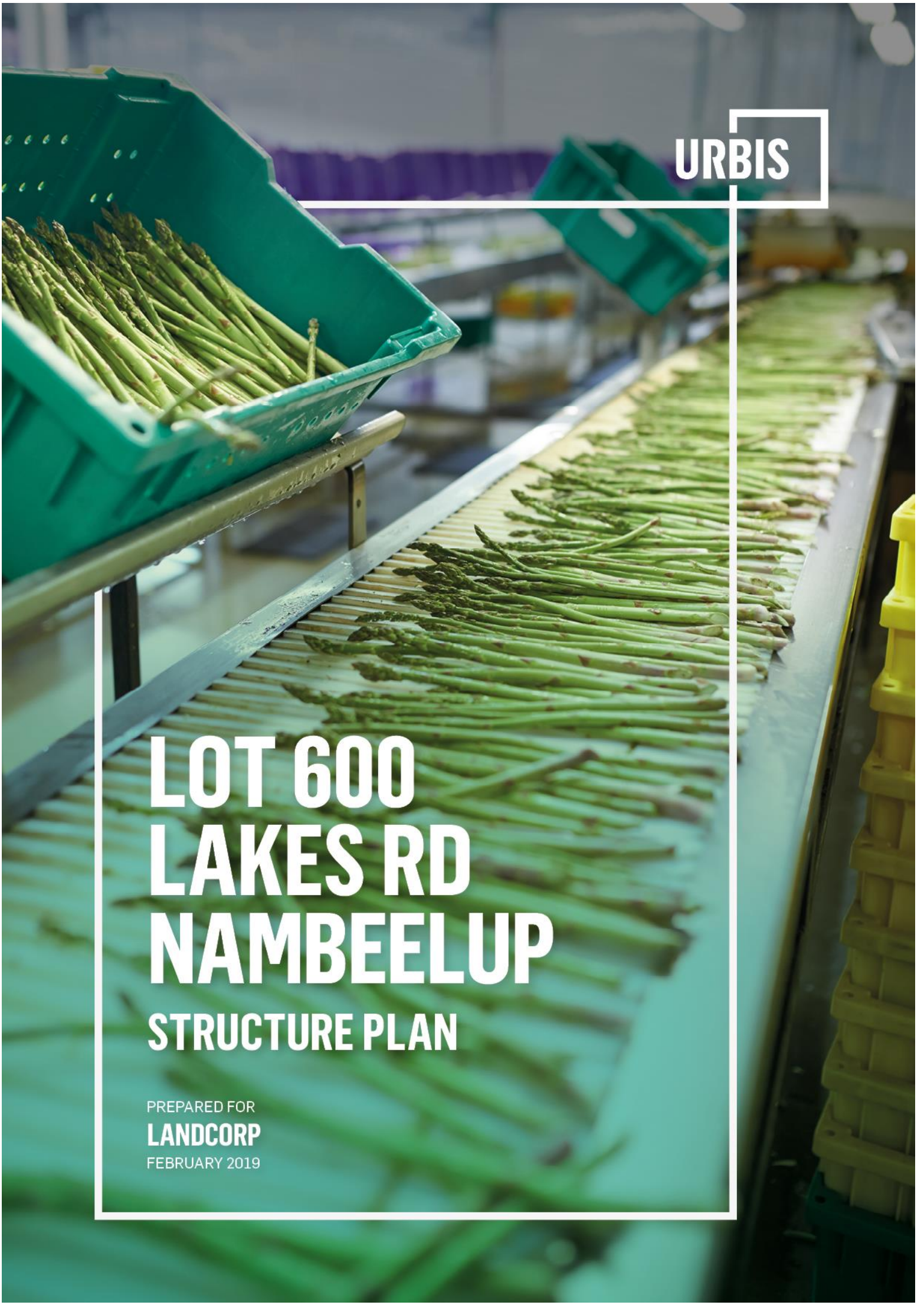

URBIS

LOT 600 LAKES RD NAMBEELUP

STRUCTURE PLAN

PREPARED FOR

LANDCORP

FEBRUARY 2019

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FIGURES:

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Aboriginal Heritage Assessment – JCHMC

ENDORSEMENT PAGE

This Structure Plan is prepared under the provisions of the Shire of Murray Town Planning Scheme No.4.

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

18 March 2019

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:

Taryn Cox

18 March 2019

18 March 2029
Date of Expiry

Amendment No.	Summary of the Amendment	Amendment Type	Date Approved by WAPC

EXECUTIVE SUMMARY

Lot 600, Lakes Road Structure Plan (the Structure Plan) applies to all land within Lot 600. The subject site is approximately 120 hectares in area, positioned to the south-east of the Murray River, bound by Lakes road to the south and Gull Road to the east.

This Structure Plan promotes innovative industrial development with an agricultural focus that includes provision for built form design control through future planning stages (i.e. Local Development Plans) and the promotion of environmental and economic benefits through land use control and environmental management. The planning of the site has been heavily influenced by former planning undertaken, including the Royalties for Regions Initiative -Transform Peel project and the Nambeelup Industrial Area District Structure Plan, and includes a focus on the following:

- Employment generation through the delivery of industrial development opportunity.
- Provision of agri-food and agri-processing operations, and ancillary industries.
- Provision of transport and logistics industries.
- Taking advantage of the regional road networks through opportunities for transport and logistics.
- Accommodating planning capacity to support research and development, technology and primary industries.
- Appropriately responding to the locality's natural assets.
- Provision of an integrated and permeable movement network, which caters to anticipated traffic volumes and industrial vehicle movements.

The development of Lot 600 will be a catalyst for further development within the Nambeelup Industrial Area and provides a key opportunity to respond to the strategic objectives of the aforementioned plans, and address priorities identified within the South Metropolitan Peel Sub-Regional Planning Framework.

The Structure Plan has the potential to deliver between 80-110 industrial lots. A focus has been given to the incorporation of water sensitive urban design principles, the retention of a wetland and its revegetation, retention of natural drainage corridors and the refinement of the transport network. The Structure Plan supports the provision of approximately 22 hectares of public open space, which provides opportunities for passive recreation in accordance with Development Control Policy 4.1.

The proposed street and movement network within the Structure Plan results in a well-connected and permeable street network which caters to industrial vehicle movements, considers opportunities for shared access and more accurately responds to anticipated traffic numbers into the future.

As part of the preparation of the Structure Plan, the following technical and supporting documentation has been prepared with key points summarised in this report:

- Local Water Management Strategy (JDA)
- Bushfire Management Plan (Strategen)
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- Aboriginal Heritage Report (JCHMC)
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Full copies of these documents are provided in the technical appendices.

STRUCTURE PLAN SUMMARY TABLE

Item	Data	Section Number Referenced Within the Structure Plan Report
Total area covered by the structure plan:	119.82 ha	Section 2.1
Area of specific land uses: • Industrial • Special Industrial • Commercial • Service Commercial	 • 65.43 ha • 2.02 ha • 1.46 ha • 4.67 ha	Section 5.2
Estimated lot yield:	80-110	Section 5.2
Estimated area and percentage of public open space	Drainage – 8.04 ha (approx. 7%) Public Open Space – 21.18 ha (approx. 18%)	Section 5.3

PART ONE – IMPLEMENTATION

1. IMPLEMENTATION OF STRUCTURE PLAN

1.1. STRUCTURE PLAN AREA

The Lot 600 Lakes Road, Nambeelup Structure Plan (the Structure Plan), once endorsed, will become the guiding document in the consideration of future subdivision and development for Lot 600, being the land contained within the inner edge of the Structure Plan boundary line shown on the Structure Plan Map (refer to **Figure 1**).

1.2. STRUCTURE PLAN OBJECTIVES

The Structure Plan is based on the following objectives:

i. To provide guidance on the subdivision and development of the Structure Plan area.

ii. To facilitate the orderly and proper planning of the Structure Plan area within the context of the site's opportunities and constraints.

iii. To facilitate outcomes consistent with the Peel Business Park.

iv. To provide guidance with respect to the application of discretion in terms of land use and development.

v. To provide mechanisms for built form and landscape control.

1.3. OPERATION

In accordance with Clause 22 of Schedule 2 of the *Planning and Development (Local Planning Scheme) Regulations 2015,* this Structure Plan will come into operation on the day in which the Structure Plan is approved by the Western Australian Planning Commission (WAPC). Once approved, decision-makers shall have due regard to the contents of this Structure Plan when making decisions on the subdivision and development of land within the Structure Plan area. This Structure Plan has an effective period of 10 years commencing from the day of endorsement.

1.4. STAGING

It is proposed that the development of the Structure Plan be undertaken within seven (7) stages. The staging of the Structure Plan is mainly influenced by the existing road network, site levels and earthworks and the delivery of infrastructure upgrades.

Staging will commence in the south-west of the site and will continue northwards. It is anticipated that Stage 1 will consistent of approximately 10-20 lots which have access from the southern internal road network. Further detail as to how the staging of the development may unfold is included in **Part Two**, **Section 5.11**.

1.5. SUBDIVISION AND DEVELOPMENT REQUIREMENTS

The Structure Plan Map (refer to **Figure 1**) designates the land use zones applicable to the Structure Plan area. The decision-making authority is to have due regard to the zoning, subdivision and development requirements contained within this Structure Plan when making planning decisions.

Land use and development within the Structure Plan is to be consistent with the prescribed zonings and reservations as detailed on the Structure Plan Map as defined under the Shire of Murray's Town Planning Scheme No.4.

Public open space is to be provided generally in accordance with **Figure 1** (Structure Plan Map) and **Figure 13** of Part 2.

1.6. DESIGN GUIDELINES AND LOCAL DEVELOPMENT PLANS

The Structure Plan Map (refer to **Figure 1**) identifies some of those areas within the Structure Plan where a Local Development Plan (LDP) may be prepared as a precursor to development. Conditions may be applied to future planning stages (i.e. subdivision) that require an LDP in the following circumstances:

i. For the area of land identified as the 'Special Land Use and Built Form Precinct'. The LDP will address items such as the wetland interface, bushfire management, interface with the adjacent 'kennel precinct' and access arrangements to Gull Road.

ii. To address interface issues and bushfire management, lots abutting drainage basins and for lots abutting a swale to address shared crossover arrangements.

iii. For the land located within the 'Service Commercial' and 'Commercial' zone / local node. The LDP will address access and interface issues with Lakes Road and built form considerations.

iv. For the lots backing on to Readheads Road to address access and interface with Readheads Road.

v. For the lots abutting the internal north-south connector road to address access including shared crossovers.

1.7. DEVELOPMENT CONTRIBUTIONS

No Development Contributions Plan is required to facilitate this structure plan or resultant subdivision by reason of the delivery of enabling infrastructure through Royalties for Regions funding. However, post-delivery of Royalties for Regions commitments, a Development Contributions Plan will likely be prepared by the Shire to enable the coordinated delivery of shared infrastructure across the wider NIA.

Refer to **Table 3**.

1.8. ADDITIONAL INFORMATION

The following technical information is required to be undertaken at future planning stages:

Table 1 – Subdivision and development requirements

Additional Information	Purpose	Approval Stage	Consultation Required
Wetland Management Plan	To provide guidance on the wetland interface.	Condition of subdivision approval for any lots directly abutting a wetland buffer area.	Department of Parks and Wildlife. Shire of Murray
Urban Water Management Plan	To detail drainage construction works, monitoring and maintenance arrangements in accordance with the	Condition of subdivision approval.	Department of Water.

Additional Information	Purpose	Approval Stage	Consultation Required
	WAPC's Better Urban Water Management Guidelines.		
Landscape and Open Space Management Plan	To detail the ongoing management and maintenance arrangements of landscaping and public open space areas.	Condition of subdivision approval.	Shire of Murray.
Traffic Management Plan	To provide technical specifications relating to road upgrades, construction management arrangements and broader traffic requirements.	As required.	Shire of Murray. Main Roads WA (if required).
Acid Sulphate Soils	Preliminary Acid Sulphate Soils (ASS) investigation to confirm the presence or absence of ASS prior to any site earthworks.	Application for subdivision approval.	Department of Environmental Regulation.
Preliminary Site Investigation	To determine if any actions to manage potential contamination are required to be implemented during construction.	Application for subdivision approval.	Department of Environmental Regulation.
Archaeological Survey	To investigate potential Aboriginal sites within Lot 600.	Prior to development.	South West Land and Sea Council.
Consultation with Gas Pipeline operator	To confirm the location and setbacks required from the gas pipelines adjacent Readheads Road.	Application for subdivision approval and prior to development.	ATCO Gas

Figure 1 – Structure Plan Map

BRISBANE
Level 7, 123 Albert Street
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Australia
T +61 7 3007 3800

MELBOURNE
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PERTH
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Perth WA 6000
Australia
T +61 8 9346 0500

SYDNEY
Level 23, Darling Park Tower 2
201 Sussex Street
Sydney NSW 2000
Australia
T +61 2 8233 9900

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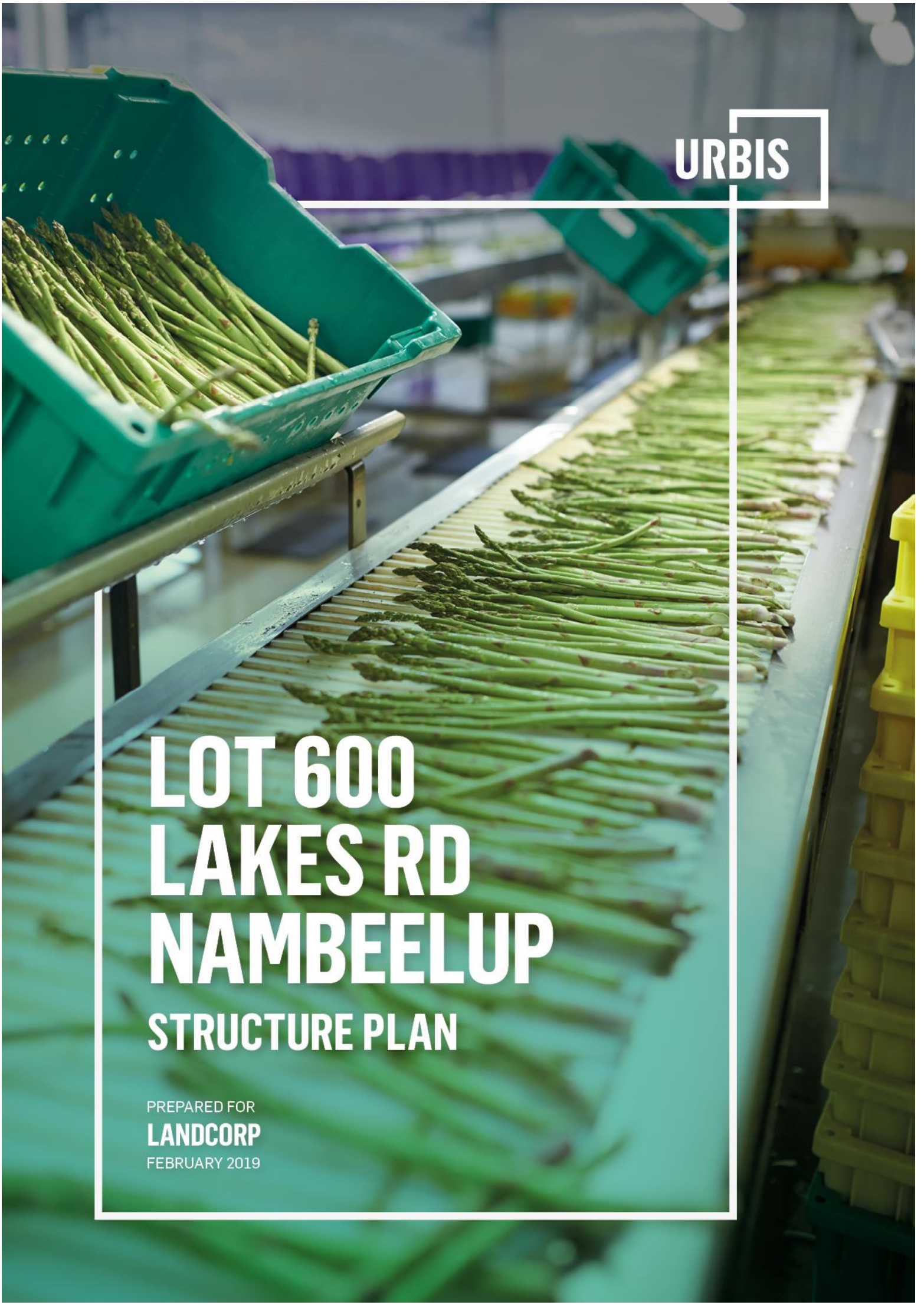

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[DATE]

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

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PART TWO – EXPLANATORY SECTION

1. INTRODUCTION AND PURPOSE

This part of the report provides an explanation of how the Structure Plan was developed considering the site, its characteristics and the planning framework. It provides detail on the Structure Plan's form, function and key attributes. It also provides guidance on how the Structure Plan should be interpreted and implemented, inclusive of future reporting.

The purpose of the Structure Plan is to provide a framework that will guide future subdivision, development and land use within the Structure Plan area. This includes future reporting and approvals required to support more detailed planning for the land.

The Structure Plan will facilitate the industrial development of Lot 600, which is part of the Peel Business Park – a strategic priority of government to provide employment and industrial lands within the Peel Region. Latter sections of this document will describe the unique industrial proposition of Lot 600, with a focus on agricultural-related industry.

Specifically, the Structure Plan will provide for specialist (agricultural-related) industry, pockets of more generalised industry, service commercial and commercial land, open space/drainage and conservation. The structure plan will allow for these land uses to be provided in an integrated manner, while also allowing for the future use and development of surrounding land to unfold over time.

This document provides all necessary information and addresses the reporting requirements of The Shire of Murray's Town Planning Scheme No.4 (TPS4) and the requirements of the Planning and Development (Local Planning Scheme) Regulations 2015, including the Western Australian Planning Commission's Structure Plan Framework (August 2015).

1.1. BACKGROUND TO THE PEEL BUSINESS PARK

The subject land forms part of the Peel Business Park, which is identified under the Peel Development Commission's Peel Regional Investment Blueprint as a critical element in the delivery of a more sustainable and economically competitive Peel Region.

The Peel Business Park represents several strategic imperatives currently driving current state initiatives. They include:

- The diversification of the State's economy away from an overreliance on cyclical commodity exports;
- Increasing local value-add activities;
- More efficiently utilising existing resources;
- Improving Perth and Peel's urban systems to ensure that significant population growth can be supported.

Transform Peel is the overarching name for the development program initiated to deliver Peel Business Park. The focus of the Peel Business Park (also known as the Nambeelup Industrial Area – 'NIA') will be on food manufacturing and processing industries, logistics enterprises, and supporting rural-related service commercial and industrial activities. The Peel Business Park also focuses on research and development, and training to support primary industries.

In support of the above regional context, the State's Directions 2031 and Beyond: Metropolitan Planning and Horizon and Perth and Peel @3.5 million provides guidance on where sustainable development should occur over the next 35 to 40 years. The key direction of these strategies is to ensure the impact of urban growth in areas of environmental significance is minimised to protect our environment and maximise benefits of unconstrained land. This includes the identification of key industrial land parcels which are suitably serviced or able to be serviced to facilitate the delivery of industry. Lot 600 and the wider NIA has been identified as an area for industrial growth under these strategies.

2. LAND DESCRIPTION

The following section examines the land's context with respect to location, land use and ownership.

2.1. LOCATION & REGIONAL CONTEXT

The subject site is located within the Shire of Murray at Lot 600 Lakes Road, Nambeelup. The site is positioned approximately 8km north-east of the Mandurah Town Centre and approximately 12km north-west of Pinjarra. The land currently comprises a single land parcel with a total area of 119.82ha.

The site has frontage to both Lakes Road and Gull Road, which provide good east-west and north-south access to Mandurah and Pinjarra. Both roads are currently classified as local roads and are under the care and control of the Shire of Murray. The latter sections of this report will illustrate the nature of any road upgrades anticipated by the Nambeelup Industrial Area District Structure Plan (Nambeelup DSP).

Figure 2 illustrates the location of the land within the context of the broader Peel region. This report will summarise the strategic planning documents, which identify this site as a priority industrial area as part of the Peel Business Park.

2.2. LOCAL CONTEXT

The site is bound by Lakes Road to the south, Gull Road to the east, Readheads Road to the north (unconstructed) and adjoining a rural lot to the west. The land located to the south of the site (south of Lakes Road) consists of rural lots, some with single residential dwellings and outbuildings. Various dog kennels and a small number of residential dwellings are located to the east, forming the Nambeelup 'kennel precinct', comprised of 32 properties each approximately 2 hectares in size. Subsequent sections of this report discuss the how the Structure Plan area interfaces with the existing 'kennel precinct'. Further to the east is the Murrayfield Airport. Generally, the land located to the north and west is rural in nature.

The land surrounding the Structure Plan area is largely undeveloped meaning the development of the subject site can be unfolded without great impact on the broader area. The subject site is positioned within close proximity to Pinjarra and Mandurah. The site's positioning offers good access to these areas and the broader regional road network.

Figure 3 shows the location of the land within the context of the broader area.

2.3. LAND USE

The land is currently used for extensive agriculture purposes, most evidently cattle grazing. We understand this has been the use for some time. The site contains clusters of vegetation and wetlands, as well as a dam in the northwest extent of the site

Figure 4 shows an aerial of the site.

Figure 2 – Location Plan

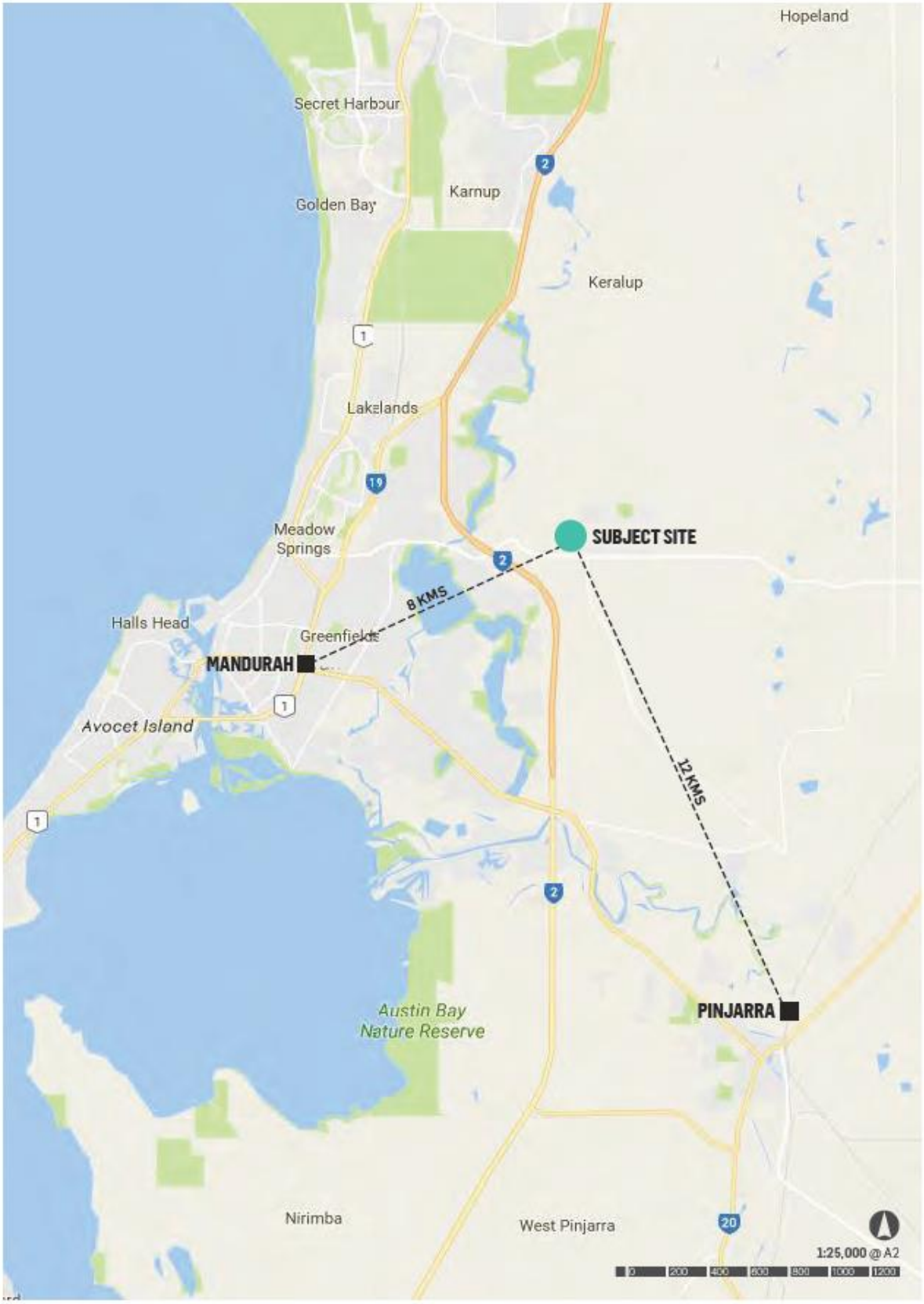
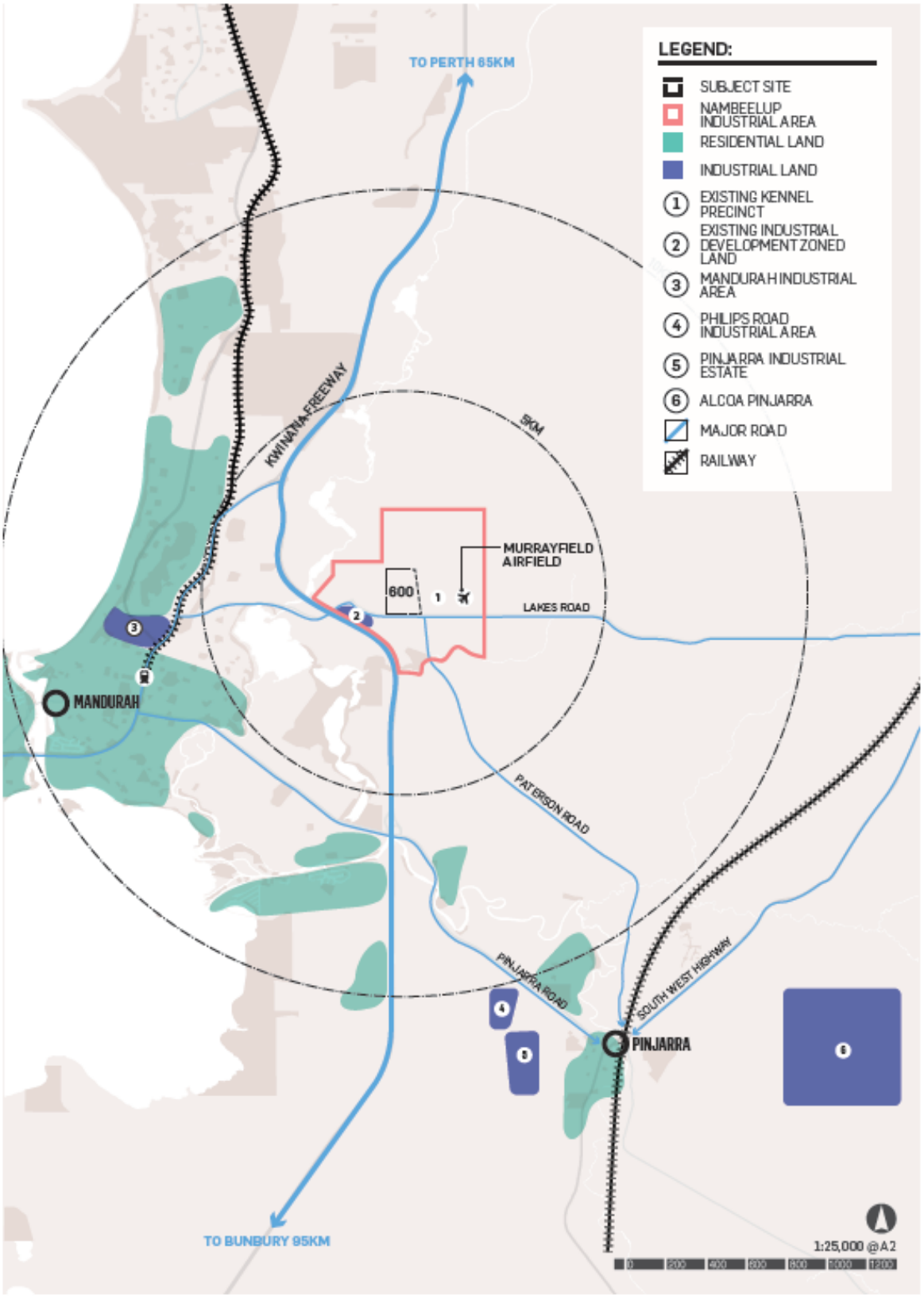


Figure 3 – Context Plan



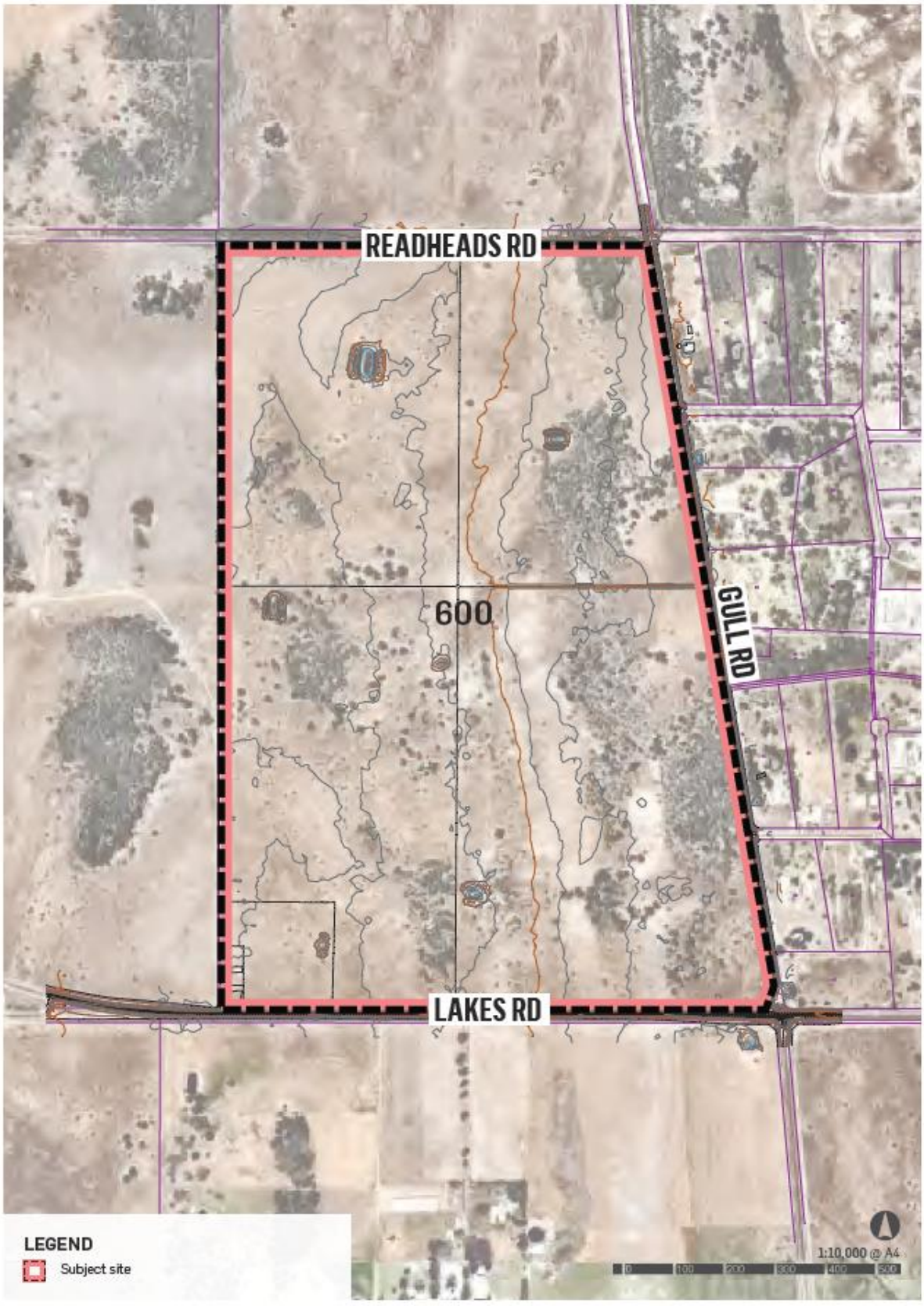
2.4. LEGAL DESCRIPTION AND OWNERSHIP

The subject site is in single ownership. Lot details for the subject site have been summarised in **Table 2**. A copy of the Certificates of Title for the subject site has been provided in **Appendix A**.

Table 2 – Summary of Lot Details

Lot	Area	Plan/Diagram	Vol/Folio	Proprietor	Encumbrances
600	119.72ha	DP57701	2753/559	Western Australian Land Authority	No easements of encumbrances are listed on the Certificate of Title

Figure 4 – Aerial & Contour Plan



3. PLANNING FRAMEWORK

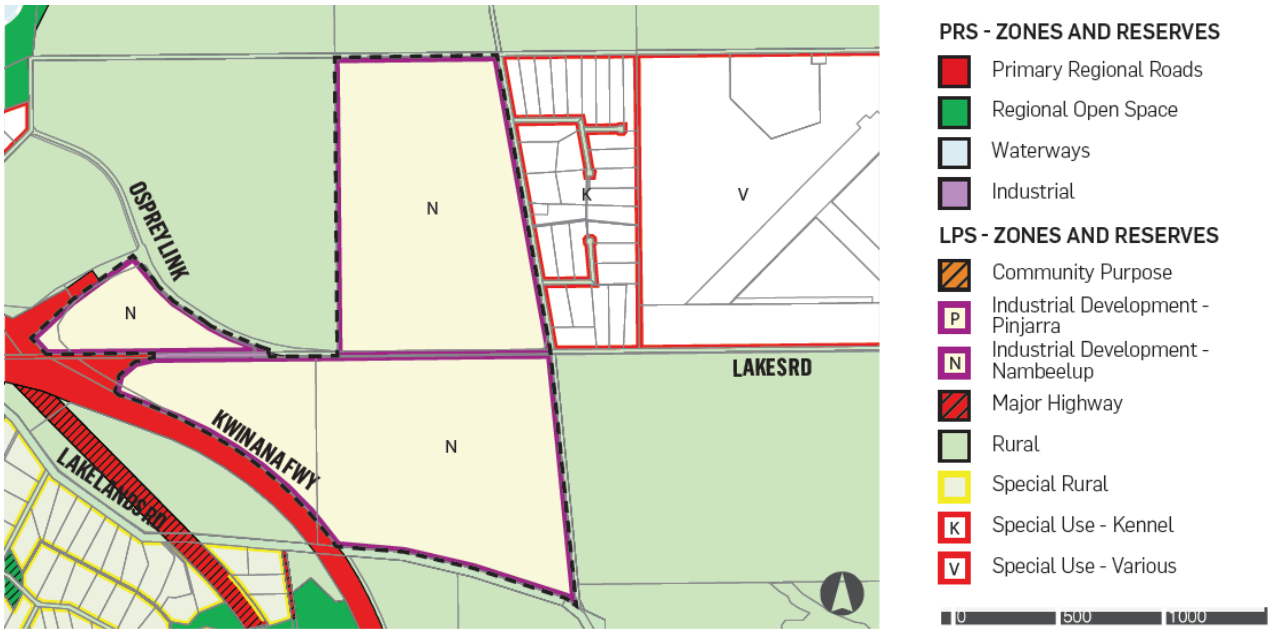
The following sections provide an overview of the relevant planning framework as it relates to the Structure Plan. These factors have influenced the design and provisions of the Structure Plan.

3.1. ZONING AND RESERVATIONS

The Structure Plan area is currently zoned 'Industrial' under the Peel Region Scheme (PRS) and 'Industrial Development – Nambeelup' under the Shire of Murray's Town Planning Scheme No. 4 (TPS4) (refer **Figure 5** and **Figure 6**). The specific TPS4 zones proposed by this Structure Plan are outlined in **Section 5.2.**

Figure 5 – Peel Region Scheme Excerpt

Figure 6 – Town Planning Scheme No.4 Excerpt



3.2. STATE PLANNING STRATEGIES

The design response of the Structure Plan has been shaped by the State government strategic planning environment. This section summarises the relevance of these strategies/policies within the context of the Structure Plan.

3.2.1. Directions 2031 and Beyond

Directions 2031 and Beyond (Directions 2031) provides a high level spatial framework for development and future growth within the Perth and Peel Regions. The document provides a framework to guide the detailed planning and delivery of housing, infrastructure and services necessary to accommodate the forecasted additional 45,000 residents in Peel by 2031. Directions 2031 recognises that maintaining a strong and regionally dispersed network of industrial centres is critical to the Perth and Peel region's continued economic growth. Directions 2031 identifies NIA as a Regional Industrial Centre. The further industrial subdivision and development of the land facilitated by this Structure Plan is aligned with the objectives of Directions 2031 and Beyond.

3.2.2. Perth & Peel @ 3.5 Million

Directions 2031 is supplemented by the South Metropolitan Peel Sub-Regional Planning Framework (Planning Framework), which provides a more detailed indication of how the principles of Directions 2031 are to be applied in a geographic sense. The Planning Framework identifies the subject site as an Industrial Expansion area. Areas identified for Industrial Expansion include land that has been identified for potential industrial development in preceding planning studies, or land that represents the logical expansion of an existing industrial area. This Structure Plan presents an opportunity for the implementation of the strategic direction and priorities of the Planning Framework, particularly with respect to the following:

- It will strengthen identified industrial areas to meet the future needs of industry, commerce and the community.
- It will maximise the use of existing infrastructure, including transport.
- It will contribute to the diversification of industry to boost jobs in the Peel region and attract additional investment.

The status of the land under Directions 2031 and the Planning Framework was reflected in the preparation and endorsement of the Nambeelup DSP. This Structure Plan presents the next step in the planning implementation process, to realise the planned industrialisation of the land.

3.2.3. Economics and Employment Lands Strategy

The Economic and Employment Lands Strategy (EELS) was prepared in 2012 to facilitate a coordinated approach to industrial land use and development. EELS focuses on the identification and de-constraining of land suitable for long term industrial development. The NIA (including the subject site) is identified under the EELS as a priority 'non-heavy industrial' site suitable for further investigation. EELS recommends the PRS and TPS4 be amended to prepare Nambeelup for industrial development. In addition, it recommends environmental, infrastructure and servicing studies be undertaken.

The rezoning of the land under the PRS and TPS4 have been advanced as recommended by the EELS. The EELS recommended detailed reporting has been undertaken as part of the rezoning and this Structure Plan. This Structure Plan represents the next step in implementing EELS in the area.

3.2.4. State Planning Policy No.2.1 – Peel Harvey Coastal Plain Catchment

The subject site is located within the Peel-Harvey coastal plain catchment. State Planning Policy 2.1 – Peel Harvey Coastal Plain Catchment (SPP 2.1) seeks to ensure changes to land use within the Peel-Harvey coastal plain catchment are controlled to minimise environmental damage.

SPP 2.1 contains a number of general and specific policy provisions relating to drainage. The policy states that subdivision proposals shall make provision for a drainage system which maximises the consumption and retention of drainage on site.

A Local Water Management Strategy (LWMS) has been prepared as part of the structure planning for the site and is attached at **Appendix B**. The LWMS defines surface water and ground water management objectives, and strategies including water quality management, water conservation and sustainability measures consistent with SPP 2.1 and best practice in urban water management.

Further information in regards to water management has been provided in **Section 5.6.**

3.2.5. State Planning Policy No.3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 (SPP 3.7) provides guidelines for the development of land uses located within a designated bushfire prone area. The Policy is supported by the accompanying Guidelines for Planning in Bushfire Prone Areas (the Guidelines), which assists in the interpretation of the objectives and policy measures outlined in SPP 3.7.

A Bushfire Management Plan has been prepared as part this Structure Plan (refer **Appendix C**) and confirms the Structure Plans compliance with SPP 3.7. Refer to **Section 5.8** for more detailed information.

3.2.6. State Planning Policy No.4.1 – State Industrial Buffer Policy

The purpose of the policy is to provide a consistent state-wide approach for the protection and long-term security of industrial zones. Buffers for industrial development are determined on an individual basis depending on the site's characteristics and intended use. The Policy states buffers for light/service industry can generally be retained on-site through building setbacks and landscaping.

On-site and off-site buffers may be required for general industry land uses. Buffers for general industry uses are assessed at the development application stage.

3.2.7. Development Control Policy No.4.1 – Industrial Subdivision

Development Control Policy No.4.1 (DC 4.1) provides broad guidelines for industrial subdivision throughout the State. The Policy provides guidance for matters such as the design and shape of industrial lots, road layout, servicing and open space requirements. The key objectives of this policy are as follows:

- To encourage the development of well-designed industrial areas serving the full range of general and special industrial needs throughout the State.
- To provide for the safe and efficient movement of traffic to and from each site within the industrial area.
- To provide for infrastructure services and public open space consistent with the operational needs of industrial users and the workforce.
- To protect the amenity of adjacent land uses, where necessary, from the effects of industrial development.

DC 4.1 is primarily to be implemented at subdivision stage, and the Structure Plan Part 2 Plan enables this through, for example, compliant road reserve widths and street block depths.

3.2.8. State Planning Policy 2.9: Water Resources

As previously mentioned, a LWMS has been prepared and confirms compliance with SPP 2.9. Further information is provided at **Section 5.6**.

3.3. LOCAL PLANNING POLICIES

The following section provides an overview of the local planning policies, which have influenced the design of this Structure Plan.

3.3.1. Local Planning Policy – Tree Retention

A vegetation survey has been undertaken in accordance with the requirements of this policy. The Environmental Assessment Report (EAR) provided at **Appendix D** confirms that there is no threatened flora on the site. Further, vegetation of (visual) significance on site is generally limited to the wetland areas.

It will be difficult to retain trees outside of the wetland areas due to the need for fill on the subject site. However, where possible trees may be retained in the road reserve and drainage areas. This will be further explored at subdivision stage.

3.3.2. Local Planning Policy – Water Sensitive Urban Design

As previously mentioned, a LWMS has been prepared and confirms compliance with LPP. Further information is provided at **Section 5.6**.

3.4. WATER PROTECTION

There are several policies and prior reporting that are relevant to the land from a water protection perspective. These include:

- Peel Region Scheme Floodplain Management Policy
- Environmental Protection (Peel Inlet-Harvey Estuary) Policy (EPA, 1992b)
- The Water Quality Improvement Plan for the Rivers and Estuary of the Peel – Harvey System phosphorus management (EPA, 2008).
- Murray Drainage and Water Management Plan (DoW, 2011)
- Nambeelup Industrial Area DSP District Water Management Strategy (JDA, 2016)

The LWMS at **Appendix B** illustrates how the approach to water management takes into consideration the requirements of these policies and reports.

3.5. PLANNING SPECIFIC TO LOT 600

3.5.1. Peel Region Scheme Minor Amendment 043/57

On 25 August 2017, the site was rezoned from Rural to Industry under the Peel Region Scheme, via Amendment 043/57.

The rezoning included the rezoning of 120ha of Rural land to Industrial, with a portion being rezoned for the Lakes Road road reserve, and the truncation with Gull Road.

3.5.2. Local Planning Scheme No. 4 Amendment No.301

Amendment 301, gazetted 18 May 2018, rezoned Lot 600 from Rural to Industrial Development (Nambeelup) to reflect the outcomes of Amendment 043/57 to the PRS.

The purpose of the Industrial Development (Nambeelup) zone is to enable further, more detailed planning to occur via a structure plan prior to substantive subdivision and development.

The amendment also introduced the Nambeelup Industrial zone which provides land use permissibility specific to achieving the intentions and objectives for the Industrial Development (Nambeelup) zone. Further, additional land use classifications were inserted to recognise the agri-innovation and research direction for the locality.

3.5.3. Nambeelup Industrial Area District Structure Plan

The Nambeelup Industrial Area DSP (Nambeelup DSP) sets out zoning and general development requirements to guide the coordinated planning and development of the NIA.

The intention of the Nambeelup DSP is to implement broad land use zones with the delineation of more comprehensive zoning occurring at future planning stages. Under the DSP, the subject site is designated 'Industrial' and 'Open Space'.

The Structure Plan (refer to **Figure 1**) reflects the designations that are contained within the DSP. Any departures from the Nambeelup DSP are minor in nature and the result of more detailed planning investigations. It is highlighted that the core elements of the Nambeelup DSP including the retention of the wetland area and the associated buffer, and the industrial zoning have been maintained. Where departures have been proposed, they are fully explained and justified in latter sections of this report.

The Nambeelup DSP provides broad guidance on implementation. To this end, **Table 2** and **Section 4.1** of the Nambeelup DSP provide the framework around the detailed planning to be undertaken prior to the development of the NIA. **Table 3** of this report provides a summary of the key actions to be undertaken as part of the Structure Plan – and confirms satisfaction of the same.

3.5.4. Pre-Lodgement Consultation

The submission of this Structure Plan has been preceded by consultation with various agencies. This consultation was undertaken within the context of the PRS and TPS4 amendments. The consultation included the Department of Planning and the Shire of Murray. The consultant team has engaged with agencies relevant to their discipline. A consultation register has been provided at **Appendix E**, which provides an outline of the consultation that has been undertaken and how matters have been responded to.

Figure 7 – Nambeelup District Structure Plan

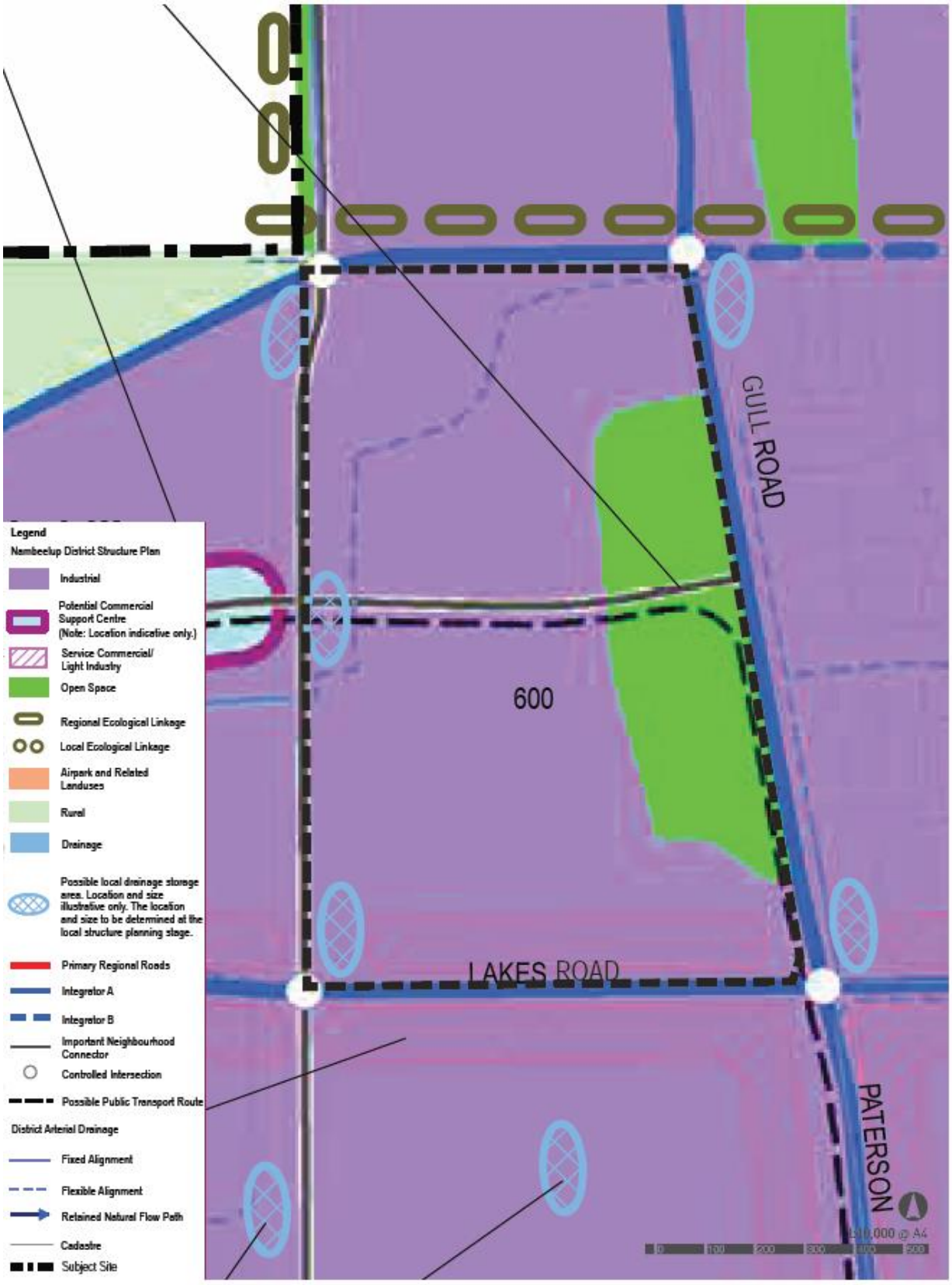


Table 3 – Measurement of Structure Plan against Key DSP Implementation Tasks

Implementation Task	Comment in DSP	Response/Compliance
Preparation of a comprehensive infrastructure servicing plan for the Nambeelup Industrial Area.	A suitably agreed comprehensive infrastructure servicing plan for the Nambeelup Industrial Area is required to support any industrial rezoning and would form the basis of the future Development Contribution Plan.	The Infrastructure and Servicing Strategy dated August 2018 has been included in support of this Structure Plan and demonstrates the ability for the site to adequately serviced while the remainder of the District Structure Plan area is being developed. The servicing strategy does not prejudice the ability for other land in the area to be developed. The development of the subject site will be a catalyst for the broader development of the area. The servicing strategy acknowledges the Royalties for Regions (RfR) funding available to facilitate the development of the first 290ha of industrial land and ensures the infrastructure associated with this is sufficient to provide not only for LandCorp on Lot 600 but other landowners in the locality up to 290ha. Refer to **Section 5.10** for more information.
Preparation of a Development Contribution Plan.	Draft Development Contribution Plan to be prepared to support a region scheme and local rezoning request and to potentially form the basis for a separate local scheme amendment to implement the Plan.	Based on discussions with the Department of Planning and the Shire of Murray it has been agreed that the preparation of a draft Development Contribution Plan was not required in support of the scheme amendments. Those amendments have proceeded (been approved) on this basis. Following the approval of this structure plan and the delivery of Royalties for Regions

		commitments, a Development Contributions Plan will likely be prepared and implemented by the Shire to guide the further provision of shared infrastructure across the NIA.
Undertake relevant environmental reporting.	Depending upon the type of environmental qualities on the site.	An Environmental Assessment Report has been prepared to accompany this Structure Plan. This identifies that there are no significant constraints on the development of the site in accordance with the DSP and details the technical reporting and management strategies required at the future planning stages. Refer **Appendix D** for more details.
Preparation of a Bushfire Hazard Level Assessment and Fire Management Plan.	Landowners to undertake relevant investigations in consultation with the Shire of Murray and DFES in relation to fire management matters.	A Bushfire Management Plan has been prepared in support of this Structure Plan in accordance with State Planning Policy 3.7 and the WAPC Guidelines for Bushfire Prone Areas. Refer to **Section 5.8** of this report for more details.
Suitable transport modelling (in accordance with **Section 4.4** of the **DSP**)	N/A	Flyt has been engaged to update the transport modelling to support the development of the estate for industrial purposes. Refer to **Section 5.5** of this report for more details.

The above table confirms that this proposal satisfies the implementation requirements of the Nambeelup DSP, and on this basis it is appropriate for the Structure Plan to be advanced at this time.

4. SITE CONDITIONS AND CONSTRAINTS

This section describes the key site opportunities and constraints that have informed the Structure Plan.

4.1. BIODIVERSITY AND NATURAL AREA ASSETS

The EAR at **Appendix D** summarises the potential impacts associated with the Structure Plan. The EAR demonstrates that the potential environmental impacts associated with development within the Structure Plan area can be appropriately managed in accordance with the objectives of the EPA. The following provides a summary of the key findings of the EAR:

- The site investigation undertaken by RPS on 2 September 2011 and Coffey Environments (2009) identifies the native vegetation within the site is in a 'degraded' to 'completely degraded' state.
- Coffey Environments (2009) identified that no threatened or priority flora, threatened or priority ecological communities protected under the federal or state legislation were recorded on the site.
- Lomandra hermaphrodita or Lomandra maritime were not recorded by Coffey Environments (2009) as being present on the site.
- Coffey Environments (2009) identified that no threatened or priority fauna protected under Federal or State legislation were recorded on the site.
- Coffey Environments (2009) identified the survey area contains habitat that is generally in a degraded condition due to significant impacts by previous land uses and would generally be addressed as either disturbed fauna habitat or highly degraded fauna habitat that is unlikely to contain a unique fauna assemblage.
- The site does not contain habitat which would be significant breeding or foraging habitat for either the Carnaby's Black cockatoo or the forest red-tailed black cockatoo.
- There have been no significant changes to the existing environment within the site over the past 10 years. The site has been used for cattle grazing, consistent with the 'Rural' land use zoning.

The findings above confirm that the environmental characteristics of the land are no impediment to the subdivision and development of the land in a manner provided for in this Structure Plan. Specific detail on the key environmental aspects of the land are provided for in the following sections.

4.1.1. Flora

The EAR confirms that Coffey Environments undertook a Level 2 flora and vegetation survey for the subject site (formerly lot 91 now lot 600), which consisted of a desktop assessment and field surveys. A report was prepared for the site entitled *Flora and Fauna assessments, Lots 91, 92 and 604, Nambeelup Industrial Study Area* (Coffey Environments 2009), included as an attachment to the EAR.

No Threatened or Priority Flora, Threatened or Priority Ecological Communities protected under federal or state legislation were recorded upon site. Due to the site having been largely altered from its original natural state, the native vegetation that does exist within the site is considered to be in a "Degraded" to "Completely Degraded" condition using the Bush Forever vegetation condition scale (Government of Western Australia 2000) (refer **Figure 8**). There is a very high occurrence of agricultural weeds/pasture species within the site.

The information in relation to flora confirms that there is no technical or legislative reason for vegetation to be retained on site. However, there are other valid reasons for retention where possible – for example, for amenity reasons and to satisfy Council's policy requirements. Moreover, the Resource Enhancement Wetlands on site are highly vegetated - vegetation can make an important contribution to the values and

functions of the wetland. There is a requirement for the wetlands to be retained and, by extension, so too should associated vegetation also be retained as applicable.

In response, our environmental and landscape team has reviewed the vegetation that is realistically available and appropriate for retention. Vegetation is to be retained in the wetlands and buffers, and where possible in drainage areas, POS areas and road reserves. However, as previously noted the potential for vegetation to be retained outside of the wetland areas will be compromised by the need to fill much of the site and will be subject to detailed design.

Section 5.4 and **5.7** describes design responses to the site, including in relation to vegetation retention and management.

4.1.2. Fauna

The retention of the wetlands and associated vegetation will also retain animal habitat. Assessments undertaken with respect to Black Cockatoos concludes that the Structure Plan does not contain habitat considered to be significant breeding or foraging habitat for either the Carnaby's Black-Cockatoo or Forest Red-Tailed Black Cockatoo.

The landscaping details at **Section 5.4** also demonstrate that the species selected for verges and open space/drainage will be native species that promote local habitat for fauna.

4.1.3. Wetlands

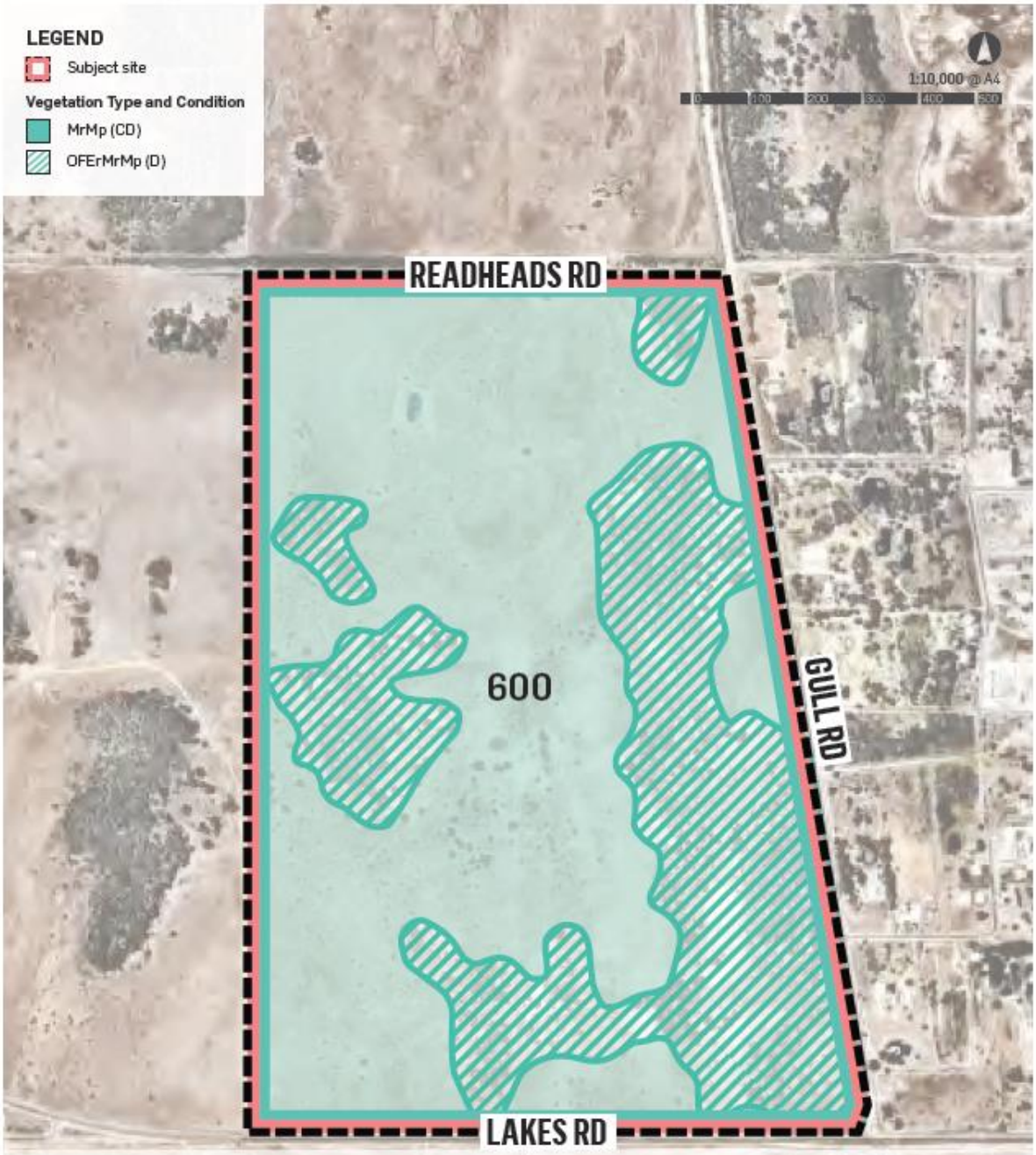
The subject site contains Multiple-Use wetlands (MUW) and Resource Enhancement wetlands (REW), both of which are management categories of geomorphic wetlands.

MUW is mapped for a significant portion of the Structure Plan area. This wetland is an extensive palusplain wetland which has been subject to various impacts associated with the historical and present use of the land. A portion of the Structure Plan is affected by an REW located in the east and south-east of Lot 600 (refer to **Figure 9**).

The assessment of the wetlands indicates that wetland vegetation is highly modified with no understory vegetation remaining and is considered to be 'degraded'.

The future development of much of the site for industrial purposes is not considered to be constrained by the site's existing wetland systems. Importantly, due to the historical degradation of the site, the rezoning and redevelopment of the site offers an opportunity to better manage the wetlands through the Wetland Management Plan required by Part 1 of this Structure Plan. The Structure Plan is a balanced response that reflects the detailed investigation of the wetlands.

Figure 8 – Vegetation Map



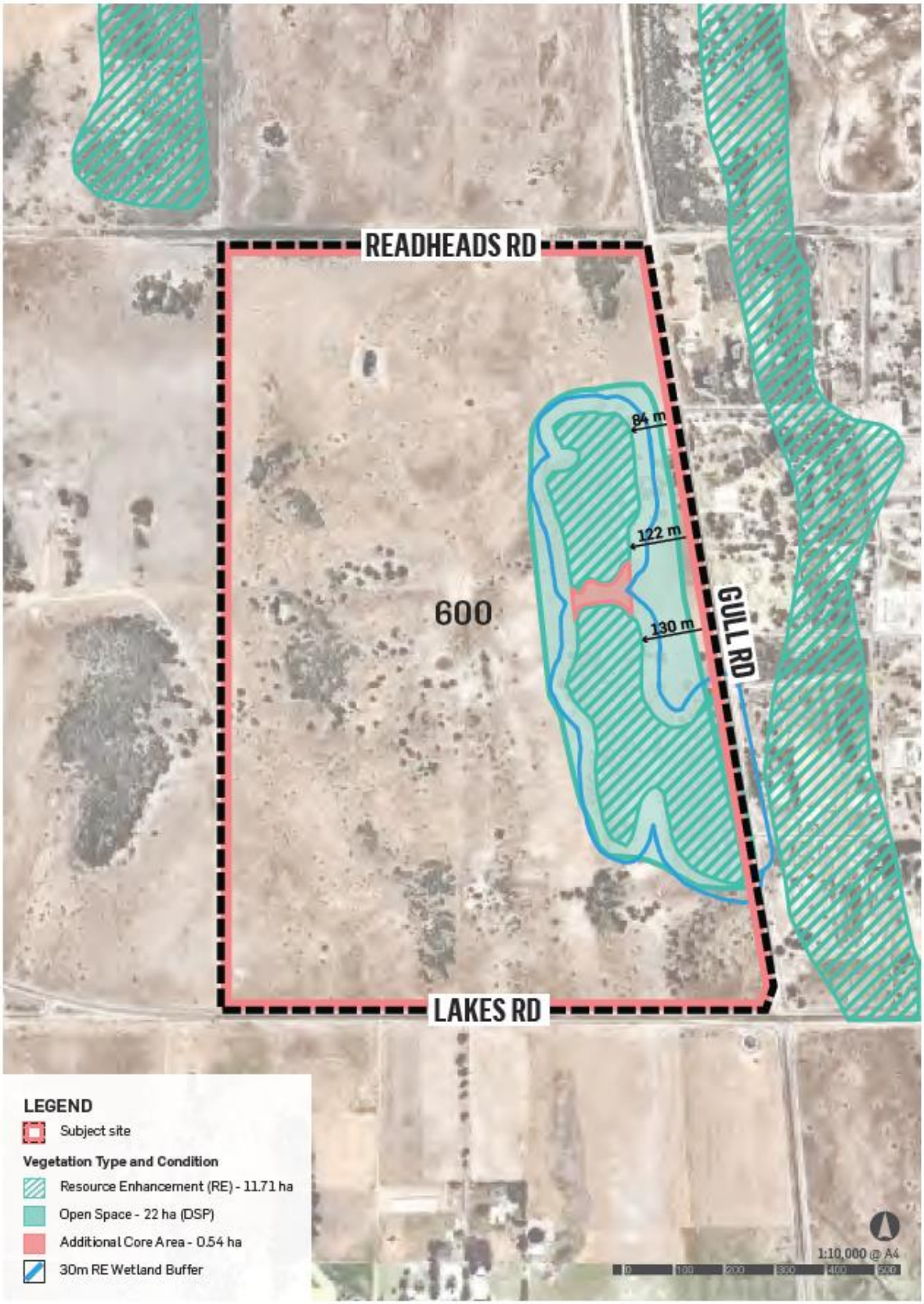
VEGETATION CONDITION:

P – Pristine Pristine or nearly so, no obvious signs of disturbance
E – Excellent Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
VG – Very Good Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
G – Good Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
D – Degraded Basic vegetation structure severely impacts by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive wees, partial clearing, dieback and grazing.
CD – Completely Degraded The structure of the vegetation is no longer intact and the areas are completely or almost completely without native species. These areas are often described as parklands cleared with the flora composing weed or crop species with isolated native trees or shrubs.

VEGETATION TYPE:

OFErMrMp
Open forest to Open Woodland and Eucalyptus rudis subsp. Rudis, Melaleuca rhaphiophylla and Melaleuca preissiana to 12m with occasional Banksia littoralis over Grassland/Herbland/Sedgeland to Scattered Grasses/Herbs/ Sedges dominated by weed species.
MrMp
Scattered Trees of Melaleuca rhaphiophylla and Melaleuca preissiana to 12m over pasture species with scattered patches of Juncus pallidus to 1.3m.

Figure 9 – Resource Enhancement Wetland Map



4.2. LAND FORM AND SOILS

The site is generally flat and low-lying and varies in slope slightly from below 5 metres AHD in the lowest point to the west to above 6 metres AHD in the east. This represents a distance to ground water in the order of less than 1 metre, which means that fill and/or alternate drainage solutions will be required to achieve the necessary separation.

Based on WAPC Acid Sulphate Soil (ASS) risk maps the entire extent of the site is mapped as moderate to low risk of ASS occurring at depths of greater than 3 metres. A preliminary Acid Sulphate Soils (ASS) assessment will be undertaken at subdivision stage to determine if there is the presence of ASS.

A search of the Department Environment Regulations (DER) Contaminated Sites Database was undertaken on 9 June 2016 and there were no matches found for the subject site.

On this basis, there is no design or other structural impact from a landform/soils perspective. It is likely that extensive fill will be required based on the low-lying nature of the land, which will make it difficult to retain vegetation outside of wetland areas. This will be addressed at the detailed design phase.

4.3. GROUNDWATER AND SURFACE WATER

A Local Water Management Strategy (LWMS) has been prepared to support the Structure Plan, refer to **Section 5.6** and **Appendix B** for more detailed information with respect to the management and conservation strategies proposed to be implemented as part of the more detailed planning stages.

With respect to surface water, the LWMS advises regional surface water features include the Serpentine River and its floodplain, which encompasses the regionally significant Goegrup and Black Lakes. Nambeelup Brook is a tributary of the Serpentine that drains into Black Lake.

The LWMS also notes the presence of wetlands on site as well as a RAMSAR wetland downstream. While the quality and nature of surface water is no impediment to the Structure Plan proceeding, these matters will be addressed via future, more detailed planning phases (UWMP).

The LWMS confirms that a monitoring program was undertaken for the site. Of particular note, the LWMS states the following, with respect to groundwater:

Over a majority of the study area the seasonal fluctuation in the watertable results in the watertable being close to the natural surface level for a few months of the year, and in wetland areas at the natural surface or a few months.

The winter maximum varies from year to year consistent with the variation in the amount and intensity of rainfall and evapotranspiration.

The LWMS also comments on groundwater quality. There is no groundwater quality issue that would preclude the Structure Plan being advanced. Rather the matters highlighted in the LWMS are to be carried forward to more detailed phases of the process (UWMP).

4.4. BUSHFIRE HAZARD

Several portions of the subject site are identified under the Department of Fire and emergency Services mapping as being located within a Bushfire Prone Area. A Bush Fire Management Plan (BMP) accompanying the Structure Plan (refer **Appendix C**) outlines the bushfire risk associated with the development of the subject site. Importantly this document determines that portions of the site are subject to bushfire hazard (refer **Figure 10**) and will require management strategies at future detailed planning stages. Further detail with respect to the management of bushfire is provided in **Section 5.8** of this report.

Generally, a 'low' bush fire hazard rating applies to present site conditions, with portions of the site subject to a 'moderate – high' risk level due to the existing unmanaged wetland. Only small areas of the site are classified as 'extreme', due to the well-structured understorey surrounding the wetland forest, woodland and scrubland.

The BMP identifies the BAL ratings which apply across the site along with the identification of Asset Protection Zones. Most notably, the BMP determines that the site can be readily managed through a standard management response as outlined in the Bushfire Protection Guidelines and AS3959. A full summary of the measurement measures is contained in **Appendix C**.

Figure 10 – Bushfire Hazard Level Assessment

4.5. HERITAGE

The Desktop Heritage Report at **Appendix F** confirms that there is no European heritage consideration relevant to this structure plan. Further, the report confirms that no previously reported sites of Aboriginal archaeological or ethnographic significance, will be impacted by the proposed project. However, due to the location of the Structure Plan area being within proximity to well-known and recorded areas of Aboriginal occupation (including the Serpentine River, Black Lake, Nambeelup Brook and Goerup Lake), and a moderately altered environment, there is the potential for unrecorded archaeological sites of Aboriginal heritage to be discovered. In this regard, appropriate management recommendations have been provided and are detailed further in **Section 5.9** of this report and **Appendix F**.

4.6. EXISTING ROAD MOVEMENT

4.6.1. Existing Major Roads

The existing road networks applicable to the Structure Plan area are outlined within the Traffic Impact Assessment (TIA) (refer to **Appendix G**) prepared by Flyt, as described below:

Lakes Road

Lakes Road runs in an east-west direction and is a key road link between the Kwinana Freeway and South Western Highway. It is a two-way road configuration with one lane in each direction with a 20m wide road reservation. Lakes Road connects to Gordon Roan and Pinjarra Road to the west and South Western Highway to the east.

Gull Road

Gull Road runs in a north-south direction from Sunshine Place to Lakes Road linking Keralup with Nambeelup. It is a two-way road configuration with one lane in each direction with a 20m wide road reservation. Gull Road connects to the intersection of Lakes Road and Paterson Road to the south making it the only access point to the existing 'kennel precinct'. The intersection with Lakes Road is stop sign controlled and marked to allow for right turn and left turn movements to Lakes Road.

Paterson Road

Paterson Road runs in a north-south direction connecting to Lakes Road and Gull Road in the north and to South Western Highway to the south. The portion of Paterson Road near the Structure Plan area has a two-way configuration with one land in each direction and approximately a 6.5m wide carriage way. The intersection with Lakes Road stop sign controlled and marked to allow for right turn and left turn movements.

4.6.2. Restricted Access Vehicle Network

The Restricted Access Vehicle (RAV) network is critical to the development of Nambeelup and the Peel Business Park as access for specific vehicles is required to support the evolution of the area as an employment and economic generator. The existing RAV network near the site predominantly allows Class 2 and 4 vehicle type movements.

4.6.3. Other Transport Networks

There are no public transport services and no dedicated pedestrian paths or cycling paths within the proximity of the Structure Plan area.

4.7. INFRASTRUCTURE AND SERVICING

The Infrastructure & Servicing Report included in **Appendix H** provides a full overview of the preliminary engineering investigations that have been undertaken as part of the formulation of the Structure Plan. The report does not identify any constraints with respect to the site's ability to be provided with key infrastructure.

4.8. SUMMARY OF CONTEXT AND OTHER LAND USE CONSTRAINTS AND OPPORTUNITIES

Based on the information provided in this section, below is a bullet point summary of the key opportunities and constraints, as illustrated within **Figure 11**. **Section 5** of this report details how the Structure Plan has responded to these opportunities and constraints through concept design and planning.

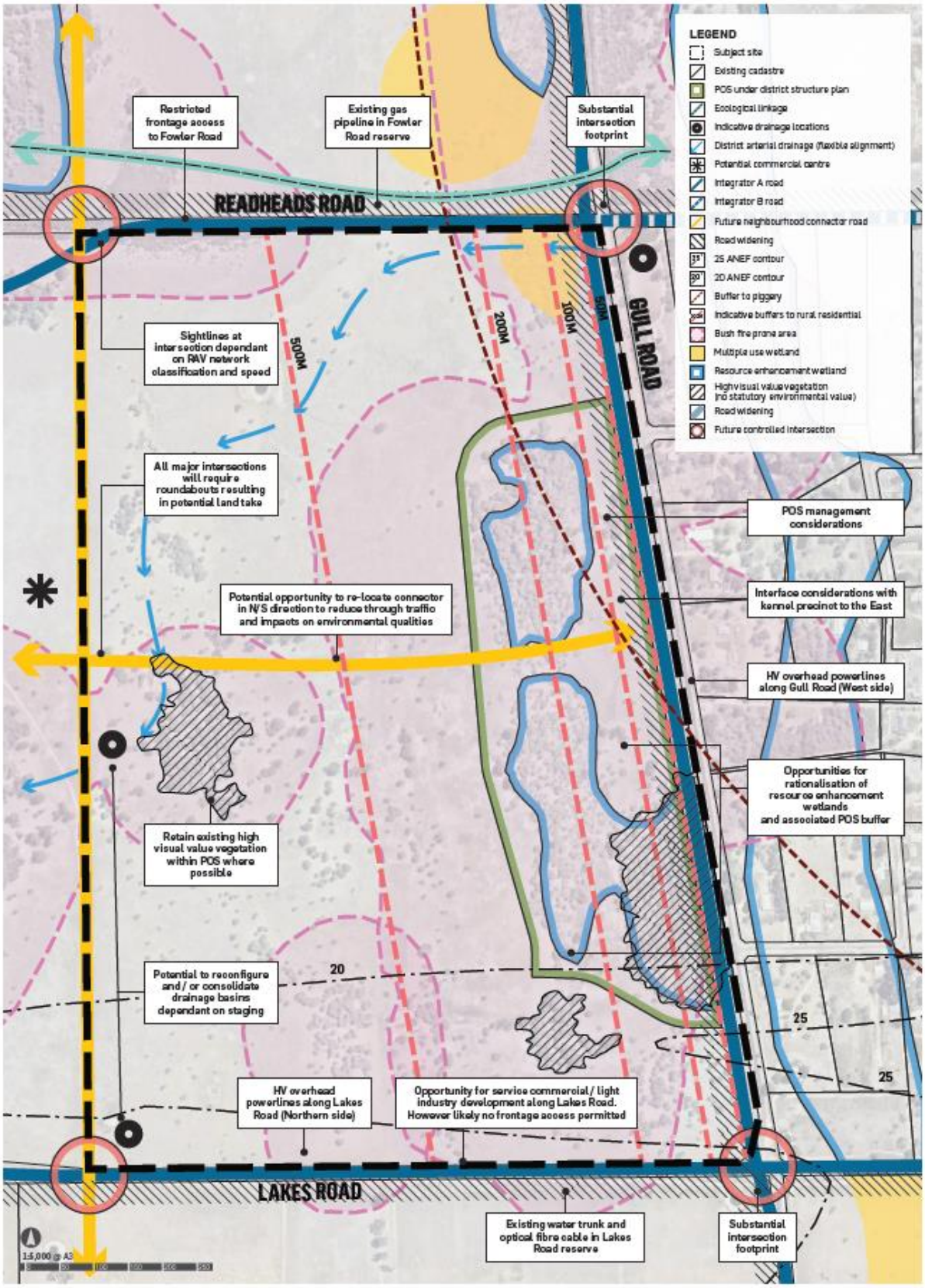
4.8.1. Opportunities

- The site's proximity to the rural hinterland provides opportunities for the development of rural-industrial land uses, which have synergies to the surrounding areas.
- The site has a frontage to Lakes Road which provides convenient access to regional freight routes such as Kwinana Freeway and South Western Highway.
- The site's exposure along Lakes Road (access and visibility) provides the opportunity for the site to include an entry statement and opportunities for Service Commercial uses along Lakes Road.
- The site is relatively flat and unconstrained other than those requirements with respect to stormwater management and separation to groundwater. This will ensure the site is well suited to accommodate a range of industrial uses.
- The site naturally grades from north-east to a south-west direction. There is an opportunity to apply water sensitive design that can reduce the flow rates and improve the quality of water leaving the site.
- The degraded nature of the vegetation on site and the lack of fauna presents an opportunity to reduce the wetland buffer.
- There are opportunities to retain and enhance the existing vegetation in the wetland and drainage areas to facilitate local character in the estate and provide a recreational function to the estate's workforce.
- The Structure Plan area does not involve fragmented landownership given it is in single ownership. This enables a more effective delivery of infrastructure and servicing.
- Opportunities for a Managed Aquifer Recharge and other alternative servicing strategies to be accommodated within the site.

4.8.2. Constraints

- The footprint required to accommodate roundabouts at major intersections.
- The gas pipeline in Readheads Road reserve.
- There is a requirement for the provision of drainage areas on site and limitations on where drainage (flow and storage) can be located.
- Potential access restrictions to external roads and no direct lot access to the internal integrator roads.
- 'Kennel precinct' to east of Gull Road – includes residential land use and requires careful interface treatment and potential buffers.
- Buffers relating to the Resource Enhancement Wetland.
- Noise contours from Murrayfield Airport.
- Potential odour from the existing piggery on Lot 89 Gull Road.

Figure 11 – Opportunities & Constraints



5. THE STRUCTURE PLAN

The Structure Plan provides a coordinated framework to facilitate the industrial development of the subject site. The Structure Plan establishes the planning parameters to guide future, detailed planning stages.

5.1. VISION AND DESIGN PHILOSOPHY

The vision for the Structure Plan has been underpinned by the following broader vision for the region outlined in the Nambeelup DSP:

"The Nambeelup Industrial Area will be a modern well-planned industrial business park designed to protect and benefit from the area's environmental features and provide a major new focus of economic activity, employment growth and service delivery for the Peel region."

The design developed for the estate addresses the considerations outlined in previous sections in a comprehensive manner as outlined below. The design has responded to the site requirements whilst ensuring a design which is implementable. The Structure Plan identifies the estate's core components such as the location of the various development uses, key road links and wetland areas. Greater detail is provided in the Explanatory Part 2 Plan (refer to **Figure 12**). The following summarises the adopted design philosophy:

ENVIRONMENT

The site's existing environmental features have been a key driver in the design of the Structure Plan. The Structure Plan layout and placement of open space has been carefully considered to preserve the wetland area and utilise the natural slope of the site to maximise drainage outcomes. This in term will reduce the level of fill required for the development of the site and enhance the natural amenity of the area.

MOVEMENT

The Structure Plan movement network has been designed to provide generous spacing between the access points and limit the occurrence of four-way intersections. Strong north-south and east – west connections are provided to minimise external access requirements. Overall, the circulation of the site follows a logical grid design which facilitates straight roads and a high level of permeability.

FLEXIBILITY

The Structure Plan has been designed to be flexible to cater for a variety of land uses. Large development blocks have been established to accommodate a variety of lot sizes and lot mixes. The design creates a number of distinct precincts focused around key intersections and environmental assets which can be individually developed as stages.

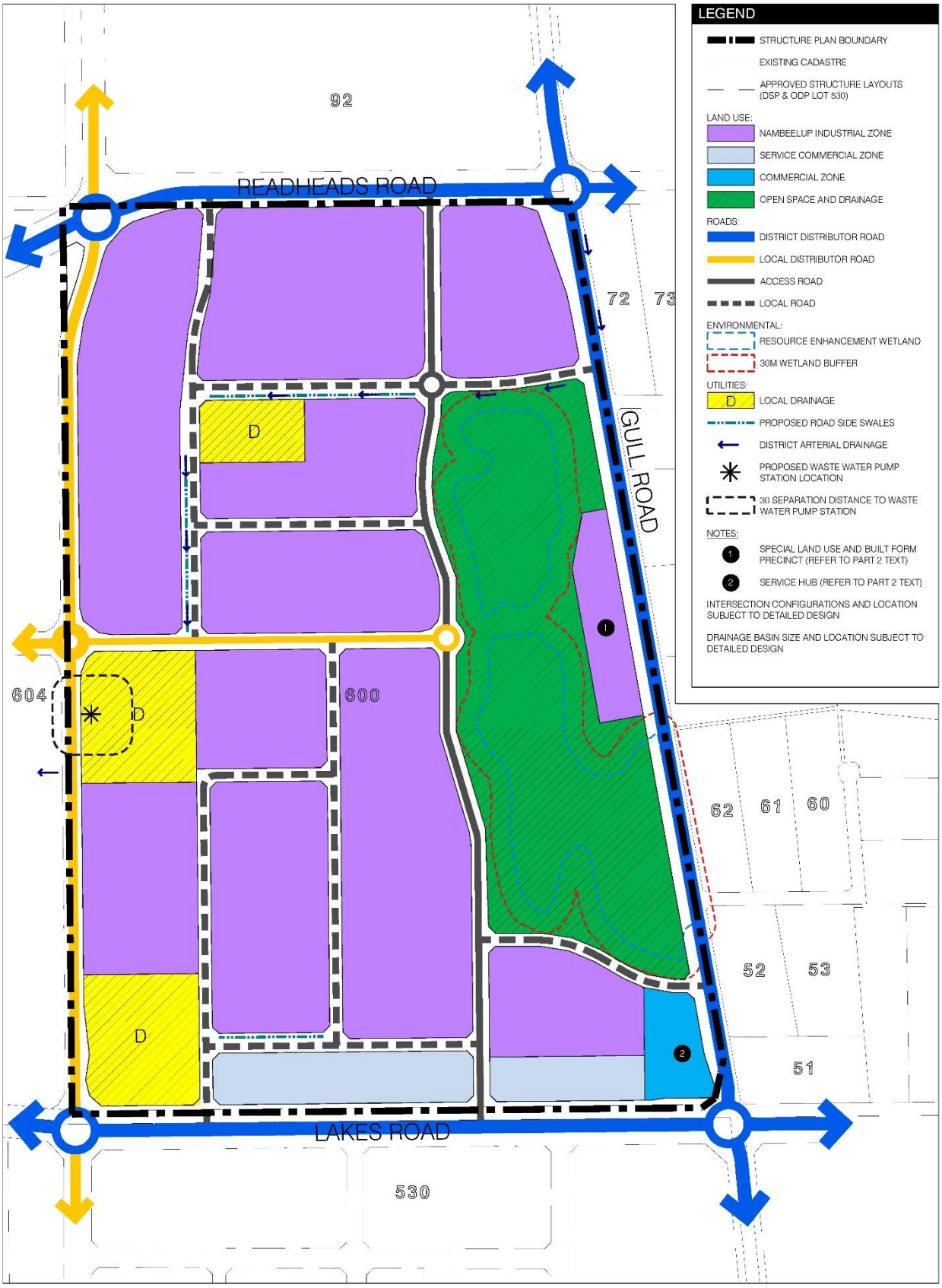
INNOVATION

The Nambeelup Industrial zone has been tailored to facilitate the development of a variety agricultural related industrial land uses focused around resilient and innovative business and production. This includes opportunities for alternative service schemes and potential harvesting of stormwater through a Managed Aquifer Recharge (MAR) process. The zone is flexible and it is anticipated that it will applied to other land parcels in the NIA to achieve the broader objectives of the Nambeelup DSP.

INTERFACE

A tailored and considered lot interface with the 'Kennel Precinct' has been incorporated into the overall design which includes landscaping and smaller lot product. This precinct has been identified as a 'Special Industrial' precinct within the Structure Plan, with the built form and setbacks being controlled through Local Development Plans to protect the amenity of the existing adjacent land uses. Consistent with the NIA District Structure Plan, service commercial and commercial land uses have been strategically located to the southern boundary and south-eastern corner to leverage exposure from Lakes Road.

Figure 12 – Explanatory Structure Plan



5.2. ZONES/PRECINCTS

Consistent with the Planning and Development (Local Planning Schemes) Regulations 2015 (the Regulations), the intent of the Structure Plan is to utilise the existing zones under TPS4. This ensures the Structure Plan is capable of being normalised. This section describes the zones/precincts proposed.

5.2.1. Nambeelup Industrial Zone

The 'Nambeelup Industrial' zone encompasses the majority of the Structure Plan area covering 73.58ha of land, with an anticipated yield of 80-110 lots. The 'Nambeelup Industrial zone is a flexible zone which will facilitate the development of a variety of rural-related industry uses, consistent with the vision for the area under the Nambeelup DSP.

In accordance with TPS4, the objectives of wider 'Industrial Development' zone are:

- *To designate land for future industrial development.*
- *To provide a basis for future detailed planning in accordance with the structure planning provisions of this Scheme.*

In addition, the objectives of the specific 'Nambeelup Industrial Development' zone are to:

- *Achieve job creation through the delivery of industrial development opportunities;*
- *Designate an industrial area of regional significance which reflects the objectives of the Nambeelup Industrial Area District Structure Plan;*
- *Achieve a cluster of agri-food and agri-processing operators and associated industries;*
- *Accommodate conventional light and general industries together with limited service commercial and commercial support uses; and*
- *Demonstrate the viability of innovate servicing solutions.*

Development within the Nambeelup Industrial zone will be in accordance with the objectives and provisions of the relevant zone as outlined in TPS4.

Note: The Nambeelup Industrial zone was introduced into TPS4 via Amendment 301.

5.2.2. Special Land Use and Built Form Precinct

This precinct occupies a total of 2.02ha of land between the wetland buffer area and Gull Road.

The intent for this area is to accommodate land uses and development that is sensitive and compatible to the wetland area, as well as the adjoining rural residential interface. This infers a higher quality of built form than the remainder of the estate and, potentially, other measures to minimise built form impacts such as greater setbacks, lesser heights and greater vegetation than elsewhere across the Structure Plan area.

It also infers less-intensive industrial land use that does not impact on surrounding land holdings (or the kennel precinct) from a noise, visual and odour perspective.

To ensure an appropriate and sensitive built form outcome, LDPs are required by Part 1 of this Structure Plan for land within the Precinct prior to its development.

When considering applications for land use, decision makers should only approve those discretionary uses that have minimal off-site impacts. Research, development and education are favoured land uses.

5.2.3. Service Commercial

The 'Service Commercial' zone encompasses 4.67 ha of land fronting Lakes Road. Consistent with the intentions of the Nambeelup DSP and the Shire of Murrays Zones Local Planning Policy, the Service

Commercial zone will *provide for a mix of non-retail business activities to service the community* and support the nearby industrial activities and workforce.

The 'Service Commercial' zone is strategically located to take advantage of physical and visual access to Lakes Road. Further, the location provides an opportunity for a service commercial interface to Lakes Road. The service commercial interface will landmark the entry to the Structure Plan area and provide for opportunities for surveillance over the site's main entry. The detailed design of the interface will be administered through LDPs and built form guidelines for the Estate (where appropriate).

The development of land and land use permissibility within the 'Service Commercial' zone will be in accordance with the provisions under TPS4.

Land uses within the 'Service Commercial' zone will be located in high quality built form and be oriented to Lakes Road. Access will need to be carefully considered via planning controls and at subdivision stage to limit road access to Lakes Road and to prohibit direct lot access (utilising the local road to the north instead).

5.2.4. Commercial

The 'Commercial' zone encompasses 1.46ha of land located at the corner of Lakes Road and Gull Road.

The 'Commercial' zone incorporates a local node that will be specifically targeted at uses such as delicatessen/café, dry cleaners, newsagents and other uses specifically designed to cater to those working in the locality. The location of the node (refer to **Figure 12**) has been selected based on the high level of passing trade that would be necessary to support the node, the high amenity environment afforded by the southern end of the wetland buffer open space area and ease of access from the remainder of the estate. Design Guidelines and LDPs will be utilised to ensure built form outcomes commensurate with Shire expectations.

The development of land and land use permissibility within the 'Commercial' zone will be in accordance with the provisions under TPS4, except for residential land uses which are not intended to be developed within the Structure Plan area. Applications for residential development should be refused.

5.3. PUBLIC OPEN SPACE AND DRAINAGE

5.3.1. Open Space and Drainage Distribution

Development Control Policy 4.1 notes that public open space within industrial estates/subdivisions is not generally required, however it is necessary to ensure that adequate facilities are available for both passive and active recreation.

The Structure Plan proposes several open space/drainage areas (refer **Figure 13**) which are responsive to existing natural assets (i.e. wetland), drainage patterns and the interface to the existing 'kennel precinct' to the east. Most this public open space is 'restricted', primarily serving drainage and environmental functions. However, the drainage areas have also been designed such there can be, where possible and appropriate, a degree of public access and passive recreation rather than the creation of fenced sumps. There are opportunities for passive recreation within the public open space areas in the wetland buffer.

Figure 13 provides a breakdown of the open space proposed and demonstrates the location and type of public open space across the Structure Plan.

5.3.2. Public Open Space & Drainage Form & Function

The public open space layout has been highly influenced by the existing natural assets and is centred around the existing wetland. This section deals with the key design principles, recreational elements and landscaping that underpins the open space and drainage areas. Refer to **Section 5.6** for more detail with respect to drainage management.

The following key principles have driven the design response to public open space and drainage areas:

- The wetland.

- Protection of flora and fauna habitat where possible.
- Provision of functional, passive recreational open space areas with walk trails and connections to the surrounding land uses.
- Provision of a green interface treatment to the existing ‘kennel precinct’ to the west.
- Creation of a character and amenity that is reflective of place and rural-industry function.

It should be noted that all landscaping outcomes are indicative (for guidance).

Figure 13 – Public Open Space

D1 – 'Lakes Drainage Reserve'

Forming the threshold of the subdivision at the south west corner, the siting of the reserve will also provide an opportunity to create a landmark and natural buffer into the site. Due to the topography levels, this reserve will primarily perform a key drainage function with the planting of vegetation assisting in creating a visual entry statement into the estate from the south (refer to **Figure 14**).

Figure 14 – Lakes Park Landscape

D2 and D3 – Drainage Reserves

These reserves have been sited based on drainage function and existing topography. While the western basin will also provide an opportunity to create a visual edge and buffer into the site from the west, these areas will primarily provide increased visual amenity and passive recreation through footpaths and small seating areas (refer to **Figure 15**). Retention of trees where possible and habitat creation through profiling and rehabilitation of the drainage basins will contribute to the rural-character elements of the estate and facilitate water quality and habitat improvement.

Figure 15 – Drainage Reserves Landscape

Wetland 'Two Swamp Park'

The most significant area of open space within the development due to size and function, the retention and rehabilitation of this area will ensure that flora and fauna habitat is sustained into the future. Retention of trees and habitat creation through weed control and replanting works will, over time, deliver an asset to the community and support the broader environmental objectives for the area.

Due to its distinct character and unique locational advantages, this public open space is intended to incorporate nature play, BBQ's, shelters and interpretive signage to create a distinct outdoor space. Varying lengths of circuits walks can also be incorporated to enable recreation opportunities for employees and visitors to the area.

Figure 16 – Wetland Landscape

5.4. LANDSCAPE DESIGN

A Landscape Master Plan has been prepared to accompany the Structure Plan (refer to **Figure 17**).

The approach to landscaping has been based on an overall philosophy of creating integrated and multi-function spaces that are self-sustaining, to minimise ongoing maintenance and contribute to improving the ecology and biodiversity of the existing REW. A key focus is on the retention of vegetation and trees within the wetland area wherever appropriate and possible.

The Shire promotes a landscape outcome that is reflective of place and of setting. Rural elements and theming should be incorporated where possible to reflect the nature of the industry proposed and to set the Estate apart from other, more standard and metropolitan industrial areas.

The landscape design will also focus on facilitating a high-level of pedestrian connectivity throughout the Estate to enable passive recreation opportunities, particularly in conjunction with the wetland. This pedestrian movement will be supported by street tree planting of drought tolerant native species with a focus of shade provision and visual amenity. The street hierarchy within the development will be supported by the selection of street tree species, adding informal wayfinding with verges being primarily planted with drought tolerant native shrubs and groundcovers.

The landscape design will address ongoing maintenance through a considered approach to revegetation, with the long-term outcome of ensuring a landscape system that is self-sustaining and low maintenance.

5.4.1. Irrigation Strategy

As the water quality across the site varies and as the goal of the landscape is to create a self-sustaining ecology, it is currently envisioned that irrigation use across the site will be limited to establishment purposes only and in selected locations associated with small activity nodes.

Landscape areas should be hydrozoned and designed to minimise water use through the appropriate selection of species and soil enhancements.

5.4.2. Landscape Management

The industry accepted standard developer funded and managed landscape, and the irrigation maintenance period is typically two (2) summers. Following this period, the landscape and irrigation maintenance will be handed over to the Shire of Murray to manage, unless otherwise negotiated.

Figure 17 – Landscape Master Plan

5.4.3. Interface to 'Kennel Precinct'

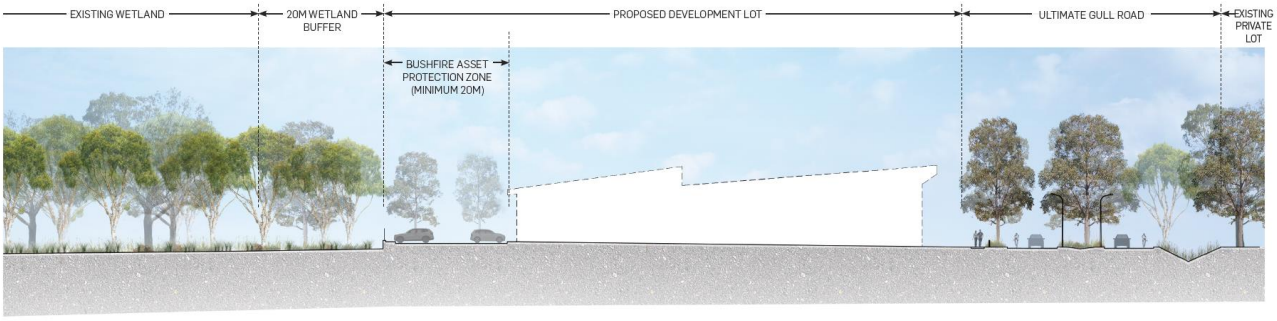
The Structure Plan is located adjacent to the Nambeelup 'kennel precinct' to the east of Gull Road. The Structure Plan seeks to create an appropriate interface between future industrial development and the existing 'kennel precinct' particularly in the interim until the kennel precinct is also redeveloped for industrial development (if ever this occurs). Details of the design response is as follows:

- To the largest extent, the wetland buffer has been retained and abuts Gull Road. Where possible existing vegetation and trees will be retained, with revegetation undertaken in accordance with the EAR (refer to **Appendix D**). This will result in natural screening and a green, natural outlook being provided to residents of the 'kennel precinct'.

- The bespoke 'Special Land Use and Built Form Precinct' will provide a unique opportunity to provide less-intensive industrial land uses along a portion of the eastern boundary. It is anticipated that land uses within this location will have a higher quality built form (guided by LDPs) and minimal off-site impacts ensuring the amenity of the nearby 'kennel precinct' is retained.

The cross-section in **Figure 18** demonstrates how the 'Special Land Use and Built Form Precinct' interface relates to the wetland and the 'kennel precinct'.

Figure 18 – Interface to 'Kennel Precinct'



5.5. MOVEMENT AND TRAFFIC

This section has been directly informed by the Transport Impact Assessment undertaken by Flyt (refer to **Appendix G**). It highlights the key elements and details of the proposed and existing movement networks, the road hierarchy classification and road cross-sections as they apply to the Structure Plan. This section also provides an overview of the pedestrian and cyclist network within the Structure Plan.

5.5.1. Regional Movement

The regional context for the proposed road network hierarchy within the Nambeelup locality and the Peel region will be based on the proposed network set out in the South Metropolitan Peel Planning Framework.

The road network adjacent to the Structure Plan area will include Lakes Road as the primary freight route through the Nambeelup area, with connections to the Kwinana Freeway and South Western Highway. Other main links, such as Gull Road, Readheads Road, Nambeelup Road and Paterson Road will be designed as district distributor roads with a network of supporting lower-order distributor and local roads.

This is consistent with that reflected in the Nambeelup DSP.

5.5.2. Access

Access to the Structure Plan area will be provided via Gull Road, Readheads Road and the new north-south road located to the western boundary of the Structure Plan. Access to Lakes Road will be restricted to two intersections within the Structure Plan area. No direct access will be provided to lots fronting Readheads Road and Gull Road.

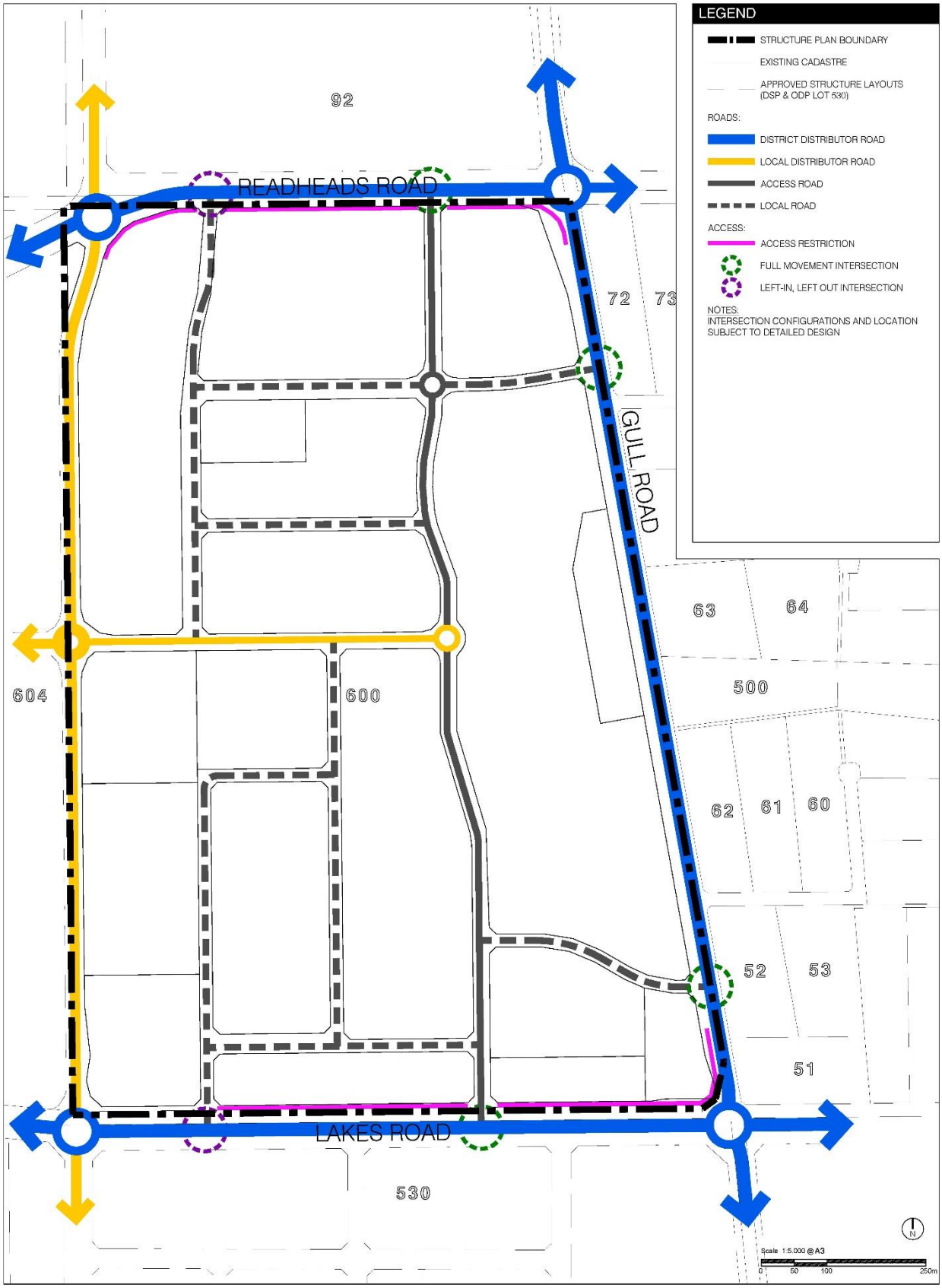
Shared access should be provided where required for lots located within the 'Special Land Use and Built Form Precinct' fronting Gull Road and for lots fronting the north-south connector road. Access arrangements will be dealt with in LDPs. Left turn pockets should also be developed to reduce the traffic impact to these areas.

Provisions for service lanes and connecting routes should be made for lots fronting Lakes Road, Readheads Road and internal roads that provide frontage to commercial and service commercial land uses. These service roads will be detailed at subdivision stage when lot layout is determined.

The internal transport network has been developed to provide immediate access to all lots to be developed within the Structure Plan area and minimise conflict points at intersections. The road reserves and carriage ways have been planned to provide access and capacity for the land uses within the Structure Plan area (refer to **Figure 19**).

The Nambeelup DSP access outcomes for Gull Road, Readheads Road and Lakes Road have been reflected in this Structure Plan, which proposes to have no frontage access to these district distributor roads, as well as limiting lot access on other sections of the road network.

Figure 19 – Movement Network Plan



5.5.3. Traffic Modelling

The TIA included in **Appendix G** details the outcomes of the assessment of the forecast traffic modelling for the Structure Plan area.

As part of the traffic modelling (WA ROM24) undertaken as part of this TIA, the road reserve types (and applicable widths/cross-sections) within the Nambeelup DSP are noted to be overstated. Despite this, agreement with the Shire of Murray has confirmed the following treatments and widths of the roads:

- *East-West Connector (terminating at the western boundary of the wetland) - the road is not to connect with Gull Road on basis on minimal impact to traffic circulation and benefits of not fragmenting the resource enhanced wetland.*
- *North-South Connector (western property boundary) - subject to the drainage strategy being a piped system, a mid-block road reserve width of 29 metres with variations in road reserve width required to accommodate the intersection treatments.*
- *Gull Road (eastern property boundary) - Gull Road Reserve is to be in accordance with the Nambeelup DSP road reserve width of 39-42 metres. The Shire does not support the widening of the road reserve to the eastern verge.*
- *Lakes Road (southern property boundary) - Lakes Road Reserve is to be in accordance with the Nambeelup DSP.*
- *Paterson Road (continuation of Gull Road, south of Lakes Road) - preference is to include drainage on the eastern boundary with a road reserve width of 46-49 metres.*

The abovementioned treatments and widths have informed the design of roads within the Structure Plan area.

In relation to the treatment and widths of Gull Road (refer to **Figure 20f**), included is both the interim and future design as agreed to by the Shire of Murray. This is further explained below:

- The interim design includes a single 7m wide carriageway with one lane provided per direction. Either side of this carriageway is a 1.5m cycle lane. Beyond the cycle path to the east is a 12m area for verge, turning lane and the existing Gull Road swale drain. To the west is a 3m median strip, combined 5.9m area for verges and 2.1m pedestrian path, with vacant area remaining for future road upgrades.
- The future design recognises the agreed 39-42m width and a dual carriageway treatment. This will include the upgrade of the interim carriageway to 9m through the removal of the eastern cycle path and the reduction of the width of the western cycle path to approximately 1m, and the construction of an additional 9m lane.

5.5.4. Street Types

Typical street cross-sections have been prepared to reflect the proposed Structure Plan road network, including the identification of a hierarchy of local access streets within the Structure Plan (refer to **Figure 20(a-f)**). The sections demonstrate the typical road environment and are subject to detailed design.

The primary consideration has been to achieve a street layout that is suitable for industrial development.

The design of the streetscapes has also been influenced by ensuring pedestrian and safe cycle access throughout the development and the desire to minimise heat impacts through ensuring sufficient room for trees within verges where possible. In some instances, road pavements have been diverted to sit closer to the road reserve boundary to allow for ecological links through the road reserve.

Road reservation widths will generally range from 20 metres for the local access streets to 25 metres for the Neighbourhood Connector. Wider reservations are predominately driven by the need for road side swales to cater to the natural drainage lines.

An east-west connection through the site was proposed in the Nambeelup DSP and connected Gull Road with the Kwinana Freeway interchange. The TIA and correspondence received from the Shire demonstrates that this link is unnecessary for traffic capacity and is not justified in terms of a public transport route. On this basis, the Structure Plan removes this east-west link.

5.5.5. East-West Connection

The Nambeelup DSP states that at local structure plan stage:

"*the road designs will take into consideration any findings of further investigations relating to any possible future regional or district public transport systems or services and proposed future major service infrastructure*."

As detailed within the TIA, traffic modelling and further investigations into the movement network have demonstrated that the east-west connection through the Structure Plan which connects Gull Road to the Kwinana Freeway interchange is not required for traffic capacity and is not justified in terms of a public transport route. This analysis has taken into consideration the relevant traffic projections, most efficient public transport routes and changing circumstances within the broader locality.

5.5.6. Pedestrian and Cycle Network

The Structure Plan includes a number of pedestrian and cycle paths throughout the estate, with district level infrastructure proposed along Lakes Road and Gull Road, consistent with the Nambeelup DSP.

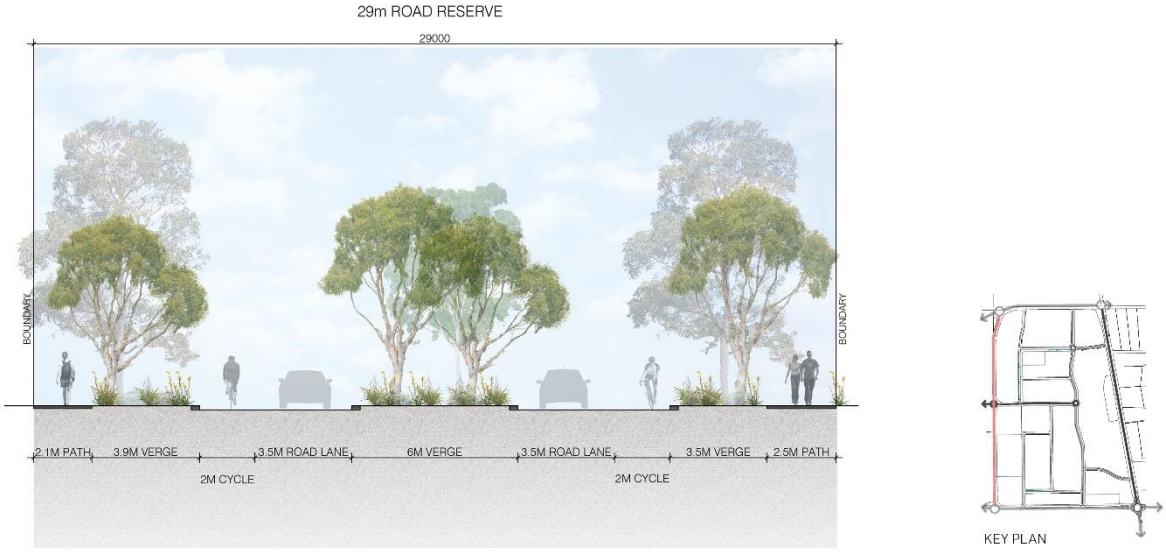
Also consistent with the Nambeelup DSP, higher order shared paths will be located to the periphery of the site - along Readheads Road and the new proposed north-south connector along the western boundary of the Structure Plan.

As detailed in the TIA, all internal roads will also have '*a path for pedestrian use on at least one side of the carriageway.'*

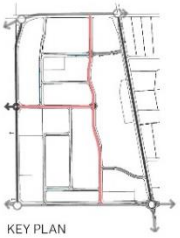
5.5.7. Public Transport

The road network within the Structure Plan is capable of providing opportunities for public transport. The Nambeelup DSP proposes a potential bus route through Lot 600 (and the REW) extending to Kwinana Freeway Interchange. As detailed above, the east-west link through the REW has not been retained in the Structure Plan and therefore alternative routes for the bus link will need to be determined with Transperth at the detailed development stage. The TIA provides alternative routes which may be contemplated by Transperth (refer **Figure 30** within **Appendix G**).

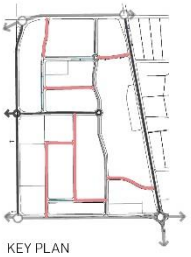
Figure 20(a-f) – Road Cross-sections

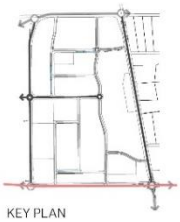


25m ROAD RESERVE


KEY PLAN

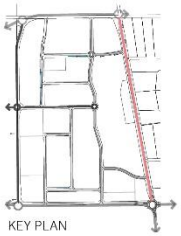
20m ROAD RESERVE


KEY PLAN



KEY PLAN

60m ROAD RESERVE (LAKES RD)



KEY PLAN

42m ROAD RESERVE (GULL RD)

5.6. WATER MANAGEMENT

The LWMS at **Appendix B** confirms that the subject land and its characteristics in relation to water are capable of supporting the Structure Plan.

It proposes the following to deal with water conservation, stormwater management and groundwater management.

Table 4 – LWMS – Principles, Strategies, Design Criteria

Total water cycle management for a Water Sensitive Town aims to:		
• Provide water security for public and private water supply consumers • Restore and protect waterway and wetland health • Manage flooding and inundation risks to human life and property		
Key Principles	**DWMP/DWMS Strategies**	**LWMS Design Criteria**
1. Manage catchments to maintain or improve water resources	1.1 Minimise changes to hydrology *Development could help to mitigate potential impacts of climate change by careful design of drainage infrastructure (p51 DWMP) *Marilliar (2012) estimated predevelopment 35% gross recharge. * Development areas with higher gross recharge (>35% to 60%), then CGL set at AAMaxGL by wetlands to maintain AAMaxGL of wetland (DWMS p39).	• Surface Water post-development 1 in 100 AEP peak flows reflect pre-development peak flows for catchments documented in the DWMS; • Lot soakwells size for 7.6mm (~60% recharge under future wet climate, and >35% gross recharge future dry). Remainder 1yr 1hr (16.3mm) treated in treatment train in Study Area. • Subsoil drainage set at CGL's to control rise in groundwater levels; CGL's to consider wetland hydrology, site water balance, water quality and ASS, and set at AAMaxGL by wetlands.
	1.2 Maintain or improve water quality	• Implements non-structure measures such as reduction of nutrient inputs via land use change (from grazing to industrial) and nutrient-wise landscaping. Possibly limit fertiliser application to some road verges if required. • Implement best management practice water quality treatment trains for stormwater runoff and any subsoil discharge.
	1.3 Manage and restore waterways and wetlands 1.4 Safeguard the quality and availability of water resources for the future	• Maintain Serpentine River and Nambeelup Brook floodplain/foreshore reserves; • Retain and restore mapped wetlands. • Arterial drains treated as vegetated swales or living streams. • Managing infiltration devices size to deliver desired recharge rates for groundwater aquifers.

Total water cycle management for a Water Sensitive Town aims to:		
2. Manage flooding and inundation risks to human life and property	2.1 Provide adequate clearance from 1 in 100 annual exceedance probability (AEP) flooding and surface or groundwater inundation.	• Finish levels of buildings to provide minimum 0.3 m clearance above 1 in 100 AEP flood level of Arterial Drains and local drainage systems including basins and roads. • Finish levels of buildings to provide minimum 0.5 m clearance to Serpentine River and Nambeelup Brook 1 in 100 AEP flood levels; • Subsoil drainage/drains set at CGL's to control rise in groundwater levels. Subsoils in all road reserves. • Lots to either locate lot soakage from impervious areas within front 30m of lot or Lots provide own subsoil drainage to subsoil connection pit provided to reduce groundwater mounding at back of lots. • Building floor set above groundwater mounding.
	2.2 Do not cause flooding or inundation of upstream or adjacent developed areas & 2.3 Manage surface water flows to prevent damage to downstream infrastructure and assets (not worsen existing risk)	• Meet DWMS Arterial Drain requirements for receiving flows from upstream and to downstream. • Control 1 in 100 AEP & 1 in 10 AEP peak outflow from development area to pre-development flow rates stated in DWMS.
3. Ensure the efficient use and re-use of water resources	3.1 Minimise water use within developments	• Implementation of hydrological zoning and native plantings to minimise water use in open areas and streetscapes.
	3.2 Achieve highest-value use of fit-for-purpose water, considering all available forms of water for their potential as a resource	• Identification of fit-for-purpose water sources and consider reuse of all forms of water, including: superficial bores horizontal & reuse of subsoil flow. • Potential for Groundwater Managed Aquifer Recharge (MAR) investigated separate to this LWMS.

The LWMS notes the following responsibilities to implement the LWMS:

Table 5 – Implementation Responsibility

Implementation		Responsibility	
LWMS Section	Action	Developer	Shire of Murray
6.2	For relevant subdivision condition, preparation of an Urban Water Management Plan to support subdivision	✓	
6.1	Construction of stormwater system.	✓	
6.1	Construction of groundwater management (subsoil) System.	✓	
6.3	Long term stormwater system operation and maintenance.		✓
6.4	Monitoring Programme.	✓	

The LWMS also noted the need for a UWMP at subdivision stage and that it is to be developer-prepared, and address the following:

- Agreed/approved measures to achieve water conservation and efficiencies of use including sources of water for non-potable uses and detailed designs, controls, management and operation of any proposed system.
- Detailed stormwater management design including the size, location and design of public open space areas, integrating major and minor flood management capability, landscape plans as related to stormwater function, specific details of local geotechnical investigations and their impact on stormwater design.
- Measures to achieve protection of waterways. Specific structural and non-structural BMPs and treatment trains to be implemented including their function, location, maintenance requirements, expected performance and agreed ongoing management arrangements.
- Adequacy of buffers proposed in the Local Structure Plan having consideration of any controlled groundwater level (CGL) proposed.
- Management of subdivisional works (to ensure no impact on downstream regional conservation areas, maintenance of any installed BMPs and management of any dewatering and soil/sediment, including dust).

Further details in relation to drainage operation and maintenance, and ongoing monitoring, can be found at **Section 6** of the LWMS included at **Appendix B**.

5.7. THE WETLAND

This element of the Structure Plan has been directly informed by the Environmental Assessment Report (EAR) prepared by RPS and included in **Appendix D**.

The Nambeelup District Structure Plan proposes an east-west road dissecting the two REW's. The Structure Plan proposes the removal of this linkage, which will result in 0.54 hectares being rehabilitated and consolidated in the surrounding wetlands. This increases the core wetland area to 12.25 hectares. The TIA prepared in support of the Structure Plan demonstrates that the removal of this connection does not impact on the movement network within the Structure Plan area or the wider NIA, however from an environmental perspective, the removal of this connection will also remove any impact the construction and operation of the road would have had on the wetlands.

Consultation with the Department of Parks and Wildlife has been undertaken in the preparation of the Structure Plan, particularly with respect to the wetland buffer. As the ongoing management of the wetland will fall to the Shire of Murray, DPaW's advice states that they will defer any decision on the wetland buffer to the Shire of Murray. Throughout preliminary consultation, DPaW and the Shire of Murray have agreed to a reduction in the wetland buffer due to the 'degraded' state of the wetland and its vegetation (refer to **Appendix D**). The reduced wetland buffer will allow for a permeable road network to be provided to the periphery as anticipated within the Nambeelup DSP. This reduced buffer will be offset through improved groundwater and surface water quality via development and implementation of water sensitive urban design and best stormwater drainage management practices and landscaping and revegetation of existing vegetation to improve the overall function and quality of the REWs.

The removal of the east-west linkage and reduction to the buffer will also offer opportunities for a 'Special Land Use and Built Form Precinct' to be established off Gull Road, maximising exposure to key road networks and offering an appropriate interface to the 'kennel precinct' in the interim scenario until such time as this precinct is developed for industry.

5.7.1. Wetland Management

Consultation has been undertaken with the Shire of Murray and the Department of Parks and Wildlife with respect to the ongoing management of the wetland. The following management measures to protect the environment values of the REWs will include:

- Provision of a 30 metre buffer to the edge of the wetland and the retention of the Melaleuca trees.
- Maintaining the ecological water requirements of the Eucalyptus rudis subsp. Rudis, Melaleuca rhaphiophylla and Melaleuca preissiana trees.
- Revegetation of the core wetland area and agricultural dams
- Surface water retention swales, batters from roads/paths within or adjacent to the wetland buffer planted using endemic species.
- Interface treatments between conservation areas and recreation areas.
- Preparation of a Wetland Management Plan (WMP) at subdivision stage.

Through implementations of the WMP, and other management measures outlined above, potential adverse impacts to the flora and vegetation at the site will be mitigated and the proposed Structure Plan and future subdivision can be implemented in accordance with the objectives of the EPA.

5.8. BUSH FIRE MANAGEMENT

A Bushfire Management Plan (BMP) has been prepared for the Structure Plan (refer to **Figure 21** and **Appendix C**) in accordance with State Planning Policy 3.7 Planning in Bushfire-Prone Areas (SPP 3.7). The BMP provides a compliant bushfire management response for the Structure Plan based on the indicative design and the proposed post-development scenario of Lot 600.

5.8.1. Separation & Asset Protection

The bushfire hazard that could threaten the development is primarily concentrated in the bushland surrounding the wetland in the eastern portion of the site and the drainage basins as incorporated into the Structure Plan. This area represents a permanent threat to specific areas of the development.

Based on the post-development scenario, minimum low fuel separation distances for a BAL-29 rating or lower can be achieved within all development areas in the form of Asset Protection Zones (APZs) consisting of either road reserves or building setbacks. This meets minimum APZ acceptable solution requirements of the Guidelines for Planning in Bushfire-Prone Areas (the Guidelines) and will ensure that development is avoided in any areas of BAL-FZ and BAL-40. The final location of APZs will be confirmed at detailed planning stages, once lot layout is determined.

Further to the APZs, onsite fuel management of low fuel and grassland areas will need to be managed and maintained until they are transferred to the respective landowners. Appropriate conditions of subdivision approval are anticipated in this regard.

Due to the industrial type of development proposed within the Structure Plan (Class 4-9 building), increased construction standards are not mandatory. Notwithstanding, the BMP recommends that any new buildings within 100 metres of post development classified vegetation consider higher construction standards in accordance with AS3959 Construction of Buildings in Bushfire Prone Areas.

Further to the above, additional management measures will be implemented at subsequent planning stages, including:

- Risk Management Plans being prepared for any Development Application for a high-risk land use.
- Notification being placed on Certificate of Titles for all lots notifying prospective purchases that their land is subject to a BMP and increased construction standards.
- Additional BAL assessment being required at subdivision stage (where required) to determine an accurate BAL rating for each individual lot.

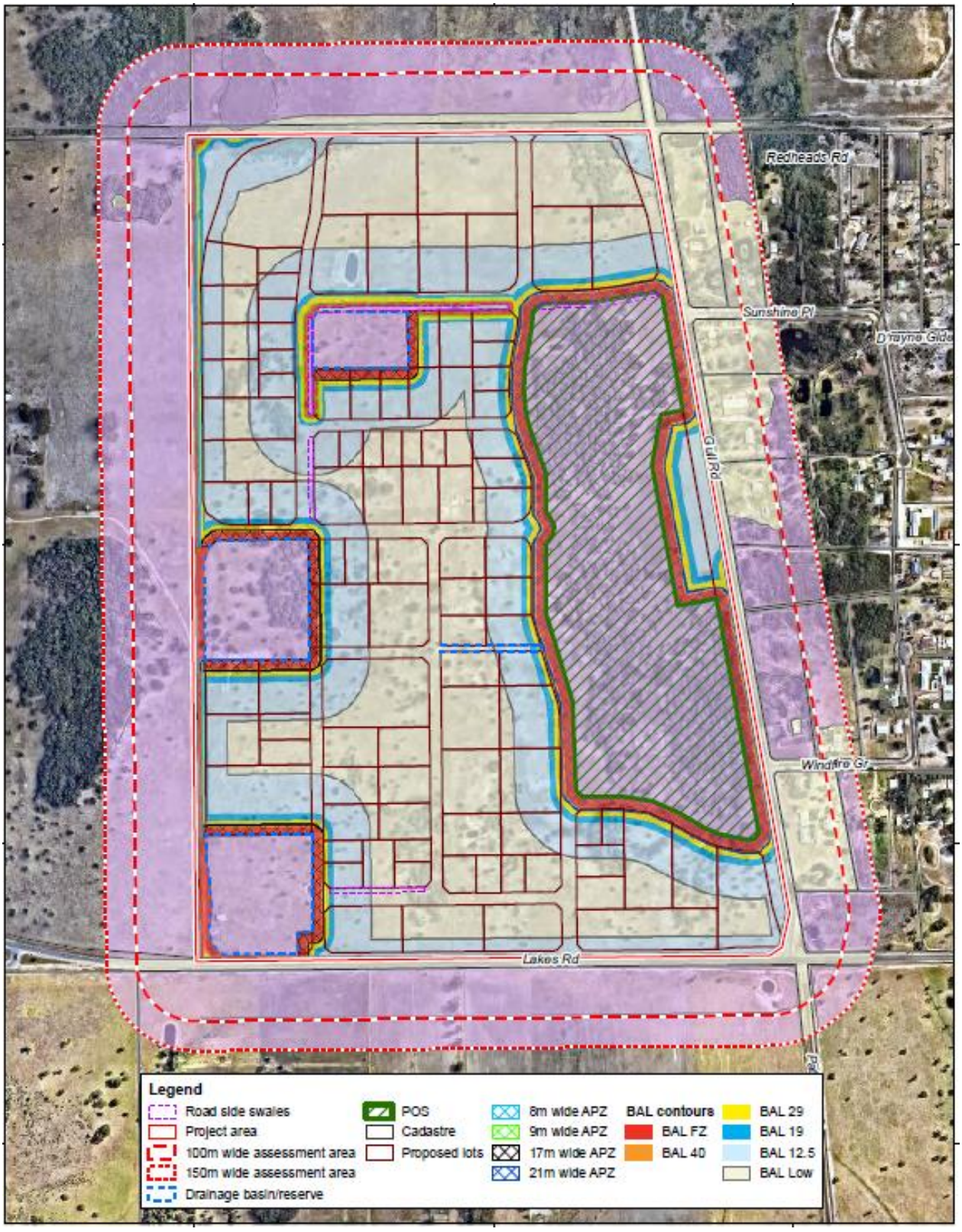
5.8.2. Access

The Structure Plan demonstrates that at least two different points of vehicle access/egress are provided for all development stages at all times ensuring compliance with the Guidelines.

5.8.3. Staging

The staging of development may result in temporary bushfire threats from development stages which are yet to be cleared. The BMP recommends that each stage of development should be surrounded by a 100 metre wide, on-site cleared or low threat buffer prior to development to reduce this temporary risk. These buffer areas will need to be managed appropriately until such time as the adjoining stage is cleared for development. As detailed in the BMP, firebreaks will also need to be created and maintained in accordance with the Guidelines and the Shire of Murray annual firebreak notice.

Figure 21 – Bushfire Management Plan



5.9. ABORIGINAL HERITAGE MANAGEMENT

As no sites of significance were reported on as part of former ethnographic surveys undertaken within the locality, the desktop Aboriginal heritage report prepared by JCHMC (refer to **Appendix F**) recommends that no further ethnographic surveys are required to be undertaken.

However, given the sites proximity to well-known areas of Aboriginal occupation and significance, the potential that remains to be assessed is whether any archaeological sites still exist within the area, including scarred trees, surface artefact scatters or subsurface deposits. There is also potential for unrecorded archaeological sites (significant from an indigenous heritage perspective) to be uncovered.

On this basis, the report makes two recommendations:

1. *'Lot 600 Lakes Road should be subjected to a systematic archaeological survey. Particular attention should be paid during that survey to areas of open sand in the northern sector, remnant bushland to the east and higher ground surrounding the swampland in the central and eastern part of the Project. Representatives of the Gnaarla Kaarla Boodja People should accompany the archaeologist in that exercise.'*

2. *'Should the archaeological survey identify any sites of Aboriginal heritage, a list of names of relevant knowledgeable Gnaarla Kaarla Boodja persons should be sought from the South West Land and Sea Council to meet on site and carry out a full consultative ethnographic survey of the Project'.*

These recommendations are presently being implemented and do not represent an impediment to the structure plan being prepared and progressed.

5.10. SERVICING AND INFRASTRUCTURE

An Infrastructure & Servicing Report has been prepared by Cossill & Webley and is included in **Appendix H**. This report outlines what is required for development of the Structure Plan, independent of other developments in the NIA. The report confirms that the site can be appropriately serviced.

5.10.1. Power

The Structure Plan has access to existing 22kV lines in Lakes Road and Paterson Road.

The initial stages of development within the NIA, including Lot 600 will be serviced by the extension of existing power infrastructure, however it is expected that a zone substation will need to be constructed in the future to service the greater NIA.

Western Power have advised that there is no capacity within the existing overhead infrastructure or nearby Meadow Springs substation to service the Structure Plan. The Structure Plan will therefore be serviced by the Pinjarra substation via either underground or overhead cables installed along Paterson Road.

Given the constraints within the locality it is intended to implement an electrical microgrid solution on Lot 600, inclusive of 1MW of solar PV and a 2MWHr of battery storage. The use of solar PV within individual developments is also to be encouraged by way of design guidelines. In the initial stages it is anticipated that the microgrid will cater for development within Lot 600 before extending to other land within the NIA should sufficient capacity and demand be present.

5.10.2. Sewer

The Structure Plan will initially be serviced by an interim waste water pump station at a suitable low point within Lot 600 to service initial development stages of the NIA. Locating the interim pump station in the Structure Plan area will reduce the reliance on external landowners' approval and allow for the pump station to be constructed once uptake of land and development is sufficient to generate waste water flows required for a pump station. Until such time that waste water flows are at a level to facilitate the construction of a waste water pump station on site tankering will be undertaken for development within Lot 600.

The ultimate sewer servicing from the Structure Plan area will be via the Amarillo South Pump Station A (PSA).

5.10.3. Water

The Water Corporation has confirmed that the ultimate preferred option for servicing the NIA is via a main from the North Mandurah Water Trunk (NMWT). The timing for the delivery of this main is currently unknown and will depend on the rate of development within the NIA and level of water demand. It is anticipated that the construction of this main will occur as part of the Water Corporation's Capital Investment Program.

Until such time as the delivery of the water main, the Water Corporation have advised that they will support the construction of a 250mm main to service the development, to be funded by RfR funding. It is expected that this main will connect to existing infrastructure closer to Mandurah. Initial water servicing will commence at the southern portion of the Structure Plan, on or near Lakes Road, with the site then being serviced via reticulation main extensions.

There is an opportunity for alternative water supply services for the Structure Plan area such as a Managed Aquifer Recharge scheme or treatment of wastewater for reuse. The variability and delivery of these schemes will be explored and progressed further over coming years and in the broader context of the NIA.

5.10.4. Gas

The Dampier to Bunbury Natural Gas Pipeline to the east of the site and the Dongara to Pinjarra to the north-east of the Structure Plan are not suitable for direct connection for industrial reticulated gas.

ATCO Gas has constructed a gas trunk that connects the Dampier to Bunbury Natural Gas Pipeline to the Mandurah network to reinforce its capacity. This main is located to the north of Readheads Road and has the capacity to service industrial type development proposed within the Structure Plan.

5.10.5. Telecommunications

The Structure Plan is currently not serviced by NBN Co. Any extensions of fibre service to the Structure Plan area will occur along Lakes Road and would be triggered by further development within the NIA. Until this time, the Structure Plan will be serviced by NBN Co.'s fixed wireless footprint which extends east from Barragup, across Black Lake and is currently planned to expand to cover the entire site.

Telstra infrastructure is not sufficient to service the Structure Plan and there are no plans to extend this service given NBN Co. coverage.

5.10.6. Earthworks

Limited fill will be required in order to obtain a Class A or S Site Classification in accordance with the Australian Standard AS2870-1996.

However, due to the existing topography and groundwater levels, fill will be required over the site in order to satisfy drainage requirements. A separation of 1.0 – 1.5 metres is expected to be achieved through the importation of fill. The volume of fill required may be reduced depending on the subsoil drainage and groundwater levels sought by the Department of Water.

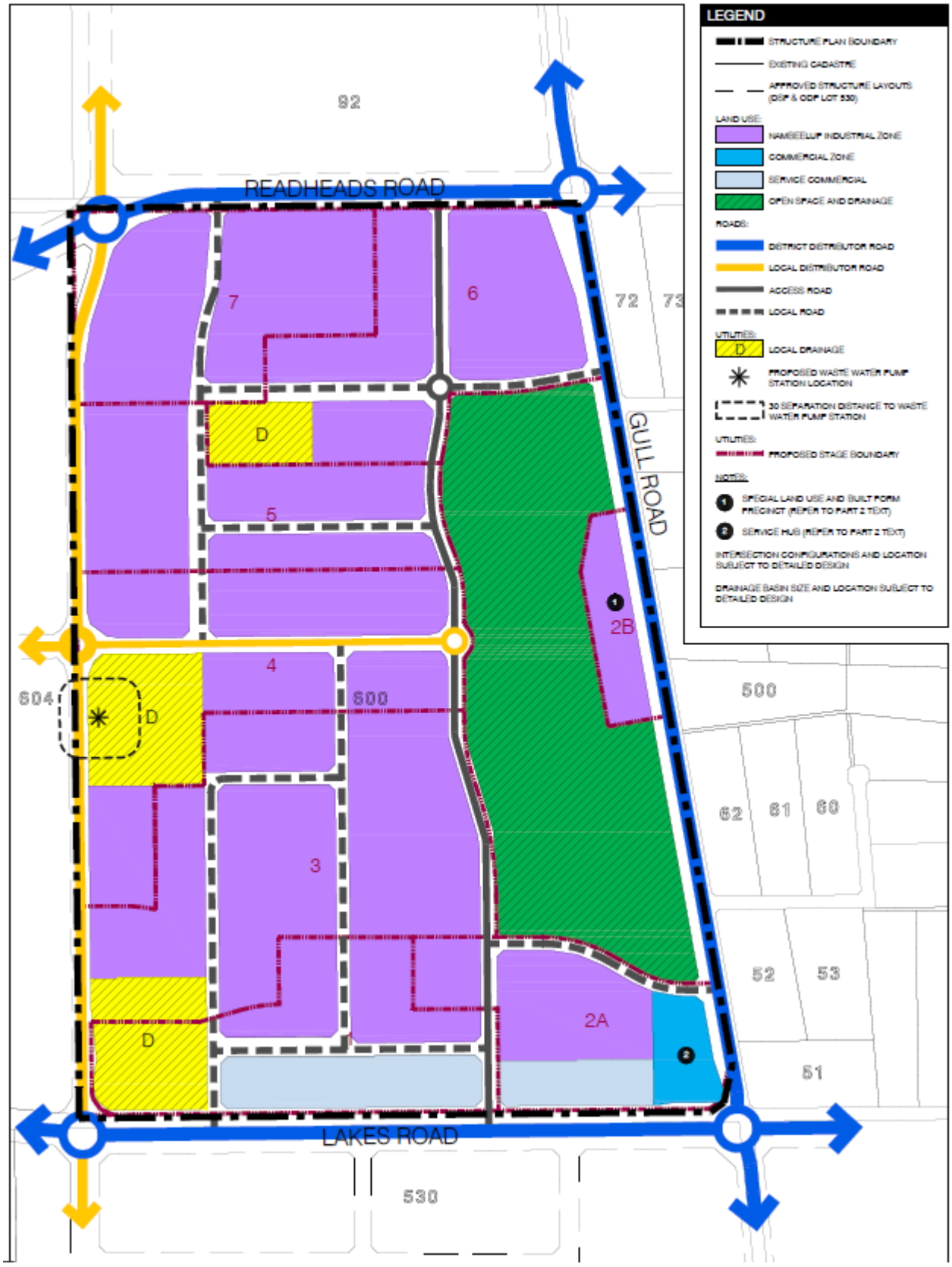
5.11. STAGING AND IMPLEMENTATION

The development of Lot 600 will be undertaken on a staged basis that will be informed by a range of factors and guided by the management of the overall area by LandCorp. The indicative staging assumes a 50% build out of employment generating land uses by the 2031 assessment year. It is also primarily based on servicing and road infrastructure, and is driven by the following key elements:

- Undertaking the initial stages of development within land which is easily accessible in the interim scenario and can provide a mix of lots.
- Reducing the amount of servicing and infrastructure required to commence initial stages and levering off existing services and planned funds.
- Reducing the amount of alternative forms of intersections required as part of initial works.
- Allowing for the staged delivery of main intersections such as Lakes Road given the low volumes of traffic anticipated in the initial stages of the NIA.
- Understanding that distributor level road networks along the northern and western boundaries of the site are subject to the development of adjoining sites and the NIA as a whole.

Importantly, the servicing strategy will not prejudice the ability for other land in the area to be developed. The development of the subject site will be a catalyst for the broader development of the area. **Figure 22** demonstrates the indicative staging plan for the Structure Plan.

Figure 22 – Indicative Staging Plan



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