LOCAL STRUCTURE PLAN

LOTS 386, 180 AND 371 HILL STREET AND LOT 9001 ELLIOTT STREET, WAROONA This structure plan is prepared under the provisions of the Shire of Waroona Local Planning Scheme No. 7.

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

20 March 2009

In accordance with Schedule 2, Part 4, Clause 28 (2) and refer to Part 1, 2. (b) of the *Planning and Development (Local Planning Schemes) Regulations* 2015.

Date of Expiry:

19 October 2025

TABLE OF AMENDMENTS

AMENDMENT NO.	SUMMARY OF AMENDMENT	AMENDMENT TYPE	DATE APPROVED BY WAPC.
1.	Cover page. Endorsement page. Table of amendments. Table of density plans. Executive summary. Table of contents. Part one: Implementation Part two: Explanatory section. Technical appendices. Land Use and Implementation Notes. Removal of note 6: <i>Prior to subdivision of the</i> <i>"existing residence.", suitable</i> <i>access arrangements will be</i> <i>required to ensure connection</i> <i>to the local road network to</i> <i>the satisfaction of the Local</i> <i>Government.</i> Relocation of POS from front of residence 3123m2 to area adjacent to football ovals 3136m2.		20 March 2018

TABLE OF DENSITY PLANS

DENSITY PLAN NO.	AREA OF DENSITY PLAN APPLICATION	DATE ENDORSED BY WAPC.
06804P-19A	LOTS 9001,180,371 ELLIOTT STREET & LOT 386 HILL ST WAROONA	20/03/09

EXECUTIVE SUMMARY

ITEM	DATA	STRUCTURE PLAN REF (SECTION NO.)
Total area covered by the structure plan	20.7 hectares	
Area of each land use proposed: Residential	Hectares Lot yield <u>12.8646</u> <u>161</u>	
Total estimated lot yield	<u>161</u>	
Estimated number of dwellings	<u>179</u>	
Estimated residential site density	7.1 dwellings per hectare	
Estimated population	<u>447</u>	
Number of high schools	<u>0</u>	
Number of primary schools	<u>0</u>	
Estimated commercial floor space	0 net lettable area	
Estimated area and percentage of public open space given over to: • Regional open space • District open space • Neighbourhood parks • Local parks	$\begin{array}{c} \underline{0} \\ \text{hectares}\{\%} \\ \underline{0} \\ \text{hectares}\{\%} \\ \underline{0} \\ \text{hectares} \\ \underline{0} \\ \text{parks} \\ \underline{2.1608} \\ \text{hectares} \\ \underline{4} \\ \text{parks} \end{array}$	
Estimated percentage of natural area	0 hectares 0 %	

Contents

1.0	INTRODUCTION	. 1
1.1	Location, Area & Ownership	. 1
2.0	PLANNING FRAMEWORK	. 2
2.1	Peel Region Scheme	. 2
2.2	Shire of Waroona Town Planning Scheme No.7	. 2
2.3	Shire of Waroona/Hamel Preliminary Local Planning Strategy	. 4
3.0	SITE ANALYSIS	. 4
3.1	Landform, Topography and Land Capability	. 4
3.2	Conservation & Environmental Values	. 4
3.3	Hydrological Conditions	. 5
3.4	Sites and features of Aboriginal European Heritage Value	. 5
4.0	CONTEXT ANALYSIS	. 5
4.1	Pattern of Neighbourhoods	. 5
4.2	Transport Network	. 5
4.3	Existing and Future Land Use	
5.0	INTEGRATION WITH SURROUNDING LAND	. 6
6.0	DESIGN RATIONALE	
7.0	TRAFFIC MANAGEMENT & SAFETY	
8.0	PARKLAND PROVISION & MAINTENANCE	
9.0	URBAN WATER MANAGEMENT AREAS	. 9
10.0	PUBLIC UTILITIES & SERVICES	10
10.1	1 Water supply	10
10.2	2 Roadworks	10
10.3	3 Sewerage	10
10.4	4 Earthworks & Acid Sulphate Soils	11
11.0	IMPLEMENTATION	11

1.0 INTRODUCTION

Thompson McRobert Edgeloe has been engaged by Giglio and Leanne Martelli to undertake structure planning of their land, which is a large undeveloped site on the eastern edge of the Waroona townsite as indicated in *Figure 1*.

The landowner's and Thompson McRobert Edgeloe have liaised with the Shire of Waroona (the Shire) since the inception of this project in 2003. With the finalisation of Amendment No. 16, the basis for structure planning of the site has been refined. This report intends to facilitate the structure plan developed in close conjunction with the Shire and the Department of Planning, Lands and Heritage.

1.1 Location, Area & Ownership

The subject land (the site) consists of Lot 9001, Lot 386, Lot 371 & Lot 180 Hill Street Waroona. The land is located on the eastern side of Hill Street which is a major local road bordering the existing urban area. The site also fronts Elliot Street, which extends along portion of the northern boundary. The site is about 1.5km east of the Waroona town centre.



Figure 1 - Site Location

The site has a combined area of 20.75 hectares with individual lot areas as follows:

Property Property	<u>Area</u>	<u>Ownership</u>
Lot 9001	15.6110ha	Giglio & Leanne Martelli
Lot 386	4.0001ha	Giglio & Leanne Martelli
Lot 371	0.0955ha	John Van Twist
Lot 180	1.0395ha	John Van Twist

Copies of the Certificate of Titles are in Appendix 1.

2.0 PLANNING FRAMEWORK

2.1 Peel Region Scheme

The Peel Region Scheme (PRS) is the statutory land use plan for the Peel Region. The site is zoned "Urban" under the Peel Region Scheme. The "Urban" classification makes the site appropriate for residential subdivision subject to local zoning, planning controls and servicing requirements.

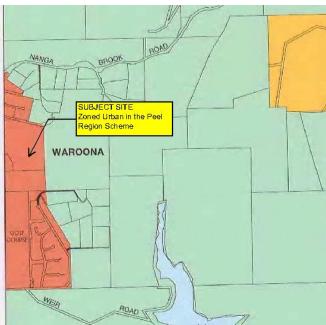


Figure 2 - Excerpt from Peel Region Scheme Map

2.2 Shire of Waroona Town Planning Scheme No.7

The site is at the time of writing this report, zoned "Urban 4 – Residential" with a density coding of R12.5/30, as indicated below in *Figure 3.*



Figure 3 - TPS No. 7 Zoning

The requirements of the Urban 4 – Residential zone are set out in Section 4.8 of the scheme. The following is section 3.7 paraphrased from the scheme text:

"3.7.1 Objectives and Policies

Council's objective is to ensure that the residential areas of Waroona Townsite development in a manner which will provide adequately for the variety of residential needs anticipated in the reasonably foreseeable future, consistent with the best use of available land resources and a high level of urban amenity.

Council's policies will therefore be to:

- protect by appropriate zoning, land considered to be adequate and suitable for Waroona's anticipated residential needs;
- adopt land use control and Residential Planning Codes which will permit development of a range of housing types.
- achieve maximum economic use of the urban land resource by encouraging development of vacant subdivided lots and other serviced unsubdivided lots and other serviced unsubdivided areas;
- require that residential development attains a satisfactory standard of urban amenity through siting, design and construction."

Section 3.7.2 of the scheme "Special Applications of Residential Planning Codes" deals with requirements that are in effect, to be modified and replaced by Scheme Amendment 16 which sets out the provisions in the format set out by the Model Scheme text. It is therefore considered unnecessary to discuss the implications of Section 4.8.2 as these provisions will not apply once amendment 16 achieves final approval.

"3.7.3 Structure Plan

Prior to considering subdivision or development of unsubdivided land in the zone, Council may request preparation of an overall structure plan of the land and adjoining areas which:

- (a) defines a suitable road pattern in accordance with currently adopted principles of residential road planning;
- (b) provides adequately for external and site drainage requirements;
- (c) provides public open space of appropriate location and quantity, provided that Council in lieu of land may accept an equitable cash contribution in accordance with the Act;
 - for the purchase of land for open space in the said locality; or
 - with the approval of the Commission, for the improvement or development as parks, recreation grounds or open spaces generally of any land in the said locality vested or administered by Council for those purposes."
 - 1. In July 2003 (including the Special Residential land to the east which has been subdivided), as the result of a meeting with officers from the

Department of Planning, Lands and Heritage and the Shire's Manager Development Services resolved that the portion of the site zoned 'Residential' would be rezoned to 'Development Zone'.

The rezoning of the site to 'Development Zone' has been in process since 2003 and is in the latter stages of being finalised. It is titled "Scheme Amendment No.16". Amendment 16 provides the detailed requirements for the structure plan including figures and mapping required and the matters to be included in the report. This report is compiled to address these requirements.

2.3 Shire of Waroona/Hamel Preliminary Local Planning Strategy

This strategy was endorsed in 2009 and shows the subject land identified for residential development.

3.0 SITE ANALYSIS

Figure 4 provides a map to indicate the various natural features and constraints of the site.

3.1 Landform, Topography and Land Capability

The sites landform and topography is indicated in the Site Analysis map. In general it slopes gently down from east to the south west corner from the 85 metre contour to about the 68 metre contour level. The whole of the site is contained within the F2B (Forrestfield2B) land form unit. It is described as follows:

"Low slopes and footslopes up to 5-10% with well drained, moderately deep to deep, gravely acidic yellow duplex soils and rare laterite."

The details of the land capability assessment can be found in APPENDIX 2 of this report. Land capability of the site can be summarised as:

- Most of the site slopes between 1-5%
- Most of the site has a high ease of excavation, good machine trafficability, good soil workability, very low water erosion and water logging potential and low wind erosion potential. This makes it highly suitable for residential development.
- There are no significant constraints in terms of landform and soils.

3.2 Conservation & Environmental Values

The site consists of mainly pasture but has a sparse scattering of remnant eucalypts and banksias. In the northern portion (in Lot 180) there is some dense remnant jarra, marri, banksia bushland in the eastern portion of Lot 180. This land has aesthetic qualities as a native landscape buffer. The structure plan proposes to incorporate this part of Lot 180 bush as a natural buffer for the benefit of existing residences in Elliot Street and the new residences to be in the structure plan area.

Apart from the vegetation mentioned above there are no other perceived conservation and/or environmental values within the site.

3.3 Hydrological Conditions

As stated above, the site slopes gently from east to the south west, therefore natural drainage is in this direction. Measurements taken from nearby monitoring bores (Dept of Water) suggest that the water table is fairly low in comparison to the existing town site areas further to the west and on the coastal plain. In general it is perceived from nearby readings in similar landforms that there is about a 15-17 metre depth to the water table at the eastern portion of the site with an 11-12 metre water table depth in the water table is not as high as on the coastal plain, these natural assets greatly assists with natural drainage of the site.

3.4 Sites and features of Aboriginal European Heritage Value

Information from the Department of Planning, Lands and Heritage indicates that there is the presence of an Aboriginal Site broadly covering the area as indicated on the site analysis map. The Site ID is 3309 and it extends over part of the western portion of the site. A list of relevant heritage survey reports is in APPENDIX 3.

4.0 CONTEXT ANALYSIS

Figure 5 is a context analysis map which shows the site in relation to the whole of Waroona townsite and its environs.

4.1 Pattern of Neighbourhoods

The context analysis illustrates the site in relation to existing and future neighbourhoods. The townsite area to the west of the site is well established with commercial, business and community facilities that are essential to the function of a local rural service centre. It also includes areas for local service and light industry and that include support facilities for the nearby mining activities and processing plants.

In terms of the current town planning scheme and planning strategy the area of the structure plan represents a transitional area where the more 'traditional size' town lots are on the western side, closer to the town centre and the larger 'special residential' lots are on the eastern portion of the site where the foothills begin and slopes increase as the land becomes closer to the Darling Scarp. Lots in the very hilly "Future Rural Residential" land further to the east are proposed to be even larger at around 4 hectares or more. The difficult nature of the terrain and the need for more attention to landscape protection in the scarp areas, will mean larger lots in these areas are more appropriate.

4.2 Transport Network

The main features of the transport network associated with the site are as follows:

• Passenger rail line which runs a twice daily service between Perth and Bunbury. The rail line also carry's freight and raw

materials throughout the south west region. The Waroona station is approximately 1.5km west of the site.

- South West Highway is a major road transport link between Perth and the south west of WA. It caters for all forms of road traffic including passenger vehicles, coaches and freight carriers. It is the essential link between Perth and the provincial rural towns that are spread from Pinjarra down to Bunbury, the most notable of these being Harvey and Waroona.
- Road access from the site to the town centre is by virtue of a number of sealed local roads that run east west through the established residential areas of the town. Hill Street which borders the western side of the site runs north west and provides links to the recreation, golf course and industrial areas south of the site and Nanga Brook Road north of the site. Nanga Brook Road is a major rural road that provides a link between Waroona and Waroona Dam, Dwellingup and Boddington town sites.
- The town does not have a local transport system however public bus and rail services run regularly between Perth and Bunbury on the SW Highway and the railway line.

4.3 Existing and Future Land Use

As discussed previously the majority of the town site is well established and located to the west of the site. There are only small pockets of infill available in these areas for future residential development. Also to the west in between the site and the SW Highway are the main commercial, recreation and community activity areas. Directly south of the site is the community recreation and aquatic centre, with large areas of playing fields adjacent to the south eastern portion of the site. The golf course lies further south of the recreation centre.

North of the site exists established 'special residential' areas where the lots are generally between $2,000 - 4,000m^2$ and special controls apply to the development of these lots in order to maintain a degree of quality.

Directly east of the site are a number of special residential lots generally around the 4,000m² or acre size which were subdivided in 2003. Land to the east of these lots is currently vacant pasture utilised for grazing. It is however proposed for "Future Rural Residential" with lots being a minimum of 4 ha in size. There is a small existing rural residential zone containing about 8 lots (over 2ha in size) to the south east of the site.

5.0 INTEGRATION WITH SURROUNDING LAND

The plan proposes to integrate with the surrounding areas in the following ways:

 On the western side of the site, where it interfaces with the existing townsite area, there are large areas of public open space and landscaping proposed, Therefore the majority of existing dwellings will be able to enjoy an aspect over parklands.

- On the northern side of the site there is a densely vegetated area intended for preservation which will also assist in minimising impact on the amenity of the existing residential areas to the north. It also enables the proposed estate to have a degree of identity (i.e. not just an extension to existing residential areas).
- On the eastern side of the site larger lots (around 2,000m²) are proposed to provide a transition between the more 'standard' residential lots to the west and the acre size lots that exist to the east.
- On the southern side of the site there is a proposed road connection with the road that currently runs east-west along the northern boundary of the recreation centre and playing fields. this gives the site a direct connection with the recreation areas and therefore integrates the future inhabitants with existing recreational facilities and large areas of open space.

Given the above it is considered that the proposed structure plan integrates extremely well with surrounding areas in terms of:

- Street and pedestrian connectivity
- Convenience
- Compatibility of uses
- Aesthetics and landscape buffers used to maximum advantage for existing and future residential development.
- Urban Legibility
- Distinct sense of place and identity
- Proposed plan enhances and improves surrounding areas rather than imposes on them.

6.0 DESIGN RATIONALE

The Proposed Local Structure Plan is indicated in *Figure 6* (following this page). The design is based on the following objectives:

- Strong and compatible integration with surrounding areas as indicated in section 5.
- Conformity with "Liveable Neighbourhood" principles and WAPC policy.
- Provision of a variety of residential accommodation alternatives.
- Strong linkages with the existing town centre and urban areas while retaining a sense of place, identity and character (i.e. not just an extension to existing residential areas).
- Strong linkages and accessibility to existing recreation facilities and areas.
- Legible and safety conscious road system (i.e. no four way intersections and good site lines).

- Conservation of valuable natural areas and integration to improve aesthetics and buffering to neighbouring housing areas.
- Use of drainage areas as visual feature to tie in with landscaping.
- Efficient use of power line easement area.

It is considered that the design has due consideration to all the points mentioned above and having been developed over a long period of time in liaison with the Shire and the Department for Planning and Infrastructure has achieved as much as possible given the site constraints.

7.0 TRAFFIC MANAGEMENT & SAFETY

The road layout was designed with high regard to Liveable Neighbourhood design principles and incorporates the following considerations:

- Only one vehicle intersection with Hill Street, minimising traffic conflict points on this road.
- Hill Street T junction is set midway between the two nearest existing roads that join Hill Street from the west.
- Only one road link to Elliot Street which is also a considerable distance from the Elliot and Hill Street intersection to reduce traffic conflict.
- No four way intersections.
- T intersections have high regard to appropriate site lines.
- Appropriate corner truncations to improve intersection visibility.
- Design does not promote 'rabbit runs'.

Given the above points it is evident that the design has a high regard for traffic management and safety.

8.0 PARKLAND PROVISION & MAINTENANCE

The site is fortunate to be located adjacent to an extensive area of public open space that contains the existing recreation & aquatic centre and football playing fields.

Also it is proposed that a large area adjacent to the western boundary be given over as Public Open Space in the form of landscaped parklands and artificial lakes for the dual purpose of accommodating drainage and providing an aesthetic feature and habitat for birds. The proposed POS and drainage area totals are approximately as follows:

Lot 9001 2.0100ha - 50%Drainage Area 0.4000ha 1.5900ha Lot 386 0.2338ha Lot 180 0.3370ha

Total 2.1608ha

% of 20.75ha = 10.4%

Therefore given a 50% provision of POS for the landscaped drainage areas provision of POS would be over the 10% requirement as prescribed by state government policy.

Maintenance arrangements would be subject to further negotiation with the shire once it is defined more accurately the nature, size and purpose of the open space areas.

9.0 URBAN WATER MANAGEMENT AREAS

Drainage of the site and effective use of stormwater is the single largest issue relating to the site. This is because due to sites location below the foothills of the escarpment and its slope down from east to south-west there is calculated to be a large amount of stormwater produced in the winter months. It is also because the Shire's existing drainage system is known to be utlised to capacity, therefore it is best that drainage of the site be dealt with independently of the Shire's system.

The site receives upstream runoff from overland and groundwater flows from developed semi-rural lots and farm land to the east. Due to the clayey soils anticipated, lot drainage connections would most probably be required to all lots. These would connect to the road reserve piped stormwater system. Subsoil drainage in the same trench as the piped stormwater is also proposed. Due to the slope of the site, drainage easements may therefore need to be located along back and side boundaries of some lots.

The stormwater requirements necessitate calculation of excess runoff over the pre-developed flows. This excess will be catered for by either storage or attenuation before entering the existing drainage system.

Some area is therefore needed to provide for bioretention basins. Due to the gradient of the site sloping to the south west, a large bioretention basin is envisaged in the south west corner catering for the majority of the site. Storing and attenuating the contributing flows associated with upstream development has apparently not been a requirement of these previous developments and no storage has been provided in previous stages. This lower catchment development will therefore need to allow for these contributing flows.

A smaller attenuating basin can be situated on the proposed northern P.O.S. to cater for flows from a northern portion of the site. This site should be suitable providing it does not fall within the power easement. Both basin outfalls would discharge into the drainage network at pre development flows.

While a piped system to the two basins has been proposed, further investigation and detailed modelling would look at enhancing the stormwater management with cost effective WSUD options. This system could be developed in conjunction with vegetated bioretention swales on each side of the roads along the power easement and utilising the southern P.O.S. to

assist with attenuation, soakage and disposal of stormwater runoff prior to reaching the larger southern basin.

Options would assess runoff from lots being soaked near the source to minimize runoff. Dual pits beside road side entry pits and kerb breaks to vegetated verge soakage areas may help to attenuate peak flows before being piped from overflows. Alternatively flows could be captured periodically into revegetated swale retention areas before overflowing to the bioretention basins for further treatment and final discharge into the existing Shire drainage system. A more detailed investigation and design phase would assess what combination of WSUD options would provide the best and most economical management of stormwater.

Vegetated zones within the P.O.S. and lifestyle village site along the western boundary could be incorporated with the bioretention basins to assist with nutrient stripping and soakage of stormwater. This would also provide an aesthetic aspect to the development as well as a low maintenance system consistent with Water Sensitive Drainage Design principles.

Due to the limited capacity in the existing piped system, the preliminary estimate includes upgrading 50 metres of 450 diameter and 100 metres of 525 diameter & drainage pipes to 600 mm diameter at the southern end of the development in Hill Street.

It is envisaged that stormwater can be both maintained without increasing any burden on the exist system (with upgrading) and also provide an opportunity to have an aesthetically pleasing impact on the site when viewed from the adjacent townsite.

10.0 PUBLIC UTILITIES & SERVICES

10.1 Water supply.

There is a reticulated Water Corporation water supply bordering the site. A 150 uPVC main exists on the southern side of Elliott Street and a 200 uPVC main extends down the eastern side of Hill Street. A 150 uPVC main has been allowed along the proposed east-west subdivision road extending from the existing 150 main and existing road to the east. 100 diameter reticulation mains are assumed for the remainder of the subdivision.

10.2 Roadworks

Access to and from the subdivision is via one road in the north of the site off Elliott Street and one access off Hill Street on the western side of the site. A condition of subdivision will be that all lots will require a sealed access. A 6 metre wide AC7mm seal is proposed with flush kerbing along the roads adjacent the 132Kv line to allow for roadside swales and mountable kerbing elsewhere.

10.3 Sewerage

Subdivision and development of the subject land will be required to be in accordance with the Draft Government Sewerage Policy 2016. As the subject land is located in a sewerage sensitive area all lots smaller than one hectare will be required to be connected to reticulated sewerage.

10.4 Earthworks & Acid Sulphate Soils

Due to the existing gradual and evenly sloping topography, no retaining of lots is envisaged. Earthworking will include stripping and stockpiling of topsoil; a provision for removal of unsuitable material and replacement with sand; and final trimming and shaping of lots. While no general sand fill over the lots for separation from winter water table has been allowed, a nominal 6000m3 of imported sand fill has been included in the earthworks estimate.

Contours indicate a natural gradient falling approximately 20 metres from north east to south west over the entire site (approx. 4%). Although it is envisaged that existing gradients over the lots are considered appropriate, the smaller lots (506 to 530m2) may have an elevation difference across each lot of 0.7 to 1.3 metres. While this may require some retaining, more design is needed to confirm this. Some minimal earthworking has been allowed in the estimate, however no retaining has been allowed at this stage.

Due to the natural gradient of the land, some cut to fill and minor fill is inevitable for a road and drainage network for allowing minimum grades and providing acceptable subgrade material. Fill will also be required for construction in, and removal of, unsuitable material in service trenches and drainage retention basins.

A geotechnical investigation will need to look in more detail at the soil capacity for onsite effluent disposal and methodology for roadworks, stormwater disposal and lot classifications for building construction.

A geotechnical investigation will also need to look at Acid Sulphate Soils as this development borders the Moderate Risk Zone identified by the Ministry for Planning and Department of Environment. Acid Sulphate Soils are likely to be encountered for any earthworks at depth such as stormwater services and retention basins.

An allowance during construction is also made for stabilization by way of hydro mulching to disturbed areas to prevent wind borne dust problems.

11.0 IMPLEMENTATION

With the final approval to Amendment No.16 and approval to this local structure plan by the Shire of Waroona and the WA Planning Commission the proponent will then be able to lodge subdivision applications. Following subdivision approval detailed works plans can then be compiled.

The majority of the land is owned by G & L Martelli however their will need to be some cost sharing arrangements made if the owner of Lot 180, Mr John Van Twist is also to develop. These arrangements will need to occur if and when Mr Twist wants to become involved.

It is anticipated that the subdivision of this land in the manner proposed by the structure plan will greatly enhance the quality of the local neighbourhood and complement the existing developed townsite area.

