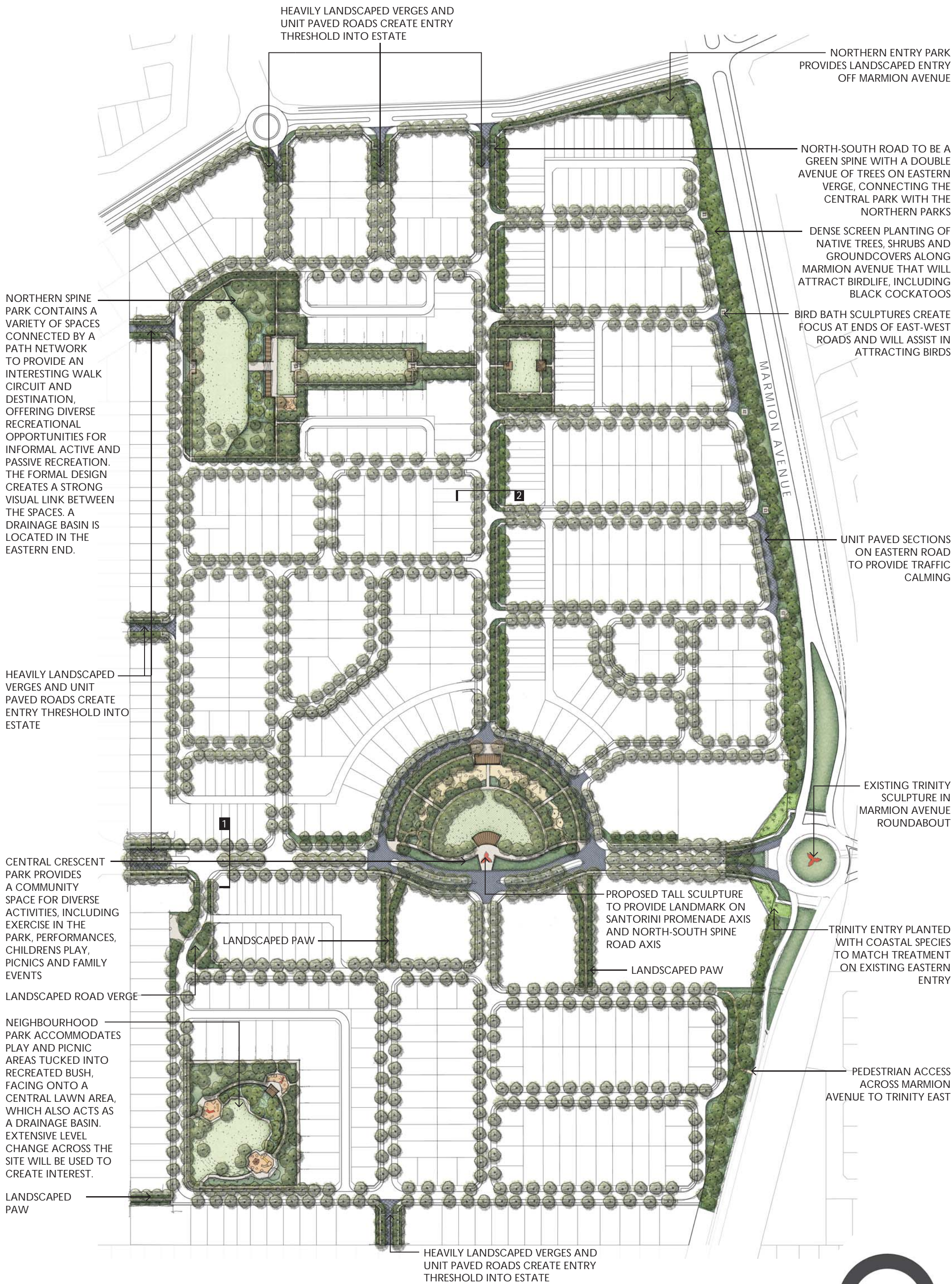


FIGURE 25

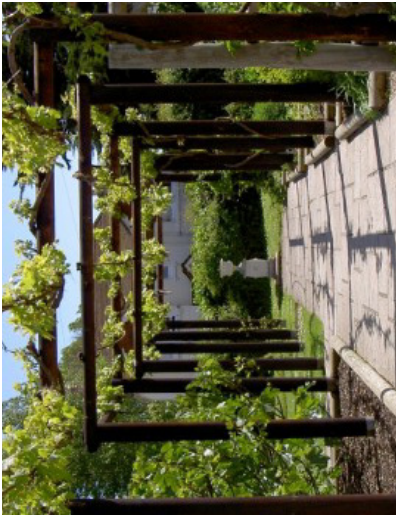




NORTHERN PARK

Formal Square

- Neighbourhood Park
- Some level change
- Nature Play
- Drainage function
- Combination of lawn and planted areas



PARK CHARACTER

CENTRAL PARK

Crescent Park

- Community gathering
- Exercise in the park
- Play and Fitness
- Open lawn areas



SOUTHERN PARK

Circus

- Intimate park
- Extreme level change
- Passive recreation
- Drainage function
- Mostly planted



FIGURE 26





POS 13

SMALL NEIGHBOURHOOD PARK PROVIDING A FOCAL SPACE IN THE SOUTH-WEST CORNER OF THE SITE. THE PARK WILL INCORPORATE EXTENSIVE LEVEL CHANGE FROM EAST TO WEST, WHICH WILL BE USED TO CREATE TOPOGRAPHICAL INTEREST WITH RETAINED TERRACES AND SLOPED EMBANKMENTS. WITH SMALL PLAY AREAS INTEGRATED INTO THESE LEVEL CHANGES. THE PARK WILL INCLUDE OPEN LAWN AREAS FOR INFORMAL ACTIVE RECREATION, AND EXTENSIVE GARDEN AREAS PLANTED WITH WATERWISE NATIVE PLANTS. PATHS WILL PROVIDE CIRCULATION, WITH ONE OR TWO SEATING / PICNIC NODES ESTABLISHED NEAR PLAY AREAS. THE PARK WILL INCORPORATE A LARGE DRAINAGE BASIN THAT WILL BE TURFED IN THE DRIER AREAS, AND PLANTED WITH ENDEMIC DAMPLAND SPECIES IN THE WETTER AREAS.

POS 14

THIS PARK IS LOCATED IN THE HEART OF THE WESTERN VILLAGE, PROVIDING A COMMUNITY FOCUS AND DESTINATION POINT. IT WILL INCORPORATE A LARGE OPEN LAWN AREA AND SHADE STRUCTURE, ALLOWING FOR COMMUNITY EVENTS AND FUNCTIONS, AS WELL AS PROVIDING OPPORTUNITY FOR EXERCISE IN THE PARK, WHICH WILL BE PROMOTED IN THIS VILLAGE. THE PARK WILL ALSO INCLUDE A SIGNIFICANT MULTI-AGE PLAYGROUND, WITH ASSOCIATED PICNIC SHELTERS.

POS 15 & 16

THESE TWO PARKS FORM AN IMPORTANT GREEN SPINE IN THE NORTHERN SECTOR OF THE PRECINCT. POS 15 WILL INCORPORATE A LARGE DRAINAGE BASIN THAT WILL BE TURFED IN THE DRIER AREAS, ALLOWING FOR INFORMAL ACTIVE RECREATION, AND PLANTED WITH ENDEMIC DAMPLAND SPECIES IN THE WETTER AREAS. PATHS WILL PROVIDE CIRCULATION, WITH SEVERAL SEATING / PICNIC NODES ESTABLISHED. WITH POSSIBLY A SMALL JUNIOR PLAYGROUND PROVIDED. POS 16 WILL INCLUDE A COMBINATION OF GARDEN BEDS PLANTED WITH NATIVE SPECIES, AND LAWN AREAS FOR PASSIVE RECREATION, WITH PATHS AND SEATING NODES PROVIDED.

POS 17

THIS SMALL PARK AT THE NORTHERN ENTRY WILL BE PLANTED WITH NATIVE SPECIES, WITH PATHS PROVIDING PEDESTRIAN ACCESS AND CIRCULATION.

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 ARBORES/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.

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.



FIGURE 27

Development of the open space areas within the western precinct is explained below:

- Central Crescent Park

The Central Crescent Park forms the hub of this precinct, located on the axis of Santorini Promenade and the primary North-South road.

It will contain a large grassed space and shade structure for community events and activities, including 'exercise in the park' group classes and outdoor performances.

The park will also incorporate play and activity spaces for children and youth, including playgrounds, skate areas, outdoor table tennis and so on, with associated picnic facilities to encourage family use.



Barbecue facilities will be provided to cater for community gatherings and foster neighbourhood ties.

A tall sculpture will provide a landmark element in the landscape that will be visible from the Hilltop Park in Agora village, and also visible along Santorini Promenade and the primary North-South road.

- South West (Circus) Park

The South West Park will accommodate play and picnic areas tucked into re-created bush, organised around a central drainage basin that will be partially grassed for informal passive and active recreation, and planted with dampland species in the low point of the basin. Extensive level change across the site will be used to create interest, with play spaces built into the embankments.



- Northern Spine Park

The Northern Spine Park will contain a series of spaces linked by a path network to provide an interesting walk circuit and destination. It will be designed to offer diverse opportunities for informal active and passive recreation. The formal design creates a strong visual link between the spaces.

A drainage basin is located at the eastern end, incorporating a large grassed area for active use, and planting of dampland species in the low point of the basin.

### **5.8.3 Planting Theme**

The selection of plant species will be based on fulfilling several functions, including:

- The use of endemic coastal species to reinforce the coastal character of the precinct, and reduce long-term water requirements.
- The use of flowering species that will attract bees and birdlife, supporting the theme of wellness.
- The use of species that encourage foraging and roosting for Carnaby's Black Cockatoo, to comply with DEWHA requirements.
- The use of medicinal and edible plants in selected locations, to support the theme of health and wellbeing.

### **5.8.4 Colours and Materials**

The use of different paving materials and landscape elements will be utilised to complement the planting theme, as well as to reinforce the concept of a unique neighbourhood.

Special threshold paving, road and landscaping treatments, such as planted entry embankments, contribute to creating a unique streetscape which is a design signature of Trinity.

The key colours and materials within the western village will predominantly be light in character. In order to reinforce the overall vision of health and relaxation.

A more neutral back drop will be a core characteristic, softened by natural materials and local landscaping. Light and natural tones in selected paving and structures will complement the selected plant species.

Flowering and seasonal plants will provide colour in the streetscape and help support native birdlife. Landscaping will continue an important attribute within the whole of Trinity, of preserving and enhancing habitat for fauna.

### **5.8.4 Boulevards / Street Planting**

Extensive tree planting will occur within street verges and median strips to create green spines within Lot 1002, continuing the approach already established for the areas developed east of Marmion Avenue.

The approach to create green spines along key roads is described below:

- Marmion Avenue

The western verge of Marmion Avenue will be heavily planted with native trees, shrubs and groundcovers to provide a dense screen of planting along this interface.

- Santorini Promenade

Santorini Promenade is the primary east-west road in the precinct and will contain a central median to create a distinctive tree-lined boulevard. The boulevard will deviate slightly around the Crescent Park, defining the park as the community hub of the precinct, and providing a traffic-calming effect to create a more pedestrian friendly environment.

- North South Spine Road

The North-South road is to be a green spine featuring a double avenue of trees on the eastern verge, creating a shady walking route linking the Central Crescent Park and the Northern Spine Park.

#### **5.8.5 Public Art**

Public art will be an important and integral component of the landscape design within this development, as has occurred in Atelier and Agora villages. Artworks will provide numerous benefits to the community, including the following:

- Enrich the built environment
- Contribute to the creation of a local identity
- Develop community pride
- Interpret and express in a creative way the unique characteristics of this area (including, natural, cultural and social characteristics)
- Provide landmarks as points of reference and orientation

A public art strategy and program will be developed at the outset of the project to ensure the implementation of meaningful and relevant artworks throughout the precinct.

As explained in Section 5.8.2 a large scale public art structure will be a key urban design feature in the planned crescent shaped park within Lot 1002.

Examples of planting types, colours and materials, play equipment and public art images that will be incorporated into landscape and urban design are included as **Attachment 5**.

## 5.9 Engineering and Infrastructure

All service infrastructure can be readily provided from extension to the services currently being constructed within the existing subdivision in the structure plan area, as detailed in the updated Service Report compiled by GHD – **Attachment 6**.

### 5.9.1 Roads and Paths

All roads and paths will be constructed to the standards and specification of the City of Wanneroo.

### 5.9.2 Service Infrastructure

All lots will be provided with necessary service infrastructure, including reticulated water, sewer, stormwater drainage, underground electricity, gas and telecommunication services.

### 5.9.3 Water Management Strategy

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

Addendums to the approved Local Water Management Strategy were prepared in support of both Amendment 2 and 3 to the ASP.

A new Addendum has been prepared to support the revised Development Concept Plan for Lot 1002 proposed as part of Amendment No 4 to the ASP – **Attachment 7**. It presents an up to date surface water management strategy, and outlines key changes to the water management strategy.

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.

- **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 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.







## **6.0 SUMMARY**

In the five years since the original ASP No 60 in 2009 was prepared, the district planning context of the locality has changed considerably.

With the completion of the local structure planning for the areas to the immediate west and north of Lot 1002 providing greater clarity, the detailed planning for the western precinct within ASP No 60 has been reviewed and refined.

The revised Development Concept Plan has been designed to facilitate the creation of a wide range and choice of housing lots and styles. Views to the ocean will be maximised to take advantage of the site's elevation. The design provides for better integration with proposed developments on the surrounding boundaries, and there will be strong pedestrian connections towards the retained dune on the northern boundary providing a green link between the coast and the Alkimos Sub Regional Centre.

Generous sized areas of public open space will be developed to a high quality with integrated design themes, and the planned central crescent shaped park will be the core focus of the western precinct design.

Like Atelier and Agora before it, the western village will have it's own unique character, individual theme and distinct style.

From a statutory context, the amendment proposes:

- (i) The removal of Environment Responsive Housing precinct and recoding;
- (ii) Redefinition and rezoning of the western activity centre boundary;
- (iii) A minor realignment of east west neighbourhood connector (Santorini Promenade).

This Amendment will result in an improved design outcome for future subdivision of Lot 1002.