

Tomorrow's Kwinana



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shape the Kwinana of tomorrow.

Rural Lands Study

Table of Contents

1.0	Introduction	2
2.0	Description of current rural land use and zones	2
3.0	Strategic considerations	3
4.0	State and Local Level Strategies, Policies, and Plans	6
5.0	Physical Characteristics	13
5.1	Landform Units	13
5.2	Biodiversity and Bassendean Sands Vegetation Communities	14
5.3	Wetlands in the City's Rural Areas	16
5.4	Drainage and Groundwater Separation	17
5.5	Landscape	18
5.6	Bush Fire Hazards	20
6.0	Land Use Analysis of City's Rural Areas	20
6.1	Special Rural Zone	20
6.2	Rural Water Resource Zone	22
6.3	Rural A Zone	26
6.4	Public Purpose Reserve (Casuarina Prison)	28
6.5	Urban / Rural Interface	28
6.6	Non-Conforming Land Uses	29
6.7	Bush Fire Management	30
7.0	Rural Issues, Challenges and Opportunities – key themes	31
7.1	Future Land Uses in the City's Rural Areas	31
7.2	Managing water quality in the City's Rural Areas	32
7.3	Clearing and Overgrazing in Special Rural and Rural Water Resource Zones	33
7.4	Rural A Zone	34
7.5	Rural Interfaces and Buffers	34
7.6	Bushfire Management	35

1.0 Introduction

The Local Planning Strategy (LPS) aims to provide a land use planning vision extending to 2050 for the City of Kwinana (City), thus setting out a long-term strategic direction for land use, and in the process, consider a wide range of local economic, social and environmental issues that are affecting the City. The LPS is being completed over a number of stages. The City is presently in the first stage and the focus of this stage is to engage with the community about key elements of land use planning for input into the initial draft of the LPS.

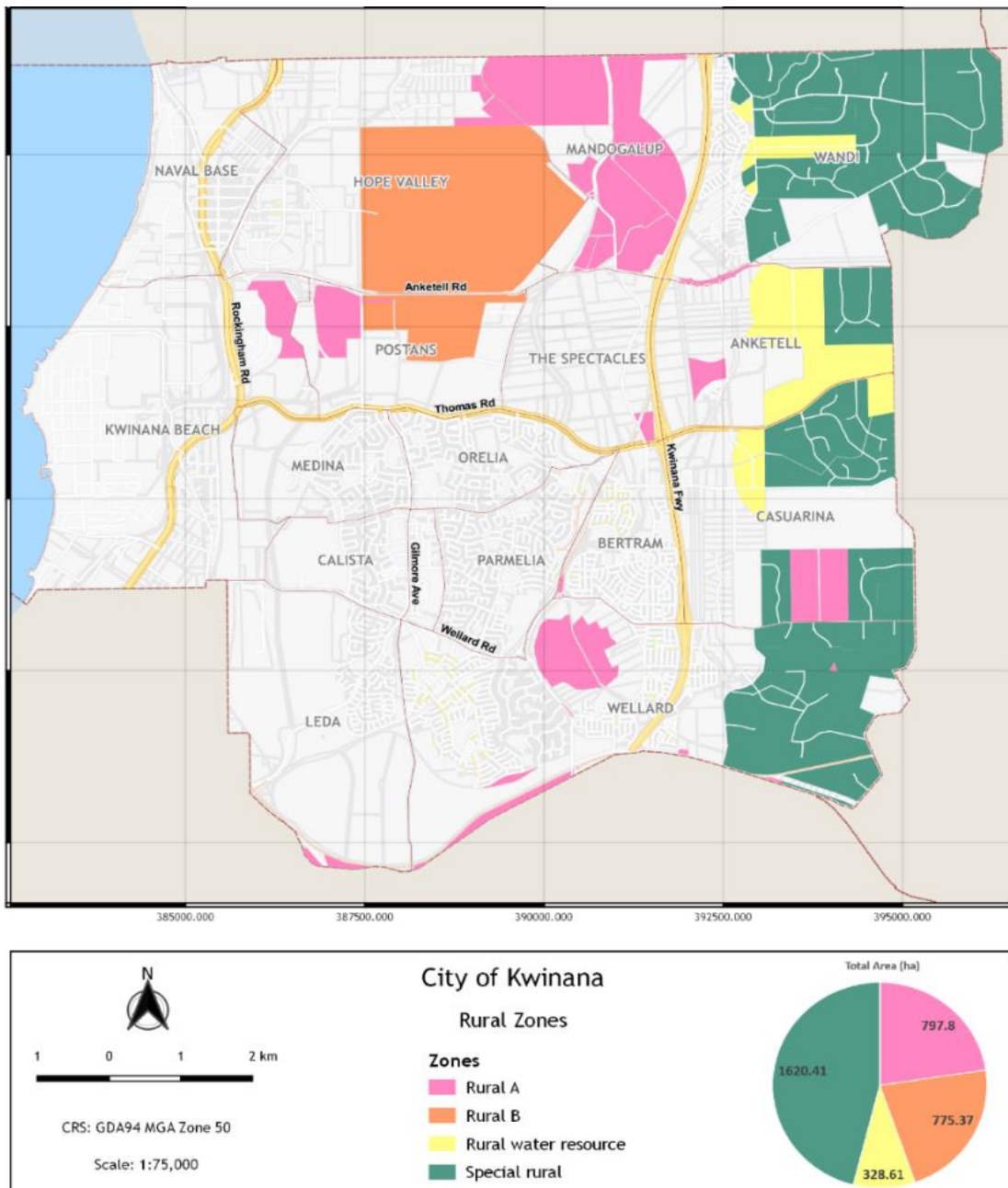
The Rural Lands Study (RLS), one of the studies that will inform the preparation of the LPS, It aims to identify the issues associated with the City's rural areas and provide guidance to future planning and land use.

2.0 Description of current rural land use and zones

The City is responsible for planning and development control of all areas within its boundary. Development is controlled through the application of Local Planning Scheme No 2 (LPS2) and Local Planning Scheme No 3 (LPS3) and via the application of the Planning and Development (Local Planning Schemes) Regulations 2015. Under LPS2, the City has four rural zones i.e. Rural A, Rural B, Special Rural, and Rural Water Resource (**MAP 1**), which are described below:

- Rural A
 - Predominant use in the Rural A zone is 'rural use'. *State Planning Policy 2.5 - rural planning* defines rural use as "land uses that are rural in nature and that support and are associated with primary production, basic raw material extraction, biodiversity conservation, natural resource management, public purposes (e.g. prisons, cemeteries, public utilities and waste management facilities) and protection of landscapes and views, however does not include rural living";
 - The proposed uses should be consistent with principles of ground water conservation; and
 - An emphasis on avoiding fragmentation by subdivision.
- Rural B
 - May be used for extractive industries, tailings ponds, processing and other purposes applicable to and purposes incidental to Rural B.
- Special Rural Zone
 - Predominant uses are rural homesites and equestrian special rural.
- Rural Water Resource Zone
 - Protect and preserve the underground water resource while facilitating rural land use and development.

Schedule II of LPS2 provides additional information about the subdivision and development guidelines attached to lots in the City's Special Rural zones.



Map 1 City's Rural Zones 2019

3.0 Strategic considerations

The City's rural areas are spread across the City facilitating various rural pursuits, however approximately 60% of rural land is located to the east of the Kwinana Freeway. The South Metropolitan Peel Sub-regional Planning Framework 2018 (Planning Framework 2018), has identified the current rural areas to the west of the Kwinana Freeway as almost entirely set aside for industrial or industrial related purposes. This is evident in **Map 2** below, which identifies large tracts of rural land in the Hope Valley and Postans localities as well as Mandogalup as 'Industrial investigation' and 'Industrial expansion'.

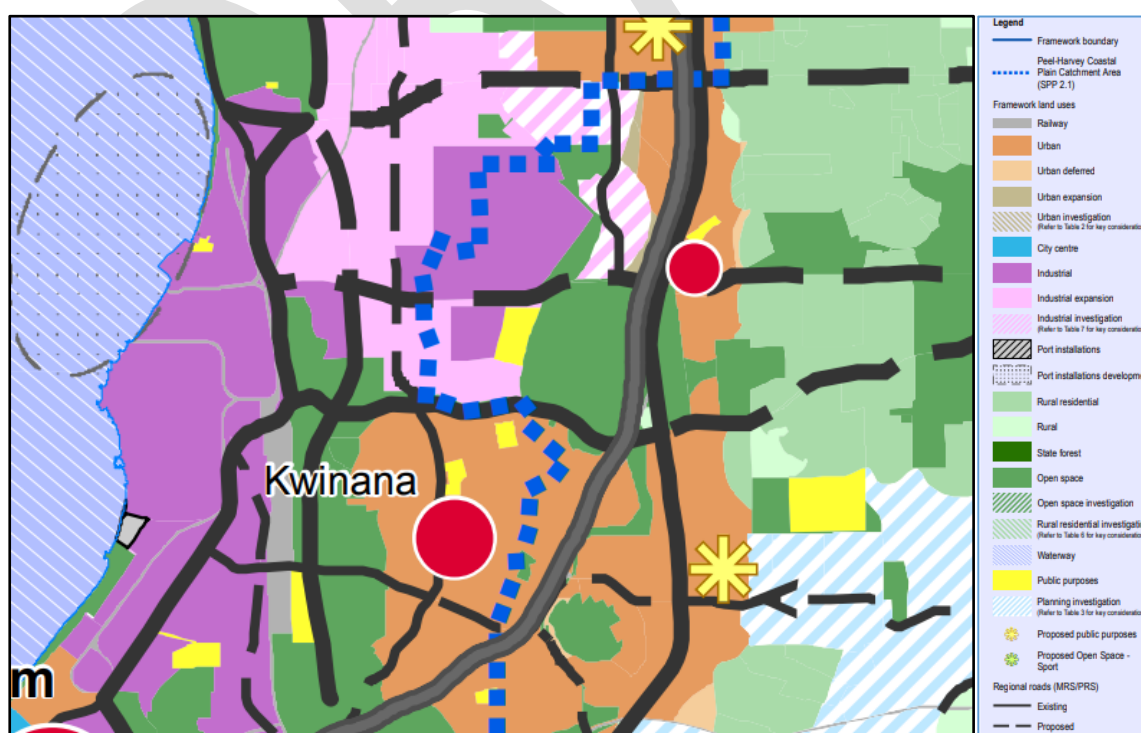
The land set aside as Rural B under LPS2 is the Alcoa Residue Disposal Area which is identified in the Planning Framework 2018 as Industrial. The Postans area is shown as Industrial Expansion and the eastern portion of Mandogalup as Industrial Investigation. The eastern part of Mandogalup is also subject to Improvement Plan 47 under the control of the Western Australian Planning Commission (WAPC). The objectives of the plan are to

- provide for a strategic land use analysis that takes into consideration physical, economic and environment factors;
- to provide a strategic planning framework to determine future land use considering all land use options (rural, urban and/ or industrial);
- provide a statutory planning instrument through which to implement the strategic planning framework;
- provide a statutory land use planning instrument to effectively guide the preparation of statutory plans, statutory referral documentation and policy (as may be required) to facilitate orderly and proper planning of the area; and
- to facilitate the provision of an effective, efficient, integrated and safe transport network.

The Improvement Plan will determine the land uses in this locality which will be incorporated into a town planning scheme for the locality.

Council has also adopted Local Planning Policy No 12 Mandogalup Future Development which proposes a range of land uses in the Mandogalup area. The policy identifies the area shown as Industrial Investigation under the Planning Framework 2018 as transitional and light industrial uses.

In addition, it is intended that Bollard-Bulrush wetland in the suburb of Wellard to the east of the Kwinana Freeway, currently zoned as Rural A (refer to **Map 2**) will be brought under State responsibility for management as a Parks and Recreation Reserve.

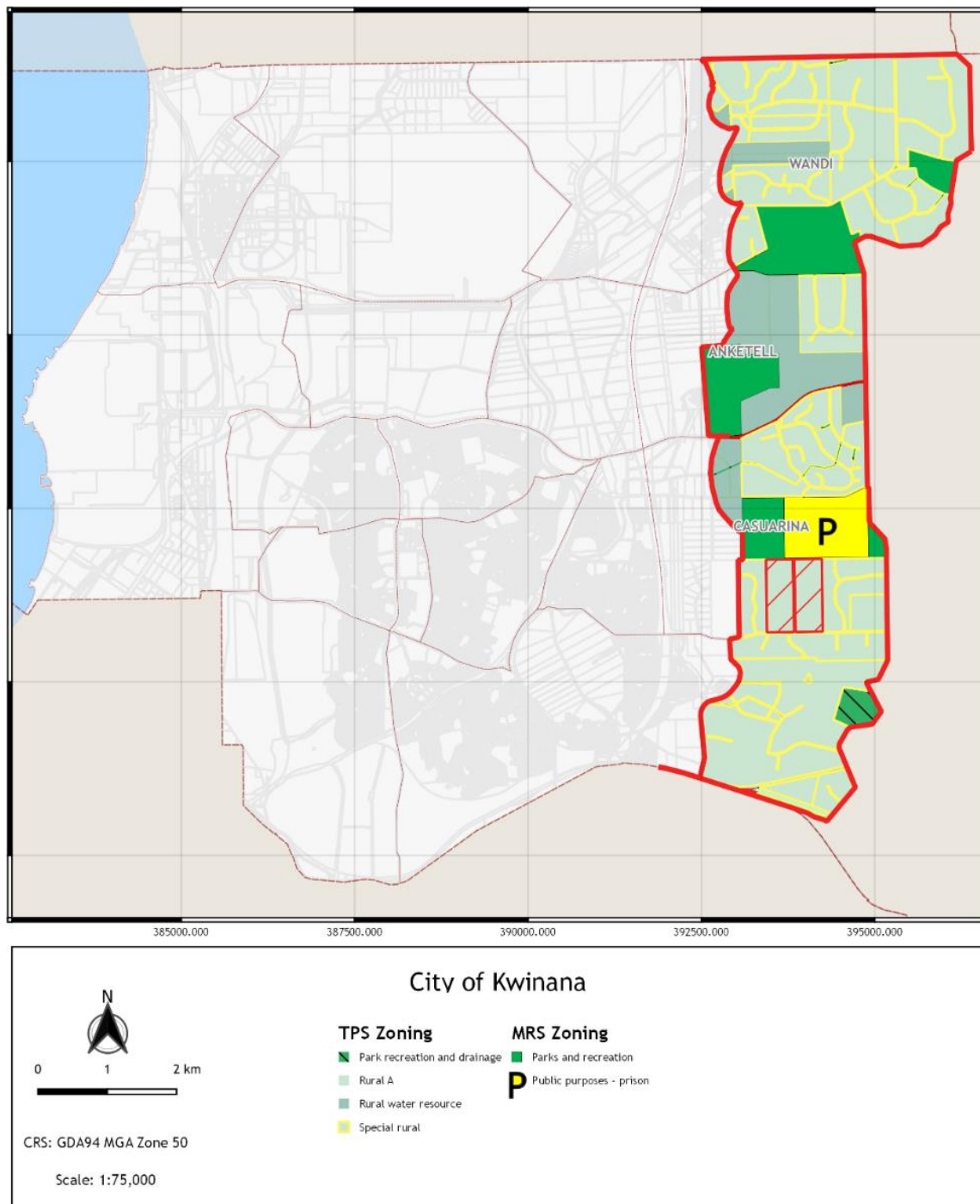


Map 2 Planning Framework 2018 identifying Planning and Industrial Investigation Areas

Given the above context, this study has focussed on rural land existing on the eastern side of the Kwinana Freeway (**Map 3**). This area contains significant areas of rural zoned land, including numerous special rural estates. In addition, this area contains Metropolitan Region Scheme (MRS) zoned Parks and Recreation Reserves, and Public Purposes (Prison) land.

Over time, the existing rural areas west of the Kwinana Freeway in Postans and Hope Valley are likely to be zoned and set aside for largely industrial land uses, while the rural land in Mandogalup appears to be subject to further investigation and will remain unresolved until the Improvement Plan scheme is prepared.

Key Observation: Strategic forward planning by the WAPC through its Planning Framework 2018 suggests that rural land within the City will be almost entirely east of the Kwinana Freeway.



Map 3 Rural land areas identified for the Rural Land Study 2018

4.0 State and Local Level Strategies, Policies, and Plans

The following State and local level planning strategies, policies, and plans influence the land use and development of the City's rural areas:

- State Planning Strategy 2050 (Strategy 2050)

The Strategy 2050 develops an array of strategic directions that will guide future land use and development, addressing a range of issues. Key principles relevant to the Rural Lands Study outlined in the document are:

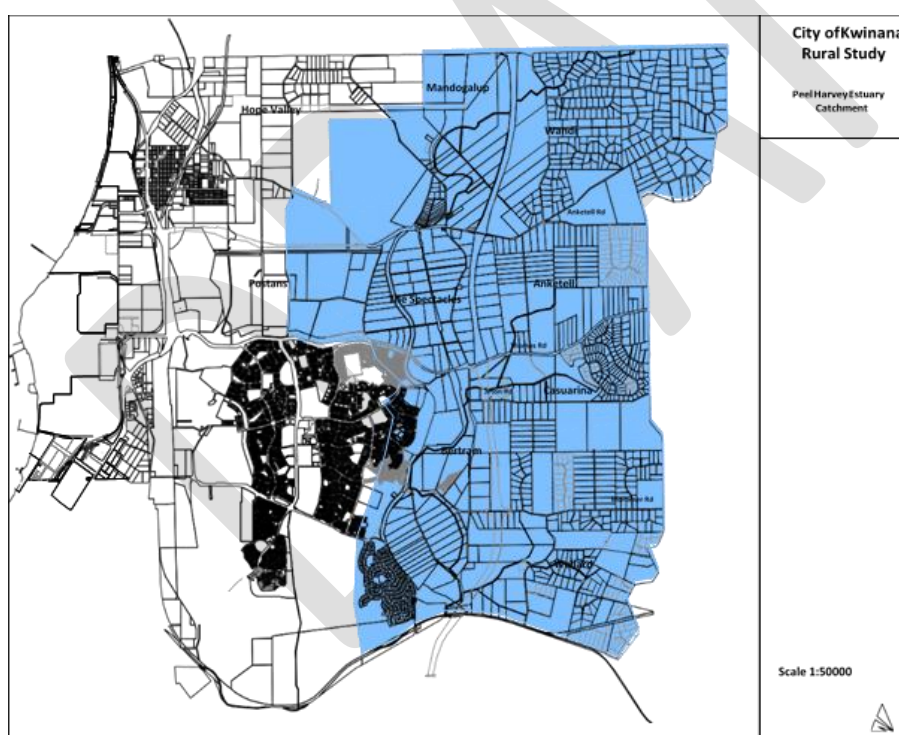
- Economy - facilitate trade, investment, innovation, employment and community betterment.
- Environment – Conserve the State’s natural assets through sustainable development.

▪ State Planning Policies (SPPs)

Key SPPs that are relevant to City’s rural land use and development are:

- *SPP 2.1 - The Peel-Harvey Coastal Plain Catchment 1992*: The purpose of this Policy is to ensure that land use changes within the Peel-Harvey Estuarine System that are likely to cause environmental damage to the estuary are brought under planning control and prevented. The area of the catchment for this system is shown on **Map 4**.

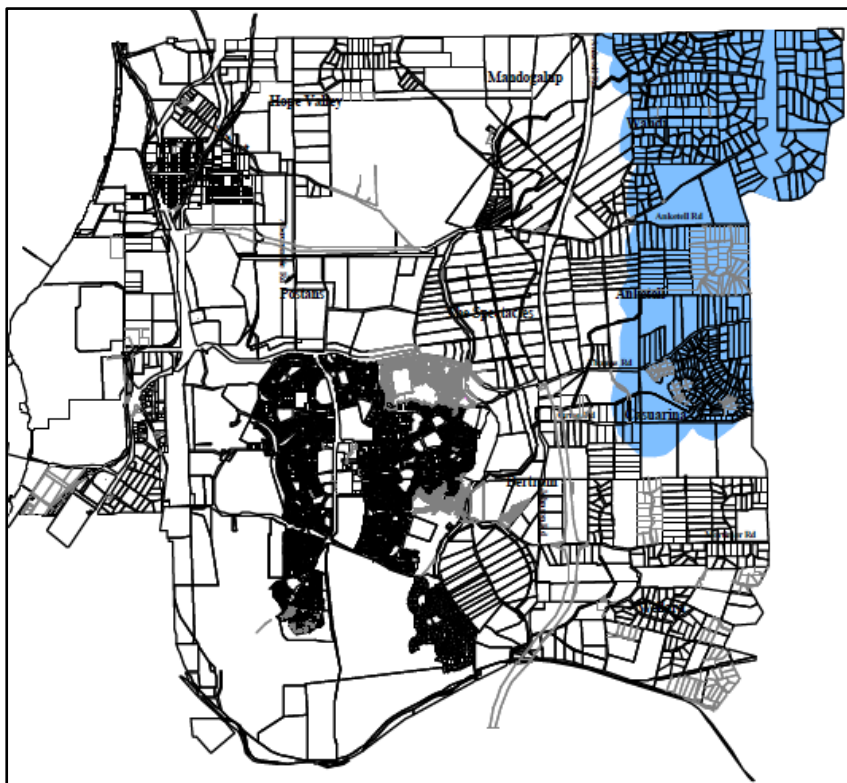
All of the Special Rural zoned area in Kwinana is within the drainage catchment of the Peel/Harvey Estuarine System. Increased nutrient and stormwater runoff and increased drainage resulting from vegetation removal from the rural zoned area have caused severe eutrophication conditions to the Catchment System.



Map 4 Peel Harvey Catchment Area (shown in blue)

- *SPP 2.3 – Jandakot Groundwater Protection 2017*: A key objective of this policy is to ensure that all development and changes to land use within the policy area are compatible with maximising the long-term protection and management of groundwater, in particular for public drinking water supply (see **Map 5**). Another objective aims to prevent,

A large portion of the City's rural areas are within the groundwater protection mound and subject to the requirements of the SPP including Wandí and Anketell.



Key Observation: State planning policy has a particular focus on water quality impacts in the City's rural areas. Preventing, minimising and managing development and land uses that may result in contamination of groundwater, public drinking water and increased nutrient and stormwater runoff.

- Page 8 of 37

It also includes activities that support and are associated with primary production, basic raw material extraction, biodiversity conservation, natural resource management, public purposes (e.g. prisons, cemeteries, public utilities and waste management facilities) and protection of landscapes and views.

- *SPP 2.7 - Public Drinking Water Source 2003* – This Policy aims to protect and manage public drinking water source areas from incompatible land uses and pollution in order to maintain the quality of the drinking water. Under this Policy, land uses that are detrimental to the quality and quantity of the water supply will not be permitted, unless it can be demonstrated that such impact can be managed. The WAPC classifies drinking water resource areas as follows:
 - Priority 1 (P1): These areas should be managed to ensure that there is no degradation of the water resource in these areas. P1 is the highest level of protection for the water source and will normally apply to land owned by the state, and is characterized by low-intensity and low-risk land use, such as forestry.
 - Priority 2 (P2): These areas should be managed to ensure that there is no increased risk of pollution to the water source. P2 areas are declared over land where low-risk development already exists that may be privately owned.
 - Priority 3 (P3): These areas should be managed to reduce the risk of polluting the water source. P3 areas are declared over land where water supply sources need to co-exist with other land uses such as residential, commercial, and light industrial developments, although there is some restriction on potentially highly polluting land uses.
- *SPP 3.5 - Historic Heritage Conservation 2007*: SPP 3.5 provides guidance on the identification, planning and management of places of historic heritage significance. The policy applies principally to historic cultural heritage including heritage areas, buildings and structures, historic cemeteries and gardens, manmade landscapes and historic or archaeological sites with or without built features.
- *SPP 3.7 - Planning in Bushfire Prone Areas 2015*: This Policy directs how land use should address bushfire risk management in WA, and it applies to all land which has been designated as bushfire prone. It seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure.
- *SPP 2.8 - Bushland Policy for the Perth Metropolitan Region*
The Bush Forever Sites (BF Sites) policy recognises the protection and management of significant bushland areas as a fundamental consideration in the planning process, while also seeking to integrate and balance wider environmental, social and economic considerations.

The City has 953 hectares (ha) of BF Sites, and Rural zoned land abuts most of the BF Sites. While some consideration for the implications of BF Sites in future land use

planning can be referred to in the Rural Strategy, it is most relevant in the City's Biodiversity Strategy.

- Development Control and Operational Policies

- Development Control Policy 3.4 - Subdivision of Rural land

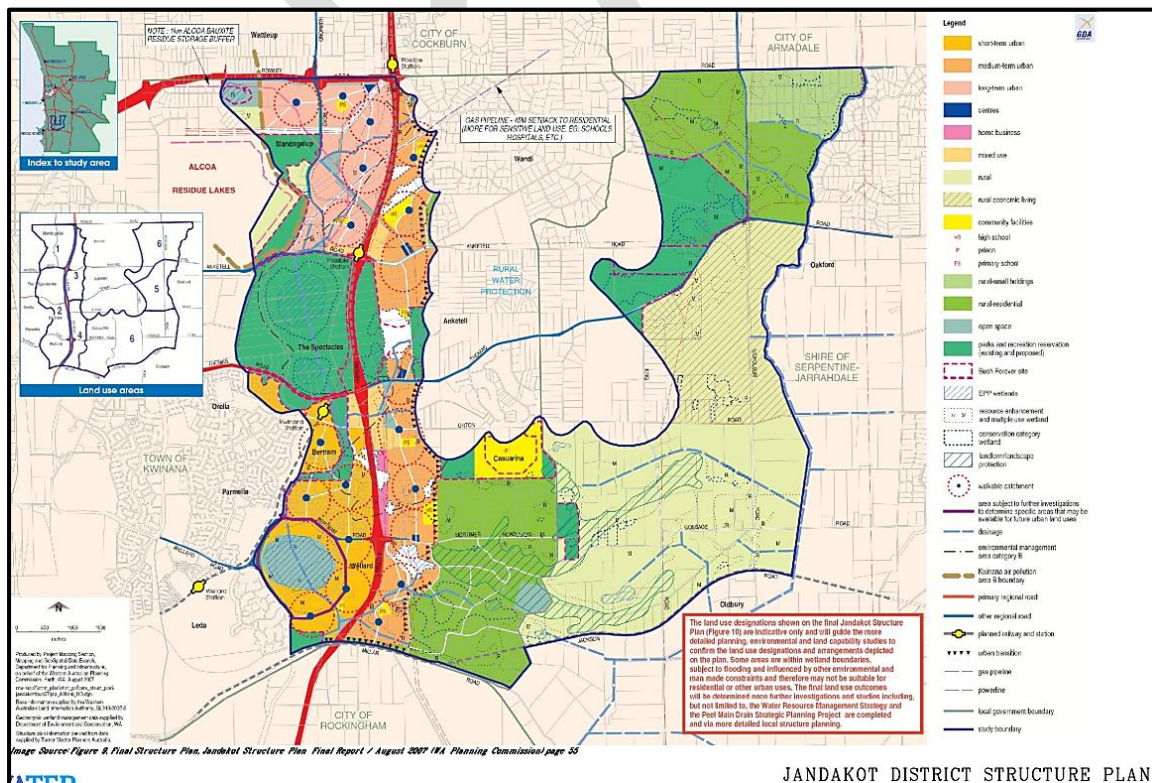
This policy sets out the principles that will be used by the WAPC in determining applications for the subdivision of rural land. It also guides the subdivision of rural land to achieve the four key objectives of SPP 2.5 to protect agricultural land, plan for rural settlement, and minimise land use conflict.

- Jandakot Structure Plan 2007

The Jandakot Structure Plan (WAPC, 2007) was a key strategic planning document providing a guide to subdivision and development/redevelopment of the Jandakot area, while protecting the Jandakot Underground Water Pollution Control Area, and addressing the environmental constraints within the area.

The structure plan area is approximately 1,450 hectares and is bound by Rowley Road and the underground water pollution control area to the north, Birriga drain to the east, Jackson and Millar roads to the south, and Mandogalup Road, McLaughlan Road, Colchester Avenue, the railway line and Wellard Road to the west (**Map 6**).

The structure plan identified three key land uses east of the Kwinana Freeway within the City. These were urban-residential, rural water protection (over the protected Jandakot Groundwater Mound) and rural-residential land south of the groundwater mound.



Map 6 Jandakot Structure Plan

The structure plan determined the extent of potential urban – residential development east of the Kwinana Freeway and these urban ‘cells’ were subsequently subject to rezoning to Urban and Urban Deferred under the MRS and Development Zone under LPS2.

The land further east was identified as either being in the rural water protection area over the Groundwater Mound or was considered suitable for rural-residential land uses (as opposed to rural uses further east in the Shire of Serpentine – Jarrahdale). The Casuarina Prison was also identified in the structure plan as was portions of Parks and Recreation Reserve, particularly in Anketell.

Key Observation: The State Government’s Jandakot Structure Plan identified land in the City south of the Jandakot Groundwater Mound as rural-residential.

- Jandakot Drainage and Water Management Plan 2009

The Plan area includes the suburbs of Mandogalup, Casuarina, Wellard, Anketell, Wandi, and Bertram, and The Spectacles wetlands. The aim for this document WAS to provide guidance to subdivision and development while maintaining adequate protection of underground water pollution control area. The plan was to assist developers in regards to storm water management issues.

This plan was to be referred to when preparing and assessing local water management strategies as part of applications for local structure planning and or other forms of development applications.

It is noticeable that separation of development from groundwater is a significant issue in many parts of the City’s rural areas.

- Local Planning Policy - Development within Special Rural Zones

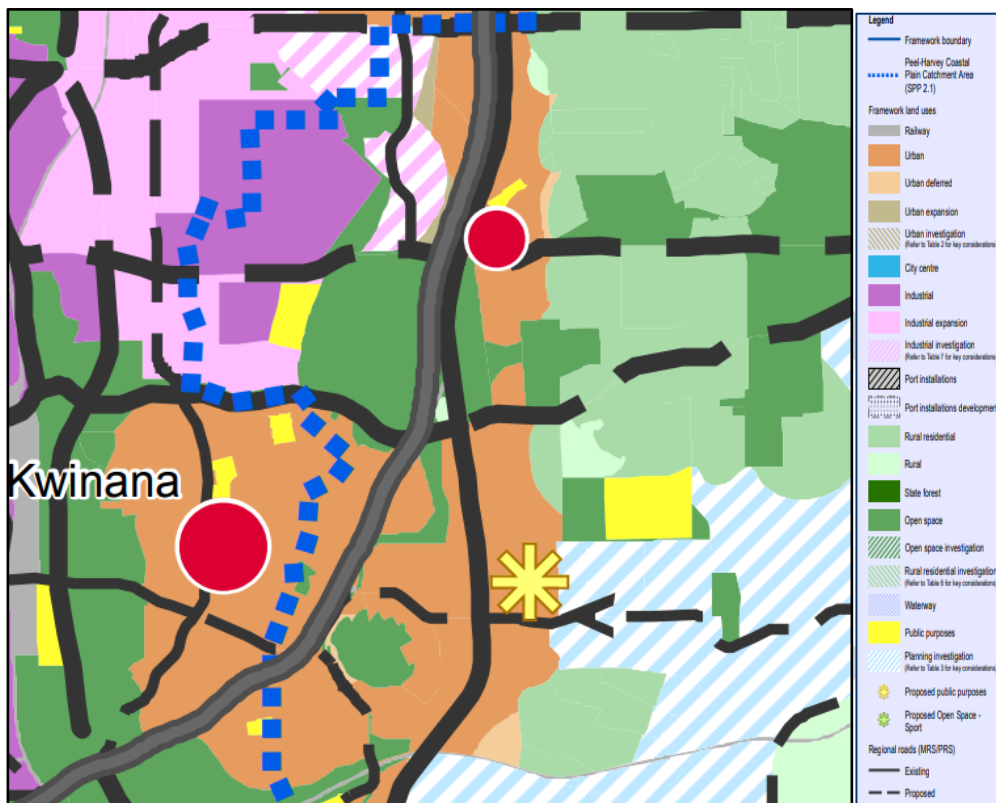
This Policy provides guidance to landowners and Council to ensure that the use and development within Special Rural Zones is in a manner appropriate to the intentions of the zoning, has minimal impact on neighbouring properties and the environment, and provides guidelines for the protection and rehabilitation of remnant vegetation. The provisions in this Policy relates to development not specifically mentioned in the Scheme provisions but is generally acceptable within the Special Rural Zone.

- South Metropolitan Peel Sub-regional Planning Framework 2018 (Planning Framework 2018)

The Planning Framework 2018 (**Map 7**) guides the planning and growth management of urban and rural land and infrastructure in the southern metropolitan and Peel regions. The Planning Framework 2018 is one of three frameworks prepared for the outer sub-regions of the Perth and Peel metropolitan areas and establish a long-term and integrated framework

for land use and infrastructure provision for these areas. The frameworks build upon the principles of Directions 2031.

The land uses proposed under the Planning Framework 2018 for the City east of the Urban zones along the Kwinana Freeway are primarily Rural-Residential with some limited Open Space, Public Purpose (Prison) and an area for Planning Investigation.



Map 7 South Metropolitan Peel Sub-regional Planning Framework, 2018

Rural Residential

The Planning Framework 2018 notes that rural residential areas provide “alternative lifestyle and housing opportunities” and may also provide “a transition between urban and rural areas”. These areas are characterised by lot sizes predominantly between one and four hectares.

The Planning Framework 2018 also states that this type of development is a “relatively inefficient form of development, places additional demand on community and service infrastructure that is difficult to meet and can prejudice other future planning options”. Once established, it is difficult to repurpose special rural areas for other uses due the nature of the lot configuration and multiple landownership. The report goes on to state that “On this basis, the creation of new rural residential lots/areas beyond those classified within the framework is unlikely to be supported by the WAPC”

The identification of the rural residential land use in the Planning Framework 2018 tends to reflect the preponderance of Special Rural zones in the City at present east of the Kwinana

Freeway. These zones provide a particular lifestyle suitable for people who prefer the relative seclusion and amenity of the larger lots in bushland settings.

Planning Investigation Areas

The Planning Framework 2018 identifies areas as Planning Investigation. Portion of the Planning Investigation Area is located in the City in the Wellard/Casuarina areas. These Planning Investigation areas have been set aside as part of the strategic reconsideration of land use. These areas will be subject to assessment by the WAPC to determine whether any possible change from the lands current zoning is possible and/or appropriate. These investigations are being progressed by the WAPC and are required to be undertaken prior to any related Metropolitan Region Scheme (MRS) amendment processes.

The future use of the rural areas in the City should be guided by the intent of the WAPC Planning Framework 2018.

Key Observation: The WAPC Planning Framework 2018 has a preference against additional special rural development (partly because once established, it is difficult to repurpose for other uses) and has identified a portion of the City's rural areas for Planning Investigation to determine long term land use.

5.0 Physical Characteristics

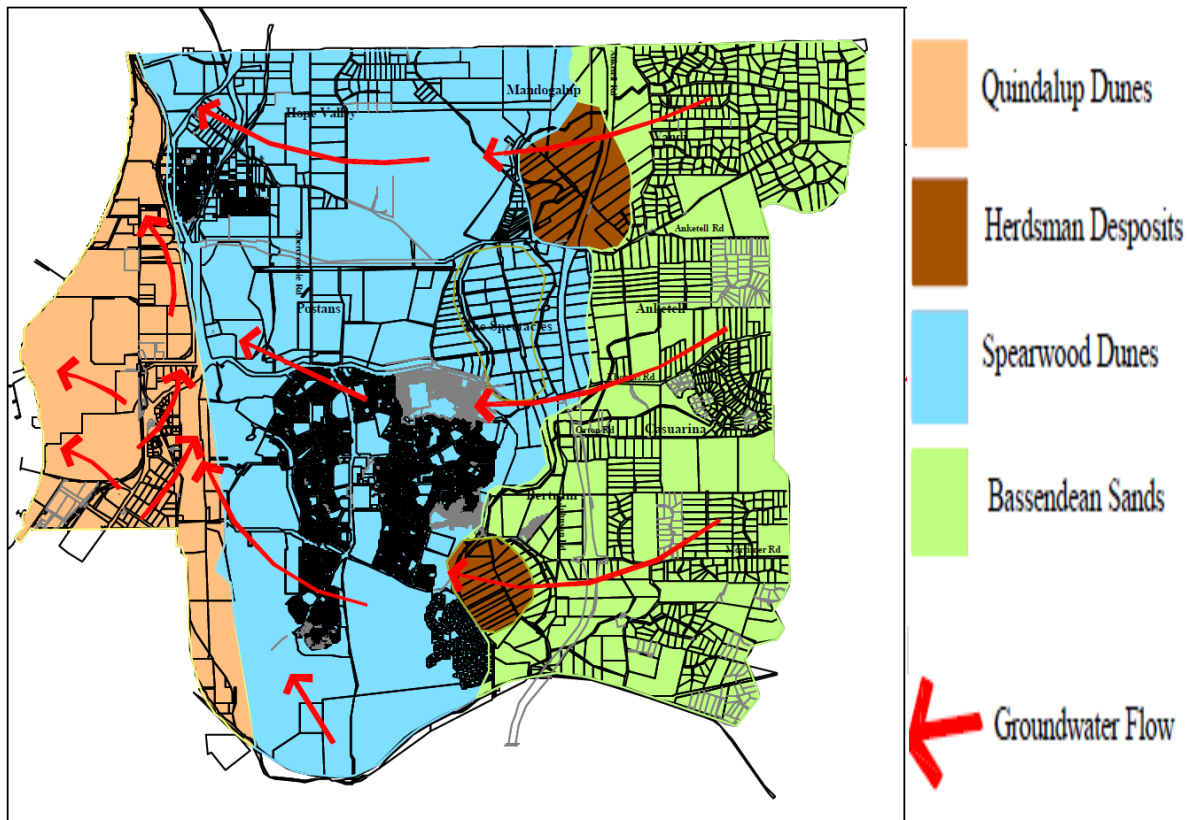
5.1 Landform Units

The City's rural areas west of the Kwinana Freeway are almost entirely within the Bassendean Sands System to the east (**Map 8**). The Bassendean Sands consists of low dunes of deep grey siliceous sands and bleached sands, overlaying a shallow iron-organic hardpan. Certain sections of the Bassendean Sands are thinly overlain by Guildford soils (yellow duplex sands). "The soils of this system have low inherent fertility and low water holding capacity" (Murdoch University, 1987).

Because of their highly leached nature the soils have little ability to sustain agricultural activities without major application of fertilizers. Equally they have little or no phosphorous retention ability and limited ability to fix nitrogen contaminants. They do however possess a greater denitrification ability, than Spearwood Soil Associations. Much of this landform unit is low lying and with minimal separation from the groundwater body and as such, transportation of contaminants to the water table is rapid.

Note that conventional effluent disposal systems are inadequate in the Bassendean Sands landform unit and Nutrient Retentive Effluent Disposal Systems (NREDS) are appropriate.

The Bassendean Sands unit is generally subject to high water table and in many areas is prone to inundation by seasonal fluctuations in the water table.



Map 8 Soil Systems within the City of Kwinana

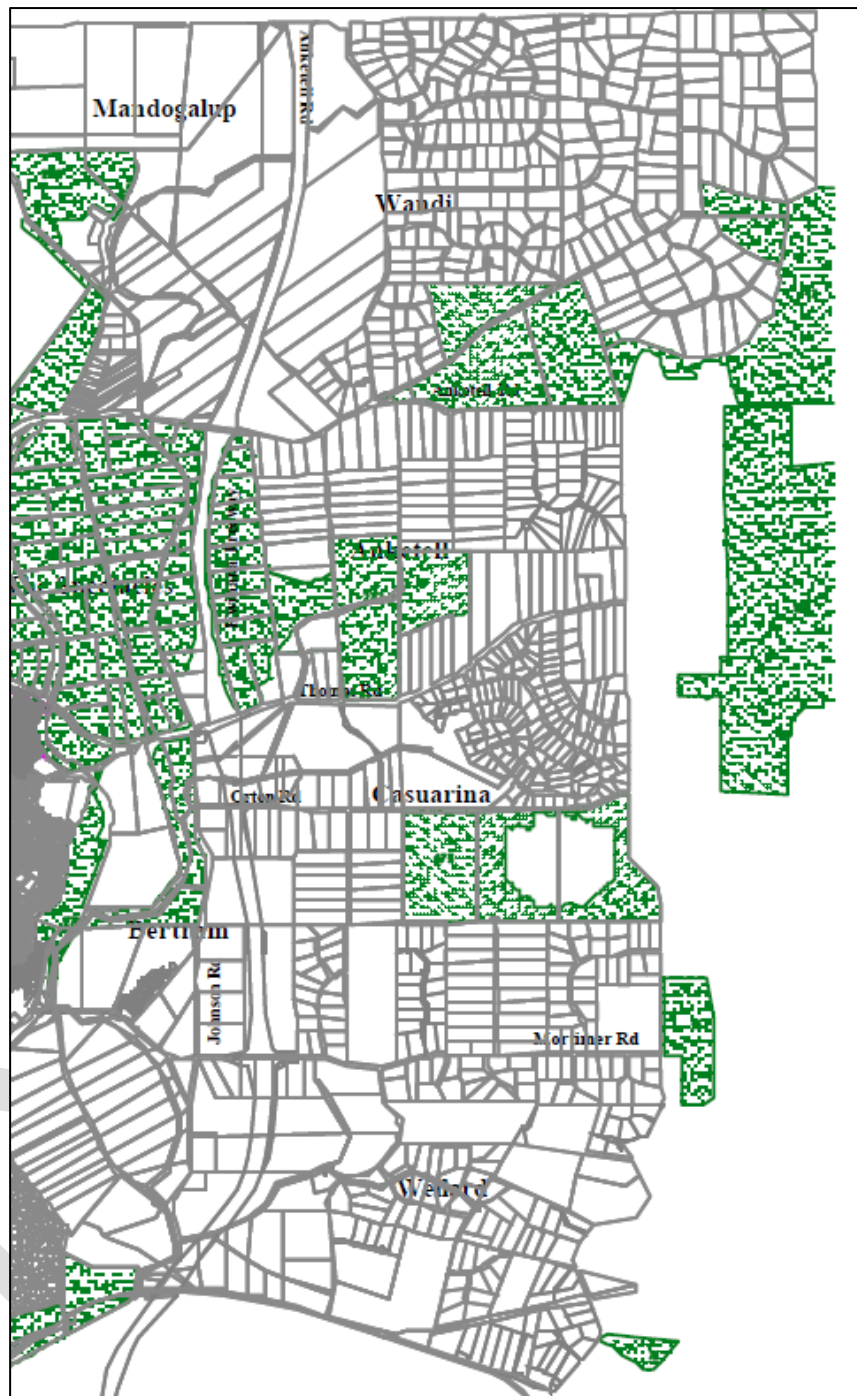
5.2 Biodiversity and Bassendean Sands Vegetation Communities

The vegetation of the low relief dunes of this system is low banksia woodland, with *Banksia menziesii*, *B attenuate*, *B ilicifolium*, *Allocasuarina fraserinana* and *Zylomelium* (Jarrah) *occidentale* as co dominants. *Eucalyptus marginata* (Jarrah) and *Nutria floribunda* are often present but never attain dominance.

The under storey of the scrub is very dense and is composed of woody sclerophyllous perennials. In wetland swampy areas the vegetation is more variable with sedge lands, heaths and various trees, such as *Mullica parviflora*, other *Melaleuca spp* , *Banksia littoralis* and *Eucalyptus rudis* (flooded gum)"(Murdoch University 1987).

The City's Biodiversity Study (2019) notes that the Banksia Woodlands typical of the Bassendean Vegetation Communities (Banksia Woodlands of the Swan Coastal Plain) have been listed by the Federal Government as threatened Ecological Community (TEC).

Much of the natural vegetation within this landform unit, is on privately owned land which has been partly cleared of natural vegetation. The areas of dense vegetation are confined largely to Government landholdings, Crown lands. In this respect, there are some large areas set aside under the City's LPS2 and MRS as Parks and Recreation Reserves. These are also reserves containing Bush Forever sites which are areas of local bushland identified and protected by the State Government which form part of a wider network to protect biodiversity values in a fragmented landscape (**Map 9**).



Map 9 Bush Forever Sites in the City's Rural Areas

Key Observation: The City's rural areas are primarily located on the Bassendean Sands System which has a relatively low inherent fertility and low water holding capacity with remnant vegetation being characterised by low banksia woodland (Banksia Woodlands).

5.3 Wetlands in the City's Rural Areas

Land use and development within the study area is influenced to a large degree by water related issues. That is portion of the study area is within the Catchment of the Peel Harvey Estuary and other portions include an area designated for current and future Public Water Supply (Jandakot Groundwater Mound). Dispersed throughout the study area, are also wetlands protected by the *Environmental Protection Policy "Swan Coastal Lakes Environmental Protection Policy 1992"*. In addition, others are identified in the publication "Wetlands of the Swan Coastal Plain", adopted in the past by the then Waters and Rivers Commission, and afforded protection under planning legislation.

Those wetlands are protected by the *Swan Coastal Lakes Environmental Protection Policy 1992*) are afforded statutory protection from environmental damage by virtue of the Environmental Protection Act. The Policy prevents damage and pollution of Wetlands included under the Policy.

The "Wetlands of the Swan Coastal Plain" publication identifies a significantly greater number of wetlands than those under the Environmental Protection Policy and defines the margins of the Wetlands more broadly. In this publication, Hill, Semeniuk and Delmarco 1996 classify wetlands into three Management Categories as follows:

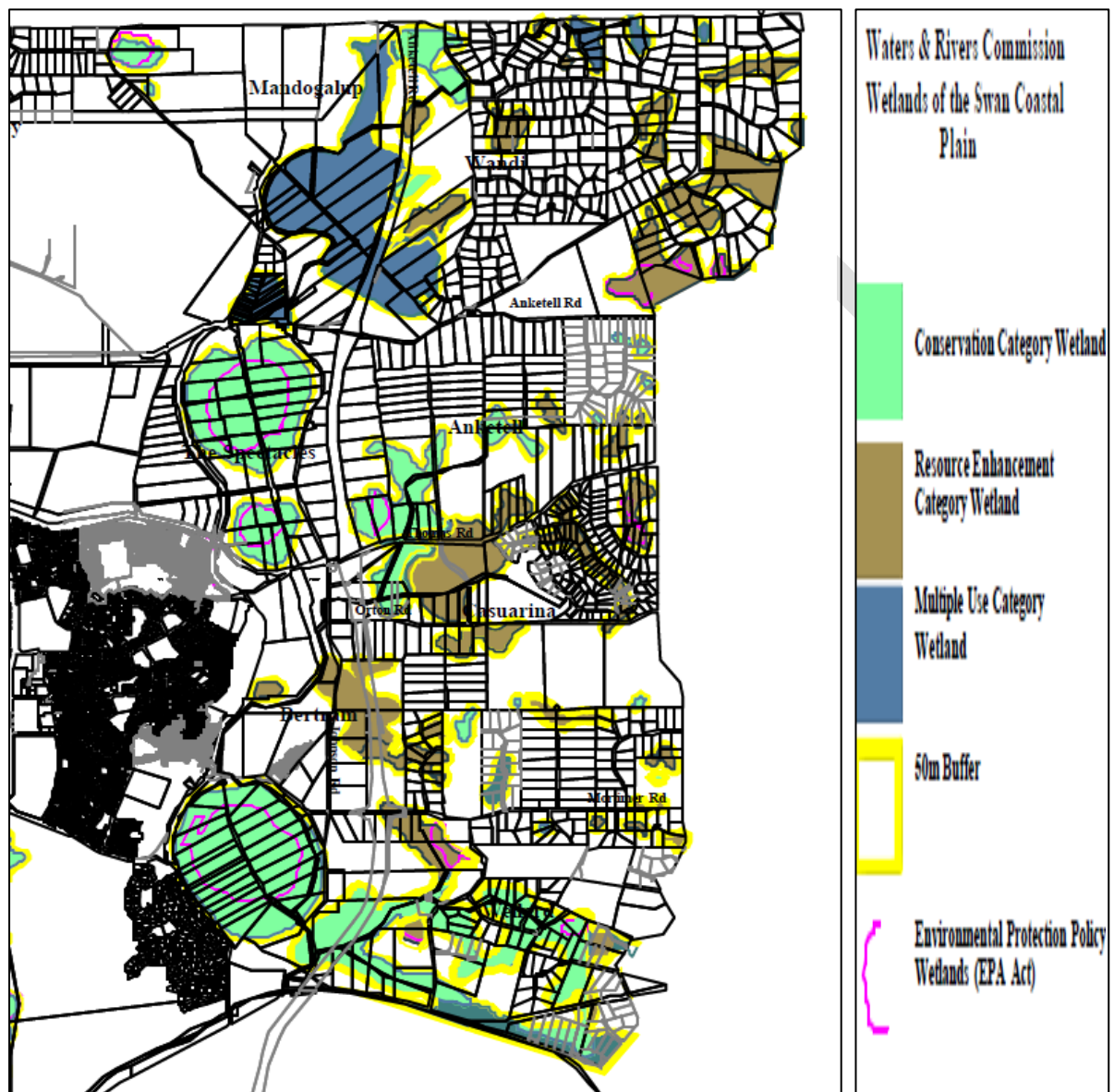
Category	Attributes	Objectives
C - Conservation	Wetlands which support high levels of attributes and functions	To restore wetlands attributes and functions through reservation in national parks, crown reserves, state owned land and protection under environmental protection policies.
R – Resource Enhancement	Wetlands which have been partly modified but still support substantial functions and attributes.	To restore wetlands through maintenance and enhancement of wetland functions and attributes by protection in crown reserves, State or local government owned land and by environmental protection policies or in private property by sustainable management.
M – Sustainable Use Multiple Use Wetlands	Wetlands with few attributes but which will provide important wetland functions	Use, development and management should be considered in the context of water (catchment/strategic drainage planning), town (land use) and environmental planning through land care.

The presence of wetlands does not have an impact on the suitability of land use at the broad level. The environmental and land use management approaches will however, have an impact on the types and intensity of land use that can be conducted, in the immediate vicinity of the wetlands.

Uses with potential to pollute or degrade wetlands, should be excluded from areas in the vicinity of Wetlands and the buffer requirements (absolute minimum of 50 metres) from the

edge of wetlands. This should be the basis in which the location of buildings, building envelopes, clearing etc. should be determined.

Proposals for new development (including subdivision), should be designed to respond to these constraints to ensure that works and unacceptable land uses do not encroach into the wetland and buffer areas. For example, the siting of buildings and effluent disposal, riveways, fence lines and fire breaks should avoid encroachment into the defined wetland and vegetation buffer area.



Map 10 Wetland Classification across the City's future rural areas

5.4 Drainage and Groundwater Separation

The Bassendean Sands unit is generally subject to high water table and in many areas is prone to inundation by seasonal fluctuations in the water table. Groundwater levels in the catchment, range from 0-30 metres below natural ground level. The majority of land is 10

metres or less, above the water table and there are significant areas being 3 metres or less above groundwater.

Sheet flooding has occurred during periods of prolonged high rainfall with highest known groundwater levels occurring in the late 1960's

The unit is characterised by a number of wetlands and is drained by the Peel Main Drain and lateral drains which in turn feed to the Serpentine River 15km to the south. It is within the catchment of the Peel/Harvey Estuary and is subject to the policy requirements of *SPP 2.1 - The Peel-Harvey Coastal Plain Catchment 1992*.

Key Observation: The City's rural areas contain a significant amount of wetlands some of high quality which are protected by the State Government. The Bassendean Sands unit is generally subject to high water table and in many areas is prone to inundation by seasonal fluctuations in the water table.

5.5 Landscape

The landscape of an area assigns a particular identity and character. The landscape comprises elements of topography, vegetation, water and the built environment. While the landscape of an area can be described as the totality of these features, specific features which represent the extremes of these components, contribute most to the area's identity and character. In addition, man-made features have a significant impact on the landscape perception of an area.

The following features of the rural area landform can be identified as the focal points of landscape:

1. Hill tops
2. Ridgelines
3. Ridge faces and steep prominent slopes
4. Introverted depressions
5. Significant prominent wetlands
6. Outstanding vegetation (native or otherwise)
7. Rock faces or rock outcrops

While landscape focal points have significance to landscape perception, equally significant are places from which feature can be viewed, although these places in themselves do not have specific landscape qualities. Other viewing places may not focus on individual components but on collective landscape. As such, the following features have also been identified:

1. Viewing platforms/lookouts
2. Vistas
3. View corridors

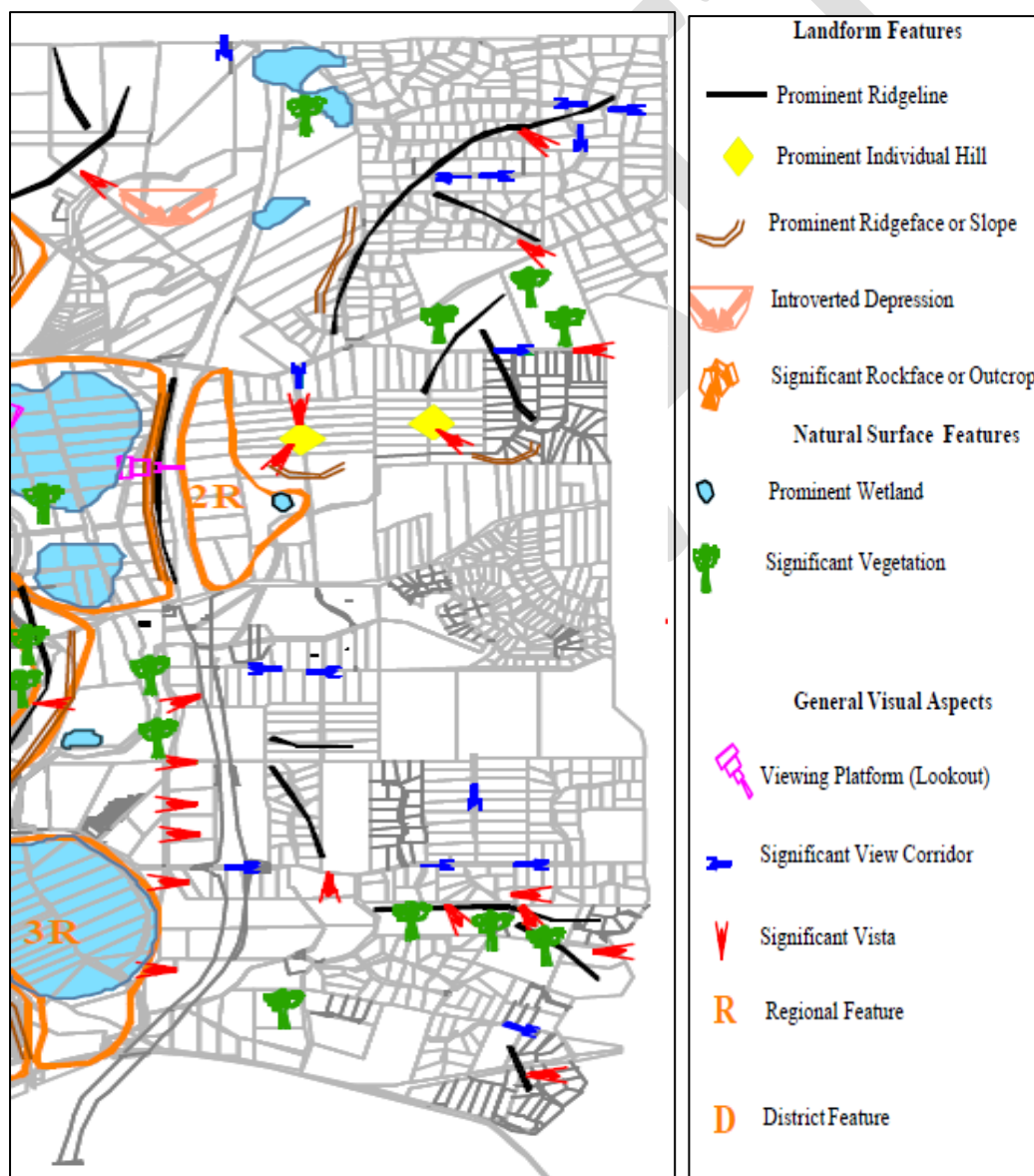
The Bassendean Sands Landform, because of the generally low nature of the landform has few significant landscape features. The landscape features of the Bassendean

Dunes are concentrated in the Wandri and Wellard (minor ridgelines which dominate the local landform).

The ridgelines are made prominent more by the contrast with the surrounding flat landform than the vertical height. Notwithstanding this, their relative elevation over areas to the east provide spectacular views towards the Darling Scarp.

The Wellard area in particular, is low lying and particularly flat. The principal focus is existing vegetation and areas subject to seasonal inundation. The western edges of the area, is afforded views to the Parmelia ridgeline, which offer considerable visual relief.

Map 12 identifies some prominent landscape features in the City's rural areas. Note the reference to 2R and 3R refers to the Spectacles Wetland and Bollard Bulrush wetland features respectively both considered key regional landscape features.



Map 12 Landform Features across the City's rural areas.

5.6 Bush Fire Hazards

Bushfires are an inherent part of the Australian environment. In many parts of Western Australia, bushfire threat is increasing due to hotter, drier weather conditions associated with long-term climatic changes. Areas where urban, rural and natural areas interface can be at particular risk.

Reducing vulnerability to bushfire is the collective responsibility of State and local government, landowners, industry and the community. It requires ongoing commitment and diligence to a range of management measures such as the appropriate location and design of development; managing potential fuel loads; implementing bushfire management plans; providing emergency services; increasing awareness of the potential risk through education; and ensuring emergency evacuation plans are in place. Such measures, in conjunction with planning policy and building controls, have the effect of increasing community resilience to bushfire

Key Observation: While it varies across the City's rural areas, bush fire hazards and risks are commonly at the medium to high (extreme) levels.

6.0 Land Use Analysis of City's Rural Areas

6.1 Special Rural Zone

Objective

The main objective of this zone is to support living in a rural environment, while maintaining rural character and retaining rural landscapes. Stock keeping is permitted in some Special Rural Zone areas provided a management plan agreed to by Council is established. Special Rural Zones make up the large bulk (66%) of rural land east of the Kwinana Freeway. All of the Special Rural Zones were created prior to the year 2000.

The Special Rural Zones have been divided into three categories according to the policy areas and the predominant use. These are:-

Wandi rural homesites and equestrian special rural development: These include Special Rural Zones 2, 3, 5, 9, 11, 12 and 13. Within these zones, the predominant use shall be equestrian special rural development and it is intended that the development of land shall occur in a manner to preserve Banksia Woodlands. Extractive industry nor tailing ponds are permitted and land use and development shall be consistent with the objectives of "Statement of Planning Policy No. 2.3 – Jandakot Groundwater Protection".

Mortimer Road rural homesites and equestrian special rural development: These include Special Rural Zones 4, 6, 7 and 15. Within these zones, the predominant use shall be rural homesites with equestrian special rural development permitted in part. The preservation of Banksia Woodlands is a priority and extractive industry nor tailing ponds area permitted. Land use and development shall be consistent with the objectives of "Statement of Planning Policy No. 2.3 – Jandakot Groundwater Protection".

Thomas Road Rural homesites: These include Special Rural Zones 1, 14 and 16. Within these zones, the predominant use shall rural homesites with equestrian special rural not permitted. The preservation of Banksia Woodlands is a priority and extractive industry nor tailing ponds are permitted. Land use and development shall be consistent with the objectives of “Statement of Planning Policy No. 2.3 – Jandakot Groundwater Protection”.

Under these broad scheme and policy provisions, there are some variations across the 16 different Special Rural Zones in the City. Some of the principles adopted for development in this zone include requiring nutrient retentive effluent disposal systems, preserving remnant vegetation, and managing run-off to avoid the impact on wetland and bushland areas.

Key Observation: By far, the most common type of land use in the City’s rural areas is Special Rural Zone with a focus on rural lifestyle and in some areas, equestrian uses. Protection of Banksia Woodlands and minimising adverse water quality impacts on groundwater and runoff are key objectives.

Demand and Supply for Special Rural lots

Advice from local real estate agencies is that demand for Special Rural landholdings remains relatively strong even in a depressed market. It appears that the opportunity to reside in a rural-residential lifestyle in a semi-secluded location relatively close to the Kwinana Freeway and train stations is attractive. The size of the lots commonly at 2 hectares (about 5 acres) is appealing, particularly where equestrian uses and the keeping of livestock is available. Further, there is significant interest in these lot types by persons who may wish to store commercial vehicles.

As discussed, there is a significant supply of Special Rural Zone lots in the City with the 16 Special Rural Zones in the City. There is currently 770 Special Rural Zone lots in the City with the potential for another 30 lots to be created via additional subdivision within existing Special Rural areas.

It appears that there would be sufficient demand for additional Special Rural Zone areas within the City.

Issues

In the main, residents appear to be enjoying the rural lifestyle offered in this zone. While there are amenity issues occurring on occasion across these zones, commonly between adjoining properties/neighbours (e.g. noise, dust, visual impacts, etc.), the incidents found to be site specific so strong trends are not apparent.

The City has however identified some generic issues/concerns which tend to apply across most of the Special Rural zoned areas. These are:

Areas of Concern	Issue	Potential Response to Issues
Land Management	Remnant vegetation protection – clearing outside the building envelope	<ul style="list-style-type: none"> ▪ Education of residents ▪ Stronger compliance by local government ▪ Incentives for protection of vegetation
Land Management	Overgrazing and degradation with regard to keeping of stock and stocking rates	<ul style="list-style-type: none"> ▪ Education of residents ▪ Stronger compliance by local government ▪ Removing stock as a permitted land use
Land Use Permissibility	Establishing and carrying out land uses which are not permitted (e.g. agriculture businesses, earthmoving business, parking of trucks, landscaping and garden supplies and private recreational pursuits)	<ul style="list-style-type: none"> • Education of residents • Stronger compliance by local government • Allowing for a wider range of rural pursuits in the Special Rural Zones
Bush Fire Management	A tendency towards over clearing as a result of lack of understanding about fire management and/or misinterpretation or clarity about requirements in the City's Bushfire Notices or advice received from Bushfire Consultants	<ul style="list-style-type: none"> • Education of residents • Stronger interaction with community and compliance by local government • Different approaches to the location of built form on building envelopes

Key Observation: Within Special Rural Zones, two key concerns are the clearing of remnant vegetation and overgrazing (equestrian activities). Lack of clarity about bush fire management can exacerbate loss of vegetation.

6.2 Rural Water Resource Zone

Objective

The main objective of this zone is to protect and preserve the underground water resource while facilitating rural land use and development.

Rural Water Resource Zone applies in the City to those areas over the Jandakot Groundwater Mound which are not otherwise zoned for Special Rural Zones, Parks and Recreation reserves or Public Utility. This includes a number of lots along Bodeman Road, Battersby Road and the lots along Thomas Road.

Land uses within the “Rural Water Protection” zone under LPS2 are subject to the land use permissibility outlined in State Planning Policy 2.3 – Jandakot Groundwater Protection (SPP2.3), and the Department of Water – Water Quality Protection Note No.25 – Land Use Compatibility Tables for Public Drinking Water Sources (WQPN 25).

Demand and Supply for Rural Water Resource lots

These lots vary in size across the City from 2 hectares in Wandi to over 16 hectares in Anketell. The most common size is about 4 hectares. Local real estate agents advise that these larger lots are not as appealing as the smaller Special Rural lots and it appears that the main demand for these lots is for rural-residential living. Those lots that allow for equestrian land uses and the keeping of livestock are in greater demand. The proximity to the Kwinana Freeway and train stations is of appeal (this applies to most of the City’s rural areas)

Advice suggests that the constraints on the use of these lots in respect to the State Governments ground water protection policies tends to diminish the appeal of the lots for uses other than largely rural-residential living purposes.

The Rural Water Resource Zone is solely located over the Jandakot Groundwater Mound and limited to this particular area. There are 86 Rural Water Resource Zone lots in total with potential for a further 22 lots through additional subdivision. Their supply is limited in this regard.

Issues

There is a mixture of residences and existing rural business pursuits on these properties and while site specific amenity based issues can occur (e.g. noise, dust, visual impacts, etc.), these are generally site specific and one-offs.

The City has however identified some generic issues / concerns which tend to apply across the Rural Water Resource Zone. These are:

Areas of Concern	Issue	Potential Response to Issue
Land Use Permissibility	There are a number of existing businesses that continue under non-conforming use rights in this zone. These existed prior to the adoption of SPP2.3 and would not be permitted under current policy. Despite a desire in some cases to expand operations, these businesses are constrained in terms of expansion and operations under current SPP	<ul style="list-style-type: none"> An ongoing issue which will remain under current planning policy in the event that the non-conforming land uses continue to operate

Land Management and subdivision	<p>Removal of remnant vegetation protection and land clearing associated with the use of these properties (particularly with existing rural businesses and uses)</p> <p>Most lots within the Rural Water Resource Zone do not contain building envelopes and are quite large so retention of vegetation can be problematic</p> <p>A number of the lots within the zone are large enough to permit further subdivision into minimum 2 hectares and these can include building envelopes. This assists in managing vegetation protection</p>	<ul style="list-style-type: none"> ▪ Education of residents ▪ Stronger compliance by local government ▪ Removing stock as a permitted land use ▪ Potentially encourage further subdivision of the larger lots to enable identification of building envelopes beyond which clearing is not permitted
Land Management	<p>Overgrazing and degradation with regard to keeping of stock and stocking rates</p>	<ul style="list-style-type: none"> ▪ Education of residents ▪ Stronger compliance by local government ▪ Removing stock as a permitted land use
Land Use Permissibility	<p>The need to ensure land uses and change in land uses meet SPP2.3 and LPS2 provisions</p> <p>Any change to land use would need to take into account the objectives of SPP2.3 and the WQPN 25 and this is not always understood by landowners/ new purchasers</p>	<ul style="list-style-type: none"> ▪ Education of residents to ensure a greater awareness of the SPP2.3 and LPS2 requirements.
Bush Fire Management	<p>A tendency towards over clearing as a result of a lack of understanding about fire management and/or misinterpretation or clarity about requirements in the City's Bushfire Notices or advice received from Bushfire Consultants</p>	<ul style="list-style-type: none"> ▪ Education of residents ▪ Stronger interaction with community and compliance by local government ▪ Different approaches to the location of built form on building envelopes

Key Observation: The key objective within the Rural Water Resource Zones is to protect and preserve the underground water resource while facilitating rural land use. Key concerns are the clearing of remnant vegetation and overgrazing (equestrian activities) and the presence of existing incompatible land uses / businesses.

Operation of Special Control Areas (Landscape Protection)

Council's objective in setting aside areas of Landscape Protection as Special Control Areas under LPS2 is to conserve areas of natural ecological value or landscape amenity whilst at the same time allowing development.

There are numerous areas of landscape protection within the City's rural areas. Many of these are wetland features reflecting the amount of high value wetlands within the City but some also are associated with the areas of landform that merit protection such as high ridge lines.

Within these Special Control Areas, LPS2 states that

"No person shall, in any Area of Landscape Protection, without Council's Planning Approval in writing;

- (a) Carry out clearing of trees or other vegetation;*
- (b) Carry out any filling, dredging or changes to the contour of the land;*
- (c) Erect any advertising sign,*
- (d) Erect or construct any building or outbuilding,*
- (e) Degrade any natural wetland system,*
- (f) Detract from the amenity of the locality."*

Issues

The application of the objectives of the Special Control Areas (Landscape Protection) tends to apply as part of any consideration of development and planning applications. In this respect, the City has had relatively little issue in the application of the protection areas albeit that landowners/purchasers may be unaware of the zone applying to their landholding.

Areas of Concern	Issue	Potential Response to Issue
Currency of Special Control Areas	The Landscape Protection areas were introduced into the LPS2 over 20 years ago and their relevancy can be questioned. This is particularly the case in new Urban zoned land	<ul style="list-style-type: none">▪ Review of the current Landscape Protection areas required as part of a new planning scheme.
Bush Fire Management	Potential conflict with the intent of the Landscape Protection Zone. A tendency towards over clearing as a result of lack of understanding about fire management and/or misinterpretation or clarity about requirements in the City's Bushfire Notices or advice received from Bushfire Consultants	<ul style="list-style-type: none">▪ Greater clarity about land management and clearing for bush fire management by relevant authorities▪ Education of residents▪ Stronger interaction with community and compliance by local government▪ Different approaches to the location of built form on building envelopes

6.3 Rural A Zone

Objective

The predominant uses within the Rural A Zone are intended to be rural use provided that the proposed uses are consistent with principles of groundwater conservation and are not likely to result in significant discharge of nutrients to the district drainage network. There is a preference against fragmentation by subdivision except where the predominant use is consistent with Scheme intent for the locality.

Uses permitted under LPS2 include a range from intensive agriculture, rural industry to a variety of rural pursuit such as rearing or agistment of various livestock, stabling of horses, growing of trees and plants for commercial intent, churches, recreation facilities, caravan parks, kennels, forestry to name a few.

There is only a limited number of Rural A lots within the City given the extent of the Jandakot Groundwater Mound and preponderance of Special Rural Zone land. Along Bone Road, there are 22 lots which comprise of an area of 82.14 hectares, with 17 lots being over 4 hectares in area (some of the largest rural lots in the City). While there are some businesses such as a market garden, kennels, nursery, machinery workshop, many are largely residential uses.

There are additional Rural A Zoned lots in Mandogalup but, as noted previously, the future of any Rural A lots (if any) remaining is largely dependent on the outcome of the planning for the WAPC's Improvement Plan 47, and to some extent, the long term implementation of the Planning Framework 2018.

Demand and Supply for Rural A Zone

The lots along Borne Road vary in size from 2 hectares to just over 6 hectares. Advice suggests that in a similar fashion to the Rural Water Resource Zone lots, these larger lots do not appear to be as appealing as the smaller Special Rural lots and it appears that the main demand for these lots at present is for rural-residential living, for equestrian land uses and the keeping of livestock.

Despite the capacity for a wider range of land uses in this zone (compared with the Special Rural and Rural Water Resource zones), real estate agencies report limited current interest for agricultural and/or commercial uses at these properties from purchasers.

The capacity for additional Rural A lots within the City appears very limited. The presence of the Jandakot Groundwater Mound and existing Special Rural Zones prevents additional Rural A Zoned lots east of the Kwinana Freeway (apart from subdivision of a few existing lots).

As discussed, there may be some capacity for Rural A Zoned lots in Mandogalup in the longer term but this will be determined by the planning for Improvement Plan 47. It is worth noting that the Rural A Zoned lots along Bone Road are also situated within the area identified in the Planning Investigation Area under the WAPC's Planning Framework 2018.

Issues

Areas of Concern	Issue	Response to Issue
Land Use Permissibility	<p>Incompatible land uses and some ongoing pressure to expand the range of land uses within this zone.</p> <p>In this regard, whilst there is a broad range of land uses permissible in Rural A, the City has experienced pressure from some land purchasers and landowners to widen the range of permitted land uses under LPS2</p>	<ul style="list-style-type: none"> Consideration about the most appropriate range of rural pursuits in the Rural A Zone
Land Management	Remnant vegetation protection – clearing outside the building envelope	<ul style="list-style-type: none"> Education of residents Stronger compliance by local government Incentives for protection of vegetation
Land Management	Overgrazing and degradation with regard to keeping of stock and stocking rates	<ul style="list-style-type: none"> Education of residents Stronger compliance by local government Removing stock as a permitted land use
Bush Fire Management	<p>Emergency access to this zone given only one way in and out of this locality</p> <p>A tendency towards over clearing as a result of lack of understanding about fire management and/or misinterpretation or clarity about requirements in the City's Bushfire Notices or advice received from Bushfire Consultants</p>	<ul style="list-style-type: none"> Education of residents Stronger interaction with community and compliance by local government Different approaches to the location of built form on building envelopes

Key Observations:

- The key objective within the Rural A Zones is to promote rural use provided that the proposed uses are consistent with principles of groundwater conservation and nutrient discharges to water catchments are managed.
- Some key concerns are the potential for incompatible land uses and pressure to expand the range of land uses within LPS2. The clearing of remnant vegetation and need for better emergency access are also important.

6.4 Public Purpose Reserve (Casuarina Prison)

Objective

The reason for this Public Purposes reserve, set aside under the MRS, is to accommodate the Casuarina Prison and provide adequate buffer to surrounding land uses. In this respect, the Casuarina Prison is surrounded to the east and west by land which is reserved for Parks and Recreation purposes under the MRS. To the north is Special Rural Zone and to the south, Rural A and Special Rural Zone.

The Casuarina Prison is a Maximum Security Prison and it is critical that appropriate land uses occur around this land use.

Issues

There are limited land use planning issues associated with the prison. It is preferred that traffic access to the prison is separated from residential urban areas and local residential traffic associated with the development of the nearby Casuarina Urban area. Issues which may be considered associated with the Public Purposes Reserve and prison include:

Areas of Concern	Issue	Potential Response to Issue
Land Use Buffers	The need to ensure that there are appropriate buffers surrounding the prison to enable the operation of the facility	▪ Land use planning will need to consider appropriate buffers to the prison
Access and Traffic	It is preferable that traffic access to the prison is separated from the requirement to move through local residential development areas	• Land use planning will need to consider access / egress to the prison with a preference on avoiding movement through local residential areas

Key Observation: It is critical that there is appropriate buffers surround the prison to enable the effective and efficient operation of the facility. Access / egress via local residential areas is not preferred.

6.5 Urban / Rural Interface

With the rezoning of large areas of previously rural land east of the Kwinana Freeway for urban development, the interface between the urban and rural areas has become an important planning consideration.

The way this interface tends to manifest itself at the detailed level is a road interface between residential subdivision to the west and Special Rural to the east. In this respect, planning for this interface included the introduction of larger residential lots within residential subdivision to soften the buffer between the two different types of land uses.

The introduction of urban development into previous rural areas brings with it potential impacts associated with increased traffic, noise and amenity impacts. It is important that buffers be considered and planning for these issues.

Issues

Areas of Concern	Issue	Potential Response to Issue
Land Use Interface	The potential adverse traffic, noise and amenity impacts associated with urban development immediately adjoining rural areas	Land use planning will need to consider the best planning for the interface areas

Key Observation: Land use planning for the City's rural areas needs to consider appropriate interface between rural and urban land uses.

6.6 Non-Conforming Land Uses

Most local government planning schemes include provisions which entitles land uses in place prior to rezoning of land to continue to operate even when the use is not compatible with the new zone in place (e.g. a factory or market garden in a residential area). This is referred to as non-conforming use rights. Over time, most of these land uses or businesses move away elsewhere where constraints on noise and odour may be less or they reach the end of their lifetime of operation. Planning is a long term process and must take account of these legal rights.

This is the case in the City where previous rural land uses now form part of the urban areas east of the Kwinana Freeway (Casuarina, Anketell, Wellard and Wandi). These land uses may create the need for buffers with incompatible uses or detailed assessment as to their impacts. An example of this in the City is the presence of the Mushroom Farm in the Casuarina Urban area. This is a use approved while the area was rural and it is now urban.

These incompatible uses may also occur in rural land and this is the case with a number of rural land uses and business operating in the Rural Water Resource Zone where State Government policies to protect groundwater and water catchments were applied after these uses were approved.

Areas of Concern	Issue	Potential Response to Issue
Non-conforming land use	The potential adverse environmental, traffic, noise, odour and amenity impacts associated with non-conforming land uses on adjacent, often incompatible areas or on the environment	Land use planning needs to take account of the rights of non-conforming land uses and accommodate such land uses within a long-term process of change

6.7 Bush Fire Management

Reducing vulnerability to bushfire is the collective responsibility of State and local government, landowners, industry and the community.

It requires ongoing commitment and diligence to a range of management measures such as the appropriate location and design of development; managing potential fuel loads; implementing bushfire management plans; providing emergency services; increasing awareness of the potential risk through education; and ensuring emergency evacuation plans are in place. Such measures, in conjunction with planning policy and building controls, have the effect of increasing community resilience to bushfire.

People's safety is a priority but it is important to seek to achieve an appropriate balance between bushfire risk management measures and biodiversity conservation management and landscape amenity.

Issues

Areas of Concern	Issue	Potential response to Issue
Bush Fire Management	The lack of bush fire management planning in the rural community can potentially result in damage to property and businesses or much worse, human injury or death	<ul style="list-style-type: none">▪ Consideration of fire management through the planning approval process▪ Increasing the understanding and ownership by residents about the dangers and need for bush fire planning▪ Stronger interaction with community and compliance by local government
Bush Fire Management	The need to ensure emergency access/egress for rural communities. A tendency towards over clearing as a result of lack of understanding about fire management and/or misinterpretation and clarity about requirements in the City's Bushfire Notices or advice received from Bushfire Consultants	<ul style="list-style-type: none">▪ Planning must take account of emergency access/egress.
Bush Fire Management	A tendency towards over clearing as a result of lack of understanding about fire management and/or misinterpretation or clarity about requirements in the City's Bushfire Notices or advice received from Bushfire Consultants	<ul style="list-style-type: none">▪ Education of residents▪ Stronger interaction with community and compliance by local government▪ Different approaches to the location of built form on building envelopes

Key Observation: Bush Fire Management is a critical concern in rural areas and there is the need for appropriate planning as part of new development but also by landowners in concert with state and local authorities. It is also important to create greater understanding and ownership of residents about the dangers of bush fires and need for bush fire planning.

7.0 Rural Issues, Challenges and Opportunities – key themes

7.1 Future Land Uses in the City's Rural Areas

The following observations were made:

- *Rural land within the City will be almost entirely east of the Kwinana Freeway (based on the WAPC's Planning Framework 2018).*
- *State planning policy has a particular focus on water quality impacts in the City's rural areas. This is a focus on preventing, minimising and managing development and land uses that may result in contamination of groundwater, public drinking water and increased nutrient and stormwater.*
- *The State Government's Jandakot Structure Plan (2007) identified land in the City south of the Jandakot Groundwater Mound as rural-residential.*
- *The WAPC Planning Framework 2018 has a preference against additional special rural development (partly because once established, it is difficult to repurpose for other uses) and has identified portion of the City's rural areas for Planning Investigation to determine long-term land use.*
- *By far, the most common type of land use in the City's rural areas is Special Rural Zone with a focus on rural lifestyle and in some areas, equestrian uses. Protection of Banksia Woodlands and minimising adverse water quality impacts on groundwater and runoff are key objectives.*

A key challenge for the City will be to determine the most appropriate land uses for its rural areas over the next 10 to 20 years (and longer) as part of its Local Planning Strategy. What might be the best land uses, particularly given the need manage and minimise water quality impacts on both the Jandakot Groundwater Mound and drainage catchment of the Peel/Harvey Estuarine System. Large areas of future rural land are already set aside for special rural uses.

Demand for rural land uses will vary with Special Rural Zones proving popular at present particularly given the close proximity to transport infrastructure such as the Kwinana Freeway and railway stations. Would however demand for Rural A Zoned land with its broader range of land uses (particularly agricultural uses) increase with development of Westport and/or the gradual growth of industrial land associated with the Western Trade

Coast. If so, where might that additional Rural A Zone land be located (if at all). Would another form of land use zone be more appropriate?

This forward planning also needs to take account of the State Government's strategic plans and policies and in this respect, the WAPC is undertaking its own planning investigation into part of the City's rural areas. The outcomes of the community engagement in this first stage of the preparation of the City's Local Planning Strategy will provide input into that investigation.

Challenge / Opportunity	Points to Consider
Identifying preferred land uses across the City's rural areas over the next 10 to 20 years (and longer).	<i>Much of the City's rural areas are currently Special Rural Zones. What other types of land uses might be preferred in the City's rural areas?</i>
The WAPC is currently considering a 'Planning Investigation Area' identified in the Planning Framework 2018 within the City's Rural Areas.	<i>What are some of the issues which may affect this area and its future use?</i>

7.2 Managing water quality in the City's Rural Areas

The following observations were made:

- *State planning policy has a particular focus on water quality impacts in the City's rural areas. This is a focus on preventing, minimising and managing development and land uses that may result in contamination of groundwater, public drinking water and increased nutrient and stormwater.*
- *The City's rural areas are primarily located on the Bassendean Sands System which has a relatively low inherent fertility and low water holding capacity with remnant vegetation being characterised by low banksia woodland (Banksia Woodlands).*
- *The City's rural areas contain a significant amount of wetlands some of high quality which are protected by the State Government. The Bassendean Sands unit is generally subject to high water table and in many areas is prone to inundation by seasonal fluctuations in the water table.*

The way that land is managed can have a profound impact on the environment. The Bassendean Sands and the associated vegetation complexes can be vulnerable and the water table close to the surface and subject to flooding. It is important then that land users are mindful of the type and amount of fertilisers used, pasture management, overgrazing and vegetation clearing. Good land management is very important to minimise environmental damage.

These challenges and the reasons for good management may not be well understood by landowners and this is an issue.

Challenge / Opportunity	Points to Consider
Appropriate types of land uses to manage and protect water quality on the Jandakot Groundwater and Peel - Harvey Estuarine Catchment.	<i>Which types of land uses might best achieve this outcome (special rural, rural – agricultural, rural water resource)?</i>
How best to manage the vulnerable Bassendean Sands and protect banksia woodlands and wetlands.	<p><i>How aware are landowners about the poor quality of the soils in the City's rural areas and the importance of vegetation cover. How might they be made more aware?</i></p> <p><i>What can the City itself do to ensure the protection of the banksia woodlands and wetlands?</i></p>

7.3 Clearing and Overgrazing in Special Rural and Rural Water Resource Zones

The following observations were made:

- *Within Special Rural Zones, two key concerns are the clearing of remnant vegetation and overgrazing (equestrian activities). Lack of understanding and clarity about bush fire management can exacerbate loss of vegetation.*
- *The key objective within the Rural Water Resource Zones is to protect and preserve the underground water resource while facilitating rural land use. Key concerns are the clearing of remnant vegetation and overgrazing (equestrian activities) and the presence of existing incompatible land uses / businesses.*

While not always the case, there can be the tendency for land to be gradually cleared across properties for a variety of reasons relating to recreational activities, weed infestation, long term lack of revegetation or confusion linked to bush fire management. It is also noticeable that overgrazing relating to equestrian activities can severely degrade properties.

Challenge / Opportunity	Points to Consider
Protection of remnant vegetation (commonly Banksia Woodland) on Special Rural Zones and Rural Water Resource Zones.	<i>The awareness and understanding by landowners to the need to retain native vegetation and protect remnant Banksia Woodlands.</i>
How best to manage pasture, stock and maintain equestrian properties on Special Rural Zones and Rural Water Resource Zones.	<p><i>The awareness and understanding of landowners to good stock management plans and best practice for the keeping of horses and other stock on the Bassendean Sands.</i></p> <p><i>How best can landowners be informed about best practice?</i></p>

Bush fire risk and land clearing	<p>See also below.</p> <p><i>How best can bush fire risk be mitigated while protecting native bushland across the City's rural areas?</i></p>
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7.4 Rural A Zone

The following observations were made:

- *The key objective within the Rural A Zones is to promote rural use provided that the proposed uses are consistent with principles of groundwater conservation and nutrient discharges to water catchments are managed.*
- *Some key concerns are the potential for incompatible land uses and pressure to expand the range of land uses within LPS2. The clearing of remnant vegetation and need for better emergency access are also important.*

A relatively small part of the City's rural land area, this zone affords the most flexibility in terms of agricultural rural land use and potential under the Local Planning Strategy for change (given the constraints on other land use zones). Issues of water quality management and emergency access/egress affect the zone. The zone is also include in the WAPC's "Planning Investigation Area" under the Planning Framework 2018.

Challenge / Opportunity	Points to Consider
Future of the Rural A zone for the next 10 to 20 years (and longer).	<i>Is the Rural A Zone the best zone for the future in this locality? What other land uses appeal?</i>
Range of land use types which may be supported.	<i>The LPS2 identifies appropriate land uses in this zone. Are they appropriate or should other uses be considered?</i>

7.5 Rural Interfaces and Buffers

The following observations were made:

- *It is critical that there is appropriate buffers surround the Casuarina prison to enable the effective and efficient operation of the facility. Access / egress via local residential areas is not preferred.*
- *Land use planning for the City's rural areas needs to consider appropriate interface between rural and urban land uses.*

The need to plan for appropriate separation and interfaces between differing land uses is important as part of a Local Planning Strategy particularly where there are non-conforming land uses occurring in rural areas. They need not always be large buffers between uses but can be site specific management actions to minimise conflict.

Challenge / Opportunity	Points to Consider
The need for interfaces and buffers.	<p><i>What locations may require buffers and interfaces to address land uses within the City's rural areas?</i></p> <p><i>What type of interface is needed?</i></p>
Approaches to conflicting land uses.	<i>What strategies and actions may be required to address conflicts between land uses, particularly those with non-conforming use rights?</i>

7.6 Bushfire Management

The following observations were made.

- *While it varies across the City's rural areas, bush fire hazards and risks can be at the medium to high (extreme) levels.*
- *Bush Fire Management is a critical concern in rural areas and there is the need for appropriate planning as part of new development but also by landowners in concert with state and local authorities. It is also important to create greater understanding and ownership of residents about the dangers of bush fires and need for bush fire planning.*

Bush Fire is a very real threat in the City's rural areas. Ensuring the protection of people and property in the City is a priority but balancing this with environmental protection and good land use management is important and a significant challenge. There is the need to do so however for the present and into the future. Much comes down to the actions of the landowner, despite the best intent of authorities.

Challenge / Opportunity	Points to Consider
Awareness of fire risk by residents in rural areas and knowledge of ways to mitigate risk.	<p><i>What information is available to landowners about fire risk and how aware are landowners to risk in their localities?</i></p> <p><i>Do landowners need training support and education about mitigating fire risk on their properties? How might this be achieved?</i></p>
Introducing regulation and statutory provisions to reduce bush fire risk.	<i>Is there good examples of regulatory frameworks undertaken by local governments which work well and can assist in reducing fire risk in the City?</i>
Environmental Protection	<i>How can bush fire risk be mitigated while protecting native bushland across the City's rural areas?</i>

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