



## Wokarena Heights Residential R2.5 Structure Plan

Buller, Western Australia

Prepared for the Shire of Chapman Valley by GHD Pty Ltd

Adopted by the Council of the Shire of Chapman Valley 19 September 2012

CERTIFIED THAT THIS STRUCTURE PLAN WAS ADOPTED BY RESOLUTION OF THE  
WESTERN AUSTRALIAN PLANNING COMMISSION ON

\_\_\_\_\_  
Date

Signed for and on behalf of the Western Australian Planning Commission

\_\_\_\_\_

an officer of the Commission duly authorised by the Commission pursuant to section 16 of the Planning and Development Act  
2005 for that purpose, in the presence of:

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

And by

RESOLUTION OF THE COUNCIL OF THE SHIRE OF CHAPMAN VALLEY ON

\_\_\_\_\_  
Date

And  
PURSUANT TO THE COUNCIL'S RESOLUTION HEREUNTO AFFIXED IN THE PRESENCE  
OF:

\_\_\_\_\_  
Mayor, Shire of Chapman Valley

\_\_\_\_\_  
Chief Executive Officer, Shire of Chapman Valley

\_\_\_\_\_  
Date

This Structure Plan is prepared under the provision of the Shire of Chapman Valley Local Planning Scheme

## TABLE OF MODIFICATIONS TO PART ONE AND STRUCTURE PLAN MAP

[illegible]

# Contents

Part One - Statutory Section	1
Part Two - Explanatory Section	5
1.0 Planning Background	5
2.0 Site Conditions & Environment	12
3.0 Local Structure Plan	17
4.0 Implementation	32
Appendix A: Local Water Management Strategy	
Appendix B: FAQs	

## List of Figures

Figure 1: Structure Plan Location	6
Figure 2: Wokarena Heights Site Aerial	7
Figure 3: TPS1	9
Figure 4: LPS2	9
Figure 5: Greater Geraldton Structure Plan	10
Figure 6: Opportunites & Constraints	16
Figure 7: Indicative Lot Layout	18
Figure 8: Movement Network	20
Figure 9: Indicative Road Cross Section	21
Figure 10: Public Open Space	24
Figure 11: Development Yields	31
Figure 12: Example Staged Subdivision	34
Figure 13: Example Detailed Area Plan	35

## List of Tables

Table 1: Proportionate contributions to road Infrastructure upgrades	4
Table 2: Ownership & Certificate of Title details	8
Table 3: Threatened Fauna	13
Table 4: Structure plan summary	17
Table 5: Indicative lot yield	17
Table 6: Public open space schedule	23
Table 7: Method of cost apportionment	30

## Appendices

Appendix A: Local Water Management Strategy	
Appendix B: Frequently Asked Questions	



# Part One - Statutory Section

## 1.0 Structure Plan Area

### 1.1

The Wokarena Heights Residential R2.5 Local Structure Plan ('Structure Plan') shall apply to the area located within the 'Structure Plan Boundary' as depicted on Plan 1 – Structure Plan.

## 2.0 Structure Plan Content

### 2.1

This structure plan comprises:

- Part 1: Statutory Section;
- Part 2: Explanatory Section; and
- Technical appendices.

## 3.0 Structure Plan Objective

### 3.1

The objective of the structure plan is to provide a statutory planning framework that is responsive to the site's location and environment and facilitates the coordinated development of R2.5 residential dwellings

## 4.0 Interpretations and Use Class Permissibility

### 4.1

The words and expressions used in this structure plan shall have the respective meanings given to them in the Shire of Chapman Valley Town Planning Scheme No. 2 (the 'scheme').

### 4.2

Land use permissibility within zones shown in Plan 1 shall be in accordance with the corresponding zone under the scheme.

## 5.0 Operation Date

### 5.1

The structure plan shall come into operation either when it is endorsed by the Western

Australian Planning Commission pursuant to clause 5.22.10.2 of the scheme or adopted by Council pursuant to clause 5.22.9.1 of the scheme, whichever is the latter.

## 6.0 Relationship to the Local Planning Scheme

### 6.1

Pursuant to clause 5.22.6.3 of the scheme, the provisions, standards and requirements specified in the Structure Plan shall have the same force and effect as if they were a provision, standard or requirement of the scheme.

### 6.2

Subject to clause 5.22.12.2 of the scheme, in the event of there being any inconsistency or conflict between the provisions, standards or requirements of the scheme and the provisions, standards or requirements of the structure plan, the provisions, standards or requirements of the scheme shall prevail.

## 7.0 Public Open Space

### 7.1

Public open space shall be located as per Plan 1, and designed in accordance with the Wokarena Heights Structure Plan Local Water Management Strategy.

## 8.0 Residential Density

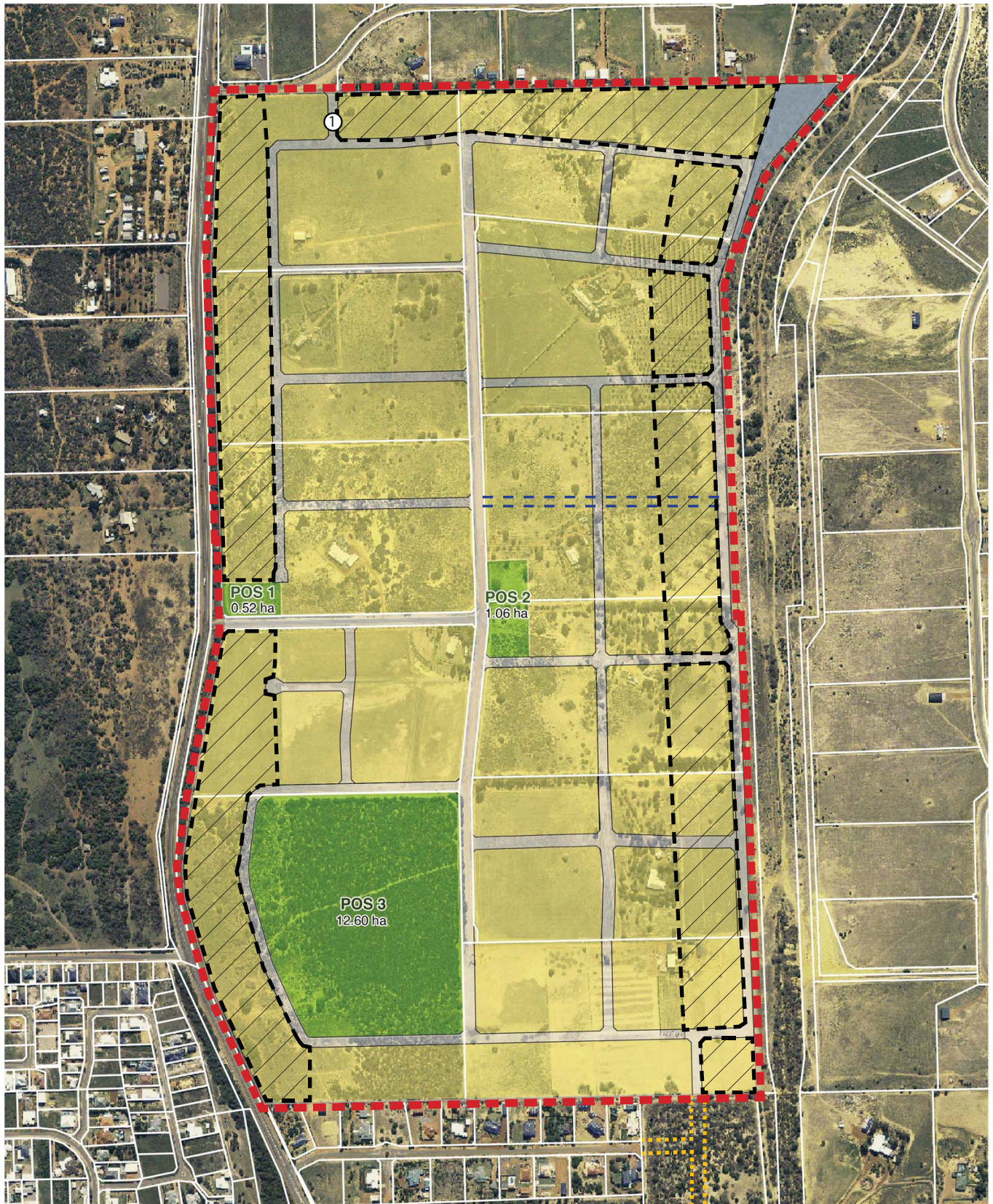
### 8.1

Plan 1 depicts the residential density codes applicable to the land according to the legend thereon.









### 8.2

The residential density codes designated on this structure plan apply to the land and scheme except where varied by Clause 8.3 of the structure plan.





#### LEGEND:

	RESIDENTIAL (R2.5)		LOCAL STRUCTURE PLAN AREA		SUBJECT TO FUTURE DETAILED AREA PLAN (REFER TO FIGURE 13)
	ROAD RESERVE (FUTURE HIGHWAY)		FUTURE ROAD CONNECTION		① ROAD CONNECTION ONLY TO BE PROVIDED IF DETERMINED NECESSARY FOR VEHICLE ACCESS AT TIME OF SUBDIVISION. IF NOT REQUIRED FOR VEHICULAR PURPOSES TO BE RETAINED AS PEDESTRIAN ACCESS WAY / SERVICE ALIGNMENT.
	PUBLIC OPEN SPACE		TEMPORARY ACCESS WAY		

0 60 120 180m  
SCALE 1:5000 AT ORIGINAL SIZE



CLIENTS | PEOPLE | PERFORMANCE

Shire of Chapman Valley  
Wokarena Heights Structure Plan

Local Structure Plan

Job Number 71-11105

Revision B

Date Oct 2013

Plan 01

GHD House, 239 Adelaide Tce Perth WA 6004 T 61 8 6222 8222 F 61 8 6222 8555 E permail@ghd.com.au W www.ghd.com

Plot Date: 22 October 2013 - 2:25 PM

Plotted by: Angie Brown

Cad File No: G:\8130130\image Files\Manila Drawings\CADD\Richards Road Residential\FIGURES\PLAN1\_Local Structure Plan Rev B.dwg



### 8.3

For any lot directly abutting the Parkfalls Estate, provision 6.3.1 Buildings setback from the boundary, Acceptable Development provision A1 of the Residential Design Codes is varied so that the minimum rear setback is 30 metres

## 9.0 General Subdivision and Development Requirements

### 9.1

All provisions, standards and requirements of the Residential Zone as set out in the scheme shall apply.

### 9.2

The orientation and design of buildings shall be sympathetic to existing landform and landscape elements.

### 9.3

The use of reflective roof and wall materials which prejudice the landscape amenity of the surrounding landform, will not be permitted.

### 9.4

Ancillary structures shall be of a design and construction complementary to the design and materials used in the primary residence.

### 9.5

Boundary fencing shall be permeable. Alternative internal fencing shall only be permitted where it can be demonstrated that it will not reduce passive surveillance of the street.

### 9.6

No direct vehicular access shall be permitted to the Northwest Coastal Highway or Wokarena Road.

## 10.0 Detailed Area Plan Requirements

### 10.1

A Detailed Area Plan shall be prepared as a condition of subdivision for those lots and locations as shown on Plan 1.

### 10.2

Detailed Area Plans shall include provisions with regard to:

- Minimum setback of buildings to public open space
- Passive surveillance of the public open space
- Orientation of the building to public open space
- Identification of building envelopes with a minimum rear setback of 30 metres for any lot abutting the Parkfalls Estate
- The provision of a minimum 3 metre firebreak and 10 metre landscape buffer at the rear boundary for any lot abutting the Parkfalls Estate.

## 11.0 Special Provisions

### Infrastructure Provisions

### 11.1

Developers shall be responsible for the upgrade of Richards Road and Wokarena Road, including its intersection with Northwest Coastal Highway ('road upgrades').

### 11.2

A cost contribution for road upgrade will be placed as a condition of approval of a subdivision application by the Shire of Chapman Valley.

### 11.3

Each parent lot shall pay a contribution that represents a percentage of the total construction cost, as shown in Table 1.

#### 11.4

A detailed cost estimate for the upgrade of shall be prepared by the Shire and reviewed annually.

#### 11.5

A contingency fee and contract management fees shall be built into the cost estimate to allow for costs associated with unforeseen circumstances or increases to construction costs.

#### 11.6

If the actual cost is lesser than the cost estimate, contributions may be refunded or utilised to further enhance the streetscape.

#### 11.7

To ensure the coordinated upgrade of Wokarena and Richards Roads the Shire will undertake all works associated with construction. The Shire may allow or require as a condition of subdivision a landowner to undertake upgrade works where it is determined that the upgrade works are necessary to support that stage of subdivision.

#### 11.8

The timing of construction will largely depend on when the funding becomes available from Landowners through contributions. The Shire may, however, provide additional funding to bring forward the construction time of Wokarena Road and Richards Road given the increasing need for this road to provide access.

## 12.0 Operation and Implementation

### 12.1

The following technical studies and plans will be required to support applications for subdivision:

1. Flora and fauna survey (Lot 1 only, prior to
2. Application for subdivision)
3. Urban Water Management Plan consistent with the Local Water Management Strategy (condition of subdivision)
4. Bush fire Management Plan (condition of subdivision)

### 12.2

As a condition of subdivision, the following notifications on title will be required:

1. For lots abutting Northwest Coastal Highway: No direct vehicular access shall be permitted to the Northwest Coastal Highway.
2. For lots directly abutting Parkfalls Estate: Controlled stocking is permitted on adjacent rural-residential lots, with possible associated livestock impact on adjacent properties.

Table 1 - Proportionate Contribution to Road Infrastructure Upgrades

Lot	Created Residential Land	Contribution
1	7.12ha	6.4%
2	10.36ha	9.4%
3	10.22ha	9.2%
4	10.43ha	9.4%
5	10.46ha	9.4%
6	9.67ha	8.7%
7	10.3ha	9.3%
8	10.66ha	9.6%
9	9.9ha	8.9%
10	11.22ha	10.1%
11	10.39ha	9.4%



# Part Two - Explanatory Section

## 1.0 Planning Background

### 1.1 Introduction and Purpose

The Shire of Chapman Valley (SoCV) is currently in the process of drafting Local Planning Scheme No. 2 (LPS2) to replace Town Planning Scheme No. 1 (TPS1). As part of this process, it is intended to rezone the study area from 'General Farming' to 'Residential R2.5'. The Environmental Protection Authority (EPA) has deemed that this proposed rezoning does not warrant an Environmental Review under Part IV of the *Environmental Protection Act 1986*.

As a result, a Local Structure Plan (LSP) is required to guide the future use, subdivision and development of the proposed Wokarena Heights 'Residential R2.5' zone. The purpose of the LSP is:

- To provide a statutory land use plan for the defined area;
- To provide a comprehensive framework for land use to facilitate future subdivision and development of the area;
- To coordinate the provision and planning for local infrastructure and facilities; and
- To provide the general basis for subdivision that will comprise a more detailed level of planning.

This structure plan report includes 3 main components: Part One - Statutory Section, Part Two - Explanatory Section, and appendices. Part One sets out statutory provisions that apply to all subdivision and development within the structure plan area, and includes the structure plan map. Part Two is non-statutory. This section elaborates on the intent of Part One, and provides additional guidance and examples for the future development of Wokarena Heights. Appendix A includes a Local Water Management Strategy for Wokarena Heights, which explains how water and stormwater is to be managed in a coordinated way. The Local Water Management Strategy provides a basis for the development of more detailed Urban Water Management Plans to be prepared by developers at the time of subdivision.

Appendix B provides a list of 'Frequently Asked Questions' about subdivision and development processes. It provides information to landowners and potential purchasers and developers about how the subdivision of land occurs, what infrastructure is required to be provided by subdividers and why, and what the other requirements and obligations are for developers.

### 1.2 Land Description

#### Location

The Wokarena Heights study area is located approximately 8 km north of Geraldton, adjacent to the North West Coastal Highway (see Figure 1). The site is bounded by the highway to the west, the future highway realignment corridor to the east and existing development to the north and south.



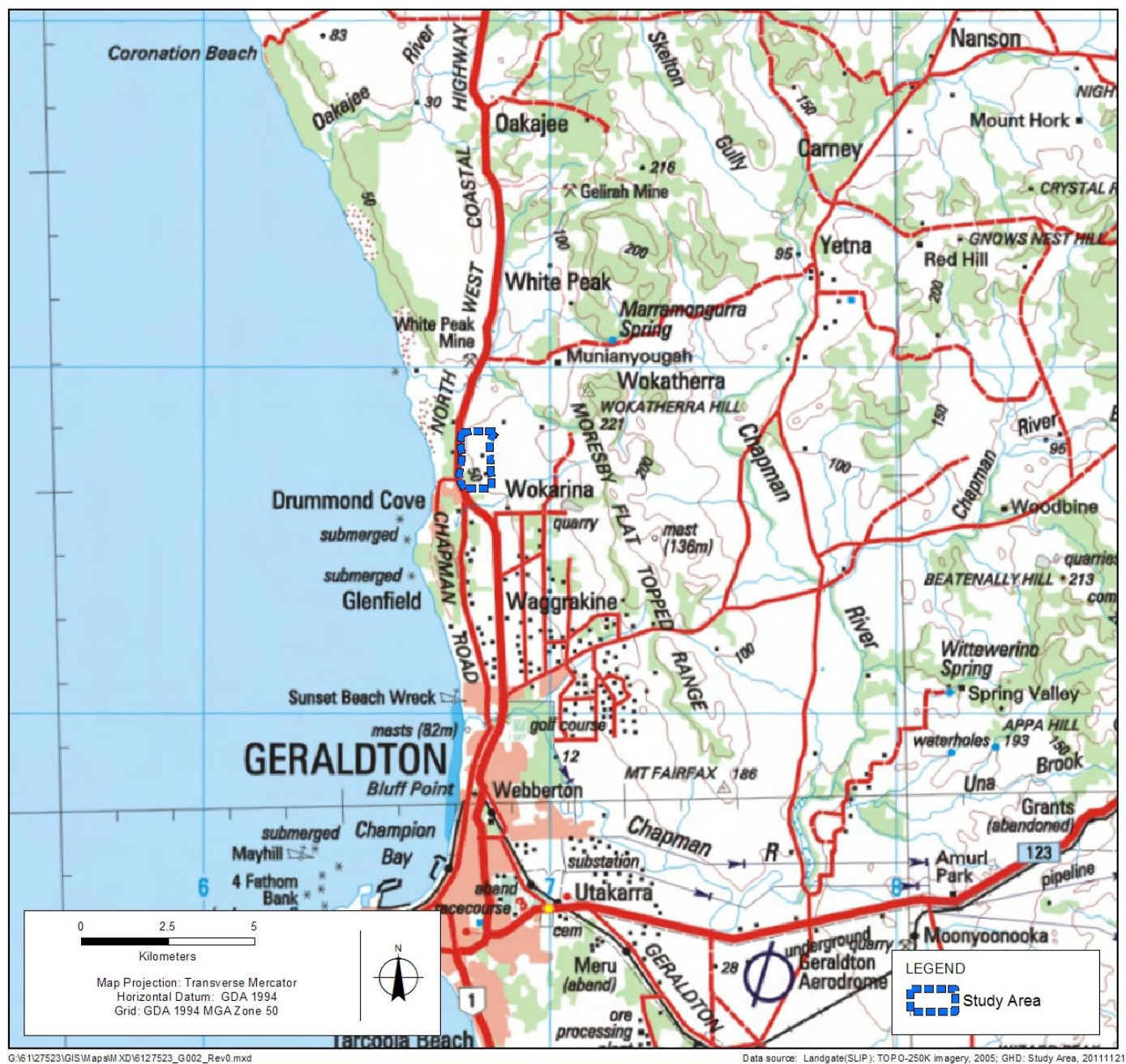


Figure 1 - Location of Wokarena Heights Structure Plan Area



## Area and Land Use

The site consists of primarily rural lifestyle land uses, including an orchard, cleared areas, existing houses and remnant bush land. An aerial photo of the site is included as Figure 2.

The total area of the LPS is 142.79 ha

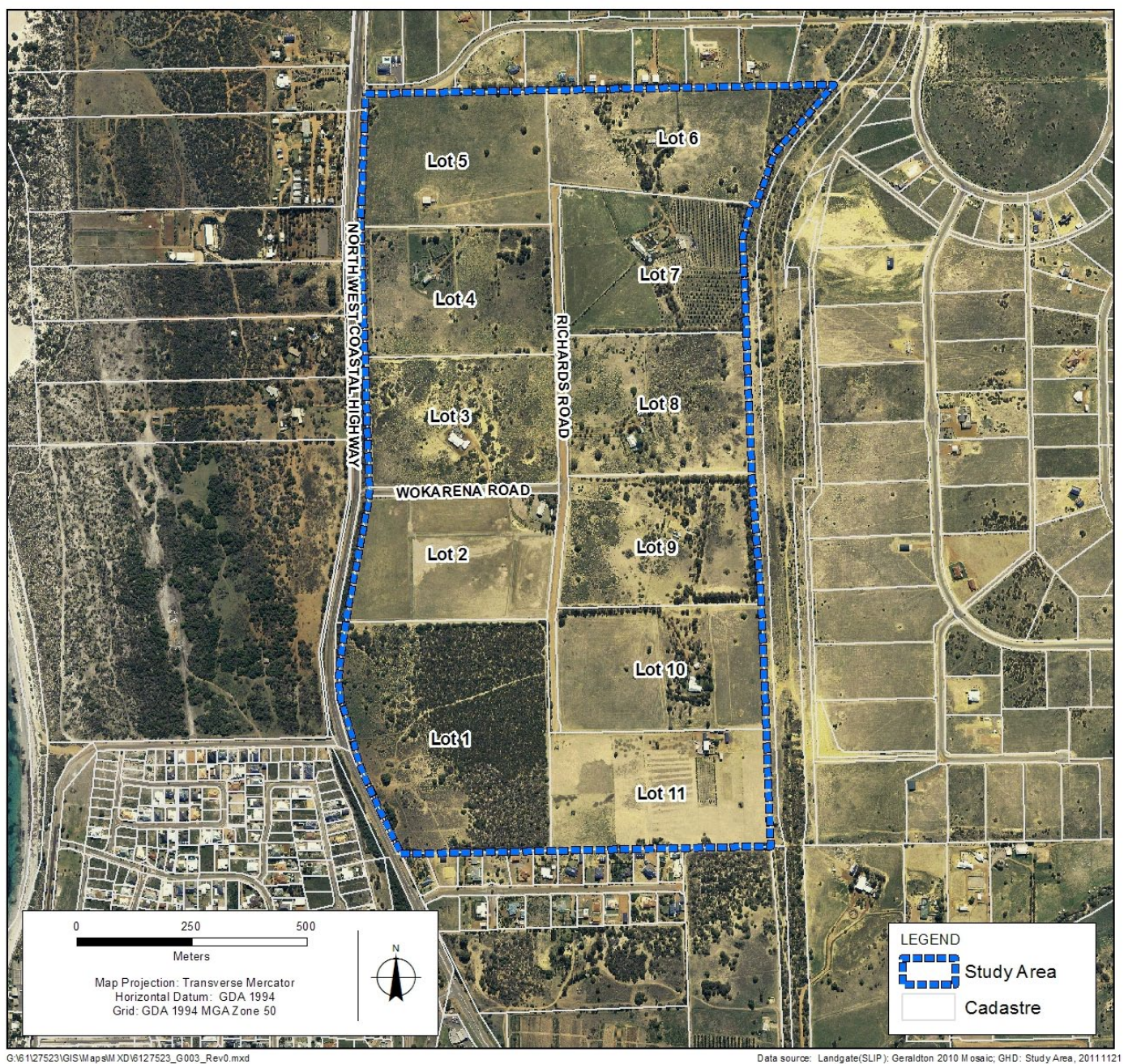


Figure 2 - Wokarena Heights Site Aerial



## Legal Description and Ownership

The site consists of 11 freehold lots, all in separate private ownership. The ownership and Certificate of Title details are outlined in Table 2.

Table 2 - Ownership and Certificate of Title Details

Lot	Owner	Certificate of Title (Volume/ Folio)
1	Supardi Hadinoto	1133/226
2	Ross Williamson	1967/127
3	Ken & Bernadette Mitsuda	1741/326
4	Jeremy Henderson and Danielle Austin	1741/327
5	Raymond & Tracey Jakovich	1741/329
6	Gregory & Gwenda Moncrieff	1741/329
7	Berrice & Phillip Lodge	1741/330
8	Jim Bowbridge	1741/331
9	Kerry Pym	1741/332
10	Donald & Lynette Patten	1741/333
11	Alison McCaskie	1741/334

### 1.3 Planning Framework

#### Zoning and Reservations

The site is currently zoned 'General Farming' under the SoCV TPS1 (see Figure 3). The following Policy Statement is included within TPS1 for the General Farming zone:

*'This zone embraces the broad acre farming areas of the Shire. It is intended to protect the economic viability of those areas generally and to preserve the rural character and appearance of the area. The lot sizes shall be at the discretion of Council based on what is locally accepted as a viable farm unit, or where a non-farming use is proposed on the amount of land required for that purpose.'*

An 'Important Regional Road' reservation abuts the eastern boundary of the site and traverses the north east corner of the site, through Lots 6 & 7. This reserve reflects a potential realignment of North West Coastal Highway. Local Planning Scheme No. 2 illustrates the updated alignment in accordance with Main Roads WA planning and the WAPC's Greater Geraldton Structure Plan (Figure 4).

The Shire of Chapman Valley is currently reviewing TPS1 and subsequently Local Planning Scheme No. 2 (LPS2) was made available for public inspection and comment from 22nd November 2010 until 23rd February 2011. There were no objections received during this time in relation to the rezoning of Wokarena Heights.

The progression and adoption of LPS2 is being affected by appeals associated with recommendations of the EPA with regard to areas outside the Wokarena Heights Precinct. The advice of the EPA and submissions received during advertising of the scheme support the rezoning of the Wokarena Heights Precinct to R2.5. Once finalised, LPS2 will zone the subject land 'Residential R2.5'.

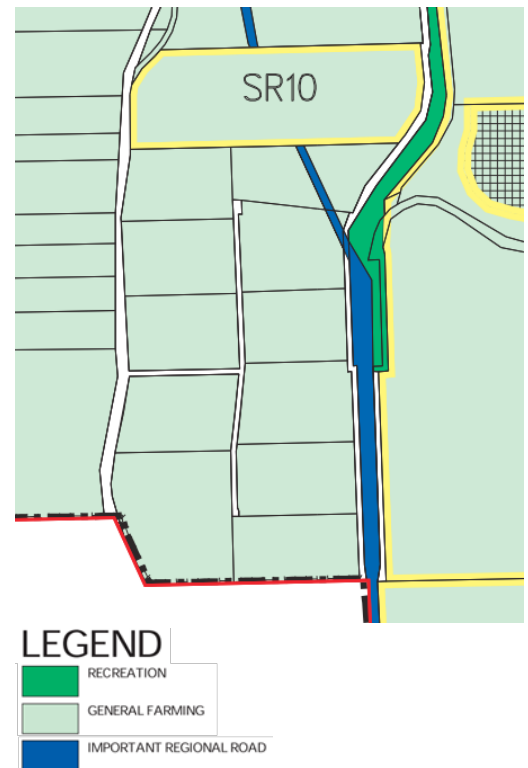


Figure 3 - TPS1



Figure 4 - Local Planning Scheme No.2 Zoning

## Regional and Sub-Regional Structure Plan

The final *Greater Geraldton Structure Plan* (GGSP) was released in June 2011, and is an update of the 1999 *Greater Geraldton Structure Plan*. The document is intended as an interim measure until local governments have prepared new local planning strategies and/or district structure plans. It will also be used as a basis for the preparation of wider strategic regional planning.

The LSP area is identified within the GGSP as 'Future Urban' (in pink), with an 'indicative rapid public transport alignment' (in yellow) identified along North West Coastal Highway (Figure 5).

The GGSP provides the following guidance for these areas:

- The indicative rapid public transport alignment reinforces the linear form of 'urban' Geraldton. The notional alignment will assist local governments in identifying the location and extent of future district and neighbourhood activity centres in the northern and southern coastal corridors as the eventual delivery of the public transport corridor will ultimately reinforce their strategic importance.
- The development of 'future urban' areas is subject to localised structure planning and the provision of infrastructure and services. Environmental considerations, indigenous and cultural heritage issues may require resolution during structure planning. The long-term development of 'future urban' areas may be constrained by the capacity of key utilities and service infrastructure including power, water and wastewater.



Figure 5 - Greater Geraldton Structure Plan



- The orderly and proper planning of 'future urban' areas can be compromised if they are further fragmented. In this regard, ad hoc subdivision should not be supported. The final location and extent of district activity centres in the northern and southern coastal corridors are subject to further investigation by the local governments. This will have ramifications for future structure planning and the provision of public transport infrastructure.

The LSP provides the framework for urban development of the precinct consistent with the recommendations of the GGSP.

The *Draft Northern Geraldton District Structure Plan* (NGDSP) was released in 2006, with the purpose of providing a district structure plan that progresses key elements of the original GGSP (1999) and identifies principles that will guide future development within the study area. The structure plan provides an overall guide for the future development of the area and reflects and refines key recommendations of the GGSP in terms of identifying land for urban and residential uses.

The NGDSP identified Wokarena Heights as 'Future rural residential'. Land to the west of the future highway was identified as future rural residential in the NGDSP with a lot size range of 1 ha to 4 ha. The NGDSP requires that development in the area with a requirement to prepare local structure plans that consider among other matters, visual impacts of development on the Moresby Range.

There are no commercial or community services (other than the special uses) identified within the locality and as such, local distributor road connections will be important in providing residents with convenient access to services.

The NGDSP remains in draft form and many of its functions have been superseded by the GGSP.

## Policies

The Wokarena Heights LSP has been prepared in compliance with the following key existing policies and strategies:

- Geraldton Region Plan 1999;
- Greater Geraldton Structure Plan 2011;
- Draft Northern Geraldton District Structure Plan 2006;
- Moresby Range Management Strategy 2009;
- Moresby Range Management Plan 2010;
- Geraldton Regional Flora and Vegetation Survey 2010;
- Shire of Chapman Valley Town Planning Scheme No. 1;
- Shire of Chapman Valley Local Planning Scheme No. 2;
- Shire of Chapman Valley Local Planning Strategy 2007;
- State Planning Policy 3.6 Development Contributions for Infrastructure;
- Planning Bulletin 92 Urban Water Management; and
- Draft Structure Plan Preparation Guidelines 2011.

## Other Approvals and Decisions

A component of LPS 2 separate to the Wokarena Heights site required Environmental Review by the EPA, which is currently under appeal by SoCV and several landowners. Once a decision is made by the Environment Minister, LPS2 can be returned to Council for further consideration and endorsement before being forwarded to the Western Australian Planning Commission for final endorsement.

## 2.0 Site Conditions and Environment

### 2.1 Environmental Assets and Constraints

#### Vegetation

The majority of the subject land is cleared, with some scattered trees and an area of remnant vegetation within the southeast part of the Wokarena Heights precinct.

The remnant vegetation has been mapped as Beard Vegetation Association 359: Shrublands, Acacia and Banksia scrub through the Geraldton Regional Flora and Vegetation Survey 2010 (GRFVS).

The vegetation type has more than 10 percent but less than 30 percent of its original extent in WA, the region, and the Shire of Chapman Valley, and little of the current extent is protected within reserves. The GRFVS indicates that the vegetation type is regionally significant and vulnerable due to being under-represented and poorly protected.

#### Fauna

The conservation status of fauna species is assessed under State and Commonwealth Acts; in particular the Western Australia *Wildlife Conservation Act 1950*; *Wildlife Conservation (Specially Protected Fauna) Notice 2006*, and the Commonwealth *EPBC Act*.

As part of the environmental review of the adjacent Buller Development Zone to support Local Planning Scheme No.2, a search was undertaken through DEC threatened Fauna database, which includes species declared as 'Rare or likely to become extinct (Schedule 1)'; 'Birds protected under an international agreement (Schedule 3)'; and 'Other specially protected fauna (Schedule 4)'. Due to the geographical proximity, search results are applicable to the Wokarena Heights precinct.

Results are shown in Table 3.

The site presents little vegetation of sufficient quality to provide significant habitat for fauna species. However remnant vegetation within the Wokarena Heights Precinct may provide habitat for some native species.

### 2.2 Landform and Soils

The Wokarena Heights development site is located in the coastal land system. This system consists of two phases of major coastal dunes, the Tamala and the Quindalup. The Tamala dune system comprises of lithified limestone overlain by deep yellow sands and red loams. The younger Quindalup dune system contains white calcareous sands and can be mobile. The dunes are generally stable but are susceptible to erosion. Yellow sands contain some clay and therefore have water retention capacity (WAPC 2008).

There are no known regions of acid sulfate soil risk within the study area. Mapping by Landgate indicates that there is one area approximately 0.3 km west of the proposed development where there is high to moderate risk of acid sulfate soils occurring within 3 meters of the ground surface. This area is approximately 1.48 km long and is 160 meters wide at its broadest and located outside of the study area.

The north east corner of the study area is elevated towards the Moresby Ranges, with a maximum elevation between 70 meters Australian Height Datum (AHD) and 75 meters AHD based on existing LandGate contours. The elevation decreases steadily towards the south west corner of the study area, to a minimum between 20 meters AHD and 25 meters AHD.

Table 3 - Threatened Fauna

Species / Details	General Information (provided by DEC search, unless referenced otherwise)	Likelihood of Occurring at the Site
<p>Name: <i>Bothriembryon whiteyi</i>, N/A (snail)</p> <p>Protection Status: S2</p> <p>Record No / Date: 1, no date provided.</p>	<p>This species occurs in open heath, amongst and under rocks (Department of Environment), Water, Heritage and the Arts, 2007).</p> <p>Very few specimen of this species of snail have been collected in more than 50 years.</p>	<p>This species has been classified as 'presumed extinct' (S2 - refer to Table 15 Appendix D), therefore, it is unlikely to occur at the site. The site does not provide suitable habitat for the species.</p>
<p>Name: <i>Calyptorhynchus latirostris</i>, Carnaby's Black Cockatoo</p> <p>Protection Status: S1, Endangered - EPBC Act</p> <p>Record No / Date: 5 from 1983</p>	<p>This species moves around seasonally in flocks to feeding areas in proteaceous scrubs and heaths and eucalypt woodlands as well as pine plantations. Breeding occurs in winter/spring, mainly in the eastern forests and wheatbelt where they can find mature hollow-bearing trees to nest in.</p>	<p>The site does contain feed plant species and it is possible, although considered unlikely, that the species would utilise the site for foraging. The site does not contain suitable breeding trees for this species.</p>
<p>Name: <i>Cyclodomorphus branchialis</i>, Grilled Slender Bluetongue</p> <p>Protection Status: S1</p> <p>Record No / Date: 3, no date provided</p>	<p>A ground-dwelling and largely nocturnal skink which shelters in spinifex, leaf litter and under fallen timber.</p>	<p>The skink occurs in coastal environments and is unlikely to utilise the site.</p>
<p>Name: <i>Dermochelys Coriacea</i>, Leatherback Turtle</p> <p>Protection Status: S1</p> <p>Record No / Date: Vulnerable - EPBC Act 1 in 1993</p>	<p>This species of marine turtle has been recorded at numerous locations along the WA coast.</p>	<p>This site is not on the coast and does not offer habitat suitable for the turtle.</p>
<p>Name: <i>Falco peregrinus</i>, Peregrine Falcon</p> <p>Protection Status: S4</p> <p>Record No / Date: 3 from 1975</p>	<p>This species is uncommon and prefers areas with rocky ledges, cliffs, watercourses, open woodland or margins with cleared land.</p>	<p>This species could potentially utilise the site for foraging, although it prefers areas with rocky ledges, cliffs and watercourses for breeding habitat (the Buller River to the north east may provide some suitable breeding area).</p>
<p>Name: <i>Idiosoma nigrum</i>, Shield-backed Trapdoor Spider.</p> <p>Protection Status: S1</p> <p>Record No / Date: 2 from 1983 &amp; 1997</p>	<p>This species is in decline in its patchy distribution through the northern and central wheatbelt and coastal plain. It is a long-lived species that is very sensitive to disturbance.</p>	<p>The understorey of the site has been disturbed. It is considered unlikely that the species would exist at the Site.</p>



Species / Details	General Information (provided by DEC search, unless referenced otherwise)	Likelihood of Occuring at the Site
<p>Name: <i>Macropus irma</i>, Western Brush Wallaby</p> <p>Protection Status: P4</p> <p>Record No / Date: 1 in 1954</p>	<p>This species occurs in areas of forest and woodland supporting a dense shrub layer.</p>	<p>The site is at the northern extent of the Western Brush Wallaby's known range (Department of Environment and Conservation, 2006).</p> <p>This species required large patches of vegetation to sustain its populations, and would be unlikely to occur at the site.</p> <p>The species has not been identified in the WA Museum database as known to occur in the area.</p>
<p>Name: <i>Pomatostomus superciliosus ashbyi</i>, White-browed Babbler</p> <p>Protection Status: P4</p> <p>Record No/ Date: 3 from 1980, 1981 and 1983.</p>	<p>This species of bird lives in eucalypt forests and woodlands, and forages on or near the ground for insects and seeds.</p>	<p>The habitat at site is generally unsuitable for this species, therefore, the likelihood of impacting the species is considered to be low.</p>
<p>Name: <i>Psacadonotus</i>, cricket</p> <p>Protection Status: P1</p> <p>Record No / Date: 1, no date provided.</p>	<p>This species of cricket is only known from Champion Bay near Geraldton.</p>	<p>Little is known about the habitat preferences of this species. There is the possibility that this species may exist on site.</p>
<p>Name: <i>Tyto novaehollandiae novaehollandiae</i>, Masked Owl (SW ssp)</p> <p>Protection Status: P3</p> <p>Record No / Date: 1 in 1983</p>	<p>This species is an inhabitant of forests and woodlands, nests in tree hollows and has declined in the south-west. Its large talons are adapted for preying on small to medium sized mammals.</p>	<p>The habitat is generally unsuitable for this species and the site does not contain suitable breeding trees for this species, therefore, the likelihood of impacting the species is considered to be low.</p>

## 2.3 Groundwater and Surface Water

There are no surface water bodies (watercourses or wetlands) located on the site. There is no groundwater contour data readily available for the Wokarena Heights development area. Groundwater levels for Department of Water bores within 5 km of the site centre were assessed, however none of the bores were within the development area. Bores located to the north and south of the area indicated that groundwater level is likely to be deeper than 10 meters below ground level.

## 2.4 Bushfire Hazard

The presence of a large stand of remnant vegetation combined with a steep grade and strong prevailing winds from its coastal aspect presents an extreme bushfire risk, and fires have been experienced in the study area in the past.

## 2.5 Heritage

No sites of either Aboriginal or European heritage are listed within the Wokarena Heights Precinct. An Aboriginal heritage region borders the northern edge of the study area, however will not be impacted by the structure plan.

The adjacent decommissioned rail reserve, outside the study area, incorporates the previous alignment of the Wokarena-Naraling Branch of the Geraldton to Northampton Railway. To the north of the study area, this reserve has been identified as a potential trail to recognise the alignment of the rail line. Along the eastern boundary of the study area, the reserve has been identified as an option available for the realignment of the Northwest Coastal Highway. The site is not listed as a formal heritage area.

## 2.6 Context and Constraints Analysis

Figure 6 illustrates the key opportunities and constraints for the Wokarena Heights Precinct.

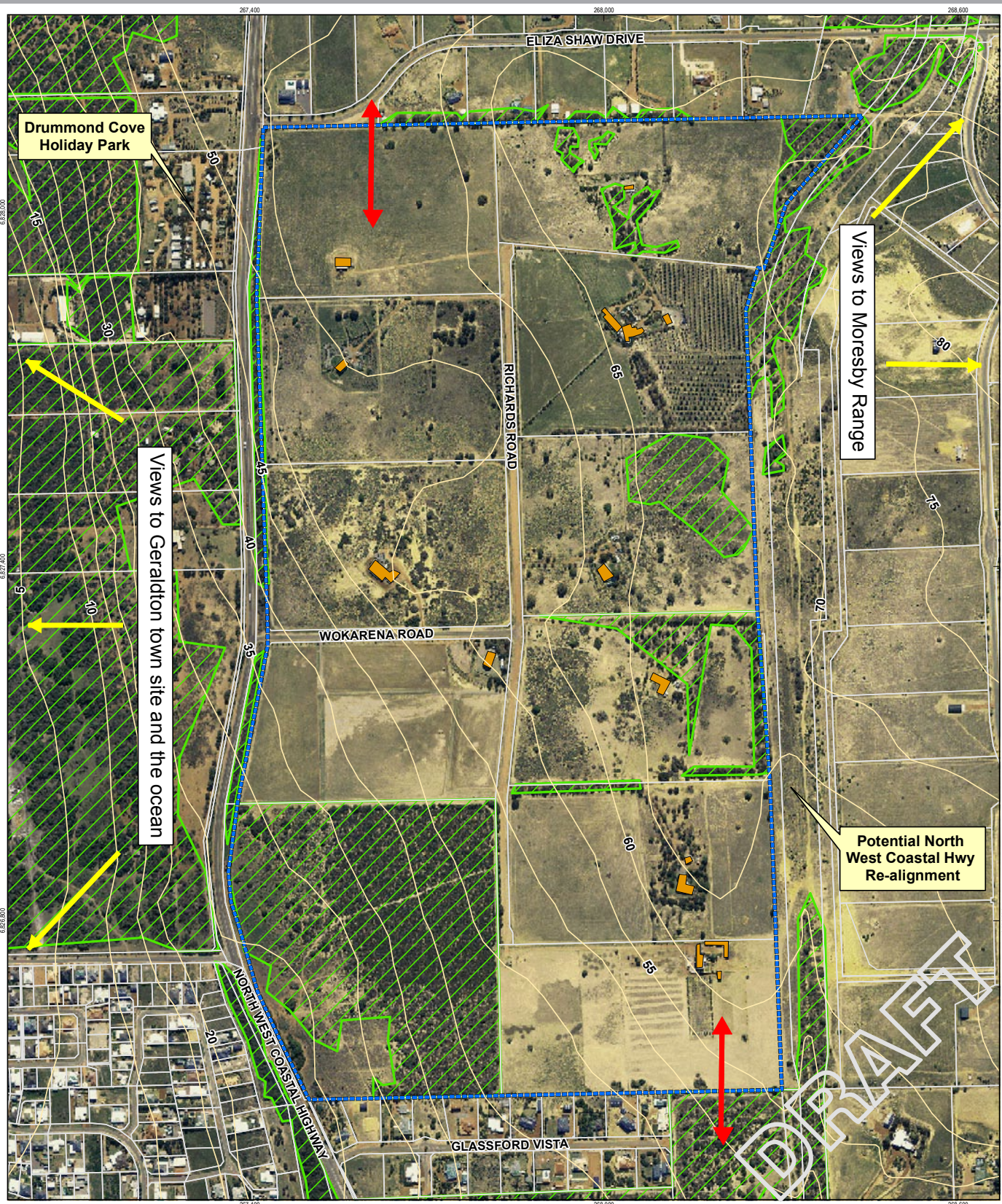
### Key opportunities:

- Unique and extensive views to the coast, Geraldton port, and the Moresby Ranges
- Few environmental constraints
- Opportunity to enhance access to the Northwest Coastal Highway through adjacent developments
- Opportunity to upgrade the Wokarena Road intersection to enhance safety of road users
- Opportunity to enhance the quality of remnant vegetation through management

### Key challenges:

- High level of fragmentation in land ownership
- Bushfire risk posed by vegetation area requiring attention to firebreaks and enhanced emergency access
- Noise impacts of Northwest Coastal Highway and future possible realignment of the Highway to the eastern boundary of the site
- Future realignment of the Northwest Coastal Highway requiring additional ceding of road reserve





#### LEGEND

- Contours (5m)
- Existing Buildings
- Remnant Native Vegetation
- Study Area
- Cadastre
- Potential Road Connections

Paper Size A3  
0 30 60 120 180 240  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 50



Shire of Chapman Valley  
Wokarena Heights Structure Plan

Job Number 61-27523  
Revision A  
Date 22 Nov 2011

#### Opportunities and Constraints

Figure 6

Ipier05nas\projects\6127523\GIS\Maps\MXD\6127523\_G001\_Rev0.mxd  
© 2011. Whilst every care has been taken to prepare this map, GHD (and DATA CUSTODIAN) 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: Data Custodian, Data Set Name/Title, Version/Date. Created by: S.Jeffrey



## 3.0 Local Structure Plan

### 3.1 Residential

The structure plan facilitates the residential development of the subject land at a density of R2.5.

An indicative lot layout is shown in Figure 7. Lot orientation is designed to take maximum advantage of views experienced within the precinct.

The proposed density, with lot sizes of 4,000 m<sup>2</sup>, will complement the adjacent existing urban developments of Drummond Cove and Glenfield, and the rural residential development of Parkfalls. The proposed density provides an appropriate grading of density from urban development areas, reducing in scale to rural residential uses.

The residential use and proposed density provides an opportunity for alternative dwelling choice for those wanting large lot accommodation and reflection of a rural lifestyle in close proximity to the major regional centre of Geraldton.

Likely lot yield across the precinct is shown in Table 5.

The future development of the Buller Development Zone will provide supporting centre (retail and commercial) and community uses to support a higher density population. With the lower densities provided within the Wokarena Heights Precinct, these supporting uses are not considered necessary or viable. The retail and community needs of future residents in the Wokarena Heights Precinct will be met through adjacent development areas.

Table 4 - Structure Plan Summary

Item	
Total area covered by the structure plan:	142.79 ha
Area of specific land uses:	Residential: 110.73ha (excluding roads)
List of land uses proposed by the structure plan	Residential Public open space
Estimated lot yield:	253 lots
Estimated number of dwellings:	253 dwellings
Estimated population:	653 people
Number and area of public open space -	14.18 hectares
:district open space	1 district park: 12.6 hectares
:neighbourhood parks	2 neighbourhood parks: 1.58 hectares

Table 5 - Indicative lot yield

Parent Lot	Area Residential Land (excluding road reserves and open space)	Number of lots
1	7.12	17
2	10.36	25
3	10.22	22
4	10.43	25
5	10.46	24
6	9.67	22
7	10.30	23
8	10.66	25
9	9.9	22
10	11.22	25
11	10.39	23
Total	110.73	253

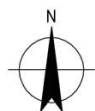




#### LEGEND:

- LOCAL STRUCTURE PLAN AREA
- PUBLIC OPEN SPACE
- A DRAINAGE RESERVE
- 1 ROAD CONNECTION ONLY TO BE PROVIDED IF DETERMINED NECESSARY FOR VEHICLE ACCESS AT TIME OF SUBDIVISION. IF NOT REQUIRED FOR VEHICULAR PURPOSES TO BE RETAINED AS PEDESTRIAN ACCESS WAY / SERVICE ALIGNMENT.

0 60 120 180m  
SCALE 1:6000 AT ORIGINAL SIZE



CLIENTS | PEOPLE | PERFORMANCE

Shire of Chapman Valley  
Wokarena Heights Structure Plan

Indicative Lot Layout Plan

Job Number 71-11105  
Revision B  
Date Oct 2013

**Figure 07**

Plot Date: 22 October 2013 - 2:16 PM

Plotted by: Angie Brown

GHD House, 239 Adelaide Tce Perth WA 6004 T 61 8 6222 8222 F 61 8 6222 8555 E permail@ghd.com.au W www.ghd.com  
Cad File No: G:\6130130\image Files\Manila Drawings\CADD\Richards Road Residential\FIGURES\FIG7\_Indicative Lot Layout Rev B.dwg



## 3.2 Movement Network

### Road network hierarchy

The structure plan proposes a movement network that maximises permeability and legibility.

New connections to Northwest Coastal Highway could be achieved via Eliza Shaw Drive to the north of the structure plan area, and through a future connection into Glassford Vista to the south in order to enhance access into the development area.

The proposed movement network in the west of the structure plan area relies on strong north south linkages that facilitate east-west lot orientation to maximise exposure to views, and minimise the number of lots along view corridors.

On the eastern part of the precinct, which due to topography has lesser view exposure, the movement network maximises connectivity whilst minimising the expanse of subdivisional roads.

The road hierarchy uses appropriate road types from Liveable Neighbourhoods and matches them to traffic and parking demands of the structure plan area (Figure 8). Throughout the structure plan area, vehicle movements are anticipated to be up to a total of 2,250 per day at time of completed subdivision and development.

Neighbourhood connectors are proposed for Wokarena Road and Richards Road as the key access and egress connectors for the structure plan area. Neighbourhood connector B (minor) roads are designed to accommodate 3,000 or less vehicle movements per day, and support on-street car parking. The LSP proposes neighbourhood connectors to recognise the primary connections of Wokarena Road and Richards Road, and in response to the existing road reserve widths of these roads. Cross sections for neighbourhood connectors within the precinct provide for informal on-street car parking in recognition of the limited demand likely to be presented by the low density residential land use compared to that required by



View along north west coastal highway



Wokarena Road

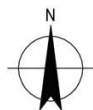


**LEGEND:**

- NEIGHBOURHOOD CONNECTOR B (MINOR) - 20 METRE RESERVE
- ACCESS STREET C - 16 METRE RESERVE
- ACCESS STREET D - 16 METRE RESERVE

- LOCAL STRUCTURE PLAN AREA
- FOOTPATH

① ROAD CONNECTION ONLY TO BE PROVIDED IF DETERMINED NECESSARY FOR VEHICLE ACCESS AT TIME OF SUBDIVISION. IF NOT REQUIRED FOR VEHICULAR PURPOSES TO BE RETAINED AS PEDESTRIAN ACCESS WAY / SERVICE ALIGNMENT.



CLIENTS | PEOPLE | PERFORMANCE

Shire of Chapman Valley  
Wokarena Heights Structure Plan

**Movement Network**

Job Number | 71-11105  
Revision | B  
Date | Oct 2013

**Figure 08**

GHD House, 239 Adelaide Tce Perth WA 6004 T 61 8 6222 8222 F 61 8 6222 8555 E permail@ghd.com.au W www.ghd.com

Plot Date: 22 October 2013 - 2:00 PM

Plotted by: Angie Brown

Cad File No: G:\61130130\Images\Files\Manila Drawings\CADD\Richards Road Residential\FIGURES\FIG8\_Movement Network Rev B.dwg



### Liveable Neighbourhoods.

Internal subdivision roads are proposed to be access streets C and D, designed for use in areas of 3,000 vehicle movements or less per road. Cross sections in Figure 9 show how the function of road corridors supports vehicle movements, informal on-street car parking, pedestrian links, and water management.

The road network facilitates independent development of most lots, with vehicle access directly to the existing Wokarena Heights. Lots 8 and 10 do not have formal links to Wokarena Heights in the LSP; development ahead of lots providing these links can be achieved through temporary east-west access ways over proposed lots that enable access to subdivision roads. Once formal road links are developed, these accessways can be decommissioned and the additional lots subdivided. Lot 5 has additional connection to Eliza Shaw Drive to the north, and a shared road along the southern boundary of sufficient width for temporary access that will facilitate independent development ahead of subdivision on Lot 4.

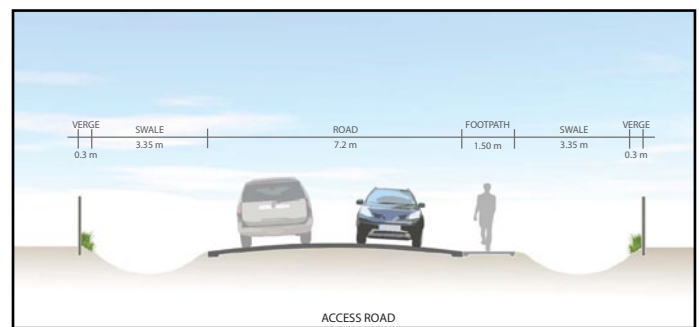
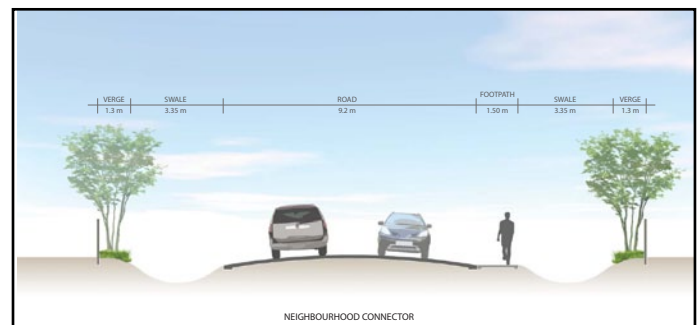


Figure 9: Indicative Road Cross Section

### Traffic Generation and Management

The existing intersection of Wokarena Road with Northwest Coastal Highway is likely unsuitable to support traffic generated from the development of the precinct.

Traffic generation of 250 dwellings has been determined from the New South Wales Roads & Traffic Authority's "Guide to Traffic-Generating Developments", Version 2.2 (October 2002). According to this guide, using the rate for "dwelling houses", 250 dwellings would generate 2,250 daily vehicular trips, with 212 in the weekday peak hour.

Surveyed flows on the Northwest Coastal Highway have been obtained from Main Roads. The survey data is for the Highway, south of Coronation Beach Road, and the average daily volume for the period Monday 16th May 2011 to Friday 20th May 2011 was used as a reasonable reflection of flows experienced along the Wokarena Heights Precinct. This daily volume is 1,421. It is assumed that the peak-hour flow is 10% of daily flow, giving 142 vehicles per hour.

Austroroads "Guide to Road Design" Part 4A "Unsignalised and Signalised Intersections" (2009) provides guidance on the type of turning treatments, i.e. basic, auxiliary lane or channelized in Section 4.8. Given the above traffic volumes, and a design speed of 100 km/h (speed limit plus 10 km/h), the appropriate treatments would be channelized right turn treatment with short turn slot; and auxiliary left-turn treatment with short left-turn lane on the major road.

The following dimensions can be considered as probable requirements to manage the additional traffic generation from Wokarena Heights to the Northwest Coastal Highway:

- Right-turn treatment: additional width of 3.5 metres over a length of 219 metres, assuming flat grade and assuming no B-doubles or road trains turning into Wokarena Road;
- Left-turn treatment: additional width of 3.5 metres over a length of 70 metres, assuming

flat grade;

- In total, the additional width requirements would therefore be 7 metres; this is in addition to the existing requirements which include, on each side, a 1-metre sealed shoulder, an unsealed shoulder (typically 1 metre) and a verge (typically 5-metres);
- Vehicle turning templates should be used to determine the exact requirements, along with other detailed considerations; and
- It may be advisable to also include additional treatments to reduce conflicts between cyclists and left-turning vehicles.

The existing road reserve widths of Northwest Coastal Highway and Wokarena Road are considered sufficient to accommodate required intersection upgrades.

Required intersection treatments for subdivisional roads will be determined at the time of subdivision in accordance with the requirements of the Shire of Chapman Valley.

### Pedestrian network

All roads within the precinct, as shown by cross-sections, will include footpaths to facilitate pedestrian access throughout the site.

### 3.3 Open Space

Consistent with the requirements of Liveable Neighbourhoods, the structure plan proposes ten percent of the subdivisible area for public open space. A schedule of public open space (POS) is shown in Table 6. The district and neighbourhood parks provide a range of passive and unstructured active recreational opportunities, incorporating protection and activation of conservation areas and water sensitive urban design.

As part of the design process, POS planning at Wokarena Heights will ensure universal access to benefit all members of the community.

Figure 10 illustrates the locations and key functions of public open space.

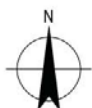
Table 6 - Public Open Space Schedule

	Hectares
Total LSP area	142.79ha
Deductions	
Regional road reserve	1.0ha
Total developable area	141.8ha
Required POS (10%)	14.18ha
Public Open Space	
District Park	12.6ha
Neighbourhood Parks	1.58ha
Total	14.18ha (10%)



**LEGEND:**

■ ■ ■ LOCAL STRUCTURE PLAN AREA



CLIENTS | PEOPLE | PERFORMANCE

Shire of Chapman Valley  
Wokarena Heights Structure Plan

Public Open Space

Job Number 71-11105  
Revision B  
Date Oct 2013

**Figure 10**

Plot Date: 22 October 2013 - 2:24 PM

Plotted by: Angie Brown

GHD House, 239 Adelaide Tce Perth WA 6004 T 61 8 6222 8222 F 61 8 6222 8555 E permail@ghd.com.au W www.ghd.com  
Cad File No: G:\61130130\image Files\Manila Drawings\CADD\Richards Road Residential\FIGURES\FIG10\_Public Open Space Rev b.dwg

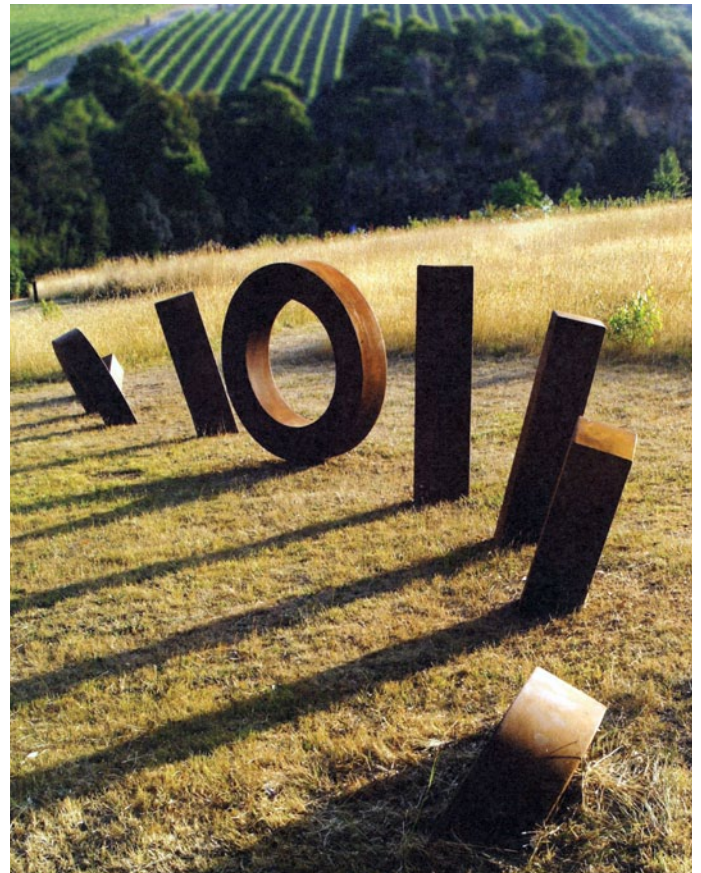


## POS 1 - Neighbourhood Park

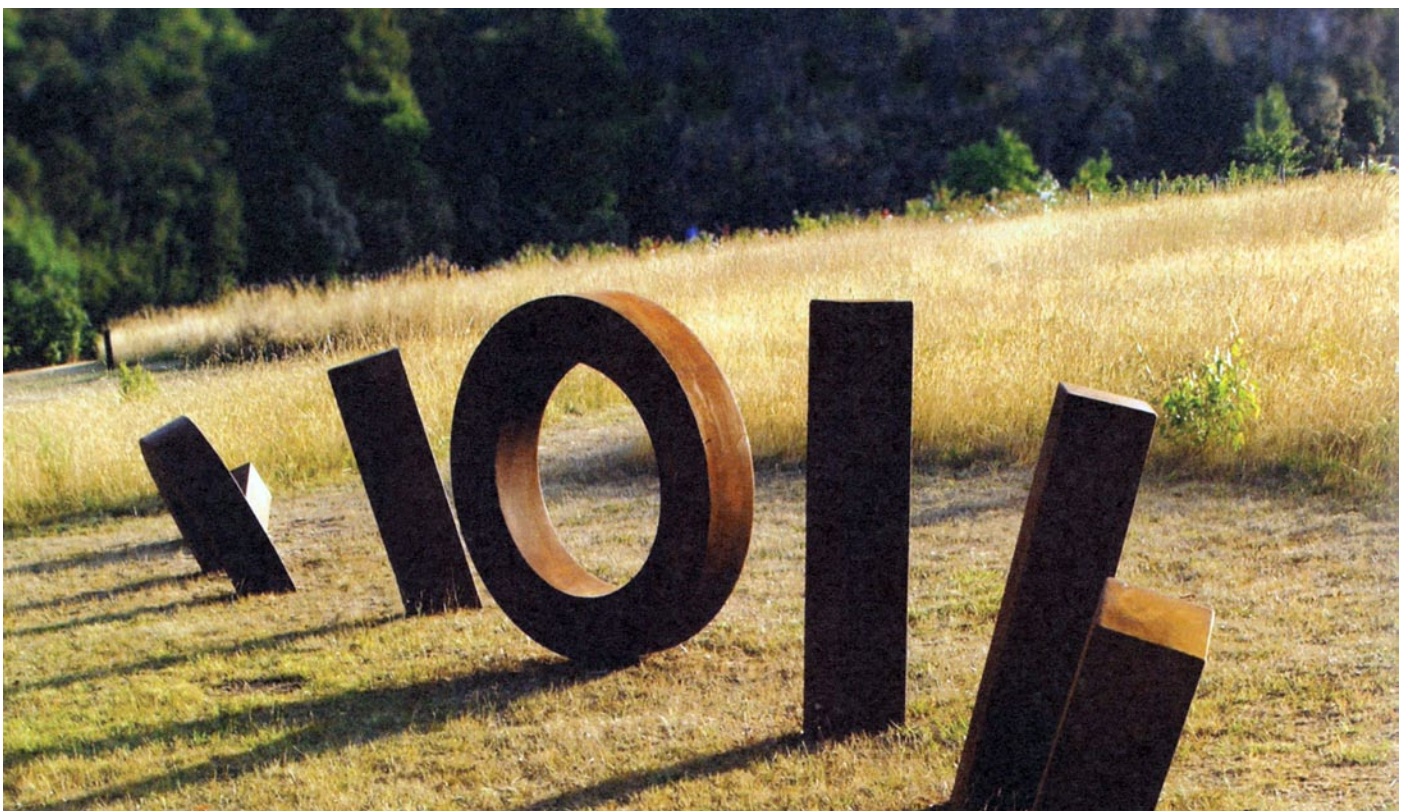
POS 1, located at the primary entry to the development area, is proposed to be a passive recreational space that works as an entry statement to the Wokarena Heights Precinct.

Its highly visible position along Northwest Coastal Highway makes it a suitable location for the provision of public art and to be a point of interest along the Highway.

The space will be a visual link between the Wokarena Heights precinct and the Buller Development Zone. Following realignment of the Northwest Coastal Highway, enabling greater pedestrian access across the current alignment, the space will be an important part of the pedestrian link from Richards Road, into the Buller Development Zone, through to the coast.



Entry statement set within a passive recreational space.



Permeable POS, which may allow for view corridors to the Buller Development Zone area



## POS 2 - Neighbourhood Park

POS 2 is a neighbourhood park that will combine passive recreation and unstructured active play opportunities. The location of the space will provide public access to exceptional coastal views, and provide an aesthetic entry statement to the precinct.

The space can include an area for unstructured active play and facilities, such as seating or a gazebo/lookout.



View from public open space area.



Unstructured play space

### POS 3 - District Park POS

POS 3 incorporates and proposes the protection of remnant vegetation in the southeast of the precinct. The protection of the vegetation will provide opportunity for passive recreation based on the conservation value of the site. Retention of the vegetation in public ownership will facilitate the active management of the area for its conservation value.

The space can include an area for unstructured active play and facilities, such as seating and barbecue facilities that provide for the activation of the conservation area and foster community ownership and stewardship to enhance management.

POS 3, in addition to providing important recreation functions, will also provide an important conservation function through the protection of approximately 11.6 hectares of the Beard Vegetation Association 359: Shrublands, Acacia and Banksia as mapped in the Geraldton Regional Flora and Vegetation Survey 2010. Currently in private landownership, the vegetation is threatened by potential land use change or degradation due to inadequate active management of the vegetation for its conservation value. Inclusion of the vegetation into a local reserve for the purpose of conservation and passive recreation will increase the formal protection of Beard Vegetation Association 359 in the region. Through reservation and public ownership, increased active management for conservation purposes will provide for increased quality of the vegetation and its conservation value.



Unstructured public open space



Recreational space alongside a conservation area



### 3.4 Bushfire Management

The LSP proposes a number of elements to manage bushfire risk presented by the remnant vegetation. Importantly, a road interface is provided between the bushland and all private land to assist as a firebreak. An additional road link between Lot 1 and 11 introduces access and escape opportunity in the event of a fire for those lots in Lot 1, and is an essential component of bushfire management. The introduction of additional north south roads and additional links to the highway also enhances emergency access and egress.

The installation of fire hydrants and preparation of bushfire management plans will be required to provide detailed bushfire management planning at the time of subdivision.

### 3.5 Water Management

A Local Water Management Strategy has been prepared for the structure plan, and is provided as Appendix A.

The proposed stormwater management strategy employs the following principles for managing water quantity:

- For the 1 year ARI event lot and road runoff will be infiltrated as close to source as practical using water sensitive urban design (WSUD) measures such as infiltration devices. These include swales and soakwells.
- Events greater than the 5 year ARI event and up to and including the 100 year ARI event will be collected and conveyed via road side swales into drainage basins integrated within public open space located throughout the area. These swales and basins have been sized to compensate for major events up to the 100 year ARI event.

Furthermore, the following measures are advised for managing water quality:

- Structural measures - Using WSUD and BMPs

to ensure that stormwater is infiltrated as close to the source as practical; and

- Non-structural measures - Nutrient control and landscaping, sediment and litter control and construction management, and community awareness and education

### Groundwater management

To ensure that existing groundwater levels and quality is maintained, the quality of the stormwater infiltration will be maximised using WSUD and best management practices (BMPs) to ensure that stormwater is infiltrated as close to the source as practical.

### 3.6 Educational Facilities

No school facilities are required within the Wokarena Heights Precinct. Several schools have been planned in Drummond Cove and Glenfield that will service the development.

### 3.7 Infrastructure Coordination

#### Water

Water planning for the Wokarena Heights precinct has not yet been commenced by the Water Corporation. The Water Corporation have indicated that some improvements to existing water supply scheme will be provided to accommodate the proposed development in the area.

Currently this area is served by temporary water supply system. The system is located in Eliza Shaw Drive and incorporates a 50 m<sup>3</sup> water storage tank, a booster pump, 150P-12 water reticulation at the inlet, and 100P-12 water main at the outlet.

Water Corporation has advised that the existing water main into the Wokarena Heights precinct will be connected to 2 ML storage tank planned to be constructed by the end of 2012 within the adjacent Parkfalls Estate. The inlet water reticulation located in Eliza Shaw Drive coming from Parkfalls is considered to be sufficient to supply the precinct without impacting on water servicing to the Parkfalls Estate. The existing storage tank in

Eliza Shaw Drive and the booster pump are being decommissioned. It is envisaged that a Pressure Reducing Valve will be installed on the reticulation main serving the precinct once connected to the new storage tank.

The existing water supply into the study area is temporary and not in accordance with standards, consisting of 100P-12 pipes located within easements within Lots 5 and 6 before entering the Wokarena Heights reserve.

Development of the precinct will require the existing infrastructure being upgrading to 150 P-12 pipes, and the relocation of upgraded infrastructure to within road reserves in the precinct. These upgrades will need to be funded by developers at the time of subdivision.

The upgrade of water reticulation can be undertaken in stages, with stages commencing at the north of the precinct and moving consecutively to the south as staged subdivision occurs.

Subdivision of the precinct, however, will be determined by the time frames of individual landholders. If a developer chooses to subdivide ahead of staged infrastructure upgrades through the northern part of the precinct, there may be requirement for that developer to fund the upgrade of water reticulation from Eliza Shaw Drive to the lot being subdivided based on advice from and negotiation with the Water Corporation.

### Wastewater

No reticulated wastewater scheme is proposed for the development area, with onsite treatment and disposal of effluent through aerobic treatment units on individual lots permitted by the proposed lot sizes and the Department of Health's '*Draft Country Sewerage Policy (2003)*' and '*Draft Government Sewerage Policy (2012)*'.

### Power

There are existing electrical connections into the study area, although the capacity of the electricity network in the region is very limited. The need for

any reinforcement works or infrastructure upgrades should be determined at the time of subdivision through a Western Power feasibility study.

### Telecommunications

All lots in the Wokarena Heights structure plan will be connected to Telstra by copper wire connection and the National Broadband Network (NBN).

Corridors through local roads should be considered in the design and construction of each subdivision. Telecommunications infrastructure must be in accordance with appropriate guidelines of network providers.

The Geraldton to Port Hedland fibre optic cable is proposed to be installed along the southern and western boundaries of the Wokarena Heights Precinct. This will allow the optimal connection point or multiple connection points to the National Broadband Network.

## 3.8 Development Contribution Arrangements

No formal development contribution scheme is proposed for the Wokarena Heights Precinct. However, the LSP does provide for sharing of some infrastructure costs.

Public open space costs will be shared across the development area through implementation of cash-in-lieu provisions provided by the Planning and Development Act 2005.

Water management costs are being shared through the preparation of a Local Water Management Strategy that provides a coordinated approach to drainage locations. The use of roadside swales rather than traditional pit and pipe networks will facilitate the onsite infiltration of most rainfall events. The location of drainage swales for the 100 year flood within public open space facilitates the sharing of drainage land costs through public open space cash-in-lieu processes.

Road infrastructure upgrades to Wokarena Road and Richards Road will be required to facilitate

development. As all lots will contribute to the need, a cost sharing arrangement through the provisions of the structure plan are proposed. Cost contributions have been apportioned across all parent lots based on the area of residential land that will be created on each lot, excluding public open space and roads as shown by Figure 11, and therefore the contribution of that lot to the need for the upgrade works.

The following method of cost apportionment shall be used to determine the amount payable at the time of subdivision:

R = Area of residential land on the lot

L= Total area of residential land in the LSP area

P= Percentage of total contribution required from landowner

C = Cost of road upgrades

A = Amount payable

$$R / L \times 100 = P \text{ (Table 7)}$$

$$C \times P = A$$

The Shire will be responsible for undertaking required upgrade works once contributions have been received. However, if a subdivision application is deemed to require an upgrade in the shorter term to ensure safety of road users, then the applicant may be required to construct part or all of the upgrade works as a condition of subdivision, irrespective of proportionate responsibility.

Table 7 - Method of Cost Apportionment

Lot	Area Residential Land (excluding road reserves and open space)	Percentage Contribution to Road Infrastructure Upgrades
1	7.12	6.4%
2	10.36	9.4%
3	10.22	9.2%
4	10.43	9.4%
5	10.46	9.4%
6	9.67	8.7%
7	10.30	9.3%
8	10.66	9.6%
9	9.9	8.9%
10	11.22	10.1%
11	10.39	9.4%
Total	110.73	-



The surface of Wokarena Road will require upgrade

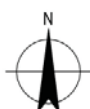
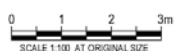




LEGEND:

■ ■ ■ ■ ■ LOCAL STRUCTURE PLAN AREA

Ⓐ DRAINAGE RESERVE



CLIENTS | PEOPLE | PERFORMANCE

Shire of Chapman Valley  
Wokarena Heights Structure Plan

Development Yields

Job Number 71-11105

Revision B

Date June 2012

Figure 11

GHD House, 239 Adelaide Tce Perth WA 6004 T 61 8 6222 8222 F 61 8 6222 8555 E permail@ghd.com.au W www.ghd.com

Plot Date: 22 October 2013 - 2:21 PM

Plotted by: Angie Brown

Cad File No: G:\61130130\image Files\Manila Drawings\CADD\Richards Road Residential\FIGURES\FIG11\_Development Yields Rev B.dwg

## 4.0 Implementation

Implementation of the structure plan will be through application of the provisions of Part 1 of the structure plan through subdivision processes.

A number of technical studies and surveys will be required to facilitate subdivision of the site. These include:

- Flora and fauna survey (Lot 1 only, prior to application for subdivision)
- Urban Water Management Plan (condition of subdivision)
- Bushfire Management Plan (condition of subdivision)

Each parent lot will represent a stage of subdivision; however it is not expected that each lot will subdivide to the ultimate development layout through a single subdivision stage. Staged subdivision may retain large lots around existing houses and improvements, whilst providing for part development as an interim measure.

Figure 13 provides an example of a staged subdivision for Lot 7.

It is recommended that subdivision move along stages from north to south, however this is not a statutory requirement of the structure plan and in reality staging will be according to the development aspirations of individual landholders.

Where subdivision does not follow the north-south pattern consistent with infrastructure upgrade planing, there may be a need for owners to undertake works in excess of what would be their proportionate contribution to the upgrade of (particularly water) infrastructure to facilitate earlier subdivision.


The structure plan and Local Water Management Strategy provide for coordinated stormwater management, with basins for the 100 year flood located within public open space. Subdivision stages occurring ahead of the development of public open space on other lots will need to incorporate temporary measures and areas for flood mitigation. The sizing, location, and decommissioning of temporary drainage infrastructure should be incorporated within Urban Water Management Plans prepared as a condition of subdivision.

Several potential issues arising through development of the Wokarena Heights Local Structure Plan will require further detailed planning to resolve. These include:

1. Noise impacts associated with the Northwest Coastal Highway, and the potential realignment of the highway to the eastern boundary of the subject area;
2. Managing the interface between Wokarena Heights and the adjacent rural-residential Parkfalls Estate, particularly at the northern boundary, and
3. Managing the interface between public open space and abutting private lots.

To manage these impacts, specific provisions for lots in these locations will be required. Detailed Area Plans, which provide additional development standards for particular circumstances, will be required to be developed for lots identified by the structure plan to manage potential impacts. Key issues to be considered and resolved in the preparation and adoption of Detailed Area Plans include:

1. Lots abutting highway:
  - Increased rear setbacks and landscape buffering to assist noise attenuation;
  - 'Quiet building design'.
2. Lots abutting Parkfalls Estate:
  - Increased rear setbacks and landscape buffers



to provide visual buffer for residents in Parkfalls Estate

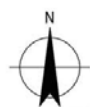
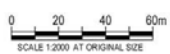
- Specified building envelopes and site coverage requirements to maintain the amenity of residents in Parkfalls Estate.
3. Lots abutting Public Open Space:
- Passive surveillance of Public Open Space areas
  - Activated frontages along Public Open Space and roadways

Figure 13 provides a conceptual example of a Detailed Area Plan for lots abutting Parkfalls Estate at the northern boundary of Wokarena Heights. This example provides additional design standards to manage potential impacts of increased density within Wokarena Heights on rural-residential neighbours within Parkfalls Estate.





KEY PLAN



11/F Alphaland Southgate Tower 2258 Chino Roces Ave corner EDSA Makati City Philippines



CLIENTS | PEOPLE | PERFORMANCE

Shire of Chapman Valley  
Wokarena Heights Structure Plan

Example Staged Subdivision  
For Lot 7

Job Number 71-11105

Revision A

Date June 2012

**Figure 12**

Plot Date: 27 March 2012 - 2:27 PM

Plotted by: Arianne Marisse G Manandoc/Manila/GHD/IAU

Cad File No: G:\71111105\CADD\Drawings\Richards Road Residential\71-11105\_FIG11\_Example Staged Subdt.dwg

T 63 2 479 5600 F 63 2 479 5601 E mnlmail@ghd.com W www.ghd.com

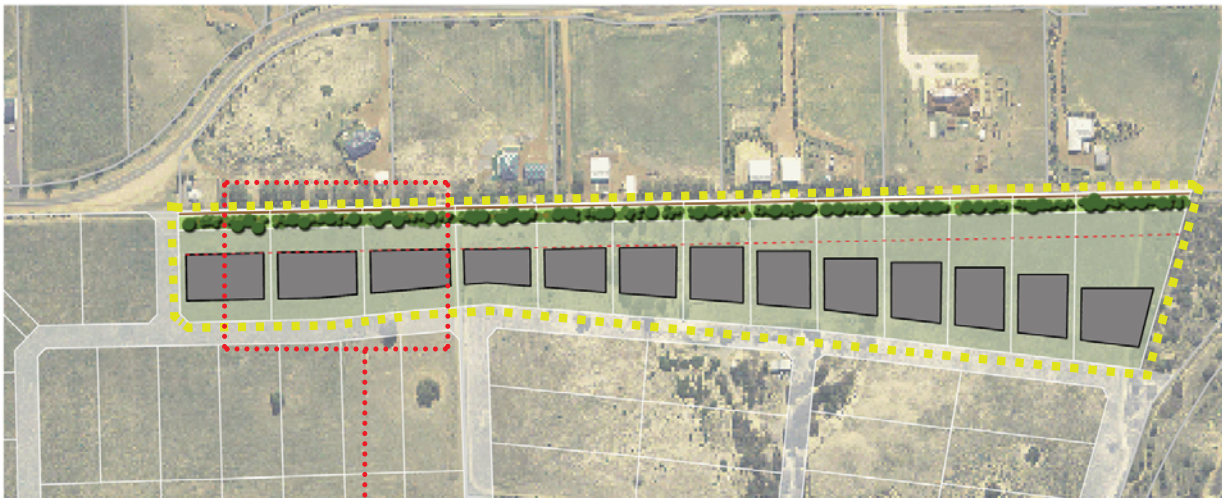
#### SUBDIVISIONAL/DEVELOPMENT STANDARDS

The requirements of the R-Codes apply unless otherwise provided below or by the Wokarena Heights Local Structure Plan.

1. Dwellings and all incidental development is to be contained within the prescribed building envelope.
2. Dwellings and incidental development is not to exceed 20 percent of the total site area.
3. All lots are to provide and maintain a ten metre wide landscape buffer strip, to provide visual screening, along the rear boundary.
4. All lots are to maintain a three metre firebreak along the rear boundary.



KEY PLAN



LOT PLAN

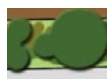
#### LEGEND:



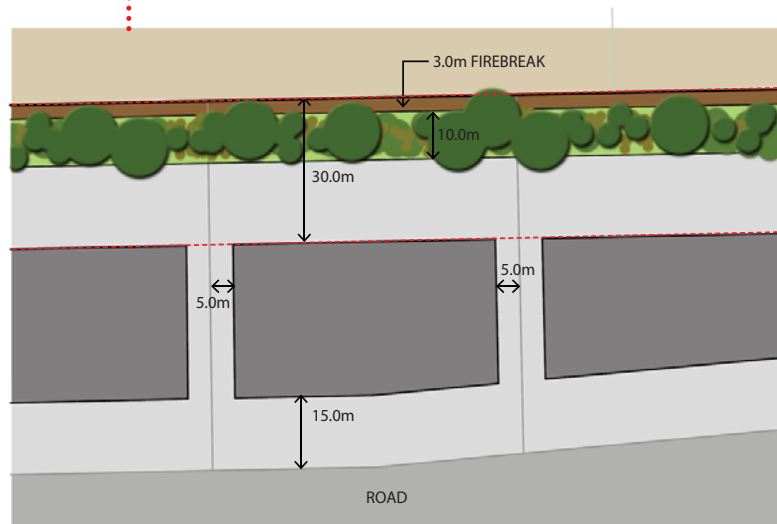
BUILDING ENVELOPE



3.0m FIREBREAK



10.0m LANDSCAPE BUFFER



DETAIL PLAN (Not to scale)



CLIENTS | PEOPLE | PERFORMANCE

Shire of Chapman Valley  
Wokarena Heights Development

Example Detailed Area Plan  
for lots abutting Parkfalls Estate

Job Number 71-11105

Revision A

Date June 2012

Figure 13

GHD House, 239 Adelaide Tce Perth WA 6004 T 61 8 6222 8222 F 61 8 6222 8555 E permail@ghd.com.au W www.ghd.com

Cad File No: G:\61275231\Images\Manila Drawings\CADD\Richards Road Residential\FIGURES\FIG13\_Example Staged Subd - northern lots.dwg

Plot Date: 27 June 2012 - 9:17 AM

Plotted by: James Paxton

# Appendix A: Local Water Management Strategy



# Appendix B: Frequently Asked Questions

## What is a local structure plan?

A structure plan is a document (incorporating reports and plans) that nominates land uses, transport and road networks, open space areas, utility networks, urban water management land requirements and development standards over an area of land.

Local structure plans focus on the neighbourhood scale and provide a comprehensive land use framework for subdivision and development applications. Local structure plans will show all land uses (as per the zones in the local planning scheme), residential density ranges and the neighbourhood street network. They can be prepared by local government, a landowner or landowner representative.

Local structure plans are statutory documents prepared and approved under the provisions of a local planning scheme. The Wokarena Heights Local Structure Plan is a statutory structure plan.

## What is the purpose of a local structure plan?

A structure plan provides a guiding framework for subdivision and development. It serves to coordinate the provision of land use, community facilities (such as schools, parks and roads), services and infrastructure. Structure plans are particularly important in areas that have fragmented or multiple ownership.

A local structure plan provides a comprehensive framework for land use to facilitate future subdivision and development of an area. Local structure plans coordinate the provision and planning for local infrastructure and facilities and provide the general basis for subdivision which will comprise a more detailed level of planning.

## What is the structure of the Wokarena Heights Local Structure Plan?

The Wokarena Heights Local Structure Plan includes 3 main components:

- Part One - Statutory Section,
- Part Two - Explanatory Section, and
- Appendices.

Part One sets out statutory provisions that apply to all subdivision and development within the structure plan area, and includes the structure plan map. This is the only statutory component of the structure plan.

Part Two is non-statutory. This section elaborates on the intent of Part One, and provides additional guidance and examples for the future development of Wokarena Heights.

Appendix A includes a Local Water Management Strategy for Wokarena Heights, which explains how water and stormwater is to be managed in a coordinated way. The Local Water Management Strategy provides a basis for the development of more detailed Urban Water Management Plans to be prepared by developers at the time of subdivision.

## Do I have to subdivide?

No.

The structure plan provides the general coordinated layout for subdivision when a landowner chooses to subdivide. The structure plan does not require that the land be subdivided, but only facilitates subdivision if that is the action a landowner wishes to take.

## Can I continue running my business from my property?

Yes.

The structure plan does not require that landowners subdivide now, in the future, or at all. Any existing and authorised business operations may continue until such time as the owner wishes to subdivide.

## Can I subdivide in stages?

Yes.

The structure plan does not require that any lot is completely subdivided at once. Figure 12 in the structure plan document shows an example of how a lot might subdivide partially, whilst keeping

a larger lot with the current dwelling and business retained. So long as a proposed subdivision generally supports the road network shown on the plan, and does not prejudice future subdivision in accordance with the structure plan, staged subdivision can be supported.

Can I develop larger lots than the structure plan specifies, or subdivide off a portion of my lot for a family member?

Yes.

The Structure Plan allows for any number of lots larger than 4000m<sup>2</sup> to be subdivided, providing they are in accordance with the overall layout i.e. they do not conflict with the intended road layouts. This includes subdividing off a single larger lot for various purposes.

What if I want to subdivide in a manner different to shown on the Structure Plan?

The structure plan sets the framework for the coordinated subdivision of the entire Wokarena Heights area. The most important elements to ensure coordinated subdivision are road connections into neighbouring lots, the location and size of public open space, and the area of road and its impact on stormwater management (which impacts on the size of drainage basins in public open space).

Part One of the structure plan includes 'Plan 1' which shows these road connections and public open space areas, and subdivision should generally accord with that plan. Subdivision layouts that propose minor changes to road layouts and do not compromise road connections, public open space or impact on stormwater management could be supported. This includes adjusting road layouts to retain houses, or to increase potential lot yield.

The indicative lot layout plan included as Figure 7 in Part Two of the structure plan is not statutory and provides an example of one way that lots could be subdivided under the requirements of the structure plan. Subdivision plans do not have to present the same lot layout as presented in that plan.

Major changes that would impact on neighbouring lots, affect the distribution of public open space, or

create additional stormwater runoff are unlikely to be supported as they would not be consistent with the requirements of the structure plan.

Why do I have to provide public open space (POS)?

State planning policy requires that subdivision of residential land in WA provides 10 percent of the subdivisional area being ceded as public open space ('POS').

What happens if the structure plan requires me to provide more than ten percent POS? What is a POS contribution and how is it calculated?

In the case of the Wokarena Heights Structure Plan, rather than 11 landowners providing 11 parcels of land, the 10 percent POS land allocation has been distributed on a more coordinated basis. The coordinated allocation of POS avoids 11 smaller parks of lesser future community value and meets with drainage requirements and the Department of Environment requirements pertaining to the protection of remnant vegetation upon Lot 1.

The coordinated allocation of POS throughout the Wokarena Heights area results in some landowners not having any POS identified on their lots, and other landowners being required to cede a greater area than 10 percent.

All landowners in Wokarena Road are required to contribute their equivalent 10 percent, either through land or cash-in-lieu contributions.

Landowners not ceding any land for POS, or ceding less than 10 percent of their subdivisional area, for POS are required to pay a 'cash-in-lieu' contribution for any under provision of POS.

Landowners required to cede more than 10 percent land for POS will be compensated through a cash payment at the time of subdivision for any excess area of land ceded.

The monetary contribution is based upon the unimproved valuation of the land prior to subdivision. This method for determining the value of land in cash contributions is set out in the Planning and Development Act 2005. Cash-in-lieu



contributions are paid to Council at the time of subdivision and held in trust for the acquisition of excess POS from other landowners in Wokarena Heights.

For example, the structure plan shows 5,200m<sup>2</sup> of POS on Lot 3, which has a total area of 11.6123 hectares. The POS area to be ceded comprises 4.48 percent of the subdivisible area. Therefore, if the owner of Lot 3 were to subdivide, the 10 percent POS contribution would comprise 4.48 percent land and 5.52 percent cash-in-lieu contribution.

Why do I have to contribute to road upgrades?

It is considered reasonable that the cost of the Richards Road upgrade and Highway intersection upgrade would be proportionately borne by subdividers as it is the act of subdivision that will generate the additional lots and with it the additional residences and vehicle trips that will impact upon Richards Road and the Highway intersection, and it is the subdivider who will financially benefit from the subdivision.

The expectation and precedent for subdividers to pay for infrastructure, where the demand and/or need is generated by subdivision, is set out in state planning policy.

Do I have to pay POS or road contributions if I do not subdivide?

No. Should you have no interest in subdivision then you would not make payment of a POS contribution or road upgrade contribution as they are payable only at time of subdivision.

How are the road contributions calculated?

Road contributions are shared across all subdividers, based on the proportionate demand/need for the infrastructure generated by the subdivision of each lot in the Wokarena Heights structure plan area.

The proportion of infrastructure costs for each lot in the Wokarena Heights Structure Plan area has been determined to exclude areas including:

- Public open space

- Subdivisional road reserves
- Land ceded for other purposes, e.g. future road reserve

In this way, the contribution is only paid for land that a subdivider can sell, therefore only that land that creates the need for the infrastructure. Figure 12 in Part Two of the Local Structure Plan illustrates these areas.

For example, under the structure plan, Lot 9 will generate approximately 9.9 hectares of sellable residential land (excluding area of POS and road reserves). This represents 8.9 percent of the total residential land yielded in the structure plan area. Therefore, it is expected that the subdivision of Lot 9 will result in 8.9 percent of future demand for road infrastructure upgrades, therefore the subdivider of Lot 9 will be responsible for contributing to 8.9 percent of the cost to undertake road upgrade works.

Council will obtain and publish a design for road upgrades and a cost estimate for the works to inform developers of the likely costs associated with this development item.

Do I have to pay road contribution if I only subdivide one larger lot (e.g. 1 – 2 hectares)?

No. Road contributions are only payable for residential subdivisions that generate the need for the road upgrades.

If only one lot is subdivided, then internal subdivision roads would not be required to be created, and service authority fees such as power connection and water connection/headworks charges would be based on creation of one additional lot (and the remaining balance lot that contains the residence would already have these services). Other fees incurred would be the costs of surveying and settlement but again these would be linked to the creation of one lot only.

Do I have to pay road contribution if I only subdivide a smaller stage?

Yes, however you would only pay the contribution associated with the area of land you are subdividing at that time.

Do I have to give money to other developers  
if they subdivide before I do?

No. Developer contributions are only paid when the land is subdivided. A developer will pay their contribution to the Council as a condition of subdivision. No landowner is expected to pay any money to any other developer at any time, irrespective of when subdivision occurs (For example, road contribution would not be required for the larger 'balance' lot).




GHD Pty Ltd

T: 61 8 6222 8222 F: 61 8 6222 8555 E: [permail@ghd.com.au](mailto:permail@ghd.com.au)

© GHD Pty Ltd 2013

This document is and shall remain the property of GHD Pty Ltd. The document may only be used for the purposes 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.

#### Document Status

Rev No.	Author	Reviewer		Authorisation		
		Name	Signature	Name	Signature	Date
0	Colleen Murphy	Anna Kelderman		Anna Kelderman		4/4/2012
1	Matt Morgan	Colleen Murphy		Anna Kelderman		28/06/2012
2	Colleen Murphy	Anna Kelderman		Anna Kelderman		12/10/2012
3	Colleen Murphy	Anna Kelderman		Anna Kelderman		24/10/2013



[www.ghd.com](http://www.ghd.com)

