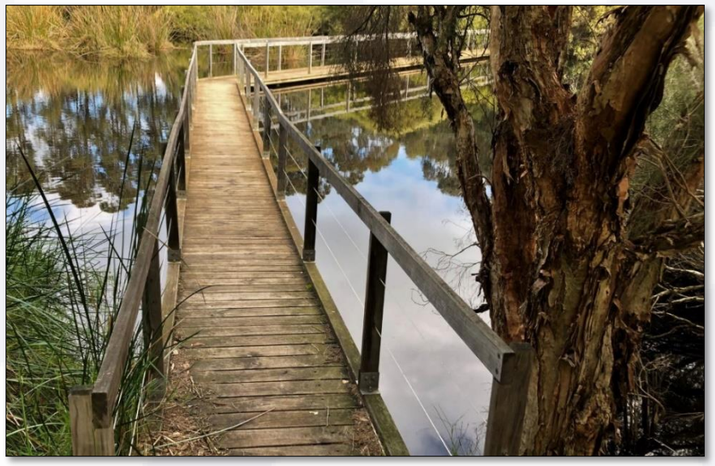
July 2022

Glen Iris District Structure Plan

Stage One – final draft



CITY OF BUNBURY

Document Control

ISSUE	DATE	ISSUE DETAILS	WRITTEN	CHECKED
Prelim. Draft	11 March 2022	For Technical Working Group review	LG	LG
First draft	30 March 2022	For Bunbury Development Committee review	LG	LG
Final draft	20 July 2022	Modifications for Public Advertising	KDS	KDS

This document was prepared as a first draft by *Across Planning* for and on behalf of the Bunbury Development Committee. The final draft for public advertising was prepared by the City of Bunbury.

Acknowledgement of Country

The City of Bunbury and *Across Planning* acknowledge traditional owners of the land, the Wardandi Noongar people, and pay respect to Elders past, present and emerging.

Other acknowledgements

The contributions of many agencies, businesses, groups and individuals are acknowledged for their valuable input to this structure plan, including the Glen Iris Land Use Planning Steering Group and the Technical Working Group.

Special mention is made of the Bunbury Development Committee for its leadership and commitment to stakeholder engagement and Main Roads Western Australia for its substantial transport planning technical input. Assistance received from the Department of Planning, Lands and Heritage (Bunbury office), the Department of Water and Environmental Regulation, Development WA, South West Development Commission, and the Department of Communities is also acknowledged.

Photograph of John Boyle O'Reilly Park mural on front cover courtesy City of Bunbury.

ENDORSEMENT PAGE

This structure plan is prepared under the provisions of the City of Bunbury Local Planning Scheme Number 8.

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

_____Date

Signed for and on behalf of the Western Australian Planning Commission:

_____

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

_____ Witness

_____ Date

_____ Date of Expiry

Table of Amendments

Amendment No.	Summary of Amendments	Amendment Type	Date approved by WAPC

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EXECUTIVE SUMMARY

The Glen Iris locality in the City of Bunbury has had a number of local structure plans prepared over the years, each covering a portion of the overall area and often prepared at the initiative of owners of broadacre holdings or land developers. Whilst some plans (especially the *Glen Iris Structure Plan 2010* covering the eastern, central and north-eastern portion of Glen Iris, including '*Vittoria Heights*', and the *Moorlands Stage 1 Structure Plan* '*Riverlea*') have resulted in significant on-the-ground subdivision and development, around half of the Glen Iris locality has been subject to local structure plans that have made only limited progress and where changed circumstances have necessitated a renewed approach, or where no structure plan has been endorsed.

In recent years, it has also become apparent that there are a number of issues beyond the ability of any single local structure plan area to resolve – such as floodway relief for the Lower Preston River, traffic management at the intersection of Vittoria Road and Forrest Highway, and the overall provision of schools and parkland.

Accordingly, the need was identified by WAPC for a 'high-level' District Structure Plan (DSP) with a focus on the main structural elements necessary to address the most important land use issues and to provide a vision and over-arching guide to development and management of the Glen Iris locality.

Having established this overall direction, new and amended local structure plans will have a key role in establishing more comprehensive and detailed guidance for subdivision and development.

Vision

Inspired by output from community engagement and exploration of constraints and opportunities, the Vision for the DSP is:

> *Glen Iris is well known in the Bunbury Metropolitan Area, and beyond, as a place offering urban and country lifestyles; close to employment and close to nature; with a vibrant commercial centre, welcoming schools and connected neighbourhoods.*

John Boyle O'Reilly Park

Objectives

The principal objectives of *Liveable Neighbourhoods* (Western Australian Planning Commission, draft 2015) are equally relevant as the objectives for the Glen Iris DSP, as follows:

- *To achieve a sustainable urban structure that balances the provision of urban development through site-responsive design.*
- *To develop a coherent urban system of compact walkable neighbourhoods which cluster around activity centres capable of facilitating a broad range of land uses, employment and social opportunities.*
- *Provide a network of interconnected streets based on function within attractive, safe and pedestrian friendly streetscapes, which facilitates accessibility for all users to, within and between neighbourhoods and activity centres.*
- *Promote mixed use development and activity centres that optimise commercial opportunities, access to public transport and efficient street network connections.*
- *Plan for public open space that meets the recreational, social and health needs of existing and future communities.*
- *Ensure that water is protected and managed to maximise efficiency by incorporation of urban water management techniques into the urban design.*
- *Facilitate housing diversity, responsive built form, local employment and amenity within a coherent and efficient urban structure of compact walkable neighbourhoods.*
- *Provide education sites and other community infrastructure to meet the needs of existing and future communities.*

- *Provide utility services in a land-efficient, environmentally-responsible and sustainable manner.*

The DSP comprises this report and maps, which should be read in conjunction with the technical documents listed in Appendix A.

This report focusses on Stage One, which encompasses the existing urban area east of Vittoria Road and the land west of Vittoria Road which has an urgent need for a DSP.

Planning for Stage Two of the DSP should immediately follow the adoption of Stage One in order to address unresolved urban, industrial, commercial, movement system and environmental constraints and opportunities.

The structure plan map is shown in *Figure 2: Glen Iris District Structure Plan map* and a summary of the main land use statistics is shown in *Table 1: Structure Plan summary.*

Table 1 includes a summary of existing and projected totals for lot yield and population. The potential residential lot yield for the DSP Stage One is based on the following:

Low density:	R20	33 lots	(1.5Ha @R20)
Medium density:	R30-R60	1767 lots	(38.9Ha @R40)
Higher density:	R60+	650 lots	(9.8Ha @R60)
Total:	*2,450 lots*		

Allowing for one dwelling per lot and a household size of 2.4 persons per dwelling (Bunbury average at the 2016 Census) 2,450 lots equates to **5,880 people,** which would increase the resident population in the Stage One area to **8,650 people.**

Caution needs to be applied when referring to these projections as it will be landowner preferences and market demand at the time of subdivision that will ultimately determine the resulting lot yields. If a significant amount of development occurs at densities lower than those currently contemplated, then population numbers will proportionately reduce, and this could then affect the timing and roll-out of supporting infrastructure.

Potential lot yields and population projections will be further refined during the preparation of local structure plans.

Key elements

Key elements of the DSP include:

- Addressing existing traffic issues through rationalising and improving existing principal external connections and creating two additional primary regional road entries
- Providing for a network of internal roads, public transport transit routes and cycleways that facilitate internal and external connectivity and ease of way-finding
- Supporting the designated Neighbourhood Centre with opportunities for higher residential densities and mixed-use development within the surrounding area (walkable ped-shed)
- Facilitating opportunities for new residential development at a variety of densities
- Responding to updated flood modelling by setting aside low-lying areas for flood relief whilst recognising their potential recreational value to the local community as open space
- Increased dedicated open space including a neighbourhood sports ground and the conservation and enhancement of existing remnant vegetation and wetland features
- Identifying the potential for an additional government primary school site (co-located with the new neighbourhood sporting ground) to cater for the population increase.

Application

The DSP comes into effect on the date it is approved by the Western Australian Planning Commission (WAPC). It will then be given due regard in ongoing decision-making on land use and development and guide the preparation of subsequent structure plans.

Table 1: Structure Plan summary

ITEM	DATA
Total Area	592.7 Ha
Stage One	368.0 Ha
Stage Two	224.7 Ha

STAGE ONE – As Existing	
Residential Zoned Land:	
• Existing R2.5	2.1 Ha
• Existing R20	68.5 Ha
• Existing R30	2.5 Ha
• Existing R40	4.8 Ha
• Existing R80	1.8 Ha
• Existing Residential Mixed Use R80	2.4 Ha
• Total existing Residential	82.1 Ha
Existing dwellings (estimated) (1)	1,058
Existing population (estimated) (2)	2,751
Existing 'Urban Development' Zone (3)	78.4
Open Space	
• Existing Regional Open Space	34 Ha
• Existing Local POS (Unrestricted)	2 Ha
• Existing Local POS (Restricted)	4.5 Ha
Other:	
• Existing Floodway	22.2Ha
• Existing Conservation	2.7Ha
Education	
Number of High Schools	1
Number of Primary Schools (4)	4
Commercial	
• Service Commercial	6.2 Ha
• Neighbourhood Centre	1.8 Ha
• Service Station	0.8 Ha
• Total Commercial	8.8 Ha
Port Buffer	
Special Control Area (including Roadhouse)	24.2Ha

STAGE ONE – As Proposed (5)	
Additional Residential Land (6)	
• Low density (R20)	1.5 Ha
• Medium density (R30 – R60)	38.9 Ha
• Higher density ped-shed (R60)	9.8 Ha
• Total new Residential	50.2 Ha
• Total new and existing Residential	82.1 + 50.2 = 132.2Ha
• Additional dwellings – range (7)	2,000 – 3,300
• Projected additional dwellings (mid-range) (8)	2,450
• Total projected and existing dwellings	3,500
• Additional population – range (9)	4,750 – 7,850
• Projected additional population (mid-range)	5,900
• Total projected and existing population	8,650
Open Space Provision	
• Regional Open Space (no change)	32 Ha
• Overall Local POS provided	18.5 Ha
• Overall Local POS (Unrestricted) provision	5 Ha (8% = 10.6 Ha)
• Overall Local POS (Restricted) provision	13.5 Ha (2% = 2.9 Ha)
• Required Overall POS (Unrestricted) (10)	10.6 Ha
• Overall POS Shortfall (Unrestricted)	5.5 Ha
• Overall Shortfall Sports Space (11)	3.8 Ha
Other	
• Floodway (12)	30.8Ha
• Conservation (No Change)	2.7Ha
Education	
• Number of High Schools (no change)	1
• Number of Primary Schools (one additional)	5
Commercial	
• Overall Commercial (13)	7.8 Ha
Port Buffer	
Subject to further planning (no change)	24.2 Ha
STAGE TWO	
Subject to further planning	To be determined

(1) Adjusted from ABS Census 2016 to exclude housing outside the Stage One boundary
(2) Adjusted from ABS Census 2016 to exclude residents outside the Stage One boundary
(3) Area as designated within current City of Bunbury Local Planning Scheme No 8
(4) Includes K-12 Grace Christian School and site of former John Calvin Primary School
(5) Additional dwellings and population projections have been rounded to the nearest fifty
(6) Comprises the 'Urban Development' zoned land redesignated as Low density (2ha), Medium density (56.5 ha) and Higher density (13ha), less 25% (for POS contributions and service infrastructure) and less 3.5Ha for future Primary School
(7) Calculated at low density @R20, medium density @R30-R60, higher density @R60. Does not include further subdivision / intensification of existing developed lots. Range reflects variability provided within the medium density coding
(8) Using a mid-range lot yield based on medium density being developed at R40
(9) Reflects variability provided within the medium density coding
(10) Representing standard POS contribution (8% unrestricted) from combined areas of existing and proposed residential land
(11) Liveable Neighbourhoods 2015 recommends 6.5m² per resident (as an element of unrestricted public open space)
(12) In keeping with reserve boundary adjustments
(13) Reduced area of Service Commercial to accommodate new Forrest Highway access; excludes Roadhouse.

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PART ONE: IMPLEMENTATION

IMPLEMENTATION

1.1. District Structure Plan Area

This District Structure Plan (DSP) applies to the land area predominantly comprising the locality of Glen Iris in the City of Bunbury, principally bounded by:

- Forrest Highway in the north (together with an area generally in the Port of Bunbury Inner Harbour locality)
- Bunbury Port railway reserve in the east
- South Western Highway in the south
- Robertson Drive in the west

Incorporating an area of 592.7ha, the structure plan boundary is identified on the Structure Plan map (refer *Figure 2: Glen Iris District Structure Plan map*).

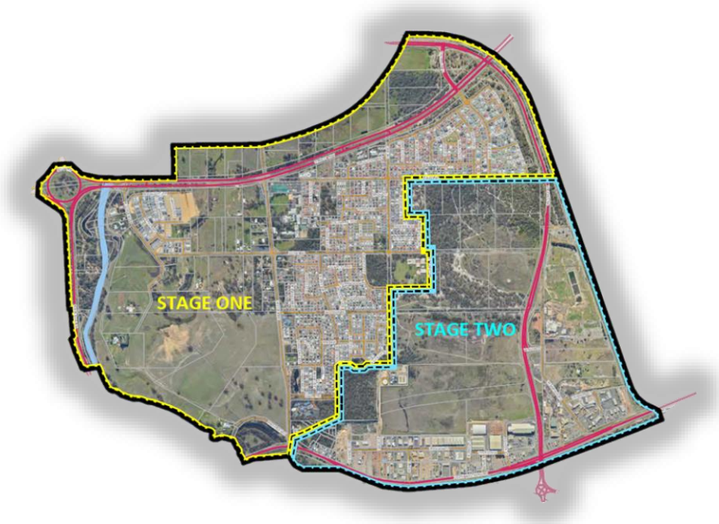
1.2. Operation

This DSP comes into effect on the date it is approved by the WAPC and will then be given due regard in ongoing decision-making on land use and development, including the preparation of amendments to the Greater Bunbury Region Scheme and Local Planning Scheme No. 8 (LPS8).

1.3. Staging

The DSP is being prepared and implemented in two principal stages (refer *Figure 1: Stage One and Stage Two*). The existing residential area of Glen Iris, together with the land in the west of the structure plan area, comprises Stage One. Stage Two comprising land in Glen Iris east and part of the Picton and Wimbridge industrial areas will be the subject of further planning prior to inclusion in the overall Glen Iris DSP.

Figure 1: Stage One and Stage Two



Apart from the above-mentioned Stage One and Stage Two, staging of the DSP will be determined by approval of local structure plans and related subdivision applications in response to landowner intentions and market demand.

1.4. Greater Bunbury Region Scheme

1.4.1. GBRS amendment

It is recommended that an amendment to the Greater Bunbury Region Scheme be initiated to reflect this DSP and capture the following:

- inclusion of additional 'Primary Regional Roads' reservations for the new northern link to Forrest Highway and the new western link to Robertson Drive
- rationalising existing 'Public Purposes – Special Uses' (flood relief) reservations and affected 'Urban' and 'Urban deferred' zones consistent with implementing the revised Glen Iris Floodway.

1.5. Local Planning Scheme No. 8

1.5.1. LPS8 amendment

It is recommended that an amendment(s) to the City of Bunbury LPS8 be initiated to reflect the intent of this DSP (where appropriate) and to ensure on-going consistency with amendments made to the GBRS.

Further amendments would follow the endorsement of local structure plans that will guide and inform the formal designation of local zones and reserves.

1.5.2. Special Control Areas

Together with other provisions of LPS8, subdivision, development and land use in the DSP area is subject to the following Special Control Areas (SCA) under Part 5 cl. 47 and Schedule 7 (Table 10) – Special Control Areas Table and identified on the scheme map:

- Development Areas
- Development Contribution Areas
- Bushland Areas
- Abattoir Notification Area
- Abattoir
- Bunbury Water Reserve

- Flood Prone Land
- Water Treatment Buffer.

1.6. Local structure plans

Prior to subdivision and development, local structure plans are required to be prepared and endorsed for the following areas:

- areas zoned 'Urban development' under LPS8
- the Special Control Area north of Forrest Highway

Prepared in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015* local structure plans will be used to guide orderly and proper planning. In supplementing information contained within this DSP the local structure plans will clarify/provide additional detail (as appropriate) in respect of:

- the extent of local zones and reserves including the layout of local access roads and classification of local POS (within a public open space schedule and accompanying plan)
- confirmation of residential densities (within the medium density range), with predicted lot yield and population forecasts
- integration of key transport and other infrastructure together with the submission of an accompanying traffic impact assessment (TIA) and local water management strategy (LWMS)
- bushfire management as appropriate
- boundary interface arrangements / treatment adjacent to Kalgulup Regional Park
- the proposed staging of subdivision.

1.7. Subdivision and development requirements

1.7.1. General provisions

Together with related local structure plans, this DSP provides the basis for zoning and subdivision of land and will be given due regard by the WAPC when determining applications within the DSP area.

The following subdivision and development requirements are to be implemented in conjunction with the DSP map:

1. Subdivision, development and land use are to be generally in accordance with this DSP.

2. Land required for new and widened Primary regional roads ('red roads') should be set aside as separate lots pending acquisition by Main Roads Western Australia.

3. No direct vehicle access to or from properties will be permitted to Forrest Highway and the proposed Primary Regional Road reservation extending approximately 175m south of Forrest Highway toward Jeffrey Road.

4. Provision of new public roads will be required to be ceded to the Crown as a condition of subdivision approval.

5. Preparation and approval of a Local Water Management Strategy (LWMS) will be required prior to the subdivision of land within the DSP Area. Such LWMS is to be prepared in accordance with *State Planning Policy No. 2.9 Water Resources* and the *Better Urban Water Management* (October 2008, as amended).

6. Preparation, approval and implementation of an Urban Water Management Plan will be required as a condition of subdivision approval.

7. All lots and development are to be connected to reticulated water supply and sewerage services.

8. All lots are required to be connected to the district drainage system at the subdivider's/developers' cost. Site stormwater overflow shall be connected to the City's stormwater drainage system in accordance with *Planning Policy - Connection to the City's Stormwater Drainage System*).

9. The Local Government may require an Integrated Open Space Plan (incorporating a Landscape Plan) as part of any application for subdivision. The Integrated Open Space Plan must incorporate statements detailing:

   (a) the intent and primary use (including any secondary or dual use) function of all proposed public open space areas

   (b) treatment strategies for each identified open space area

   (c) upon completion of the development of the public open space reserves, the subdivider/developer shall be required to maintain the reserve(s) for a period as determined by the Local Government, but which shall not be less than two years.

10. Subject to LPS the local government shall request a Landscape Plan as a condition of subdivision and prior to development, which shall address but is not limited to, the following matters:

    (a) interfaces between public open space and residential lots

    (b) integration with drainage features

    (c) layout and integration of pathway and cycleway networks

    (d) protection of remnant wetlands

    (e) measures for rehabilitation of native vegetation and natural drainage areas

    (f) vegetation management (e.g. control of weeds, retention of protected and significant flora, maintenance, etc)

    (g) water quality management (e.g. drainage sediment, erosion control, water quality, creation of drainage swales, attenuation basins and ephemeral habitat

    (h) best management practice standards for Water Sensitive Urban Design and Waterwise landscaping

    (j) bushfire hazard/risk management, if the land within or contiguous to the area is considered a bushfire hazard/risk by either the Local Government and/or the WAPC.

11. In areas required, an approved Bushfire Management Plan is to be implemented as a condition of subdivision approval.

1.7.2. Proposed land use and zonings

The proposed land use and zonings in the DSP area are to reflect those shown in *Figure 2: Glen Iris District Structure Plan map*, together with the following:

Residential land
Residential subdivision and development shall provide for a mix of densities – predominantly medium density (R30-R60), with higher densities particularly encouraged where these will overlook POS or are in close proximity (within the walkable ped-shed) of the Neighbourhood Centre.

Flood Relief and Open Space
The purpose of the area identified as flood relief on the structure plan map (Figure 2) is to maintain an overland flow path for 1% AEP riverine flood events to freely discharge through the Glen Iris locality in the event of a breach of the levees along the eastern side of the Preston River. This function will be protected by setting the land aside as a Regional Reservation, under the Greater Bunbury Region Scheme (GBRS).

Any management plan for the Regional Reservation will need to ensure the relief floodway, as identified in the GBRS Floodplain Management Policy (WAPC, 2017) and modelled to support the Glen Iris District Structure Plan, is protected from any development that could impede the movement of flood water. The Regional Reservation is expected to be designated as Regional Reserve 'Public Purposes-Special Uses', following amendment to the GBRS.

Importantly, the land proposed as public open space located immediately south of the area identified as flood relief, (shown as 'h' on the DSP map) is required to detain flood waters in the event of a breach of the levees along the eastern side of the Preston River. The development of this land can only be undertaken in a manner that does not reduce its ability to detain flood waters. Therefore, the landform may not be altered, unless supported by a flood study to demonstrate it does not increase the risk or impact from major river flooding on lives and properties. This area also contains a series of oxbow lakes, and it is envisaged that it could be enhanced to provide passive recreation encompassing social, aesthetic, environmental and drainage functions. It is not considered suitable for active open space or sporting facilities.

The designation of local parks and small parks (in accordance with *Liveable Neighbourhoods*) is to be appropriately addressed at the local structure planning stage.

Glen Iris activity centre
In the approved activity centre hierarchy (Table 2) in the *Activity Centres Policy for Greater Bunbury Policy*, Glen Iris is identified as a future Neighbourhood Centre. This activity centre is already appropriately zoned within the local planning scheme.

Located at the intersection of Vittoria Road and Jeffrey Road the as yet undeveloped Neighbourhood Centre is supported by areas zoned in LPS8 as 'Service Commercial' to the north and 'Mixed-Use Residential' to the south.

Port Buffer Special Control Area
A portion of the DSP located north of the Forrest Highway buffers operations associated with the Port of Bunbury

Inner Harbour. Currently designated as Rural Zone in the GBRS, the land is identified as an SCA within LPS8 and as such subject to further planning.

Under the DSP, the following provisions apply to this SCA:

1. Investigation and approval of suitable land use and development via an endorsed structure plan is to precede any rezoning, subdivision or development.

2. With the exception of the approved roadhouse (service station), no vehicle access is permitted from/onto Forrest Highway, Thomson Road or Willinge Drive.

1.8. Local development plans

In keeping with clause 47 of *the Planning and Development (Local Planning Schemes) Regulations 2015* a local development plan (LDP) may be required if:

a) the Commission has identified the preparation of a local development plan as a condition of approval of a plan of subdivision of the area

b) a local planning policy or structure plan requires a local development plan to be prepared for the area

c) another provision of the local planning scheme requires local development plan to be prepared for the area

d) the Commission and the local government consider that a local development plan is required for the purposes of orderly and proper planning.

1.9. Other requirements

1.9.1. Developer Contribution Schemes

A Development Contribution Scheme (DCS) may be required for areas designated as 'Urban Development' zones and/or 'Development Contribution Areas SCA' in LPS8 and subject to the additional provisions under Part 5 Cl. 47 Schedule 7 (Table 10) – Special Control Areas Table.

Under Part 4 Cl. 29 of LPS8, *State Planning Policy 3.6 Infrastructure Contributions* (WAPC, 2021) is to be read as part of the Scheme.

1.9.2. Acid Sulfate Soils

The occurrence of Moderate to High-Risk Acid Sulfate Soils within the structure plan area may necessitate the preparation and approval of an Acid Sulfate Soils Management Plan to be imposed as a condition of subdivision approval. Such a plan may be required to be submitted to, and approved by, the Department water and of Environmental Regulation (DWER) before any subdivision works or development are commenced.

1.10. Alternative outcomes

Consideration could be given to removing the need for the flood relief area, as identified on the Structure Plan Map as 'Public Purposes – Special Uses', through the filling of the land.

The filling of land would need to be designed to mitigate potential impacts from riverine and local catchment flooding, as well as ensuring current risks to existing developed areas are not increased. Any filling of the land would need to be undertaken in a manner that results in the existing flood levees along the eastern side of the Preston River no longer being required for flood management, for the entire reach up to the Forrest Highway.

In the event this option is pursued it will require further studies and modelling to be undertaken to the satisfaction of the WAPC/DWER/Water Corporation, prior to an amendment to this structure plan and the GBRS being undertaken.

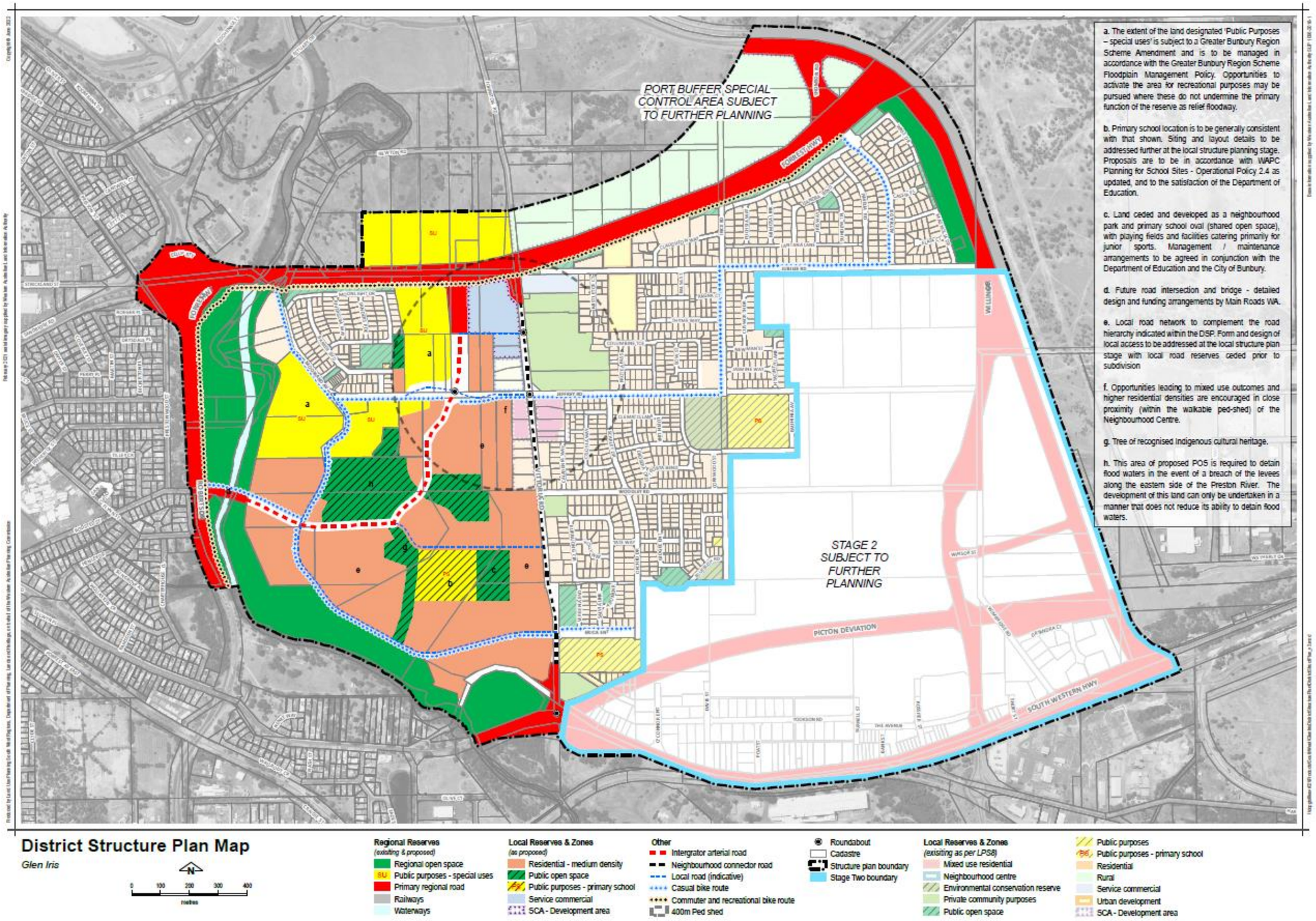


Figure 2: Glen Iris District Structure Plan Map

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PART TWO: EXPLANATORY REPORT

EXPLANATORY REPORT

2. Planning background

2.1. Introduction and purpose

The Glen Iris locality has had a number of local structure plans prepared over the years, each covering a portion of the overall area and often prepared at the initiative of land developers or owners of broadacre holdings. Whilst some have resulted in significant on-ground subdivision and development (e.g. the *Glen Iris Structure Plan 2010* covering the eastern central and north-eastern portion of Glen Iris, including '*Vittoria Heights*', and the *Moorlands Stage 1 Structure Plan* – '*Riverlea*'), around half of the locality has been subject to local structure plans that have made only limited progress and where changed circumstances have necessitated a renewed approach, or where no structure plan has been approved.

In recent years, it has also become apparent that there are a number of issues beyond the ability of any single local structure plan area to resolve – such as floodway relief for the Lower Preston River, traffic congestion at the intersection of Vittoria Road and Forrest Highway, and the overall provision of schools, sporting grounds and parkland.

Accordingly, the need was identified for a 'high-level' district structure plan (DSP) with a focus on the main structural elements necessary to address existing land use issues and to provide a vision and over-arching guide to development and management of the Glen Iris locality. Having established this overall direction, new and amended local structure plans will have a key role in establishing more comprehensive and detailed guidance for subdivision and development.

2.2. Methodology and engagement

In 2018, the City of Bunbury engaged *Maker & Co* and *Storybox Consulting* to undertake a community engagement process to identify and prioritise street-level improvements for Glen Iris.

The engagement process included a 'Glen Iris Street Meet' workshop, review of feedback provided to the Member for Bunbury Don Punch MLA and online engagement activity using the City of Bunbury's Social Pinpoint platform along with information provided through local newspapers, social media and advertising. The Bunbury Development Committee (BDC) led some of the engagement as a conduit between the community, Government agencies, the City of Bunbury and other stakeholders.

Glen Iris Street Meet December 2018 (photo courtesy Maker & Co and Storybox Consulting)

The engagement process resulted in formulation of the *Glen Iris Community Enhancement Action Plan* and a *Community Enhancement Action Plan* (2019). A number of local, detailed works and actions identified in those reports are either completed or ongoing, however they also demonstrated the need for a Glen Iris District Structure Plan (DSP) as a coordinated, over-arching plan for the whole of Glen Iris.

Consequently, in 2020, the BDC and the City of Bunbury in conjunction with *IPS Consulting* undertook further consultation including an open day, community forum, and Traditional Owner meetings. The resulting report *Outcomes from Glen Iris District Structure Plan* (IPS, 2020) is listed in ***Appendix A***.

Sharing information and ideas (photo courtesy IPS Consulting)

Emerging themes included:

- Need to address traffic calming and management, road safety issues, Vittoria Road/Forrest Highway intersection congestion and alternative road connections in and out of Glen Iris

- Enhancing community connection, including local schools as a community resource – public and private excellent facilities, opportunities for increased community engagement
- Space activation – converting under-utilised spaces into vibrant ones with good facilities, lighting and public artworks while increasing trees and shade
- Spaces for young people
- Need for improved management and maintenance of bushland and wetlands, including exclusion of trail bikes and 4WD vehicles while providing more walk and bike paths
- Desire for new playing fields and ovals
- Improved commercial and community facilities
- Bushfire management planning and implementation to avoid the type of fire impacts of recent years
- Interface with industrial uses in Glen Iris east / Wimbridge / Picton - amenity issues including odour and noise.

2.3. Vision and objectives

2.3.1. Vision

Inspired by output from community engagement and exploration of constraints and opportunities, the Vision for the DSP is:

Glen Iris is well known in the Bunbury Metropolitan Area, and beyond, as a place offering urban and country lifestyles; close to employment and close to nature; with a vibrant commercial centre, welcoming schools and connected neighbourhoods.

2.3.2. Objectives

The principal objectives of *Liveable Neighbourhoods* (WAPC, draft 2015) are equally relevant as the objectives for the Glen Iris DSP, as follows:

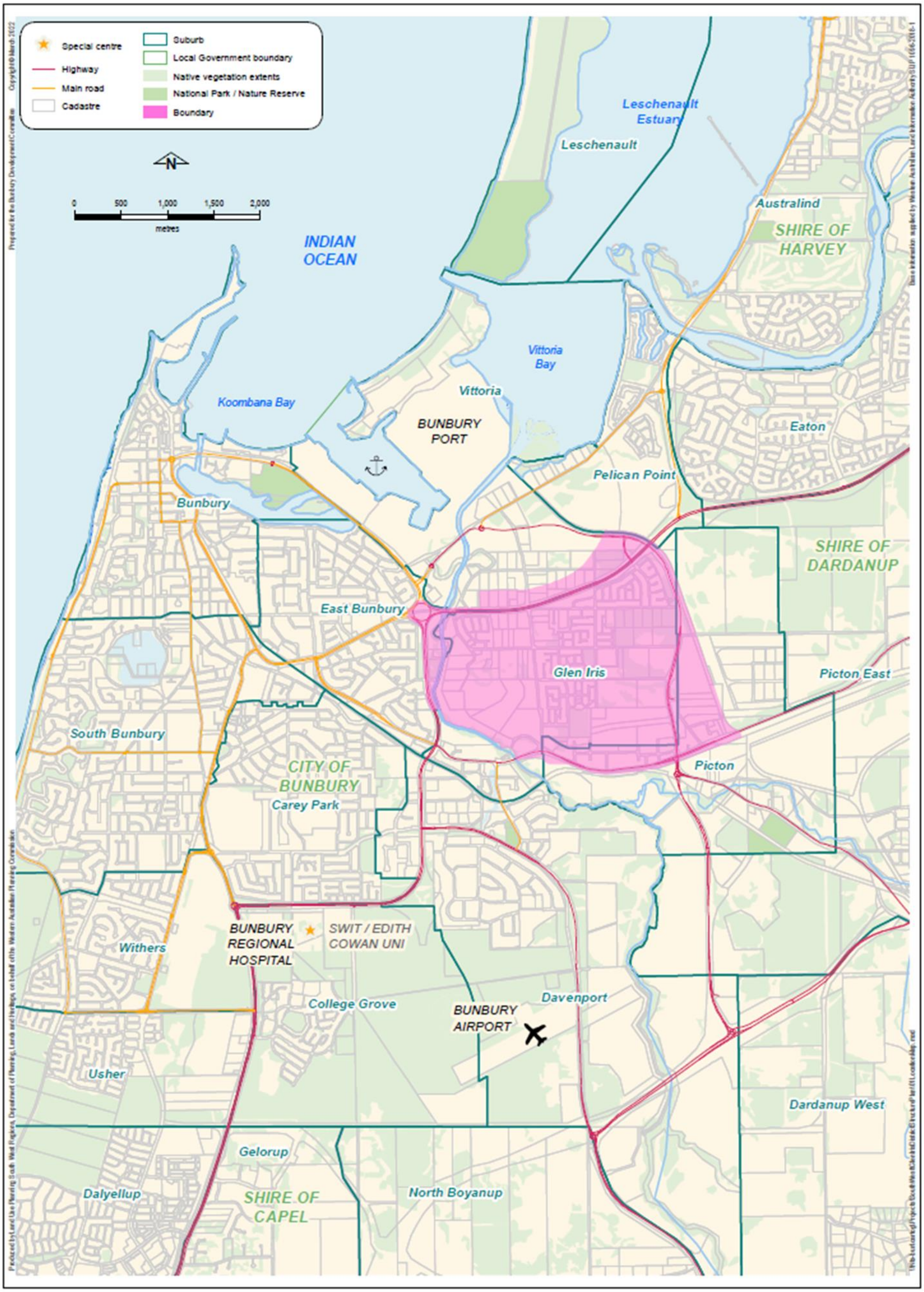
- *To achieve a sustainable urban structure that balances the provision of urban development through site-responsive design.*
- *To develop a coherent urban system of compact walkable neighbourhoods which cluster around activity centres capable of facilitating a broad range of land uses, employment and social opportunities.*
- *Provide a network of interconnected streets based on function within attractive, safe and pedestrian friendly streetscapes, which facilitates accessibility for all users to, within and between neighbourhoods and activity centres.*
- *Promote mixed use development and activity centres that optimise commercial opportunities, access to public transport and efficient street network connections.*
- *Plan for public open space that meets the recreational, social and health needs of existing and future communities.*
- *Ensure that water is protected and managed to maximise efficiency by incorporation of urban water management techniques into the urban design.*
- *Facilitate housing diversity, responsive built form, local employment and amenity within a coherent and efficient urban structure of compact walkable neighbourhoods.*
- *Provide education sites and other community infrastructure to meet the needs of existing and future communities.*
- *Provide utility services in a land-efficient, environmentally-responsible and sustainable manner.*

2.4. Land description

2.4.1. Location

Glen Iris is located approximately four kilometres south-east of the Bunbury CBD, with the Port of Bunbury Inner Harbour to the north, Picton East to the east, Picton to the south and East Bunbury to the west.

The DSP is generally bounded by the Forrest Highway, port access railway, the South Western Highway and Robertson Drive (refer *Map 1: Regional context map*).



Map 1 Regional Context

2.4.2. Area and land use

The DSP covers an area of 592.7ha of which Stage One comprises 368.0ha and Stage Two comprises 224.7ha.

Existing land use is made up of the residential areas of *Riverlea*, *Glen Iris* and *Vittoria Heights*; broadacre and small holdings properties in Glen Iris (west); a large area of remnant bushland, wetlands and cleared former farmland between the existing Glen Iris residential area and Willinge Drive; Picton industrial uses in the south; and industrial uses inclusive of an abattoir in the Wimbridge Road area in the south-east portion of the DSP area.

North of Forrest Highway is an area with predominantly cleared, former farming land, wetlands and several properties with substantial remnant vegetation. The Preston River skirts the south-western portion of the DSP area before flowing northward, bounded by levee banks, toward the Leschenault Estuary (refer ***Map 2: Aerial photograph***).

3. Planning framework

3.1. Greater Bunbury Region Scheme

The Greater Bunbury Region Scheme (GBRS) is the approved statutory region scheme that governs land use and development in the Bunbury Metropolitan Area, including the City of Bunbury. The regional zones and reserves under the GBRS are shown in ***Map 3: Greater Bunbury Region Scheme.*** West of Vittoria Road, it is apparent that the existing 'Public Purposes – Special Uses' and 'Urban Deferred' areas previously set aside for flood relief will require amendment to reflect updated flood modelling.

3.2. Local Planning Scheme No. 8

The City of Bunbury LPS8 is the approved statutory scheme controlling land use and development at the local government level. In common with other local government planning schemes where a region scheme exists, LPS8 includes GBRS reserves (refer ***Map 4: City of Bunbury Local Planning Scheme No. 8***).

LPS8 contains a number of SCA including 'Development Areas' SCA in which a structure plan or local development plan may be required in accordance with relevant provisions of the *Planning and Development (Local Planning Scheme) Regulations 2015* ('Regulations').

Other SCA relevant to the DSP include:

1. Development Contribution Areas the purpose of which is to designate areas requiring infrastructure servicing for the purposes of implementing arrangements for the fair and equitable apportionment of the costs of providing identified infrastructure)

2. Bushland Areas the purpose of which is to designate areas that are known or likely to include ecological assets, values or features of local, regional or state significance

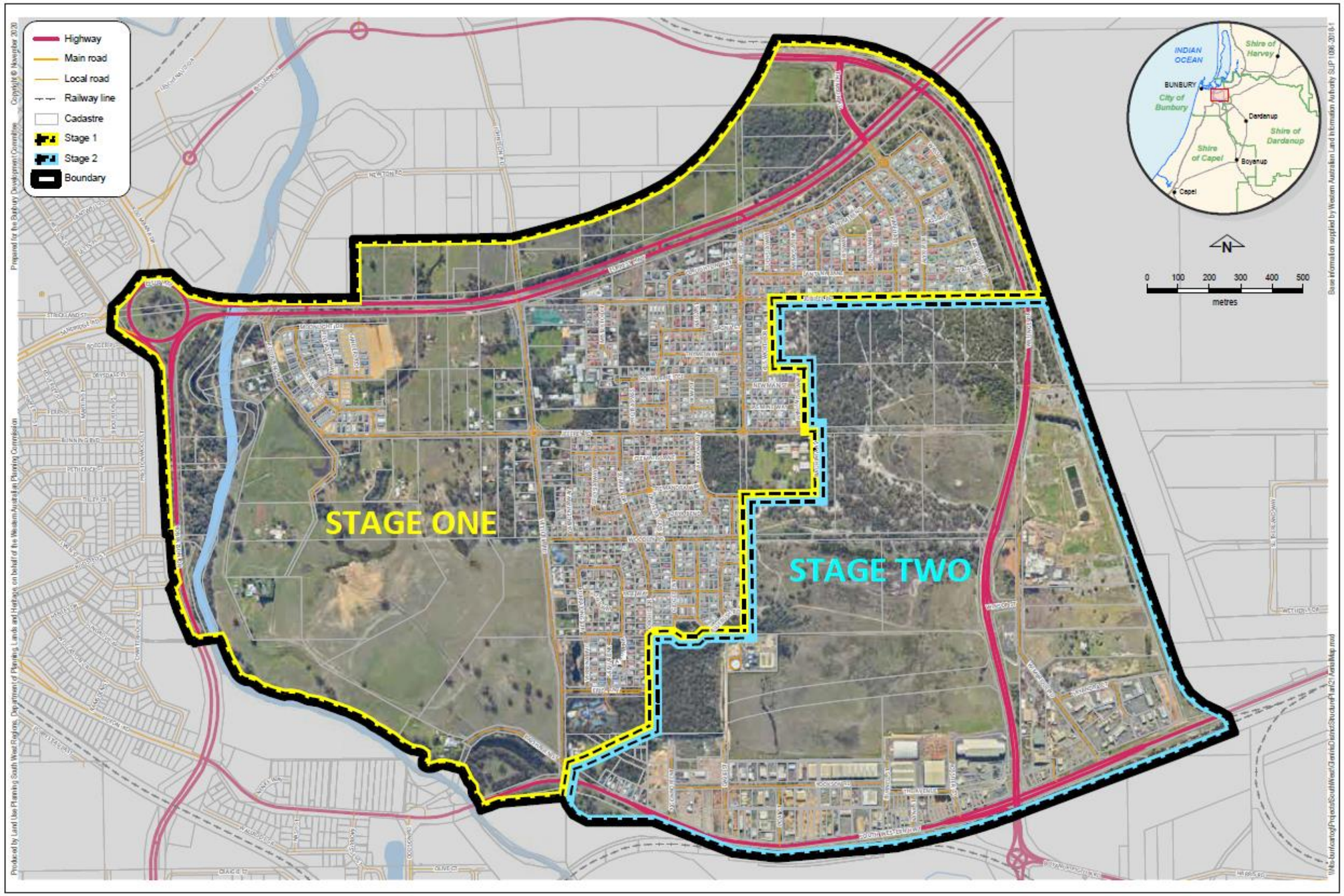
3. Abattoir Notification Area the purpose of which is to designate land where a notification will be required on titles the odour buffer area for land surrounding the abattoir)

4. Abattoir the purpose of which is designate land surrounding the abattoir where sensitive land uses will not be permitted

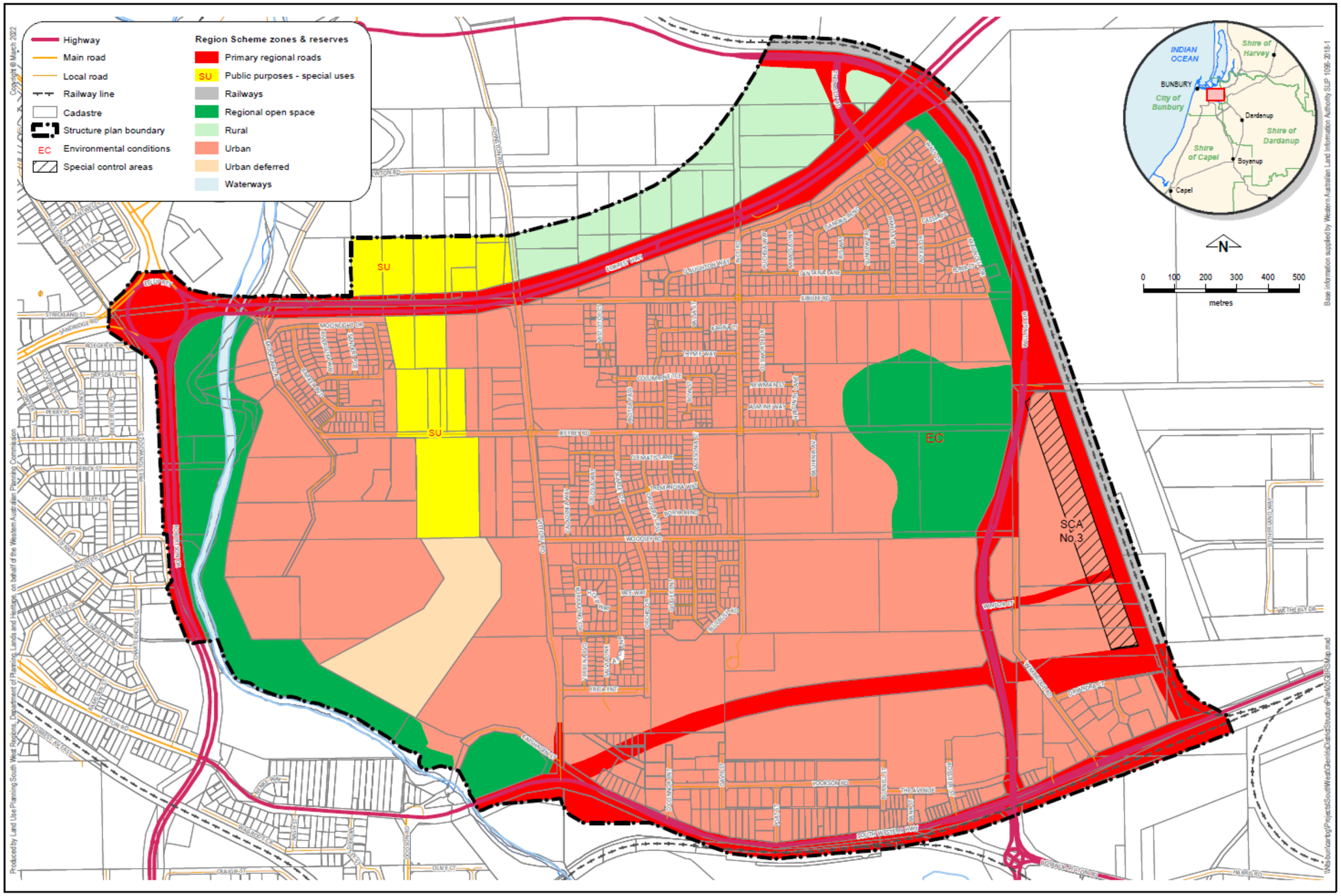
5. Bunbury Water Reserve the purpose of which is to identify the public drinking water source priority area and wellhead protection zones for the Bunbury Water Reserve in accordance with any relevant state planning policy or regional land use and water management strategy or drinking water source protection plan

6. Flood Prone Land the purpose of which is to minimise the potential for flood damage resulting from decisions relating to land use and development on defined river floodplains; and

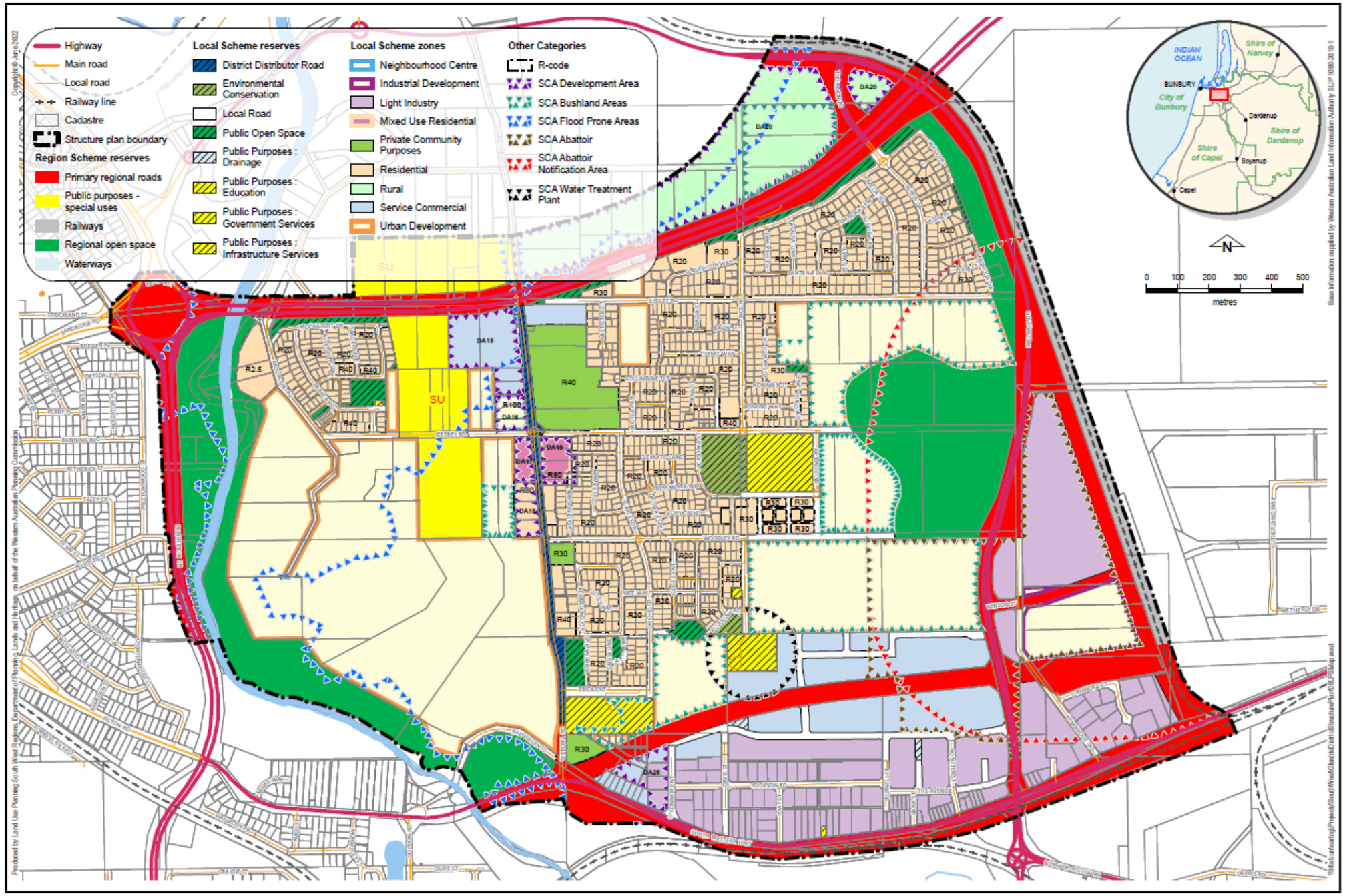
7. Water Treatment Buffer the purpose of which is to identify land within the 150 metre water treatment buffer area located around water treatment plants in accordance with the Environmental Protection Authority (EPA) *Guidance Statement No. 3 – Separation Distances Between Industrial and Sensitive Land Uses* (June 2005).



Map 2: Aerial Photograph



Map 3: Greater Bunbury Region Scheme



Map 4: City of Bunbury Local Planning Scheme No. 8

3.3. Deemed provisions

The Deemed Provisions within the *Planning and Development (Local Planning Schemes) Regulations 2015* apply to all local planning schemes in Western Australia. The Deemed Provisions are contained in Schedule 2 of the Regulations and apply irrespective of whether they have been formally incorporated into a local planning scheme.

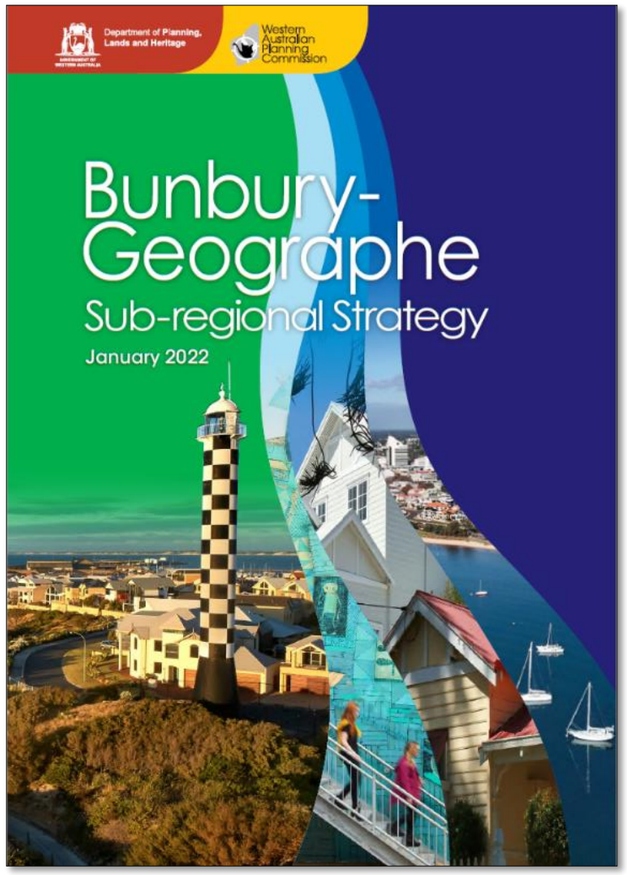
Amongst other provisions, the Deemed Provisions include Part 4 – Structure Plans which sets out matters such as when a structure plan may be prepared, advertising, submissions, determination by the WAPC, and the effect of an endorsed structure plan.

3.4. Sub-regional strategy

The *Bunbury-Geographe Sub-regional Strategy* (WAPC, January 2022) is the endorsed over-arching strategy for the sub-region. Its primary purpose is to plan and manage growth in the Bunbury-Geographe sub-region to the year 2050. It plans for significant growth to unlock the sub-region's vast potential.

Amongst the strategic directions, it provides for this significant growth by identifying the 'Bunbury Metropolitan Area' and reaffirming and promoting it as the State's second city.

The strategy plans for a 'step-change' in the magnitude of Bunbury-Geographe's population and economy. It provides for growth of the sub-region's population to 200,000 by identifying sufficient residential and employment land to cater for this target population. It also recognises the broader aspiration for a population of 300,000.



A number of the strategic directions and initiatives in the strategy translate to the Glen Iris DSP, including:

- Promotion of a consolidated urban form for the Bunbury Metropolitan Area through urban infill and increased residential densities around activity centres
- Supporting greenfield development in locations that have already been zoned or committed for residential purposes
- Encourage new developments, including those in infill areas, to be more waterwise and create climate resilient public open space, sporting grounds and recreational venues
- Preserve and enhance ecological linkages, including a presumption against further fragmentation of these linkages, in planning instruments
- Adopt a presumption against planning proposals within areas identified to be affected by coastal hazards and flooding
- Direct future urban growth to locations that are well serviced by existing infrastructure networks.

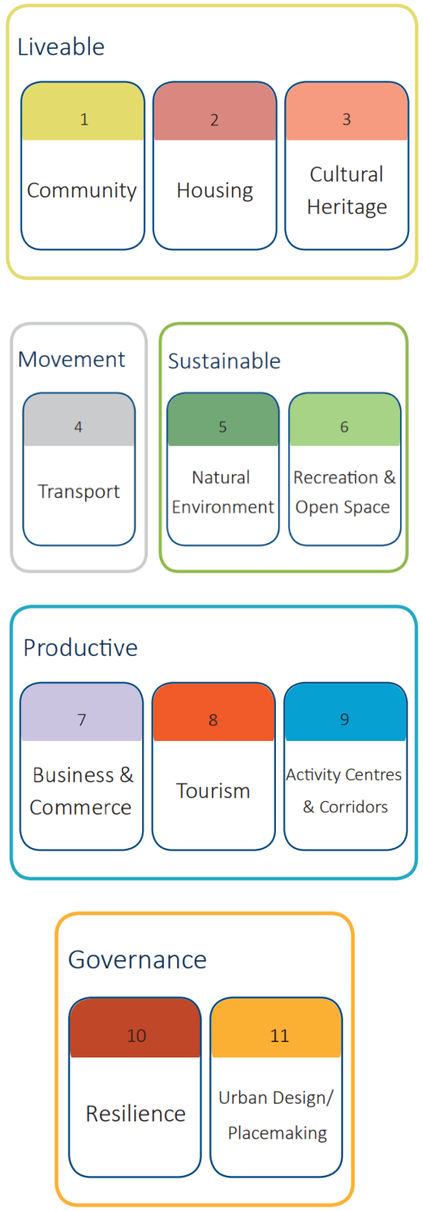
3.5. Local planning strategies

3.5.1. Local Planning Strategy

The *City of Bunbury Local Planning Strategy* (the Strategy) was adopted in 2018, together with gazettal of LPS8.

Together, these planning instruments guide the City framework for growth and decision-making for at least the following 10 years, or until they are reviewed.

The Strategy includes a City-wide Strategy and 11 land use planning themes, as follows:



Within the City-wide Strategy Map, Glen Iris is identified for substantial future urban areas, future Neighbourhood Centre, service commercial areas, mixed use areas, ecological linkages, conservation areas, bushland special control areas, lower impact and higher impact industrial areas (Wimbridge / Picton) and rural areas. The Strategy has helped frame the content of the Glen Iris DSP.

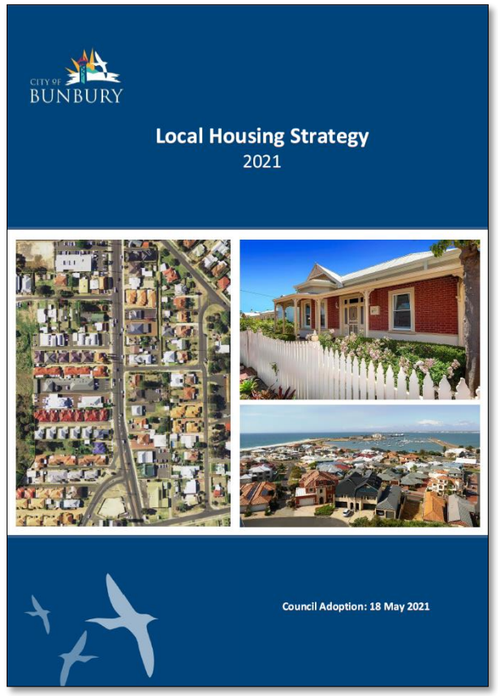
City-wide Strategy Map (extract)

3.5.2. Local Housing Strategy

The *City of Bunbury Local Housing Strategy* (2021) is a 15 to 20-year plan to guide the quantity, appropriate location, form and type of housing.

The Housing Strategy is important to Bunbury because:

- the Bunbury Metropolitan Area's population is expected to more than double to 200,000 people by 2050 and around 39,700 new homes will be required to accommodate this population growth
- the City of Bunbury will have a greater responsibility to maximise the housing opportunities and yields in all 'greyfield' and 'greenfield' sites and to support the vitality of the city centre
- housing affordability is recognised as a growing problem across the Bunbury Metropolitan Area
- the Bunbury community is changing, with less people living in each house and an ageing population (ABS 2016 Census), and
- there is a need for a mix of housing choices to suit the changing population.



The Housing Strategy indicates that the City's current housing stock does not match the projected smaller household size and will not provide an adequate range of

housing choices for future households. For example, 74% of the housing is in the form of single dwellings and 82% of the dwellings are larger with 3+ bedrooms, however over 30% of homes have only one person in them.

The Housing Strategy considers that a greater number of smaller dwellings will be required to meet the needs of smaller households and an aging population.

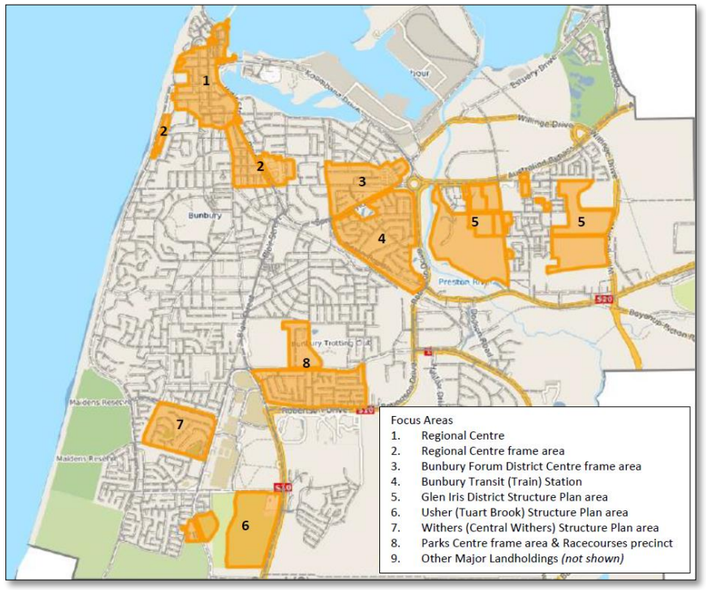
The Housing Strategy acknowledges that over time there will be some industry adaptation to high housing costs and that larger dwellings and dwellings will be utilised differently. For example, there is likely to be more home working, shared housing arrangements and more than one household per dwelling.

However, the Housing Strategy observes that such arrangements will not suit all households and given the significance of the projected mismatch, it is considered appropriate that an increase in the number of smaller dwellings types should be encouraged across the City, and in particular around activity centres, high amenity areas and along transit routes. This can be achieved through increases to residential densities in appropriate locations and seeking adequate higher residential yields in the new urban greenfield areas.

Facilitating a greater number of smaller dwellings will assist in providing options for residents and single person households (including seniors and people with disabilities) seeking to downsize or move to more appropriate housing, while staying in the local area.

The Housing Strategy establishes that, in terms of strategic direction, any additional new housing (to that already provided under existing residential zones) should largely be contained within nine (9) focus areas (refer ***Figure 3: Housing Focus Areas***).

Figure 3: Housing focus areas



The focus areas have been specifically identified recognising their proximity to activity centres and transit routes (and therefore opportunities to access employment, education, shopping, services and facilities), their redevelopment potential, or because the land is undeveloped. The objective of planning and reviewing these focus areas is to increase the number of residents and housing choices beyond that which is currently planned for.

Of the nine focus areas, one is within the Glen Iris DSP area identified as No. 5, broadly in two areas east and west of Vittoria Road.

The Housing Strategy advocates for a high-quality built form and more affordable and sustainable housing. It also builds on the Local Planning Strategy's direction to focus on creating walkable communities, around activity centres and quality open spaces.

It is also recognised that the City will need to incrementally improve the public realm and increase tree canopy cover in order to maintain and improve Bunbury as a desirable and liveable city, that complements its role as Western Australia's second city.

3.6. Local structure plans

To date, three local structure plans have been endorsed by the WAPC for the Glen Iris locality (refer ***Map 5: Endorsed local structure plans***).

Of these, the *Moorlands Structure Plan* (Stage 1) covers *Riverlea*, which is substantially developed.

The *Glen Iris Structure Plan* (August 2010) is partly implemented, however the previous absence of a DSP that addresses the more strategic constraints and opportunities has hampered many of its detailed proposals. Elements contained within that local structure plan, including proposed zones and reserves have since been captured and refined within LPS8 and as such some of the information it contains has been superseded. It is anticipated that this local structure plan may need to be reviewed following adoption of the DSP.

The *Wimbridge Precinct Structure Plan* endorsed by the WAPC in 2015 for the south-eastern portion of the Glen Iris DSP has experienced limited progress. It is generally agreed by landowners, the City of Bunbury, the DPLH and other stakeholders that review of planning for this area is required. Accordingly, this area forms part of Stage Two of the DSP and is subject to further planning prior to inclusion in a consolidated DSP.

3.7. State planning policies

There are a large number of WAPC policies relevant to the DSP, including the following State Planning Policies (SPP) which are high-order policies under the State Planning Framework:

- *SPP 2 Environment and Natural Resources (2003)*
- *SPP 2.9 Planning for Water (2021, draft)*
- *SPP 3.4 Natural Hazards and Disasters (2006)*
- *SPP 3.6 Infrastructure Contributions (2021)*
- *SPP 3.7 Planning in Bushfire Prone Areas (2015)*
- *SPP 4.1 State Industrial Interface (1997)*
- *SPP 4.2 Activity Centres (2020, draft)*
- *SPP 5.4 Road and Rail Noise (2019)*

In addition, the *Government Sewerage Policy 2019* is a whole-of-government policy that applies to the DSP.

The Greater Bunbury Region Scheme has several policies, of which the *Floodplain Management Policy 2017* is relevant to the Glen Iris DSP.

The City of Bunbury has a number of local planning policies relevant to the DSP and local structure plans, including the following:

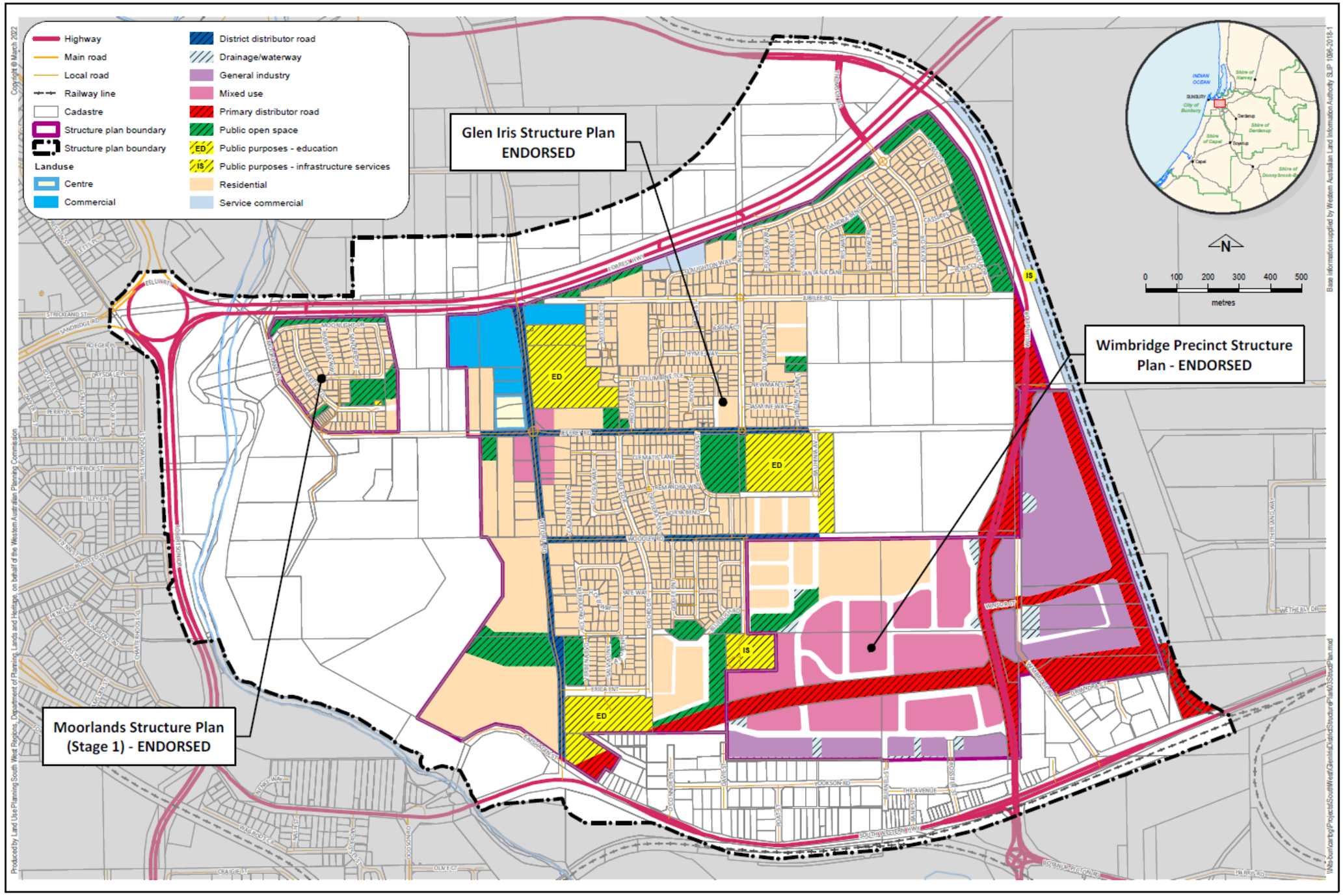
- *Development in Flood Affected Areas*
- *Development within 100m from the Toe of the Preston River*
- *Engineering requirements for Subdivision and Land Development*
- *Zone Development Requirements.*

3.8. Liveable Neighbourhoods

Liveable Neighbourhoods (2015, draft) is the WAPC's primary policy for the design and assessment of structure plans (regional, district and local) and subdivision for new urban areas (predominantly residential) on greenfield and large infill sites, including those within the Bunbury Metropolitan Area.

Liveable Neighbourhoods promotes an urban structure of walkable neighbourhoods. Community facilities and services are accessed by walking, cycling and public transport through an efficient, interconnected movement network. Employment opportunities and economic sustainability are facilitated through a coherent hierarchy of activity centres.

The *Liveable Neighbourhoods* policy is applied throughout State and local government planning decision-making in conjunction with state planning policies for the preparation and assessment of all structure plans, activity centre plans and relevant subdivision applications.



Map 5: Endorsed Local Structure Plans

3.9. Pre-lodgement consultation

3.9.1. Agency consultation

Pre-lodgement consultation during formulation of the draft DSP was carried out with members of the Technical Working Group, plus other State Government departments, agencies and entities, including the following:

- Bunbury Development Committee (BDC)
- Department of Planning Lands and Heritage (DPLH)
- South West Development Commission
- Main Roads Western Australia (MRWA)
- Public Transport Authority (PTA)
- Department of Water and Environmental Regulation (DWER)
- Department of Fire and Emergency Services (DFES)
- Development WA.

4. Site conditions and constraints

4.1. Biodiversity and natural area assets

4.1.1. Flora and vegetation

According to mapping of the Heddle Vegetation Complexes (Heddle et al 1980), the eastern portion of Glen Iris forms part of the Southern River (vegetation) Complex characterized by open woodland of E. calophylla (Marri), E. marginata (Jarrah), and Banksia spp. with fringing woodland of E. rudis (Flooded Gum) and M. rhaphiophylla along creek beds.

The western portion forms part of the Yoongarillup Complex characterised by Woodland to tall woodland of E. gomphocephala (Tuart) with Agonis flexuosa (Peppermint) in the second storey and less consistently an open forest of E. gomphocephala, E. marginata - and E. calophylla.

Much of the DSP area has previously been cleared for grazing, urban and industrial development and infrastructure. Nonetheless, there are extensive areas of remnant flora and vegetation, particularly associated with water courses and wetlands.

Ox-bow lake wetland south of Jeffrey Road

A Level 1 Flora Survey was undertaken of the South Moorlands area in March 2014 as part of the preparation of a *Wetland Management Plan* (Biodiverse Solutions, 2015). As this was not a spring survey, a targeted threatened flora survey was undertaken by Biodiverse Solutions in September 2015.

A total of 27 species were recorded from the survey area, of which 12 or 44% were native (15 weed species recorded). A total of four vegetation types were present on site, being:

- Eucalyptus Open Woodland
- Perennial Sedgeland
- Melaleuca preissianna Low Open Woodland
- Bare areas.

Generally, the higher slopes in South Moorlands supported bare areas with some isolated tree species of Eucalyptus gomphocephala and Corymbia calophylla, while the lower slopes supported perennial herbland/sedgelands and low open Melaleuca woodlands along the fringe of wetlands.

The vegetation condition for the South Moorlands area (as per the scale of Keighley (1994)) shows that fringing the remnant native vegetation along the wetlands there are varying degrees of degradation caused by exposure and weed invasion. This has led to the vegetation in core areas of the wetlands being assessed as “Good condition”. Most of the Conservation Category Wetland (CCW) sites were graded as “Good” or “Degraded”. Areas where minimal native vegetation cover existed were rated as “Completely degraded”. These areas had only some clumps of Juncus pallidus with many introduced grasses and weeds and was heavily accessed by cattle for grazing.

Biodiverse Solutions undertook a search of the Threatened (Declared Rare) Flora Database, WA Herbarium database and the Declared Rare Flora and Priority Species List by the Threatened Flora Database Officer in the Species and Communities Branch of Parks and Wildlife. The database search did not identify evidence of Priority Flora or Declared Rare Flora pursuant to Subsection 2 of Section 23F of the Wildlife Conservation Act 1950, in the South Moorlands survey area.

Environmental assets including significant flora, fauna and wetlands are shown in *Map 6: Environmental assets*.

4.1.2. Fauna

In 2014, *Biodiverse Solutions* undertook desktop and field survey analysis of fauna in the South Moorlands area. Opportunistic observations of fauna species were made during a survey of four vegetation units across the site. In addition, microhabitats such as logs, rocks, leaf litter and standing water were searched throughout the site, frogs were identified from their calls or through direct observation and bird species were identified from their calls or from visual identification through binoculars.

Targeted assessment was carried out for Calyptorhynchus banksii subsp. naso (Red-tailed Black Cockatoo), Calyptorhynchus latirostris (Carnaby's Cockatoo), Merops ornatus (Rainbow Bee-eater), Ardea modesta (Eastern Great Egret), Actitis hypoleucos (Common Sandpiper), Calidris ruficollis (Red-necked Stint), Tringa nebularia (Common Greenshank) and Isoodon obesulus subsp. fusciventer (Quenda).

Frog species likely to occur in the South Moorland survey area are typical of the Swan Coastal Plain including burrowing species such as the Moaning Frog (Heleioporus eyrie) that breed in wetlands but also use upland vegetation. There are no conservation significant frogs likely to occur in the subdivision area (Department of Environment, 2014).

No reptiles were observed during the *Biodiverse Solutions* survey although it was noted that areas of native vegetation that are in relatively good condition are likely to support a relatively intact reptile community.

No mammals were recorded during the survey and it was noted that parts of the survey area that are cleared, or that are very degraded, are unlikely to support significant populations of native mammals but may support introduced species such as the House Mouse (Mus musculus) and the Black Rat (Rattus rattus). However, those areas that are in relatively good condition may support some native species such as the Brushtail Possum (Trichosurus vulpecula) and the Honey Possum (Tarsipes rostratus).

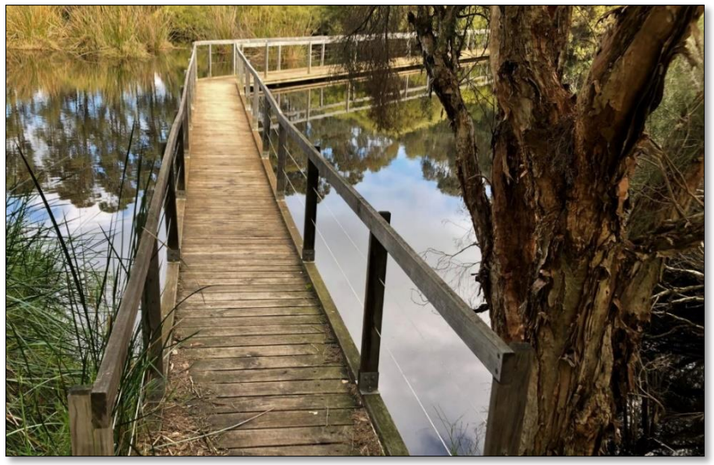
In the survey area there were minimal areas of 'Good' quality fauna habitat, mostly degraded habitat was identified during the site assessment. No areas of 'Very Good' fauna habitat were identified.

An assessment of Conservation Significant Fauna was undertaken that indicated 14 species that could possibly occur in the survey area, with low and moderate risks of occurring. Those species with a 'moderate' risk of occurring include the Forest Red-tailed Black Cockatoo, Baudin's Black-Cockatoo, Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo, Great Egret, White Egret and Cattle Egret.

The survey identified that the fox, feral European rabbit, feral or semi-domestic cats and at least one species of introduced rat are likely to occur within the survey area.

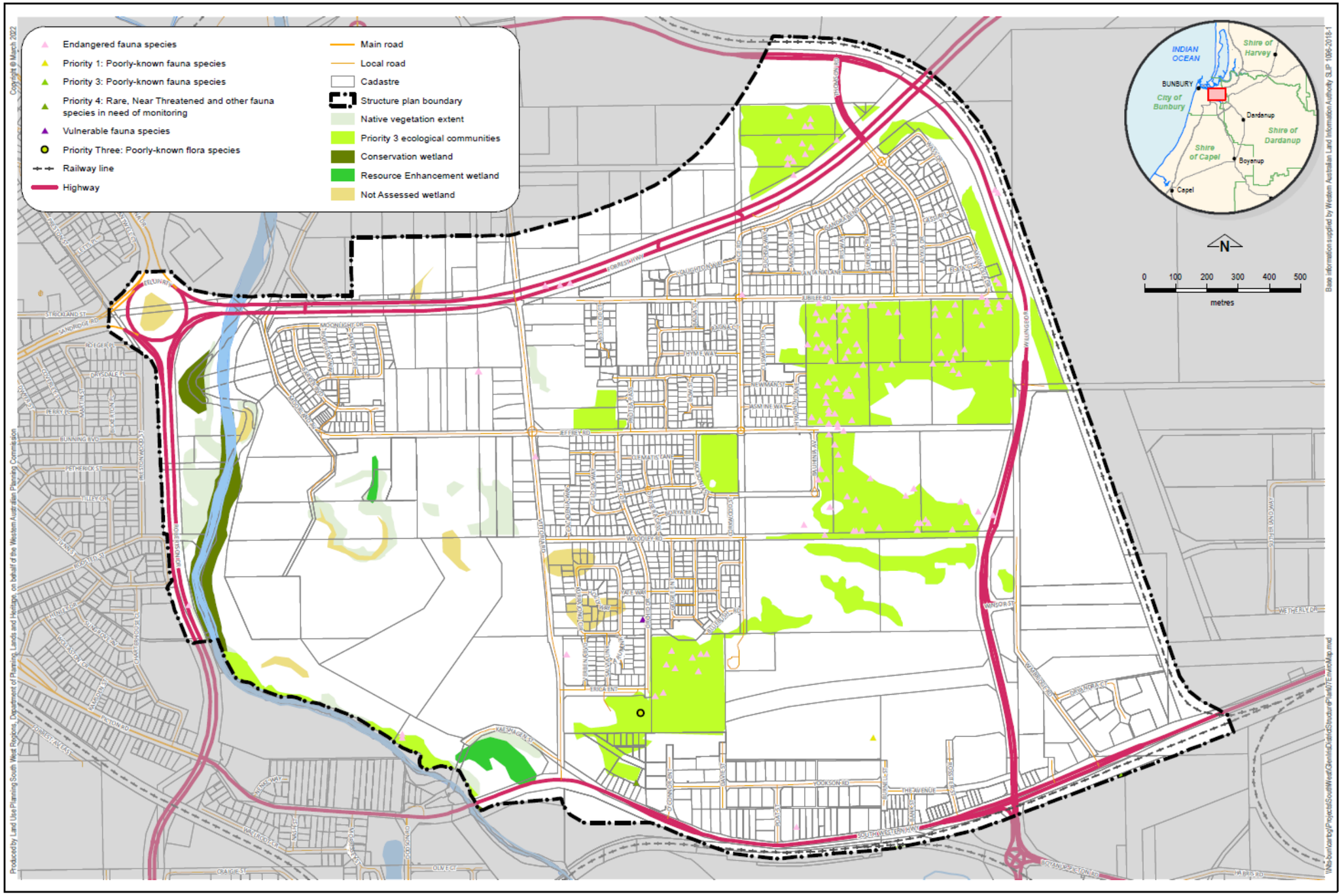
4.1.3. Environmental significance

Conservation Category Wetlands (CCW) are located within the Regional Open Space (ROS) along the western boundary of the project area – also in association with the Preston River. A Resource Enhancement Wetland (REW) is also located within the ROS to the south of Kaeshagen Street and a further REW is located within future POS to the south of Moorlands Avenue, also in the west of the project area.



Resource Enhancement Wetland

A large portion of the project area is mapped as a Multiple Use Wetland (MUW), including the majority of Glen Iris west as well as the wetland within Glen Iris east. A large portion of the Wimbridge Precinct Structure Plan is also identified as being an MUW. There are additional wetlands, primarily within the western portion of the project area that are mapped as not being assessed (including one of two ox-bow lakes).



Map 6: Environmental Assets

4.2. Landform and soils

Geological mapping (Bunbury 1:50,000 Geology Sheet) places the DSP area as being alluvial, sand derived from Tamala limestone and Guildford formation.

Hydrogeology Map Series (DoW 2001) places the area within the Phanerozoic time period, Qpgs: Guildford formation - alluvial sand. clay and gravel with minor estuarine and shallow marine lenses Sand member. Aquifer - Surficial aquifer - karstic or unconsolidated, extensive or local major to minor groundwater resources.

Soil landscape zones across the DSP area generally comprise Pinjarra Zone in the west and south-eastern areas, Perth Coastal Zone in the northern portion, and Bassendean Zone through the middle of the area extending from the south-western to the eastern DSP area boundary (refer ***Map 7: Soils and landform***).

A geological survey was undertaken by Douglas Partners in 2011 (*Report on Preliminary Geotechnical and Acid Sulphate Soil Investigation Proposed Subdivision Moorlands South, Bunbury,* Douglas Partners, August 2011) which found that the Moorlands South site was generally comprised of topsoil overlying sand. Silty and clayey soils considered to be recent alluvial deposits were encountered in the north west corner.

4.2.1. Topography

There is a low and undulating dunal ridge running south-west to north-east generally through the centre of the DSP area where the majority of existing urban development has taken place. To the north, south-east and the west, the land is predominantly flat or gently sloping.

4.2.2. Acid sulfate soils

Published acid sulfate soil risk mapping indicates that the majority of the DSP area is either moderate to low acid sulfate soil (ASS) risk, or high to moderate ASS risk (refer *Map 7: Landform and Soils*).

Having undertaken limited sampling of the Moorlands South area in 2011, Douglas Partners concluded that ASS are likely to be present within 3 m of natural soil surface, in particular, within areas of alluvium. It is highly likely that as part of subdivisional approval of areas of High to moderate ASS risk, the WAPC will impose a condition requiring investigation and management of ASS. Similarly, it is expected that local structure plans proposed for areas containing high to moderate ASS will investigate and plan for management of ASS.

4.3. Groundwater and surface water

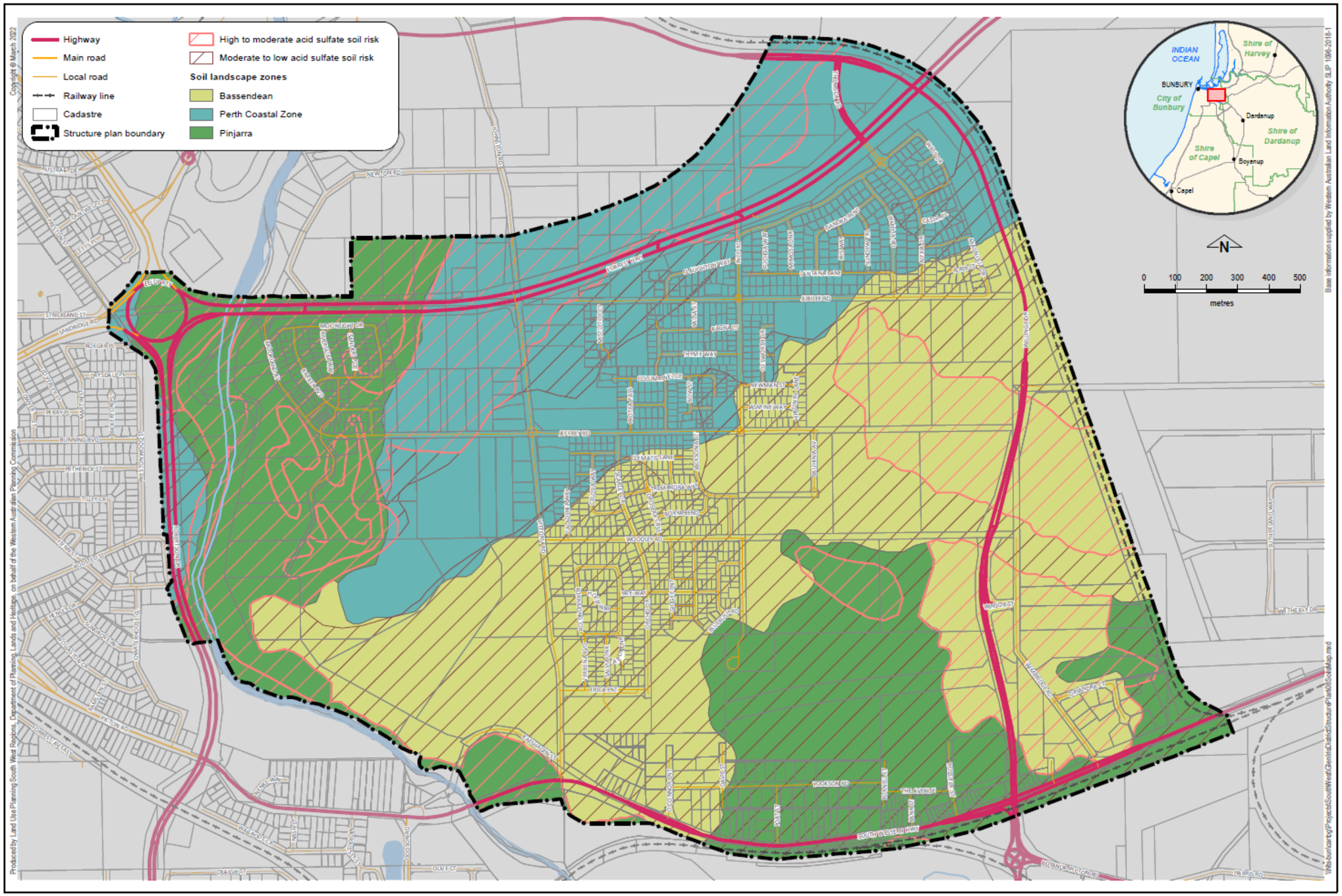
A District Water Management Strategy (DWMS) has not been prepared for the DSP, however there is published information available on groundwater and surface water, particularly in relation to flooding.

In 2016, a Local Water Management Strategy (LWMS) was prepared for South Moorlands (*Local Water Management Strategy,* MPM, 2016), together with a stormwater and groundwater management strategy (*Stormwater and Management Strategy*, Hyd20, 2015).

Groundwater flow is generally in a westerly direction across the site and is at its lowest in the north western portion of the site. The average annual maximum groundwater level (AAMGL) at the monitoring bores ranged from 1.01m AHD to 6.17m AHD, with the depth to groundwater varying from ponding at the surface to an approximate depth of 2.59m. (Hyd20, 2015)

Surface water includes the Preston River at the south-western and western edges of the DSP area. There are no direct surface water flows into the river, although there are some groundwater connections. There are a number of wetlands within the DSP area as surface expressions of groundwater, including ox-bow lakes.

Ox-bow lake wetland



Map 7: Soils and Landform

4.4. Flood hazard

The GBRS *Floodplain Management Policy 2017* addresses flood risk and management for the lower reaches of the Brunswick, Collie, Preston and Capel Rivers, Eedles Gully and the Leschenault Estuary. An extract of the Policy's Floodplain Management Policy Map affecting Glen Iris is shown in ***Map 8: Floodplain policy***.

The Policy was informed by various flood studies, modelling and mapping undertaken by DWER and others, including:

- *Preston River Flood Study (Leschenault Inlet to Picton Bridge* (Water Authority of WA, 1994)
- *Bunbury Flood Management Strategy* (SKM, 2004)
- *Preston River Flood Study* (SKM, 2012).

These investigations examined the potential flooding resulting from a 1 in 100-year flood event. Given that this translates to a 1% chance of such a flood occurring in any given year, it is possible for such an event to occur in consecutive years. Accordingly, 1 per cent AEP (Annual Exceedance Probability) is now commonly used, being a more accurate description.

From the southern side of Glen Iris upstream, the natural landform is generally higher than flood levels in a 1 % AEP event. However, downstream where the Preston River flows northward toward the Leschenault Estuary, the landform is generally lower making it more flood prone. For this reason, the former Public Works Department constructed a levee bank on the eastern side of the river (closer to the Eelup Rotary, the levee exists on either side of the river).

View across floodplain to existing levee bank

While the levee bank along the eastern side of the Preston River is intact, it provides flood protection to the adjacent low-lying areas of Glen Iris. However, the various flood studies have demonstrated the areas affected if the levee bank fails or is breached, causing the land behind to flood.

To help manage this risk, the ***Floodplain policy*** map (***Map 8***) identifies the following:

- Levee bank (coloured green)
- Levee bank 100m buffer zone (coloured purple - strip of land that would be prone to potential high velocity flood flows in the event of a breach of the levee bank)
- Floodplain (coloured yellow - land subject to inundation by floods up to and including the probable maximum flood event – that is, flood-prone land)
- Extent of 100-year AEP flooding (blue dashed line)
- Glen Iris relief floodway (coloured grey between Australind Bypass (now Forrest Highway) and Jeffrey Road, and south of Jeffrey Road annotated as *"Relief "Floodway south of Jeffrey Road to be determined by structure plans and local water management strategies)."*

In addition to the GBRS policy, the City of Bunbury's LPS8 sets out additional provisions applying to the Flood Prone Land Special Control Area (SCA), the purpose of which is:

> *To minimise the potential for flood damage resulting from decisions relating to land use and development on defined river floodplains.*

The objectives under this SCA are:

> *(a) To identify land within the Scheme area at risk of being affected by flooding consistent with the Greater Bunbury Region Scheme – Floodplain Management Policy*
>
> *(b) To assist in the protection of life, property and community infrastructure from flood hazard*
>
> *(c) To assist the natural flood carry capacity of floodplains by enduring any use or development maintains the free passage and temporary storage of flood waters*
>
> *(d) To protect water quality and waterways as natural resources in accordance with SPP No. 2 – Environment and Natural Resources Policy.*

In order to investigate the potential impacts that planned road changes under the DSP might have on flooding, Main Roads WA (Main Roads) undertook a planning and traffic

study for several possible ultimate road network layouts. A final road network option was selected for use in the DSP. Based on this, *Advisian* was engaged by Main Roads to complete a hydraulic modelling investigation to assess the road design options and identify the impacts on floodwater levels in Glen Iris.

The findings from the *Advisian* modelling are outlined in section 7.1.

4.5. Bushfire hazard

The DSP area contains land that is designated as bushfire prone on the Map of Bush Fire Prone Areas (DFES 2019) due to the presence of on-site bushfire hazards, as well as bushfire hazards that border the DSP area.

The identified bushfire prone areas represent remnant native vegetation in association with:

- Preston River foreshore area, along the western project area boundary
- various wetlands present within the predominantly cleared open pastureland areas in the central west of the project area
- land to the north of Forrest Highway within the Bunbury Port inner harbour precinct
- various vegetated parkland/POS areas within the residential area
- the large central wetland and remnant vegetation on Jubilee, Jeffrey and Woodley Roads within Stage Two of the DSP
- land external to the southern and eastern boundaries of the project area, where bushfire prone designation occurs as a result of a 100 m buffer to this vegetation.

A Bushfire Management Plan (BMP) has been prepared to inform and accompany the DSP (refer Appendix A: *Bushfire Management Plan* (Strategen-JBS&G, February 2022).

The BMP identifies the pre-development Bushfire Hazard Levels (BHL), including 'Extreme' BHL that largely reflect the above-mentioned bushfire prone areas (refer ***Map 9: Pre-Development Bushfire Hazard Levels***). As mentioned above, it is noteworthy that the largest areas of Extreme BHL are associated with remnant vegetation in Glen Iris east, which will need to be addressed in Stage Two of the DSP.

Indicative Bushfire Attack Level (BAL) Contour assessments have been prepared for existing (pre-development) conditions as well as anticipated future (post-development) conditions to identify any existing or future development areas that have potential to be subject to unacceptable levels of bushfire risk requiring further investigation at future planning stages (refer ***Map 10: Pre-development BAL Contour Plan***).

Strategen-JBS&G considers the bushfire hazards within and adjacent to project area and the associated bushfire risks are readily manageable through standard management responses outlined in the Guidelines and AS 3959. The BMP identifies how these responses are to be factored into proposed development as early as possible at all stages of the planning process to ensure a suitable, compliant and effective bushfire management outcome is achieved for protection of future life, property and environmental assets.

4.6. Heritage

4.6.1. Aboriginal heritage

Within the Glen Iris locality, there are several Registered Aboriginal Sites of heritage significance (refer ***Map 11: Heritage***).

Registered Aboriginal Site 4917 (Bunbury 06) is located at Lot 310 Vittoria Road. It comprises artefacts/scatter, skeletal material/burial and a cultural marker (large Marri tree) on a sandy rise. The proponents of the South Moorlands Structure Plan previously engaged ethnographic consultants to carry out an Aboriginal heritage survey of the area.

According to *Report of an Aboriginal Heritage Survey of Lots Associated with the Glen Iris – Moorlands Structure Plan, Bunbury, Western Australia* (Brad Goode & Associates, 2013), the large Marri tree located on the south-eastern side of ID 4917 Bunbury 06 (refer to photograph) has become the cultural symbol that now signifies and connects the contemporary Nyungar community to this landscape.

Registered Aboriginal Site 19795 signifies the Preston River adjacent the western and south-western part of the DSP. This is a mythological site of cultural significance that extends from the upper reaches of the Preston River to the Leschenault Estuary. It is noted that within the DSP and areas both upstream and downstream, the Preston River is contained within a Regional Open Space reservation under the GBRS, which helps protect the mythological values as well as the environmental values of Site 19795.

Photo courtesy Brad Goode and Associates

There are several other registered or lodged Aboriginal Heritage sites associated with the Preston River. Aboriginal Sites 4874 and 4868 are registered as heritage places with artefacts and scatters.

The proposed western link road from Glen Iris to Robertson Drive will involve crossing the Preston River. Although this elevated bridge will not impede the flow of water, consultation with the Gnaala Karla Booja Indigenous Land Use Agreement (ILUA) group should be undertaken early in the planning and design process for the proposed bridge.

Registered Aboriginal Site 4805 lies adjacent the Forrest Highway in the north-eastern area of Glen iris and comprises artefacts/scatter. Further consultation with the Gnaala Karla Booja ILUA group should be undertaken prior to future transport infrastructure or other works that may impact this Site.

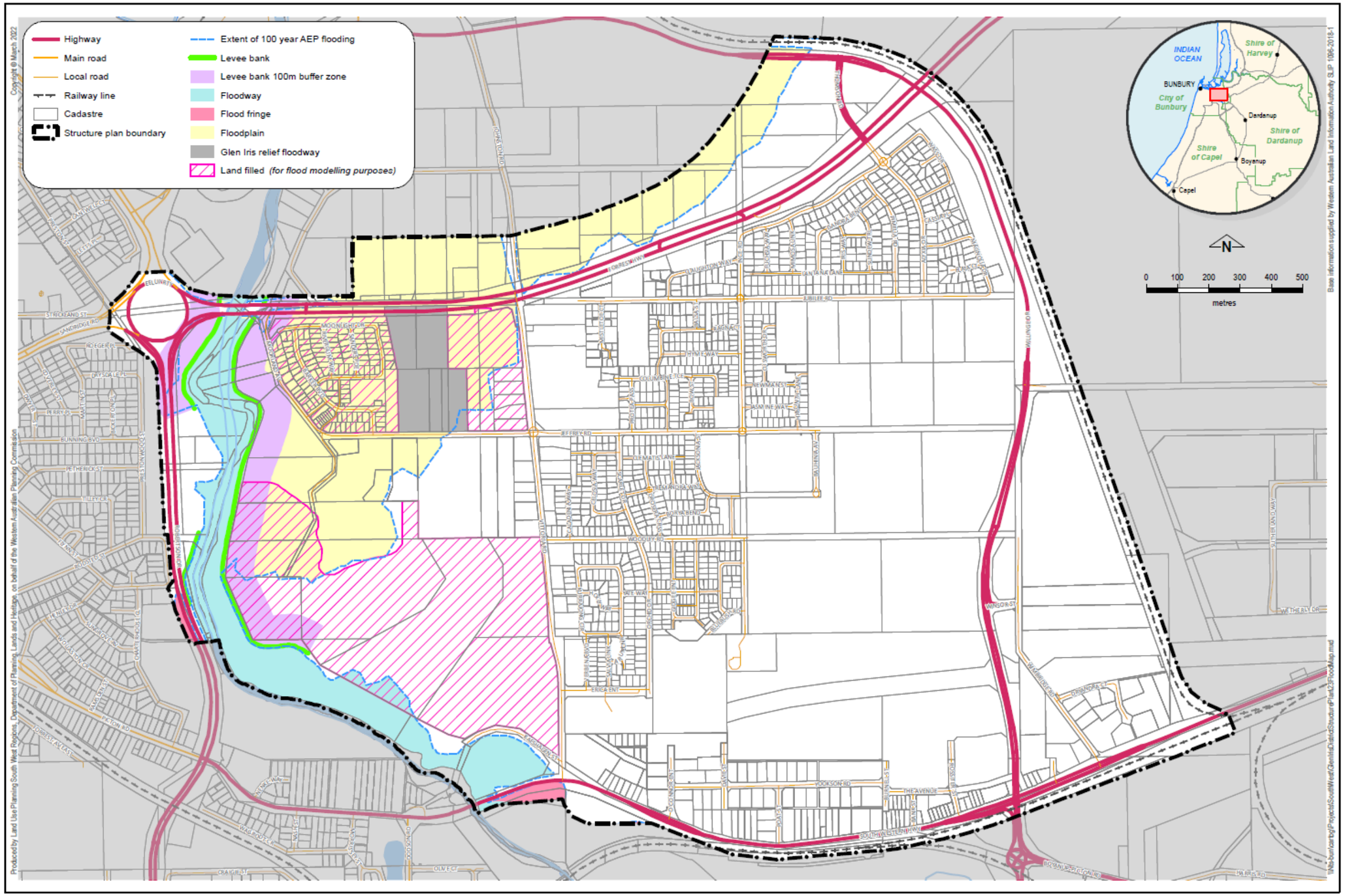
Site 4871 in south-east Glen Iris is a Lodged Aboriginal Heritage Site with artefacts/scatter. Nearby site 4872 in the Wimbridge Road area has stored data on artefacts /scatter but is not a registered site. Further investigation of heritage significance and consultation with the Gnaala Karla Booja ILUA group should be undertaken during planning for Stage Two of the DSP.

4.6.2. Non-Aboriginal heritage

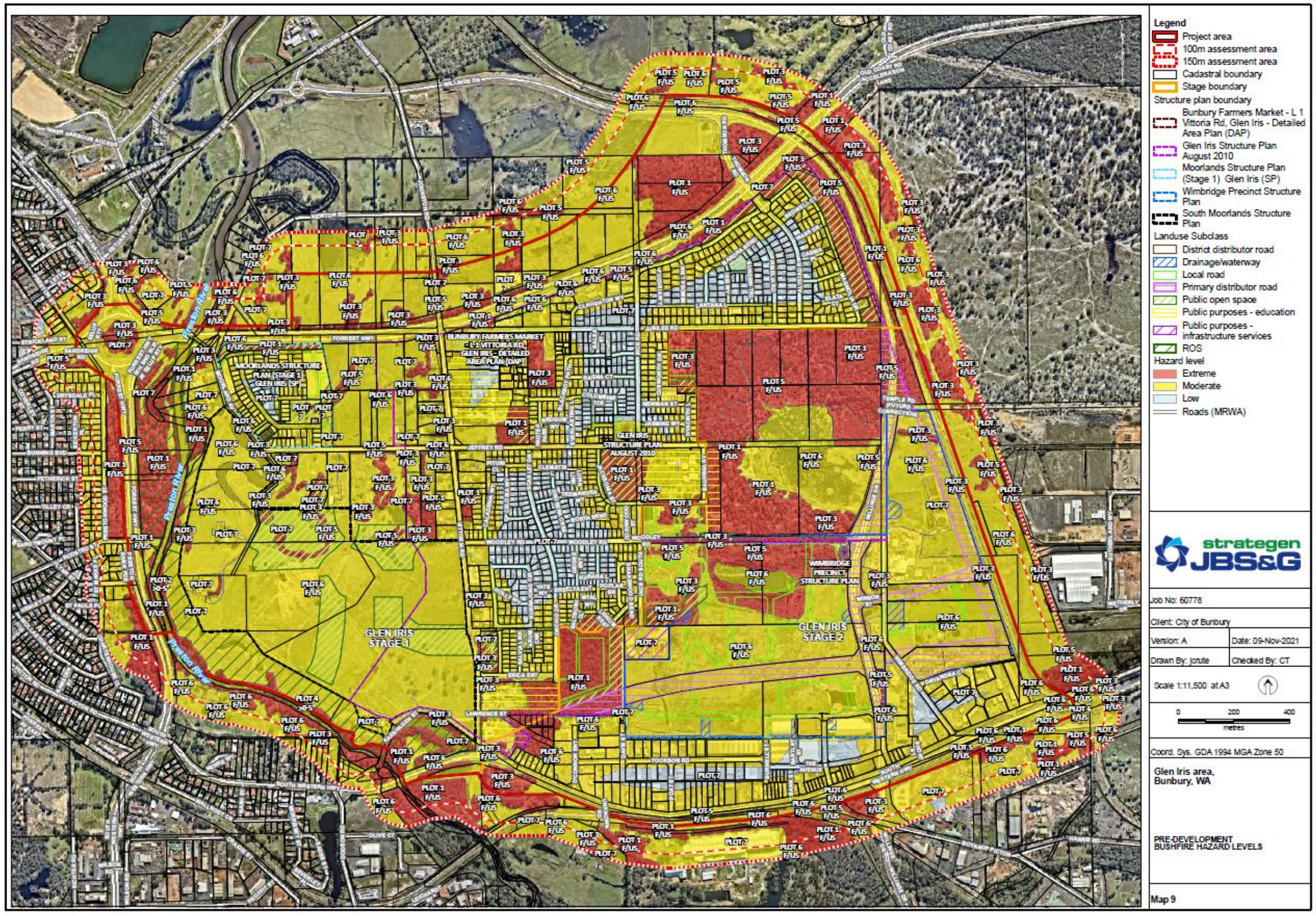
The City of Bunbury Local Government Heritage Survey is a list of places that the City considers to have, or may have in the future, cultural heritage significance. Although the inventory is adopted under LPS8, places and heritage areas listed do not have any legal protection but are given consideration in the day-to-day planning, management and development of the respective areas. Some of these places are also listed on the State Heritage Register or by the National Trust of Western Australia. The inventory includes a number of Aboriginal heritage sites but also a large number of non-Aboriginal heritage sites (also refer *Map 11: Heritage*).

- Site P6617 at the Eelup rotary is the site of the former Scott's farm *Eelup*
- Site P5654 is a former school house and barn at Moorlands farm, Moorlands Avenue. Today, it remains in use as a garden nursery
- Site P5677 generally opposite Flynn Street East Bunbury is the site of the former Moonlight Bridge adjacent to former bridge 5006
- Site P382 near Kaeshagen Street and the Preston River is the site of the former Picton Inn Hotel (also known as Lawrence's Wayside Inn, Morgan's Wayside Inn). Immediately adjacent is P5628 being Riversdale, formerly the Lewin family home at the end of Kaeshagen Street
- Site P15835 on Vittoria Avenue is the former Picton Public School No. 2, currently vacant
- Site P5688 on the southern side of the South Western Highway opposite the former Picton Primary School is the site of the First Picton School 1861-1882.

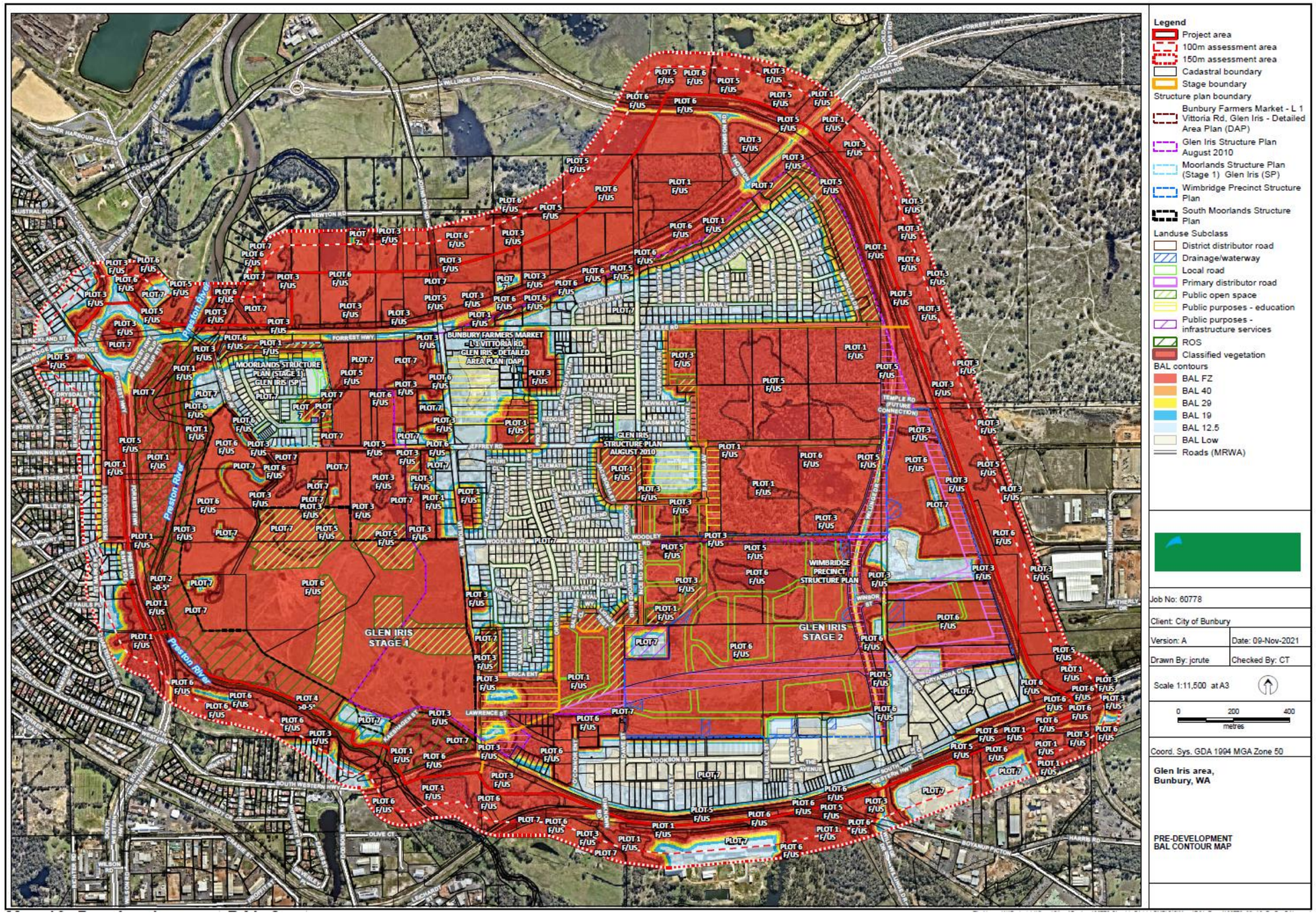
These sites have been taken into account in the formulation of the DSP (Stage One) and should be further considered at the local structure plan stage.



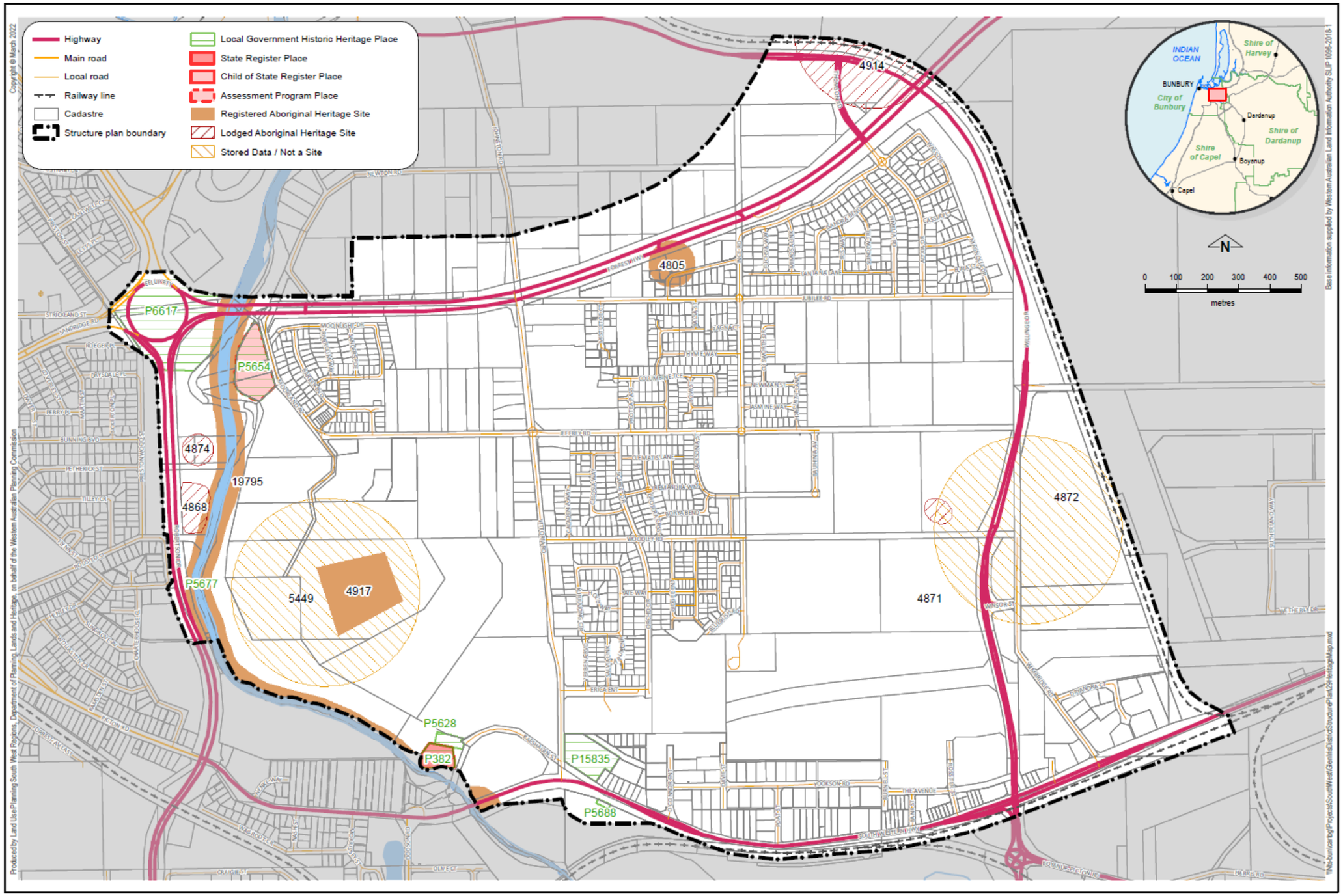
Map 8: Floodplain Policy



Map 9: Pre-development Bushfire Hazard Levels



Map 10: Pre-development BAL Contour Map



Map 11: Heritage

4.7. Foreshores

The western margins of the DSP contain foreshore areas of the Preston River. These are extensively reserved as Regional Open Space (ROS) under the GBRS (refer *Map 12: Existing Public and Regional Open Space*).

Although the extent of foreshore areas should be considered during preparation of local structure plans, it is not anticipated that any significant extension of foreshore areas will be required.

Portion of existing floodway on private property

5. Land use and subdivision

5.1. Urban structure

Liveable Neighbourhoods promotes an urban structure of walkable neighbourhoods where community facilities and services are accessed by walking, cycling and public transport through an efficient, interconnected movement network. Employment opportunities and economic sustainability are facilitated through a coherent hierarchy of activity centres.

The following design principles are adapted from those of *Liveable Neighbourhoods* most relevant to this higher-order DSP:

- Create a permeable street network that prioritises pedestrians, cyclists and public transport and is integrated with surrounding land use
- Ensure a movement network that facilitates safe and efficient access by all users
- Ensure urban form facilitates safe and convenient access to services, facilities and employment in mixed land use, 'main-street format' activity centres
- Provide housing density and diversity to meet the changing community needs
- Coordinate the design and delivery of an integrated network of public open space that provides communities with access to nature, sport and recreation
- Optimise the siting and design of public open space to promote accessible and efficient use of land
- Ensure that education sites are developable, serviceable and accessible
- Promote safe, adaptable and efficient use of land and other community infrastructure.

5.1.1. Neighbourhood activity centre

The Neighbourhood Centre is located on the west side of Vittoria Road at the junction with Jeffrey Road as shown within the *Figure 2: Glen Iris District Structure Plan map*.

This activity centre is appropriately zoned within LPS8 consistent with the hierarchy assigned to it within the *Activity Centres Policy for Greater Bunbury Policy* (WAPC, 2012).

Development of the neighbourhood centre has yet to materialise, noting however that a significant amount of retail related activity catering for residents and visitors alike already occurs within the immediate area.

5.1.2. Urban neighbourhoods

Urban neighbourhoods should generally contain medium to higher residential densities, especially in proximity to a recognised activity centre. Urban neighbourhoods are well suited to people seeking ready access to commercial, business and entertainment activities, hence are encouraged within a 400m radius ('ped-shed') of the Neighbourhood Centre.

5.1.3. Suburban neighbourhoods

Suburban neighbourhoods generally comprise residential areas of low to medium-density. Each should have its own identity drawn from localised natural and built form features and connections to history, culture and community.

A mix of lot sizes is encouraged, with medium densities focussed on locations with higher amenity, such as overlooking/close to parklands and schools.

5.1.4. Residential land and housing supply

An infill housing review undertaken for the *City of Bunbury Local Housing Strategy* (2021) found potential for 16,600 new dwellings within the City of Bunbury, of which approximately 5,400 can be accommodated in vacant infill and urban infill areas.

The Strategy found that new housing stock could comprise around 40% from greenfield land (undeveloped), 44% from urban infill / mixed use sites, and 16% from infill in the regional centre. About 2/3 of infill housing will be within the older inner suburbs of Bunbury, East Bunbury and South Bunbury. Glen Iris has a mix of older suburban housing on larger lots, new and near-new housing, and medium to large greenfield sites.

Table 2: Urban infill potential (by suburb)

Infill	Large Dev't Sites	Vacant Infill Sites	Urban Infill Sites	Mixed Use Infill Sites	Regional Centre	Total Dwellings
Bunbury	1,087	55	307	1,780	2,658	5,887 (35%)
East Bunbury	134	35	1,812	98	-	2,080 (12%)
South Bunbury	651	156	1,428	360	-	2,595 (16%)
Carey Park	772	29	1,008	-	-	1,809 (11%)
Withers	419	21	468	-	-	908 (5%)
Usher	1,142	11	14	-	-	1,167 (7%)
Glen Iris	1,996	51	25	-	-	2,072 (12%)
College Grove	30	-	1	-	-	31 (>1%)
Pelican Point	47	20				67 (>1%)
TOTAL DWELLINGS	6,278 (38%)	379 (2%)	5,063 (30%)	2,238 (13%)	2,658 (16%)	16,616 (100%)

Source: City of Bunbury Local Housing Strategy

Table 2: Urban infill potential (by suburb) is derived from the Strategy. It indicates that Glen Iris has potential for 2,072 dwellings comprising 1,996 dwellings on large development sites (7 lots and above), 51 dwellings on vacant infill sites (under 7 lot yield) and 25 dwellings on urban infill sites (lots with re-development potential based on R-coding, excluding the current dwelling). No Neighbourhood Centres or Local Centres were reviewed hence no Mixed-Use infill sites were included.

Variance between estimates included in the Housing Strategy and the projections provided within the DSP are explained through calculations being based on differing residential footprints and by the DSP introducing opportunities for new residential development to occur at higher densities than previously anticipated.

Facilitating development within the range of medium residential densities (R30 -R60) is consistent with recent strategic directions (as contemplated by the Bunbury Geographe Sub-regional Strategy) and is expected to assist in delivering:

- the intended 'step-change' in approach to growth within the Bunbury Metropolitan Area
- opportunities that facilitate greater diversity and availability in housing type, size and affordability
- more viable and efficient provision of utilities, community infrastructure and services.

Table 1: Structure Plan summary includes a summary of existing and estimated totals for lot yield and population that utilises the 'footprint' land areas in Figure 2. An assumption has been applied that deducts 25% of the 'footprint' area to allow for roads, local open space etc.

Residential land and potential yield estimates are apportioned as follows:

- Low density (R20) 33 lots
- Medium density (R40) 1767 lots
  (within R30 -R60 range of 1296 – 2692 lots)
- Higher density (R60) 650 lots
  Total: 2,450 lots

Allowing for one dwelling per lot and a household size of 2.4 persons per dwelling (Bunbury average at the 2016 Census) 2,450 lots projects to 5,900 people.

It is however difficult to predict future lot yields and forecast resulting population with great confidence. The calculated housing yields together with the resulting population projection represent only one potential outcome. Actual figures will depend on landowner preferences and market demand at the time of subdivision. While medium density in the range of R30-R60 is viewed as desirable (i.e. offering the opportunity to provide a broad range of housing stock and product type) there is no mechanism in place to ensure development occurs at such densities.

It is appropriate to acknowledge trends experienced in the ongoing development of the Riverlea estate (*Moorlands Stage 1 Structure Plan*) where Residential zoned land coded R40 has subsequently been developed at a much lower density. If this pattern was replicated in the areas identified for new residential development in the DSP it would result significantly reduced lot yields and a considerably lower resident population.

5.2. Parklands and open space

Feedback received during engagement with local residents identified a need to address the provision of parkland and the availability of quality public open space.

In 2012, the Department of Sport and Recreation prepared a classification framework for describing public open space known as the *Classification framework for public open space* (Department of Sport and Recreation, 2012). Public open space refers to urban green spaces, being parklands, play areas, playing fields, bushland, greenways and other similar spaces people use for recreation, sport and social interaction. The document was subsequently referred to in the *draft Liveable Neighbourhoods* (WAPC, 2015) and remains a contemporary guide to planning for open space.

5.2.1. Regional open space

Regional open space (ROS) may accommodate important recreation and organised sport spaces as well as significant conservation and/or environmental features. ROS may provide substantial facilities for organised sport, play, social interaction, relaxation and enjoyment of nature. ROS can assist to protect biodiversity conservation and environmental values through retention of bushland, wetlands, ocean and river foreshores and other natural features.

ROS areas are typically greater than 15ha and serve one or more geographical or social regions. They are likely to attract visitors from outside any one local government area. Users not living within close proximity will use either private vehicles or public transport systems.

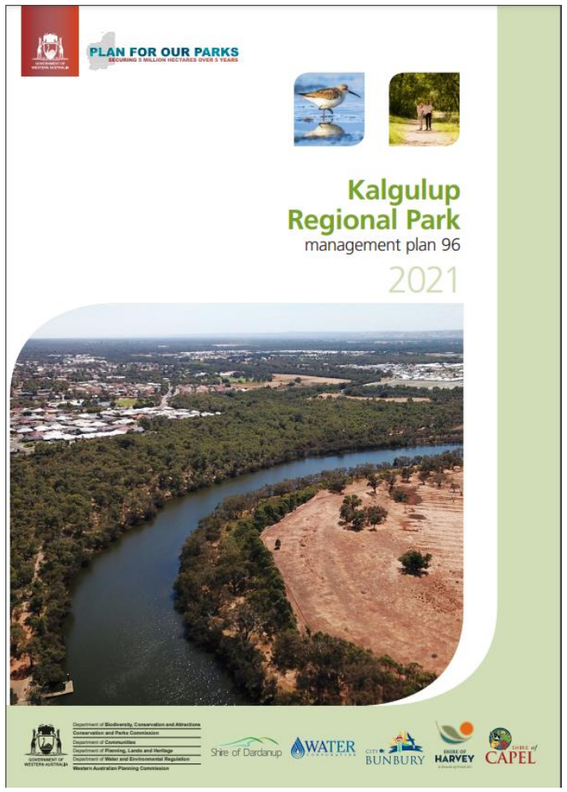
ROS is usually allocated outside the structure planning process by the WAPC in consultation with local government. Its location is usually determined by resource availability and opportunities to utilise and/or protect the space. It should be well connected to major road and public transport networks.

Existing ROS reserves in Glen Iris comprise foreshore areas either side of the Preston River, the remnant vegetation and wetland area in Glen Iris east and the buffer area between Vittoria Heights and Willinge Drive (Port Access Road).

The foreshore areas form part of the 'Preston River Link' within the Kalgulup Regional Park are identified for 'Natural Environment use'. The management of this park is guided by the Kalgulup Regional Park Management Plan (as gazetted in October 2021).

The planning and development of land adjacent to the Park should acknowledge its high recreational value and seek to complement opportunities for the enjoyment of nature-based activities. Boundary interface land use and treatment should be complementary and facilitate good access to the Park. Such matters are to be reviewed and addressed at the local structure plan stage.

While no additional areas of ROS are proposed in Stage One the extent and future recreational use of ROS (in conjunction with the provision of district playing fields) will be an important element to be reviewed within Stage Two.



5.2.2. Recreational use of 'floodway'

Flood modelling has demonstrated that a significant amount of land adjacent to the Preston River needs to be designated for the purpose of flood relief. Any new works and activities on that land are to be strictly limited to those that do not undermine the required flood relief function. This means that any changes to existing ground level or topography (without further flood modelling occurring) would not be allowed, nor any new structures introduced (natural or built) that may negatively impact the collection or flow of flood waters.

Within such confines there remains the opportunity to explore the use of the land for (passive) recreation as a secondary function.

5.2.3. Public open space

Existing POS in Glen Iris essentially comprises:

- native bushland areas and wetlands (e.g. Catalpa Park near Picton Primary School and John Boyle O'Reilly Park near Djidi Djidi Primary School)
- turfed local parks with a playground (e.g. Riverlea)
- landscaped buffer areas with associated noise walls or bunds adjacent Forrest Highway
- skate park (located in John Boyle John Boyle O'Reilly Park).

Although the amount of land reserved as public open space within the Stage One area appears plentiful, analysis confirms a significant under-provision of dedicated active/sports open space.

Skate board facility at John Boyle O'Reilly Park

Liveable Neighbourhoods (2015) Element 5 guides the provision of open space in keeping with a standard that essentially requires 10% of a subdivisible residential area to be allocated as POS, part of which may be accepted as a cash-in lieu payment in appropriate circumstances. The guidance identifies that certain areas that have value as POS but do not primarily perform a recreational function (such as resource enhancement wetlands and buffers to environmentally sensitive areas) are to be regarded as 'restricted' open space, and consequently limited to contributing a maximum of 2% of their land area towards meeting the standard requirement. Accordingly there is an expectation that at least 8% is provided as 'unrestricted open space', ideally comprising a mix of recreation spaces (such as playgrounds), nature spaces and sports spaces.

In planning for the provision of sport a standard of approximately 6.5m^2 active playing surface per resident is used as a guide by *Liveable Neighbourhoods*, with facilities preferably accommodated within a regional or district park.

In terms of Glen Iris, whereas approximately 6.5Ha of Stage One is currently reserved as local POS almost 75% (4.5Ha) of this land is 'restricted', meaning that its recreational value is limited given that it largely fulfils another purpose, such as drainage or as an environmental buffer. Of the remaining 2ha that may be considered functional 'unrestricted' open space none is designed or suitable for playing fields /conducting active sports.

Riverlea playground

Stage One of the DSP proposes an additional 12Ha of local POS, much of which will be ceded and reserved through the sub-division of land associated with new residential development. Of this amount, approximately 75% (9Ha) is considered 'restricted', being primarily associated with a flood relief or other drainage function. The remaining 3Ha of 'unrestricted' open space includes provision of around 1.75Ha as dedicated active/sports open space.

Functioning as a neighbourhood park, this active open space is intended to be developed as a playing fields/sports oval located alongside and shared with the anticipated new primary school. It is possible for the neighbourhood park to be developed in advance of the school, with future dual – use arrangements subsequently discussed and agreed with the Department of Education at the appropriate time.

Around 6Ha of the proposed POS regarded as 'restricted' falls within land required for flood relief and includes a large oxbow lake and wetlands. While holding value in terms of visual and environmental amenity the area is unsuitable for active recreation. Further, the introduction of facilities to support any passive pursuits would be limited to those that would not undermine the primary flood relief function.

Although the amount of land classified as 'unrestricted' open space will increase following implementation of the DSP, post development provision within Stage One will still fall short of the standards recommended in *Liveable Neighbourhoods*.

Taking 8% of the entire (existing and proposed) subdivisible residential area it is estimated that there would remain a shortfall of around 5.5Ha in provision of functional 'unrestricted' open space, of which 3.5Ha - 4Ha should be provided as active/sports space, and ideally accommodated within a district park.

Acknowledging the limited amount of suitable land available for use as active sports space within Stage One expectations are likely to increase for such provision to be accommodated within the planning and development of Stage Two.

There are substantial areas of wetland and remnant vegetation in the eastern part of Glen Iris – not all of which is ROS. Although some of this is in a partly degraded state, with suitable rehabilitation and management to conserve and enhance environmental values, some of these areas would be suited to accommodating a district level park with opportunities for both active and passive recreation.

This matter is identified for investigation in the preparation of Stage Two of the DSP.

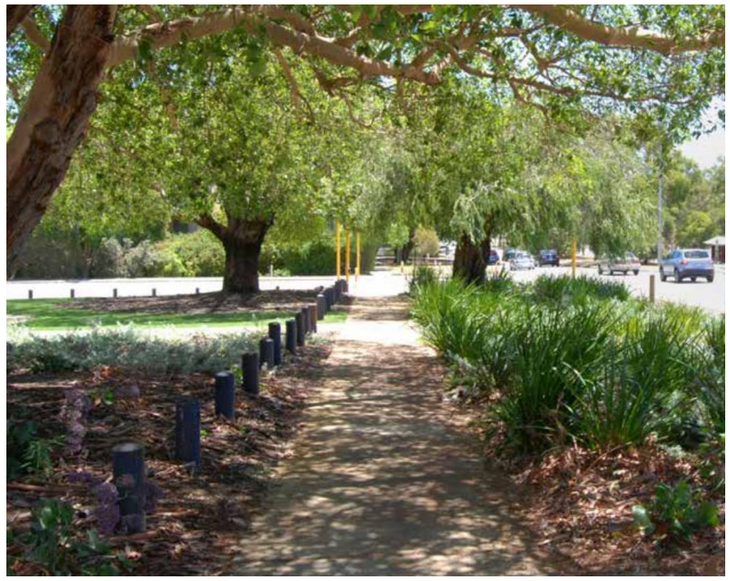
In Stage One the designation of small parks and local parks is more appropriately addressed at the local structure planning stage. The provision of all parks (with confirmation of their classification and function) is expected to be identified at that stage within a public open space schedule and accompanying plan prepared in accordance with *Liveable Neighbourhoods*.

5.2.4. Parkland linkages

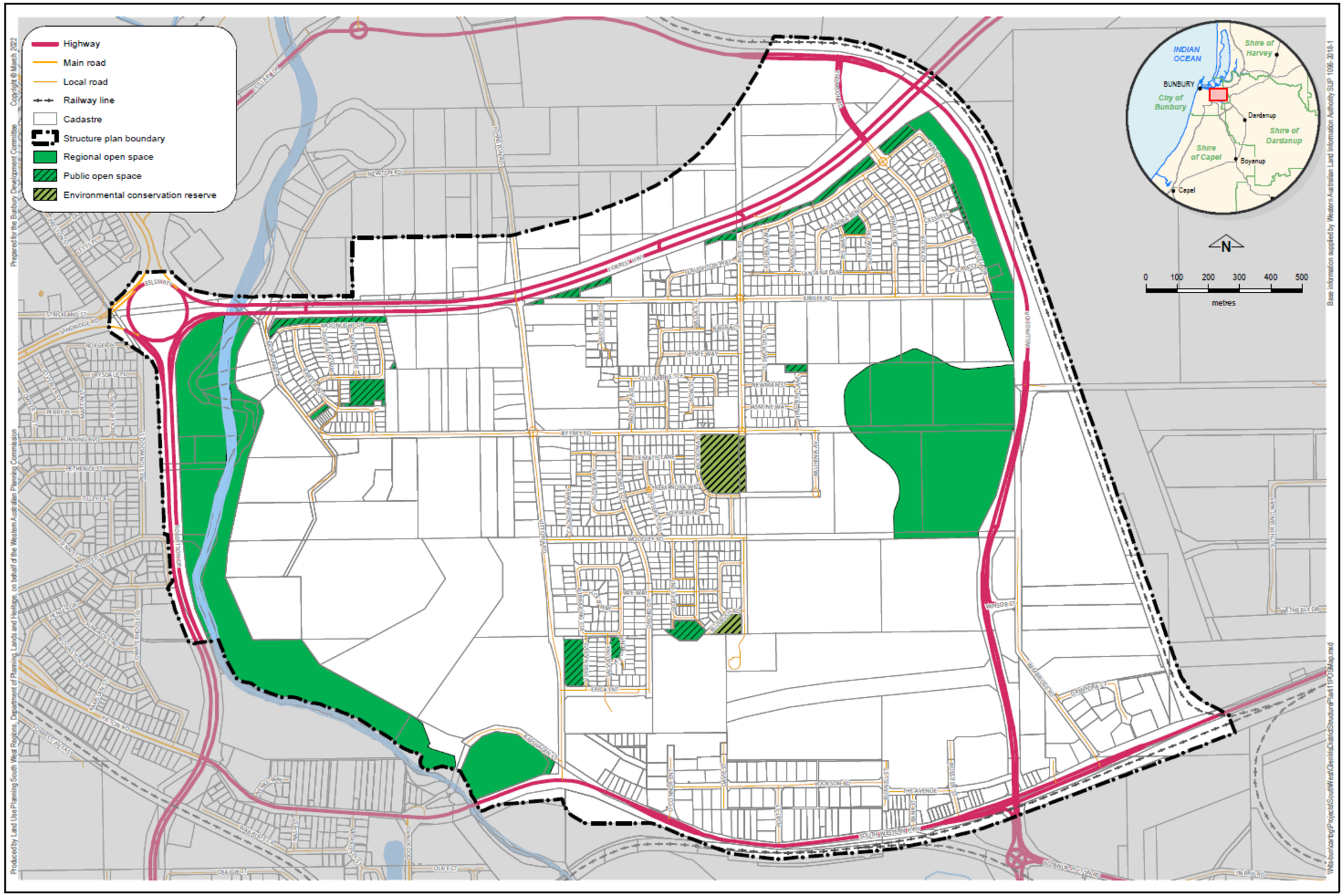
Parkland linkages are relatively narrow areas comprising POS, selected roads and other reserves in which landscape planting and management maintains ecological linkages between substantial conservation and POS areas, while also providing pedestrian linkages with shade and visual amenity. In some instances, the parkland linkage may provide the opportunity for 'living streams' that retain existing landform features or create a new connection.

Also known as linear open space, these long, narrow parkland linkages must be overlooked by adjoining residential lots for at least 50% of their length (for surveillance), preferably at least 15m wide on average, with landscaping, park furniture and lighting.

The identification of parkland linkages/a network of green pathways in the road reserve that supports the retention of existing healthy mature trees and caters for the provision of new shade trees is encouraged and should be given further consideration during the preparation of local structure plans and at subdivision design (as part of an integrated open space plan).



Green link – City of Stirling



Map 12: Existing Public and Regional Open Space

6. Movement Networks

6.1. Regional Roads

6.1.1. Primary Regional Roads

Existing and proposed Primary Regional Roads are identified in *Figure 2: Glen Iris District Structure Plan map*.

Limited existing road connections between Glen Iris and the surrounding regional road network, coupled with existing congestion issues at the intersection of Vittoria Road and Forrest Highway, have demonstrated the need for modifications and additional connections.

The first, and most significant additional connection, is a planned new Glen Iris entry road (north access road) located to the west of Vittoria Road. This road is 'the key to un-locking the potential of Glen Iris' and relieving existing access issues. It will have a controlled intersection (traffic lights) with Forrest Highway, initially two-lanes (with auxiliary turning lanes and pedestrian facilities) but capable of planned future upgrade to four-lane between Forrest Highway and Jeffrey Road.

Another benefit of this Primary Regional Road status will be the control of access by Main Roads WA for the northern part of the northern Glen Iris access road approximately mid-way between the Forrest Highway and Jefferey Road. This control of access will prohibit direct vehicle access from the adjoining private land and ensure the new intersection functions correctly.

On the southern side of Forrest Highway in the vicinity of Vittoria Road and the new Glen Iris entry road, the existing large drain is proposed to be replaced with purpose-built box-culverts and overflow detention basins to provide for a slip lane off Forrest Highway and improved visual amenity on this entry to Bunbury and Glen Iris.

It is proposed that the existing Vittoria Road – Forrest Highway controlled intersection be retained, but subject to modification once the new Glen Iris northern entry road is established and operational. In the long-term, the Vittoria Road/Forrest Highway intersection should be converted to left-in and left-out only, subject to further stakeholder discussion.

This conversion will:

- reduce traffic congestion at the intersection
- provide drivers with choice of access (Vittoria Road or new north access road) to the Activity Centre and Glen Iris as a whole
- enable traffic-calming and improved safety
- facilitate creation of a more pedestrian-friendly environment better suited to the Neighbourhood Centre, service commercial, educational and community functions of the Activity Centre.

The expected lead time prior to this intersection conversion will enable existing businesses, school and community interests to plan ahead to minimise negative impacts and to embrace the new opportunities created by this change.

There will be a number of factors impacting the timing of significant transport infrastructure. *Table 3: Timing / triggers for key road infrastructure* provides a summary of the 'triggers' and timing for provision of significant infrastructure.

In the long-term, and to maintain an effective Forrest Highway, the existing Vittoria Road and Forrest Highway intersection is proposed to become a left-in and left-out only, subject to further stakeholder discussion. Achieving this in the medium-term is not possible given business reliance on this access.

No direct vehicle access to or from properties will be permitted to Forrest Highway and the proposed Primary Regional Road reservation extending approximately 180m south of Forrest Highway toward Jeffrey Road.

The second significant new road connection for Glen Iris is a future western connection to Robertson Drive. This connection will require an additional bridge over the Preston River before entering Glen Iris (west) / Moorlands South. This western connection will provide:

- greater choice and convenience of access into and out of Glen Iris
- enhanced safety (especially in the event of the need for emergency access and temporary closure of other roads)
- potential for strengthened linkage between Glen Iris and East Bunbury, especially for cyclists and pedestrians.

Table 3: Timing /triggers for key road infrastructure

Infrastructure	Key elements	Timing / trigger	Notes
South Western Highway – Vittoria Road Roundabout	• Managed intersection (roundabout) • Safe and convenient Glen Iris ingress/egress	• State Government funded project (Main Roads) – scheduled for completion 2023-24	• Construction in progress (March 2022)
Establish new (additional) northern access road intersecting with Forrest Highway (Stage 1)	• New north intersection west of Vittoria Road • New 2-lane road between Forrest Highway and Jeffrey Road (plus auxiliary/turn lanes/pedestrian facilities) • Control of Access (within 180m of Forrest Highway) • No on-street parking between Forrest Highway and Jeffrey Road	• Required to support additional development implementation (or construction) within Glen Iris. Trigger of development generating 50 vehicles per hour (vph) in any peak period (cumulative of existing land use traffic demands as of March 2022) • Subject to identification of construction funding (including public/private contributions)	• Ultimately, Liveable Neighbourhoods Integrator A (4-lanes without on-street parking) • Ultimately, no direct property access to this link (Lot 18, Forrest Hwy may require interim access). • An east-west Local link road may be required to access service commercial development and link to Vittoria Road. Right-turn movements associated with the connection with the new northern access road requires further detailed assessment.
Upgrade new northern access road intersecting with Forrest Highway (Stage 2)	• Upgrade additional access west of Vittoria Road from 2-lanes to 4-lanes between Forrest Highway and Jeffrey Road	• Required once 2-lane link west of Vittoria Road reaches 12,000vpd or 1,200vph in any peak	• Liveable Neighbourhoods Integrator A (4-lanes without on-street parking)
Establish new western access road intersecting with Robertson Drive	• New western intersection with Robertson Drive • Initially, Liveable Neighbourhoods Integrator B (2-lane road accessing Glen Iris plus auxiliary/turn lanes/pedestrian facilities) • Requires a new road and pedestrian bridge over the Preston River (subject to Aboriginal heritage and environmental processes) • No on-street parking	• Required once traffic accessing Glen Iris from Forrest Highway (excluding via Alyxia Drive) reaches 22,000vpd or 2,200vph in any peak • Subject to identification of construction funding (including public/private contributions)	• Ultimately, upgraded to Liveable Neighbourhoods Integrator A (4-lanes without on-street parking)
Conversion of existing Forrest Highway and Vittoria Road intersection	• Conversion of existing intersection to a left-in and left-out only (reduced access intersection) • Traffic calming of Vittoria Road between Forrest Highway and Jeffrey Road	• Long-term and subject to full establishment of the new northern access road intersecting Forrest Highway (west of Vittoria Road) • Subject to stakeholder consultation with adjacent businesses within Glen Iris.	• Suitable turn-around facilities to be provided at the northern end of Vittoria Road (roundabout at Bunbury Farmers Market access) to accommodate school bus movements as well as other traffic movements

The southern Primary Regional Road connection will be enhanced by the planned roundabout at the intersection of Vittoria Road and the South West Highway. This is a Main Roads WA funded project scheduled for completion in 2023-24. It will provide safe and convenient access/egress at this southern gateway to Glen Iris.

Road connections to Primary Regional Roads (Willinge Drive and the proposed Picton Deviation) in the east/ south-east of the DSP will be addressed in Stage Two.

6.1.2. Integrator arterial roads

Northern access and western link road
Arterial roads are primarily designed to facilitate efficient and safe regional and district traffic movement while maximising community integration via development frontage and urban activity, where possible.

Liveable Neighbourhoods Integrator 'A' arterials are generally four-lane streets that have limited connections to enable the movement of vehicular traffic. Closer to activity centres, on-street parking is encouraged to activate the street frontage and encourage the movement economy. It is proposed that the northern access be an Integrator 'A' north of Jeffrey Road without on-street parking.

South of Jeffrey Road, the western link road (connecting the northern access with Robertson Drive) is proposed to initially be built as an Integrator 'B' (2-lane) arterial road within a 32m-wide road reserve (refer ***Figure 4***).

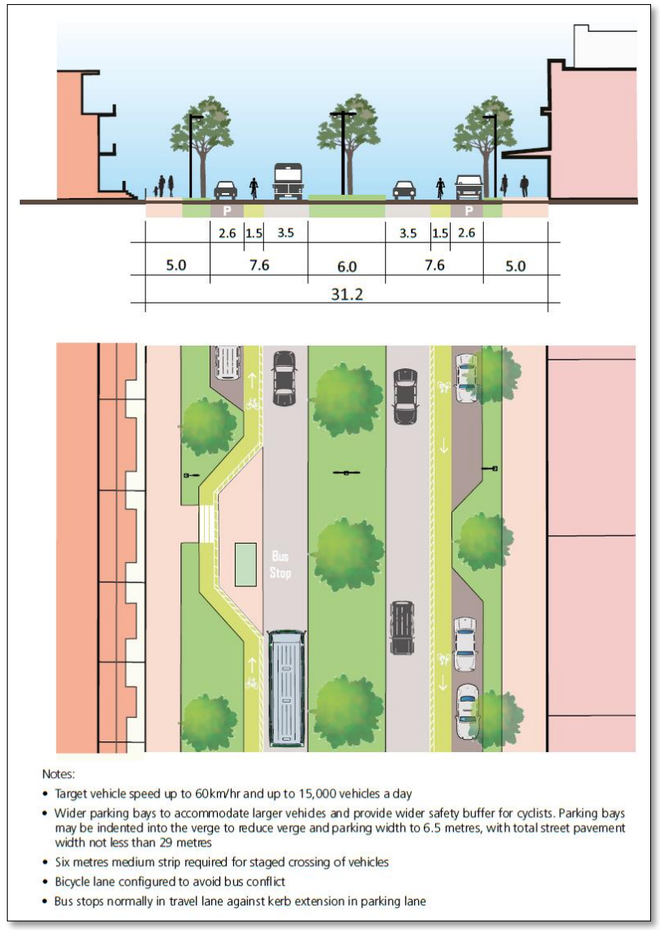


Figure 4: Integrator B arterial road

The 32m-wide reserve should be capable of future upgrade to 4-lane Integrator 'A' standard when necessary for the planned lot yield in Glen Iris (west) / Moorlands South. An example of a 4-lane Integrator arterial road is shown in the following photograph, including a cycling lane, central lighting and limited bay parking.

4-lane Integrator A arterial (photo courtesy Liveable Neighbourhoods)

6.1.3. Neighbourhood connector roads

General Network
Neighbourhood connectors link neighbourhoods and activity centres and are carefully designed to facilitate pedestrian use, calm traffic and have frequent local street connections. The neighbourhood connector should not attract substantial long distance through-traffic but provide for safe and convenient local travel to and from arterial routes, sometimes at signal-controlled intersections.

Neighbourhood connectors spread local traffic loads and reduce intersection loadings and support the location and viability of neighbourhood centres.

Neighbourhood Connector A's are generally two-lane divided streets used for higher vehicle volumes (up to 7,000 vpd), while taking into consideration safe pedestrian crossing and opportunities for stormwater management systems such as swales. These streets and their design need to have particular regard to context, function and

adjacent land uses, particularly when acting as a main street within a centre.

Neighbourhood Connector A

Victoria Road

The DSP proposes that Vittoria Road become a Liveable Neighbourhoods Neighbourhood Connector road with a primary role of serving the existing and future residents of Glen Iris.

Currently, Vittoria Road is a 2-lane undivided road (single lane in each direction). It is centrally located within Glen Iris, forming the main access corridor for the area. It intersects with Forrest Highway to the north (currently approximately 32,000 vpd typical weekday) and South Western Highway to the south (currently approximately 13,000vpd typical weekday).

Vittoria Road itself currently carries around 7,500vpd on a typical weekday south of the Bunbury Farmers Market driveway and around 10,000-11,000vpd to the north of the driveway.

The surrounding road network attracts significant peak traffic during holidays and long-weekends. Both highway intersections are under pressure from existing development from within Glen Iris as well as passing traffic, with Forrest Highway/Vittoria Road particularly vulnerable to congestion at peak times.

Existing businesses, several schools, existing residential areas, community facilities as well as other land uses gain access directly from Vittoria Road. Its reservation width is generally 20-25m wide and contains multiple services making improvements such as widening works challenging and expensive.

Vittoria Road caters for a mix of direct property/business access, provision of broader Glen Iris access and a component of through traffic movement which often results in this link becoming congested, particularly surrounding Grace Christian School and the Bunbury Farmers Market at peak times.

The Bunbury Farmers Market access is in close proximity to Forrest Highway and as a result this access can interact regularly with the function of the Vittoria Road/Forrest Highway intersection. Congestion created within Glen Iris can spill out onto Forrest Highway, impacting its operation.

Main Roads WA investigations have shown that upgrades to the existing Vittoria Road /Forrest Highway intersection may provide additional capacity in the medium-term. However, those upgrade solutions may be short-lived and not be value for money. Moreover, achieving long-term capacity is challenging, given a range of safety, amenity and access challenges including the need to pass through a 40km/h school zone, bus stops, high-pressure and medium-pressure gas pipelines, growing congestion and the prospect of continued queuing back towards Forrest Highway.

Upgrading Vittoria Road to 4 lanes would require significant road widening and impact the amenity, function and sense of place of the area, particularly north of Jeffrey Road. Given these challenges, various options were assessed, resulting in the proposed new Glen Iris northern access road approximately 200m west of the Vittoria Road /Forrest Highway intersection.

The Northern portion of Vittoria Road between Forrest Highway and Jeffrey Road should transition to a two-lane Neighbourhood Connector A with a width of 28m and be subject to traffic calming measures to become pedestrian-friendly and compatible with the adjoining Activity Centre (refer *Figure 5: Neighbourhood Connector A*).

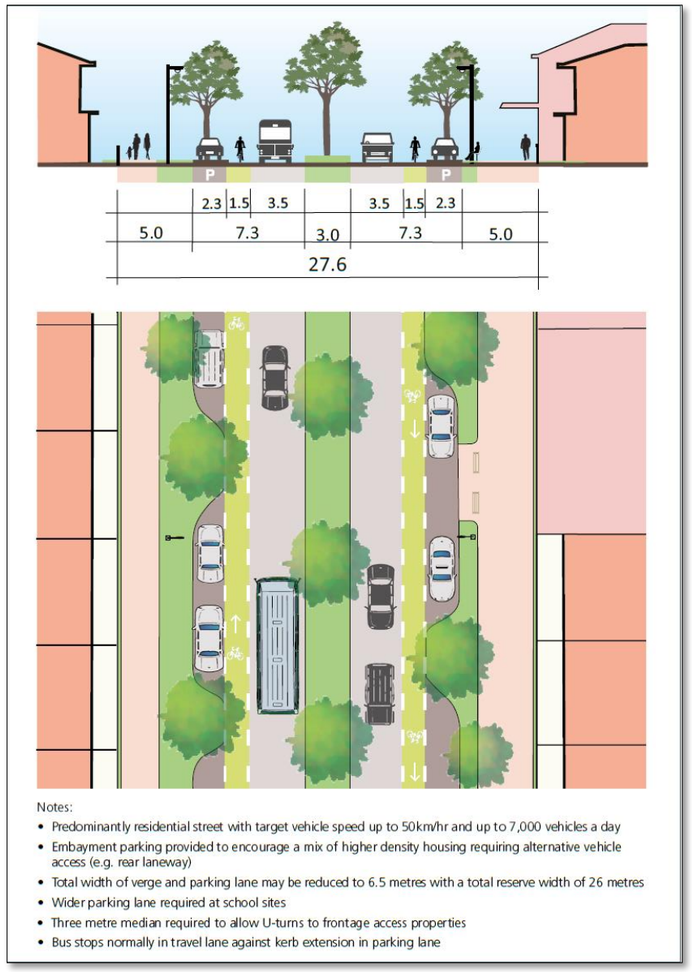


Figure 5: Neighbourhood Connector A

Neighbourhood connector B's are two-lane undivided streets with no median and are suitable for lower traffic volumes (3,000 vpd). Both neighbourhood connectors will accommodate a diverse housing typology suited to higher densities and restricted vehicular access from the main street.

It is proposed that the southern portion of Vittoria Road outside the Activity Centre (between Jeffrey Road and the South Western Highway) transition to a two-lane Neighbourhood Connector B (refer *Figure 6: Neighbourhood Connector B*).

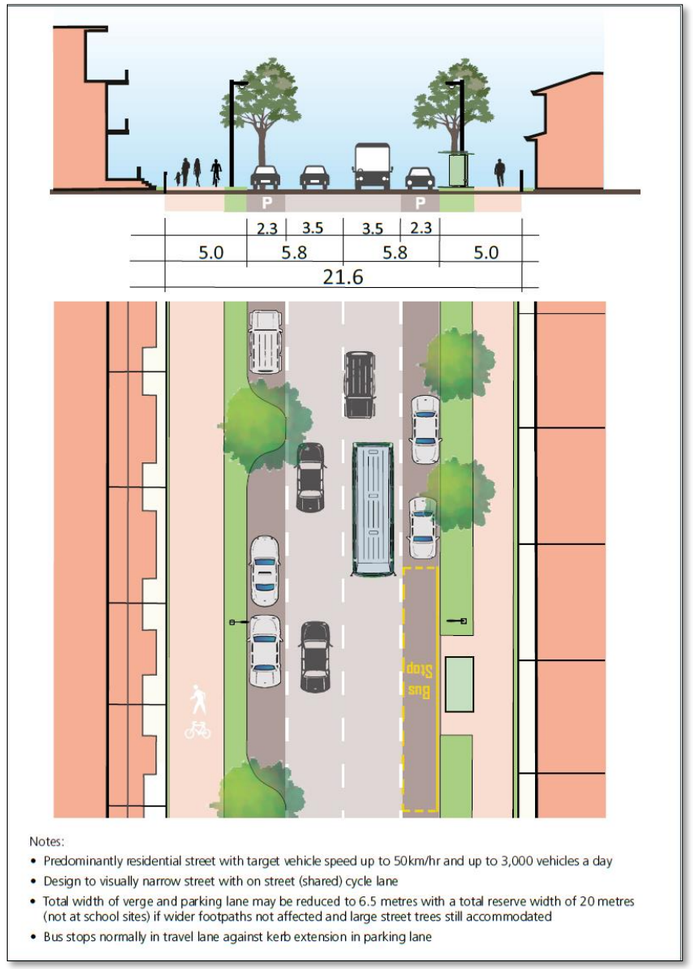


Figure 6: Neighbourhood Connector B

The southern portion of Vittoria Road should become more of a boulevard with an emphasis on wide verges, indented parking, shade trees, pathways and feature street lighting.

6.1.4. Local roads

According to *Liveable Neighbourhoods*, Local streets promote social interaction, public health, safety and amenity. They facilitate surveillance, activity, visual interest and exposure, which assists commercial viability. On most local streets, traffic volumes and speed should be low enough to provide a safe and pleasant pedestrian environment and allow vehicles to be able to enter and leave individual properties in either forward or reverse direction.

Being a higher-order plan, the DSP does not identify future Local streets. These should be identified following *Liveable Neighbourhoods* at the Local Structure Plan and subdivision applications stages.

6.2. Public transport

The existing Perth to Bunbury Passenger Rail "*The Australind*" uses the rail line immediately south of the South Western Highway through Picton. The Bunbury Railway passenger terminal is located near Picton Road in East Bunbury, a short distance from Glen Iris.

State Government investigations into a possible Perth to Bunbury 'fast rail' have also considered a potential corridor along the Forrest Highway. Being fast rail, this would have limited stops that would not include Glen Iris due to the short distance to the passenger terminal, hence bus connections to the chosen passenger terminal should be provided.

Glen Iris is currently serviced by public bus services with the frequency of services typically 30 minutes. Additional residential development in Glen Iris coupled with an increase in density is likely to result in more demand for public transport.

A number of school buses use the existing Glen Iris road network to convey students to and from the existing schools within Glen Iris. A number of bus stops are located within Glen Iris, including along Vittoria Road where patronage is anticipated to grow as development and land use increases within Glen Iris, as well as more broadly within the Bunbury Metropolitan Area.

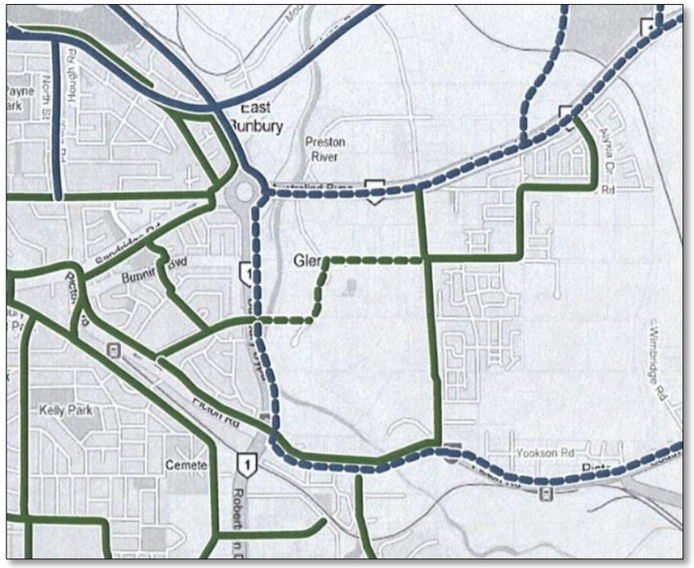
6.3. Cycling network

The *City of Bunbury Bicycle Plan* (Cardno Eppell Olsen, 2010) was prepared to maximise the efficiency and effectiveness of the existing bicycle network and to enhance bicycle facilities for all users, including expanding the existing path network for casual, commuter and recreational routes to create a high quality, safe and attractive environment for cycling through the City.
In planning for upgrading of the bicycle network, the Bicycle Plan separately identified commuter and recreational routes, and casual bike routes. Within the DSP area, this was expressed as planned commuter and recreation bike routes along the Forrest Highway, Robertson Drive and the South Western Highway.

In *Figure 7: Cycle-it Bunbury – proposed Bunbury Bicycle Route Plan* the Commuter Bike Routes are identified in blue. The dashed line indicates proposed routes.

In the same figure, the Casual Bike Routes are shown with existing routes north-south along Vittoria Road and using Jeffrey Road (east), Ince Road and Alyxia Drive identified with a solid green line. Proposed routes are Jeffrey Road (west) then south and west to Robertson Drive where it could potentially connect with the route identified along Rodsted Street, East Bunbury.

Figure 7: Cycle-it Bunbury – Bunbury Bicycle Route Plan



The DSP proposes similar district routes, plus the addition of local cycle paths within local roads and reserves (refer *Map 1: Glen Iris District Structure Plan map*). These routes complement the district-level cycling routes proposed under the *Bunbury-Wellington 2050 Cycling Strategy* (2018).

Additional information on movement systems can be found in the *Transport Planning Assessment – Glen Iris (Stage One)* (Main Roads WA, March 2022) – refer ***Appendix A***.

7. Water management

7.1. Flood Relief

In order to investigate the potential impacts that planned road changes under the Glen Iris DSP might have on flooding, Main Roads WA (Main Roads) undertook a planning and traffic study for several possible ultimate road network layouts. A final road network option was selected for use in the DSP.

Advisian was engaged by Main Roads to complete a hydraulic modelling investigation to primarily assess the impact of the proposed northern entry road/Forrest Highway intersection as well as a possible future bridge to the west fully spanning the Preston River and levee banks and identify the impacts on floodwater levels in Glen Iris.

It was a prerequisite that any roads that remained within the flood relief flow path (i.e. Jeffrey Road and Moorland Avenue) remain at grade (i.e. their existing level). No additional roads such as the proposed east-west road connecting to Robertson Drive were included in the model, however *Advisian* considered it unlikely that the east-west road will impact on the performance of the Glen Iris floodway due to its location outside the floodway.

Because the sections of Jefferey Road and Moorland Avenue within the relief floodway are to remain at grade, any proposal to upgrade these roads must ensure that they are not raised above their existing level. The model also assumed that the POS to the immediate east of Moorland Avenue was to remain at grade, and this POS cannot include any filling of the land above existing levels.

The modelling assumed a breach in the eastern levee bank of the Preston River, upstream of Forrest Highway and that the entire eastern levee fails instantaneously during a 1% AEP flood event at the same time the site experiences the 1% AEP tailwater condition. It is noted, however, that *Advisian* considered that the likelihood of the 1% AEP flood peak and 1% AEP tailwater level occurring at the site at the same time, and an instantaneous failure of the eastern Levee, is very low.

Other available information also went into the modelling, including the most recent proposed local structure plan for South Moorlands. Although that plan has not been endorsed by the WAPC, the considerable work undertaken provided an indication of the land use and development potential of this area.

An existing 2D hydraulic model developed for the Preston River Realignment Project was used with permission of the Southern Ports Authority (SPA).

A number of road design options and potential drainage upgrades were assessed by *Advisian* and compared to existing conditions. Design Option F, including a new at-grade intersection with Forrest Highway, was identified as the preferred option in consultation with MRWA and DWER (refer ***Figure 8: Design Option F***).

The modelling showed that Option F would make no material change to the operation of the Glen Iris Floodway, with minimal increases in flood levels (<0.05 m) between Jeffrey Road and Forrest Highway Road for both existing and sea level rise conditions.

The modelled results of Option F inclusive of 1.0m Sea Level Rise (SLR) are shown in ***Map 13: Design Option 'F' and Flood Relief***. It should be noted that "Changes: None" in the map title block refers to no specific changes to the planned road and bridge infrastructure.

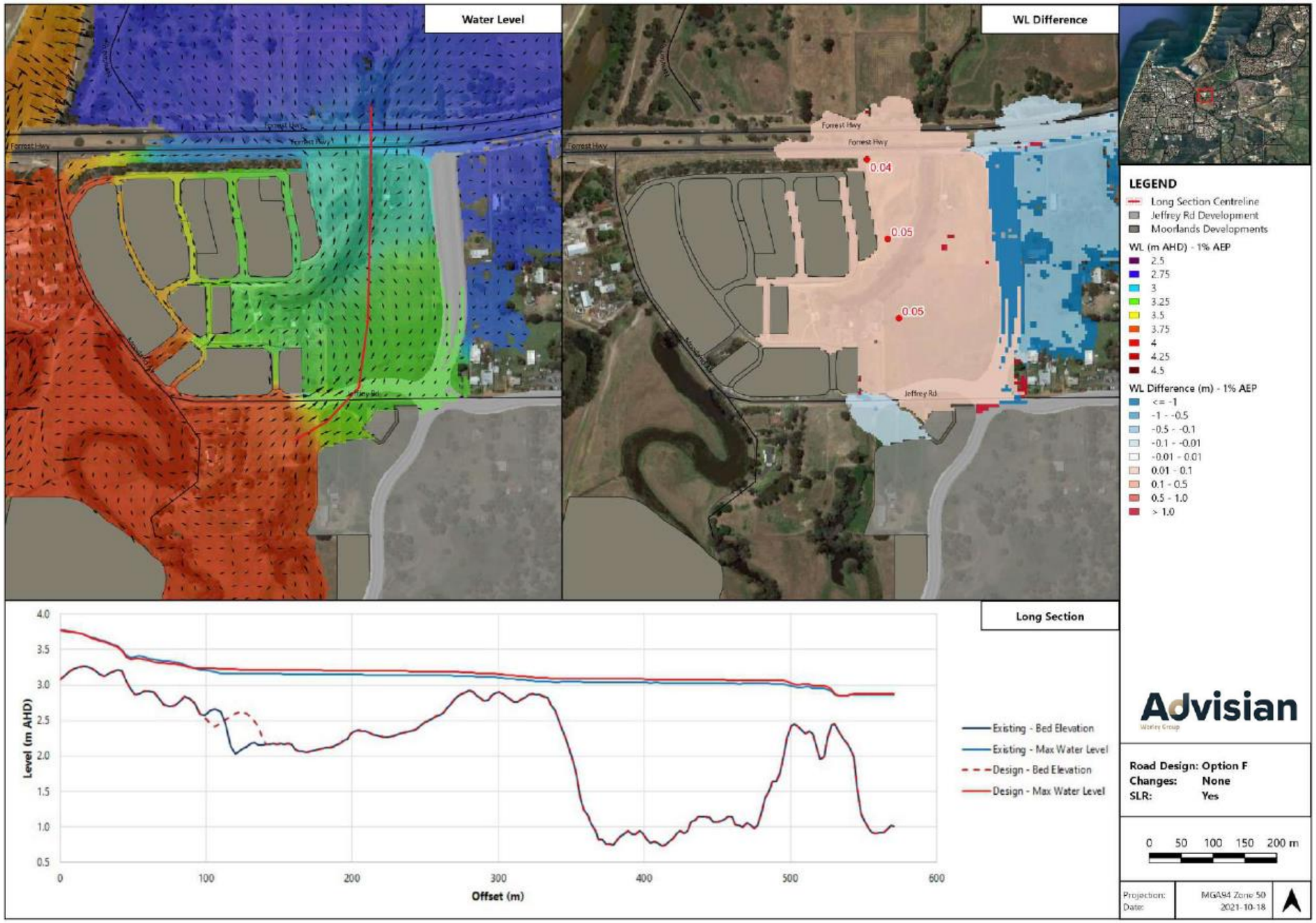
As shown in Map 13, in a 1% AEP event the entire relief floodway will be flooded for a period of time, including a section of the Forrest Highway.

Figure 8: Design Option F

The modelled results of Option F are reflected in ***Figure 2: Glen Iris District Structure Plan map.*** The DSP responds to previous and updated flood modelling by setting aside substantial low-lying areas for open space and flood relief that balances urban development aspirations with responsible planning for flood events and environmental management.

Proposed Port of Bunbury Inner Harbour developments and new road infrastructure north of Forrest Highway were not included in the *Advisian* study. This will need to be assessed in future phases of the project to ensure the current hydraulic performance of the Glen Iris Relief Floodway is maintained to minimise impacts.

Further information can be found in the *Glen Iris Floodway Modelling – Hydraulic Modelling Report* (Advisian, November 2021) – ***Appendix A***.



Map 13: Design Option 'F' and Flood Relief

7.2. Stormwater and groundwater

A Local Water Management Strategy (LWMS) prepared and approved in accordance with draft *State Planning Policy 2.9 Planning for Water* (SPP 2.9) and *Planning for Water Guidelines* will be required for each local structure plan within the Glen Iris locality.

Proposals should, in accordance with the Guidelines:

- ensure stormwater and groundwater management systems are designed and constructed in accordance with the *Decision process for stormwater management in Western Australia, Stormwater Management Manual for Western Australia* and the *Australian Rainfall and Runoff Guidelines*, and in consultation with the relevant water management agency and/or infrastructure manager(s)
- provide for the retention, detention, conveyance and treatment (where required) of stormwater and manage groundwater inundation, including treatment of groundwater discharges, while also protecting and enhancing environmental functionality, local amenity and liveability
- incorporate water sensitive design, in the early stages of the planning process. This should include setting aside sufficient land for drainage areas as part of an integrated stormwater drainage system.

LWMS involving proposals for stormwater and drainage outlets to the Preston River will need to address detention, conveyance, land tenure, foreshore management, heritage sites and water quality standards.

The DSP identifies a linear parkland linking proposed POS encompassing the ox-bow lakes wetland area central to Glen Iris west with the Preston River to the south. This parkland linkage provides an opportunity for a 'living streams' approach combining a managed drainage function with environmental, landscape and passive recreation outcomes.

A LWMS should require preparation of a management plan for the proposed POS containing the above-mentioned ox-bow lakes wetland area that:

- identifies the wetlands, foreshores and suitable buffers (including agreeing their governance and any proposed vegetation extent and rehabilitation)
- without impeding the flow of flood waters, retains and/or restores vegetation important for the long-term health of water resources within wetlands buffers and waterway foreshore areas, with the restoration of vegetation preferably using endemic species
- where possible, maintains and restores ecological linkages
- identifies appropriate wetland buffers and foreshore areas to protect public health from mosquito borne diseases
- minimises export of nutrient and non-nutrient contaminants entering water resources
- maintain or enhance safe public access, except where at the detriment of ecosystem health
- maximises opportunities for water in the landscape to enhance amenity, senses of place, liveability and contribute to urban greening and mitigation of urban heat
- identifies, protects and, where appropriate, promotes Aboriginal and other historic cultural heritage places and values.

A management plan applying the above-mentioned principles should also be prepared for the wetland located mid-way between the oxbow lake area and Vittoria Road.

7.3. Water demand and supply

In accordance with the *Planning for Water Guidelines*, each LWMS should:

- minimise future water demand by ensuring that development is designed to conserve and use water efficiently
- demonstrate secure, sustainable and fit-for-purpose drinking and non-drinking water supply for domestic consumption, POS irrigation and commercial uses. This should include consideration of future rainfall projections that incorporate climate change and, where a licence is required, within water allocation limits.

7.4. Wastewater

Subdivision and development within the DSP area will be required to connect to, or provide for, reticulated sewerage in accordance with the *Government Sewerage Policy* (2019).

8. Bushfire management

The Bushfire Management Plan (BMP) (Strategen-JBS&G, 2022) has been prepared to accompany submission of the DSP in response to the areas of bushfire prone land located within the project area. Preparation of the BMP addresses requirements under Policy Measures 6.2 and 6.3 of *State Planning Policy 3.7 Planning in Bushfire-Prone Areas* (SPP 3.7; WAPC 2015) and *Guidelines for Planning in Bushfire-Prone Areas* (the Guidelines; WAPC 2017).

The post-development Bushfire Hazard Level (BHL) assessment demonstrates that bushfire hazards will be significantly reduced on full build-out of the DSP area (refer ***Map 14: Post-development BAL Contour Map***).

The notable exception to this is the Jubilee Road Structure Plan area which the BMP assumes to remain fully vegetated given no concept subdivision design has currently been prepared over this area. Furthermore, the Jubilee Road Structure Plan has not been endorsed by the WAPC. The area lies in Glen Iris east and therefore forms part of Stage Two of the DSP. It is important that addressing the bushfire hazard be undertaken as early as possible in the planning of Stage Two.

Nonetheless, the following measures can be applied immediately to both Stage One and Stage Two of the DSP:

- Ensuring two access routes and avoiding dead-end roads
- Providing additional fire service access routes (FSARs) for any high-risk vegetation interface where public road access is not proposed
- Staged clearing – low threat staging buffers may need to be implemented around a current stage of development to ensure there is no residual impact from vegetation that has not yet been cleared or landscaped to achieve a low threat state
- Compliance with City of Bunbury firebreak notices, as amended annually
- Provision of a firefighting water supply that is suitable for the scale of each stage of development (including extension of the existing reticulated hydrant system around each development)
- Local structure plans to consider special evacuation challenges associated with 'vulnerable' land uses under Section 6.6 of SPP3.7 and a detailed Bushfire Emergency Evacuation Plan (BEEP) will need to be prepared to accompany the BMP prepared at subdivision/development stage for any vulnerable land uses.

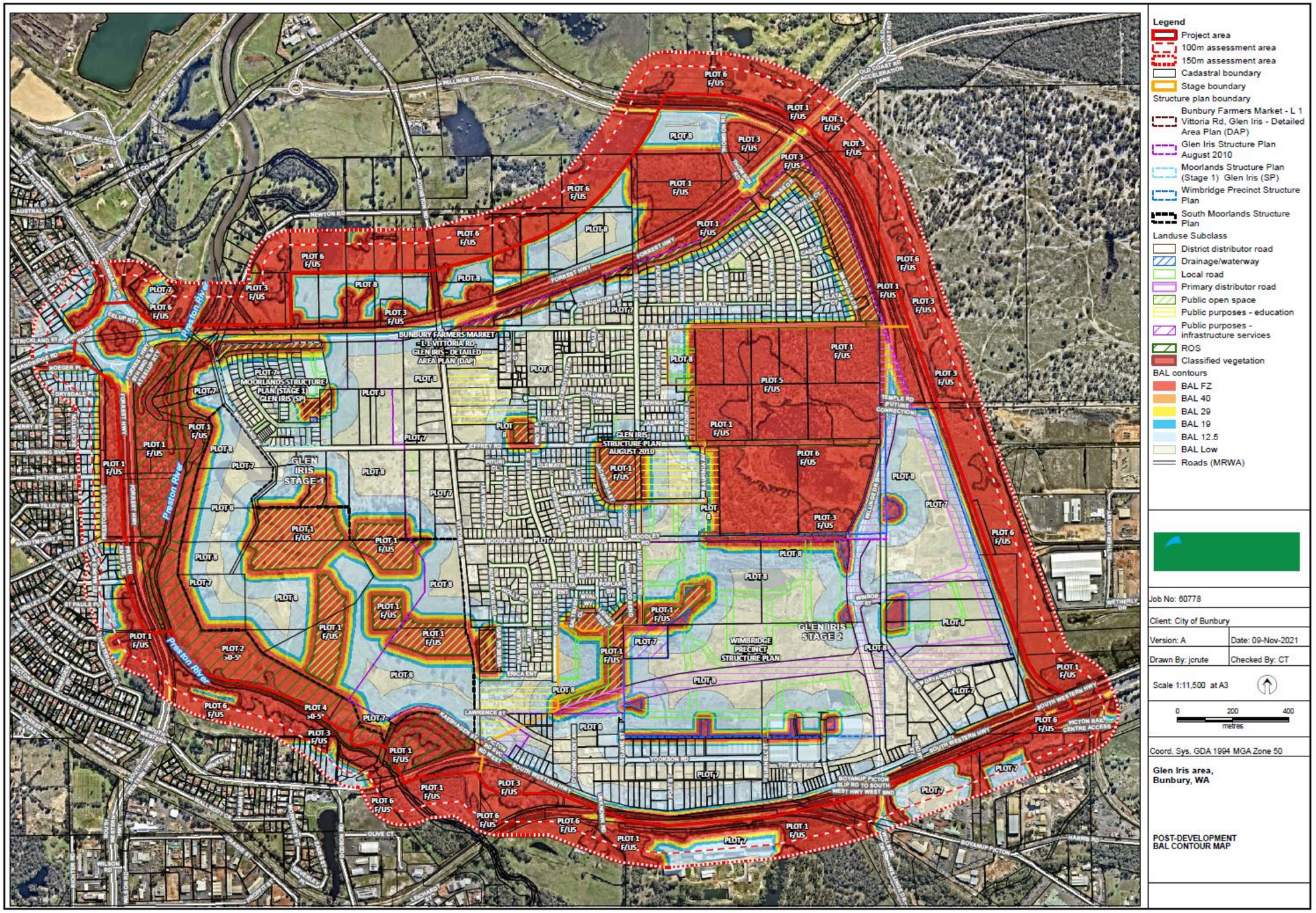
The BMP recognizes remnant vegetation as having an extreme bushfire hazard, including some areas of ROS and POS. DFES notes commentary in the BMP regarding future separation distances to achieve development within BAL-29 or below and recommends further consideration is given at subsequent stages of planning (i.e. local structure plans and subdivision) regarding the provision of perimeter roads, including areas of future residential development adjacent to the Preston River ROS areas. Such perimeter roads will increase separation distances between extreme bushfire hazard vegetation and residential development, while enhancing access. For further information refer to *Appendix A*.

9. Education facilities

Glen Iris currently has two government primary schools plus the non-government primary school as part of Grace Christian School, which also has the only high school (K-12) in Glen Iris.

Picton Primary School

Under *Liveable Neighbourhoods* (draft 2015) and WAPC *Operational Policy 2.4 Planning for Schools* (draft) in new residential areas one government primary school is required per 1,500 dwellings and one non-government primary school for every three government primary schools. One government secondary school is required per 6,500-7,000 dwellings and one non-government secondary school for two government secondary schools.



Map14: Post-development BAL Contour Map

Djidi Djidi Aboriginal School

With the potential for 1,500 plus additional dwellings to be developed within Stage One, a suitable site needs to be identified to accommodate one additional government primary school. This is best located in Glen Iris west which currently has no school site but will accommodate the majority of new residential development.

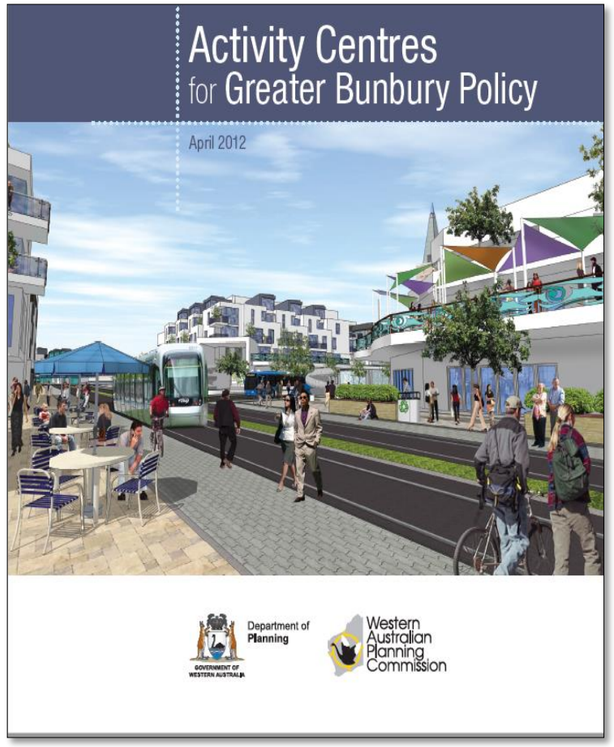
It is proposed that an area of POS suitable for multiple sports be set aside adjoining the proposed public primary school. This location will enable shared school /community use of the oval and sporting facility. As a consequence, the land area required for the primary school can be reduced from the usual 4 ha minimum to 3.5ha.

While the number of additional dwellings forecast within Stage One triggers the need to allocate land to support a new primary school, the timing of its delivery is a matter for the Department of Education (DoE). In monitoring local growth and demand the DoE will consider a number of factors including (but not limited to) the following:

- the impact residential development in the area and the surrounding locality will have on public student enrolments in existing primary schools in the locality
- student numbers that reside in the developing area and within the catchment area of a school site that will make a new school viable
- student enrolment demand and accommodation pressure of any existing nearby public primary schools.

10. Commercial centre

In accordance with the approved activity centre hierarchy (Table 2) in the *Activity Centres Policy for Greater Bunbury Policy* (WAPC, 2012*)*, Glen Iris is identified for a future Neighbourhood Centre. According to the policy, Neighbourhood Centres generally service a future population of 2,000-15,000 persons and provide for daily and weekly household shopping needs, community facilities and a small range of other convenience services. Typical retail types include supermarkets, personal services and convenience goods, while typical office development would comprise local professional services.



It would be appropriate for the Neighbourhood Centre to be supported by higher residential densities and mixed-use development on appropriately zoned land within the immediate walkable area (ped-shed).

It is anticipated that the future Neighbourhood Centre together with the continued development of nearby Service Commercial areas will form a business and community hub for Glen Iris. This node will provide significant employment in the northern part of Glen Iris. Improved access to the regional road network, together with expanded public transport and cycling networks will also assist the Glen Iris workforce to access region-wide employment opportunities.

The Neighbourhood Centre should provide a stopping/transfer point for the bus network, noting the nearby bus drop-off and pick-up for Grace Christian School.

The community hub function would benefit from inclusion of a multi-purpose community facility such as a building designed to accommodate a community hall, clubs, rehearsals and performance, arts and crafts, senior's activities, toy library etc. An eye-catching design could become a landmark building and inviting place that adds vibrancy and complements the mix of retail, commercial and educational activities.

Example of multi-purpose community facility

11. Infrastructure servicing

In addition to the usual infrastructure services in an urban area, Glen Iris has a High Pressure gas pipeline and a Medium Pressure gas pipeline within the Vittoria Road reserve, which need to be accommodated in future subdivision and development.

At the local structure plan stage, the usual infrastructure services will need to be addressed, including:

- Power
- Reticulated sewerage
- Reticulated water
- Telecommunications
- Drainage

12. Other requirements

12.1. Local structure plans

The requirements for approval of local structure plans prior to subdivision and development are set out in Part 1.

12.2. Port Buffer SCA

The Port Buffer Special Control Area (SCA) lies north of the Forrest Highway Primary Regional Road and adjoins extensive landholdings of the Port of Bunbury inner harbour owned by SPA (refer *Figure 2: Glen Iris District Structure Plan map*.

A number of properties within the SCA are privately owned, while some are in SPA ownership.

The shape of the SCA reflects long-standing plans to divert the Preston River around the inner harbour before discharging into the Leschenault Estuary. However, in February 2021, the SPA commenced a Port Master Planning project for the Port of Bunbury to help guide and shape planning in forward years. An 'Important Issues Master Planning Survey' process was undertaken with stakeholders, workforce and the wider community to provide input into development of the master plan.

Overall, the top four 'priority topics' from the survey were:

- Focussing on safe and clean shipping
- Ensuring safety and security of people at and around the Port
- Managing potential Port 'interface' impacts
- Investigating local supply opportunities.

It is important that planning for any change of zoning, use and development of the SCA be undertaken in context of the Master Planning project for the Port of Bunbury, including flood management, port buffers, compatible land uses, interface impacts, access, environmental impacts and infrastructure servicing.

Under the DSP, the following provisions apply to the SCA:

1. Investigation and approval of suitable land use and development via an endorsed structure plan is to precede any rezoning, subdivision or development.
2. Apart from the approved roadhouse (service station), no vehicle access is permitted from the SCA to Forrest Highway, Thomson Road or Willinge Drive.

12.3. Developer contribution arrangements

The City of Bunbury should give consideration to designating particular areas of the Glen Iris DSP as a Development Contribution Areas SCA in accordance with Schedule 7 (Table 10) Special Control Areas Table.

State Planning Policy 3.6 Infrastructure Contributions (WAPC 2021) would apply to such Development Contributions Areas SCA, given that under Part 4 Cl. 29 of LPS8, SPP 3.6 is to be read as part of the Scheme.

Under the DSP, the proposed Primary School is substantially located on two existing lots. Accordingly, in accordance with *Liveable Neighbourhoods* (Element 6 – Education) other landowners (potential developers) located within the primary school catchment area will be required at the subdivision stage to make payment to either the landowner(s) who has ceded the school site to the Department of Education (DOE) free of cost, or to the DOE if they have purchased all or part of the school site from the initial landowner. Such payment should be commensurate to the number of residential lots their land will yield as a proportion of the total residential lots within the school catchment.

As Primary Regional Roads, it is appropriate that the 'red roads' within the DSP are the responsibility of Main Roads WA to be developed and maintained on behalf of the Western Australian community. Accordingly, these should be excluded from any Development Contribution Plan.

Integrator Arterial Roads and Neighbourhood Connector Roads should be developed and/or upgraded by subdividers on a proportional basis under any Development Contribution Plan prepared and approved at the Local Structure Plan stage.

An exception should be made for the section of Integrator Arterial Road north of Jeffrey Road. This needs to be built at the same time as the northern access and new intersection with Forrest Highway.

Local Roads should be developed by individual subdividers unless identified in an endorsed Development Contribution Plan.

Appendix A –

Technical appendices index

No.	Document title	Approval required or supporting document	Approval agency	Approval status
1	Outcomes from Glen Iris District Structure Plan Community Forum (IPS, August 2020)	Supporting	DPLH	Lodged for information
2	Glen Iris Community Consultation Data Report (IPS, October 2020)	Supporting	DPLH	Lodged for information
3	Glen Iris Floodway Modelling – Hydraulic Modelling Report (Advisian, November 2021)	Required	DWER	Lodged for assessment
4	Transport Planning Assessment – Glen Iris (Stage 1) (Main Roads WA, March 2022)	Required	DPLH	Lodged for assessment
5	Bushfire Management Plan (Strategen-JBS&G, November 2021)	Required	DFES	Lodged for assessment