

Frasers Landing . Mandurah outline development plan

PREPARED FOR FRASERS PROPERTY GROUP

MARCH 2015

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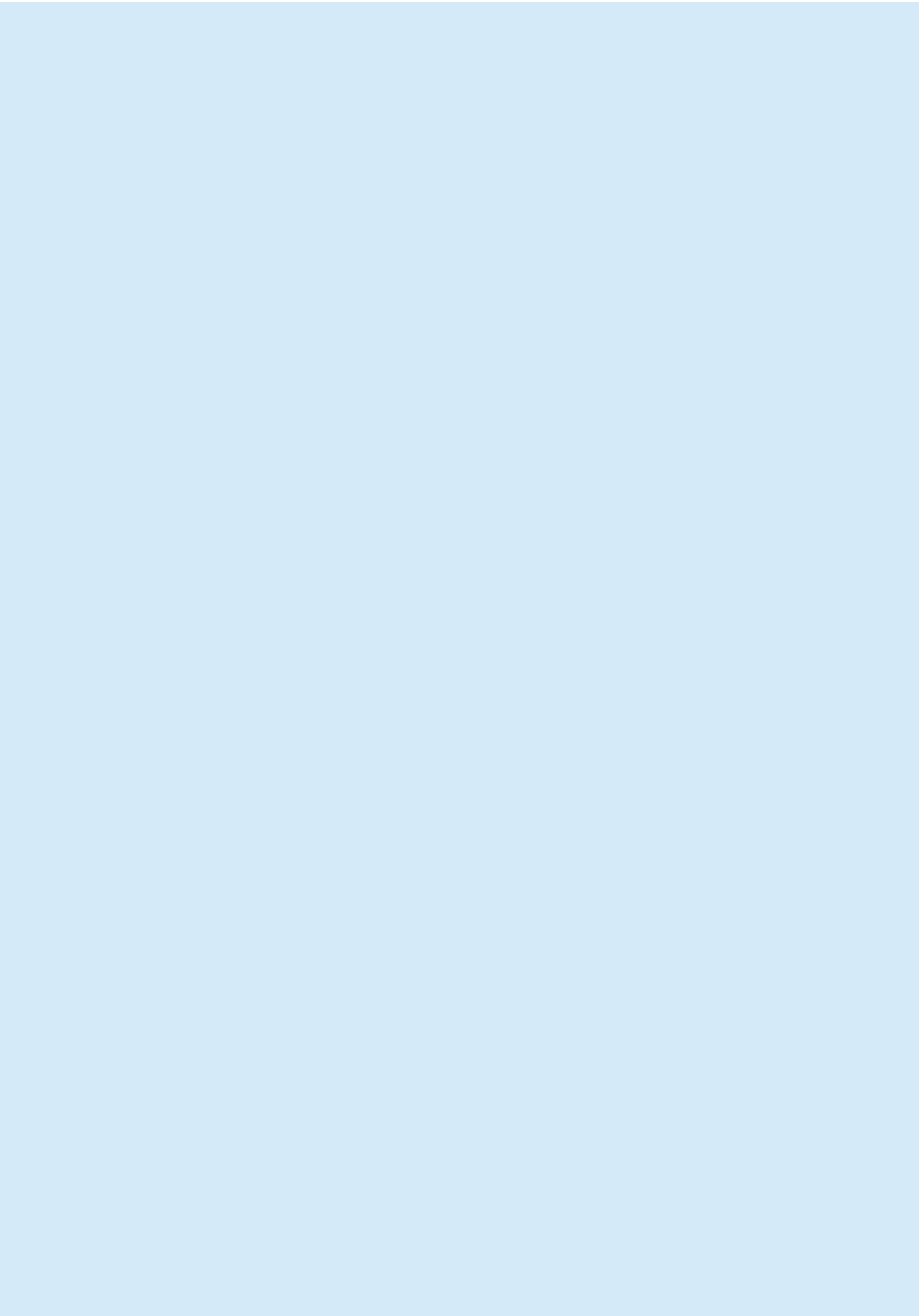
R. Duckham (2014), Frasers Landing – Outline Development Plan prepared by Roberts Day Pty Ltd.

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York Gum Services	Bushfire Management
McMullen Nolan	Surveyors



RECORD OF AMENDMENTS MADE TO THE AGREED STRUCTURE PLAN

Amendment No.	Description of Amendment	WAPC Adopted	Council Adopted

The Outline Development Plan comprises three parts:

Part One, Statutory Section – sets out the statutory planning provisions used in the assessment and approval of subdivision and development by the City of Mandurah and the Western Australian Planning Commission.

Part Two, Explanatory Section – provides a summary of the context and technical studies conducted for the site and the rationale for the Part 1 statutory provisions.

Part Three, Technical Reports – electronic copies of the supporting technical reports prepared by the consultant team (see CD at back of Part 2).

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3	Coastal Assessment Technical Note
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part one
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1.0 Outline Development Plan Zones

The Outline Development Plan Map (Plan 1) applies the following zones applicable within the Outline Development Plan area:

- a) Frasers Hamlets
- b) Residential R20-R40
- c) Residential R30-R80

1.1 Character of Zones

Land use, subdivision and development shall be guided by the statements outlined in the following table. Specific development provisions and guidance are included in Part 1 of the ODP, or will be provided in other instruments, provided for in Part 1 of the ODP

TABLE 1: CHARACTER AND OBJECTIVES OF ZONES

Element	Frasers Hamlets	Residential R20-R40	Residential R30-R80
Locational Criteria	Generally located away from water and conservation areas	Located near areas of high amenity, near the foreshore, conservation areas or other areas of high amenity	Located adjacent to areas of high amenity, near the foreshore, conservation areas or other areas of high amenity
Objective	To provide a variety of high quality housing in a grouped dwelling environment	To provide a range of conventional freehold housing in low to medium density	To provide a variety of housing at medium to high density, with some opportunities for mixed use development
Density (Range)	R50	R20-R40	R30-R80
Building Character	Generally grouped dwellings with a balance of private and communal open space	Generally single dwellings with ample private open space	A mix of compact dwellings in a higher density environment, which may provide for flexibility in land uses
Public Realm Character	Communal open space and streets, designed for flexibility to retain trees where practicable	Generally served by a range of pocket, local and neighbourhood parks with a range of functions	Generally located close to a high quality public realm drawing on exceptional amenity such as bushland and water bodies
Typical Land Uses	Grouped dwellings	Single dwellings	Residential, some mixed use

1.2 Land Uses

Land use permissibility for zones within the Outline Development Plan area shall be in accordance with the Residential zone under the Scheme, , except for the variations listed in Table 2.

The abbreviations used in Table 2 have the same meanings as symbols in the Scheme, which are:

P is consistent with the objectives of the Scheme and may be developed after planning approval.

AA may be developed after Council has granted planning approval. Council may advertise proposal.

SA may be developed after Council has granted planning approval. Must be advertised.

IP not permitted unless incidental to predominant use.

X not permitted.

TABLE 2: LAND USE PERMISSIBILITY VARIATIONS

USES	Frasers Hamlets	Residential R20-R40	Residential R30-R80
Additional Accommodation	AA	AA	AA
Aged Persons Home	AA	AA	AA
Aged Persons Village	AA	AA	AA
Bed and Breakfast Accommodation	SA	SA	SA
Car Park	SA	SA	SA
Chalet	SA	SA	SA
Child Care Premises	SA	SA	SA
Civic Use	P	P	P
Consulting Rooms	IP	IP	SA
Convenience Store	X	X	SA
Corner Shop	SA	SA	AA
Display Home Centre	AA	AA	AA
Dwelling (Single House, Group, Multi)	P	P	P
Guesthouse	SA	SA	AA
Home Occupation	AA	AA	P
Kindergarten	SA	SA	SA
Land Sales Office	P	P	P
Lodging House	SA	SA	SA
Lunch Bar	X	X	SA
Medical Centre	X	X	SA
Nursing Home	SA	SA	SA
Office	X	X	SA
Public Utility	P	P	P
Public Worship - Place of	X	X	SA
Restaurant	X	X	SA
Serviced Apartment	SA	SA	SA
Shop	X	X	SA

1.2.1 Retail and Commercial Uses

- a) Retail floorspace (NLA) for the Outline Development Plan is limited to a maximum of 2000sqm, and shall be located within the Amenity precinct
- b) For the following uses, there is a general presumption against their establishment in the Residential R30-R80 precinct, except on land identified as Local Centre:
 - Convenience Store
 - Lunch Bar
 - Medical Centre
 - Office
 - Public Worship – Place of
 - Restaurant
 - Shop
- c) Unless otherwise approved, parking for commercial and retail floorspace shall be provided at the ratio of one bay per 25sqm NLA

1.3 Reserves: Open Space

- 1.3.1. Public Open Space shall be distributed generally in accordance with the areas shown on Plan 1 – Land Use Zones and Reserves and shall be generally developed in accordance with the Open Space description in Table 1.
- 1.3.2. Land credited as public open space within the development area includes:
- Core Conservation Reserve
 - Public Open Space adjacent to the tributary foreshore
 - Neighbourhood and local parks
 - Communal Open Space within the Hamlets Precinct
- 1.3.3. In accordance with Clause 3.3.3 of WAPC Policy Development Control Policy 1.3, calculation for the provision of public open space shall allow up to 50% of the total 10% public open space to be provided for the Hamlet precinct as communal open space within the survey strata subdivision subject to the open space being useable and developed for general recreation purposes.
- 1.3.4. An updated public open space schedule shall be provided at the time of subdivision application for determination by the WAPC, upon the advice of the City of Mandurah. The schedule is to include the amount of land developed or proposed for development, the land provided as open space to date, and the open space proposed in the application for subdivision.

2.0 Other Requirements

2.1 Residential Density Codes Plan

- 2.1.1. Plan 1 defines the broad residential density ranges that apply to specific areas within the Outline Development Plan. Lot specific residential densities, within the defined residential density ranges, are to be subsequently assigned in accordance with a Residential Density Code Plan approved by the WAPC.
- 2.1.2. A Residential Density Code Plan is to be submitted at the time of subdivision to the WAPC and shall indicate the Residential Density Coding applicable to each lot within the subdivision and shall be consistent with the Outline Development Plan, and the Residential Density Ranges identified on Plan 1 and locational criteria contained in Section 5.0.
- 2.1.3. The Residential Density Code Plan is to include a summary of the proposed dwelling yield of the subdivision.
- 2.1.4. Approval of the Residential Density Code Plan shall be undertaken at the time of determination of the subdivision application by the WAPC. The approved Residential Density Code Plan shall then form part of the Outline Development Plan and shall be used for the determination of future development applications. Variations to the Residential Density Code Plan will require further approval of the WAPC.
- 2.1.5. Residential Density Code Plans are not required if the WAPC considers that the subdivision is for one or more of the following:-
- the amalgamation of lots;
 - consolidation of land for "superlot" purposes to facilitate land assembly for future development;
 - the purposes of facilitating the provision of access, services or infrastructure; or
 - land which by virtue of its zoning or reservation under the Outline Development Plan cannot be developed for residential purposes.

2.2 Local Development Plans

- 2.2.1. Local Development Plans shall be prepared for all lots within the subject site.
- 2.2.2. Local Development Plans are to be prepared as a condition of subdivision approval.
- 2.2.3. Local Development Plans are to be prepared in accordance with or with due regard to Liveable Neighbourhoods, the Residential Design Codes, and all Management Plans specified in Appendix 10 of the City of Mandurah
- 2.2.4. Those lots identified in a Bushfire Management Plan as requiring additional development or construction requirements may be identified accordingly in Local Development Plans
- 2.2.5. Where trees are required to be retained on private lots, Local Development Plans shall identify Tree Protection Zones
- 2.2.6. A local development plan may be used to elaborate or expand development provisions of the Outline Development Plan, the Scheme, Local Planning Policies and the Residential Design Codes.
- 2.2.7. In assessing Local Development Plans the following provisions shall apply:
 - 2.2.7.1. Council may waive any requirement to advertise a Local Development Plan where the land the subject of a Local Development Plan is in single ownership and the adjoining land is in the same ownership.
 - 2.2.7.2. Where subject to clause 2.2.7.1, the timeframe for Council approval of the Local Development Plan shall be 21 days.
 - 2.2.7.3. Local Development Plans shall be adopted by the City as if they were part of the Outline Development Plan and shall be included in a Schedule to the Outline Development Plan.

- 2.2.8. In assessing development on lots subject of a Local Development Plan, the following provisions shall apply:

- 2.2.8.1. Development and/or land use proposals that comply with the provisions of an approved Local Development Plan are exempt from requiring planning approval under Clause 7.1 of the Scheme.
- 2.2.8.2. Variations to the Residential Design Codes contained in Local Development Plans will be considered to constitute 'Deemed-to-comply' and therefore do not require neighbour consultation or planning approval.
- 2.2.8.3. Where variations to an approved Local Development Plan are proposed, these shall be dealt with as an R-Codes Variation Application.

2.3. Serpentine Investigation Precinct

- 2.3.1. Plan 1 identifies the Serpentine Investigation Precinct.
- 2.3.2. Land within the Serpentine Investigation Precinct shall be developed generally in accordance with the detailed design concept for the precinct included as Plan 2, including relevant annotations.
- 2.3.3. Development outcomes annotated on Plan 2 shall be required, as appropriate
 - a) Prior to subdivision;
 - b) To be included in Local Development Plans; or
 - c) To be included in Design Guidelines

2.4 Further Reporting and Management Plans Required

- 2.4.1. To facilitate development of the project area, further reporting and/or management plans are to be prepared, as applicable, to the satisfaction of the relevant authority as outlined in Table 3 below.
- 2.4.2. Two or more of the following may be combined into one document if supported by the relevant authority.

TABLE 3: TIMING OF FURTHER REPORTING AND MANAGEMENT PLANS

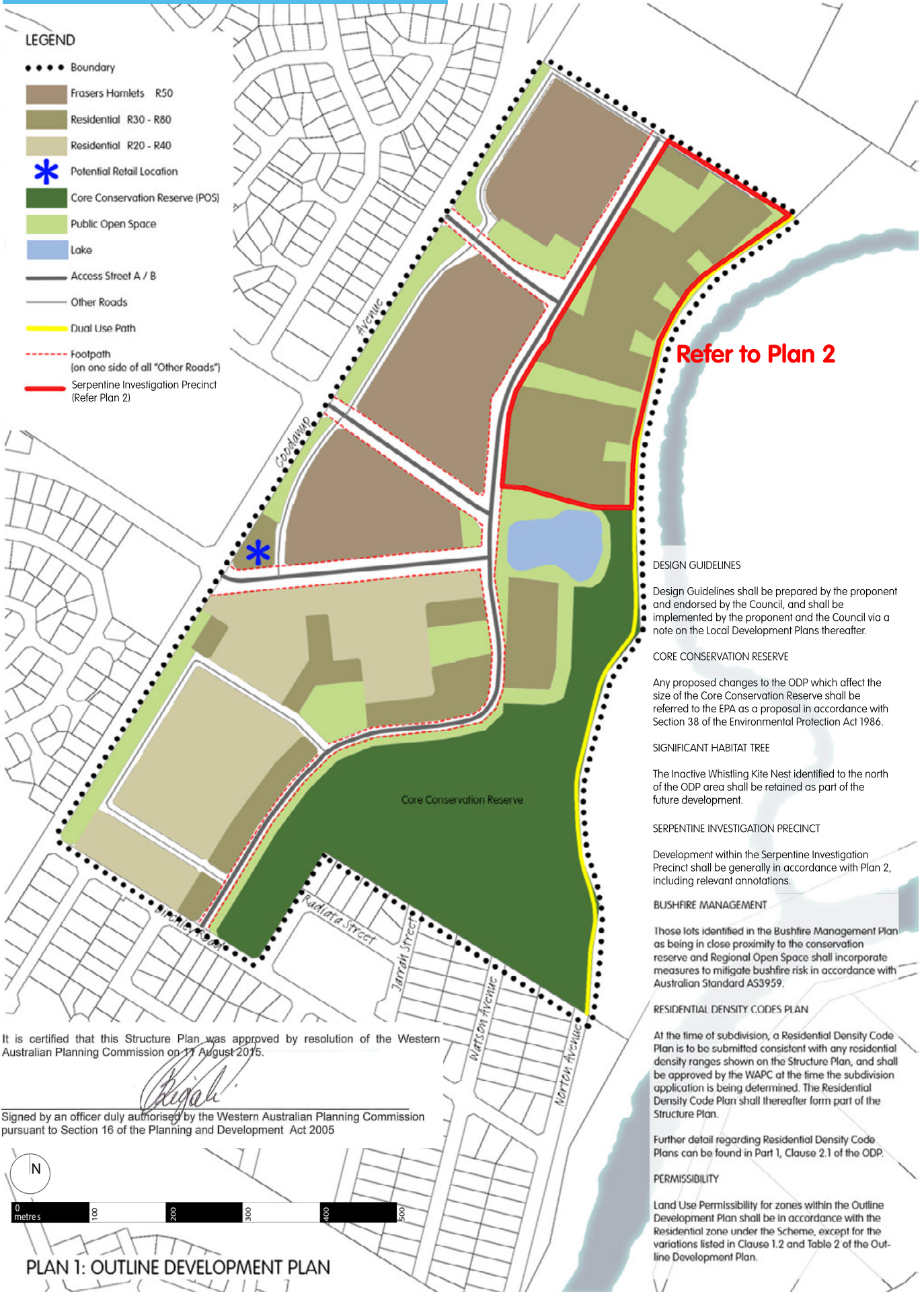
Report	When Required	Approved By
Environmental Assessment Report	With ODP	WAPC
Bushfire Management Plan	With ODP	WAPC
Engineering Servicing Report	With ODP	WAPC
Review of Aboriginal Heritage	With ODP	WAPC
Coodanup Local Community Identity	With ODP	WAPC
Transport Planning	With ODP	WAPC
Preliminary Irrigation Water Supply Assessment	With ODP	WAPC
Transport Impact Assessment	With Subdivision	WAPC
Residential Density Code Plan	With Subdivision	WAPC
POS Schedule	With Subdivision	WAPC
Landscape/POS Management Plan	Condition of Subdivision	City of Mandurah
Local Development Plan	Condition of Subdivision	City of Mandurah
Urban Water Management Plan	Prior to Site Works	City of Mandurah
Nutrient & Irrigation & Fill Management Plan	Prior to Site Works	City of Mandurah
Artificial Water Body Management Plan	Prior to Site Works	City of Mandurah
Vegetation Retention Management Plan	Prior to Site Works	City of Mandurah
Flora Relocation Management Plan	Prior to Site Works	City of Mandurah
Foreshore and Core Conservation Reserve Management Plan	Prior to Site Works	City of Mandurah
Mosquito Management Plan	Prior to Site Works	City of Mandurah
Wildlife Management Plan	Prior to Site Works	City of Mandurah
Design Guidelines	Prior to building licence	City of Mandurah

Note: Some of the above plans have been approved under the previous Outline Development Plan, and may be applicable without further modification (or with only minor modification) required

OUTLINE DEVELOPMENT PLAN

LEGEND

- Boundary
- Frasers Hamlets R50
- Residential R30 - R80
- Residential R20 - R40
- * Potential Retail Location
- Core Conservation Reserve (POS)
- Public Open Space
- Lake
- Access Street A / B
- Other Roads
- Dual Use Path
- Footpath (on one side of all "Other Roads")
- Serpentine Investigation Precinct (Refer Plan 2)



Refer to Plan 2

DESIGN GUIDELINES

Design Guidelines shall be prepared by the proponent and endorsed by the Council, and shall be implemented by the proponent and the Council via a note on the Local Development Plans thereafter.

CORE CONSERVATION RESERVE

Any proposed changes to the ODP which affect the size of the Core Conservation Reserve shall be referred to the EPA as a proposal in accordance with Section 38 of the Environmental Protection Act 1986.

SIGNIFICANT HABITAT TREE

The Inactive Whistling Kite Nest identified to the north of the ODP area shall be retained as part of the future development.

SERPENTINE INVESTIGATION PRECINCT

Development within the Serpentine Investigation Precinct shall be generally in accordance with Plan 2, including relevant annotations.

BUSHFIRE MANAGEMENT

Those lots identified in the Bushfire Management Plan as being in close proximity to the conservation reserve and Regional Open Space shall incorporate measures to mitigate bushfire risk in accordance with Australian Standard AS3959.

RESIDENTIAL DENSITY CODES PLAN

At the time of subdivision, a Residential Density Code Plan is to be submitted consistent with any residential density ranges shown on the Structure Plan, and shall be approved by the WAPC at the time the subdivision application is being determined. The Residential Density Code Plan shall thereafter form part of the Structure Plan.

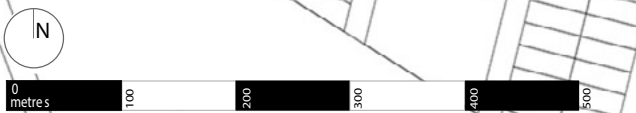
Further detail regarding Residential Density Code Plans can be found in Part 1, Clause 2.1 of the ODP.

PERMISSIBILITY

Land Use Permissibility for zones within the Outline Development Plan shall be in accordance with the Residential zone under the Scheme, except for the variations listed in Clause 1.2 and Table 2 of the Outline Development Plan.

It is certified that this Structure Plan was approved by resolution of the Western Australian Planning Commission on 17 August 2015.

Signed by an officer duly authorised by the Western Australian Planning Commission pursuant to Section 16 of the Planning and Development Act 2005



PLAN 1: OUTLINE DEVELOPMENT PLAN

SERPENTINE INVESTIGATION PRECINCT



Plan 2: Serpentine Investigation Precinct

Development of this precinct is to be generally in accordance with this plan and the annotated principles

1:2000 @ A3



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DISCLAIMER

Build form and dwelling yields are illustrative only.

This plan has been prepared based on all residential lots storing their own drainage on site by the use of soakwells or other accepted means. Vegetation retention in the potential swale areas will need to be determined during detailed design when exact storage volumes and tree locations are available while complying with relevant environmental approvals. Assumes discharge of any storm event in excess of 1 in 10 to the foreshore reserve subject to relevant authorities' approvals.





part two
explanatory section

part two explanatory section

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- 1.3 Legal Description of Land

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 - 2.3.1 Directions 2031
 - 2.3.2 Outer Metropolitan Perth and Peel Sub-regional Strategy
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01

introduction_

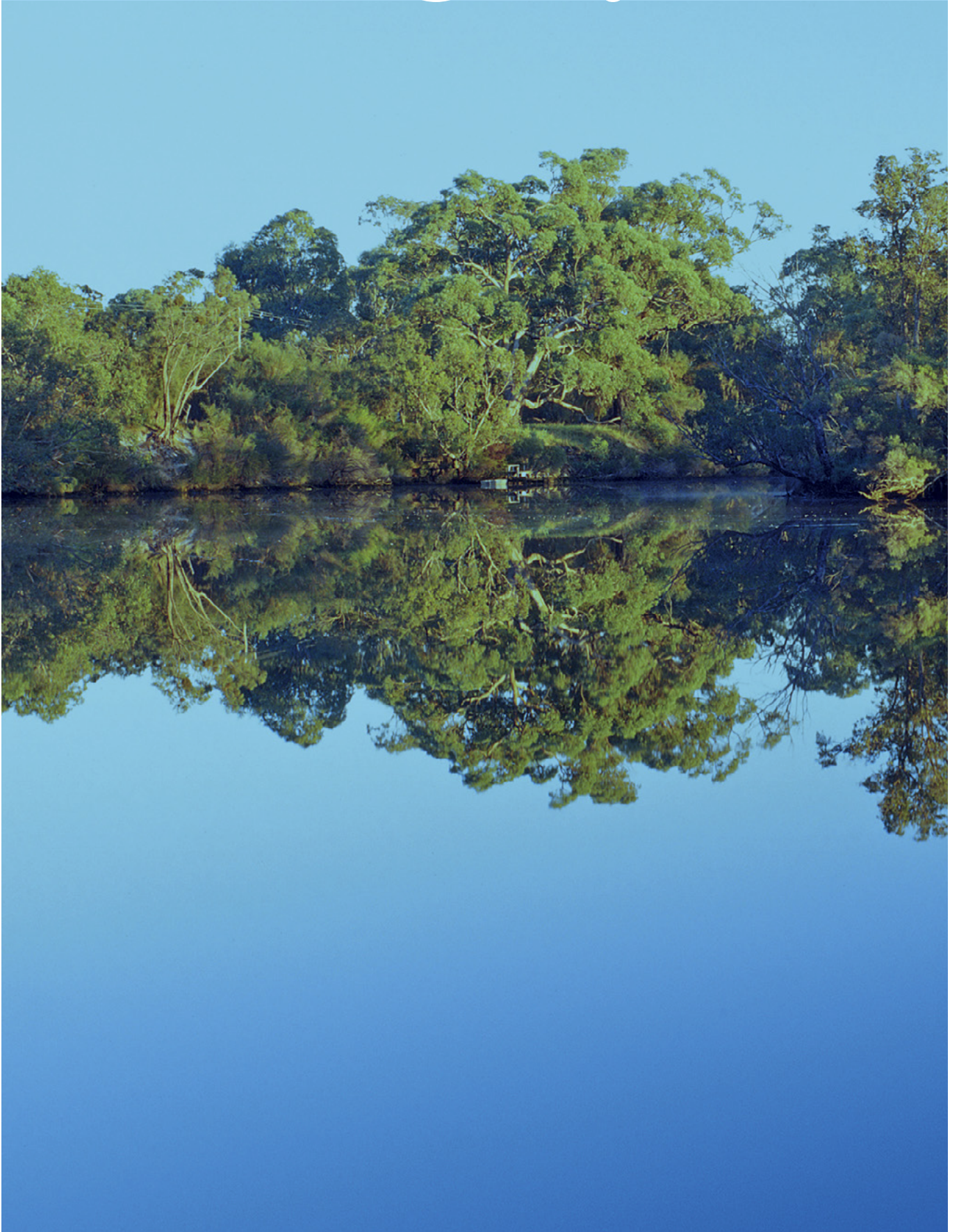
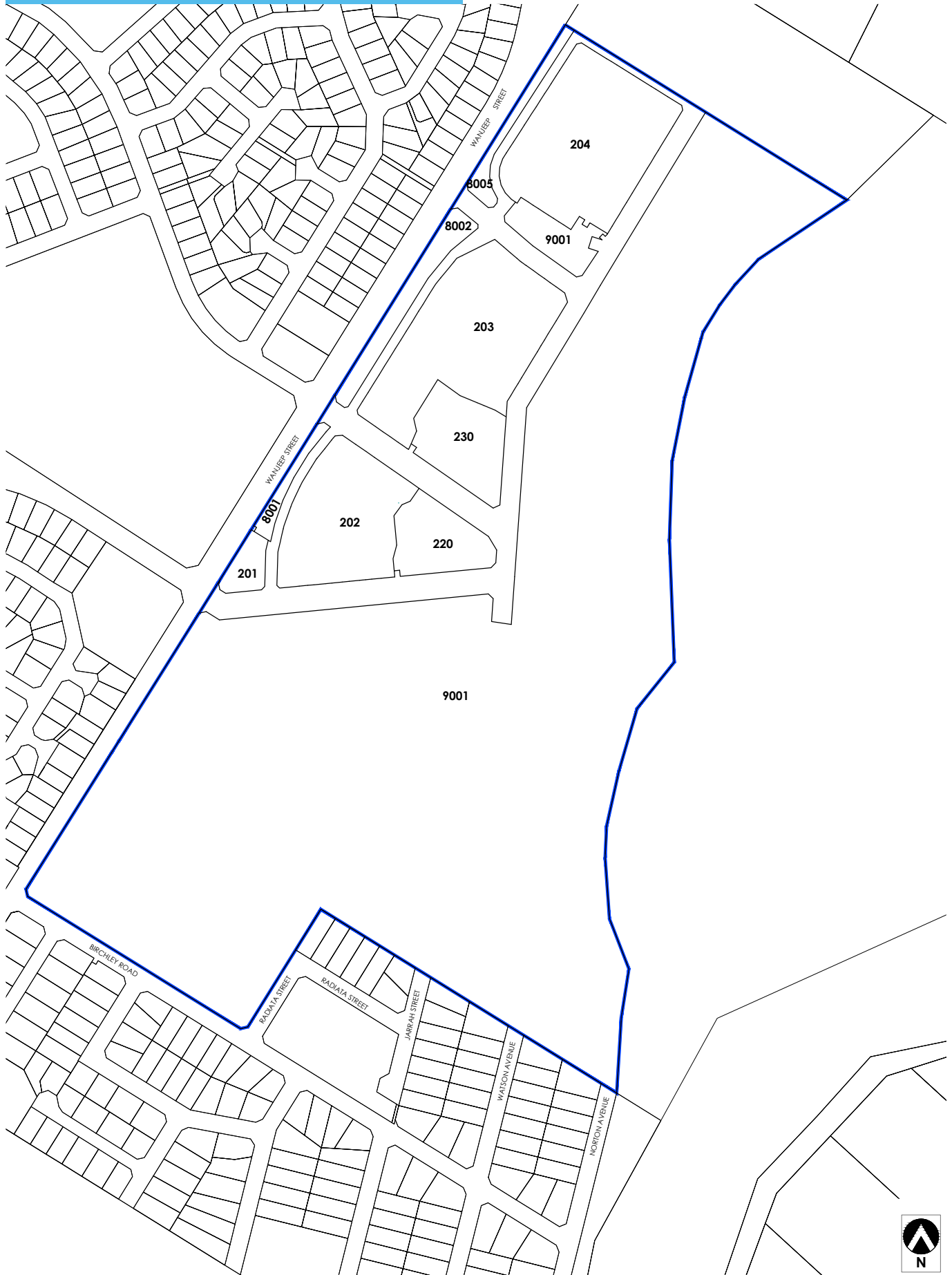


FIGURE 1: EXISTING CADASTRE



01 part two: explanatory section introduction

1.1 Purpose of the Outline Development Plan

This Outline Development Plan (ODP) has been prepared to guide subdivision and development of the Frasers Landing project. The land is currently subject of an ODP, prepared in 2006, however a number of factors outlined in this explanatory section have necessitated preparation of a new ODP.

This ODP meets the requirements for the Urban Development zone under the City of Mandurah's Town Planning Scheme No 3 (TPS 3), as a prerequisite for subdivision or development of the subject land.

This section provides an analysis of the ODP, including site description, the existing statutory planning environment, opportunities and constraints, vision and principles, an illustrative development scenario for the project, and guidance on implementation.

In light of the site history and existing development on the site, particular emphasis in the ODP has been on maintaining continuity and consistency between the existing development and proposed future development of the site.

1.2 Maintaining the Vision

In keeping with the continuity and consistency of objectives of the ODP, it is important to acknowledge the existing hamlets, developed under the previous ODP, were designed and developed to realise a vision for Frasers Landing.

This vision, '**creating a new riverine community**', was established early in the previous design process, remains relevant, and continues to drive the design of this ODP.

Although some aspects of the design and other project elements have changed, the vision of for Frasers Landing remains, and is a fundamental factor directing design and implementation of the project.

1.3 Legal Description of Land

The land comprises seven freehold lots listed in Table 1 and Figure 1. The site has a total area of 52.26ha, which also includes roads already dedicated and constructed, and open space which has been ceded and developed.

It should be noted that lots 202 and 203 represent Hamlets 2 and 3 respectively, which are already constructed. For each hamlet, the freehold lot is comprised of grouped dwellings, private roads and communal open space, and contains a survey strata scheme.

TABLE 1: LEGAL DESCRIPTION OF LAND

Lot Number	Volume	Folio	Area (ha)
201	2724	753	0.2646ha
202	2724	754	1.9121ha
203	2726	943	2.8333ha
204	2763	766	2.7206ha
220	2724	755	0.8090ha
230	2726	944	1.0094ha
9001	2763	767	37.1233ha
8001	LR3157	484	0.2048ha
8002	LR3157	500	0.5932ha
8005	LR3160	353	0.2993ha
Road Reserves			4.4904ha
Total Area			52.26ha

02

project context_



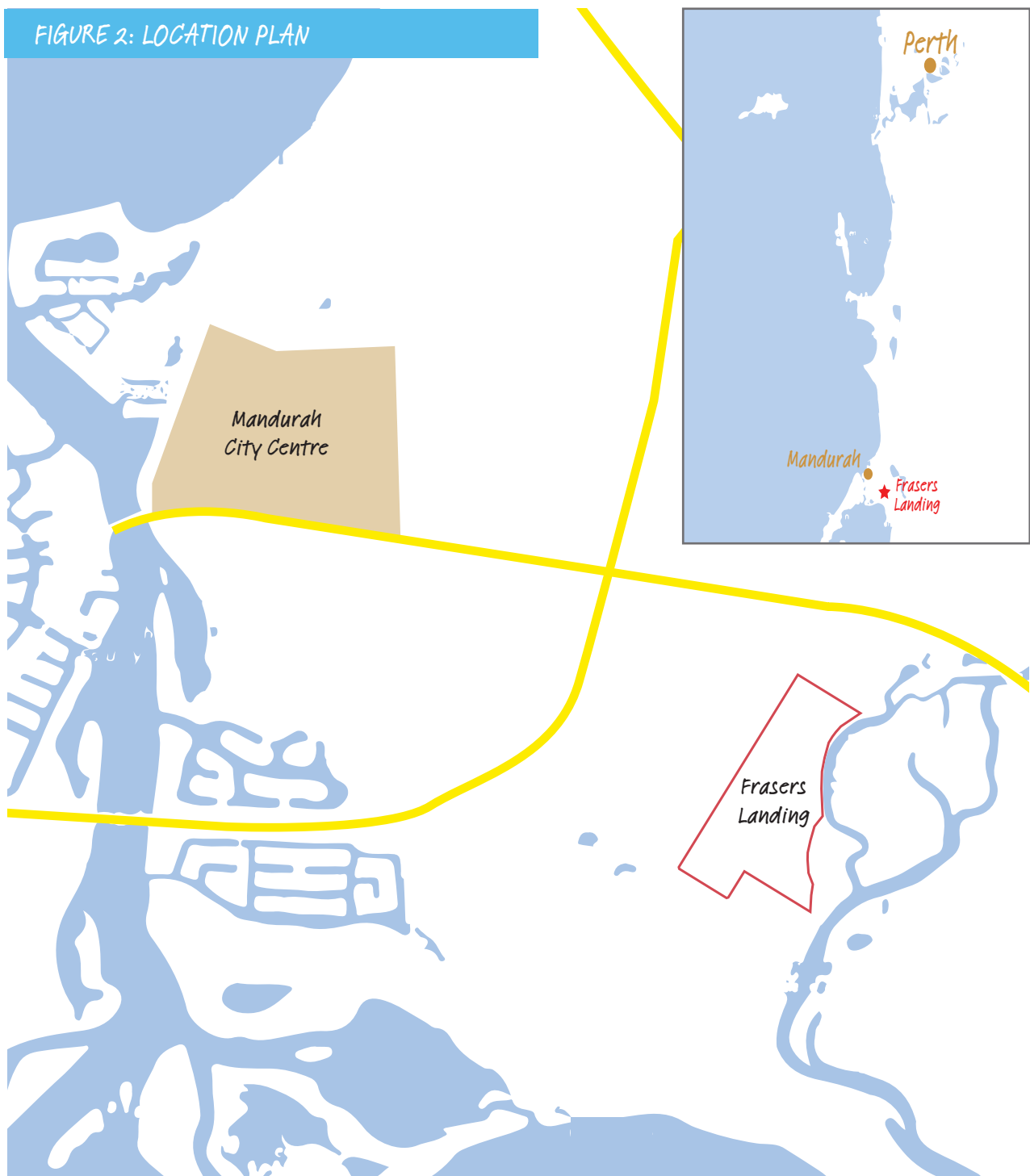
02 part two: explanatory section project context

2.1 Location

The Frasers Mandurah settlement is situated within Coodanup, approximately 72 kilometres south of the Perth Central Business District and is within the City of Mandurah, approximately five kilometres east of the Mandurah CBD. Its natural landscape features include a tributary of the Serpentine River, and bushland.

Primary access to the site is from Wanjeep Street, to the west, where access points to the subject site are established with constructed roundabouts. To the north, Wanjeep Street connects with Pinjarra Road, forming a signalised four way intersection with Lakes Road. Access to Perth can be achieved via Mandurah Road to the West or Kwinana Freeway to the east, along Pinjarra Road

The existing and future public transport facilities are depicted in the Public Transport Plan in this report. The proposed development is serviced by bus Route 597 with a bus stop located adjacent to Coodanup Community College on Wanjeep Street. The site is also within 1.5km of the Mandurah Bus/ Train Station.



2.2 Site context

2.2.1 Topography

The Urban component of the site is generally low lying and gently grades in an easterly direction from a high point of 6m AHD in the south western corner to 2m AHD along the foreshore of the tributary of the Serpentine River. The boundary of the development area also represents the boundary of the floodway for the tributary, as established by site investigation.

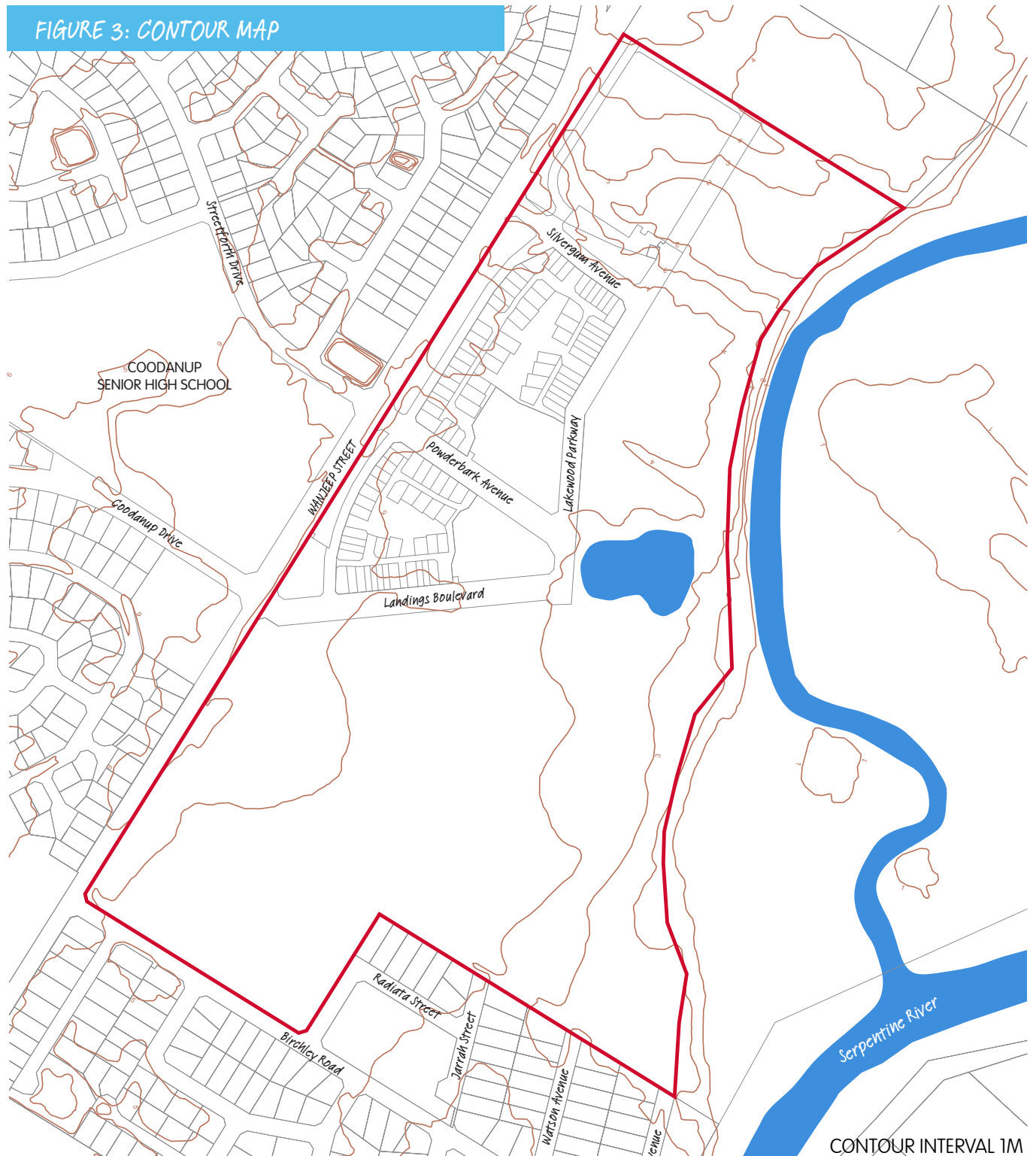


FIGURE 4: SITE CONTEXT



2.2.2 Flora and Fauna

Department of Environment and Heritage

In September 2006, the Frasers Landing ODP was voluntarily referred to the then Federal Department of Environment and Heritage (DEH). Given the significant environmental planning that had been undertaken, together with substantial areas of on-site conservation proposed, the DEH considered that the proposal would not result in significant impacts to specific Matters of National Environmental Significance protected under the Environment Protection and Biodiversity Conservation Act 1999. In this regard it was decided that the implementation of the project was "Not a Controlled Action" provided it was undertaken in a particular manner.

The DEH instructed the following measures to be implemented to ensure significant impacts are avoided to populations of Carnaby's Black Cockatoo, White-Bellied Sea-Eagle, and the ecological character of the Peel-Yalgorup Ramsar Wetlands:

- Native vegetation totalling a minimum of 16.0ha to be retained on site, most of which is retained in the Core Conservation Reserve (CCR);
- Implementation of management measures including a Vegetation Retention Management Plan, Vegetation Management Plan, Foreshore and Core Conservation Reserve Management Plan, and Wildlife Management Plan;
- Prior to commencement of works, commitments to the retention and identification on the ODP of specific habitat trees, including the nest tree, used by the White-bellied Sea-eagle. In particular the Wildlife Management Plan must be implemented;
- All trees identified to be retained, and including the buffers distances from development will be clearly marked on the ODP and on all maps used during construction to ensure no inadvertent intrusion into designated buffer areas; and
- The implementation of a site water management plan, including Urban Water Management Plan, Nutrient and Irrigation and Fill Management Plan, Artificial Water Body Management Plan, and Acid Sulfate Soils Management Plan.

The revised ODP is consistent with the DEH determination, which remains unchanged. Importantly, the revised ODP complies with the DEH instructed measures including the retention of 16ha of native vegetation tree canopy, with 11.85ha of native vegetation being retained in the CCR. Consequently, it will not be necessary for the revised ODP to be again referred to the Commonwealth government.

Vegetation Complexes

Figure 5 'Vegetation Complexes' illustrates that the majority of the ODP site is within the Yoongarillup, which is described as Woodland to tall woodland of tuart with Peppermint in the second storey. A smaller open forest area of tuart-jarra-marri also exists.

Approximately 4ha in the south east of the ODP site is within the Vasse Complex which is described as a mixture of closed scrub fringing a woodland of river gum and paperbark and open forest of tuart-jarra-marri. This entire area is with the Core Conservation Reserve of the ODP.

Vegetation Types and Communities

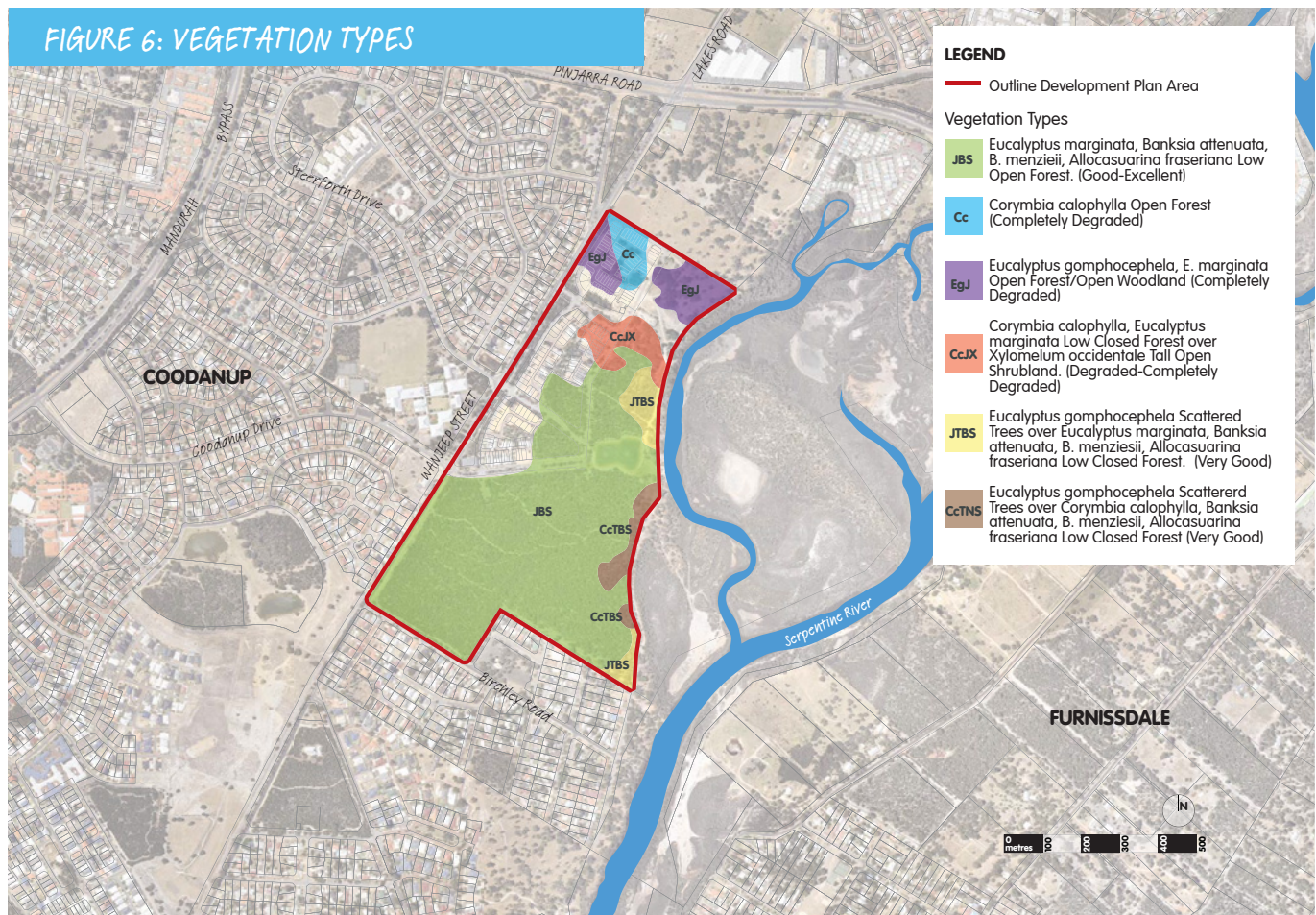
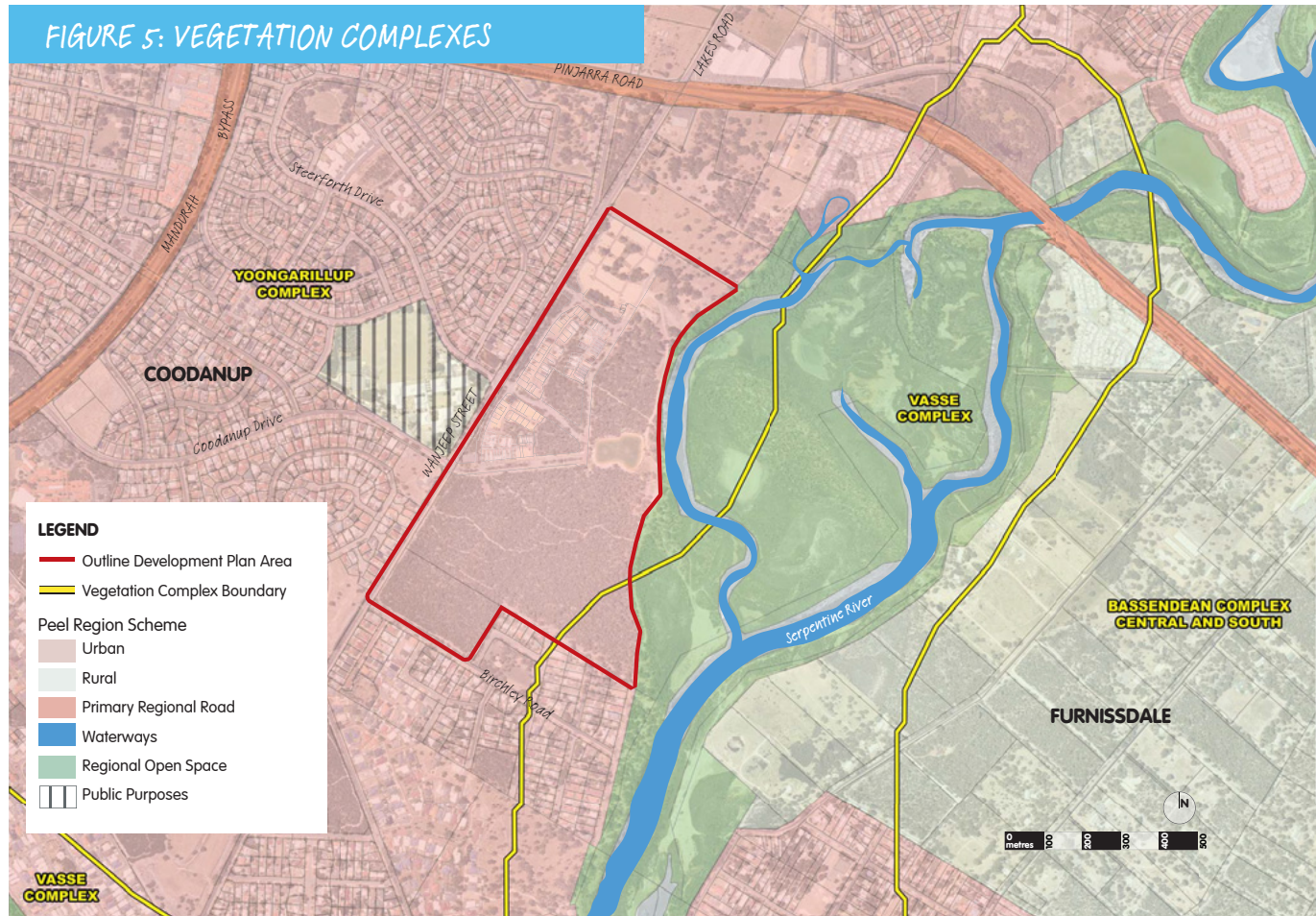
Vegetation surveys undertaken for the urban component of the site identified six vegetation types, with the majority of the site comprising if Jarrah-Banksia-Sheoak (JBS) low open forest (refer to Figure 6: Vegetation Communities and Condition).

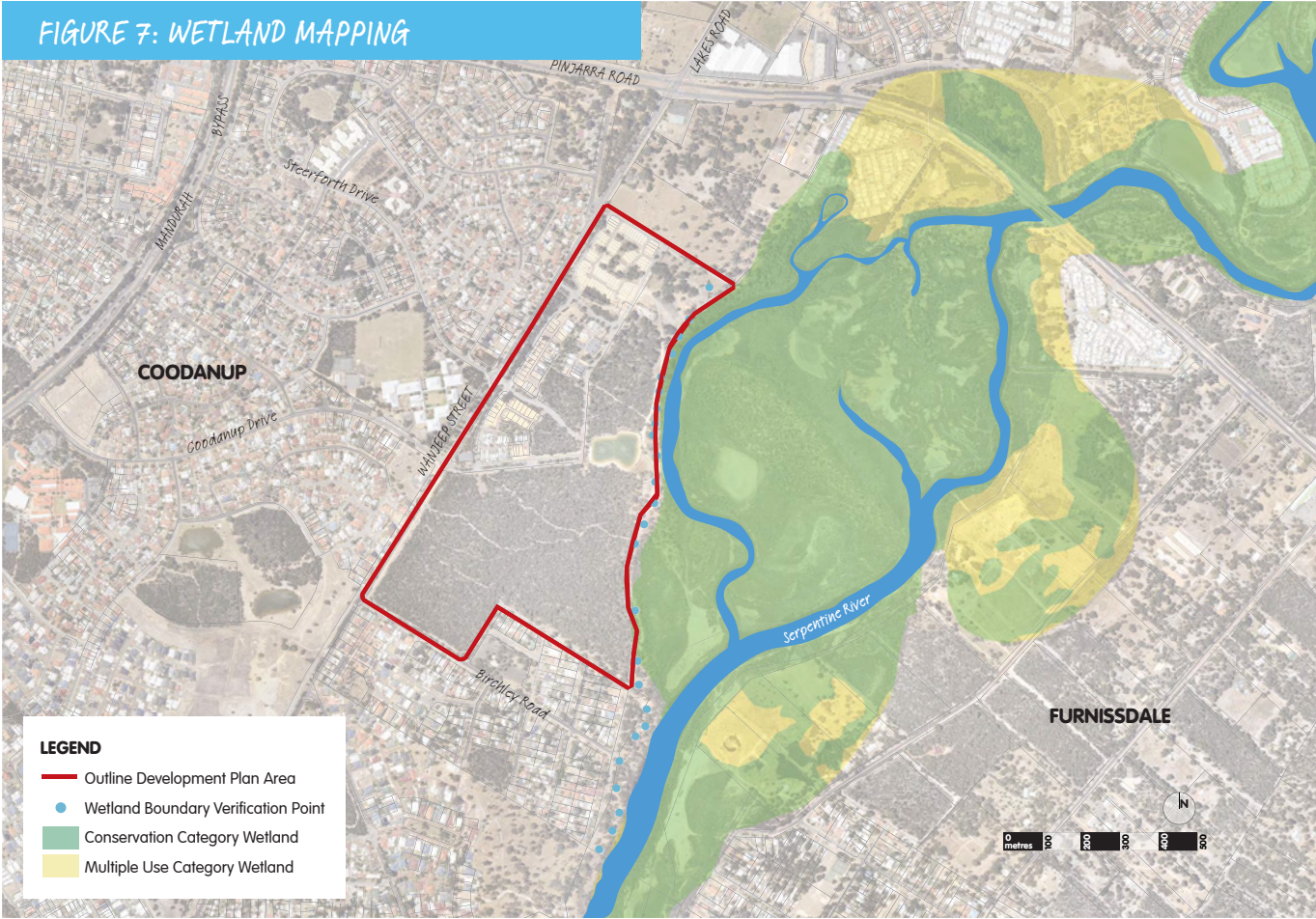
Flora

A September survey of the Urban zoned component of the site recorded 101 flora species whilst no 'Declared Rare' or 'Priority' species were recorded.

Fauna

The good quality vegetation at the site and proximity to the tributary of the Serpentine River environment results in a range of fauna habitats. A Level 2 Fauna Survey was undertaken by Bamford Consulting Ecologists for the Urban component of the site in accordance with the EPA's Guidance Statement No. 56 - Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia.





2.2.3 Hydrology and Soils

2.2.3.1 Surface Hydrology and Groundwater

The site is located on the western shore of the tributary of the Serpentine River, within the water catchment of the Peel-Harvey Estuary.

As illustrated in Figure 8, the site is not within the floodway or floodplain of the tributary of the Serpentine River. The site boundary abuts the extent of the 1 in 100 year floodplain.

Depth to groundwater varies from approximately 5m below ground level in the west and north western areas of the site, to near 0m at the eastern edge of the ODP area. Groundwater flow in the area is generally towards the tributary of the Serpentine River.

2.2.3.2 Soils, and Acid Sulphate Soils

In the western portion of the site (above the 2m AHD contour) where development is permitted, there is relatively loose soil to a depth of about 3m, which overlies medium density soils.

Figure 9 illustrates Acid Sulfate Soil (ASS) risk mapping. Further preliminary ASS investigations have been undertaken for the site, which indicates that the site-specific potential for ASS is limited to the riverine margin of the site. This is further discussed in the Servicing Infrastructure and Utilities Section of the ODP.

2.2.4 Landscape

A field and site survey of the mature trees was undertaken on site as part of preparation of the Vegetation Retention Management Plan to determine the quantity and quality of the mature trees and to explore the possibility of integrating them into the site development.

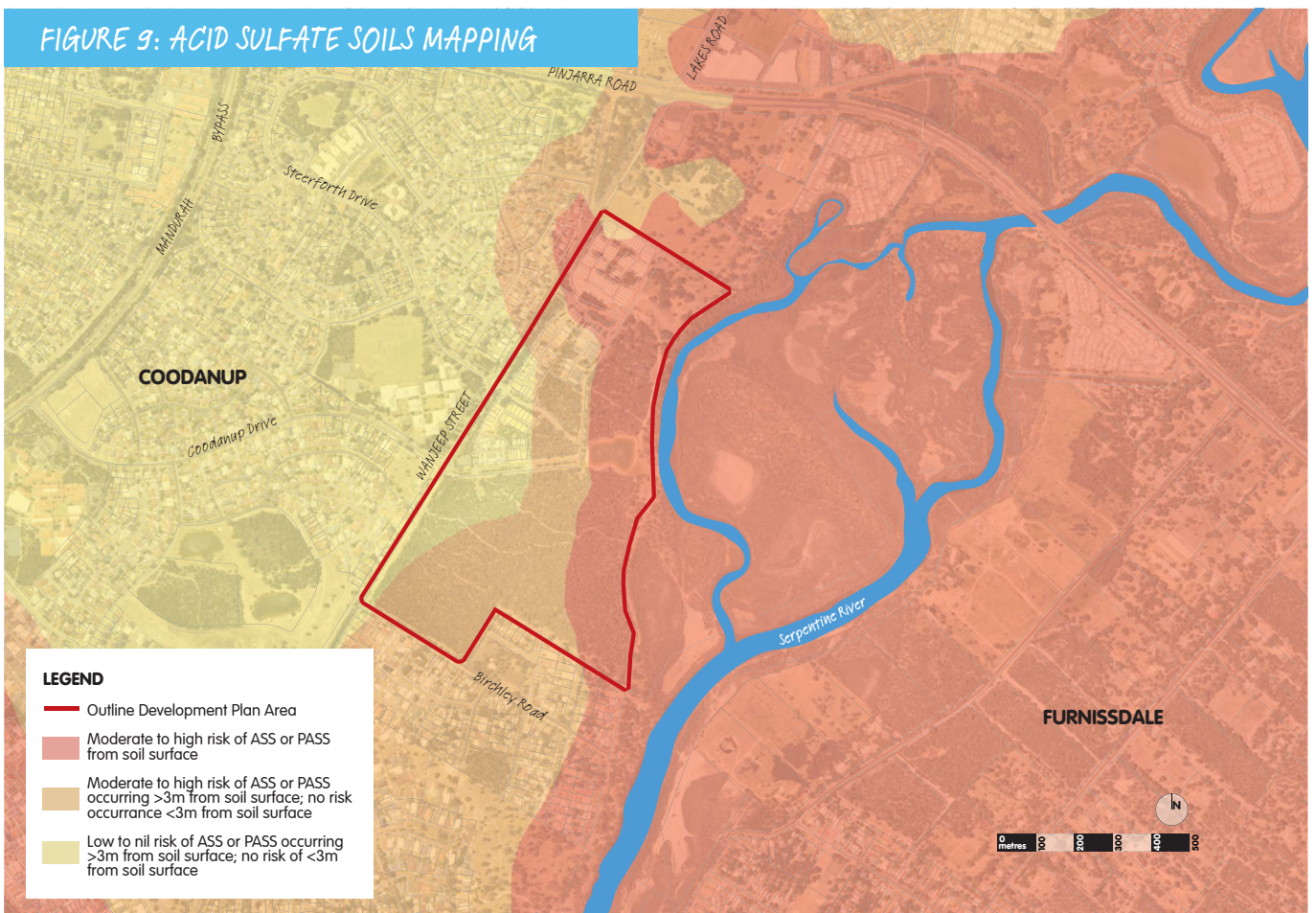
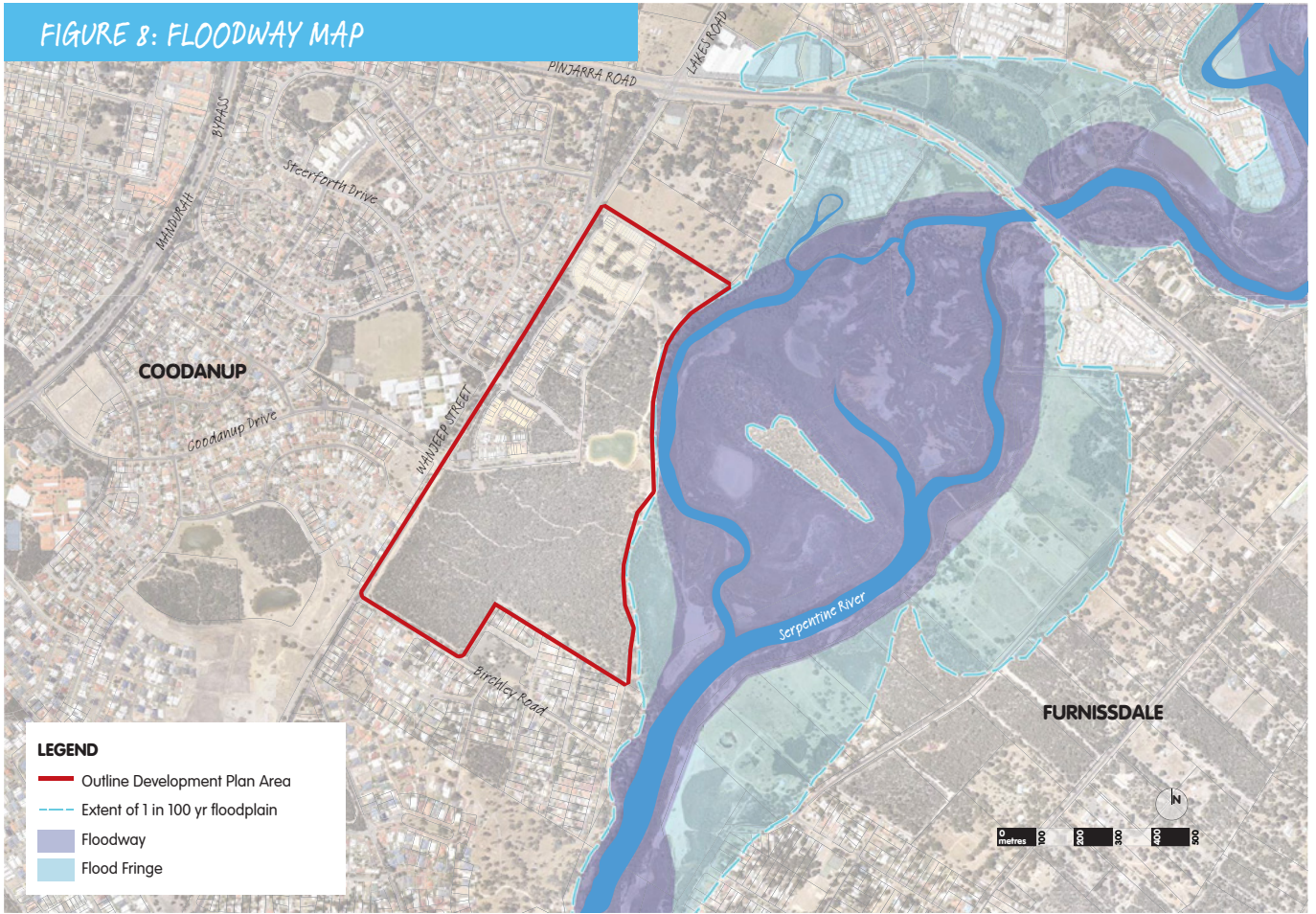
Two major types of trees were identified which included:

- **Habitat Trees:** These habitats were primarily hollows that are mostly suitable for parrots, possums, and bats. The most significant habitat trees were two active raptor nests; and
- **Landmark Trees:** Predominantly Marri, Jarrah and Tuart which have been identified as mature with a good form and are in good condition. Many of these trees range in height from 20 – 35m. A significant group of banksias trees was also identified.

2.2.5 Aboriginal Heritage

Investigations and consultations were undertaken to identify any sites of Aboriginal significance within the Frasers Mandurah landholding. The Serpentine River is a registered Aboriginal Heritage Site of ceremonial and mythological significance.

No sites of significance are recorded on within the ODP area, and consultation with the Traditional Owners raised no objection to the proposed rezoning of the land under TPS 3 or preparation of the ODP.



2.2.6 Surrounding Urban Development

Existing urban development is located to the north, west and south of the site and is mainly residential. The existing community of Coodanup is diverse, with lower to middle income households. Housing includes Department of Housing tenancies, a retirement village, rental properties and home owners.

The housing stock immediately to the south of the site was constructed during the 1950's through to the 1970's, much of it as holiday accommodation. This area has recently experienced a renewal of the housing stock, with the replacement of fibro houses with two storey dwellings in some locations. The lot sizes within this location reflected the earlier demand for traditional quarter acre lots (1012sqm), some of which have been progressively resubdivided.

Housing immediately to the west was constructed during the 1980's and is predominantly low density single residential. Given the proximity of the tributary of the Serpentine River, regional shopping facilities, and the Mandurah rail station, it is anticipated that the area will continue to experience the renewal of housing stock as existing housing ages. More recent subdivision has occurred to the south and south-west of the site, including Mariners Cove and Placid Waters.

Retail and Commercial Centres

A convenience store operates on Wanjeep Street opposite the site. The north eastern side of the Lakes Road/ Pinjarra Road intersection has recently been developed as a mixed-business employment node. The north west and southern sides of the intersection are anticipated to be further developed for mixed business service commercial development. The site is also in close proximity to the Mandurah Forum (less than 3km away), a regional shopping centre.

Public Open Space

A range of open spaces already serve the locality, including the playing fields of the Coodanup Community College immediately opposite the site on Wanjeep Street. The City of Mandurah has advised that these facilities will adequately cater for the active recreation demands for the existing and future residents of Coodanup. In determining the approved ODP the City of Mandurah and the Western Australian Planning Commission considered the existing open space network.

2.3 Strategic planning

2.3.1 Directions 2031 and Beyond – A Spatial Framework for Perth and Peel

Directions 2031 provides an overarching strategic framework for the Perth and Peel Regions. A key element of Directions 2031 is the consolidation of existing urbanised areas to ensure the efficient use of land and infrastructure.

The subject site is within the 'Peel Sub-Region', which is identified as requiring an additional 26,000 dwellings by this time. Directions 2031 seeks a 50% increase in the current average residential density to 15 dwellings per gross urban zoned hectare of land in new development areas.

The revised Frasers Landing ODP will contribute to meeting the forecast housing needs of the Peel region within close proximity to employment and public transport nodes. Further to this, the revised ODP will contribute to the diversity of housing in the locality and meet market demands and a variety of lifestyle choices.

2.3.2 Outer Metropolitan Perth and Peel Sub-regional Strategy

The draft Outer Metropolitan Perth and Peel Sub-regional Strategy ('OMPPSRS') provides a strategic framework for the planning of urban growth consistent with Directions 2031. It supports the urban development of the subject site within a number of Plans including:

- Opportunities and Constraints Analysis Plan which shows the site as 'urban zoned underdeveloped;'
- Urban Expansion Plan which shows the site as 'MRS & PRS undeveloped urban and urban deferred area;'
- Peel Sub-region Spatial Framework Map which shows the site as 'urban zoned undeveloped.'

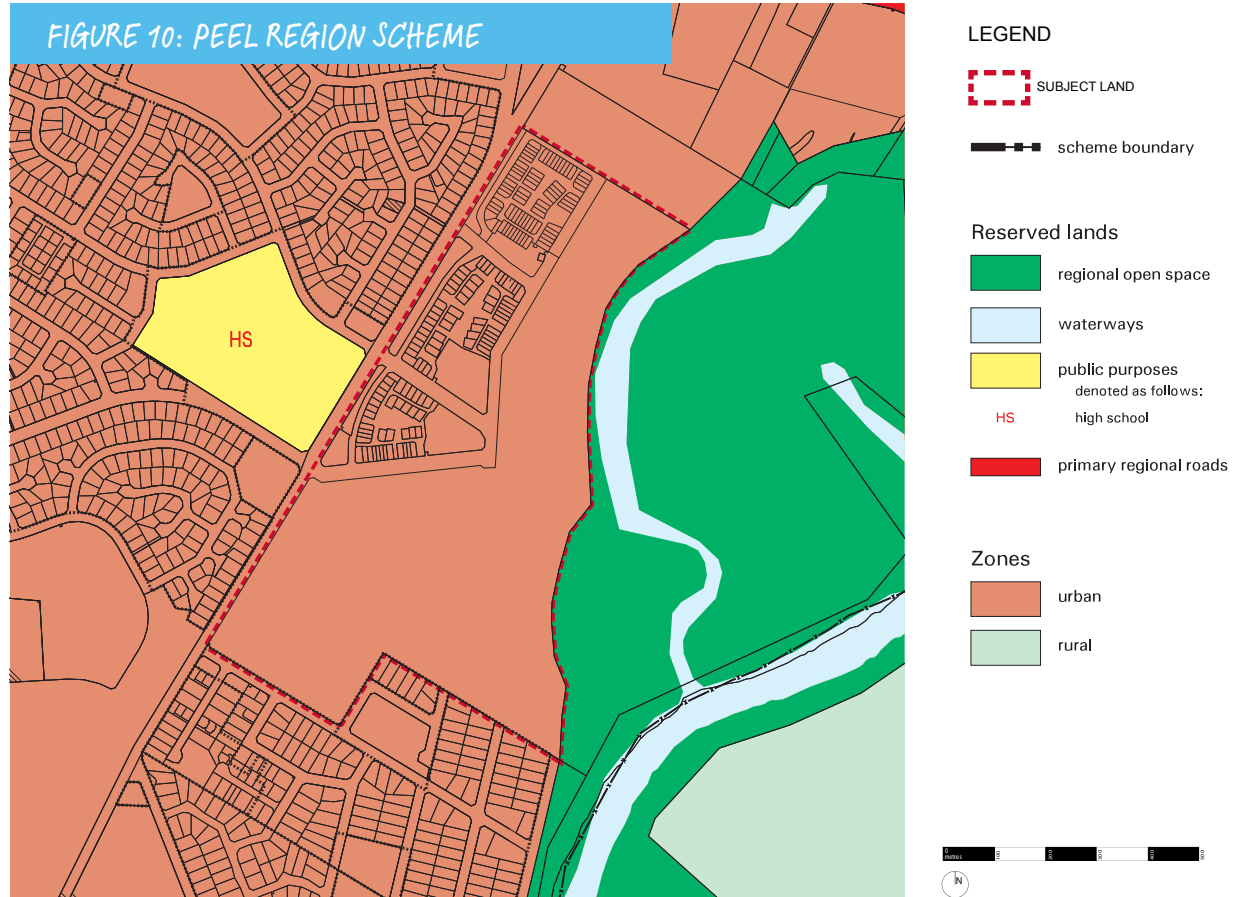
The OMPPSRS allocates the Coodanup locality with a 'connected city scenario dwelling yield' of 1,300+ dwellings.

It is unclear how this figure was derived. This is greater than the yield proposed in the previous ODP, which was itself ambitious. The revised ODP will contribute to meeting the allocated dwelling yield, however the overall yield identified for the site in this strategy is considered unrealistically high.

2.4 Statutory planning

2.4.1 Peel Region Scheme

The subject site is zoned "Urban" under the Peel Region Scheme, which, subject to the provisions of the City of Mandurah Town Planning Scheme No 3 (TPS 3), is suitable for residential development as proposed in the ODP.

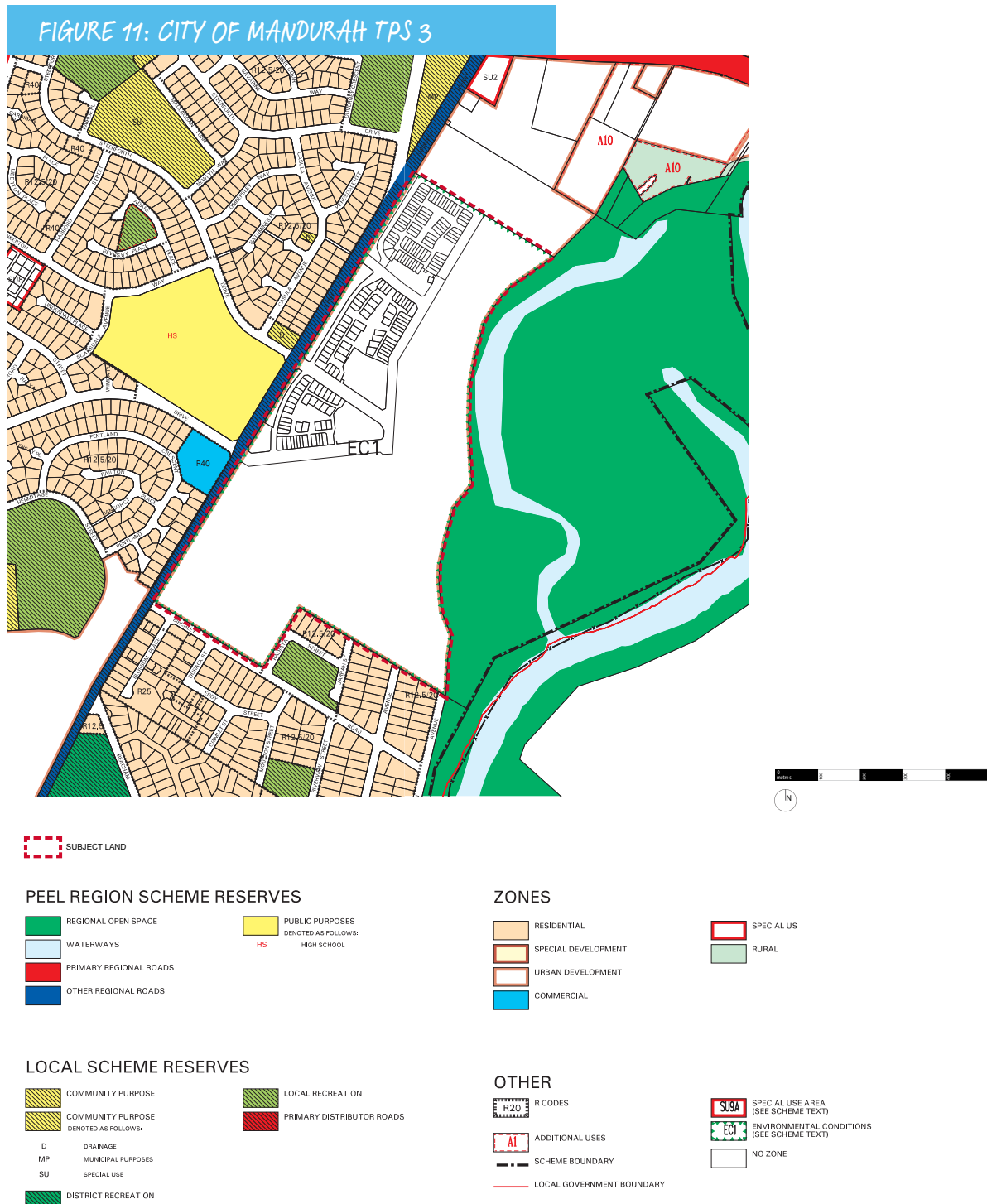


2.4.2 City of Mandurah Town Planning Scheme No. 3

In accordance with the provisions of the City of Mandurah TPS 3, the subject site is zoned 'Urban Development' and identified as subject to 'Environmental Conditions', as articulated in Appendix 10 of TPS 3. The Urban Development zone is intended to provide future residential and urban development of a site following comprehensive planning resulting in an approved ODP. Clause 4.9.2.1 states:

"The permissibility of uses in the Urban Development Zone and the relevant development and subdivision standards are specified in an approved Outline Development Plan, prepared and approved pursuant to Clause 7.11 of the Scheme."

This ODP represents the comprehensive planning required prior to subdivision and development of the subject land.



2.4.3 District Structure Planning

Mandurah East Structure Plan (November 2009)

The Mandurah East Structure Plan (MESP) was approved and endorsed by the WAPC November 2009. The Structure Plan notes that the development of the subject site is to be in accordance the existing Frasers Mandurah ODP.

The most significant element of the MESP is the connections to Wanjeep Street (which are unchanged with the updated ODP) and the interface with the surrounding development.

2.4.4 Existing Outline Development Plan

The existing Frasers Mandurah ODP was approved and endorsed by the WAPC on 22 August 2006. Given the significant economic events and changes in market demand since this time, it has been necessary to re-examine the design of the proposed development by means of a revised ODP, while maintaining the vision for Frasers Landing.

The revised ODP is intended to replace the 2006 ODP. The existing ODP will however remain operational and guide any further development until such time as the revised ODP is endorsed by the WAPC.

2.5 Planning Policies

2.5.1 State Government

Statements of Planning Policies

In assessing planning and development proposals, local and state government must have 'due regard' for any relevant Statements of Planning Policy (SPP) prepared and adopted by the WAPC. Relevant SPP's for the subject site are outlined below:

SPP No 2: Environment and Natural Resources

SPP2 aims to ensure that environment and natural resource management is integrated within broader land use planning and promotes the protection, conservation and enhancement of the natural environment.

The proposed development is consistent with the objectives SPP2 and will be preserving approximately 11.85ha of native bushland (within the Urban zone), in addition to an interface buffer along Wanjeep Street and protection of the landscape on the balance of Lot 9001.

SPP No 2.1: Peel-Harvey Coastal Plain Catchment

The primary objective of SPP2.1 is to manage the flow of nutrients into the Peel-Harvey Estuarine System as a consequence of land use changes and development.

The proposal is consistent with the objectives and policy provisions of SPP2.1 for residential land uses in providing reticulated sewer to all lots within the development, and by the preparation and implementation of an Urban Water Management Plan for the development to manage water and nutrient runoff.

SPP 2.6: State Coastal Planning Policy

SPP 2.6 addresses coastal planning, coastal process and accommodating impacts of climate change. Following extensive review of the applicability of the policy, likely future river level changes, natural processes likely to cause erosion and other activities likely on the water body, a setback line was established for development to accommodate climate change impacts. Detail of the rationale for the adopted setback line is provided in advice from MP Rogers and Associates, which is in Part 3 of this report.

SPP NO 2.9: Water Resources

SPP2.9 provides guidance in the protection and management of surface and groundwater catchments. The draft policy includes recommended minimum requirements in the consideration of water resources when preparing Structure Plans. These requirements, specifically the identification of developable and non-developable areas based on environmental constraints, have been addressed in the development of the ODP.

SPP NO 3: Urban Growth and Settlement

SPP3 establishes the principles for urban growth in Western Australia to ensure that future development is undertaken in a sustainable manner, including the provision of variety of housing types and infrastructure to service the urban growth.

The subject land is located within an existing urban area and is within close proximity to the established Mandurah City Centre, an important employment node. There is good access to public transport including the Mandurah-Perth rail line as well as local and regional recreation facilities, both active and passive. The development therefore meets the criteria of the policy.

SPP NO 3.1: Residential Design Codes

The Residential Design Codes ('R-codes') provide a comprehensive basis for the control of residential development throughout Western Australia. The existing ODP abandoned the R-Codes. This ODP proposes a range of residential densities that correspond with the three precincts; Frasers Hamlets (R50), Amenity (R30-R60) and Lifestyle (R20-R40). The densities for the development will be based on the settlement pattern and development provisions proposed by the ODP, Residential Density Guide Plans, and in accordance with Local Development Plans to be approved by the City of Mandurah.

SPP3.4: Natural Hazards And Disasters

Planning For Bushfire Protection

Planning for Bushfire Protection requires analysis of potential risks for bushfire which may affect future development on the site, and proposing measures to mitigate risks and ensure bushfire risk is as low as practicable for future occupants.

A Bushfire Management Plan has been prepared and is in Part 3 of the ODP. In addition to establishing setbacks from development sites, a fuel clearing regime has been proposed for bushland on the site, including an initial moderate burn of the understorey of the Core Conservation Reserve, and regular burns to maintain low fuel levels. These burns will be undertaken to maintain canopy cover and ensure wildlife can seek refuge during these burns.

Development Control (DC) Policies and Liveable Neighbourhoods (LN)

The DC policies include general policy statements relating to broad matters such as the subdivision of land and general road planning, to more specific policies relating to residential, rural, industrial and commercial land.

LN operates as a development control policy to facilitate the development of sustainable communities and to promote walkable neighbourhoods with an interconnected street network.

The preparation of the ODP has given due consideration to the controls contained in both the DC policies, and the principles contained in LN. Details of compliance with relevant policies will be demonstrated in sections outlining the design response in the ODP.

2.5.2 City of Mandurah

Bushland Conservation Policy (POL-EVM 02)

Council's Bushland Conservation Policy encourages the conservation and management of local bushland through a number of strategies including the retention of bushland within public open space.

Consistent with the strategies of the Policy, flora surveys have been undertaken and extensive retention of bushland is achieved in the proposed design.

Urban Design Policy (LPP No 3)

The primary objective of LPP3 is to provide urban design guidance on the way places are designed and developed. Many of the design strategies of LPP3 are more applicable at the Local Development Plan and subdivision stages of the project, however relative to provisions 2.1A and B, character and values have been maintained through the retention of 11.85ha of natural bush in POS together with the incorporation of interface buffers along Wanjeep Street and the Serpentine River tributary.

Water Sensitive Urban Design (LPP No 15)

The intent of LPP15 is to achieve a better integration of land-use and water planning resulting in improved water management outcomes for the Peel-Harvey Catchment consistent with SPP 2.6 and Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992.

LPP15 requires an ODP or Development/ Subdivision Guide Plan to address the relevant policy provisions pursuant to 7.11.1 of TPS3. Consistent with the Policy provisions, RPS has prepared a number of management plans. Most of these have been approved by the City of Mandurah, for the previous ODP, and many are largely applicable to this ODP (for example, with a technical note updating the management plans for the new design).

Development Height Policy (LPP No 12)

The purpose of LPP12 is to outline development height standards and other planning tools that apply to development within the City. It is understood however that the draft 'Urban Form and Housing Strategy' will replace LPP12 following its formal adoption and endorsement. Given LPP12 remains an active policy, commentary relative to the policy provisions has been provided below.

The Policy designates an acceptable height of 2 storeys (9 metres) for land coded R30 or less, and 3 storeys (12 metres) for land coded R40 and above which is consistent with the provisions of the R-Codes. It is anticipated that the majority of built form on the subject site will be single and grouped dwellings and in this regard will accord with the applicable R-Code density height provisions or an approved Local Development Plan (DAP).

It is noted that at the Design Forum, there was community acceptance for additional height that achieved adequate separation from existing development to the west and south of the site. Therefore there may be grounds to consider variations as part of more detailed planning.

02 part two: explanatory section project context

City of Mandurah Activity Centres Planning Strategy

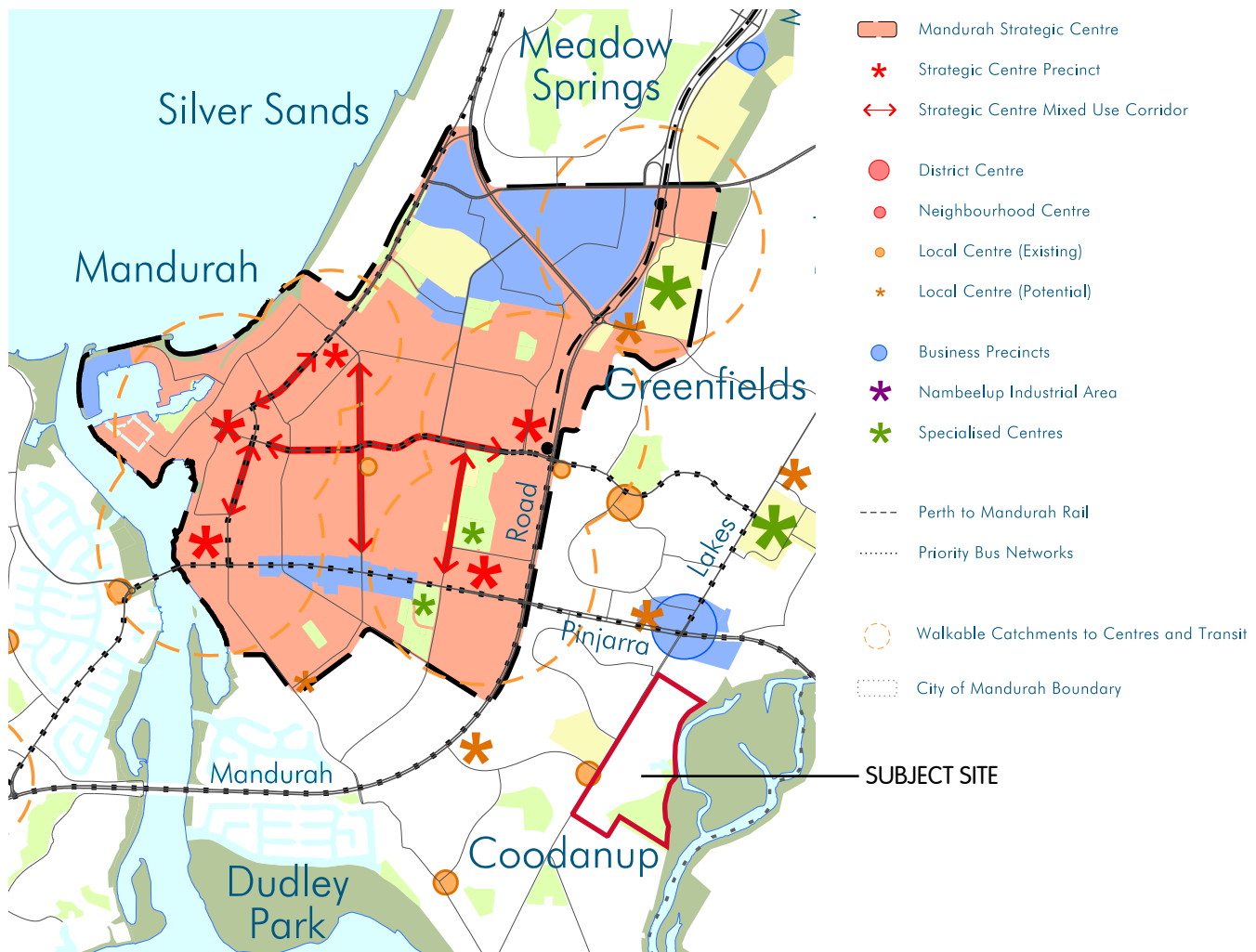
The City's Activity Centres Planning Strategy allocates retail floorspace to each locality within the City, with a focus on the development of district and neighbourhood centres.

The subject site is adjacent to an existing local centre on the corner of Wanjeep Street and Coodanup Drive. Local Centres are characterised as providing the daily needs and services for the local community and are generally less than 2,000sqm of floorspace.

As seen in Figure 12, Mandurah East, 350m north of the subject site at the intersection of Pinjarra Road, Wanjeep Street/ Lakes Road, is earmarked as a 'Business Precinct' and will offer bulky goods retail, showrooms and service/ light industry. The first stage of the development is complete and an ODP has been approved for the centres expansion on the western side of Lakes Road to accommodate approximately 45,000sqm of floorspace. The Mandurah Forum Strategic Centre is situated less than 3km north west of the subject site offering a range of department stores, supermarkets, speciality shops and government agencies.

Consistent with the definition of a local centre, the revised ODP has allowed scope for the development of up to 2,000sqm of retail and commercial floorspace within the 'Amenity' Precinct.

FIGURE 12: CITY OF MANDURAH ACTIVITY CENTRES PLANNING STRATEGY



City of Mandurah Draft Urban Form and Housing Strategy

The draft Urban Form and Housing Strategy ('Strategy') outlines the approach to the future housing density and scale of development across Mandurah. The Strategy responds to dwelling and housing targets established by Directions 2031 and sets out scale (height) and density across greenfield and infill sites. The Strategy is intended to replace any previous position statements and Local Planning Policies in respect to locations for density and height by providing a comprehensive plan based outcome rather than provisions based on existing zones.

The subject site is within the 'Mandurah East' strategy area which currently has a gross urban zoned hectare density of 7.0 and a residential site area density of 11.1.

The Urban Form and Housing Strategic Plan earmarks the subject site as 'Suburban (Future).'

The site specific guidance for Frasers Landing under the strategy are as follows:

TABLE 2: OBJECTIVES OF THE DRAFT URBAN FORM AND HOUSING STRATEGY

Controls	Strategy
Mixed Uses (Non Residential)	Potential
Housing Typologies	Town Houses, Small Lot Houses, Detached Houses
Gross Urban Density	15 dwellings per hectare
Residential Site Density	26 dwellings per hectare
Residential Density Codes	R25-R60
Building Heights	Above R40: Category C from R-Codes Above R35: Category B from R-Codes
Lot Sizes	From 300sqm; diversity required to ensure diversity in housing product
Site coverage	60%
Street frontages	6-20m
Street Setbacks	0-4m dependent on street cross section



2.6 Planning Design Forum

The Frasers Landing ODP is based on a concept plan prepared at a two day Planning Design Forum (PDF) organised and facilitated by RobertsDay in 2005.

The PDF enabled a concept plan to be prepared in collaboration with the City of Mandurah, Department for Planning, local community representatives, other key stakeholders and the Frasers Mandurah project team. Delegates were invited to participate in the Design Forum program, which included:

- an opening presentation of traditional neighbourhood planning and design principles;
- a site inspection;
- an issues identification session;
- technical presentations by members of the project team;
- a community representatives forum; and
- a presentation of the proposed concept plan.

The PDF considered the site, its context and its possibilities, and developed a clear vision for Frasers Landing, with accompanying objectives and principles. These benefited from a collaborative approach to the project from all attendees. A concept for development of the site was based on this vision, and an important outcome from the PDF.

This ODP is based on design principles and techniques for sustainable development and it is a holistic response to all issues identified through the Design Forum. The endearing qualities of the ODP were gained as a result of the direct transfer of knowledge about the natural and cultural heritage of the Coodanup locality and the aspirations of its residents.



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03

outline development plan_



3.1 Development Vision

The vision for Frasers Mandurah is **'creating a new riverine community'** and a key component of this theme will be to promote the environment through leisure and recreation, a focus on community life and a lifestyle of arts and culture. These themes build on the area's existing landscape features and proximity to the Serpentine River tributary.

While the rapid development of Mandurah has seen human intervention in the creation of canals, housing estates, shopping centres, golf courses, arts and cultural facilities; the Coodanup site, nestled on the banks of the Serpentine River tributary amongst bushland has retained its original integrity. This presents an opportunity to create a unique community with public spaces that reflect the essence of Mandurah.

This vision was established for the project during the Planning Design Forum and previous design development for the site. Although some design responses have changed, the overall design approach remains true to the established vision. Implementation will be driven by the realisation of this vision for the project as it comes to life.

3.2 Design Principles

The principles for design of Frasers Landing have remained consistent since the Planning Design Forum was conducted in 2005. These principles were instilled in the previous ODP design, and remain the foundation of design of this ODP.

Continued application of these design principles at all levels of design detail is important to ensure future development is consistent with that existing in the project, and to reinforce the identity of Frasers Landing for existing and future residents.

Housing and Built form

Built form in Frasers landing will be responsive to the climate and context, including housing which is sensitive to its environment and setting. Housing will be at an appropriate scale for the setting among mature vegetation, and will employ sympathetic materials.

The range of housing form will be diverse, to accommodate the diverse needs of residents, and will be designed to maximise passive surveillance to ensure the safety, and perception of safety is maintained.

Environment and Landscape

The design recognises the significance of the natural setting, both among the trees and mature vegetation, and along the Serpentine River tributary. The connection with the river and natural vegetation is emphasised in landscape design as a major source of identity and amenity for the project. Landscape design is functionally and aesthetically suited to this setting and the future Frasers Landing community.

Importantly, landscape design ensures ongoing compliance with Commonwealth government requirements, emphasising the continued importance afforded to environmental matters.

Open Space and Water Management

The open space design features a network of connected spaces performing a variety of functions. It focuses on the incorporation and reinforcement of significant landmarks, making environmental features central to Frasers Landing. Water management is cognisant of the water table and the tree retention requirements, and designed to ensure open space is useful and attractive to residents.

Public Realm

The public realm capitalises on the opportunity to reinforce the identity of Frasers Landing. Retention of vegetation, and in particular mature trees, creates an attractive backdrop to the development, providing definition and an attractive point of difference for the project which contrasts with many greenfield developments.

Access and Movement

The access and movement network is designed to serve a variety of functions. The network is highly connected, providing a permeable urban structure that maximises connections to the river and bushland, thereby ensuring all residents share in the natural amenity and beauty of the site. The network also creates an excellent environment for pedestrians and cyclists, to encourage physical activity.

3.3 Overall Urban Structure

The structure of the proposed development draws on the amenity of the river to create a distinct identity. The sense of connection to the river is emphasised by the street network, which offers riverine vistas to many of the existing and proposed dwellings. Treatment of the foreshore, previously provided to the Crown, will emphasise this connection and encourage a range of uses.

In addition to a connection to water, the structure offers direct connection to nature, with trees and bushland surrounding the residential development and a key feature of the street and open space network.

The most significant area of open space within the development area is the Core Conservation Reserve, an area of 11.85ha of bushland, proposed to remain as such, to conserve a range of vegetation complexes and provide passive recreation for residents and visitors. The street network also maximises visual connection to bushland.

The connected street network provides a low-speed environment for people, bicycles and vehicles. Streets reinforce the character of Frasers Landing, retaining trees where practicable and providing a walkable environment.

The built form proposed complements the public realm, and offers a diverse range of housing. This diversity marks a contrast with nearby residential development, being of medium density and appealing to a range of household types. Slightly higher density is proposed in areas of higher amenity.

The following sections provide further detail on the principles of various elements of the proposed development, and outline the design response proposed in the ODP.

FIGURE 13: ILLUSTRATIVE MASTERPLAN



03 part two: explanatory section outline development plan

3.4 Design Responses

3.4.1 Housing and Built Form

The variety and diversity of dwellings proposed will help create the picturesque environment of hamlets set within the forest, distinct from lower density residential development found in the locality. The community that inhabits this development will be a reflection of this diversity as found in a traditional residential neighbourhood.

TABLE 3: HOUSING AND BUILT FORM APPROACH

key considerations

Changed Market Conditions

The 2008 Global Financial Crisis had a profound impact on the Australian housing market, including Mandurah. Review of the Frasers Landing project is necessary to ensure housing product is satisfying demand, and that redevelopment remains commercially relevant, particularly from an affordability perspective.

Housing Choice and Density

The design response to Issue 1 could significantly impact on housing choice and density, thereby the opportunity for a diverse, authentic community.

Continued Built Form Quality

Maintaining the existing high quality built form and architecture.

Affordability

Provision of affordable housing.

design response

- Conventional freehold lots instead of strata title.
 - Smaller lots fronting areas of high amenity only and the introduction of more traditional lot sizes elsewhere.
 - No apartment product planned.
 - Decrease yield from approximately 1000 to 500
-
- Increase housing choice compared with the existing hamlets - more lot types (7 in total) and a greater breadth of choice (188sqm to 695sqm)
 - Density on the subject balance area remains high in the context of comparable masterplanned communities and surrounding development.
-
- Builders will be required to comply with the Frasers Landing Design Guidelines & seek approval from the Frasers Landing Design Review Panel prior to submitting designs for approval with Mandurah Council.
 - There will be continuity in stewardship of this process to ensure the preservation of the design integrity for future hamlets and alignment with the project vision.
-
- A mix of smaller lot housing across a range of price points.
 - Typical lot types suited to the local homebuilder market.
 - Greater allowance for more affordable, well-designed single storey homes.
 - Freehold tenure, which avoids strata levies.

FIGURE 14: INDICATIVE DENSITIES



03 part two: explanatory section outline development plan

3.4 Design Responses

3.4.2 Environment and Landscape

Frasers Landing benefits from a unique setting on the Serpentine River tributary and surrounded by natural vegetation, providing significant amenity for existing and future residents. However these surrounds must also be managed sensitively, balancing a number of environmental objectives (including vegetation cover, retention of vegetation complexes, riverine ecosystems, erosion, bushfire protection, and climate change) with social and economic imperatives to create a distinct community.

TABLE 4: ENVIRONMENT AND LANDSCAPE APPROACH

key considerations	design response
Compliance with DEH	<ul style="list-style-type: none">• Maintain 16ha of native vegetation canopy cover• Preparation and implementation of management plans as required by Appendix 10 - Environmental Conditions in the City of Mandurah's TPS No. 3
Core Conservation Reserve	<ul style="list-style-type: none">• Retention of significant Core Conservation Reserve of 11.85ha to ensure recognition of a variety of vegetation complexes
Bushfire Protection	<ul style="list-style-type: none">• Undertake initial moderate burns to reduce fuel load• Regular management and maintenance of setbacks to mitigate bushfire risk
Response to Riverine Environment	<ul style="list-style-type: none">• Update and implement Foreshore and Core Conservation Reserve Management Plan to balance environmental and recreational demands on the foreshore
Climate Change	<ul style="list-style-type: none">• Review of potential impact of sea level rises and potential erosion on future of development.• Development set back appropriately from Serpentine River tributary

FIGURE 15: ENVIRONMENTAL OPPORTUNITIES AND DESIGN RESPONSES



- LEGEND**
- Core Conservation Area
 - Potential Tree Canopy Retention
 - Potential Significant Tree Retention
 - Bushfire Buffer
 - Firetruck Access
 - 60m Available Buffer
 - 22m Recommended Buffer



03 part two: explanatory section outline development plan

3.4 Design Responses

3.4.3 Open Space and Drainage

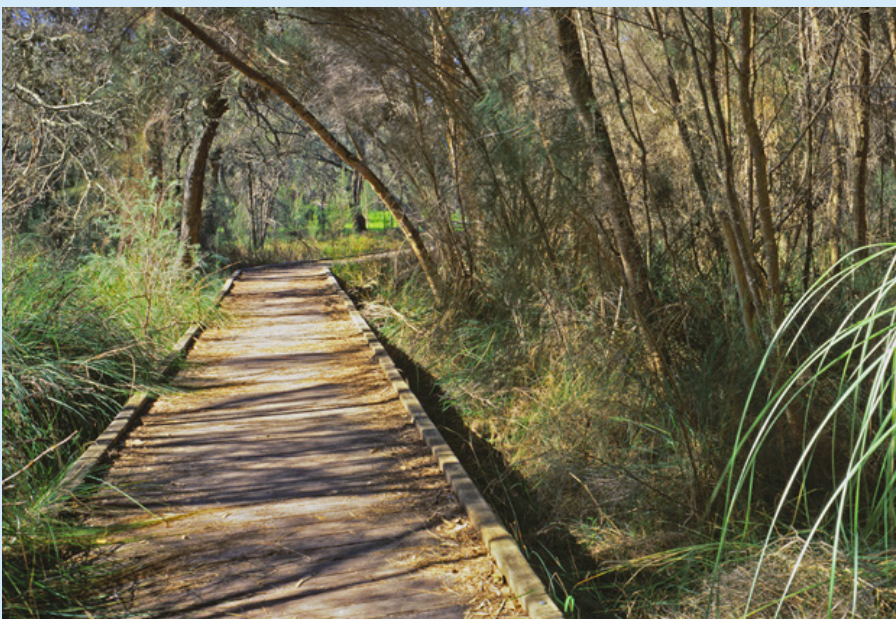
The generous provision of Public Open Space ('POS') remains an integral component of the revised Frasers Landing ODP. The site's strategic location on the bank of the Serpentine River tributary together with the retention of the Core Conservation Reserve has provided the foundations for a diverse range of spaces.

The range of open space serving residents includes passive open space and pocket parks, conservation parkland, linear open space, an artificial water body, communal open space within the hamlets, and foreshore reserve along the Serpentine River tributary.

TABLE 5: OPEN SPACE AND DRAINAGE APPROACH

<u>key considerations</u>	<u>design response</u>
<p>Higher water table</p> <p>The subject site, which is on the Serpentine River tributary foreshore, is low lying and has a high water table. This must be managed for residential development to be accommodated.</p>	<ul style="list-style-type: none"> • Appropriate measures are to be made to ensure finished floor levels of habitable rooms in houses are well above flood levels for major storm events. This will be developed in detail through earthwork design and water management documentation.
<p>Drainage within public open space</p> <p>Open space design must balance drainage, a high water table, need for tree retention, and enable functional design of spaces for recreational uses</p>	<ul style="list-style-type: none"> • Basin size has been designed to accommodate storm events accounting for the water table, and the imperative to retain trees
<p>Liveable Neighbourhoods Compliance</p> <p>The open space network has been modified, including the replacement of strata managed communal spaces with public open space. LN is therefore more applicable.</p>	<ul style="list-style-type: none"> • The quantum of public (as opposed to strata managed) open space has increased to over 19 hectares • Provision of a total of 37% public open space (including the Core Conservation Reserve and some credit for communal spaces. • Equally, provision of a diversity of high quality public open spaces that will support a range of different activities • Integration of POS within the existing and proposed street pattern, providing a highly connected public domain network. • Significantly enhanced public access to the Serpentine River tributary particularly for existing residents (increase from 6 to 16 public links).
<p>Open Space Functionality</p> <p>There are different drainage requirements for public open space, compared with the existing communal (private) space, which could impact on the functionality of POS and tree retention.</p>	<ul style="list-style-type: none"> • Drainage basins will be sensitively integrated into the design of POS, enabling recreational co-use. • Tree retention can be achieved by naturalistically sculpting drainage basins and swales around trees. • POS will accommodate a wide range of functions other than drainage, primarily: <ul style="list-style-type: none"> • Creating transitional spaces to buffer the built form and the natural environment; • Screening views to and from the site; • Retention of vegetation; • Establishing important and attractive pedestrian linkages through the site to the Serpentine River tributary; • Providing important gathering and meeting places for residents and visitors; • Providing passive reflective spaces; and • Providing a large contiguous area to the Serpentine River tributary.

FIGURE 16: DIVERSE OPEN SPACE



03 part two: explanatory section outline development plan

3.4 Design Responses

3.4.4 Public Realm

Achieving an integrated and enriched public realm remains fundamental to the Frasers Landing ODP. As outlined in Table 6, three primary considerations have been adapted to reflect community values and create a sustainable environment:

- Retaining the urban structure;
- Celebrating nature; and
- Streetscape character.

The treatment of the public realm, and ensuring consistency in particular, will be very important in developing a cohesive development with a distinct identity.

TABLE 6: PUBLIC REALM APPROACH

key considerations

Retaining The Urban Structure

Whilst many public streets are already constructed, it is essential that other key physical attributes of the vision be retained.

Celebrating Nature

This is integral to the existing sense of place at Frasers Landing and must be reflected in future development.

Streetscape Character



design response

- Public access maintained along the entire Core Conservation Reserve and foreshore edge.
 - North-south connection through the site maintained.
 - Elsewhere, major movement focused on existing connections converging on the lake.
 - Major east-west green link maintained between existing Hamlets 3 and 4, and the river.
 - Major green link maintained between the neighbourhood centre (existing sales centre) and CCR.
 - Resultant areas of development maintain the existing 'hamlets within the landscape' character.
 - Each hamlet has a public open space as its focal point and source of identity.
 - Significantly, the urban structure has been enhanced by greater visual and physical permeability between the Serpentine River environs and the existing community to the west.
-
- Sentinel tree retention opportunities in POS and CCR edge swale network.
 - Retention of 3.5m shared path through CCR and along foreshore park.
 - Importantly, the new public street network has been designed primarily to celebrate the site's unique natural environment. Most streets form a grid that runs perpendicular to bushland and the river, thereby capturing views deep into the urban fabric.
 - Significantly enhance access to nature by way of 10 additional public links.
 - Opportunities for interaction with the river, such as jetties and boardwalks, that link in seamlessly with the street and open space system.
 - New open spaces that retain a naturalistic form and character.
-
- New streets (illustrated in section 3.5) will have an informal landscape and built form character, central to which could be:
 - Native species planted informally.
 - 'Light Imprint' engineering treatments wherever possible, such as swales and flush kerbs.
 - Predominantly landscape delineation of the public/private domain.
 - Lanes with softer edges, such as groundcovers between setback garages.
 - Built form quality will be retained and continue to make a valuable contribution to streetscape character.

FIGURE 17: PUBLIC REALM RESPONSE



LEGEND

-  Riverine access and views
-  Structural Elements



03 part two: explanatory section outline development plan

3.4 Design Responses

3.4.5 Access and Movement

Access to Frasers Landing is virtually unchanged from the previous ODP design, with most connection points already constructed. These connections were predicated on a higher yield within Frasers Landing, and therefore higher traffic volumes. As a consequence, these connections, and the existing internal road network, are designed to amply accommodate a reduced yield.





TABLE 7: ACCESS AND MOVEMENT APPROACH

<u>key considerations</u>	<u>design response</u>
<p>External Connections</p>	<ul style="list-style-type: none"> • No material changes are proposed to the existing external connection provisions in the approved ODP. Accordingly, good external connectivity will be maintained and the impact on the surrounding network will be negligible, if not reduced given the lower yields now proposed. • One additional Connection is proposed onto Birchley Road, but it is a local access street with low traffic volumes. • The intersection location of the original Access Street B with Birchley Road has shifted east to now form a 'T' junction. Intersection spacing is considered satisfactory (see Part 3: Comparative Traffic Assessment). This change is the result of balancing drainage and CCR considerations.
<p>Permeability</p>	<ul style="list-style-type: none"> • Permeability in the public movement network has been substantially improved as a result of the proposed design and the tenure shift towards public streets and open spaces. • A local street grid network is proposed between the existing avenues and river environs. This configuration provides an optimal level of permeability with the site and beyond. • Fire truck access will be retained via a foreshore shared use path and other appropriate trails within the CCR.
<p>Pedestrian and Cycle Network</p>	<ul style="list-style-type: none"> • As a consequence of improved permeability, the pedestrian and cycle network is far more extensive (See Path Network Plan in Part 3: Comparative Traffic Assessment for details) • Key cycling movements are retained through shared paths along Wanjeeep Street, major internal connections and the Serpentine River tributary foreshore. Less frequent on-road movements can occur within the highly connected local street network. • Footpaths are proposed on both sides of every street. Open spaces play an important part in the pedestrian movement network and footpaths will be designed accordingly.
<p>Parking</p>	<ul style="list-style-type: none"> • Residential parking demand will be met primarily on site, with additional provision on-street. Parking embayments will match existing designs. • Replacement parking embayments will be provided where existing ones need to be removed to accommodate new intersection designs. • Visitor parking will be provided for direct POS frontage lots, either in mews or other nearby streets. • The foreshore park will also have appropriate parking provisions on-street.

FIGURE 18: MOVEMENT NETWORK



LEGEND

-  Street network
-  New / modified external street connection
-  Other possible pedestrian connections
-  Shared use / cycle / walking trail (also for emergency access)



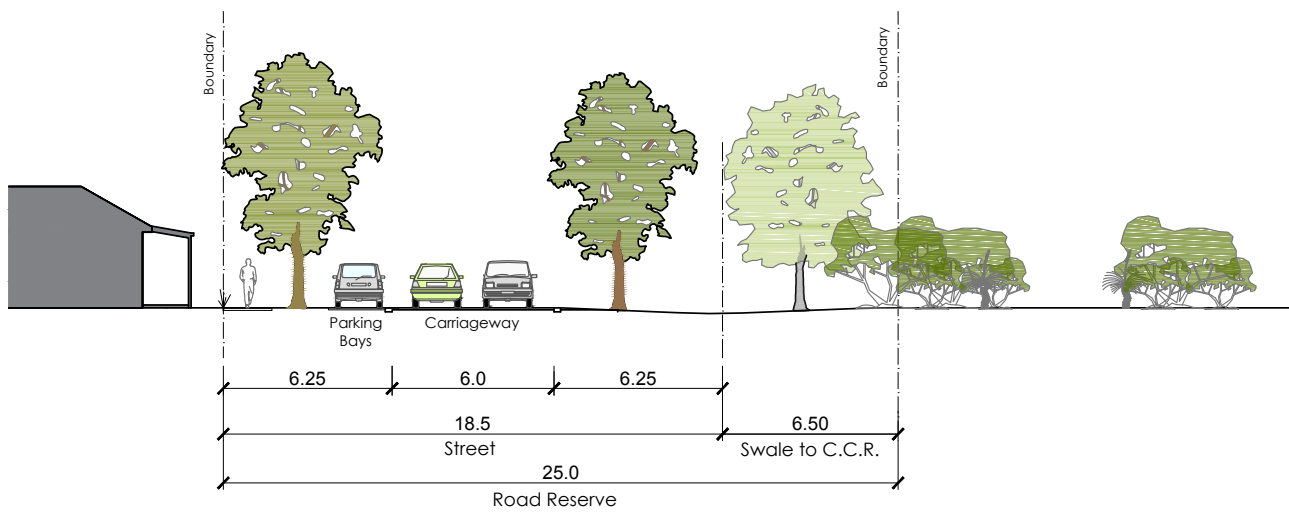
3.5 **New Typologies**

3.5.1 **Street Types**

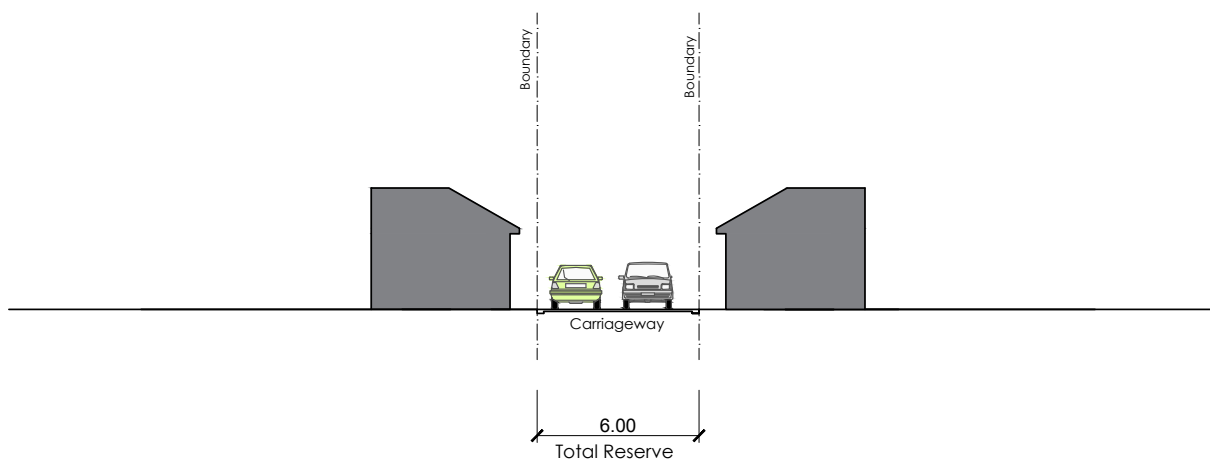
Throughout Frasers Landing, four new street types are proposed. Streets already constructed within the ODP area have not been included in the following series of sections, however the following designs have been developed to ensure consistency in the public realm character throughout the project, and to meet the objectives of Liveable Neighbourhoods, providing a safe and pleasant environment for pedestrians, cyclists, and vehicles.

FIGURE 19: INDICATIVE STREET SECTIONS

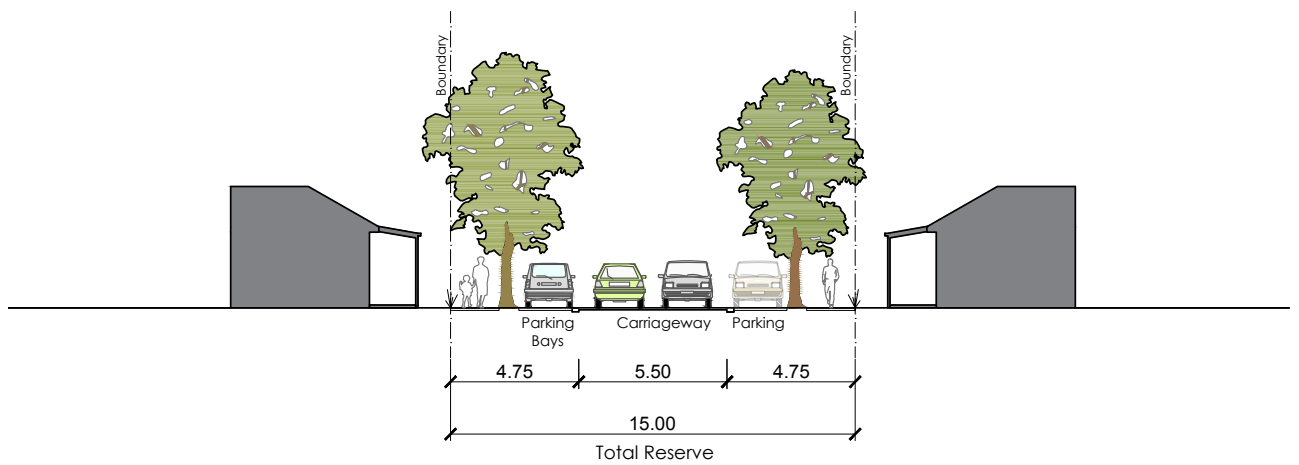
ACCESS STREET B



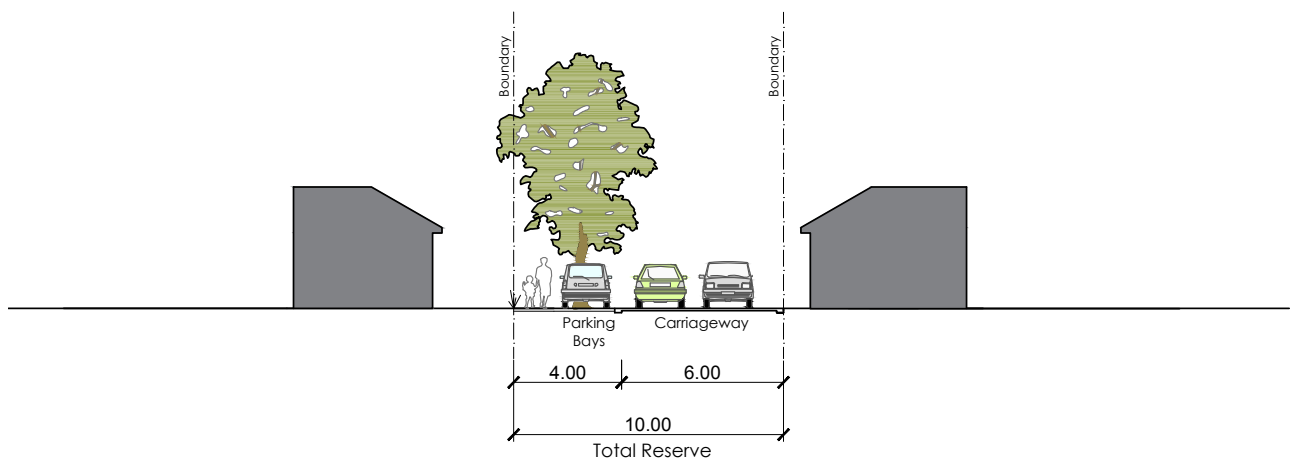
LANE (SPECIAL STREET)



ACCESS STREET C-D



MEWS (SPECIAL STREET)



3.5.2 **Open Space Types**

Five open spaces types are proposed. Their location, potential character and range of activities are summarised as follows:



Core Conservation Reserve

Character

- Retained and rehabilitated native vegetation, using retained seed bank of endemic species and relocated vegetation.
- Represents three different vegetation units which are to be maintained and protected.
- Hollows considered to provide habitat value from the development area to be relocated to the CCR or foreshore areas.
- Signage to paths adjacent to CCR to assist awareness of appropriate behaviour within the CCR (littering, pet control) and potential hazards, such as snakes and fire, and feral animal control.

Typical Activities

- Preserves linkages with the Foreshore Reserve strengthening fauna corridors.
- Habitat for fauna in hollow logs, trees, shrubs.
- Management to include weed control and rehabilitation of degraded areas.



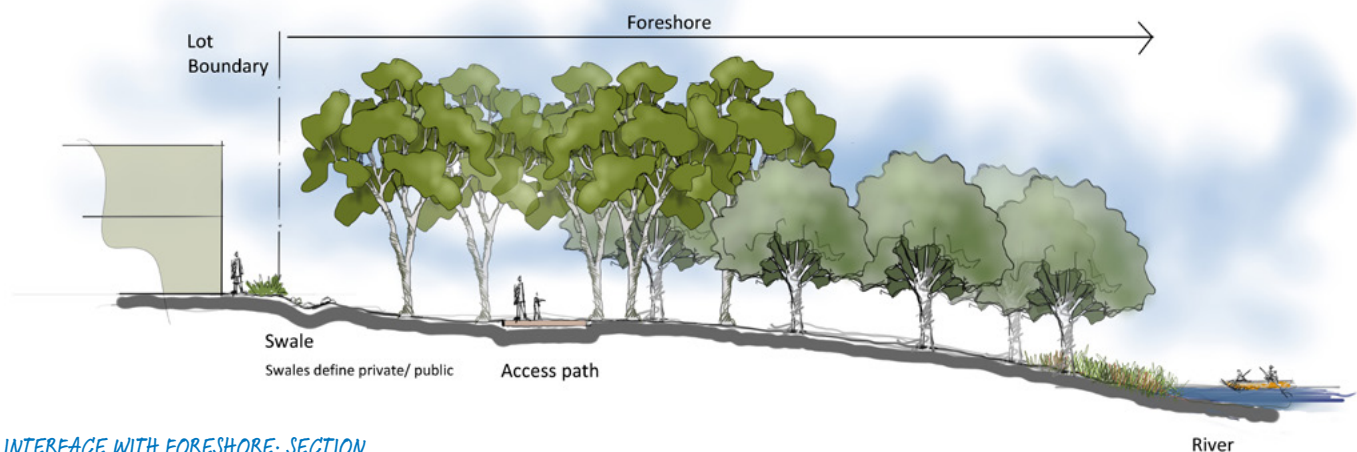
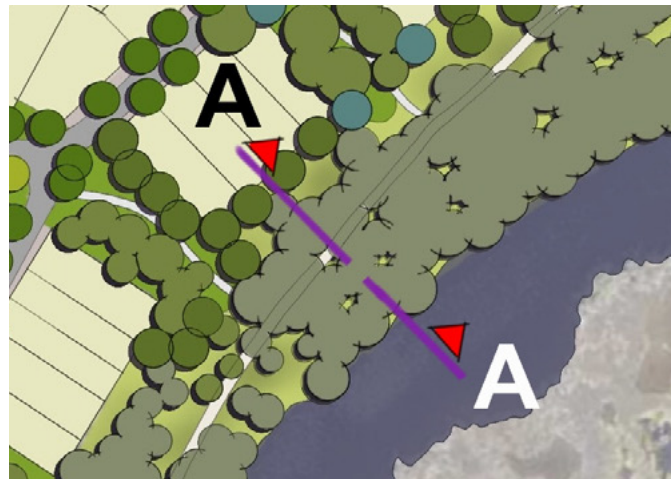
Foreshore Park

Character

- Retained native vegetation with low impact recreation.
- Sealed paths with interspersed seating, connecting to jetty's link the foreshore with the Frasers Landing development.
- Recreation nodes provided at water's edge with shelters, benches, tables and signage based on City of Mandurah specifications.

Typical Activities

- Low impact recreation such as fishing and canoeing
- Picnics
- Birdwatching



INTERFACE WITH FORESHORE: SECTION

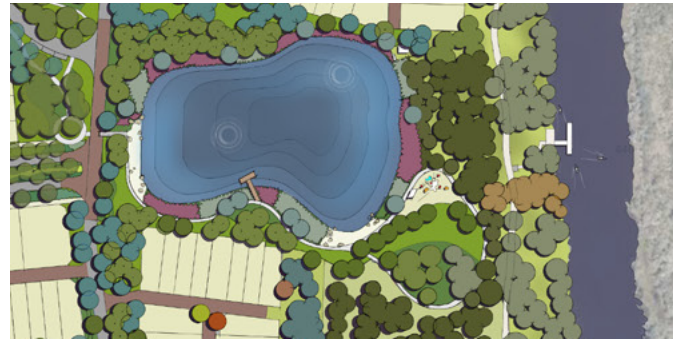
Park

Character

- Parkland surrounds the lined permanent Irrigation Lake which is kept full through aquifer recharge.
- Western frontage provides high landscape standard arrival point with lawn, low shrubs and scattered trees.
- Gentle graded slope from the Lake edge down to the tributary creates lawn and shady tree area for picnics or relaxing with views through to tributary.
- Future BBQ sheltered picnic tables and playground with provision for water drinking fountain.
- Proposed eastern node creating parking and seating area for cyclists and a link between lake, tributary and the north-south access path.

Typical Activities

- Recreation such as walking, picnics.
- Grassed kick-about area allows for more active recreation.



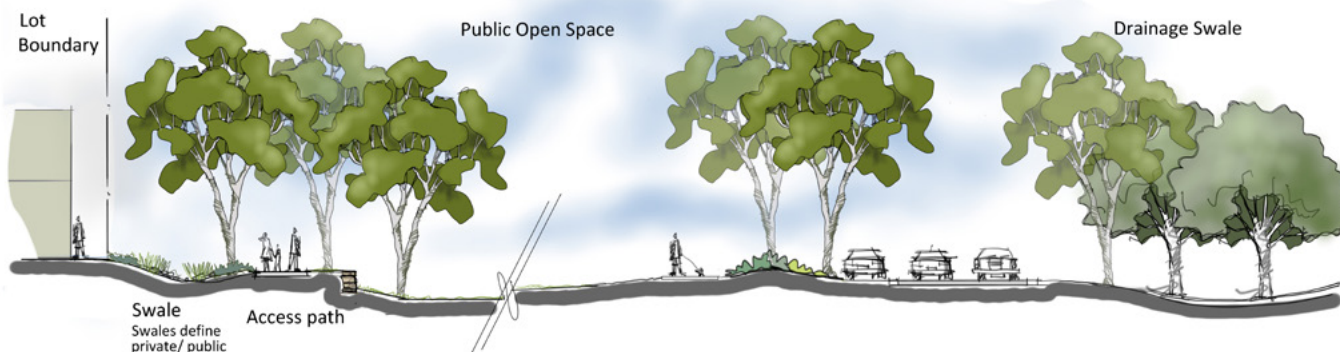
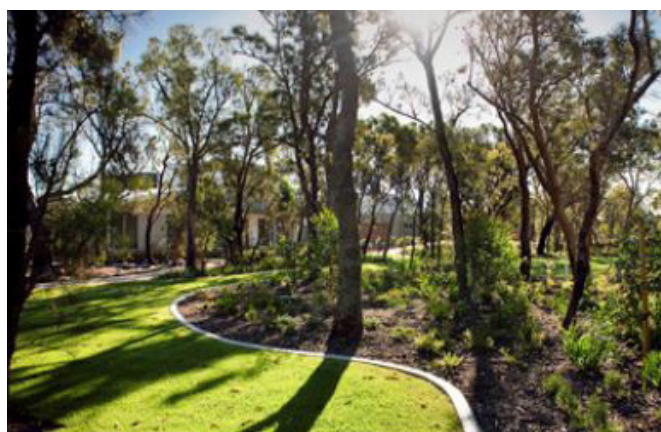
Green

Character

- Local community parks whose layout is shaped by retained native vegetation. Low water shrub planting of endemic species strengthens the retained vegetation. Bore fed irrigated grass provide areas for passive and active recreation.
- Paths create pedestrian connections through the parks and link through to road and pedestrian networks through the development.
- Shrub planting as per Frasers Mandurah Project Mosquito Management Plan to minimise mosquito habitat.
- As per RPS Nutrient, Irrigation and Fill Management Plan, low or no phosphorus fertilisers will be used to ensure that high levels of nutrients do not pollute the river.
- Stormwaters are contained within detention basins that provide local infiltration to recharge the aquifer.

Typical Activities

- Recreation such as walking, picnics
- Grassed kick-about areas for running, ball games.
- Play for children
- Walking dogs



PARKLAND INTERFACE: SECTION

Hamlet Green Ribbon

The alignment of the site beside a river provides a flowing linear character to the development which has been picked up in a series of linear Hamlet Green Ribbons running in general alignment with the River

Character

- Local species of trees and shrubs to create a natural appearance
- A range of colour contrasts through foliage, bark and flowering
- Provide visual buffers – for example to Wanjeep Street. Breaks in the visual buffer will highlight amenity and attract interest.
- Ground treatment to assist with water management and provide water harvesting for the plantings
- Birds and other fauna will be assisted to move through the site

Typical Activities

- Passive recreation and visual relief
- Preserves ecological linkages
- Water management



3.5.3 Building Types

The lot types proposed will facilitate a greater diversity of housing at Frasers Landing. The spectrum of broad housing types may include but are not necessarily limited to:

Terrace

Frontage	7.5m
Area	187 – 275sqm
Loading	Rear
Height	1-2 storeys
Demographic	Mixed family; Pre-school families; Primary/secondary school families; couples; and downsizer/empty nester.

Semi-Detached

Frontage	7.5m - 10m
Area	187 – 300sqm
Loading	Rear
Height	1-2 storeys
Demographic	Mixed family; Pre-school families; Primary/secondary families; couples; and downsizer/empty nester.



03 part two: explanatory section outline development plan

Detailed built form elements for the proposed development will be addressed prior to subdivision or development and will include:

- the prescription of the building location;
- the built form, scale and roof pitch;
- verandas, balconies and decks;
- vehicle parking and access;
- external colours and materials; and
- curtilage and landscape.

A more comprehensive list of elements is outlined in Part 1 of the ODP. These will be refined into Local Development Plans, approved by the City of Mandurah, and Design Guidelines, controlled through agreements with the purchaser.

Cottage

Frontage	12.5m
Area	337m – 375sqm
Loading	Front and Rear
Height	1-2 storeys
Demographic	Mixed family; Pre-school families; Primary/secondary families; and downsizer/empty nester.



House

Frontage	15m+
Area	450sqm+
Loading	Front
Height	1-2 storeys
Demographic	Mixed family; Primary/secondary families; and couples.



3.6 Strategic Development Targets

3.6.1 Residential Density

3.6.1.1 Directions 2031

The dwelling types provide a range of housing to fit both lifestyle and income. The diversity of products respond to purchasers who may be semi-retired and want to have an apartment where they can easily “lock up and go”, or a young couple looking to buy a single dwelling to raise a family.

Estimates for the indicative mix of dwelling types are shown below:

TABLE 8: INDICATIVE MIX OF DWELLING TYPES

Dwelling Type	Density Range	Approx Yield	Percentage
Frasers Hamlets	R50	161	28%
Lifestyle Precinct	R20-R40	227	39%
Amenity Precinct	R30-R80	190	33%
Approximate Total Yield		578	

The above estimate represents a gross residential density of 14.38 dwellings per hectare (when excluding the Core Conservation Reserve, which is subject to a Commonwealth Government determination and therefore should be discounted from any gross area calculations).

This is slightly less than the 15 dwelling per hectare identified in Directions 2031. The minor variation is warranted by the need to retain tree canopy cover to retain habitats for protected species (also part of the determination of the Commonwealth government). This need to retain tree canopy cover also results in an increased proportion of public open space, as described in the following section. The proposed density of the site represents a significant improvement on the density of the surrounding locality.

It is proposed that overarching design guidelines for the project will be prepared and administered by Frasers Mandurah and the City of Mandurah. Architectural expression will vary to create different built form characteristics.

LDPs will be prepared and advertised as described in Part 1 and in accordance with the requirements of the City of Mandurah.

There is allowance for some non-residential uses within the Amenity Precinct. It is envisaged that this will be limited and small scale in nature, serving the local community.



3.6.1.2 City Of Mandurah draft Urban Form and Housing Strategy

As outlined in Section 2.5.2, the City of Mandurah Housing Strategy provides strategic guidance for the anticipated housing outcomes on the site. The design response to this guidance is summarised in the following table:

TABLE 9: COMPLIANCE WITH THE DRAFT URBAN FORM AND HOUSING STRATEGY

Controls	Strategy	Proposed
Mixed Uses (Non Residential)	Potential	Some Retail/ Commercial land uses possible within the 'Amenity' Precinct.
Housing Typologies	Town Houses, Small Lot Houses, Detached Houses	All these typologies, and Grouped Dwellings
Gross Urban Density	15 dwellings per hectare	14.38 dwellings per hectare
Residential Site Density	26 dwellings per hectare	31.05 dwellings per hectare
Residential Density Codes	R25-R60	R20-80
Building Heights	Above R40: Category C from R-Codes Above R35: Category B from R-Codes	Determined at LDP Stage
Lot Sizes	From 300m ² ; diversity required to ensure diversity in housing product	As per the R-Codes
Site coverage	60%	Determined at LDP stage
Street frontages	6-20m	Determined at LDP stage
Street Setbacks	0-4m dependent on street cross section	Determined at LDP stage



3.6.2 **Public Open Space Distribution**

3.6.2.1 **Public Open Space Calculations**

The proposed open space provision, and compliance with Liveable Neighbourhoods and other relevant planning policies, is summarised in the following table.

Calculations for Public Open Space include the 50% credit for the artificial lake already recognised by the City of Mandurah prior to its construction, and the credit available for communal open space in the Hamlet Precinct in accordance with WAPC Policy DC 1.3: Strata Titles.

The open space provision significantly exceeds the requirements of Liveable Neighbourhoods, demonstrating the importance of maintaining a connection with open space, the measures taken to ensure conservation, and the innovative design offering a high level of amenity to residents of Frasers Landing.

TABLE 10: PUBLIC OPEN SPACE CALCULATIONS

POS Calculations	Areas (ha)
Total Site Area	52.26
Excluded POS (1:1 year events)	1.4076
Surplus restricted POS (1:5 year events; CCA)	11.3724
Total	39.4800
Gross Subdividable Area	39.4800
Required Public Open Space at 10%	3.9480
Public Open Space contribution	
May comprise	
Minimum 80% Unrestricted POS	3.1584
Maximum 20% restricted POS	0.7896
Total Unrestricted Open Space	6.1206
Communal Open Space Credit	
Total Area of Survey Strata Schemes	7.5240
Max Open Space Credit @5%	0.3762
Total Communal Open Space	1.6798
Open Space Credit from Communal Open Space	0.3762
Total Restricted Open Space	12.1652
Credited Restricted Open Space	0.7896
Total Credited Open Space Provision	7.2864
Percentage of Credited Open Space	18.46

3.6.2.2 Public Open Space Schedule

A schedule of Public Open Space proposed (which does not include communal open space within the hamlets) is as follows:

TABLE 11: PUBLIC OPEN SPACE SCHEDULE

POS Area	Total (sqm)	Excluded	Restricted	Unrestricted
1	3091			3091
2	4114			4114
3	5481	899.5	1465.5	3116
4	9280	1086.3	63.7	8130
5	1546	619.2	0.0	926.8
6	3724	600.2	536.6	2587.2
7	5391			5391
8	2070			2070
9	979	588	95	296
10	6091	484	104	5503
11	4250	860	164	3226
12	5972	1886	476	3610
13	3913	860	164	2889
14	5050	1332	0	3718
15	481			481
16	366			366
17	7425	588	95	6742
18	118488		118488	
19	8545	4272.5		4272.5
20	440			440
21	237			237
Total (ha)	19.6934	1.407576497	12.1651762	6.1206473

Note: reflects in-principle agreement to employ soakwells in Serpentine Investigation Precinct; subject of detailed design and testing at UWMP stage



FIGURE 21: OPEN SPACE AREAS



3.7 Servicing Infrastructure and Utilities

3.7.1 Earthworks

Due to the naturally occurring level terrain and being cognizant of the tree retention philosophy, the development earthworks will not significantly modify the landform. Imported fill may however be required in areas to achieve sufficient elevation above the flood and groundwater levels.

Site preparation will be required for a "Class A" site classification. Heavy vibratory compaction will be necessary and possibly over-excavation (for further compaction at depth) may be required to provide suitable foundations for development if compaction cannot be achieved from the surface. Compacted fill may then be placed in layers to the finished lot levels. Development areas will generally require clearing due to the site preparation requirements and the raised development levels due to climate change.

3.7.2 Wastewater

The site falls into the catchment of the existing wastewater pump station (Wanjeep Rd North PS35), located in the northern portion of Lot 440 (approximately 170 meters east of Wanjeep Street). A noise and odour buffer requirement around the pump station where development is not permitted will need to be maintained to future lots and the existing easement from Wanjeep Street to the pump station will need to be maintained to provide future access and protection of the existing infrastructure.

3.7.3 Water Supply

A DN200 and DN150 water mains are currently located in Wanjeep Street for the existing development supply. The site currently has a DN200 water main which runs from Wanjeep Street, down Cassowary Cres, along Lakewood Drive and up Silvergum Ave. Extensions to the existing DN200 water main can be made to serve future parts of the development.

3.7.4 Power Supply

To facilitate the construction of the initial stages of development, extensive HV infrastructure was extended along Wanjeep Street to provide the necessary power supply to Frasers, with existing Western Power high voltage power infrastructure located in Wanjeep St, Cassowary Cres a Lakewood Pky. In addition to the initial underground distribution network, HV feeder cables, transformers and switchgear will be strategically located within the proposed development. Low Voltage (LV) underground cables and equipment will need to be installed throughout the proposed subdivision.

3.7.5 Telecommunications

NBN Co is responsible for the installation of fibre in all broad acre developments of 100 or more premises within the long term optic fibre footprint, to which this project will qualify. A developer agreement will be necessary prior to any construction works commencing.

3.7.6 Gas Supply

Atco Gas has existing gas infrastructure to the north of the development site in Wanjeep Street. Future parts of the development can be made via extension to the existing gas infrastructure. Gas is not a WAPC requirement for subdivision.

04

implementation_



04 part two: explanatory section implementation

4.1 Implementation Process

A number of plans and documents are to be prepared following the ODP and prior to construction and occupancy, addressing a variety of development requirements and design detail. These are summarised in Part 1 of the LSP.

4.2 Management Plans

A range of management plans are required to be prepared prior to site works, in accordance with Appendix 10 of TPS 3. These are also summarised in Part 1 of the LSP. Many of these plans have been endorsed by the City of Mandurah and are applicable to the updated ODP with minimal modifications to ensure ongoing compliance with site specific provisions of TPS3.

4.3 Community and Economic Development Plan

A Community Economic Development Strategy has been prepared for the project under the previous ODP. It also provides an agenda for the strategies and activities that foster community participation, connection and a sense of neighbourhood purpose. It also develops a community identity for residents, while linking them to the history of Coodanup and the current Mandurah townsite.

The vision for the estate is to create a place where people feel connected to their community, where the natural environment is considered a central part of the development.

The strategy identifies actions to:

- Promote community leadership and communication
- Generate community pride and encourage connection and celebration
- Promote culture and the arts
- Encourage environmental leadership
- Promote leisure and recreation
- Engage with children and young people
- Encourage crime prevention and community safety, and
- Foster economic vitality

The strategy will be reviewed as part of the development of subsequent stages of Frasers Landing

4.4 Land Tenure and Management

One key modification to the proposed development is the introduction of freehold lots. As a consequence, not all dwellings will be subject to a strata scheme, and governance needs to reflect this mix in tenancy to ensure effective ongoing management of the estate as the site is developed, and, importantly, when development is complete. There are three elements to this governance.

4.4.1 Survey Strata Schemes

The ultimate development of Frasers Landing includes three survey strata hamlets. Each hamlet would be governed by the Strata Titles Act 1985 and strata company by-laws. The strata company by-laws will include the responsibilities of each strata company. Reserve funds will be compulsory for each hamlet so that funds will be accumulated and made available in the future for repairs and replacement.

Each strata company will be responsible for the internal common property facilities located within each strata scheme. This will be managed by the council of owners working with the strata company manager.

4.4.2 Freehold Lots

Freehold lots will be subject of conventional controls, including Design Guidelines, LDPs, and estate covenants. These would be put in place on the initial subdivision to ensure –

- Building guidelines and confinement to a building envelope and building height limits.
- Environmental guidelines incorporating adherence to solar sustainability principles.
- Landscaping guidelines specifying the types and species of permitted vegetation.
- Legal access over land for service to other parcels.
- Management and control of environmentally sensitive areas.

Restrictive covenants shall include a requirement to join, and abide by the rules of, the Residents Association for the project.

4.4.3 Residents Association

A residents association may be established in Frasers Landing. Such an association can provide a regular forum for residents. An association can address any matters arising internally, and provide a regular point of contact for residents, to the developer or relevant agencies, and as a means to hold community events and implement community development initiatives.

4.5 Indicative Staging

Two hamlets have already been constructed within Frasers Landing, being Hamlets 2 and 3. Hamlet 4 has been granted conditional approval and is likely to be the next stage of development.

Following this, development is likely to run from north to south along the tributary frontage, and then along the Core Conservation Reserve. This approach is mainly due to the proximity to services and the desire to minimise development costs to maintain affordability.





part three
technical reports



part three technical reports

The enclosed CD contains the following reports

- 1 Aboriginal Heritage
- 2 Bushfire Management Plan
- 3 Coastal Assessment Technical Note
- 4 Environmental Reporting (Original)
- 5 Environmental Reporting (Technical Note Update)
- 6 Preliminary Engineering Infrastructure Report
- 7 Traffic Impact Assessment (Original)
- 8 Traffic Impact Assessment (Technical Note Update)

Electronic copies of Parts 1 and 2 of the ODP are also included on the CD.

