

SOUTH BULLSBROOK INDUSTRIAL PRECINCT
LOCAL STRUCTURE PLAN 2

PART 1 - STATUTORY REPORT
FEBRUARY 2016



SOUTH BULLSBROOK INDUSTRIAL PRECINCT - LOCAL STRUCTURE PLAN 2

PART 1 - STATUTORY REPORT

February 2016

(3002Rep191C)

Project Team:

Client:	Sirona Gateway Pty Ltd
Project Manager:	Saracen Properties
Planning Assessment and Urban Design:	CLE Town Planning & Design
Environmental Assessment:	Emerge Associates
Groundwater & Drainage Assessment and Monitoring:	Emerge Associates
Traffic Analysis:	Arup
Engineering Infrastructure and Services:	Cossill & Webley

TABLE OF CONTENTS

- 1.0 STRUCTURE PLAN AREA
- 2.0 STRUCTURE PLAN CONTENT
- 3.0 INTERPRETATION AND SCHEME RELATIONSHIP
- 4.0 OPERATION
- 5.0 LAND USE AND SUBDIVISION REQUIREMENTS
 - 5.1 Zones and Reserves
 - 5.2 Land Use Permissibility
 - 5.3 Changes in Land Use
 - 5.4 Subdivision Road Access
- 6.0 DEVELOPMENT REQUIREMENTS
 - 6.1 Car parking
 - 6.2 Interface to Conservation Areas
 - 6.3 Bushfire Protection
 - 6.4 Servicing
 - 6.5 Infrastructure Upgrades
 - 6.6 Connection of Stock Road to Perth-Darwin National Highway
 - 6.7 Building Height

7.0 OTHER REQUIREMENTS

- 7.1 Management Plans
- 7.2 Development Contributions for Infrastructure

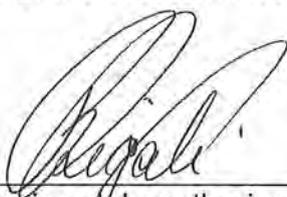
PLANS

Plan A – South Bullsbrook Industrial Precinct Local Structure Plan 2

This structure plan is prepared under the provisions of the City of Swan Local Planning Scheme No. 17

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON: **22 February 2016**

Signed for and on behalf of the Western Australian Planning Commission



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



Witness

23-2-16

Date

22 February 2026 _____ Date of Expiry

1.0 STRUCTURE PLAN AREA

This Local Structure Plan shall apply to Lot 300 Almeria Parade, South Bullsbrook and all existing road reserves being the land contained within the inner edge of the line denoting the Structure Plan boundary on the Structure Plan Map (Plan A).

2.0 STRUCTURE PLAN CONTENT

This Local Structure Plan comprises the:

- a) Statutory Report (Part One);
- b) Explanatory (non-statutory) Report (Part Two); and
- c) Technical Appendices (Part Three).

Part One of the Local Structure Plan includes only the structure plan map and requirements that need statutory effect. Part Two of the Local Structure Plan justifies and clarifies the provisions contained in Part One, and is used as a reference guide to interpret and implement Part One.

3.0 INTERPRETATION AND SCHEME RELATIONSHIP

Unless otherwise specified in this part, the words and expressions used in this Local Structure Plan shall have the respective meanings given to them in the City of Swan Local Planning Scheme No. 17 (the Scheme).

The South Bullsbrook Industrial Precinct Local Structure Plan 2 constitutes a Local Structure Plan required to be prepared prior to subdivision and development of the subject land pursuant to the Schedule 4 – Special Use provisions of the Scheme applicable to the South Bullsbrook Industrial Precinct – Special Use Zone.

Pursuant to the *Planning and Development (Local Planning Schemes) Regulations 2015 Schedule 2 - Deemed provisions for local planning schemes*, a decision maker of an application for development approval or subdivision approval is to have due regard to the provisions of this Local Structure Plan.

4.0 OPERATION

In accordance with clause 5A.1.12.1 of the Scheme, this Structure Plan shall come into operation when it is endorsed by the Western Australian Planning Commission (WAPC) pursuant to clause 5A.1.10.2 of the Scheme.

5.0 LAND USE AND SUBDIVISION REQUIREMENTS

5.1 Zones and Reserves

Plan A prescribes the zones and reserves applicable within the Structure Plan area. The zones and reserves designated under this Structure Plan apply to the land within it as if the zones and reserves were incorporated into the Scheme.

5.2 Land Use Permissibility

Land use permissibility shall be in accordance with Clause 4.3 – Zoning Table of the Scheme. In addition, the uses set out in Table 1 below are classified as either 'A' or 'D' uses pursuant to the Scheme.

Table 1 – Additional Permissible Land Uses

Zone	Use Class	Zoning Table Symbol
General Industrial	Land Sales Office*	D
	Food and Beverage Production	D
	Service Station	A

**Land Sales Office is a building of either a temporary or permanent nature, and incidental car parking and facilities, used directly in relation to the sale of land in new estates. Planning approval for a Land Sales Office in the General Industrial zone shall be for a maximum period of 2 years.*

5.3 Changes in Land Use

Subject to clauses 3.4 and 8.2 of the Scheme, all development on land zoned and reserved under this Structure Plan requires the prior approval of the local government.

5.4 Subdivision Road Access

Access to Stock Road shall be in accordance with the access arrangements shown on Plan A, unless otherwise agreed with the City of Swan and the Western Australian Planning Commission at the time of subdivision or development.

6.0 DEVELOPMENT REQUIREMENTS

Development standards and requirements shall be in accordance with the Scheme and applicable local planning policies unless specifically provided in this section.

6.1 Car Parking

On site car parking ratios applicable to the Structure Plan area are as shown in Table 2 below.

Table 2 – Car Parking Standards

Use Class	Parking Standard
General Industry	1.3 spaces per 100m ² Gross Leasable Area (GLA)
Light Industry	1.5 spaces per 100m ² GLA
Warehouse	1 space per 300m ² GLA
Transport Depot	1 space per 300m ² GLA
Storage	1 space per 300m ² GLA Where the 'Storage' use is limited to outdoor storage only and there are no buildings existing or proposed, parking shall be provided at 1 space per employee, with a minimum of 5 spaces in total.
Incidental Office	1.8 spaces per 100m ² gross leasable office area (where office is an incidental use to the industrial use).

Definition of Gross Leasable Area (GLA) is as per Schedule 1 of the Scheme.

6.1.2 Car parking standards for all other land uses not listed in Table 2 above shall be in accordance with the Scheme and any applicable local planning policy.

6.1.3 The City of Swan may vary car parking standards in accordance with Part 5.5 of the Scheme as part of any development application.

6.2 Interface to Conservation Areas

A managed interface shall be provided to the Ellen Brook Rural zone where it abuts the eastern Structure Plan boundary. The managed interface shall be in accordance with an approved Wetland Management Plan, to be prepared at the time of subdivision. The Council may require the managed interface to be constructed prior to commencement of use of the land as a condition of planning approval at development application stage, where it has not already been constructed as part of subdivision works.

6.3 Bushfire Protection

A 20 metre Building Protection Zone (BPZ) shall be provided where shown on Plan A in order to minimise bush fire threat to industrial areas.

6.4 Servicing

- a) A detailed sewer catchment plan is required to be provided at the first of either the subdivision or development stage.
- b) Developers are to undertake and provide Western Power with investigations on future demand for power, up to 3 years from commencement, to complete key infrastructure planning studies, including power infrastructure.

6.5 Infrastructure Upgrades

The City, as a condition of development approval or the Western Australian Planning Commission, as a condition of subdivision approval, may require any or all of the following infrastructure works with such works to be undertaken to the specifications of the City of Swan and Main Roads Western Australia:

- a) The upgrade and widening of Stock Road between Railway Parade and Great Northern Highway;
- b) The provision of a bridge over the Ellen Brook to enable the existing western section of Stock Road to connect through to Great Northern Highway; and/or
- c) The upgrade of the intersection of Stock Road and Great Northern Highway.

6.6 Connection of Stock Road to Perth-Darwin National Highway

Development within the Local Structure Plan area is limited to 75ha of industrial site area (excluding land for roads, drainage and the like) until such time as Stock Road is extended west to connect with Perth-Darwin National Highway upon which time no restriction shall apply.

Notwithstanding the above, the City of Swan may consider development of industrial land in excess of 75ha where it can be demonstrated that there is sufficient capacity within the existing road network to accommodate additional development.

6.7 Building Height

Building Heights are restricted in association with the operations of the RAAF Pearce Air Force Base.

7.0 OTHER REQUIREMENTS

7.1 Management Plans

Pursuant to Schedule 4 of the Scheme, the following reports / management plans are to be required to be prepared and implemented as conditions of subdivision approval:

- Urban Water Management Plan;
- Wetland Management Plan (where application area includes or abuts wetlands or waterways);
- Acid Sulfate Soils Site Assessment Management Plan;
- Unexploded Ordnance Survey.

7.2 Development Contributions for Infrastructure

The Structure Plan is within Development Contribution Area 4 (DCA 4) as identified in Schedule 13 of the Scheme. Subdivision or development of lots within the Structure Plan area may trigger the requirement to upgrade and construct various infrastructure works listed in the DCP for DCA 4 and the following provisions apply:

- a) A Development Contribution Plan (DCP) applies to this Structure Plan area and is to be read in conjunction with the Structure Plan.
- b) Any landowner seeking subdivision or development within the Structure Plan area is to contribute in accordance with the endorsed DCP.

c) Subdivision and Development is not to occur until:

- the DCP's provisions are gazetted into DCA 4 of Schedule 13 of the Local Planning Scheme,

or;

- the owner(s)/developer(s) has first entered into a Deed of Early Release Agreement with the Local Government that requires the owner(s)/developer(s) to make an appropriate cost contribution upon notification by the Local Government that payment is required and securing payment of any balance that might be due on gazettal of the DCP for DCA 4, as contemplated by Clause 5A.2.7.2 of the City of Swan Local Planning Scheme No.17.

or;

- the Local Government is satisfied there is no connection (nexus) between the proposed subdivision or development and the demand (need) for the infrastructure included in the DCP and therefore does not generate the need for the owner to pay a Cost Contribution, pursuant to Clause 5A.2.15.3 of the City of Swan Local Planning Scheme No.17.



LEGEND

METROPOLITAN REGION SCHEME

- Other Regional Roads
- Railways

LOCAL PLANNING SCHEME NO. 17 ZONES

- General Industrial

RESERVES

- Local Reserve - Public Purpose (Drainage)

OTHER

- Structure Plan Boundary
- Neighbourhood Connector
- Proposed Road
- Other Regional Road 20m road widening
- Almeria Parade Road Reserve
- Building Protection Zone
- Signalised Intersection (Ultimate)

NOTES

1. Local roads are indicative only and subject to change and refinement at subdivision stage.
2. All road reserve widths, truncations and road cross sections will be determined at subdivision stage.
3. Stock Road is classified as an Other Regional Road and is subject to a 20 metre road widening to the north of the existing reserve, to be ceded at subdivision stage.
4. Direct lot access to Stock Road is not permitted without the prior approval of Main Roads WA and/or the Western Australian Planning Commission.
5. A managed interface shall be provided to the Ellen Brook Rural zone. The interface is to be generally consistent with the principles outlined in the Wetland and Waterways Management Strategy at Appendix 3 and in accordance with any Wetland Management Plan prepared at subdivision stage.
6. Truncations and road intersection treatments shall be determined at subdivision stage.
7. The existing intersection of Almeria Parade and Stock Road is to be formally closed at the time of subdivision of the land adjacent.
8. Total development is limited to 75ha of industrial site area until such time as Stock Road is connected to Perth-Darwin National Highway unless demonstrated otherwise - refer clause 6.6 of Part 1 - Statutory Report.



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PART 2 - EXPLANATORY REPORT
JULY 2015



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SOUTH BULLSBROOK INDUSTRIAL PRECINCT - LOCAL STRUCTURE PLAN 2

PART 2 - EXPLANATORY REPORT

July 2015

(3002Rep184B)

PROJECT TEAM:

Client:	Sirona Gateway Pty Ltd
Project Manager:	Saracen Properties
Planning Assessment and Urban Design:	CLE Town Planning & Design
Environmental Assessment:	Emerge Associates
Groundwater & Drainage Assessment and Monitoring:	Emerge Associates
Traffic Analysis:	Arup
Engineering Infrastructure and Services:	Cossill & Webley

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TABLE OF CONTENTS

1.0 PLANNING BACKGROUND

1.1 Introduction and Purpose

1.2 Land Description

1.2.1 Location

1.2.2 Area and Land Use

1.2.3 Legal Description and Ownership

1.3 Planning Framework

1.3.1 Zoning and Reservations

1.3.2 Regional and Sub-regional Structure Plans

1.3.3 Applicable Policies

1.3.4 Existing Approvals and Decisions

2.0 SITE CONDITIONS AND ENVIRONMENT

2.1 Environmental Assets and Constraints

2.2 Landform and Soils

2.3 Groundwater and Surface Water

2.4 Bushfire Hazard

2.5 Heritage

2.6 Land Use Context and Opportunities Analysis

2.6.1 Adjoining Uses

2.6.2 Intermodal Freight Terminal

2.6.3 Access to Regional Road Network

2.6.4 Servicing

2.6.5 Access to Workforce

3.0 LOCAL STRUCTURE PLAN

3.1 Plan Overview

3.2 Land Use

3.3 Built Form and Development Standards

3.3.1 Built Form

3.3.2 Car Parking

3.4 Movement Networks

3.4.1 Road Network Capacity and Arterial Road Access

3.4.2 Traffic Modelling and Scenario Testing

3.4.3 Local Street Cross Section and Traffic Management Treatments

3.4.4 Pedestrians, Cyclists and Public Transport

3.5 Urban Water Management

3.6 Wetlands and Waterways Management

3.6.1 Foreshore Interface

3.6.2 Foreshore Tenure / Management

3.7 Infrastructure Coordination, Servicing and Staging

3.7.1 Water Supply

3.7.2 Waste Water

3.7.3 Power

3.7.4 Telecommunications

3.7.5 Gas

3.7.6 Siteworks and Earthworks

3.7.7 Staging of Construction

3.8 Development Contribution Arrangements

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TABLES

Table 1:	Agency Consultation
Table 2:	Land Ownership
Table 3:	Development Contribution Plan - Indicative Infrastructure Items

FIGURES

Figure 1:	Site Plan and Orthophoto
Figure 2:	Location Plan
Figure 3:	Metropolitan Region Scheme Zoning
Figure 4:	City of Swan Local Planning Scheme No. 17
Figure 5:	Directions 2031 and Beyond
Figure 6:	Economic and Employment Lands Strategy
Figure 7:	Bullsbrook Townsite Land Use Master Plan
Figure 8:	Opportunities and Constraints
Figure 9:	Precinct Context Plan
Figure 10:	Local Structure Plan 2 Concept Plan
Figure 11:	Local Structure Plan 2 Statutory Plan
Figure 12:	Intersection Locations
Figure 13:	Indicative North-South Link Road Cross Section
Figure 14:	Stormwater Management Features
Figure 15:	Indicative Foreshore Cross Sections
Figure 16:	Preliminary Staging Plan
Figure 17:	Indicative Development Contribution Infrastructure Items

TECHNICAL APPENDICES

Appendix 1	2013 Eastern States Industrial Study Tour Summary, February 2013
Appendix 2	Local Water Management Strategy
Appendix 3	Wetland and Waterways Management Strategy
Appendix 4	EPA Advice on MRS and LPS Amendments, dated 31 January 2011 & 19 March 2012
Appendix 5	Environmental Assessment and Management Strategy
Appendix 6	Fire Management Plan
Appendix 7	Transport Assessment and Staging Report
Appendix 8	Engineering and Servicing Report.

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1.0 PLANNING BACKGROUND

1.1 Introduction and Purpose

The South Bullsbrook Local Structure Plan 2 (LSP2) is lodged on behalf of the proponents, Sirona Gateway Pty Ltd, in conjunction with the landowner of the local structure plan area – Sirona Capital Management Pty Ltd.

The broader South Bullsbrook Industrial Precinct, comprising approximately 430 ha of Industrial zoned land, has long been identified in the Government's strategic planning framework as a priority strategic industrial site and is seen as a significant and vital response to the shortage of suitable industrial land on the northern side of the metropolitan region. CLE Town Planning + Design has been working with Sirona Gateway and the project team since inception in early 2010 to progress the planning and delivery of this key strategic precinct. The first local structure plan (LSP1), which encompasses 130ha of industrial land to the east of the Ellen Brook, was adopted by the City of Swan in August 2014. The progression of LSP2 is the next logical step towards the realisation of the South Bullsbrook Industrial Precinct and is a timely response to the critical shortage of suitable industrial land in the Perth metropolitan region.

LSP2 is a unique opportunity for the coordinated delivery of strategically located industrial land based on its significant site area, consolidated land tenure and geographic location. At 176.5 ha, the LSP2 land area is the largest single industrial land parcel within the Perth metropolitan region, which offers significant potential for a range of industrial land uses and development. Its single ownership enables the coordinated provision and funding of essential infrastructure, allowing for efficiencies and simplifications in the development process. Further, the location of LSP2 north of the Perth metropolitan region and between two

key existing and planned north-south regional roads (existing Great Northern Highway and planned Perth-Darwin National Highway) offers excellent access to regional transport infrastructure that is critical in servicing the types of industrial land uses that are expected to locate within LSP2.

Once developed, LSP2 will be one of three distinct precincts within the broader South Bullsbrook Industrial Precinct. LSP2 will provide a range of lot sizes, with an initial emphasis on attracting industrial land uses that require a large land area (5 ha and greater) in order to operate effectively, whilst also recognising the need for smaller service based businesses to co-locate with larger operators in identified locations.

It is envisaged that the South Bullsbrook Industrial Precinct will primarily be an industrial hub that services the resource industries in the north of the State. Given the strategic location of the precinct, there are also significant opportunities to provide a freight and logistics / distribution precinct that services the northern and eastern suburbs of Perth. The planned Intermodal Freight Terminal (IFT) immediately to the west of the LPS2 area, on the opposite side of the Perth-Geraldton Rail Freight Line provides an excellent opportunity for future integration with the large scale freight / logistics type land uses that are expected to locate within LSP2.

The purpose of LSP2 is to enable coordinated development of the land, satisfying the requirements of Local Planning Scheme No.17 (LPS17) for the preparation and approval of a Local Structure Plan prior to subdivision and development. LSP2 will establish the necessary statutory framework to enable subsequent subdivision and development of the land, as well as addressing key environmental, drainage and servicing considerations. LSP2 draws on the planning and technical studies already undertaken as part of the rezoning of the South Bullsbrook Industrial Precinct and as part of LSP1.

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LSP2 is informed by the cumulative experience of the project team, as well as recent findings and experiences arising from a study tour of a number of new industrial precincts in the eastern states of Australia. A detailed overview of the study tour, including key findings and detailed descriptions of the estates visited is Appendix 1. The study tour not only contributed to the design of LSP2, but has also assisted to provide:

- An in depth understanding of differing market conditions and the impacts this has on land supply and lot size;
- A demonstration of differing methods of market delivery and the need to be flexible in terms of staging and lot size;
- An improved appreciation for the differing types of land uses and the need to secure larger anchor tenants in order to encourage and facilitate smaller scale operators; and
- A broad range of built form and land use controls, including differing car parking standards, facade treatments, fencing and landscaping.

The fundamental principles of LSP2 are summarised as follows:

- Providing a land use response that recognises the site's strategic location and function within the broader district context.
- Establishing a framework that supports and promotes land uses that capitalise on the site's location in immediate proximity to planned (Perth - Darwin National Highway) and existing (Perth-Geraldton Rail Freight Line, GNH) transport infrastructure.
- Maximising the unique benefits afforded to LSP2 in relation to its significant land area and single ownership.

- Creating opportunities to accommodate large scale, transport based industrial uses through the provision of a robust internal road network and flexible lot sizes that integrate with and capitalise on the planned IFT to the west of LSP2.
- Establishing key access points to the arterial road network, ensuring that these access points are capable of supporting traffic generated not only from within LSP2, but also the broader area.
- Acknowledging the Rural zoned Ellen Brook and ensuring that adequate buffers and interface treatments are provided.
- Developing a comprehensive drainage network that recognises the pre-development hydrology of the site and the significance of the Ellen Brook.
- Enabling the timely delivery of suitable service infrastructure to support staged industrial development of this scale.
- Addressing the principles and requirements of Local Planning Scheme 17 with particular regards to Schedule 4.

Based on the above principles, LSP2 provides the framework for:

- Approximately 164 ha of 'General Industrial' zoned land that is able to accommodate a broad range of land uses, whilst incorporating development controls that provide the City with the discretion to prevent undesirable land uses from occurring.
- A core component of an industrial estate that is estimated to create 11,000 local employment opportunities within a catchment of the future planned residential expansion of the Bullsbrook Townsite as identified in the Bullsbrook Townsite Land Use Master Plan.

Table 1: Agency Consultation

Agency	Date	Method	Agreed Outcomes
Main Roads WA (MRWA), Department of Transport (DoT), City of Swan (CoS), Department of Planning (DoP)	22/7/14	Meeting to discuss Intermodal Freight Terminal, Stock Road overpass and other transport infrastructure related issues.	<ul style="list-style-type: none"> Perth-Darwin highway expected to be constructed around 2018 – 2019; DoT undertaking Metropolitan Freight Plan to inform Intermodal Freight Terminal location amongst other things. Assume location west of railway for the purposes of LSP2 to accommodate industrial land within Lot 300 and opportunities to integrate with IFT on western side of rail line; No confirmed timeframe for grade separation of Stock Road over railway line. LSP2 to proceed on basis of at-grade crossing until grade separation warranted; DoP to provide project team with Stock Road planned upgrades and designs when progressed to a point suitable for circulation; Extension of Almeria Parade to intersect with Stock Road is not appropriate and is reflected in LSP2 road layout; Railway Parade, which is outside of the LSP2 area, would need to be realigned further west and intersect with Stock Road approximately half-way between the railway and future Perth-Darwin Highway. This will also allow for Intermodal Freight Terminal west of railway line.
City of Swan	22/9/14	Meeting to present LSP2 to the City and discuss key themes and principles.	<ul style="list-style-type: none"> General discussion regarding LSP2 and the principles behind the plan; Discussion regarding the efficiencies in the reporting and assessment process as a result of the recent adoption of LSP1, with the understanding that LSP2 timeframes will likely be reduced as a result.
Department of Planning	23/10/14	Meeting to discuss South Bullsbrook Industrial Precinct with Department of Planning, present LSP2 and discuss key themes and principles.	<ul style="list-style-type: none"> General discussion regarding LSP2 and the principles behind the plan including the sites strategic location and its identification in key state planning documents as a priority industrial site; Outlined efficiencies in LSP2 as a result of previous preparation of LSP1 and its adoption by the City of Swan; Highlighted the unconstrained nature of LSP2 in terms of environmental features; Discussed the opportunities that the single ownership of the LSP2 area provides in terms of coordinated development and provision of infrastructure.

- Land uses that allow for future integration with the planned IFT west of the LSP2 area on the opposite side of the Perth-Geraldton Rail Freight Line.
- The coordinated provision of essential infrastructure as facilitated by the single ownership of the LSP2 area.
- A managed interface to the Ellen Brook, ensuring the provision of adequate bushfire separation, management of introduced weeds and controlled access.
- A series of landscaped detention basins on the eastern periphery of the LSP2 area comprising a total area of approximately 2.2 ha, designed and landscaped to treat stormwater before discharging into the broader network. These basins are high amenity spaces, specifically designed and sized to meet drainage requirements, whilst also ensuring ongoing maintenance is minimal.
- The management and conveyance of arterial and development drainage in a manner that mimics the pre-development hydrology and is in accordance with the principles of water sensitive urban design.
- An integrated and connected internal road network, ensuring that heavy vehicles can move safely and efficiently throughout the estate and integrate with the regional road network.
- Two signalised intersections at the internal road connections with Stock Road that allow for safe and efficient vehicle movement to / from the regional road network.
- A 20m widening to Stock Road consistent with the Metropolitan Region Scheme Other Regional Road reservation that allows for staged upgrading of Stock Road on a demand basis.

The structure and format of LSP2 is consistent with the Western Australian Planning Commission's (WAPC) Structure Plan Preparation Guidelines.

This Report comprises three sections:

- Part 1 – Statutory Section
- Part 2 – Explanatory Report
- Part 3 – Technical Appendices

The Part 1 Statutory Section contains clear, measurable and defined provisions to implement the Explanatory Report outcomes. These provisions of are given the force and effect of the Scheme, pursuant to clause 5A.1.12.3 of LPS17.

The Part 2 Explanatory Report justifies and elaborates on the methodology behind the structure plan and distils the key outcomes and planning implications of the technical reports. The format of the Part 2 Explanatory Report is based on the WAPC's Structure Plan Preparation Guidelines and responds to each of the key land use opportunities and constraints. Part 2 is based on a detailed site specific analysis of opportunities and constraints and the following technical reports and strategies:

- Environmental Assessment and Management Strategy;
- Wetland and Waterways Management Strategy;
- Transport Assessment;
- Local Water Management Strategy;
- Fire Management Plan; and
- Servicing and Infrastructure Strategy.

Preparation of LSP2 has involved extensive consultation with the City, Department of Planning, Main Roads WA and relevant service authorities. A summary of the consultation undertaken is included in Table 1 adjacent.



1.2 Land Description

The LSP2 area covers the portion of Lot 300 Almeria Parade, Bullsbrook that is zoned Industrial under the Metropolitan Region Scheme (MRS). A site plan and orthophoto depicting the LSP2 area is Figure 1.

The following sections provide a detailed description of the LSP2 land and its surrounds.

1.2.1 Location

LSP2 is located to the west of the Great Northern Highway (GNH), approximately 3km south-west of the Bullsbrook Townsite. The LSP2 area is bound by Stock Road (unconstructed) to the south, the Perth – Geraldton Rail Freight Line to the west, Ellen Brook to the east and Rural zoned land to the north. A location plan is Figure 2.

The area to the east of LSP2, between the Ellen Brook and GNH, is also identified as being suitable for industrial development and is similarly zoned Industrial under the MRS, with the City of Swan recently adopting a structure plan (LSP1) over this land.

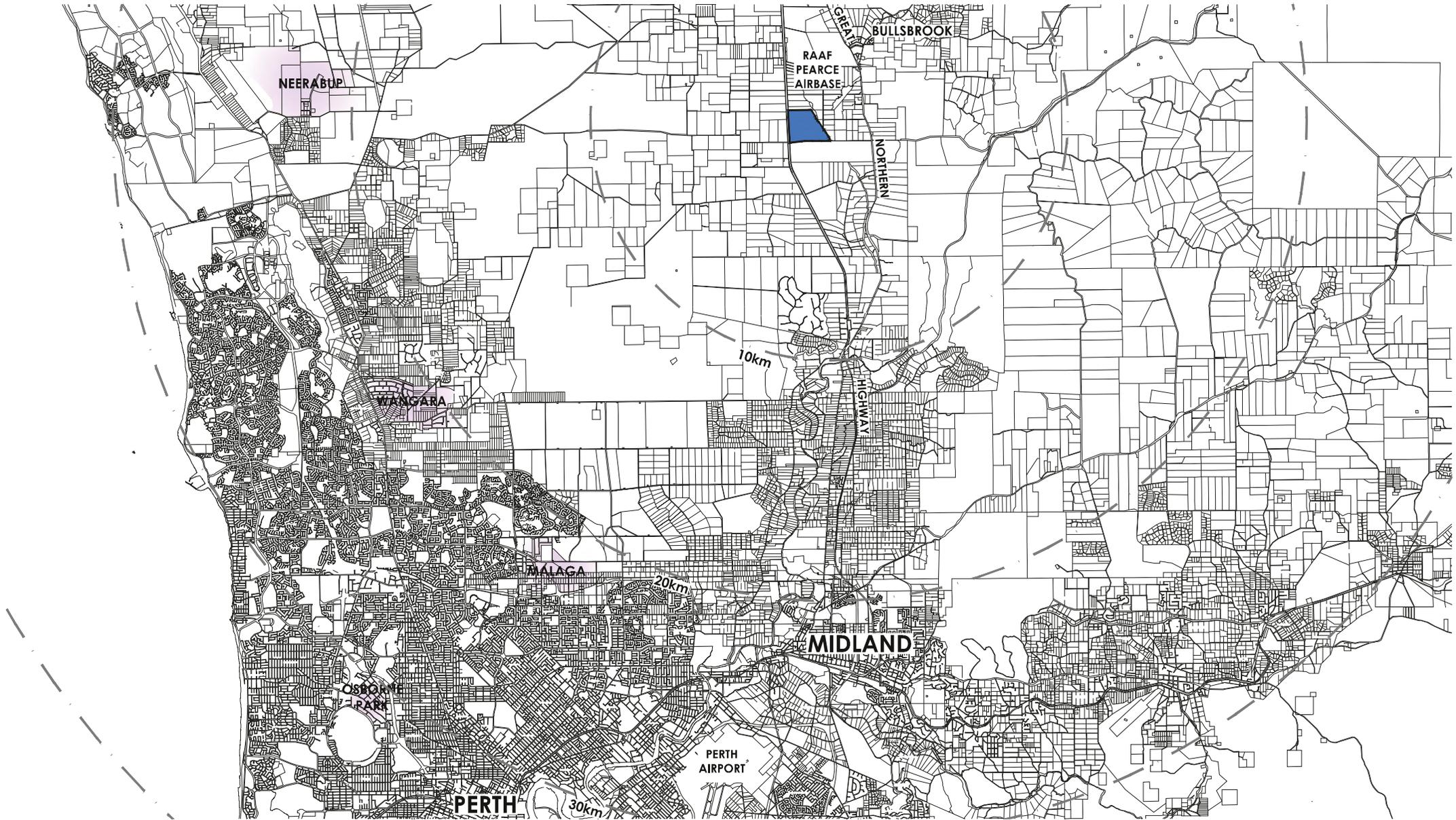
The land to the south of Stock Road is currently undeveloped and is used for rural purposes including livestock and equine grazing.

The Pearce Royal Australian Air Force (RAAF) Airbase is located approximately 1km to the north-east of the LSP2 area, separated by the Rural zoned Ellen Brook.

1.2.2 Area and Land Use

The LSP2 area contains one lot only – Lot 300 Almeria Parade, Bullsbrook which has a total area of 191.5 ha. LSP2 has a total area of 176.5 ha which includes the industrial zoned portion of Lot 300 as well as portions of the existing Moolicar Road, Almeria Parade and Stock Road reserves.

LSP2 is predominantly cleared of vegetation, with the exception of some planted fence lines and is currently used for a variety of rural pursuits. The site is generally flat, with a variation in fall from the north-west corner to the south-east corner of approximately 5 metres.



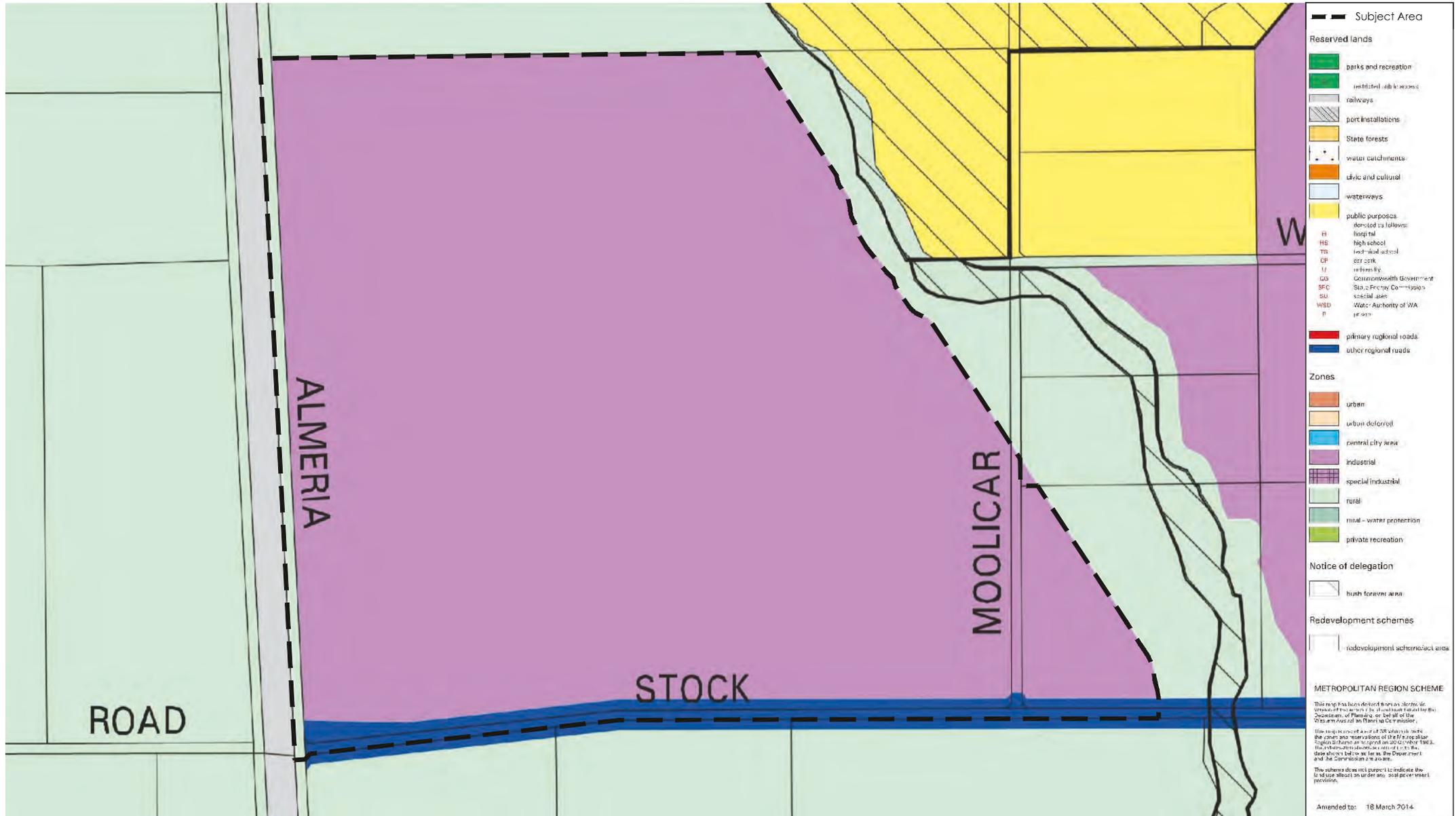
1.2.3 Legal Description and Ownership

LSP2 covers the Industrial zoned portion of Lot 300 Almeria Parade, Bullsbrook and a portion of the Moolicar Road, Stock Road and Almeria Parade road reserves. Table 2 provides the legal description and ownership of the subject land.

Sirona Gateway's ownership of Lot 300 in its entirety provides an excellent opportunity for coordinated development and provision of infrastructure.

Table 2: Land Ownership

Lot Details	Landowner	Area	Land Area Within LSP2	Land Area Outside LSP2 Area
Lot 300 Almeria Parade	Sirona Capital Management Pty Ltd	191.5 ha	169.5 ha	22 ha
Moolicar Road (road reserve)	Crown	N/A	1.0 ha	N/A
Stock Road (road reserve)	Crown	N/A	3.3 ha	N/A
Almeria Parade (road reserve)	Crown	N/A	2.7 ha	N/A



1.3 Planning Framework

1.3.1 Zoning and Reservations

Metropolitan Region Scheme

The MRS zones the large majority of the LSP2 area as Industrial, refer Figure 3. The existing Stock Road reserve, along with 20 metres on both the northern and southern sides is reserved as 'Other Regional Road' with localised widening at the intersection with Almeria Parade. The portion of Lot 300 that is zoned Rural under the MRS forms part of the Ellen Brook foreshore area and is not included within the LSP2 boundaries.

The LSP2 area is located within a larger Industrial zoned area of approximately 430ha, which was rezoned from Rural to Industrial by virtue of MRS Amendment 1219/41 approved by the Western Australian Parliament in October 2012. As part of its consideration of Amendment 1219/41, the WAPC recognised the environmental values of the Ellen Brook and noted that the Rural zoned portion of the Ellen Brook would be subject to a future Parks and Recreation reservation under the MRS as part of a separate amendment.

Adjacent to the LSP2 area, the Perth-Geraldton Freight Rail Line is reserved for Railways whilst the Pearce RAAF Airbase to the north-east is reserved for Public Purposes (Commonwealth Government). The land on the western side of the Perth-Geraldton Freight Rail Line, the southern side of Stock Road and north of LPS2 is zoned Rural.

Amendment 1222/41 to the MRS reserved the land approximately 1.6km west of LSP2 required for the Perth-Darwin National Highway (PDNH) as 'Primary Regional Road Reserve'. Amendment 1222/41 was gazetted in April 2014 and signifies a significant step in the realisation of PDNH. The PDNH 'Primary Regional Road Reserve' designates the future alignment of PDNH with links to GNH via Stock Road and Brand Highway north of Muchea.

Local Planning Scheme No. 17

The City of Swan Local Planning Scheme No. 17 (LPS17) zones the LSP2 area as 'Special Use Zone' (SUZ), refer Figure 4.

Schedule 4 of LPS17 sets out specific provisions for the Bullsbrook SUZ and introduces the requirement for a local structure plan to be prepared prior to subdivision / development pursuant to clause 5A. Schedule 4 also sets out the required environmental management plans that are to be prepared at local structure plan and subdivision stage. The management plans that are required to accompany the local structure plan are a:

- Local Water Management Strategy; and
- Wetland and Waterway Management Strategy.

Consistent with the requirements of Schedule 4, the two management plans outlined above are included as Appendices 2 and 3 respectively.

LPS17 also identifies a Development Contribution Area (DCA) over the entire SUZ. Schedule 13 of LPS17 requires that a Development Contribution Plan (DCP) be prepared over this area prior to subdivision / development. The City is currently progressing a scheme amendment (Amendment No. 108) to include development contribution provisions within Schedule 13 of LPS17 to address the requirements of the DCA. Amendment 108 was prepared and lodged by the LSP1 project team at the request of the City to address the coordinated funding of essential infrastructure for the South Bullsbrook Industrial Precinct and has now been substantially progressed, having undergone public consultation in June 2014. LSP2, as the next step in detailed planning over the land, will further inform and refine the level of detail within the DCP by identifying with more certainty the key pieces of infrastructure that require funding.

1.3.2 Regional and Sub-regional Structure Plans

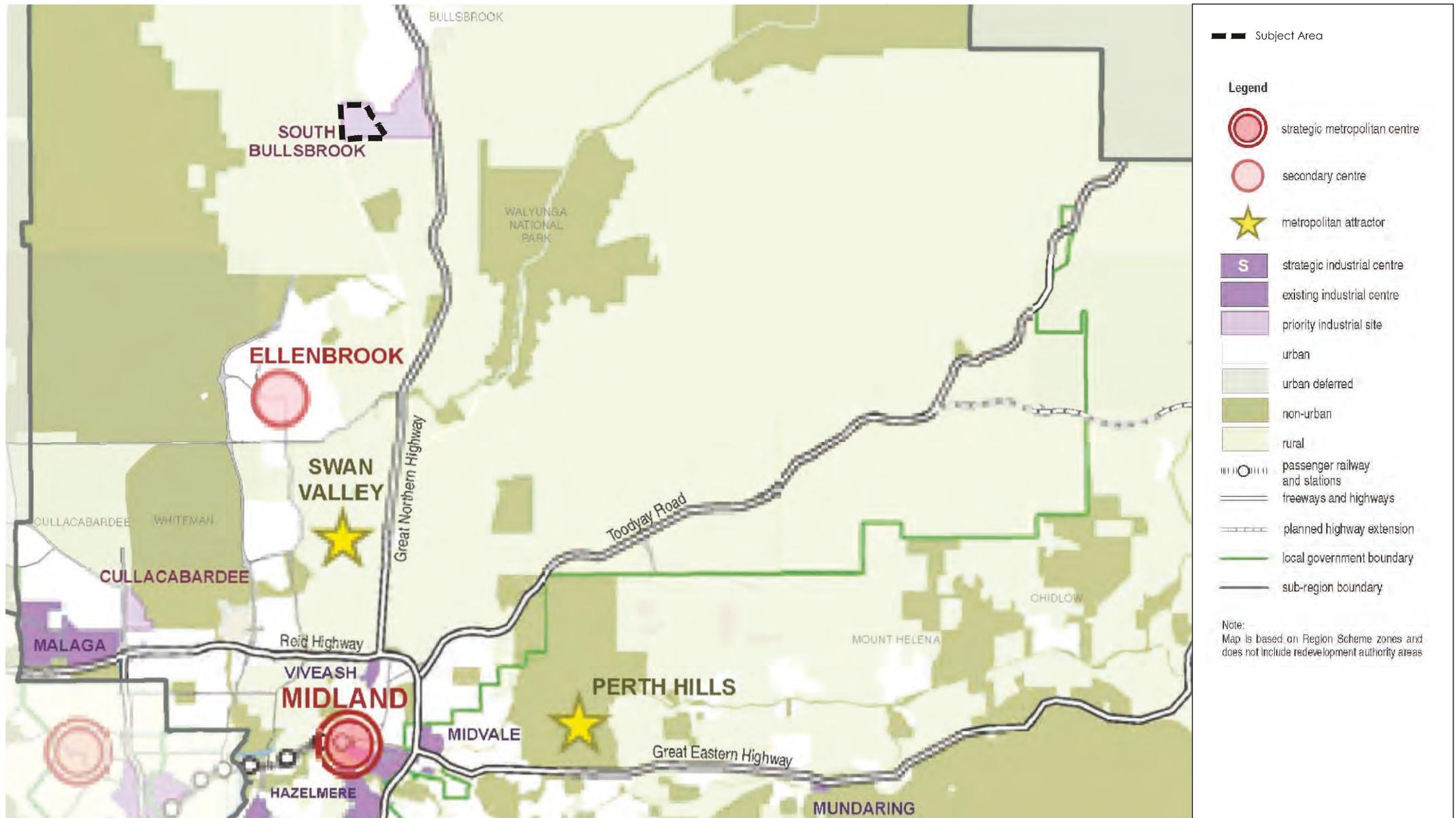
The LSP2 area and wider South Bullsbrook Industrial Precinct have been recognised as future locations for employment and industrial uses in a number of strategic state and local planning documents over the last 10 years which is reflected in the Industrial zoning of the land. The following provides a summary of the applicable key planning documents as they relate to the site.

North East Corridor Extension Strategy (2003)

The North East Corridor Extension Strategy (NECES) was published by the WAPC in 2003 to provide a context in which to determine the most appropriate use of land within the North East Corridor and guide future urban growth. The NECES encompasses the majority of the Ellen Brook catchment, including the LSP2 area.

The NECES identifies the importance of an employment node being located within the Corridor to provide employment opportunities for the increasing urban population, citing the need for an employment node of approximately 550 hectares (gross) with good access to road and rail transport linkages. A 50% employment retention target is set by the NECES for the area to sustain the growing population. The NECES identifies the study area as one potential strategic industrial site/employment node.

The NECES was advertised for public comment as a draft for an extended period in 2002-2003 before being finalised and published by the WAPC in 2003.



Bullsbrook Townsite and Rural Strategy (2008 draft)

The Bullsbrook Townsite and Rural Strategy (BTRS) was prepared and adopted by the City of Swan in 2008 in accordance with WAPC best practice guidelines as an overall strategic vision and land use management plan for the greater Bullsbrook area. The strategy has been forwarded to the WAPC for endorsement, however final endorsement has been deferred pending the release of the revised version of Directions 2031.

The BTRS identifies strong levels of demand for industrial land within the Bullsbrook area and recognises the important role that an industrial area would have in terms of local employment creation and increased self sufficiency for the Bullsbrook area. The strategy notes the need to balance industrial demand with the need to preserve the rural setting of the Bullsbrook area.

The BTRS was prepared in close consultation with the Bullsbrook community and was advertised extensively by the City prior to adoption. The BTRS identifies widespread community support for an industrial development to the south of the Pearce RAAF Airbase and identifies rural industrial and light industrial as the preferred land uses in this area.

Directions 2031 and Beyond – August 2010

In August 2010 the WAPC and Minister for Planning released the final version of Directions 2031 and Beyond. The 2010 version was released after extensive consultation on the 2009 Draft and supersedes Network City to become the highest level spatial framework and strategic plan for the metropolitan Perth and Peel region.

Directions 2031 and Beyond recognises the importance of industrial areas as critical employment generators, as well as the important relationship between industrial areas and key transport/freight linkages. The document separates industrial areas into three categories; strategic industrial centres, existing industrial centres and priority industrial sites. The LSP2 area is identified as a Priority Industrial site within Directions 2031 and Beyond, refer Figure 5. Priority Industrial Sites are described as areas which are currently under investigation to determine their suitability for industrial development to meet the industrial land supply targets within the next 20 years.

Directions 2031 and Beyond recognises the importance of Priority Industrial Sites not only in terms of meeting industrial land supply targets, but also in terms of provision of employment generating activity centres to promote surrounding urban growth and meet employment self sufficiency targets.

The recommendations of Direction 2031 are reflected in the Industrial zoning of the LSP2 area under the MRS. Directions 2031 therefore has very limited implications for LSP2 but reinforces the fact that the South Bullsbrook Industrial Precinct is a Priority Industrial Site for the Perth metropolitan area.

Economic and Employment Lands Strategy - 2012

The 2012 Economic and Employment Lands Strategy (EELS) is the final version of the 2009 draft Industrial Land Strategy and supersedes the draft version. The EELS is the State Government's response to a critical shortage of industrial land in the metropolitan area and puts in place a framework to avoid future shortfalls.

The EELS identifies the South Bullsbrook precinct, including the LSP2 area, as a potential medium term industrial area (4 - 10 years), refer Figure 6.

The identification of the LSP2 area for future industrial use further ratifies the current zoning of the land and demonstrates the demand and long-standing acceptance for industrial development in this area.

Importantly, the EELS identifies a potential IFT on the western side of the Perth-Geraldton Rail Freight Line adjacent the western boundary of the LSP2 area with an additional investigation area on the southern side of Stock Road, abutting the Perth-Geraldton Rail Freight Line.

Bullsbrook Townsite Land Use Master Plan (2014)

The City of Swan has recently adopted the Bullsbrook Townsite and Land Use Master Plan (BTLUMP) (refer Figure 7) which provides high-level direction for land use planning of the Bullsbrook Townsite, including South Bullsbrook.

LSP2 is entirely consistent with the BTLUMP which identifies the LSP2 area as 'Industrial Development'. The BTLMP acknowledges South Bullsbrook's strategic location and significance in accommodating the current and future demand for industrial land within the metropolitan area.

The BTLUMP estimates that the entire South Bullsbrook Industrial Precinct will accommodate a minimum number of 11,000 jobs at full development, serving an important function in the creation of local business and employment opportunities. The importance of local employment opportunities within close proximity of the Bullsbrook Townsite is reinforced by the significant residential expansion areas identified within the BTLUMP. These future residential areas will contribute to the employment base for the South Bullsbrook Industrial Precinct and provide opportunities for workers and residents to co-locate their place of employment with their place of residence and vice versa.

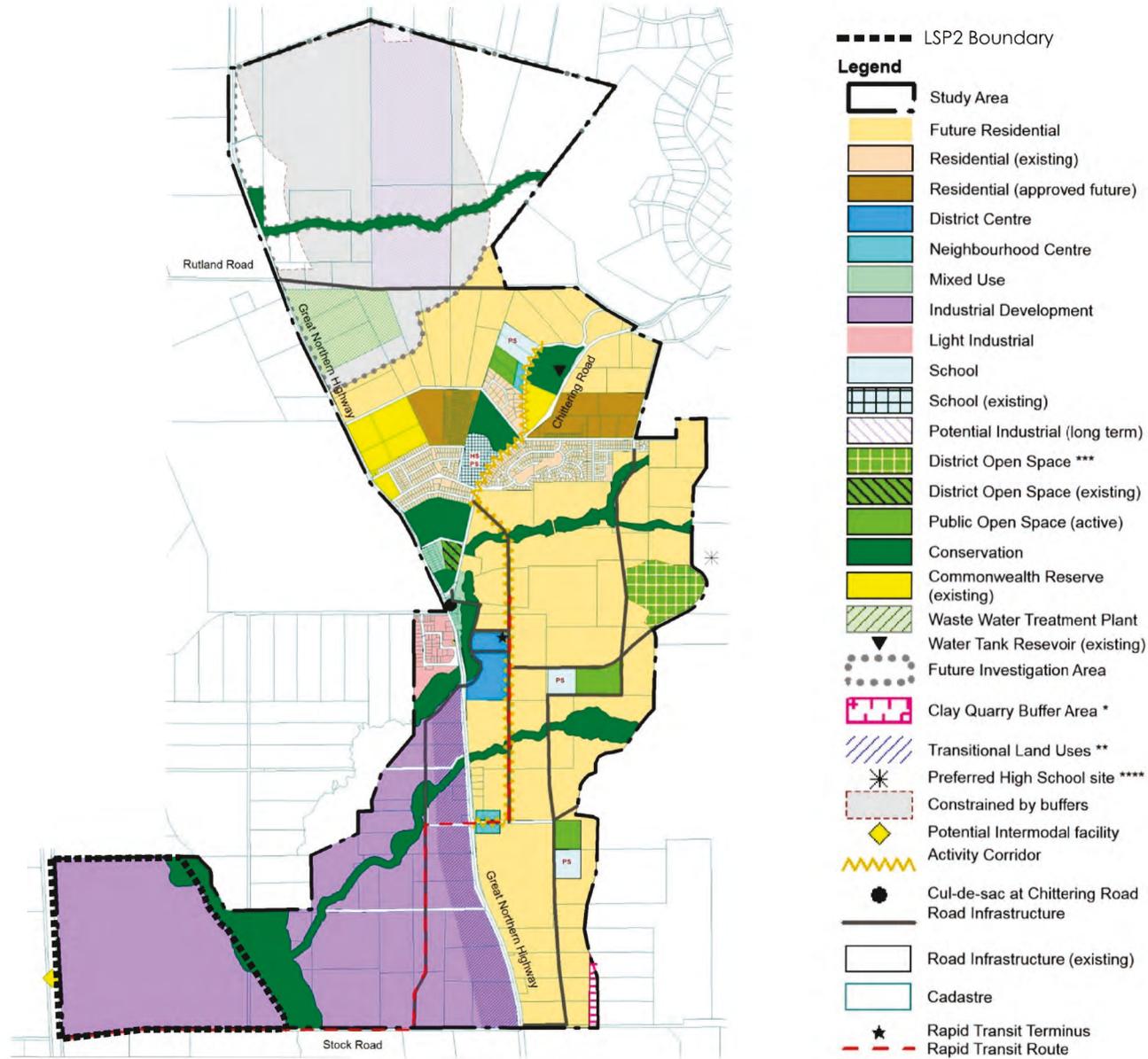
Consistent with the EELS, the BTLMP acknowledges that an IFT is expected to be developed to the west of the South Bullsbrook Industrial Precinct that capitalises on South Bullsbrook's strategic location and proximity to key transport infrastructure.

1.3.3 Applicable Policies

State Planning Policy 4.1 – State Industrial Buffer Policy

The WAPC's State Planning Policy 4.1 (SPP 4.1) provides a framework for protecting strategic industrial areas and essential infrastructure from encroachment by sensitive land uses as well as a framework for protecting sensitive land uses from industrial development.

The location of LSP2 is consistent with the objectives of SPP 4.1 on the basis that the industrial uses that it will facilitate in close proximity to existing and planned transport infrastructure are non-sensitive. Further, there are no sensitive land uses in close proximity to, or abutting LSP2, meaning that the industrial developments that LSP2 will accommodate will not have the potential to impact on any surrounding sensitive land uses.



SPP 4.1 requires that new industry be located to provide and maintain an appropriate buffer between the proposed industrial land uses and nearby sensitive land uses. SPP 4.1 notes that 'core' industries should be located towards the centre of industrial areas, with industries that have a lesser potential for offsite impacts to be located at the periphery.

SPP 4.1 makes specific reference to the EPA's Guidance Statement 3, which defines 'sensitive land uses' and provides separation distances between industrial uses and sensitive land uses.

SPP 4.1 notes that land uses are not always certain in the early planning stages and requires that buffers (if required) are addressed at the local planning scheme amendment and structure planning stages. The surrounding land uses are predominantly agricultural in nature, with the exception of the RAAF airbase, and there are no sensitive land uses located within proximity to the LSP2 area, meaning that external buffers are not required. Furthermore, the use class of 'Industry – Noxious' is a prohibited use in all zones under LPS17 and as such, any land uses within the LSP2 area will not require substantial buffers in any event.

State Planning Policy 2.10 – Swan – Canning River Systems

State Planning Policy 2.1 (SPP 2.10) applies to the Swan and Canning Rivers and their immediate surroundings and establishes a framework to improve environmental quality and public amenity along the river foreshore.

The LSP2 area is not within the defined precinct areas of SPP 2.10 however, the general environmental and water quality principles are relevant to the South Bullsbrook Industrial Precinct due to its proximity to Ellen Brook and have been given due consideration in the preparation of LSP2 and its technical reports.

State Planning Policy 5.4 – Road and Rail Transport Noise and Freight Considerations in Land Use Planning

State Planning Policy 5.4 (SPP 5.4) provides a framework for considering new noise-sensitive developments in close proximity to transport infrastructure and new transport related developments in close proximity to existing or future noise-sensitive land uses. SPP 5.4 acknowledges the economical importance of transport infrastructure and the need to protect it from encroachment from sensitive land uses.

As previously mentioned, LSP2 is located in immediate proximity to the Perth-Geraldton Rail Freight Line and Stock Road. LSP2 does not propose any noise-sensitive land uses within close proximity to the key transport infrastructure rather, LSP2 proposes land uses that are complimentary to, and capitalise on, its close proximity to Stock Road and the Rail Freight Line. Further, the industrial land uses that LSP2 will accommodate are entirely consistent with the location of the future planned IFT on the western side of the Perth-Geraldton Rail Freight Line immediately opposite the western boundary of LSP2.

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Draft State Planning Policy 3.7 – Planning for Bushfire Risk Management

The recently advertised draft State Planning Policy 3.7 (SPP 3.7) provides a new framework for identifying and managing bushfire risks within bushfire prone areas.

Consistent with the provision of the draft SPP 3.7, LSP2 is accompanied by a Fire Management Plan which identifies the areas of bushfire risk and outlines methods for managing these risks. Importantly, the Bushfire Management Plan demonstrates that any potential bushfire hazards can be appropriately managed and addressed through appropriate development controls and are not a constraint to development. Bushfire is discussed further in section 2.4 of this report and is comprehensively addressed in the Fire Management Plan at Appendix 6.

1.3.4 Existing Approvals and Decisions

Environmental Protection Authority

Both the MRS and LPS17 amendments described in section 1.3.1 above were referred to the Environmental Protection Authority (EPA) for assessment prior to the commencement of advertising.

Both Amendments were reviewed by the EPA, with the level of assessment set as “Scheme Not Assessed”. The EPA advice on the MRS Amendment goes on to note:

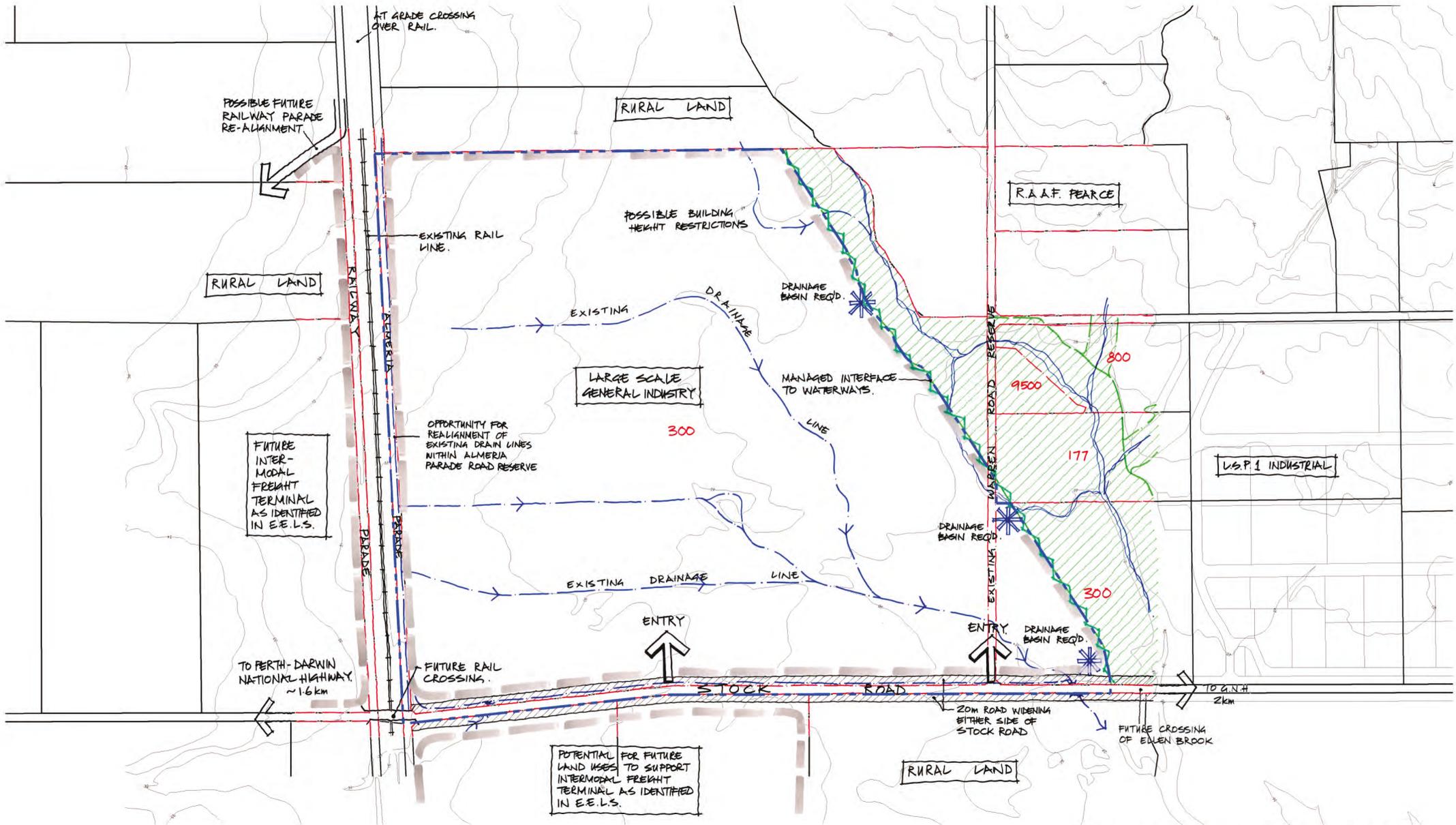
“...the proposed amendment does not raise any significant environmental issues that cannot be adequately managed, where possible, through detailed planning processes and in consultation with the DEC.”

LSP2 and its accompanying management plans respond to the EPA’s advice and provide an ongoing framework for the management of the site’s environmental assets.

The EPA’s advice on both the MRS and LPS17 amendments is included as Appendix 4.

South Bullsbrook Industrial Precinct - Local Structure Plan 1

As previously stated, LSP1 was adopted by the City of Swan in August 2014. LSP2 uses the same key technical principles and assumptions as LSP1 with respect to its response to environmental, drainage, traffic and servicing strategies, with these key assumptions having already been adopted by the City of Swan as part of LPS1.



OPPORTUNITIES AND CONSTRAINTS

2.0 SITE CONDITIONS AND ENVIRONMENT

As part of the preparation of LSP2, the project team has undertaken an extensive review of the attributes and opportunities of the LSP2 area and its surrounds. This includes analysis of the environmental, land use and servicing opportunities which are further demonstrated in the Opportunities and Constraints Plan at Figure 8.

2.1 Environmental Assets and Constraints

Overall, the environmental analysis concludes that given the provision of suitable development setbacks to the Ellen Brook which have been determined as part of the MRS Amendment 1219/41, there are no significant environmental factors that would require unique or site specific responses as part of the structure planning and subdivision processes. As the land is relatively unconstrained by environmental factors, it is ideally suited to the large-scale industrial land uses that LSP2 will facilitate.

As part of the MRS Amendment 1219/41 process, environmental consultants Cardno and Emerge Associates undertook a number of detailed environmental investigations for the LSP2 area and wider South Bullsbrook Industrial Precinct including:

- Flora and Vegetation Survey;
- Fauna Assessment;
- Wetland and Waterway Assessment for Ellen Brook;
- District Water Management Strategy; and
- A Preliminary Acid Sulfate Soils Assessment.

Emerge Associates have prepared an Environmental Assessment and Management Strategy in support of LSP2, which is included as Appendix 5 to this report. The Environmental Assessment and Management Strategy provides a more detailed analysis of the environmental opportunities, constraints and management strategies specific to the LSP2 area.

A summary of the findings of the Environmental Assessment and Management Strategy and the site specific assessments is provided in the sections below.

The LSP2 area has historically been cleared for broad scale agricultural uses with limited remnant vegetation remaining.

The Ellen Brook, located on the eastern periphery of the LSP2 area, is the key environmental consideration and forms a logical eastern boundary.

The Ellen Brook is classified as a Conservation Category Wetland and forms part of Bush Forever site number 296.

Development setbacks to the Ellen Brook were determined and agreed with the EPA / Department of Environment and Conservation as part of MRS Amendment 1219/41 and form the boundary of the Rural / Industrial interface. LSP2 retains these setbacks and does not propose any development within the Ellen Brook Rural zoned land.

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Consistent with the requirements of Schedule 4 of LPS17, a Wetland and Waterways Management Strategy (WWMS) for the Ellen Brook has been prepared by Emerge Associates and is included as Appendix 3. The WWMS identifies a series of management strategies necessary in order to ensure the ongoing protection and rehabilitation of the Ellen Brook. These strategies will be further refined and implemented as part of future Wetland and Waterway Management Plans at subdivision stage (as a condition of subdivision approval) in accordance with Schedule 4 of LPS17. The key objectives of the WWMS are:

- To address currently degrading influences to the wetland and waterway.
- To ensure industrial development does not significantly impact on the environmental values and attributes of the wetland and waterway.
- To provide a clear framework for the preparation of Wetland and Waterway Management Plans (WWMPs) required during subdivision with clear management obligations.
- To ensure the future land manager of the wetland and waterway assets are provided with adequate access and guidance to undertake routine maintenance and management tasks.

2.2 Landform and Soils

The topography of the LSP2 area is generally flat with the natural surface height ranging from 32m Australian Height Datum (AHD) in the north-west corner to 26m AHD in the south-east corner. The relatively flat nature of the site is conducive to large scale industrial types of development as proposed by LSP2 and provides opportunities for large freight-handling / set down areas without the need for significant retaining and site works.

The soil complexes within the LSP2 area are considered poorly drained yet capable of development in association with the importation of fill and are therefore not a constraint to development. Fill is discussed in more detail under the 'Groundwater and Surface Water' and 'Infrastructure Coordination' section of this report however, the extent of fill brought in over the LSP2 area will be sufficient to remediate any issues in relation to soil drainage characteristics.

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2.3 Groundwater and Surface Water

LSP2 is located outside of the 100 year ARI floodway mapped by the Water Authority of Western Australia (1989) and is therefore well suited to development.

The Ellen Brook waterway is adjacent the LPS2 area approximately 50m to 150m from the eastern boundary and flows southward. A man-made drainage channel diverts from the Ellen Brook through the LSP2 area before connecting back with the Ellen Brook further south. This man-made drainage channel will be realigned outside of the LPS2 area with further investigation to be undertaken during the more detailed design stages of development.

The existing hydrology of the site comprises of a number of waterways and man-made drainage channels that convey surface water from higher up in the drainage catchment to the north and west, through the LSP2 area, before discharging into the Ellen Brook on the eastern edge of the site. Runoff from the site itself generally flows across the surface in an easterly direction before entering the Ellen Brook.

It is important that LSP2 respects and maintains the pre-development hydrological regime in terms of peak flow rates leaving the site, as well as treating and detaining stormwater runoff from within the site before discharging into the district drainage system.

The key storm water management considerations for the development of LSP2 will need to include:

- Identification of a suitable alignment for the maintenance of existing upstream flows through LSP2 via an arterial drain – most likely located within a major east-west road reserve;

- Ensuring that internal roads provide sufficient width to accommodate localised drainage swales for conveyance of road runoff;
- Providing sufficient land area for a series of basins at the bottom of each catchment to treat road runoff; and
- Ensuring that sufficient space is set aside for the retention and treatment of lot runoff within the individual lots.

Further discussion on the LWMS, and the LSP2 response to the management of surface water is included in section 3.5.

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2.4 Bushfire Hazard

The LSP2 area is cleared of any substantial vegetation that may constitute a bushfire hazard. Bushfire Safety Consulting has prepared a Fire Management Plan (refer Appendix 6) which identifies vegetation within parts of the Rural zoned Ellen Brook area to the east of LSP2 as a 'Moderate' to 'Extreme' bushfire hazard. Importantly, bushfire risks in association with these areas can be managed appropriately through LSP2 via the provision of a suitable vehicle access interface within the hazard area, the inclusion of a 20m Building Protection Zone within designated areas that are deemed to be at risk of bushfire and connection to a reticulated water supply.

Vegetation within the road and railway reserves on the western boundary of LSP2 are assessed as a 'Moderate' bushfire hazard, however can be adequately managed via the implementation of a 20m Building Protection Zone and is therefore not a constraint to development. It should be noted that AS3959 for 'Construction of buildings within bushfire-prone areas' does not apply to industrial developments.

Fire hydrants and on site fire prevention will also be provided in accordance with the applicable legislation and standards for industrial uses / development.

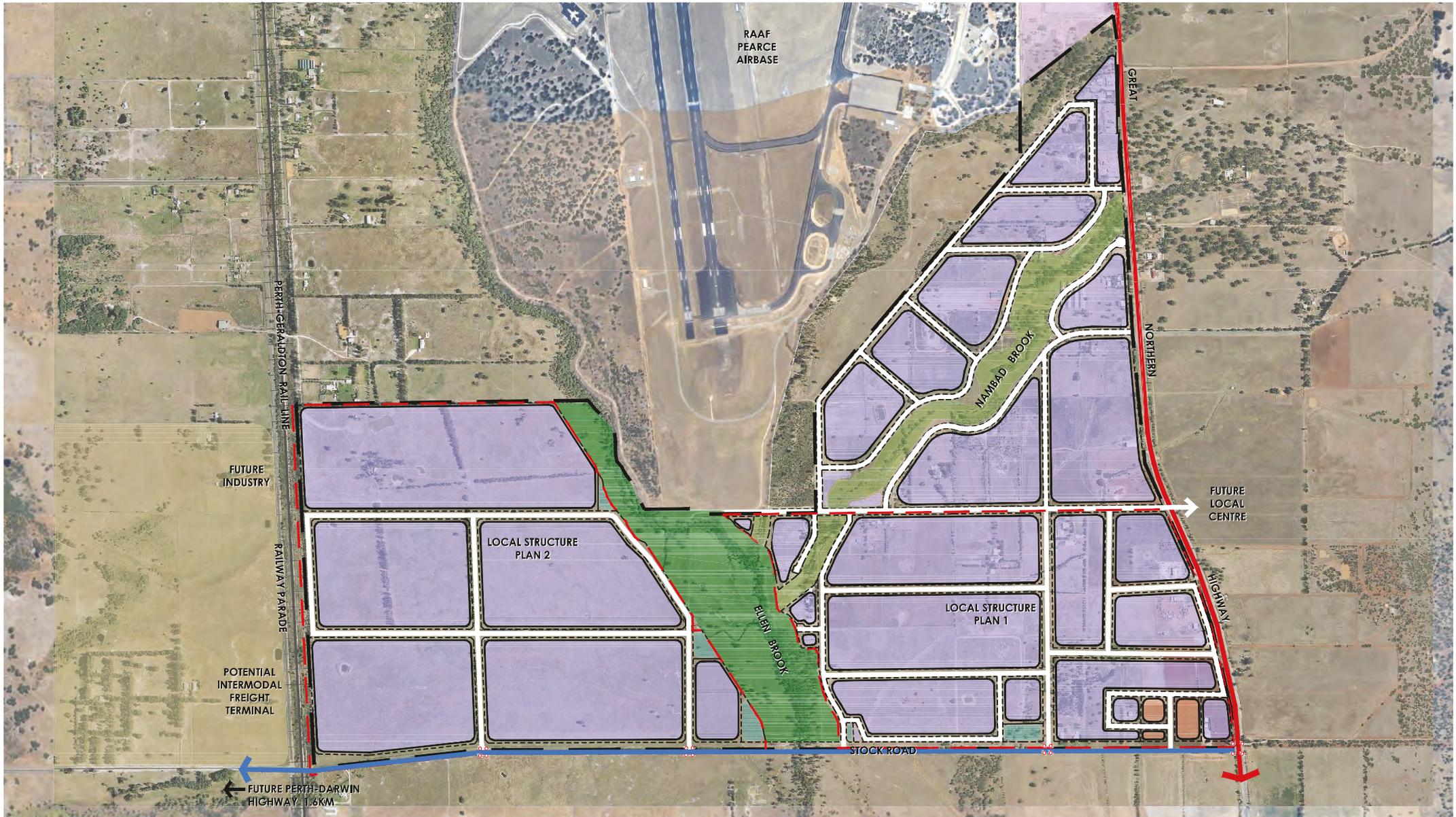
2.5 Heritage

A desktop assessment of relevant Aboriginal heritage information was undertaken using the Department of Indigenous Affairs (DIA) Aboriginal Heritage Inquiry System that incorporates both the heritage site register and the heritage survey database. The assessment concluded that:

- One registered Aboriginal site, DIA 3583 (Ki-It Monger Brook 2) is partially mapped within the eastern fringe of the LSP2 area however, does not occur within the LSP2 boundaries; and
- One heritage place, DIA 3525 (Ellen Brook: Upper Swan) is located within the LSP2 area, however this has been assessed as not being an Aboriginal Site under the *Aboriginal Heritage Act 1972* and is not defined or afforded protection as a site.

Given that the above sites / places are not physically located within the LSP2 area and are generally confined to the waterways, they will not be disturbed through the development of LSP2 and are not proposed to be altered. LSP2 recognises and respects these sites and places through specific site management strategies (foreshore areas and buffer zones along waterways) to avoid potential impacts.

The proponent recognises the obligations imposed by the *Aboriginal Heritage Act 1972* and acknowledges the requirement to seek Section 18 consent from the Minister for Aboriginal Affairs prior to disturbing any of these sites.



2.6 Land Use Context and Opportunities Analysis

The following provides an overview of the key land use considerations for the LSP2 area and identifies potential opportunities and constraints in addition to those discussed above. The land use context of LSP2 within the South Bullsbrook Industrial Precinct is further demonstrated at Figure 9.

2.6.1 Adjoining Uses

The LSP2 area is surrounded by a combination of Rural and Industrial zoned land, with no urban or sensitive land uses abutting or in close proximity. It is therefore ideally suited to accommodate a range of general industrial land uses without the potential to adversely impact on the surrounding area.

The land to the east of LSP2 on the opposite side of the Ellen Brook is similarly zoned Industrial. Two separate structure plans have been lodged over the industrial land to the east and are known as LSP1 and LSP3. LSP1 has been endorsed by the City of Swan and referred to the WAPC for final approval, whilst LSP3 has been lodged with the City but is yet to be endorsed. Industrial development of this area will occur in the short to medium term and as such, will be entirely compatible with the uses proposed within LSP2.

The land on the south side of Stock Road is zoned Rural and is currently used for livestock grazing. At present there is no firm proposal to develop or rezone this land however, the EELS identifies the western portion abutting the Perth – Geraldton Rail Freight Line as having *'potential to include additional investigation area to support intermodal facility'* which would further support and integrate with the industrial land uses that LSP2 will accommodate.

The Pearce RAAF Airbase to the north-east of LSP2 is a highly compatible with industrial development and the Australian Defence Force representatives were supportive of LSP1 and the industrial zoning during the MRS Amendment process.

2.6.2 Intermodal Freight Terminal

The proximity of LSP2 to the Perth - Geraldton Rail Freight Line provides a unique opportunity for an integrated road / rail freight and logistics precinct. This opportunity has been recognised at both State and Local Government levels, with both the EELS and BTLMP strategic documents referencing a future IFT on the western side of the Rail Freight Line.

The planned IFT is a significant opportunity for LSP2 and it is important that sufficient flexibility is maintained to enable appropriate integration with the IFT in the future with respect to access, distribution of land uses and lot sizes.

Planning for the IFT is currently being progressed by the Department of Transport (DoT), with the likely size, function and capacity of the IFT to be confirmed as detailed planning progresses. Sirona Gateway is in regular contact with the DoT, as well as the rail operators, Brookfield Rail, in order to ensure that LSP2 maximises the opportunities for future integration once the IFT is established.

2.6.3 Access to Regional Road Network

LSP2 has excellent access to the regional road network, with the existing GNH approximately 2km to the east and the planned PDNH approximately 1.6km to the west. These two primary regional roads enable efficient and convenient access to key destinations within the Perth metropolitan area, as well as the mining regions in the north of the State.

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Amendment 1222/41 to the MRS was gazetted on 24 April 2014 and created the Primary Regional Road Reserve for the PDNH which, once constructed, will support development within LSP2. With the reserve now in place, Main Roads WA has provided a preliminary indication that PDNH is expected to commence construction within the next 18 months and be open to the general public between 2018 and 2019. This timing is consistent with the expected development timeframes for LSP2 and will provide additional connection for the freight / logistical types of industrial land uses that are expected to locate within LSP2.

Stock Road will serve a key regional transport function as an east-west link between GNH and PDNH and will provide primary access to the LSP2 area. The regional significance of Stock Road means that access from LSP2 will be restricted to a limited number of key intersections, providing opportunities to consolidate and minimise transport connections.

Stock Road is partially constructed where it intersects with GNH and Railway Parade while the remainder of the length of Stock Road where it abuts the LSP2 area is currently unconstructed. The construction and upgrading of Stock Road, including two key bridge crossings will occur as part of the development of the area. Funding and timing for these key infrastructure upgrades are to be determined via a Development Contribution Plan which is currently being progressed by the City in consultation with landowners. The 20m MRS road widening to the south of Stock Road is not required to accommodate development within LSP2 which can be adequately serviced by the current road reserve and the associated MRS road widening to the north.

It is also understood that the area of land required for the extension of Stock Road to connect with PDNH to the west of the LSP2 area, will likely be reserved as an 'Other Regional Road Reserve' in the future. This area of Stock Road however, is outside of the South Bullsbrook Industrial Precinct and does not abut LSP2. This extension of Stock Road through to PDNH will play an important role in the growth of the South Bullsbrook Industrial Precinct and the overall functioning of the road hierarchy in the locality. Sirona Gateway is currently working with the DoT and MRWA to confirm the timing and funding for the delivery of this portion of Stock Road.

A detailed traffic analysis, including commentary on access to the arterial road network has been prepared by Arup and is included as Appendix 7. Further discussion on traffic and access in relation to LSP2 is provided in Section 3.4.

2.6.4 Servicing

Ongoing discussions with the Water Corporation, Western Power and other service providers since 2010 have confirmed that LSP2 is capable of being serviced within the development timeframe. A detailed servicing strategy prepared by Cossill and Webley consulting engineers is included as Appendix 8.

The LSP2 area is currently serviced to a rural standard, with water and power available to the existing property. The development of LSP2 will provide the opportunity to upgrade these services to a suitable industrial standard, as well as providing reticulated sewer, and fibre optic communications. LSP2 can be serviced via the existing and proposed network of road reserves and is not required to respond to any particular servicing constraints. Further discussion on the servicing strategy for LSP2 is set out in Section 3.7.

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2.6.5 Access to Workforce

LSP2 is ideally located to capitalise on the existing and planned residential population in the locality, providing an alternative strategic employment node that will ensure a high level of employment self sufficiency, consistent with the Directions 2031 targets.

The existing and growing populations of Bullsbrook, Ellenbrook, and the Swan Urban Growth Corridor provide an existing workforce located in close proximity to the LSP2 area.

The City of Swan's recently approved BTLUMP identifies an estimated population yield of 19,736 people, mostly within the 'Future Residential' areas of the Bullsbrook Townsite, with the potential for an additional 7,011 people in the long term (post 2031). These estimated population figures represent a significant increase in the number of people living within the Bullsbrook area that will inevitably require access to local employment opportunities. The BTLUMP acknowledges that the South Bullsbrook Industrial Estate will provide at least an additional 11,000 jobs in the locality at ultimate development. LSP2 establishes a planning framework that will enable the development of employment generating industrial uses within a catchment of the Bullsbrook Townsite and its surrounds as well as employment self-sufficiency and self-containment in the north-east corridor.

This Plan has been prepared for illustrative purposes only and represents an indicative land use concept of what may occur, once and if appropriate approvals are in place. The proposals depicted on this Plan generally have no formal approval status and can be varied by CLE or the landowner without notice. This Plan remains the property of CLE.

LEGEND
 LSP2 Boundary



3.0 LOCAL STRUCTURE PLAN

3.1 Plan Overview

LSP2 provides a framework that is both robust and flexible, ensuring that subdivision and development can proceed with certainty whilst remaining responsive to the end user's needs. LSP2 recognises and respects the environmental attributes of the site, as well as the surrounding land uses.

The LSP2 Concept Plan at Figure 10 indicatively demonstrates how development could occur on the site consistent with the principles and requirements of LSP2. The LSP2 Statutory Plan at Figure 11 and contained in the Part 1 report, provides the statutory framework and development principles based on the Concept Plan. The Concept Plan represents just one way development could occur within the framework of the Statutory Plan. The final subdivision plan will be a further refinement of the Concept Plan, consistent with the Statutory Plan.

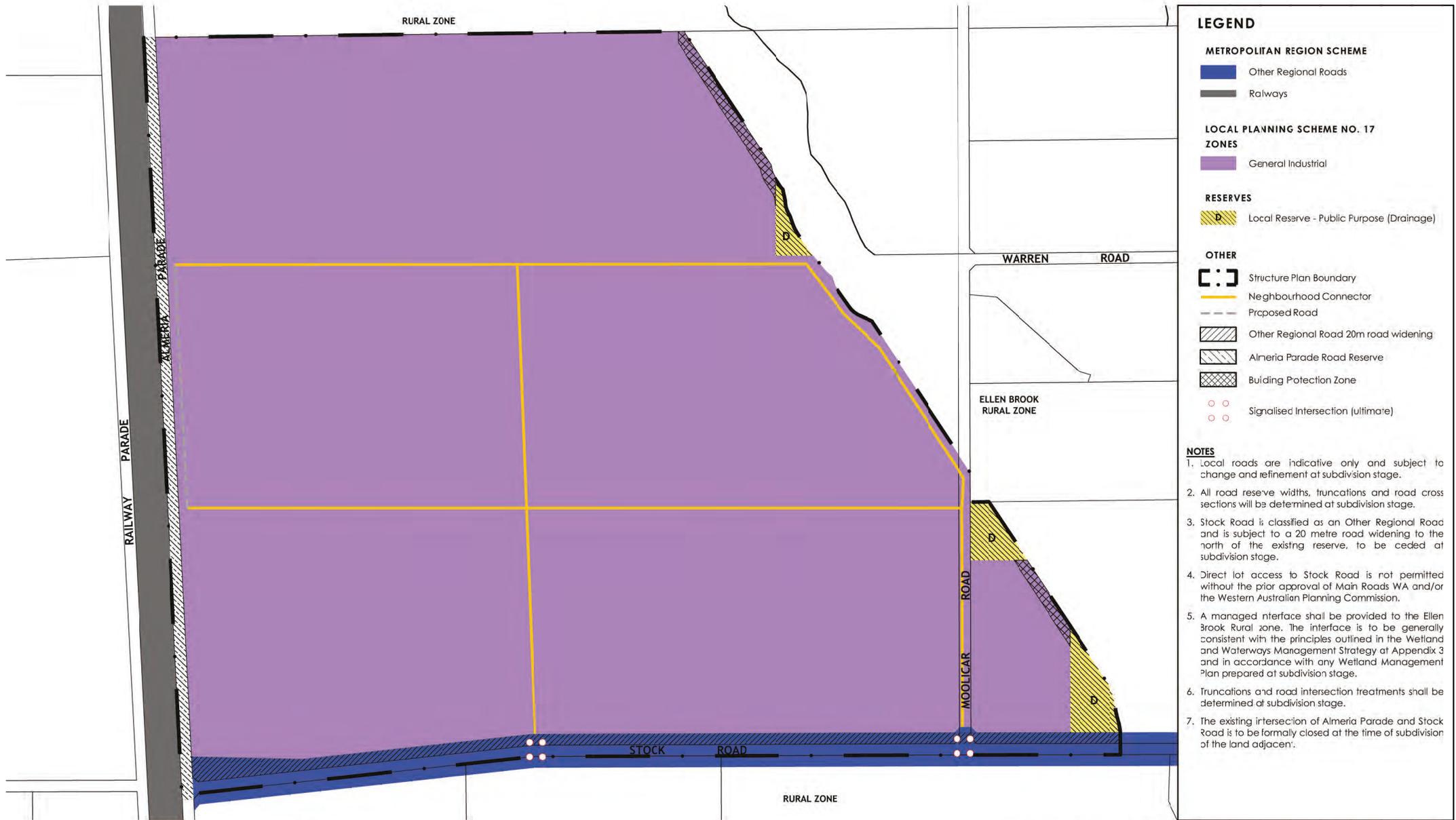
The fundamental principles of LSP2 are:

- Providing a land use response that recognises the site's strategic location and function within the broader district context.
- Establishing a framework that supports and promotes land uses that capitalise on the site's location in immediate proximity to planned and existing transport infrastructure.
- Maximising the unique benefits afforded to LSP2 in relation to its significant land area and single ownership.
- Creating opportunities to accommodate large scale, transport based industrial uses through the provision of a robust internal road network and flexible lot sizes that integrate with and capitalise on the planned IFT to the west of LSP2.

- Establishing key access points to Stock Road, ensuring that these access points are capable of supporting traffic generated not only from within LSP2, but also the broader area.
- Acknowledging the Rural zoned Ellen Brook and ensuring that adequate buffers and interface treatments are provided.
- Developing of a comprehensive drainage network that recognises the pre-development hydrology of the site and the significance of the Ellen Brook.
- Enabling the timely delivery of suitable service infrastructure to support staged industrial development of this scale.
- Addressing the principles and requirements of Local Planning Scheme 17 with particular regards to Schedule 4.

Based on the above principles, LSP2 will create:

- Approximately 164 ha of 'General Industrial' zoned land that is able to accommodate a broad range of land uses, whilst incorporating development controls that provide the City with the discretion to prevent undesirable land uses from occurring.
- Significant portion of an industrial estate that is estimated to create 11,000 employment opportunities within a catchment of the future planned residential expansion of the Bullsbrook Townsite as identified in the BTLUMP.
- Land uses that allow for future integration with the planned IFT west of the LSP2 area on the opposite side of the Perth-Geraldton Rail Freight Line.
- The coordinated provision of essential infrastructure as facilitated by the single ownership of the site.



- A managed interface to the Ellen Brook, ensuring the provision of adequate bushfire separation, management of introduced weeds and controlled access.
- A series of landscaped detention basins on the eastern periphery of the LSP2 area comprising a total area of approximately 2.2 ha, designed and landscaped to treat stormwater before discharging into the broader network. These basins are landscaped spaces, specifically designed and sized to meet drainage requirements, whilst also ensuring ongoing maintenance is minimal.
- The management and conveyance of arterial and development drainage in a manner that mimics the pre-development hydrology and is in accordance with the principles of water sensitive urban design.
- An integrated and connected internal road network, ensuring that heavy vehicles can move safely and efficiently throughout the estate and integrate with the regional road network.
- Two signalised intersections at the internal road connections with Stock Road that allow for safe and efficient vehicle movement to / from the regional road network.
- A 20m widening to Stock Road consistent with the Metropolitan Region Scheme Other Regional Road reservation that allows for staged upgrading of Stock Road on a demand basis.

3.2 Land Use

LSP2 is ideally located to enable a diverse range of general industrial uses including freight / logistics, manufacturing, service industries and large scale set-down / storage areas. The most appropriate zoning under LPS17 for the LSP2 area is therefore 'Industry - General'. This zoning is consistent with LSP1 and LSP3 to the east and will allow for a wide range of industrial uses without adversely impacting on surrounding land uses.

Industrial land uses within any given industrial estate are diverse and have differing requirements with respect to lot size, configuration and location. LSP2 is flexible in responding to industrial land use demands. Whilst it is expected that land use will be predominantly related to freight and logistics based activities, given LSP2's strategic geographical location, proximity to transport infrastructure and larger lot sizes, LSP2 is sufficiently flexible to accommodate a wide range of industrial uses.

LSP2 retains all of the permissible and discretionary uses within the General Industrial zone, as per the zoning table of LPS17. In addition and in order to ensure maximum flexibility for potential end users, LSP2 proposes to include the following uses as 'D' (discretionary) uses:

- Food and Beverage Production – As well as freight and logistics based industries, the South Bullsbrook Industrial Precinct could potentially be well suited to food and beverage production. Typically these types of industries require large land parcels to operate efficiently and non-sensitive surrounding land uses to avoid any detrimental impact on the surrounding area. These features, as well as the proximity and convenience of the regional road network and the proximity to areas of primary production, indicate that the LSP2 area is ideally suited to support food and beverage production.

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- Land Sales Office – LSP2 includes the use class ‘Land Sales Office’ as a ‘D’ use in the General Industrial zone. A Land Sales Office is defined in Part 1 report as “a building of either a temporary or permanent nature, and incidental car parking and facilities, used directly in relation to the sale of land in new estates.” The inclusion of this land use and definition in LSP2 is consistent with other endorsed LSPs within the City of Swan including LSP1, where a sales office or similar would otherwise not be capable of approval within the zone. It is generally well acknowledged that sales offices are an essential component of all new urban and industrial areas and as such, it is important that LSP2 provides the City with the discretion to approve this use.

In addition to the above provisions, LSP2 includes the following use as an ‘A’ (advertised) use:

- Service Station – The use class ‘Service Station’ is well suited to, and an necessary service for, an industrial area – particularly those industrial areas with a likely predominance of freight / logistics type uses where demand for convenient access to fuel supply is high. As noted earlier, the project team recently undertook a study tour of a number of new industrial estates in both the Perth metro area and the eastern states - refer summary report at Appendix 1. Those estates with a predominance of freight / logistics uses such as Citiswich in Ipswich, and Eastern Creek in Sydney all had service stations within the estate to allow for convenient fuel access. These service stations were typically located away from regional roads and were actually embedded within the estates themselves. Some of the service stations were ‘unmanned’ stations and were specifically designed with additional height clearance and turning areas to allow larger vehicles to circulate through the forecourt areas.

As well as being an essential supporting service to freight / logistics industry, service stations are also an ideal opportunity to provide amenity and convenience to local workers in the early stages of development, before the estate is fully developed and more specialised amenity / convenience aspects can be considered.

The additional uses outlined above are identical to those which were endorsed by the City of Swan for LSP1 and are appropriate within a developing and evolving industrial precinct.

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3.3 Built Form and Development Standards

3.3.1 Built Form

LSP2 acknowledges the need to establish a framework that achieves quality built form outcomes that are commensurate with amenity expectations within industrial areas without compromising the efficient use of land by imposing unnecessary development controls.

The City's Local Planning Policy TP-124 – *Industrial Zones – Building and Development Standards* prescribes built form and development standards for industrial zones. These standards include provisions for:

- Setbacks;
- Plot ratio / site coverage;
- Building materials / façade treatments; and
- Refuse and storage areas.

LSP2 does not propose to vary, remove or supplement these standards.

In addition to the requirements of TP-124, the land owners may choose to implement some basic estate-wide design guidelines at subdivision / development stage to ensure a standard of visual amenity and uniform patterns of development. Design guidelines could potentially address detailed design matters such as:

- Fencing materials / colours;
- Façade treatments / colour palates;

- Landscaping species; and
- Signage locations / sizes.

It is important to note that these guidelines would be separate from the statutory planning and building approvals processes and would be enforced by the developer as opposed to the City, through contracts of sale.

3.3.2 Car Parking

LSP2 proposes identical parking standards to those adopted by the City of Swan under LSP1 for the Strategic Precinct. These parking standards are appropriate for LSP2 based on the larger lot sizes and freight / logistics type land uses that it is expected to accommodate, and the highly strategic nature of LSP2 in the context of the broader precinct.

On site car parking has a significant influence on the size of an industrial building / use. In many cases, onerous and unreasonable parking standards result in the over-provision of car parking which reduces land efficiency and effectively sterilises valuable industrial land that could be better used for other purposes.

The City of Swan's Local Planning Policy TP-129 provides generic parking requirements for industrial land uses. The origin of these parking requirements is unknown and when compared to other growth councils in the metropolitan area, the parking standards appear to be quite onerous in some respects and are regularly varied by the City at the development application (DA) stage on a case by case basis.

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LSP2 provides an opportunity to review and standardise car parking requirements for industrial developments within the structure plan area. The revised parking standards are considered appropriate for the following reasons:

- The City of Swan supported revised parking ratios within the 'Strategic Precinct' of LSP1. The 'Strategic Precinct' was subject to minimum lot area requirement of 1ha which is important in the consideration of a reduced parking ratio as larger lot sizes allow for the rationalisation and consolidation of car parking. For example, one 10,000m² warehouse, depot or other industrial use will likely employ less staff than ten 1,000m² businesses. Increased floor space or storage area does not automatically translate to an actual need for the provision of more parking. As demonstrated by the 'LSP Concept Plan' at Figure 10, it is expected that LSP2 will facilitate even larger lot sizes than LSP1 of between 4.6 and 21 ha. These large lots will accommodate the types of business operations that warrant a reduced parking ratio from what the City's TP-129 would otherwise require.
- Parking standards in other comparable estates observed on the east coast of Australia reflect the above fact.
- The standards set out in the statutory provisions will provide future developers / occupants with greater certainty when purchasing land within LSP2.
- Based on pre-lodgement discussions with officers from the City of Swan, it is understood that parking standards prescribed by TP-129 are frequently varied by the City at the DA stage, based on the merits of an individual proposal. The proposed standards under LSP2 will avoid the need for an ad-hoc, merits based parking assessment for any development application that does not provide parking in accordance with the policy standards. Not only does this reduce the processing time for applications, it reduces the Council resources that are required to determine applications that propose parking shortfalls. The standards provide a more realistic and practical parking requirement based on actual examples elsewhere, therefore not forming an impediment to development.
- LSP2 is a new industrial precinct. Any businesses that consider locating within the LSP2 area will require certainty as to the commercial success of the area in terms of its location. The current policy provisions are onerous and regularly varied by officers and Council, creating uncertainty for potential tenants. Standardising the parking standards as set out in LSP2 will provide the necessary certainty.

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3.4 Movement Networks

LSP2 identifies a comprehensive road network, including key access points to Stock Road and strategic internal routes that will allow for the safe and efficient movement of traffic.

Traffic and transport aspects of LSP2 have been analysed by traffic consultants Arup in the context of:

- The traffic modelling and intersection analysis methodology that was developed as part of the endorsed LSP1 which was accepted by the City of Swan;
- Proposed development characteristics (e.g. forecast mix of land uses, timing of development, influences of forecast new development in the vicinity of LSP2);
- Demand (demographic) data and assumptions supplied by the City of Swan regarding a new Waste Transfer Station located on Stock Road to the west of LSP2;
- Demand and network data supplied by Main Roads WA, specifically the possible timing of the completion of PDNH which is anticipated to occur around 2018-2019;
- Planning data relating to the proposed IFT north of Stock Road on the west side of the existing rail line (data supplied by the Department of Transport);
- Industry-standard guidance and empirical data regarding trip generation and assignment for developments of this type and scale, moderated to suit the context; and
- The traffic impact assessment and trip generation assumptions that were prepared as part of LSP3.

The assessment and analysis of traffic implications for LSP2 has included an ongoing dialogue with Main Roads WA and the City of Swan in order to ensure that the most up to date demographic and land use assumptions are consistently applied and to ensure that the agencies are in agreement with respect to the key traffic principles of LSP2. Traffic modelling is a further iteration of the model used for LSP1, which has been accepted and endorsed by the City of Swan.

The full Transport Assessment and Staging Report prepared by Arup is included as Appendix 7. The key findings and recommendations of the analysis are summarised below.

3.4.1 Road Network, Capacity and Arterial Road Access

The key existing external roads are GNH (east), Stock Road (south) and Railway Parade (west).

Great Northern Highway

GNH is a State Road (Primary Distributor) and is reserved as a "Primary Regional Road" under the Metropolitan Region Scheme. GNH is single carriageway with a posted speed limit of 100 km/h in the vicinity of the South Bullsbrook Industrial Precinct. Until construction of PDNH is completed, GNH is expected to serve as the major north-south connection for the South Bullsbrook Industrial Precinct, including LSP2.

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In November 2011, the State Government released the *Great Northern Highway (West Swan to Muchea) Access Strategy* (the Strategy). The Strategy was prepared jointly by the Departments of Planning and Transport, Main Roads WA and City of Swan. It assesses the likely future form and function of GNH, based on the best available planning information available at the time of preparation. In relation to the LSP2 area and the access that GNH affords, the Strategy identifies a signalised intersection at GNH and Stock Road which will allow for safe and efficient access to LSP2 via Stock Road.

Perth – Darwin National Highway

MRS Amendment 1222/41, which reserved the land required for the PDNH, was gazetted on 4 April 2014 and is a significant step in the realisation of PDNH. The 'Primary Regional Road Reserve' which designates the future alignment of PDNH is approximately 1.6km west of LSP2 with links to GNH and Brand Highway north of Muchea. PDNH will function as major north-south highway and, by virtue of its immediate proximity to the LSP2 area, will serve a valuable transport function for the industrial land uses that LSP2 will accommodate. Planning and design has substantially commenced, with PDNH expected to initially be a two lane highway (one lane in each direction) north of The Promenade in Ellenbrook with a planned at-grade intersection with Stock Road. Preliminary discussions with Main Roads WA indicate that construction of PDNH is expected to be completed between 2018 and 2019. This estimated completion time coincides with the expected development timeframes and staging of LSP2.

Stock Road

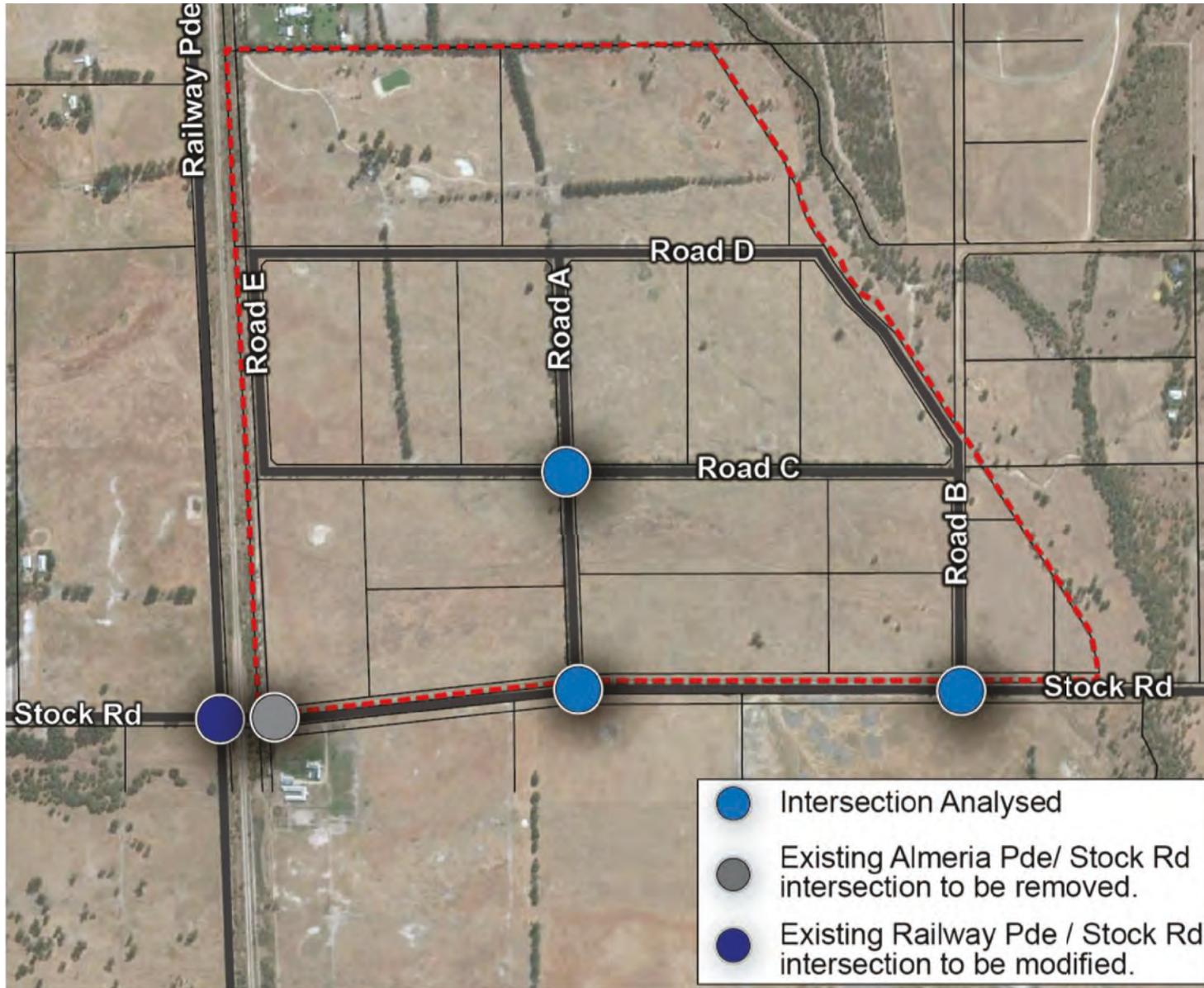
Stock Road will provide primary and direct access to LSP2. It currently has a rural character and single carriageway with unsealed shoulders west of GNH. From approximately 900m west of GNH, Stock Road becomes

unsealed for the majority of where it abuts the LSP2 boundary. Stock Road crosses the railway at grade with stop sign control and intersects with Railway Parade a short distance further west of the railway crossing at a give-way controlled, four-way intersection. The retention of the at-grade crossing is unlikely to be viable in the long term once Stock Road is fully constructed and connects GNH in the east to PDNH in the west.

It is anticipated that Stock Road will be upgraded to a single carriageway suitable to accommodate Restricted Access Category 7 vehicles (36.5m long) following commencement of development of the South Bullsbrook Industrial Precinct. Stock Road will connect with PDNH once the latter is constructed and be upgraded to dual carriageway when warranted by vehicle demands. This upgrade can easily be accommodated within the existing 60m reserve. Upgraded crossings of Ellen Brook and the Perth - Geraldton Rail Freight Line will be required as part of the upgrades to Stock Road. The funding of these upgrades is identified in the draft DCP as sub-regional infrastructure.

Railway Parade

Railway Parade is a north-south line-marked Local Distributor with unsealed shoulders that connects Warbrook Road in the south with Neaves Road and Brand Highway in the north. Traffic count data from 2005 indicated that it carried approximately 1,550 vehicles per weekday south of Neaves Road. Preliminary discussions with the City of Swan and MRWA have identified the need to realign Railway Parade further west around the future proposed IFT although this is subject to agency agreement and is not a recommendation of this structure plan. It is anticipated that this future alignment of Railway Parade will intersect with Stock Road approximately half-way between the Perth – Geraldton Rail Freight Line and PDNH. The current and future alignment of Railway Parade does not warrant a design response for LSP2 however, due consideration has been given to Railway Parade in the Transport Assessment at Appendix 7.



3.4.2 Traffic Modelling and Scenario Testing

SATURN Model

Simulation and Assignment of Traffic to Urban Road Network (SATURN) models have previously been developed in the preparation of LSP1. The traffic analysis and modelling that was undertaken as part of the endorsed LSP1 has been accepted by the City of Swan and has subsequently been revised and updated to allow for assessment of traffic impacts associated with LSP2. Importantly, the SATURN model confirms that the planned regional road network can accommodate the traffic originating from LSP2, as well as the cumulative traffic for the surrounding locality.

SATURN is a traffic assignment suite of programs specifically designed to assess road networks where intersection capacity drives the network capacity and simulates explicitly intersection performance and travel time on the network. SATURN is useful for assessing route choice, road network operation and planning options at a relatively detailed level. It incorporates traffic counts taken within the Bullsbrook area and traffic demands forecasted by Main Roads WA's Regional Operations Model (ROM). ROM takes into consideration changes to land use and the transport system over time.

SATURN models were prepared for the 2011 base year and forecast years of 2021 and 2031, assuming PDNH is operational prior to 2021. Future year scenarios were used to assist with defining road network and intersection upgrades to facilitate development of LSP2. Model outputs were also used as inputs for more detailed intersection analysis using SIDRA software.

Further detail regarding the SATURN modelling process (including inputs and assumptions) is provided in Appendix 7. This includes definition of modelling sub-scenarios to account for the effects of different forms of traffic control at the two Stock Road intersections and the internal four-way intersection.

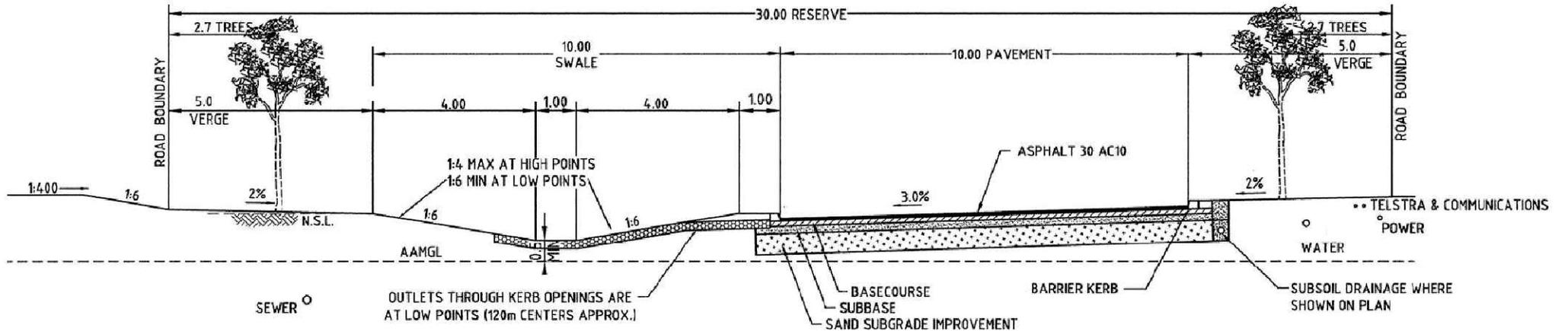
SIDRA Model

Assessment of individual intersections was then undertaken using SIDRA software to determine the most efficient and safe intersection geometry and control. SIDRA software is used for intersection and network capacity, level of service and performance analysis.

The scenarios were tested for a typical weekday morning and evening peak hour. Importantly, all intersections are forecast to operate at acceptable levels of service.

The following key intersections as identified at Figure 12 were examined:

- Stock Road / Internal Road A
- Stock Road / Internal Road B
- Internal Road A / Internal Road C



The SIDRA analysis shows that:

- Given the forecast traffic volumes along Stock Road and the subsequent demand for right-turns into the LSP2 area, two sets of traffic signals along Stock Road at its intersections with Internal Roads A and B are recommended. Importantly, the minimum intersection separation distances are provided;
- The Stock Road / Internal Road A signalised intersection is forecast to operate at Level of Service (LOS) B and C in the morning and evening periods respectively and is therefore expected to operate at a satisfactory level. LOS is a measure of intersection delays, with LOS A being the best value representing free-flow conditions. LOS F represents the worst value and relates to an average intersection delay in excess of 50 seconds for an unsignalised intersection and 80 seconds for a signalised intersection.
- The Stock Road / Internal Road B intersection is recommended to be signalised and is forecast to operate at LOS B in both peak hour periods. Some queuing is forecast along Stock Road in the AM peak period (130m to the west and 190m to the east) however, these queue lengths are not forecast to impact on adjacent intersections.
- The intersection of Internal Road A/ Internal Road C is forecast to operate well within capacity in both the morning and evening peak periods as a priority controlled intersection.

From a staging perspective, intersections will be designed and controlled to permit future upgrades (within reason) and minimise redundant works.

3.4.3 Local Street Cross Sections and Traffic Management Treatments

The LSP2 Concept Plan (Figure 10) shows the indicative internal road network. With the exception of the higher order roads, the precise alignment, location and reserve width of the internal roads will be determined at subdivision stage once lot size and development staging is confirmed.

A standard midblock cross-section is proposed for internal roads, refer Figure 13. The cross section is sufficiently large to allow for heavy vehicles, drainage swales, footpaths and service infrastructure within the reserve.

Internal intersection controls are defined based on forecast traffic volumes. In all locations, priority control is appropriate.

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3.4.4 Pedestrians, Cyclists and Public Transport

LSP2 makes provision for walking and cycling facilities, notwithstanding that active transport is likely to have a limited role based on its location, its significant and broad employee catchment and the nature of the industrial land uses that it will accommodate. LSP2 acknowledges that provision of facilities for walking and cycling is important to enable trips that are undertaken by these modes to be safe and direct.

Accordingly, all internal streets will have a shared path on one side of the road, with crossing points provided at intersections. The precise alignment and location of footpaths and shared paths will be determined at subdivision stage.

A shared path will be included along the northern side of Stock Road within the road reserve. This will help to facilitate access to external infrastructure that should be considered as part of the design of PDNH.

The 311 bus service is currently the only Transperth service that operates in the vicinity of the LSP2 area and runs along GNH connecting Bullsbrook in the north with Midland Train Station in the south. There are five two-way services per weekday, with 1-2 services on weekends and public holidays.

There is unlikely to be a marked increase in public transport service provision to South Bullsbrook in the short-term. The BTLUMP identifies a 'Rapid Bus Route' running north-south through LSP1 and LSP3 and along Stock Road for the entirety of the LSP2 southern boundary. Although the Rapid Bus Route is not proposed through the LSP2 area, it will provide a reasonable level of service based on its planned route along Stock Road. Notwithstanding this fact, the external and internal intersection geometries and road cross-sections have been designed so that they can accommodate future bus services, if required.



3.5 Urban Water Management

LSP2 provides a framework that emphasises the application of water sensitive urban design to manage the way in which water within an industrial context is utilised. This management approach aims to minimise the impact of development on the natural water cycle and mimic the pre-development hydrology.

A LWMS has been prepared by Emerge Associates and is included as Appendix 2. The LWMS demonstrates in detail how urban water management and water sensitive urban design are addressed. The key principles of the LWMS are:

- Maintain Predevelopment Hydrology - The predevelopment hydrology has been well characterised by the District Water Management Strategy (DWMS) and has been further refined in the LWMS. The sizing of storage areas and drainage channels has been calculated using XPStorm hydrological and hydraulic modelling software.
- Infiltrate stormwater locally – Detain and infiltrate flows up to the 100yr ARI event within the lot boundary of each lot to maintain the pre-development flow rates.
- Detain major event road runoff (up to the 100 year ARI event) within LSP2 – Runoff from the 1 year 1 hour ARI event from road reserves will be conveyed via roadside swales and then retained within vegetated bio-retention areas (BRA) in the downstream drainage reserves abutting the Ellen Brook. BRAs will be sized to hold the 1 year 1 hour ARI event and will be vegetated with species that are efficient in nutrient removal. Flood storage areas (FSA) will be utilised to detain major event flows before discharging into the Ellen Brook in order to maintain the pre-development peak flow rates leaving LSP2.
- Maintain upstream arterial flows - Existing flows through the site from upstream catchments will be maintained and managed via an arterial drainage channel along the periphery of the LSP2 area which

eventually discharges into the Ellen Brook. The design of the arterial drainage restricts flows such that pre-development flow rates leaving the site are maintained.

- Maintain the quality of groundwater - This will be achieved by directing all runoff from minor events (1 year 1 hour ARI event) to BRAs. BRAs will be vegetated to encourage nutrient adsorption from surface water runoff prior to infiltration to groundwater. Individual lot uses will be required to implement industry-specific water quality treatment measures at UWMP and development application stage.
- Water conservation to be achieved by providing:
 - Waterwise landscaping in lot, road verges BRAs; and
 - Water efficient fittings within all buildings to be mandated through the building licence process.

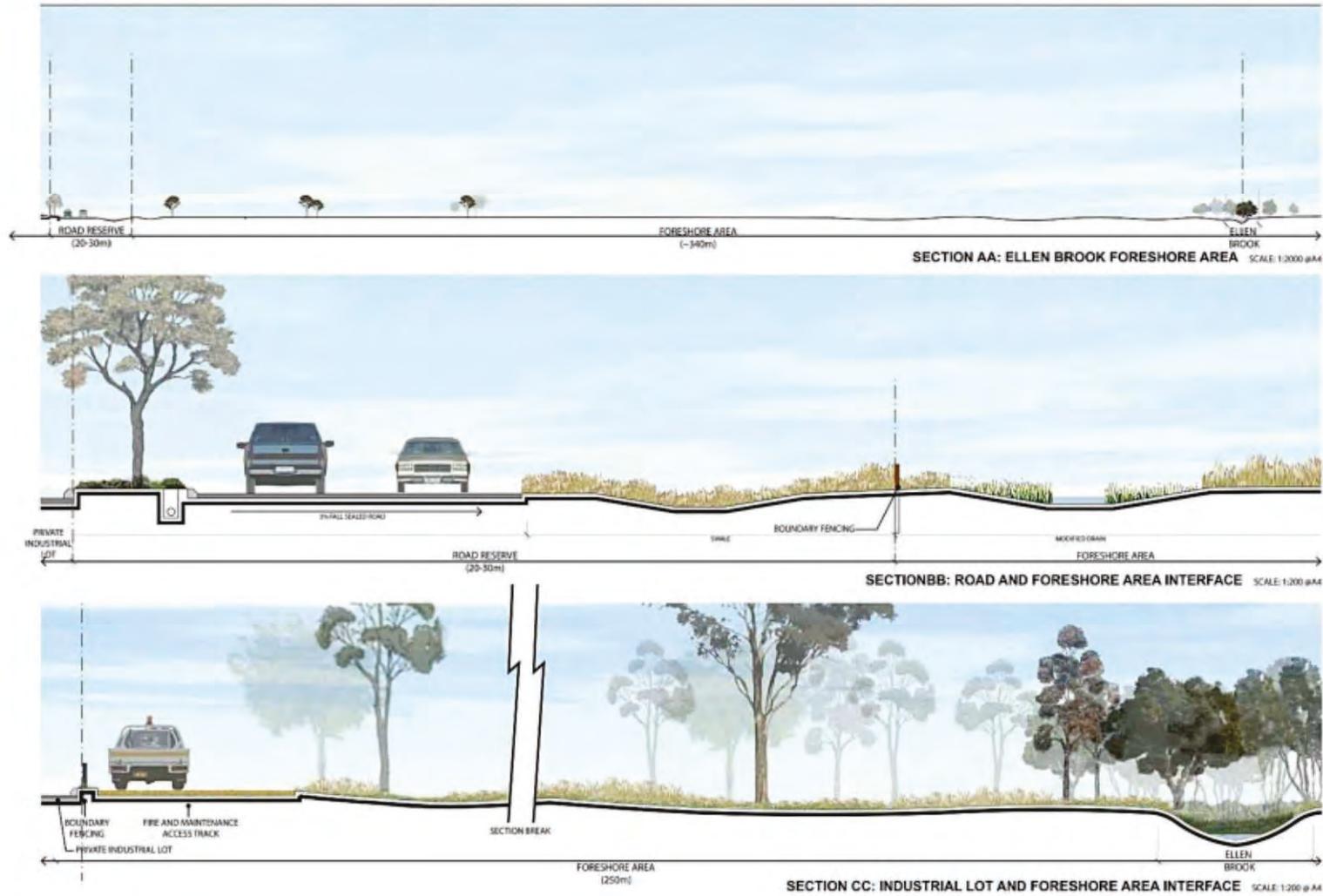
BRAs and FSAs

The northern drainage basin on the eastern boundary is 0.43 ha in area and will detain stormwater runoff from catchment one, which is the northern portion of the LSP2 area. The northern drainage basin consists of a 1,140m² BRA and a 3,163m² FSA.

The central drainage basin on the eastern boundary is 0.71 ha in area and will detain stormwater runoff from catchment two, which is the central portion of the LSP2 area. The central drainage basin consists of a 1,920m² BRA and a 5,144m² FSA.

The southern drainage basin on the eastern boundary is 1.06 ha in area and will detain stormwater runoff from catchment three, which is the southern portion of the LSP2 area. The southern drainage basin consists of a 0.26 ha BRA and a 0.8ha FSA.

Figure 14 demonstrates the post development stormwater management features.



3.6 Wetlands and Waterways Management

LSP2 recognises and respects the existing wetlands and waterways that are located immediately adjacent the LSP2 area. In accordance with the requirements of LPS17 Schedule 4, LSP2 includes a Wetland and Waterways Management Strategy (WWMS), refer Appendix 3. The WWMS has been prepared by Emerge Associates and provides the framework for future Wetland Management Plans to be prepared at subdivision stage.

The WWMS provides the overarching foreshore management requirements applicable to the Ellen Brook foreshore area and the future development interface to ensure that the impacts of future industrial development on the biological, physical and cultural features of the adjacent wetland and waterway are avoided. Although Ellen Brook is technically outside of the LSP2 area, given the significance of the waterway and the fact that industrial development is immediately adjacent to the foreshore area (and within the same lot), it is important that LSP2 puts in place a framework to manage impacts associated with industrial development.

The key considerations of the WWMS are:

- The management of the interface between the industrial areas and the conservation areas; and
- To identify a strategy for ongoing tenure, maintenance and rehabilitation of the conservation areas.

These two key strategies are outlined further below.

3.6.1 Foreshore Interface

LSP2 provides a clear separation of the foreshore area and the abutting industrial development and proposes to manage the foreshore interface in the same manner as LSP1, which has been adopted by the City of Swan and supported by the relevant state government referral agencies.

An appropriate interface or edge treatment is proposed to help delineate the different uses and function of the two areas. This is achieved through either a public road abutting the foreshore area or hard surface fire / maintenance tracks. Changes in levels and grades are also expected to assist in delineating between the foreshore and the industrial land. A cross-section of the indicative interface treatments is shown at Figure 15.

Access for maintenance will be available along the entire length of the foreshore area. This will be provided via a public road abutting the central eastern boundary. Where there is no public road, maintenance access is provided via a 6m wide hard track within the southern part of the foreshore area whilst a 4m wide standard maintenance access track to WAPC standards and specifications will be constructed in the northern section. The 6m wide track is provided in the south-east based on the opportunity for it to connect at either end to a public road which allows it to function as a fire access track which has a minimum width of 6m.

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Fencing will be used to restrict access and provide a clear delineation between the industrial development and the foreshore area. Open “agricultural-style” fencing will be used to provide passive surveillance and reduce rubbish dumping, uncontrolled access and unlawful use of the foreshore area. Fencing and access tracks will generally follow the boundary between the foreshore area and the proposed industrial development. The final fencing and access track alignment will be decided with the future land manager and may be varied in order to create a more manageable and practical fencing or access alignment.

Battering may be required between the road/development and foreshore area, in the same manner as LSP1. Possible batters will be minimised where required and it is expected that these batters will not extend into the foreshore area for more than 1m based upon a 1:3 slope. Any batters will be planted with native vegetation for stabilisation. In some areas, a roadside swale will be provided for roadside drainage which will be used to integrate the road levels into the natural surface level associated with the foreshore area.

At the construction stage of development, the foreshore and wetlands will be protected via the provision of a WWMP which is required by the WWMS. The WWMP will include plans detailing the areas of temporary fencing to protect the native vegetation from construction activities and information for construction contractors regarding best practices for weed and disease management and protection of the natural habitat.

3.6.2 Foreshore Tenure / Management

Based on discussions with officers of the DoP and consistent with the approach and principles employed as part of LSP1, it is understood that foreshore areas will eventually be transferred to the state government for ongoing management, becoming foreshore reserves. This process is likely to occur at subdivision stage and will most likely result in the transfer of portions of the Ellen Brook foreshore area to the WAPC. Once in state government ownership, these areas are also likely to be declared a Planning Control Area and ultimately reserved for “Parks and Recreation” given the regional significance of the Ellen Brook.

These areas can only be transferred through the formal subdivision process, after being excised out as a separate lot with a title (and management order). Given the consolidated nature of land tenure and the anticipation that the development front will occur from east to west. This transfer can be comprehensively undertaken during the initial stages of subdivision after the WWMS is endorsed as part of this structure plan.

The transfer of this area would result in a significant area of the Ellen Brook foreshore being transferred to the State Government for long term conservation management in a timely manner. This will also ensure that stock and other degrading factors are controlled over this portion of the Ellen Brook.

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3.7 Infrastructure Coordination, Servicing and Staging

In order to ensure the timely delivery of essential service infrastructure, a detailed servicing strategy has been prepared by Cossill and Webley Consulting Engineers.

The servicing strategy identifies the current status of the essential services and sets out the strategy and anticipated timing for extension of key infrastructure into the LSP2 area. A brief summary of the servicing strategy is outlined below. The full strategy is included as Appendix 8.

3.7.1 Water Supply

The LSP2 area is capable of accessing a reticulated water supply. The Water Corporation has scheduled the installation of a separate outlet system at the current Bullsbrook service tank for 2015, with new distribution mains heading downhill to serve the town.

The supply of water to LSP2 will require extension of this water main from the Bullsbrook Town to the LSP2 boundary via GNH and Stock Road. Timing for the extension of this water main is subject to further detailed investigation and agreement with the Water Corporation at subdivision design stage.

3.7.2 Waste Water

The key feature of the Water Corporation planning is the long-term requirement for a Type 350 Waste Water Pump Station (WWPS) located on the opposite side of Ellen Brook and within the LSP1 area. The site for the WWPS will be confirmed at subdivision stage, consistent with the Water Corporations advice on LSP1. The WWPS will connect to LSP2 via Stock Road.

The initial low-flows and uncertain take-up rates in industrial areas will be insufficient to justify the permanent conveyance in the near future and initial subdivision and development stages will need to use temporary conveyance solutions.

Initially, sewer flows from the LSP2 area are proposed to be pumped to the existing Bullsbrook Sewer Treatment Plant (BSTP) via Great Northern Highway. The pumping station would be located at the ultimate Type 350 sewer pump station.

As the BSTP is closed down, the pressure main heading towards the suburb of Ellenbrook is expected to run adjacent to the South Bullsbrook Industrial Precinct. At this stage it is proposed that the WWPS may inject directly into the pressure main.

The Water Corporation's wastewater planning for this area has been developed based on general land use, development and density/yield assumptions. The detailed layout and reticulation will need to be substantially refined and reviewed once the final development information within the catchment is available.

All internal gravity sewer networks will be served via DN225 sewer mains, and standard sewer reticulation head works will apply.

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3.7.3 Power

The power within the adjacent road network will be able to service the first stages of development within South Bullsbrook. The LSP2 area has access to power via a 22kV distribution feeder running along GNH, which is supplied from the Muchea Zone Substation. This feeder connects to an existing 22kVa three phase supply along Stock Road.

Analysis of the current loads within GNH indicate that there is spare capacity available on those feeders for the first stages of development (possibly 2MVA), dependant on the rate of development and what other users are on the system at the time of development.

As the available capacity in the 22kV high voltage feeders is exceeded, the installation of a second 22kVa feeder from the Muchea Zone Substation (19km) will be required. This will provide an additional 10Mva to the site.

Once the capacity of this feeder is reached, a second feeder may be required from the Henley Brook Zone Substation, which is also 18-19km away. Based on existing load forecasts there is sufficient spare capacity at these zone sub stations to supply the proposed development. Note the installation of these feeders can be staged during development of the site.

Whilst LSP2 does not have sufficient load to justify another zone sub station, the full development of LSP2 and the other structure plan areas to the east within South Bullsbrook will likely require the installation of a Zone Substation somewhere in the broader Bullsbrook / North Ellenbrook locality. The precise location, timing and land requirements for a zoned substation will be confirmed by Western Power as part of forward planning, once local demand is better understood.

3.7.4 Telecommunications

LSP2 recognises the importance of providing high speed communications technology in order to support industrial development. The LSP2 area will be constructed under the National Broadband Network system which will provide high speed broadband to all newly created lots and will have the potential to carry internet and telecommunications services.

3.7.5 Gas

The landowners have consulted with Westnet Infrastructure Group and WA Gas Networks concerning the provision of liquefied natural gas to the site. WestNet Infrastructure Group has indicated that gas is in close proximity via the Parmelia and Dampier pipelines and can be made available to LSP2 as required. At this stage however, there is no proposal to install a reticulated gas supply within the estate.

This Plan has been prepared for illustrative purposes only and represents an indicative land use concept of what may occur, once and if appropriate approvals are in place. The proposals depicted on this Plan generally have no formal approval status and can be varied by CLE or the landowner without notice. This Plan remains the property of CLE.

LEGEND

- LSP2 Boundary
- Stage 1 Boundary



3.7.6 Siteworks and Earthworks

The existing ground conditions consist of clayey sands across the site. The majority of the site has a Site Classification 'M to H1', which is suitable for development.

The site is relatively flat and grades from the west to east. Earthworks levels will match the existing levels of the LSP2 area as close as is reasonably practical whilst maintaining a level difference of 500mm between the finished floor level and the conveyance flood levels and 1.2m above maximum groundwater level. The flood level varies across LSP2 and is described in more detail in the LWMS at Appendix 2.

It is intended to apply a base approach to lot levels, providing grade across the lots to minimise fill requirements on site. This will provide the opportunity for building forms and detailed lot design to manage specific site works to suit individual requirements.

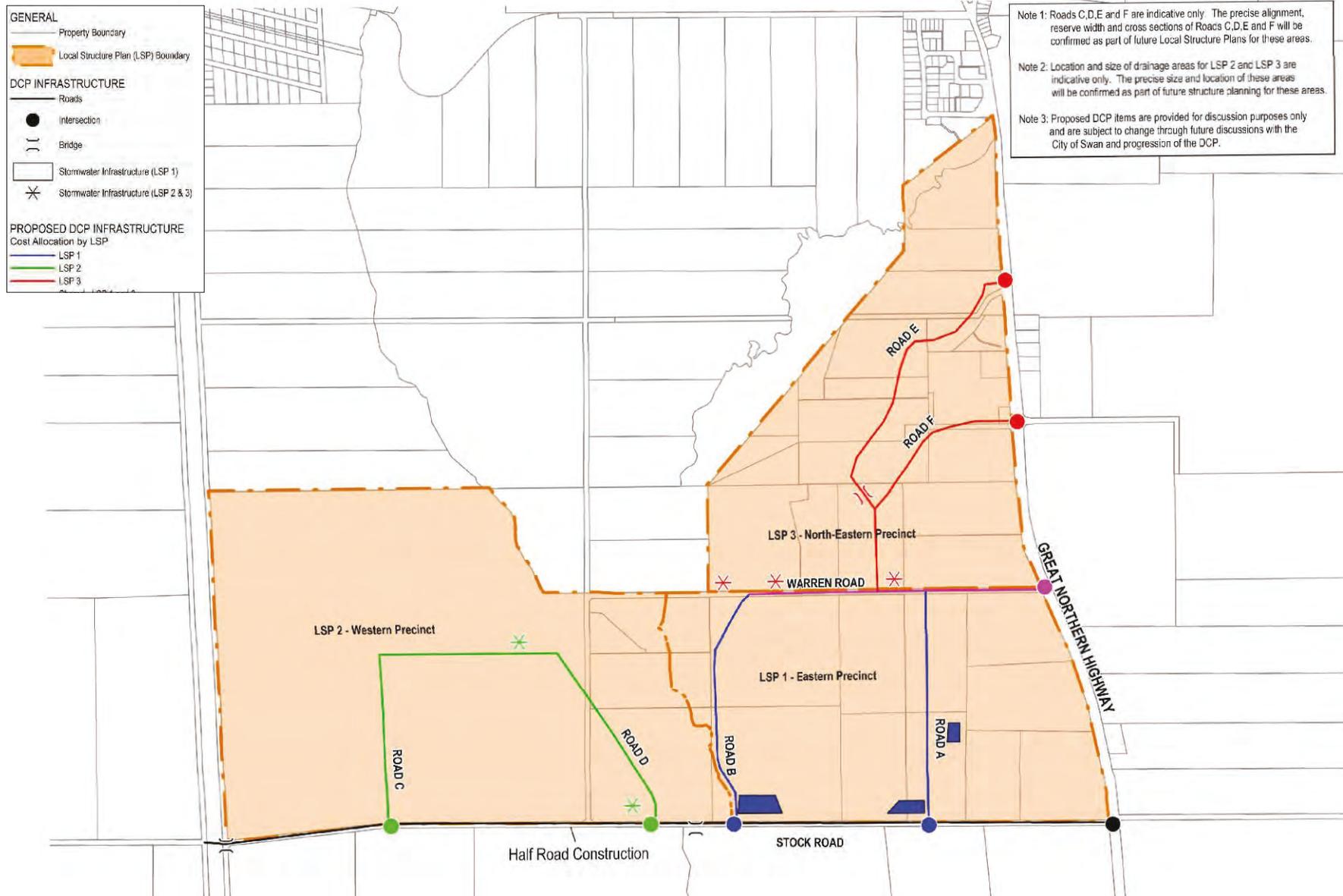
A bulk earthworks strategy for the development is included as part of the servicing strategy and depicts the relationship between the existing topography and the potential earthworks design. This plan indicates the conveyance flood locations and proximity to the proposed on-site stormwater detention and treatment as per the LWMS.

3.7.7 Staging of Construction

It is anticipated that LSP2 will be developed in stages over an extended period of time, the duration of which will be dependent on the demand for industrial land in South Bullsbrook and the extension of the associated services.

Initially, development is anticipated to be focused along Stock Road, as per Figure 16 and is expected to follow a development front from the east consistent with the access arrangements along Stock Road.

The provision of engineering infrastructure will need to be staged to suit the development demand and a detailed program for this will need to be prepared as part of ongoing planning and design of the infrastructure.



Source: Integran



INDICATIVE DEVELOPMENT CONTRIBUTION INFRASTRUCTURE ITEMS

3.8 Development Contribution Arrangements

LSP2 is located within a Development Contribution Area (DCA) pursuant to LPS17. Schedule 13 of LPS17 requires the preparation of a Development Contribution Plan (DCP) to provide for equitable sharing of infrastructure costs within the DCA, prior to subdivision and development.

At the request of the City, Sirona Gateway engaged Integran to prepare a DCP for the entire DCA area. The City is currently progressing a scheme amendment (Amendment No. 108) to include development contribution provisions within Schedule 13 of LPS17. Whilst LSP2 will inform the nature of the infrastructure items to be included in the DCP, the two processes (structure planning and DCPs) remain separate statutory processes under LPS17.

The DCP is limited to funding 'hard' infrastructure, such as roads, intersections and drainage. Infrastructure items are separated into two categories - 'sub-regional' and 'local' infrastructure. Costs for sub-regional infrastructure items are apportioned across the entire DCA, while local infrastructure items are separated into three distinct areas, with LSP2 being one of the three. Table 3 overleaf and Figure 17 show the individual infrastructure items and categorise them as either sub-regional or local infrastructure. Table 3 is preliminary and the content of the DCP will be refined through the Amendment and DCP process, in accordance with LPS17 and State Planning Policy 3.6 – Development Contributions for Infrastructure.

Integran and the proponents will continue to work closely with the City to adopt scheme Amendment No.108 that will introduce development contribution requirements into LPS17.

Costs for the infrastructure identified in Table 3 adjacent will be calculated and apportioned in accordance with the principles and requirements outlined in Part 5A of LPS17 and State Planning Policy 3.6 – Development Contributions for Infrastructure.

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Table 3: Development Contribution Plan – Indicative Infrastructure Items

Infrastructure Item	Sub-regional Infrastructure (whole precinct)	Local Infrastructure (LSP2 only)	Local Infrastructure (remaining precinct – LSP1 & LSP3)
Roads*	<ul style="list-style-type: none"> GNH / Stock Road Intersection Stock Road (including intersections and Ellen Brook crossing) Stock Road overpass 	<ul style="list-style-type: none"> Connector Road C and key intersections Connector Road D and key intersections 	<ul style="list-style-type: none"> Warren Road Connector Road A and key intersections Connector Road B and key intersections Connector Road E and key intersections Connector Road F and key intersections
Drainage**		<ul style="list-style-type: none"> Two major drainage detention basins 	<ul style="list-style-type: none"> Other major drainage detention basins Arterial drainage swale through LSP1 Culverts for LSP1

* Includes land acquisition (where applicable), full earthworks, and construction of single carriageway.

** Includes land acquisition, earthworks construction and landscaping.