

LOCAL STRUCTURE PLAN

PART 1 and 2

PROJECT TITLE: Treendale Structure Plan Policy Area 3B (amended)

DATE: 22nd DECEMBER 2020

Report Issue History

Report Issue	Job Number	Issued To	Issue Date
Original	190120	Allan Erceg	16/12/2020
Revised	190120		22/12/2020
Final	190120	WAPC	24/03/2023



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ENDORSEMENT

IT IS CERTIFIED THAT THE TREENDALE POLICY AREA 3B LOCAL STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON:

14 February 1996

In accordance with Schedule 2, Part 4, Clause 28 (4) 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 WAPC
1	Incorporates the Bunbury Outer Ring Road alignment. Increased lot yield from 75 lots to 124 rural residential lots	-	06 April 2023

EXECUTIVE SUMMARY

This Local Structure Plan (LSP) report has been prepared in accordance with the Western Australian Planning Commission (WAPC) Structure Plan Framework (August 2015) for the area defined as Treendale Policy Area 3B.

This LSP will facilitate the rural residential development of the land and has been prepared pursuant to Part 4 of the Deemed Provisions of the *Planning and Development (Local Planning Scheme) Regulations 2015*.

The Local Structure Plan comprises the following:

- Part One – Implementation
- Part Two – Explanatory Section; and
- Appendices – Technical reports, plans, maps and supporting documents.

The summary provides key statistics and planning outcomes of the LSP as follows:

Table 1: LOCAL STRUCTURE PLAN SUMMARY TABLE

ITEM	DATA	STRUCTURE PLAN REF (SECTION NO)
TOTAL AREA COVERED BY STRUCTURE PLAN	429ha	1.2.2
AREA OF EACH LAND USE: I: RURAL RESIDENTIAL (STAGE ONE ONLY)	301HA	1.2 3.0
TOTAL ESTIMATED LOT YIELD	124 Lots	3.0
ESTIMATED NUMBER OF DWELLINGS	124	
ESTIMATED POPULATION	*323 people	

**Note: Population based on 2016 ABS data, 2.6 people per household and approximate yield of 124 lots.*

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PART 1- IMPLEMENTATION

PART 1 IMPLEMENTATION

1.0 LOCAL STRUCTURE PLAN AREA

The Local Structure Plan (LSP) shall apply to the land contained within the inner edge of the line denoting the LSP boundary of the Structure Plan (SP) map.

2.0 OPERATION

In accordance with *Planning and Development (Local Planning Scheme) Regulations 2015*, the LSP shall come into effect when it is granted final approval and endorsed by the Western Australian Planning Commission (WAPC).

3.0 STAGING

The proposed staging of the SP area is fundamentally linked to the progression of the Bunbury Outer Ring Road (BORR). The progression and commitment of the construction of the BORR Northern End has been a catalyst for landowners to bring forward subdivision and development for land generally in proximity to the alignment of the BORR. Stage 2 landowners are not impacted as directly by the BORR however remain committed to future subdivision and development options. Stage 3 represents future logical development subject to the required detailed planning.

4.0 SUBDIVISION AND DEVELOPMENT REQUIREMENTS

4.1 Land Use Permissibility

Subdivision and development of land shall be in accordance with the zones and reserves assigned on the LSP Map. The land use permissibility within the LSP area shall be in accordance with the corresponding zone or reserve under the Scheme.

4.2 Information required at time of subdivision

The following information is to be provided prior to subdivision:

- 1) A Noise Exposure Forecast is to be submitted to identify the requirement for any noise mitigation from the Bunbury Outer Ring Road is required in accordance with State Planning Policy 5.4 Road and Rail Transport Noise and Freight Consideration.
- 2) A Bushfire Management Plan addressing State Planning Policy 3.7 – Planning In Bushfire Prone Areas.
- 3) A site specific site and soil evaluation in accordance with the Government Sewerage Policy.

4.3 Recommended Subdivision Conditions

The following shall be applied as conditions of subdivision:

- 1) Preparation, adoption and implementation of an approved Urban Water Management Plan to the specifications of the Shire of Harvey and in consultation with the Department of Water. The UWMP will be in accordance with 'Better Urban Water Management' and will address water sensitive urban design.
- 2) A geotechnical report is to be submitted to the satisfaction of the Shire of Harvey.

- 3) A mosquito-borne disease and nuisance risk assessment and a mosquito management plan prepared by an appropriately qualified person are to be submitted and endorsed to the satisfaction of the Shire of Harvey.
- 4) A notification, pursuant to Section 165 of the Planning and Development Act 2005 is to be placed on the certificates of title of the proposed lot(s) advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan of survey (deposited plan).

The notification is to state as follows:

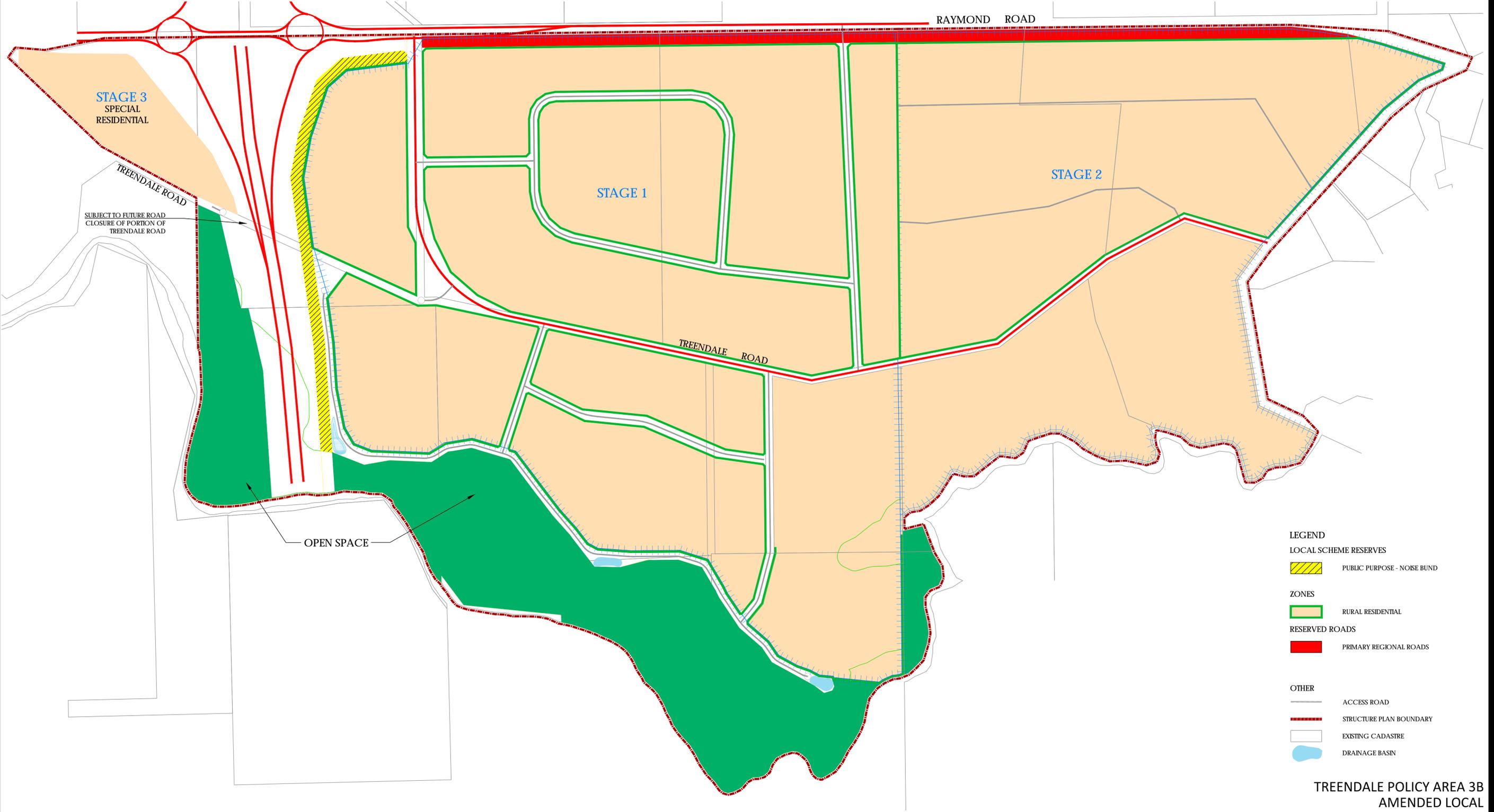
“This lot is on close proximity to known mosquito breeding areas. The predominant mosquito species is known to carry viruses and other diseases.” (Western Australian Planning Commission).

- 5) A Bushfire Management Plan is to be implemented to the satisfaction of the Shire of Harvey.
- 6) A notification, pursuant to Section 165 of the Planning and Development Act 2005, is to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan of survey (deposited plan).

The notification is to state as follows:

‘This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is/may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on the land.’ (Western Australian Planning Commission).

- 7) A Foreshore Management Plan and Wetland Management Plan are to be prepared and approved by the Department of Water and Environmental Regulation and Department of Biodiversity, Conservation and Attractions to ensure the protection and management of the sites environmental assets with satisfactory arrangements being made for the implementation of the approved plans.
- 8) A notification, pursuant to Section 165 of the Planning and Development Act 2005 is to be placed on the certificates of title of the proposed lot(s) advising that a reticulated sewer service is not available to the land and that alternative effluent disposal units may be required to address constrained on-site conditions.
- 9) Intersections with Raymond Road shall be designed and constructed to the specifications of Main Roads WA.



- LEGEND**
- LOCAL SCHEME RESERVES**
-  PUBLIC PURPOSE - NOISE BUND
- ZONES**
-  RURAL RESIDENTIAL
- RESERVED ROADS**
-  PRIMARY REGIONAL ROADS
- OTHER**
-  ACCESS ROAD
 -  STRUCTURE PLAN BOUNDARY
 -  EXISTING CADASTRE
 -  DRAINAGE BASIN

**TREENDALE POLICY AREA 3B
AMENDED LOCAL
STRUCTURE PLAN**

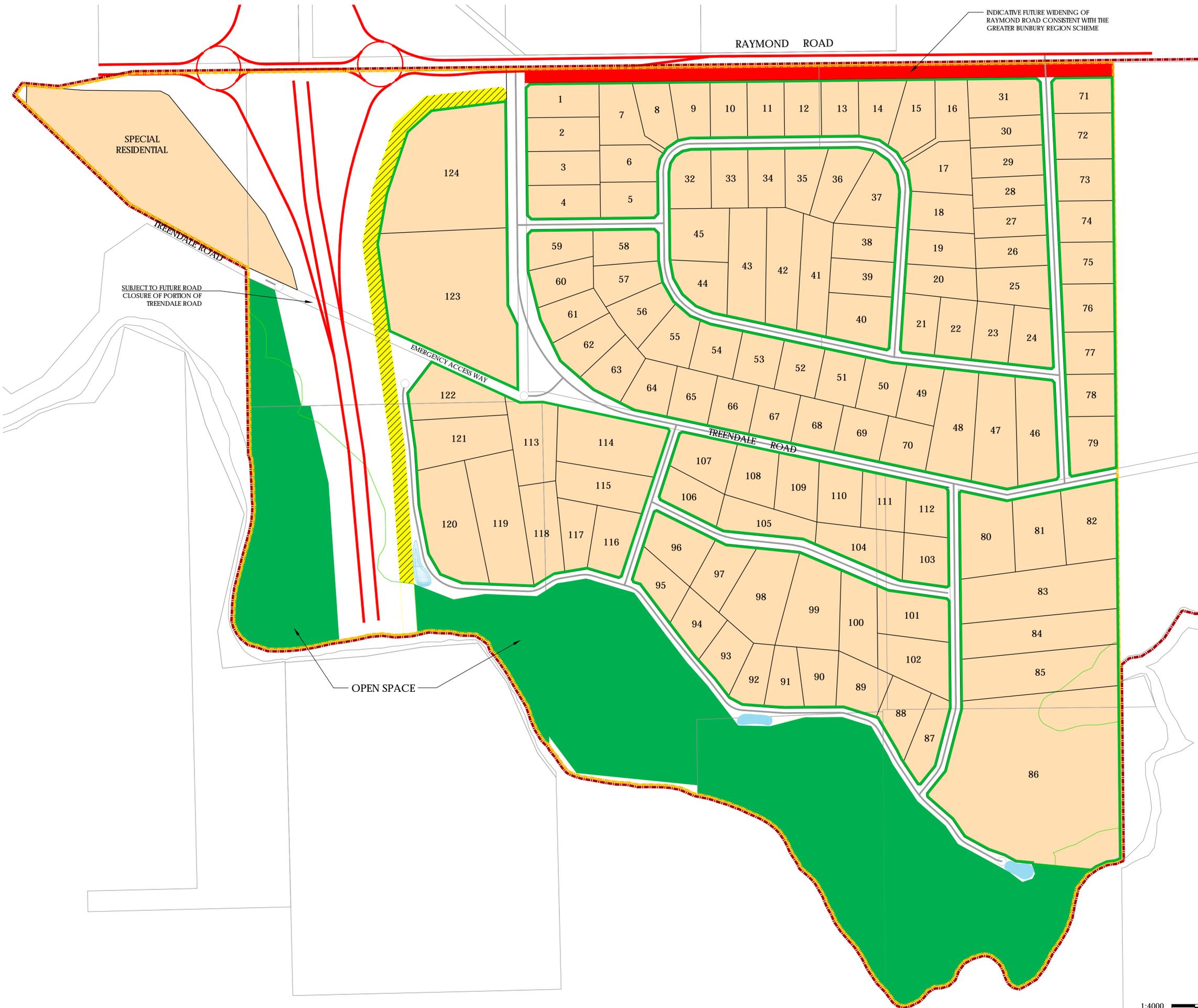
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INDICATIVE FUTURE WIDENING OF RAYMOND ROAD CONSISTENT WITH THE GREATER BUNBURY REGION SCHEME

SPECIAL RESIDENTIAL

SUBJECT TO FUTURE ROAD CLOSURE OF PORTION OF TREENDALE ROAD

OPEN SPACE

- LEGEND**
- LOCAL SCHEME RESERVES**
- PUBLIC PURPOSE - NOISE BUND
- ZONES**
- RURAL RESIDENTIAL
- RESERVED ROADS**
- PRIMARY REGIONAL ROADS
- OTHER**
- ACCESS ROAD
 - STRUCTURE PLAN BOUNDARY
 - CONCEPT PLAN BOUNDARY
 - EXISTING CADASTRE
 - DRAINAGE BASIN

TREENDALE POLICY AREA 3B
CONCEPT PLAN
STAGE ONE



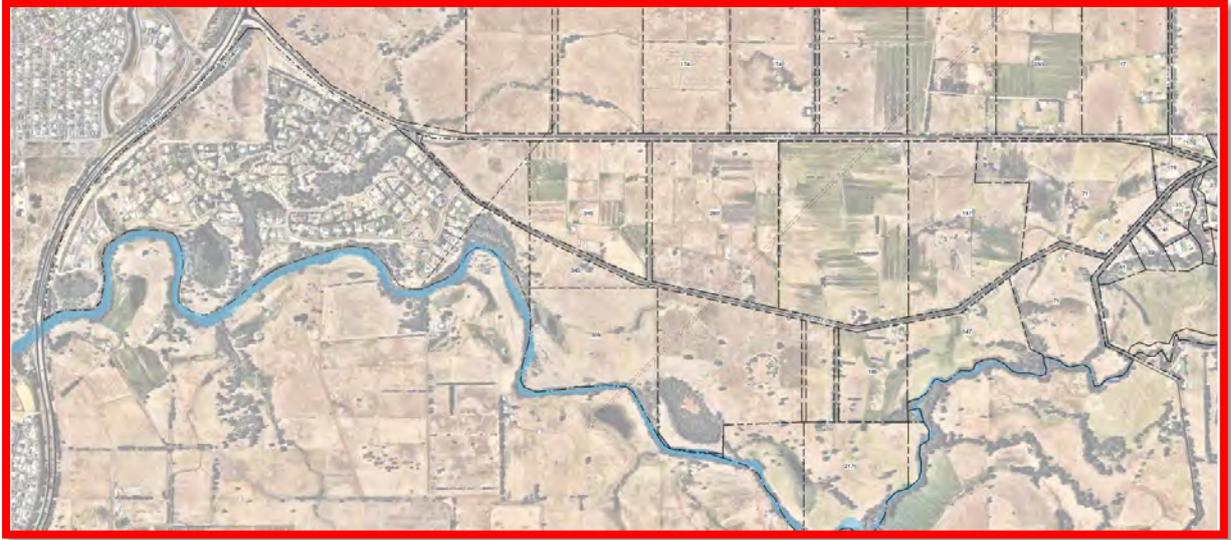
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PART 2 – EXPLANATORY SECTION & TECHNICAL APPENDICIES

PART 2 EXPLANATORY SECTION

1.0 PLANNING BACKGROUND

1.1 Introduction and Purpose

1.1.1 Overview

In noting the status of the Treendale Structure Plan Policy Area 3B 1996 and the advice from the Department of Planning, Lands and Heritage that the 1996 structure plan has full legal effect there is still a need to amend the document to address the implications of the Bunbury Outer Ring Road (BORR) as well as comprehensively addressing environmental and engineering servicing considerations.

The amended Structure Plan will provide the framework for the coordinated provision and arrangement of the land uses, subdivision and development. It will also inform the provision of a transport network, regional open space, public utilities and development standards.

1.1.2 Background and Planning History

On the 14th February 1996, the Western Australian Planning Commission (WAPC) advised the Shire of Harvey that it had resolved to endorse the Treendale Structure Plan Policy Area 3B. The area extended from Raymond Road through to the Colie River and east to Forrest Highway (appendix 6).

The only significant modification to the Structure Plan required by the Commission was to modify the Western Residential Precinct (now Meadow Landing) to reflect the higher density of Special Residential. The decision of the WAPC in relation to the Western Residential Precinct was formalised through the gazettal of Amendment No 23 to Town Planning Scheme No 1 in July 1999.

The Shire of Harvey advertised their Local Planning Strategy from July to September in 2019. The advertised Strategy showed the land on the south side of Treendale Road as Rural Residential and Priority Agriculture for the area between Raymond Road and Treendale Road.

A submission on the Local Planning Strategy made the case that there was an existing endorsed Structure Plan for the area between Raymond Road and the Collie River. Therefore, the Priority Agriculture area north of Treendale Road had been approved for Rural Residential development.

The Shire of Harvey Council accepted the submission to expand the Rural Residential area and adopted an amended Local Planning Strategy in May 2019. The Shire of Harvey submitted the adopted Local Planning Strategy to the WAPC for final endorsement. The officer's report to the Commission (via the Statutory Procedures Committee) did not recognise the 1996 Treendale Structure Plan as an endorsed plan by the Commission. As a consequence, the entire Treendale Structure Plan area remained as rural and the issue of land suitability for Rural Residential development was referred for consideration in the Bunbury Geopraphe Sub Regional Strategy planning process.

The suitability of the Treendale Structure Plan area has already been established and this revised Structure Plan, which now incorporates the Bunbury Outer Ring Road alignment, should advance through the planning approval procedures with full recognition of the endorsed 1996 Treendale Structure Plan.

1.2 Land Description

1.2.1 Site Location

The landholdings are located within the locality of Roelands in the Shire of Harvey, approximately 150kms south of the Perth Metropolitan area. The study area is situated immediately adjacent to the Collie River, approximately 3kms to the east of the Treendale District Centre. Stage One is comprised of approximately 300ha of predominantly cleared land. The Collie River borders the study area to the south, while the northern border of the study area is defined by Raymond Road. Immediately west of the landholdings is the special residential subdivision of Meadow Landing. The location of the study area is shown in Figure 1.

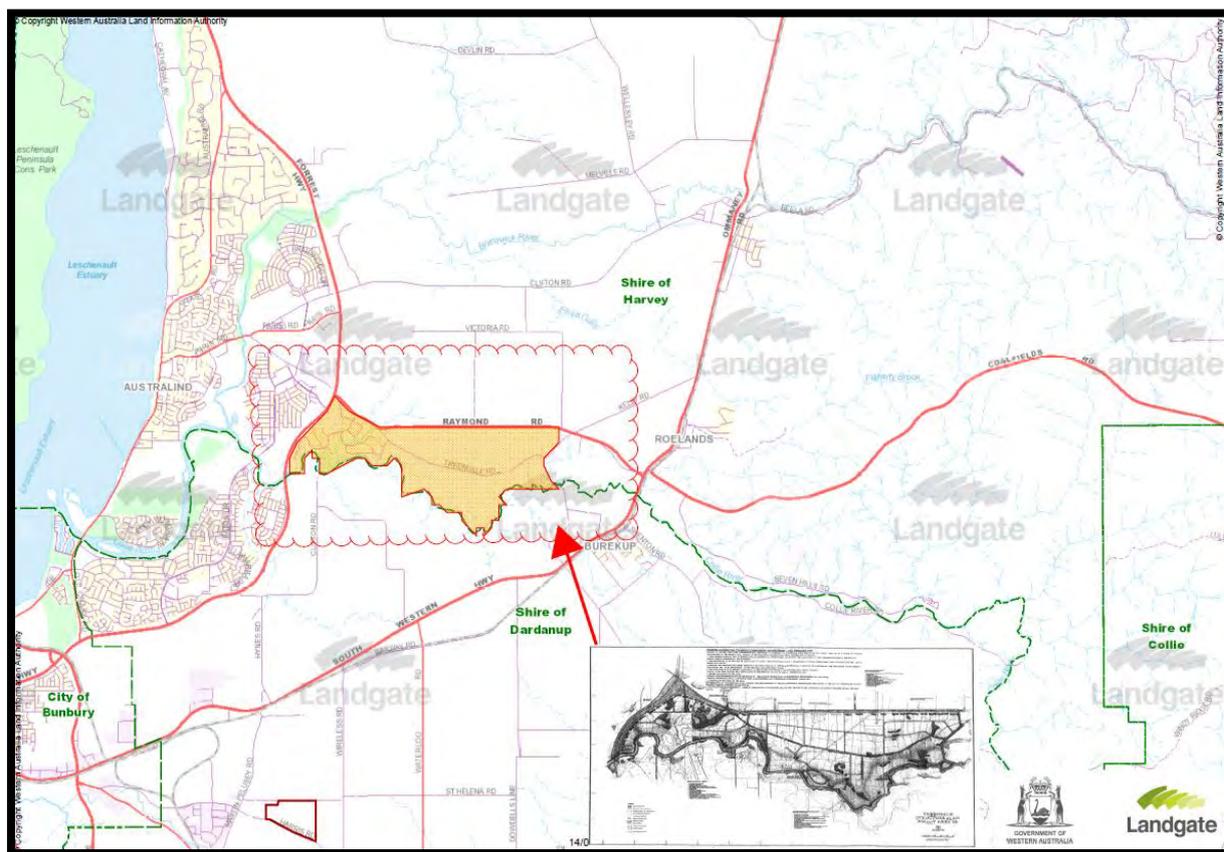


Figure 1 Location Plan

1.2.2 Area and Land Use

The land defined as the “Structure Plan Area’ (Stage One) comprises approximately 300ha of farmland and river foreshore. The land is predominantly utilised for General Farming operations including cattle grazing and stock feed cropping (Hay).

The subject site includes within its boundary five Geomorphic Wetlands, one of which is the Collie River which is situated along the southern boundary of the subject site. Three of the mapped wetlands are “Multiple Use” one is classed as “Resource Enhancement” and one is classed as “Conservation”. There is one Environmentally Sensitive Area (ESA) that extends within the subject site along the western boundary, this is associated with the Conservation wetland (UFI1734).

1.2.3 Surrounding Land Use

The locality has traditionally been an irrigated farming area supporting dairy herds and the area north of Raymond Road continues to be used for that purpose.

Immediately to the west and east of the Structure Plan area are the two major highways that service the South West region (Forrest Highway and South West Highway). Forrest Highway is soon to be affected by the alignment of the Bunbury Outer Ring Road which will pass through the western portion of the Structure Plan area.

The area between the highways and south of Raymond Road, has been subdivided immediately east and west of the Structure Plan. Land use in these areas is Special Residential to the west and Special Rural to the east.

Land use to the west of Forrest Highway is predominately urban with the Treendale town centre just 3 kilometres from the subject land. This ensures a full range of services and commercial facilities that are easily accessible (Figure 2 Local Context Plan).

The southern border of the subject land is the Collie River which has been severely modified with the construction of the Wellington Dam. Managed environmental flows have allowed important wetlands and riparian natural communities to survive. The river has significance to past and present aboriginal communities and will provide an important recreational resource to existing and future populations.

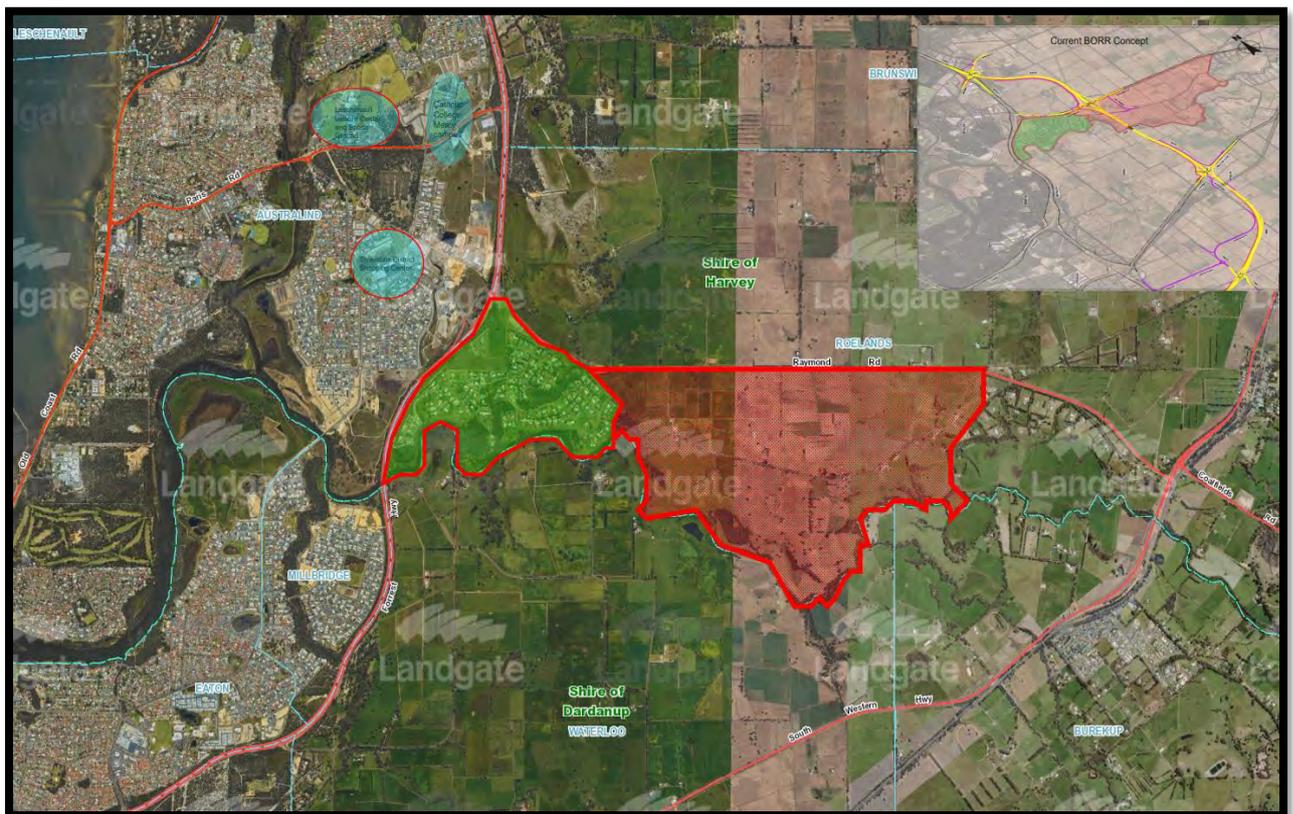


Figure 2: Local Context Plan

1.2.4 Legal Description and Ownership

Current ownership and property details as they relate to Stage One are recorded in the below table. Copies of the Certificate of Titles are contained in appendix 1.

Address	Plan No.	Certificate of Title	Landowner	Area (ha)
Pt Lot 100	P068088	2806/419	Robert Lindsay Taylor	80.3852(whole) Approx. 13 (portion in SP)
Lot 878 (No. 345) Treendale Road	P251812	1475/315	Commissioner of Main Roads	40.6484
Lot 1 (No. 260) Treendale Road	D005120	1003/348	Melissa Jane McIntyre	48.3793
Lot 2 (Multi-lot)	D005120	792/87	Crystal River Investments Pty Ltd	56.2820
Lot 3 (No.185) Treendale Road (Multi-lot)	D005500	792/87	Crystal River Investments Pty Ltd	16.1774
Lot 314 (No.217) Treendale Road	P246083	1405/876	Collie River Investments Pty Ltd	26.9585
Lot 246	P232718	1405/877	Collie River Investments Pty Ltd	13.0479
Lot 3315	P251811	1009/749	Collie River Investments Pty Ltd	54.0258
Lot 157 (No.309) Treendale Road	P418094	2983/347	Crystal River Investments Pty Ltd	25.3604
Lot 510	P418094	2983/348	Commissioner of Main Roads	7.1994
				Total Study Area 301 ha

Table 1: Land Ownership

1.3 Planning Framework & Background

1.3.1 Zoning and Reservations

Shire of Harvey Local Planning Scheme No.1

The land north of Treendale Road is currently zoned 'Intensive Farming' with land south of Treendale Road being zoned 'General Farming'.

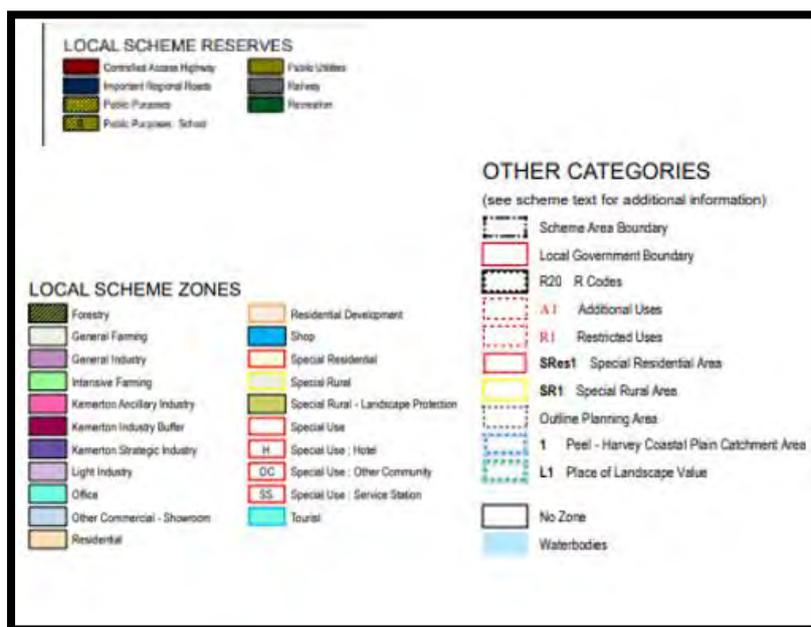
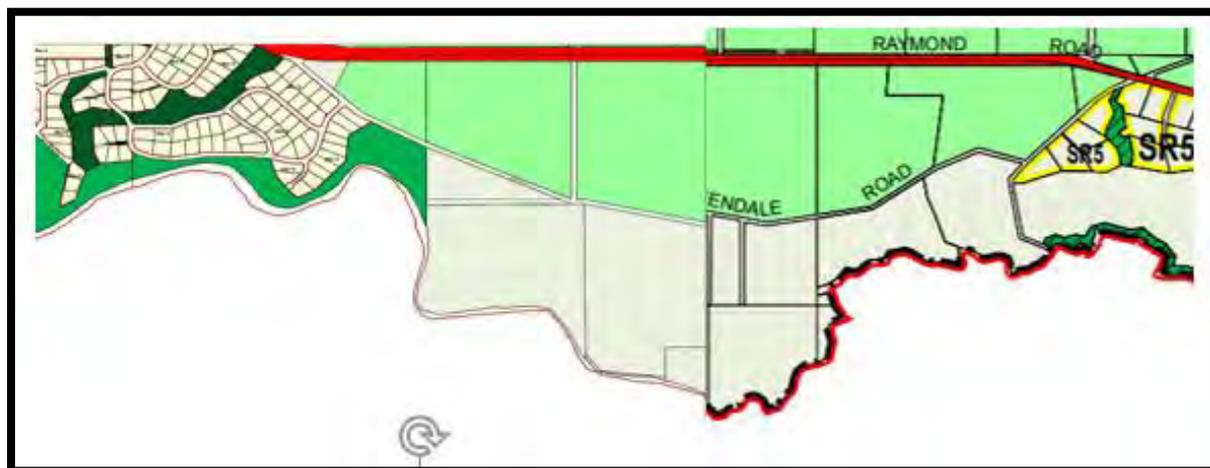


Figure 3: Extract from Shire of Harvey Local Planning Scheme No 1

Shire of Harvey Local Planning Strategy

Section 1.1.2 above refers to the detailed history and status of the Shire of Local Planning Strategy.

Following advertising of the draft Local Planning Strategy, the Shire of Harvey Council resolved to endorse a final document that included land north of Treendale Road as Rural Residential. The review of that document by the Department of Planning Lands and Heritage and subsequently the WAPC

resulted in a decision to not recognise the legal status of the 1996 Structure plan and as a consequence, the Local Planning Strategy was approved subject to the Structure Plan area remaining as rural and the issue of land suitability for Rural Residential is to be addressed through the Bunbury-Geographe Sub Regional Strategy planning process.

The Local Planning Strategy was formally endorsed by the Western Australian Planning Commission on 22nd April 2020. Figure 3 below depicts the Strategy plan as it relates to the Roelands locality. Land use for the subject land is depicted consistent with the Local Planning Scheme.

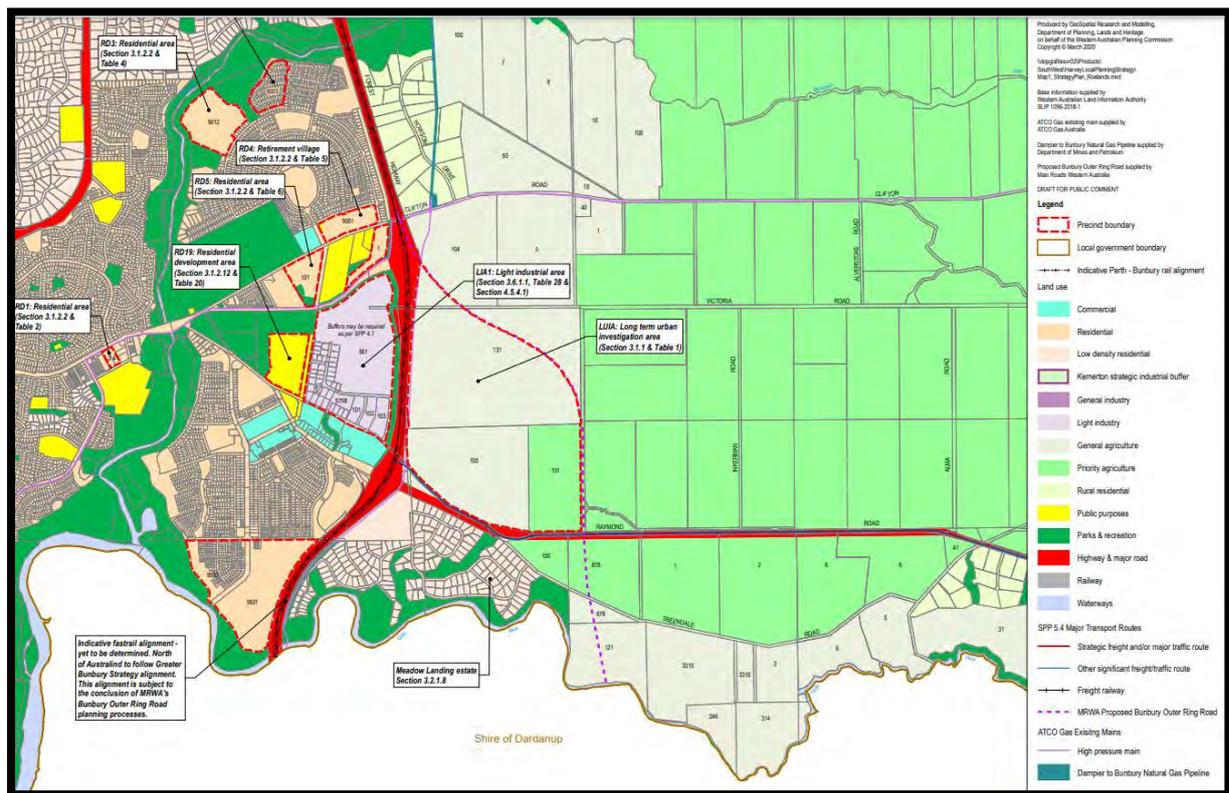


Figure 4: Extract from Shire of Harvey Local Planning Strategy

1.3.2 Regional and Sub-Regional Structure Plan

The Greater Bunbury Sub regional Structure Plan (2013) shows the subject land as Rural and this zoning is the subject of review through the current planning process associated with the Bunbury Geographe Sub regional Strategy.

Although Rural Residential has not been accepted by the W.A. Planning Commission (as recommended by the Sire of Harvey), an amended Structure Plan for the subject land is proceeding on the basis that the area has already received WA Planning Commission approval for Rural Residential development. It therefore unnecessary to undertake a further land suitability assessment to justify the Rural Residential zoning.

The draft Bunbury Geographe Sub regional Strategy is currently being advertised and the submission period closed on the 12th February 2021.

Greater Bunbury Region Scheme (GBRS)

The GBRS provides a high level strategic direction for the promotion of sustainable development in the region through regulation of subservient schemes, strategies and policies. The GBRS provides regional scale land allocation and mapping in order to guide the zoning of land, provision of infrastructure, protection of environmental assets, areas of regional open space, location of industrial areas, extraction of resources and protection of productive agricultural land.

The structure plan area is zoned 'Rural' under the GBRS. The purpose of the Rural zone is "to provide for agriculture, assist in the conservation and wise use of natural resources including water, flora, fauna and minerals, provide a distinctive rural landscape setting for the urban areas and accommodate carefully planned rural living developments".

The proposed 'Rural Residential' development is in accordance with the GBRS 'Rural' zoning and has been appropriately identified and planned for in this location, prior to the gazettal of the GBRS in October 2007. As a consequence, the proposed amendment to the Structure Plan will not necessitate an amendment to the GBRS zoning.



Figure 5: Extract from GBRS

1.3.3 Planning Policies

State Planning Policy No 3: Urban Growth Centres and Settlement

The State Planning Policy No 3: Urban Growth Centres and Settlement sets out the principals and considerations which apply to planning for urban growth settlement in Western Australia.

The main objectives of the policy include the promotion of;

- *a sustainable and well planned pattern of settlement across the State, with sufficient and suitable land to provide for a wide variety of housing, employment, recreation facilities and open space,*
- *existing communities with established local and regional economies, growth and development of urban areas in response to the social and economic needs of the community and*
- *development of a sustainable and liveable neighbourhood form which reduces energy, water and travel demand whilst ensuring safe and convenient access to employment and services by all modes.*

The Amended Structure Plan proposed is a logical infill of the existing Special Residential to the west and Special Rural to the east. This area is well serviced by road, power and water and is in close proximity to the major sub regional centre of Treendale where extensive social infrastructure is available.

The subject land is also close to major employment centres such as Kemerton, the retail and light industrial areas of Treendale, Australind and Eaton and the major industries in and around Collie.

The proposed Structure Plan is considered consistent with the intent of SPP 3 (WAPC 2003).

State Planning Policy No 3.7: Planning in Bushfire Prone Areas

The State Planning Policy 3.7 directs how land use should address bushfire risk management in Western Australia and applies to all land mapped by the Fire and Emergency Services (FES) Commissioner as being a Bush Fire Prone Area.

SPP 3.7 is supported by *Guidelines for Planning in Bushfire Prone Areas* which provides advice on how bushfire risk is to be addressed when planning, designing or assessing planning proposals within a designated bushfire prone area. The guidelines outline four performance based criteria for assessment:

- Element 1: Location;
- Element 2: Siting and Design of Development
- Element 3: Vehicle Access; and
- Element 4: Water

Table 5 of appendix 3 outlines the assessment under each of the above elements. The proposed Structure Plan is compliant with the acceptable solutions.

State Planning Policy No 5.4: Road and Rail Noise

This policy aims to promote a system in which sustainable land use and transport are mutually compatible. One of the main objectives of the policy is to protect people from unreasonable levels of transport noise.

The proposed development is in proximity to a future major highway and noise mitigation measures will need to be addressed. As per 4.1.2 of the policy, where any part of the lot is within the specified trigger distance, an assessment against the policy, specifically a Noise Exposure Forecast, is required prior to subdivision to determine the likely level of transport noise and management/mitigation required.

State Planning Policy No2: Environment and Natural Resources Policy

The objectives of the Policy are:

- To integrate environment and natural resource management with broader land use planning and decision-making,
- To protect, conserve and enhance the natural environment,
- To promote and assist in the wise and sustainable use and management of natural resources.

Relevant General Measures (5.1)

- i) Avoid development that may result in unacceptable environmental damage.
- ii) Actively seek opportunities for improved environmental outcomes including support for development that provides for environmental restoration and enhancement.
- iv) Protect significant natural, indigenous and cultural features, including sites and features significant as habitats and for their floral, cultural, built, archaeological, ethnographic, geological, geomorphological, visual and wilderness values.
- vii) Take account of the potential for on-site and off-site impacts of land use on the environment, natural resources and natural systems.
- x) Support conservation, protection and management of native remnant vegetation where possible to enhance soil and land quality, water quality, biodiversity, fauna habitat, landscape amenity values and ecosystem function.

Relevant Water Resources statements (5.2)

Planning strategies, schemes and decision making should:

- i) Consider mechanisms to protect, manage, conserve and enhance:
 - b. waterways.
- iii) Encourage urban water management through water sensitive designs approaches that better manage storm water quality and quantity, that reduces the impact of storm water flows to streams, wetlands and coastal waters and that control or remove pollutants and nutrients so as to improve water quality, retain habitats, conserve water and provide for recreational opportunities and conservation functions through multiple use drainage systems.
- iv) Ensure provision of adequate setbacks between development and the foreshores of wetlands, waterways, estuaries and the coast in order to maintain or improve the ecological and physical function of water bodies. Such setbacks will aim to maintain the natural drainage function, protect wildlife habitats and landscape values, lessen erosion of banks and verges and facilitate filtration of sediments and waste associated with surface run-off from adjacent land uses, which may include retention or replacement of riparian vegetation.
- v) Consider flood risk by identifying floodway's and land affected by 1 in 100 year flood events and avoid intensifying the potential for flooding as a result of inappropriately located land uses and development.

The application of this policy is primarily for the Collie River and its environs. As previously stated, the areas in the Structure Plan outside of the Collie River are severely degraded and therefore there is limited response required for the protection and management of natural values.

The subject land is located within the Leshenault Inlet Management Area which is designated as a Waterways Conservation Act Management Area. The Wetlands Management Plan (see appendix 2) sets out a comprehensive set of management actions which cover weeds, storm water and ground water, rehabilitation of degraded areas, flora and fauna, fire and revegetation of wetlands.

It is considered that the actions proposed in the Management Plan are consistent with the objectives and strategies of SPP 2 Environment and Natural Resources.

Government Sewerage Policy

5.2 On-site sewerage disposal

Where the provisions of 5.1.1 do not apply, onsite sewage disposal may be considered where the responsible authority is satisfied that:

- Each lot is capable of accommodating on-site sewage disposal without endangering public health or the environment; and
- The minimum site requirements for on-site sewage disposal outlined in this section and Schedule 2 can be met.

The lots proposed in the Structure Plan area are compliant with Schedule 2 of the Policy.

1.4 Pre-Lodgment Consultation

The proposed Structure Plan amendment has been discussed with representatives of the Shire of Harvey during a series of pre-lodgement meetings in April, October and December 2020. Discussions were also undertaken with officers of the WAPC in July 2020.

2.0 SITE CONDITIONS AND CONSTRAINTS

Within the Structure Plan area, the larger northern portion consists of cleared pasture composed of flat to very gently undulating plain with acidic mottled yellow duplex soils, comprising moderately deep/shallow pale sand to sandy loam over clay, being imperfectly drained.

The southern portion of the Structure Plan area is the Collie River floodplain which is characterised by gently undulating to flat terraces adjacent to the Collie River, but is well below the general level of the plain, with deep well drained uniform brownish sands or loams subject to periodic flooding.

In general, the vegetation condition of the project area is very degraded. The majority of the area has been parkland cleared and therefore retained little to no structure and native species. Areas of better vegetation occur along the foreshore areas of the river.

To assist in the preparation of this Local Structure Plan report, a number of background studies were undertaken for Stage one including:

- Wetland Management Plan;
- Engineering Servicing Report; and
- Bushfire Management Plan.

Copies of these reports are included in the schedule of appendices and are summarised below.

2.1 Biodiversity and Natural Assets

2.1.1 Flora and Vegetation Assessment

There are varying degrees of degradation throughout the project area caused by weed invasion, cattle access and historical clearing. Vegetation structure has been severely altered and as such the majority of the Structure Plan area is very degraded.

The completely degraded areas are associated with isolated *Eucalyptus rudis* trees over *Juncus subsecundus* grassland vegetation type as there is no vegetation structure retained. The dominant species is a mixture of *Juncus* and *Cenchrus* and there are obvious signs of multiple disturbances, with areas heavily accessed by cattle for grazing and drinking standing water. No areas of vegetation or wetlands themselves have been classified as being in good condition.

Of the 69 potential conservation significant species only one, *Eucalyptus rudis*, was identified and there were no priority or threatened ecological communities identified following survey. A total of 25 introduced species were recorded following survey which represented 71% of the total flora identified. The large representation of weeds indicates that the vegetation is in a degraded state with weeds starting to dominate.

2.1.2 Fauna

Fauna habitat values associated with the northern portion of the Structure Plan area have been severely reduced by historic clearing of native vegetation and cattle grazing. The few remaining large trees in this area are within a degraded habitat. Fair to good quality fauna habitat is evident where vegetation is present in pockets along the Collie River environs.

Twenty-six fauna species have been identified as part of a fauna survey comprising 22 birds, 3 mammals and 1 frog. Although not observed, black cockatoos (3 species) may have passed through this area based on the observation of some freshly chewed nuts.

2.2 Landform and Soils

2.2.1 Topography

The larger northern portion of the Structure plan area varies in height from 18m AHD in proximity to Treendale Road to 5m AHD at the point where it meets the Collie River floodplain. This results in slopes ranging from 0% to 17% with a generally southerly aspect. The floodplain of the Collie River varies in width from 20m to 450m and varies in elevation from 0m AHD to 5m AHD.

2.2.2 Acid Sulphate Soils

These soils and sediments are naturally occurring and contain sulphide minerals, predominately pyrite. When undisturbed below the water table these soils are benign and not acidic. However, if the soils are drained, excavated or exposed by lowering the water table, the sulphides will react with oxygen to form sulphuric acid.

Acid Sulphide Risk Mapping indicates that the Structure Plan area is within areas of both high to moderate risk and low to moderate risk. The low to moderate risk is the majority of the Structure Plan area whilst the high to moderate risk is situated within the Collie River wetland area.

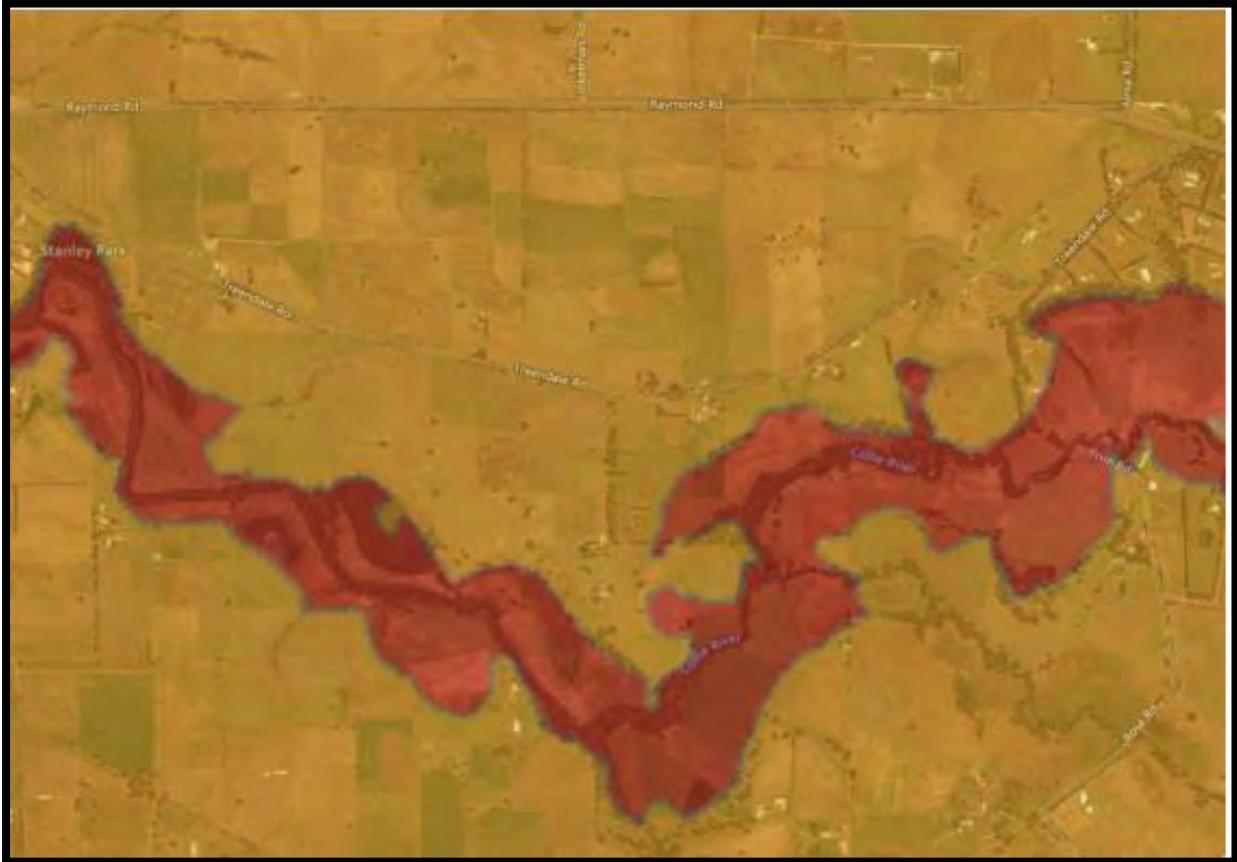


Figure 6: Acid Sulphate Soil Mapping

2.2.3 Geology and Soils

The Structure Plan area lies within the Pinjarra system. This system is described as poorly drained coastal plain with variable alluvial and aolian soils.

Soil testing results found that the area consists of duplex soils of varying depths (0.2m to 0.7m) of pale quartz sand overlaying dense highly plastic clays in the northern portion of the Structure Plan area. Within the South east, soils were found to be red earths (to 1.3m) overlaying hard packed yellow/orange and white/grey clay. Soil types in the southern floodplain area are described as red/brown loamy earth (1.2m to 2.7m) overlaying mottled grey/brown, orange/yellow or red/orange clays. The mottled clays from approximately 0.7m to 2.7m in this area indicate a perched winter water table or very low vertical hydraulic conductivity with the underlying superficial aquifer.

2.2.4 Soil Classification

As part of the land capability study undertaken By Cardno BSD (2008) for Lots 121, 246, 314 and 3315 Treendale Road Roelands, test pitting was undertaken to define soil composition. Fourteen test pits were excavated by backhoe to a maximum depth of 3.5m.

It was noted soils underlying the study area consisted of sandy clays with a thin surface horizon of quartz sand of vary depth. Surface soils were described as be expected to provide reasonable permeability, while subsoils can be expected to generally have low permeability.

Onsite investigations indicated that:

- Soils on the northern portion of the site are duplex quartz sand (0.2- 0.7m) over dense highly plastic clays. Clays were mottled at depths of 0.2-0.7m, suggesting a seasonal perched water table at this depth.
- Soils types underlying the southern floodplain portion of the site were noted to be red/brown loamy earth of between 1.2m and 2.7m depth overlying mottled grey / brown orange / yellow or red/ orange clays. These soils are noted as being consistent with those that could be expected to be found within alluvial floodplain areas.
- Soils analysis indicated that the surface soils underlying the northern portion of the study area had low to moderate nutrient retention capacity.

2.3 Ground Water and Surface Water

The Structure Plan area is not located in a Public Drinking Water Source Area, however is located in the proclaimed Bunbury Groundwater Area and the Australind (Bunbury) sub area.

Soil sampling undertaken by Cardno excavated pits to 2m – 4m with no water table encountered. There are numerous private groundwater bores in the area, however there is no recorded data on these. There are no DWER WIN bores within the subject area, however WIN bores are in proximity and have recorded groundwater at depths of between 1.2m and 11.1m.

Surface water flows are generally from the north (15m AHD) to the south, south east and south west towards the wetlands/floodplain of the Collie River. The major surface water features are the wetlands located in the lower lying areas. As the wetlands are seasonally inundated or waterlogged, the presence of standing water is likely to be an expression of ground water table rather than a function of surface run-off.

There is some connectivity between the areas of standing water through small vegetated creek line areas, which do not carry water outside the winter months. The Collie River runs along the southern boundary of the Structure Plan area. It is approximately 20m in width at the location of the Structure Plan and transports storm water from a large upstream catchment prior to discharging into the Leschenault Estuary.

2.4 Flood Prone Land

The Collie River runs along the southern boundary of the structure plan area. As part of the environmental assessment of the site and the determination of appropriate foreshore setback requirements the 1 in 100 year flood level has been mapped and included in the assessment as undertaken by Bio Diverse Solutions (appendix 2). Subsequently this has been determined to be contained within the Foreshore Area.

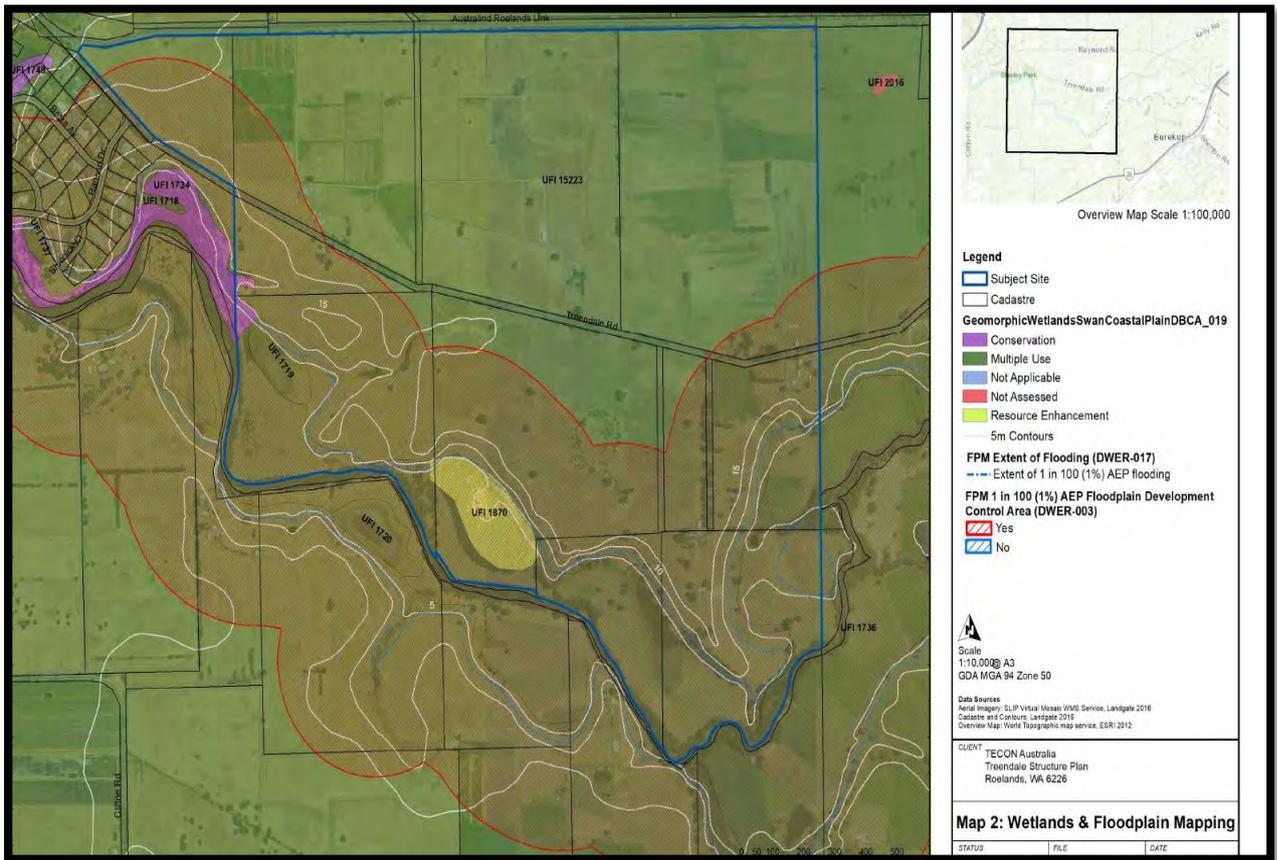


Figure 7: Wetland and Floodplain Mapping

2.5 Bushfire Hazard

The site has been identified as bushfire prone on Department of Fire and Emergency Services (DFES) bushfire prone area maps.

A Bushfire Management Plan has been prepared for the Structure Plan area (Bio Diverse Solutions 2020) appendix 3. The site is partially located within a designated bush fire prone area, however the assessment of bushfire risk is that the risk is manageable with the implementation of the documented actions.

The subject site was assessed as having internal areas of Forest Type A, Woodland Type B, Grassland Type G and Non-vegetated areas. The assessed bushfire risk is considered manageable and can be achieved by the relevant bushfire management measures identified in the report being implemented.

The predominant vegetation within the subject site is Class G Grassland and it is expected that this vegetation can be managed in a low threat state to the extent that future dwellings will be able to achieve BAL-29 or lower.

Trendale Road, Raymond Road and the construction of an internal road network will provide the development with safe access and egress to different locations.

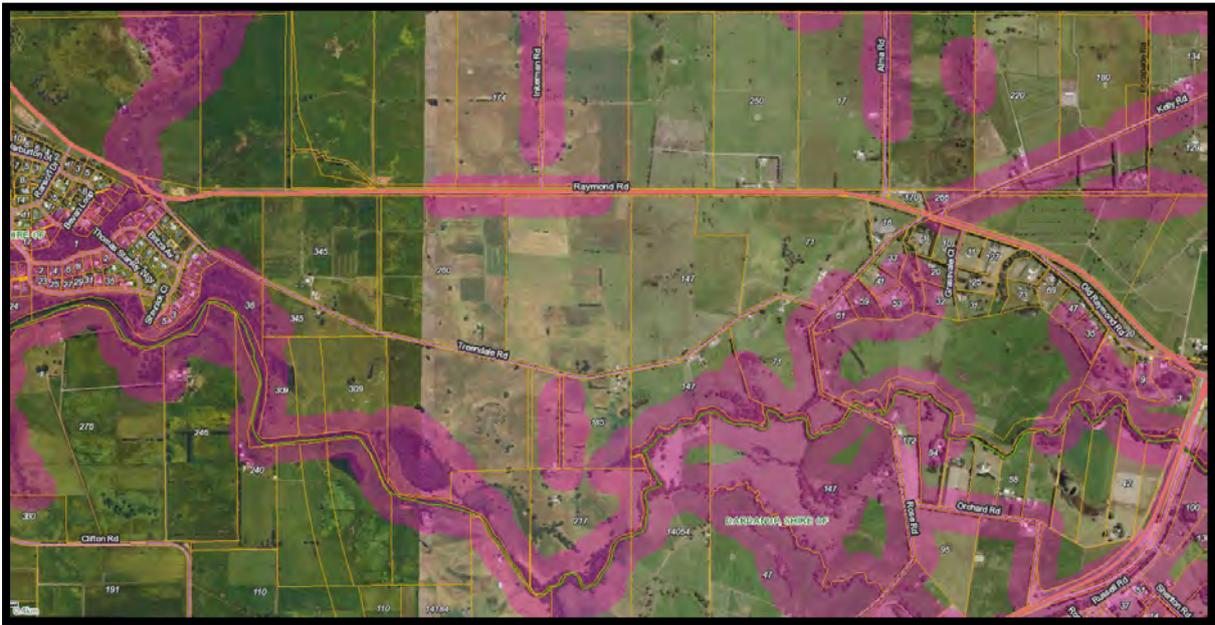


Figure 8: DFES Bush Fire Prone Map

2.6 Heritage

There are no specific Aboriginal or European heritage values identified throughout the Structure Plan area with the exception of the Collie River Wagul which occurs within the south of the project area and is listed a mythological, natural feature, water source site.

2.7 Public Health

The location of the site is within a mosquito breeding and mosquito borne disease risk area. A condition of subdivision approval is to submit a mosquito-borne disease and nuisance risk assessment and management plan. Similarly a condition of subdivision approval requires a notification on certificate of title, advising purchasers of the mosquito breeding areas and risks.

3.0 LANDUSE AND SUBDIVISION REQUIREMENTS

3.1 Design Principles

Structure Planning has previously been undertaken for land east of the Meadow Landing locality, including the subject land, creating a corridor between the existing development of Meadow Landing and the “Special Rural” development at the eastern end of Raymond Road.

The Local Structure Plan provides for rural residential development in a layout that responds to the following:

- The 1:100 flood level boundary.
- The alignment and reservation of the Bunbury Outer Ring Road.
- Environmental considerations including development exclusion areas.

Stage One Concept has been the subject of detailed studies inclusive of Wetland and Foreshore studies, Bushfire Management and servicing and infrastructure studies to enable foreshore boundaries and setbacks to be established to enable a concept design to be prepared and a lot yield estimated.

The structure plan proposes an estimated yield of 135 lots of one hectare minimum in Stage One appendix 4 demonstrates a Concept Design layout.

3.2 Foreshore Reserve

As presented by the Biodiverse Wetland Management Plan (appendix 2) the recommended buffers to wetlands as per the below table.

50m buffers have been applied from the mapped (DBCA dataset) edges of UFI 1734, 1870, 1736 and 1719 and will become future foreshore reserve.

Table 8: Proposed Wetland Buffers

UFI	Management Category	Buffers from mapped wetland edges
1734	Conservation	50m
1870	Resource Enhancement	50m
1736	Multiple Use	50m to development footprint. 30m associated with wedge of vegetation along the eastern boundary
1719	Multiple Use	50m
15223	Multiple Use	30m associated with wetland and creek/drainage line

Table 2: Proposed Wetland Buffers

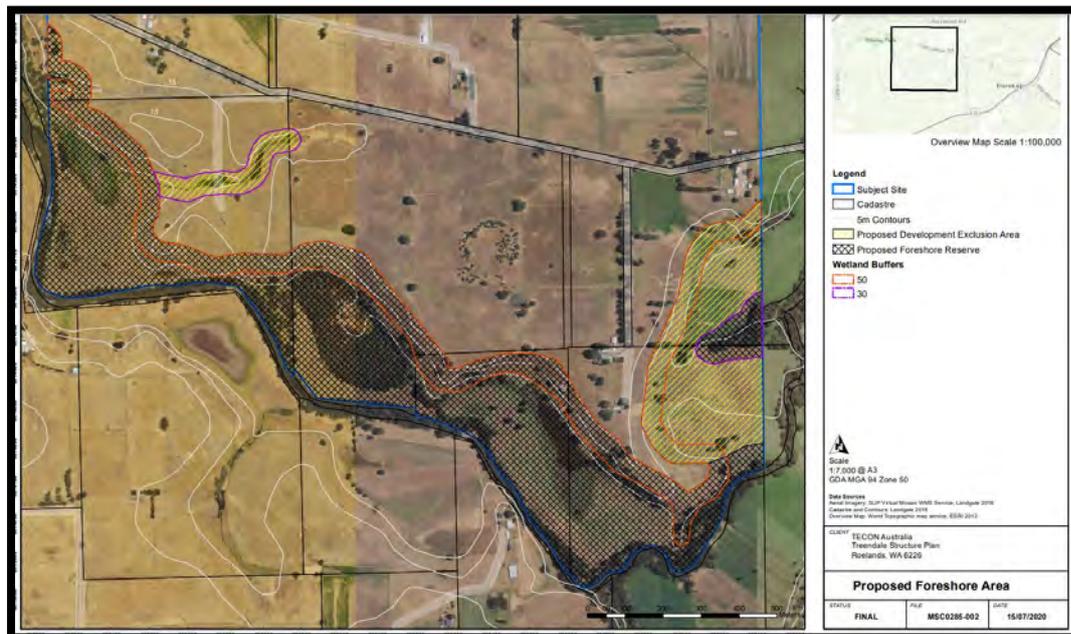


Figure 9: Proposed Foreshore Area

3.3 Rural Residential

The *Planning and Development (Local Planning Schemes) Regulations 2015* has sort to standardise the names of zones used in schemes by Local Governments. In order to be consistent with the terminology used in the LPS Regulations it is proposed to rename what is currently referred to in the Shire of Harvey Local Planning Scheme No.1 as 'Special Rural' to 'Rural Residential'.

Rural Residential developments have historically been attractive due to the lifestyle options they provide.

Rural Residential lots generally have a minimum lot size of 1ha.

3.4 Access and Movement

The study area is impacted by the alignment of the Bunbury Outer Ring Road (BORR) including a grade separated interchange with Raymond Road. The Structure Plan and concept design have been designed utilising the current alignment of the BORR as designed by MRWA.

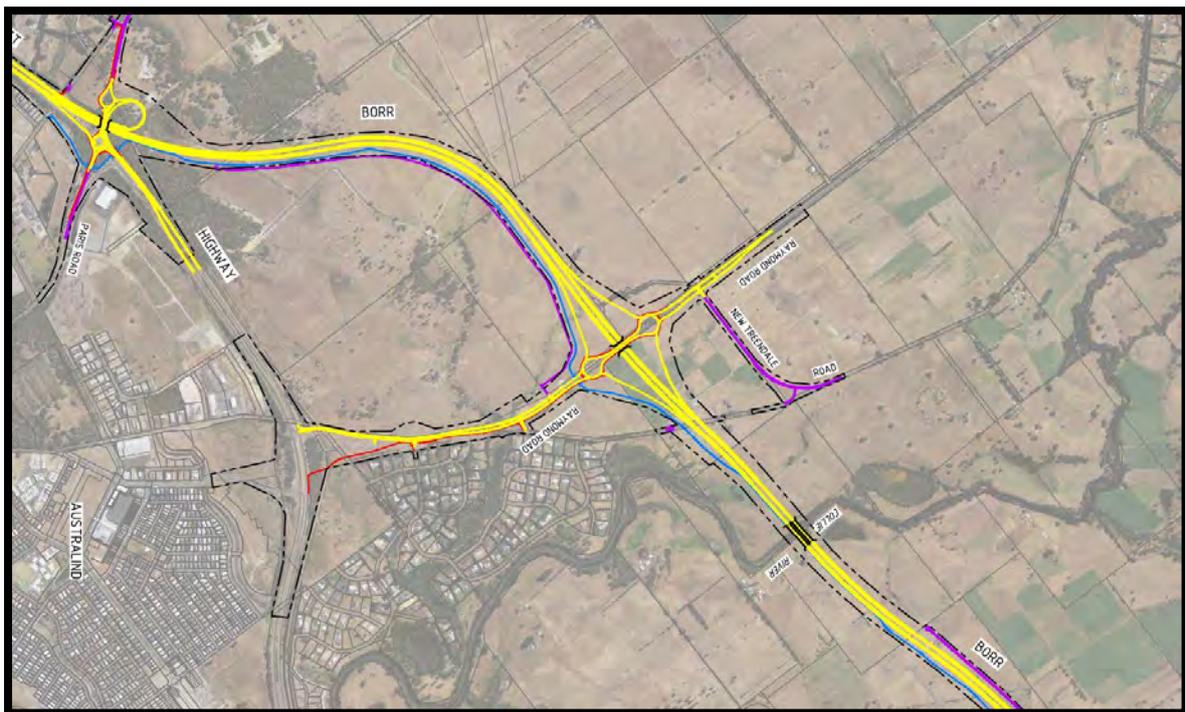


Figure 10: BORR Northern and Central Overall Plan

The proposed access to the development will be from Raymond Road. This is a Main Roads WA (MRWA) owned asset and as such the new access intersection will require their approval.

The existing Treendale Road will form a major part of the development access. The proposed BORR will cut off access to the Western end of Treendale Road from within the development when

constructed. The internal roads including Treendale are under the jurisdiction of the Shire of Harvey and any proposed road cross section will require their approval.

Typically for residential roads the Shire of Harvey would require a 6m wide 25mm AC7 asphalt sealed surface with kerbing.

There is clayey material close to the surface and as such an improved subgrade layer of granular, free draining material may be required within the development. The use of subsoil drainage may also be required. These requirements will be further clarified during the detailed engineering design phase. Due to the large lots and rural setting it is not anticipated that the Shire of Harvey is going to require footpaths to be installed within the proposed development.

3.5 Provision of Infrastructure

The below outlines existing services within the immediate area along with the likely service requirements for the development.

3.5.1 Water Supply

According to Water Corporation's Esinet system the nearest viable connection is located at the intersection of Treendale and Ranson Drive. The 150mm diameter main will require to be checked for capacity to service the proposed lots as it runs the length of Ranson Drive servicing lots within Meadow Landings.

Should the 150mm not have the capacity, the developer will likely be required at their own cost to extend the 200mm main located at the intersection of Raymond Road and Ranson Drive to the development to allow for water services to the lots.

Harvey Water owned irrigation channels are present along Treendale Road. These channels are also connected to channels within the local privately owned farmland and work to irrigate and drain the land.

3.5.2 Waste Water

There is currently no reticulated sewer within the area of the proposed development. Given the proposed larger lots, it is not anticipated that a reticulated sewer system will be required. Rather, on-site sewer units are expected on each individual lot.

3.5.3 Stormwater

On site stormwater management will be required within the development. The most logical drainage strategy for the development is to drain all stormwater towards the Collie River to the south and to have any water retention structures located within the lower areas in close proximity to the river.

An Urban Water Management Plan will be required as a condition of subdivision.

3.5.4 Earthworks

With the large lots that are proposed within structure plan area it is not envisaged that bulk earthworks or filling will be required.

3.5.5 Power and Communications

Power services will require extension from existing power mains located within Meadow Landing. These will require extension through Treendale Road to the development. Western Power may require two power extensions to maintain a ring main system for the development.

There are existing overhead lines that traverse the site that are likely to have to be relocated.

Communications services along Raymond Road are insufficient to service the new development and as such existing communications services within Meadow Landing will require extension.

4.0 TECHNICAL APPENDICIES INDEX

Appendix No.	Document	Summary	Approval Authority	Status
2	Wetland Management Final 12 August 2022	WMP to guide Structure Plan and determine wetland and foreshore areas applicable to Stage 1.	DBCA, DWER, DOW	Approved
3	Bushfire Management Plan 9 March 2023	BMP to guide all future bushfire management measures applicable to Stage 1.	Shire of Harvey	Approved
7	Local Water Management Strategy 2 August 2022	LWMS to guide the Structure Plan and subsequent stages of subdivision	DWER, Shire of Harvey	Approved
8	Site Soil Evaluation 2 August 2022	SSE to guide structure plan and future subdivision	Dept of Health	Approved

Table 3: Technical Appendices Index



APPENDICIES