cdp

Town Planning & Urban Design

South Forrestdale Industrial Area Local Structure Plan (Stage 1)

Lots 6, 8 and 200 Rowley Road, Forrestdale

APRIL 2021

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Lots 6, 8 and 200 Rowley Road, Forrestdale

APRIL 2021

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Transcore
Bushfire Prone Planning
Plan E

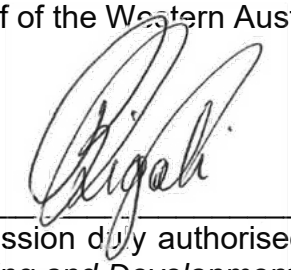
DOCUMENT STATUS

Version	Comment	Prepared	Reviewed	Issued
1	Lodgement (RPS)	-	-	21/11/2020
2	WAPC (Schedule of Modifications)	MT	JH	07/04/2021
2a	WAPC Minor Edits (Re-issued)			04/05/2021

This structure plan is prepared under the provisions of the City of Armadale Local Planning Scheme No. 4.

IT IS CERTIFIED THAT THIS STRUCTURE PLAN WAS APPROVED BY RESOLUTION OF THE WESTERN AUSTRALIAN PLANNING COMMISSION ON: **14 MAY 2021**

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

17 MAY 2021 Date

14 MAY 2031 Date of Expiry

Table of Modifications.

Amendment No.	Summary of Amendment	Amendment Type	Date Endorsed by WAPC

Executive Summary.

This Structure Plan applies to Lots 6, 8, 200 Rowley Road Forrestdale and represents 'Stage 1' of the South Forrestdale Industrial Area covering a total area of 103 hectares. The Structure Plan has been prepared to refine and implement the subdivision and development requirements associated with the City of Armadale Schedule 8 Development Area No.46 provisions.

The proposed 'General Industrial' development comprising substantial lot sizes is an ideal and timely addition to the Metropolitan South East region. The Structure Plan will aid in providing an industrial centre which is well connected to intermodal freight facilities at the Welshpool-Kewdale industrial centre and are ideally placed to take advantage of the potential synergies with major export oriented industrial centres such as Kwinana and Latitude 32, located in the Southwest Metropolitan sub-region. To that end, the Structure Plan provides for the development of general Industry logistic and storage warehouses as a solution to cater for the growing e-commerce sector.

Item	Data	LSP Reference
Total Structure Plan Area	103.69 hectares	Part 2, Section 1.2.2
Area of each land use proposed: • Industrial	79.68 hectares	Part 2, Section 3.1
Estimated Number and % of Public Open Space: • Open Space, Drainage & Vegetation Retention	13.26 hectares	Part 2, Section 3.5
Road Widening: • Rowley Road	13.97 hectares	Part 2, Section 3.7

This Structure Plan comprises:

1 **Part One - Implementation**
This section contains the Structure Plan Map and outlines the purpose and intent of the Structure Plan.

2 **Part Two - Explanatory Section**
This section contains the explanatory component of the Structure Plan, including background information, and an explanation of the structure plan, including design methodology, relevance and compliance with the applicable planning frameworks at the State and Local Government level. This section also includes plans and maps in support of the Structure Plan.

3 **Part Three - Appendices**

This section contains all of the technical reports and studies in support of the Structure Plan, with the level of detail contained within these reports and studies being commensurate with the context and scale of the proposed Structure Plan.

Contents.

List of Figures.

Part One - Implementation

SOUTH FORRESTDALE INDUSTRIAL AREA
LOCAL STRUCTURE PLAN (STAGE 1)

Part One - Implementation

1. Structure Plan Area

This Structure Plan is applicable to Lots 6, 8, and 200 Rowley Road, Forrestdale (the subject site) and comprises 103 hectares (ha) which is bordered by rural lots to the north, Tonkin Highway to the east, Rowley Road and existing Rural Residential allotments to the south and rural allotments to the west. The subject site represents 'Stage 1' of the South Forrestdale Industrial Area.

2. Operation

This Local Structure Plan comes into effect on the day on which it is approved by the Western Australia Planning Commission (the Commission) and is valid for a period of 10 years from that date, or another period as determined by the Commission in accordance with Schedule 2 of the *Planning and Development (Local Planning Scheme) Regulations 2015*.

3. Subdivision & Development Requirements

The South Forrestdale Industrial Area Local Structure Plan (Stage 1) ['Structure Plan'] contained within Part One has been presented to provide an appropriate level of information relevant to the site for the level of planning that has been undertaken. It shall provide a guide to future subdivision and zoning within the Structure Plan area.

The following requirements will be applicable to the subdivision of the subject land:

3.1 Lot Design & Layout

a) Subdivision shall generally be in accordance with the Structure Plan.

b) The minimum lot size shall be 2,000m^2.

3.2 Environment & Landscape

a) The subdivider shall prepare and submit an Urban Water Management Plan (UWMP) for any subdivision application applicable to the subject land. A condition of subdivision will require the implementation of the approved UWMP to the satisfaction of the Local Government and the Department of Water and Environmental Regulation.

b) The subdivider is required prepare a Wetland Management Plan (WMP) for the entire Resource Enhancement Wetland traversing the western boundary of the Structure Plan area. A condition of subdivision approval will require the implementation of the approved WMP to the satisfaction of the Local Government and the Department of Water and Environmental Regulation.

3.3 Bushfire Management

a) As a condition of subdivision, the subdivider shall place a section 165 (*Planning and Development Act 2005*) notification on the Certificate(s) of Title advising landowners that the lots are located within a bushfire prone area and may be subject to a bushfire management plan.

3.4 Servicing

a) As a condition of subdivision, the subdivider will be required to connect each proposed lot to reticulated water, reticulated waste water and underground power.

3.5 Rowley Road Upgrade

a) The intersection treatments with Rowley Road are to be resolved prior to the subdivision of the subject area, to the satisfaction of Main Roads WA.

b) The land required for widening of Rowley Road will be ceded free of cost as a condition of subdivision.

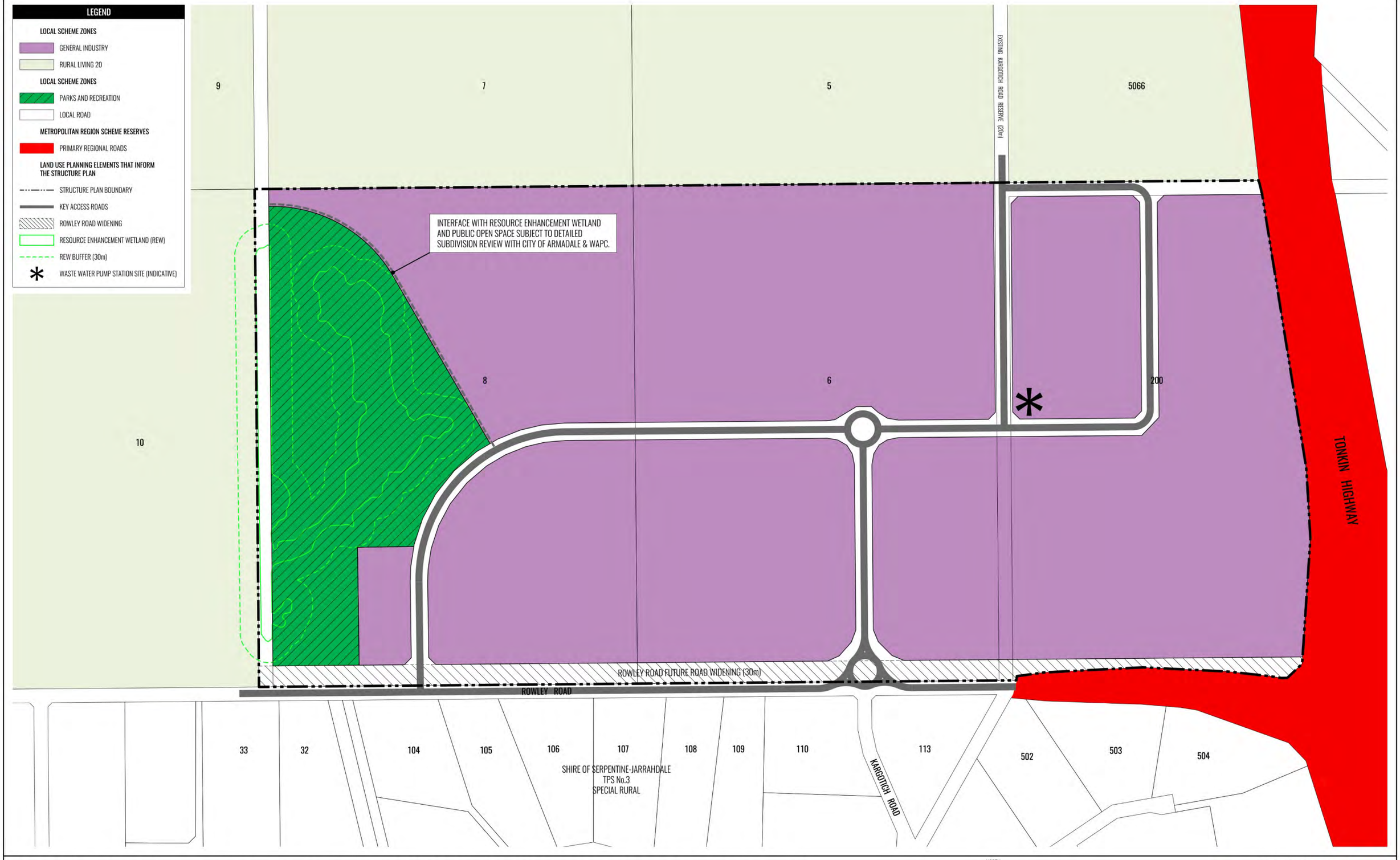
4. Other Requirements

4.1 Western Power Easement

a) The western portion of the site is encumbered by an easement to the State Energy Commission of Western Australia (Western Power). This easement traverses the Public Open Space containing the Resource Enhancement Wetland (REW). Any proposal for the use and/or development of land encumbered by the easement shall be referred to Western Power for comment and shall:

   i. Demonstrate compliance with the conditions of the easement as specified by Western Power; and

   ii. Incorporate appropriate controls of built form and other land practices to ensure the use and development will not unreasonably encroach upon the easement to the satisfaction of the responsible authority on the advice of Western Power.



PLAN 1 - SOUTH FORRESTDALE INDUSTRIAL AREA LOCAL STRUCTURE PLAN (Stage 1)

Lots 6, 8 & 200 Rowley Road, FORRESTDALE

A Rowley Developments Project

NORTH

Scale: 1:5000 @ A3

0 50 100 150m

PLAN: RODSF-2-001 REVISION: B
DATE: 11/03/2021 DRAWN: JP
PROJECTION: PCG 94 PLANNER: MT
DATUM: AHD CHECK: JH

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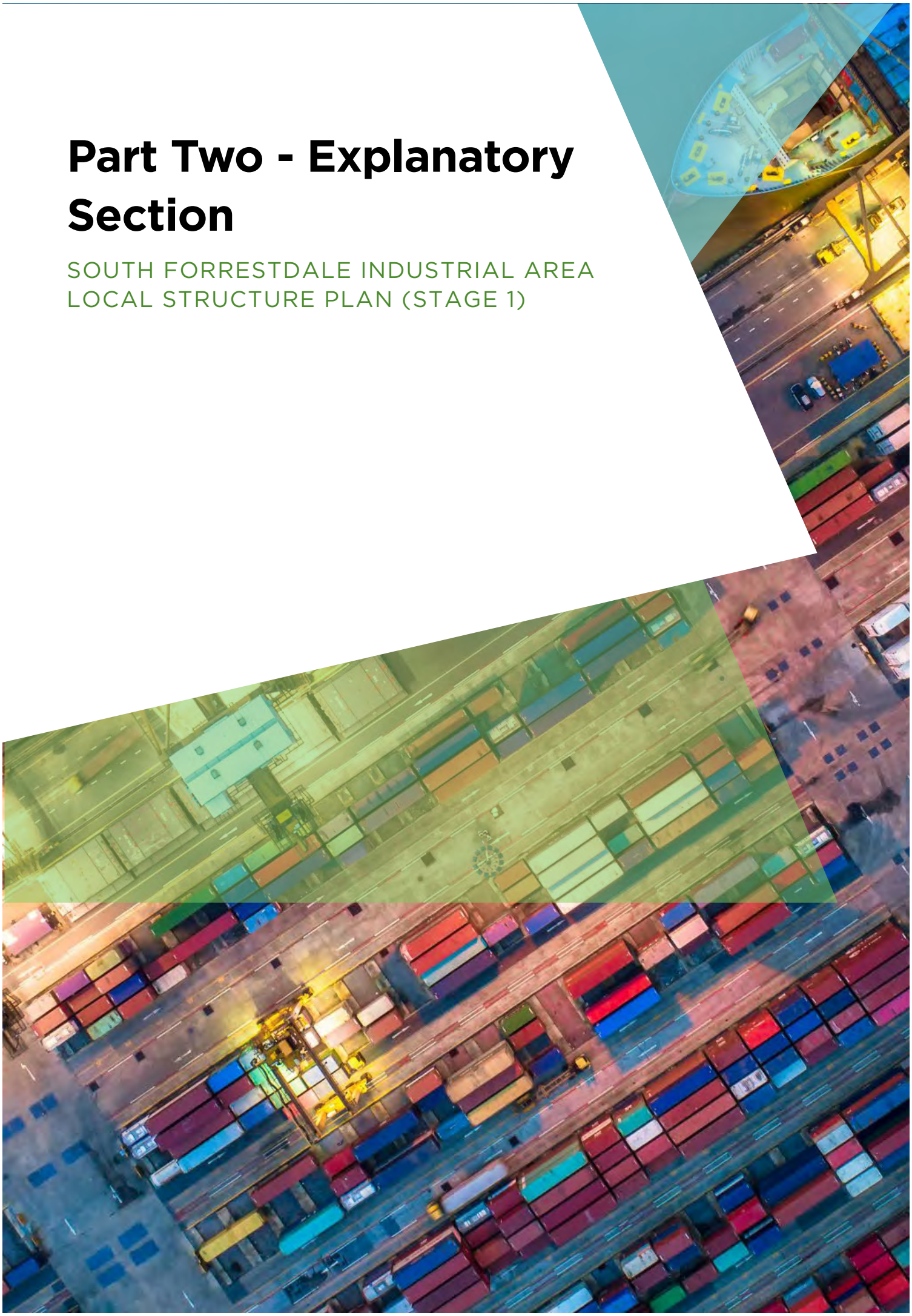
Part Two - Explanatory Section

SOUTH FORRESTDALE INDUSTRIAL AREA LOCAL STRUCTURE PLAN (STAGE 1)



Part Two - Explanatory Section

1. Planning Background

1.1 Introduction & Purpose

This Local Structure Plan (LSP) and report have been prepared on behalf of the landowner, in accordance with the WAPC's Structure Plan Preparation Guidelines and the City of Armadale's Town Planning Scheme No.4 (LPS4) provisions under Schedule 8 Development Area No.46.

This LSP has been prepared by CDP with technical inputs from a multidisciplinary team comprising:

- RPS - Environmental Assessment Report (EAR)
- RPS - Local Water Management Strategy (LWMS)
- Bushfire Prone Planning - Bushfire Management Plan (BMP)
- JDSI Consulting Engineers - Engineering Servicing Report
- Transcore - Traffic Impact Assessment
- Plan E - Landscape Concept Masterplan.

1.2 Land Description

1.2.1 Location

The subject land is located within the City of Armadale and abuts the municipal boundary of the Shire of Serpentine-Jarrahdale to the south. The site is located south-west of the Armadale city centre, north-west of the Byford townsite, approximately 25 kilometres southeast of the Perth CBD and 22 kilometres east of the Fremantle Town Centre. The land has convenient access to the regional road network via Tonkin Highway and Rowley Road (refer **Figure 1** – Location).

The subject site is generally bound by Tonkin Highway and Rowley Road.

1.2.2 Area & Land Use

The LSP encompasses a total land area of 103.69 hectares (refer **Figure 2** – Aerial). The subject site represents Stage 1 of the South Forrestdale Industrial Area.

The subject land has previously been cleared and is currently stocked with cattle and horses. The subject land has been grazed for over 40 years. This prolonged period of grazing has resulted in the understory of the entire property becoming completely degraded. In addition, artificial drainage channels have previously been formed, which appears to have altered the hydrology of the subject land.

1.2.3 Surrounding Land Uses

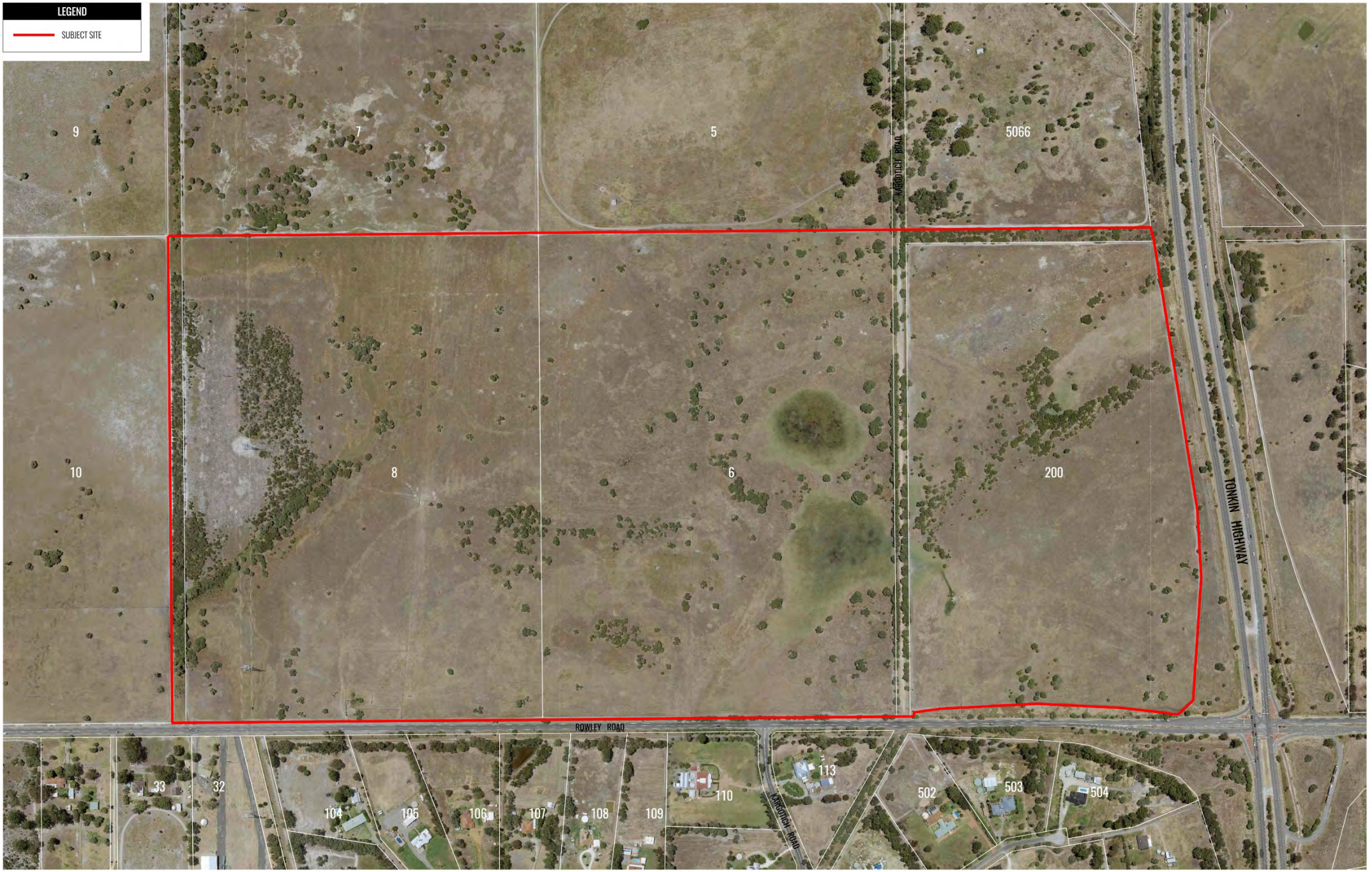
Bounded by Tonkin Highway to the east and Rowley Road to the south, the site is surrounded by rural land with rural living properties south of Rowley Road (refer **Figure 1** – Location).

Adjacent landholdings to the west and north are zoned "Industrial" in the MRS (Amendment 1340/57 gazetted October 2019 erfers) and "Rural Living" under the CoA TPS No. 4. These landholdings will ultimately form 'Stage 2' of the South Forrestdale Industrial Area and developed under guidance of a separate Local Structure Plan.

Areas east of Tonkin Highway are included under the Wungong Urban Water Redevelopment Scheme, which is proposed for residential and urban development, and areas south of Rowley Road are zoned as 'Special Rural' in the Shire of Serpentine-Jarrahdale's TPS No. 2.

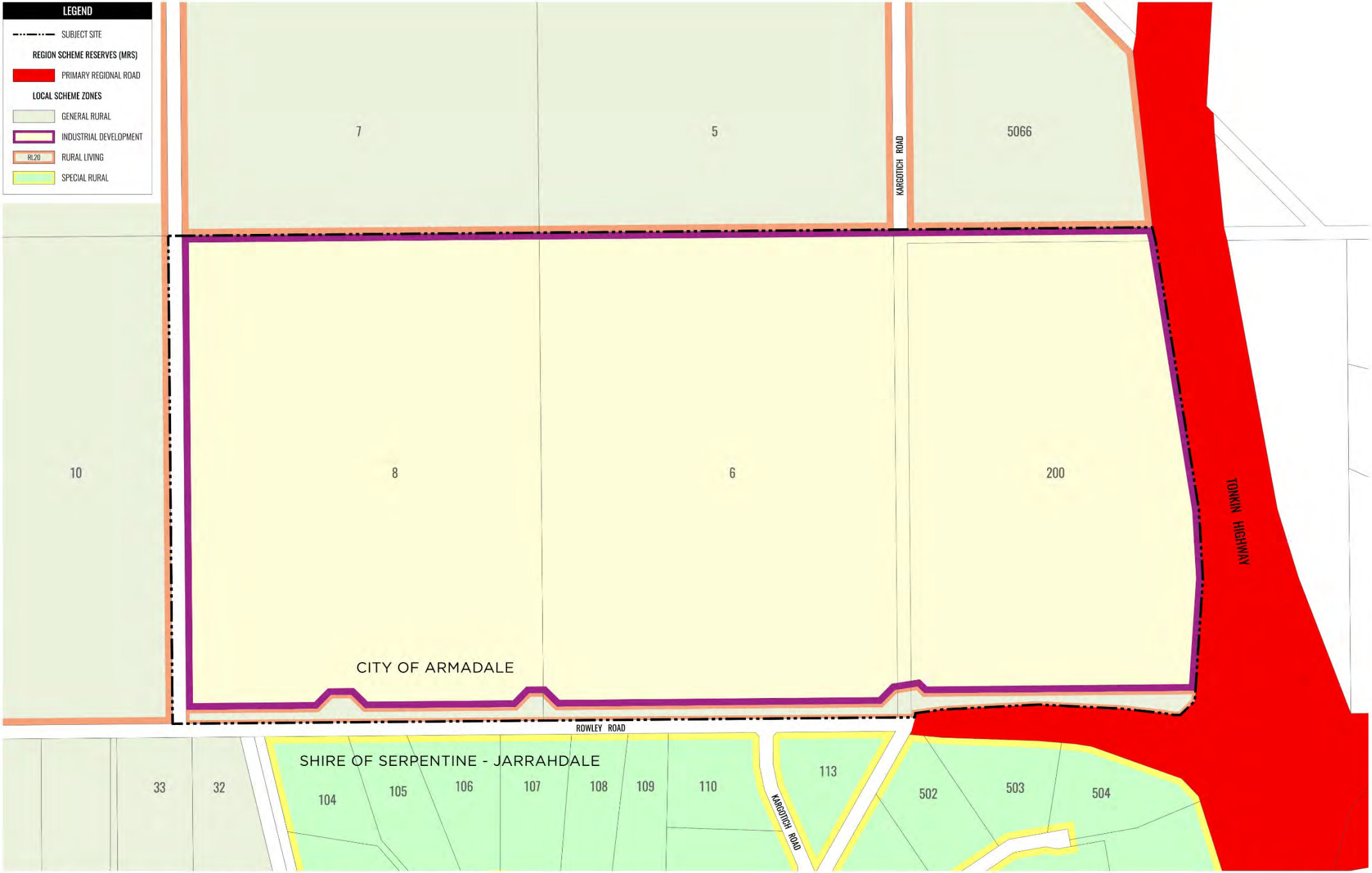
LOCATION PLAN

Figure 1



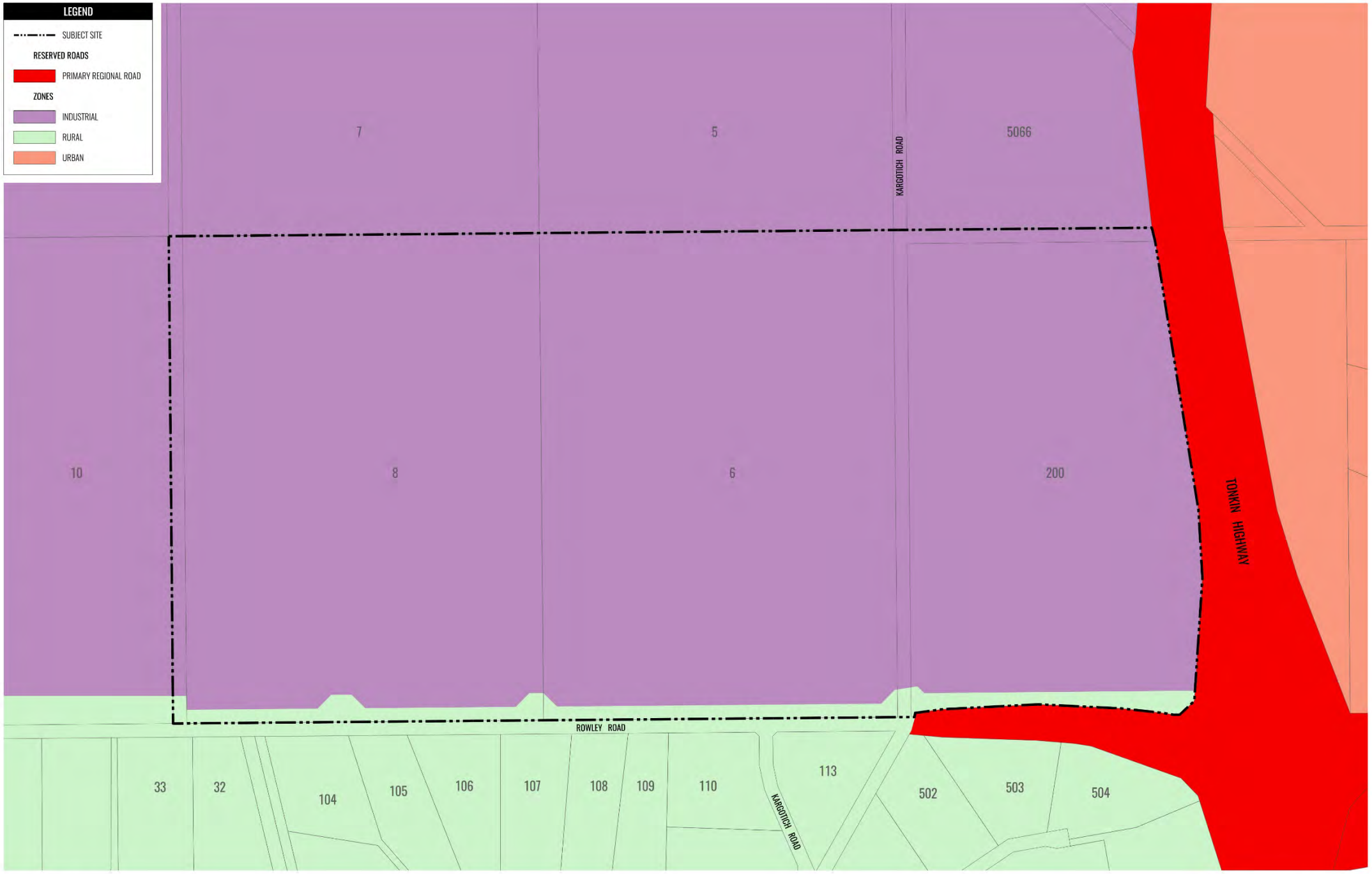
AERIAL PHOTO

Figure 2



CITY OF ARMADALE TOWN PLANNING SCHEME No.4

Figure 3



MRS ZONING

Figure 4

Rowley Road is identified as a future Primary Freight Route in *State Planning Policy 5.4 Road and Rail Transport Noise*. MRS Amendment 1240/41 applicable to the Stage 1 Industrial development required a portion of the site parallel to Rowley Road to retain its 'Rural' zoning to accommodate the necessary land requirements for future widening of Rowley Road.

The site is near the Forrestdale Lake Nature Reserve (A Class Reserve) and its associated Bush Forever Site No. 345, located approximately 500 metres to the north-west. Forrestdale Lake is listed as a RAMSAR wetland and is of international importance.

Within a 5 km radius of the site, the following industrial land use sites can be found (refer **Figure 5** – Opportunity & Constraints):

- Armadale landfill and recycling centre with a 1 km buffer;
- four poultry farms with a 500 m buffer;
- a sewage treatment plant with a 500 m buffer; and
- a natural gas pipeline with a 300 m buffer.

1.2.4 Legal Description & Ownership

The legal description and ownership details as stated on the current Certificate of Title, are as follows (refer **Appendix A** – Certificate of Title):

- Lot 6 on Deposited Plan 226007, Volume 709, Folio 150
- Lot 8 on Deposited Plan 226007, Volume 709, Folio 150
- Lot 200 on Deposited Plan 54228, Volume 2684, Folio 509

1.3 Planning Framework

1.3.1 Zoning & Reservations

Metropolitan Region Scheme

The subject land is zoned 'Industrial' under the MRS and abuts a 'Primary Regional Road' reserve along its eastern and portion southern-eastern boundary, and local road Rowley Road to the south (refer **Figure 4** – MRS Zoning).

The site was formally zoned 'Rural' under the MRS and 'Rural Living' under the City of Armadale TPS No. 4. Most of the site was subsequently rezoned to 'Industrial' under the MRS in October 2012 (MRS Amendment 1240/41, South Forrestdale Industrial Area), with a minor portion of the site adjacent to Rowley Road remaining as 'Rural' (refer **Figure 4** – MRS Zoning). This Amendment was approved by the Minister for Planning and was published in the Government Gazette on 10 September 2014.

The MRS Amendment report states that:

> *"The proposed industrial zoning is intended to allow for primarily general / service industrial development of the land as well as some commercial / showroom development as determined through a local scheme amendment, detailed structure planning and subdivision approval."*

City of Armadale Local Planning Scheme No. 4

Amendment 73 to the City of Armadale TPS No. 4 rezoned the majority of site to "Industrial Development"; gazetted on 16 December 2016 (refer **Figure 3** – TPS 4 Zoning). To accord with the MRS, a minor portion of the site adjacent to Rowley Road remained as "Rural Living".

The zoning designates land for future industrial development and provides a basis for future detailed planning in

accordance with Schedule 8 Development (Structure Planning) Areas of the Scheme.

The provisions of this Structure Plan and accompanying specialist reports conforms to the provisions established under Schedule 8 –No.46 'South Forrestdale Industrial Centre', namely:

- Subdivision and development should be generally consistent with a Structure Plan for Development Area 46 – Rowley Road Industrial Area to be prepared pursuant to Part 4 of the Deemed Provisions (set out in the Planning and Development (Local Planning Schemes) Regulations 2015 Schedule 2).
- A transport assessment shall be prepared in accordance with applicable WAPC Guidelines.
- The Structure Plan shall make adequate provision for the rehabilitation and protection of adjoining Conservation Category Wetlands, Bush Forever land and Regional Parks and the Resource Enhancement Wetland on Lot 8 Rowley Road to the satisfaction of the EPA and the local government.
- The Structure Plan shall:
  - include a servicing report detailing load demand and indicative network augmentation / reinforcement requirements for review and ratification by Western Power;
  - delineate the Western Power registered easement and
    - transmission infrastructure
    - include detailed designs and information for review, assessment and written consent of Western Power to any proposals below, if applicable, within the registered easement, in accordance with standard easement conditions:
      - Landscaping plans (including mature heights and location of species);
      - Ground level changes;
      - Permanent structures;
      - Drainage plans;
      - Conservation controls.

1.3.2 Planning Strategies

Perth & Peel@3.5 Million & South Metropolitan Peel Sub-Regional Planning Framework

The Perth and Peel@3.5 Million document provides strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for the Perth and Peel regions. It makes the case for change from a business as-usual perspective to a more considered, connected and consolidated urban form. It links the four frameworks for each sub-region (North-West, North-East, Central and South Metropolitan Peel) and encourages the consideration of new urban growth opportunities.

The South Metropolitan Peel Sub-Regional Planning Framework forms part of the Perth and Peel@3.5 Million strategic suite of planning documents. Future areas for urban and industrial development have been determined in conjunction with the State Government's Strategic Assessment of the Perth and Peel Regions, in order to protect areas which have significant environmental value.

The Framework identifies the subject site as a non-strategic industrial proposal and the LSP therefore contributes to the implementation of the Frameworks'

recommendations. The Frameworks identifies that the two Forrestdale industrial area precincts (Forrestdale and South Forrestdale) hold potential connections to freight network connections linking with the Perth Airport, Outer Harbour and Kewdale intermodal transfer facilities.

The Frameworks states the network of industrial sites, including the subject site, considers optimal proximity to workforce and service catchments, compatibility with adjacent land uses, accessibility to the freight network and, where possible, proximity to intermodal transfer facilities. The location of the subject site on key east-west transport routes will provide a local employment option for people within the south-eastern sector.

Land to north and west of the subject site which includes Stage 2 is identified as 'Industrial Expansion' in the Framework.

Economic and Employment Lands Strategy

The Economic and Employment Lands Strategy (EELS) was developed as a response to a predicted shortfall in industrial land supply. The strategy is guided by the aforementioned themes outlined in Perth and Peel@3.5 Million and focuses on the needs of general and light industry in terms of areas, type, and location of land in the context of a review of current supply and an evaluation of suitable new locations. From this, EELS forms the strategy that guides the supply and development of industrial land to meet the requirements of a growing population for the next 20 years and beyond.

The South Forrestdale industrial precinct has been identified as a possible future medium term industrial site with a 4 to 10 years planning timeframe. The precinct which includes both the subject site and Stage 2 covers a total land area of approximately 354 hectares, extending northwards to the edge of Bush Forever Area 345 and westward to adjoin existing special rural development.

The LSP seeks to undertake the first stage of development, covering 103 hectares in the south-east corner of the South Forrestdale precinct, and is consistent with the intent of the Strategy. The uses proposed within the LSP are in accordance with the EELS, contributing to employment for the Wungong Project residential population to the east of Tonkin Highway.

1.3.3 Planning Policies

WAPC State Planning Policy 4.1 Sate Industrial Buffer Policy

State Planning Policy 4.1 (SPP4.1) provides protection to industrial areas through a consistent approach to land-use buffer definition, whilst considering the safety and amenity of surrounding uses and the interests of existing landowners, residents and businesses.

Section 3.1 of SPP4.1 states that the impact of light, service industrial and technology parks uses can generally be contained on site through landscaping and appropriate setbacks. Section 3.2 states that offsite buffers may be required for more intensive uses, including resource processing and general industry, subject to environmental and planning criteria.

Whilst the uses proposed within the structure plan are 'General Industrial' uses it is not considered that any land-use buffers are required for development outside of the structure plan area as the existing Primary Regional Road of Tonkin Highway and future 70 metre Primary Regional Road Reserve of Rowley Road will provide suitable separation.

In addition, the proposed future land use nature is reflective of a technology and logistic park in lieu of noxious or

hazardous industry and the use of setbacks in this instance is most effective, particularly when combined with landscaping, for reducing the land use impacts to an acceptable level.

WAPC Development Control Policy 4.1 Industrial Subdivision

Development Control Policy 4.1 (DCP4.1) provides guidance in the determination of industrial subdivision applications in relation to matters of the design and shape of industrial lots, road layout, servicing, and open space requirements.

The policy measures of DCP4.1 have been considered, and future subdivisions will be assessed against DCP4.1.

City of Armadale Local Planning Policy 4.2: Advertisements (Signage)

The City's Local Planning Policy 4.2 (PLN4.2) establishes a framework for regulating the design and placement of signage in the City of Armadale.

Any signage proposed for 'General Industry' development within the LSP area shall be subject to the standards prescribed in PLN4.2.

2. Site Conditions & Constraints

RPS prepared a comprehensive Environmental Assessment Report (EAR) to support the implementation of the LSP (refer **Appendix D** – Environmental Assessment report). The purpose of this report is to provide:

1. Review of the existing environment and address key environmental factors that may be impacted as a result of future development;
2. Outline the management measures that will be adopted to mitigate any potentially significant environmental impacts from future development; and
3. Facilitate the approval of the LSP with the City of Armadale and the Western Australian Planning Commission (WAPC) by providing a land use framework to coordinate residential subdivision and development.

In addition, Bushfire Prone Planning have prepared a Bushfire Management Plan to accompany the LSP (refer **Appendix F** – Bushfire Management Plan).

An opportunity and constraints plan (refer **Figure 5** – Opportunities and Constraints) has also been prepared to illustrate the main issues discussed in this section.

2.1 Biodiversity & Natural Area Assets

2.1.1 Remnant Native Vegetation

The site is mostly devoid of native vegetation due to historical cattle grazing. The minor areas of remnant native shrubs and sedges within the site are concentrated in and around the winter-wet depressions, which have likely persisted despite grazing pressures due to being unpalatable. The RPS field investigation categorised the vegetation into two broad vegetation types.

- V1 - Scattered *Melaleuca rhaphiophylla* and *M. preissiana* remnant trees over a weedy understorey of exotic pasture grasses and scattered dense clumps

of *Zantedeschia aethopica* (Arum Lily). This unit covered the majority of the site.

- V2 - *Melaleuca rhaphiophylla* and *M. preissiana* Woodland over *Kunzea glabrescens* and *Astartea affinis* Shrubland to Closed Shrubland, over *Dielsia stenostachya* and mixed exotic pasture grasses. This unit is associated with the RE wetland in the west of the site.

A third broad vegetation type was represented immediately outside the site within the road reserve portion of the mapped REW (Figure 1):

- V3 - Melaleuca rhaphiophylla closed Woodland over Astartea affinis and Pteridium esculentum shrubland over Zantedeschia aethopica, Juncus pallidus, Lepidosperma sp. and Dielsia stenostachya Herbland/Sedgeland.

Due to the degraded nature of the site RPS considers that the remnant vegetation within the V1 vegetation unit described above is no longer representative of its original floristic community type due to the complete absence of a native mid or understorey.

The implementation of the LSP will result in the following outcomes:

- A minimum of 4.57 ha of remnant vegetation will be retained within the REW (UFI 15796) and its 30m proposed buffer; and
- The LSP Stage 1 design will require the clearing of approximately 10.3 ha of the remnant vegetation in Lots 6, 8 and 200 outside of the proposed buffer (subject to detailed landscape and engineering design).

The potential impact on the cleared native vegetation is due to accommodating development requirements such as entry roads, local roads, industrial development and stormwater detention/ open space.

The engineering works will require fill to achieve separation of the finished floor levels of the proposed industrial development from the groundwater table and to improve the geotechnical classification of the site. Approximately 1.5 m clearance is required to the Average Annual Maximum Groundwater Level (AAMGL), as such it is unlikely to retain native vegetation outside of the REW proposed buffer.

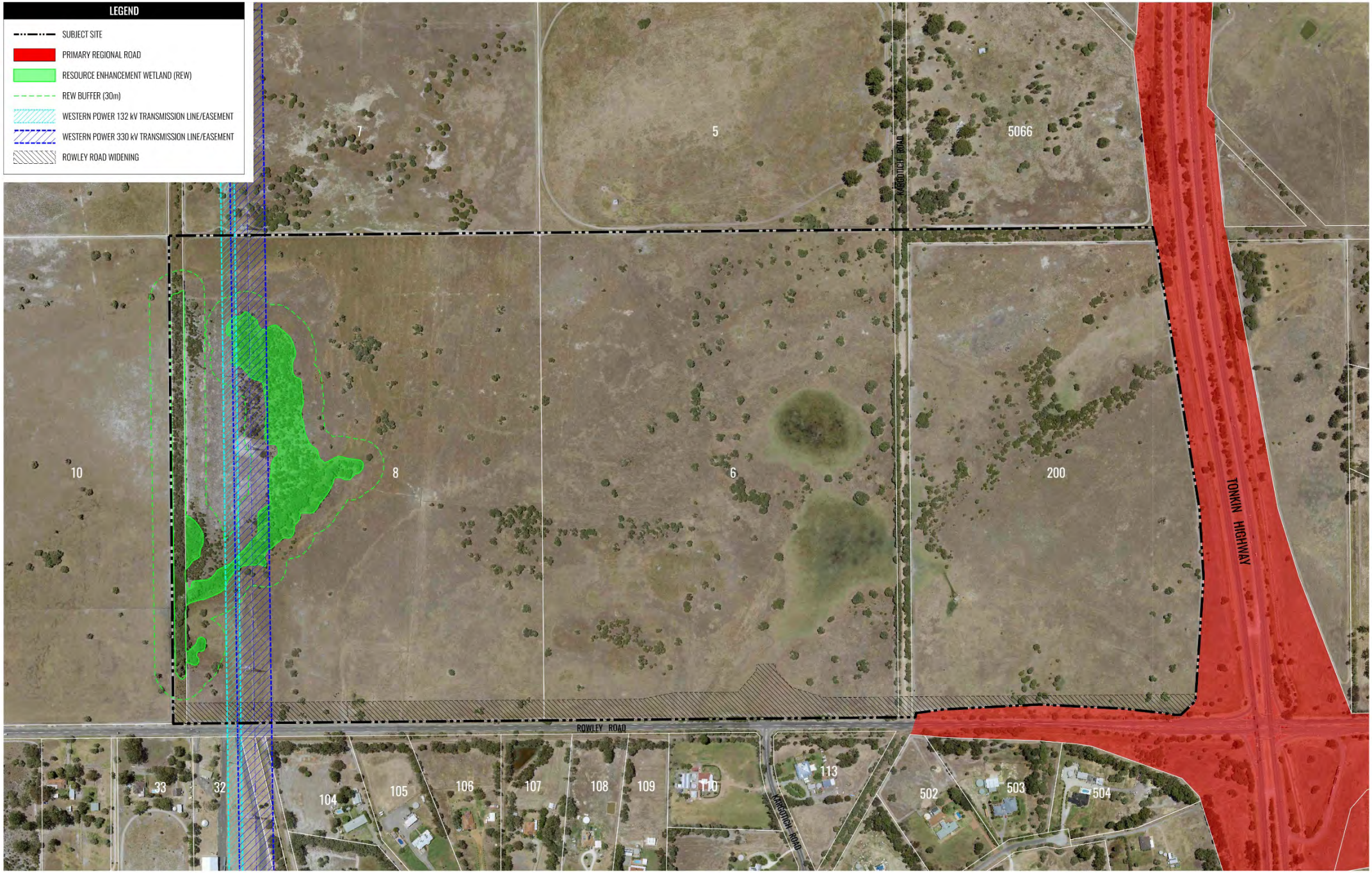
The loss from clearing the native vegetation outside of the REW's proposed buffer is minimal, as it is no longer representative of its original FCT and it is considered to be in a 'Completely Degraded' condition.

The best quality remnant native vegetation, identified to be in 'Degraded' to 'Good' condition, will be retained within the REW and proposed buffer.

This report found that the environmental attributes and values of the site have been accommodated within the LSP design, and/or can be managed appropriately through future subdivision and/or development applications in accordance with the relevant federal, state or local government legislation, policies and guidelines and best environmental management practices. As such the proposed future development will not significantly impact upon the environmental attributes of the site.

2.1.2 Fauna Habitat

The EAR details the Bioscience fauna survey that was conducted and did not find evidence of native species habitat, due to the native vegetation's highly degraded state. This conclusion was shared in Western Wildlife's findings, however they advised that rehabilitation of the REW (UFI 15796) and its buffer in Lot 8 may offer future habitat to fauna in particular birds and reptiles.



OPPORTUNITIES & CONSTRAINTS

Figure 5

RPS's field investigation in 2014 assessed the flora and vegetation's ecological values to determine if the site contained any habitat suitable for conservation significant fauna species. RPS found that the site did not contain significant fauna habitat that would support any Threatened fauna species identified in the desktop searches.

2.1.3 Bush Forever

Bush Forever identifies areas of regional conservation value on the Swan Coastal Plain portion of the Perth Metropolitan Region with an aim to protect a comprehensive representation of the biological diversity on the Swan Coastal Plain. Bush Forever Site No. 345 - Forrestdale Lake and Adjacent Bushland, Forrestdale is situated 500m north-west to the site (refer **Figure 5** – Opportunities and Constraints).

2.2 Landform

2.2.1 Topography

The site is low lying and relatively flat at 24 m Australian Height Datum (mAHD). Lot 200's south-east corner and in minor areas located on its western and northern boundary is slightly higher at 25 mAHD.

2.2.2 Geology

The site is within the Swan Coastal Plain, with the majority found in the Pinjarra Plain system and a portion of Lot 8 in the Bassendean Dunes system. The Pinjarra Plain is characterised by poorly drained plains and poorly defined stream channels with moderately deep to deep sands over mottled clays. These soils are typically acidic and tend to be grey and yellow duplex soils to a uniform bleached or pale brown. The Bassendean Dunes is also known for poorly drained plains, as its siliceous sands are underlain by clay or an iron-organic hardpan at depths generally greater than 1.5m. These soils tend to be a deep bleached grey, sometimes with a pale-yellow subsurface soil layer.

Bassendean Sands over the Guildford Formation underlie these systems. Bassendean Sands typically consist of white to grey quartz sands with minor fines and negligible clay content. The Guildford formation has complex layering of soils from past erosion events where material was transported via rivers and streams and deposited in alluvium fans. It is characterised by poor drainage due to the low permeability of its clayey sub-surface layers. This results in surface inundation when rainfall infiltration exceeds the soil's capacity to retain or percolate through.

The geology at the site is listed below:

- S10 – SAND – as S8 over sandy clay to clayey sand of the Guildford formation of eolian origin.
- Sp1 – PEATY SAND – grey to black, fine to medium-grained, moderately sorted quartz sand, slightly peaty of lacustrine origin.
- S9 – SAND – yellowish brown, medium to coarse-grained, angular to sub-rounded quartz, some fine grained pisolitic laterite little fines of lacustrine origin.
- Cs – SANDY CLAY – white-grey to brown, fine to coarse-grained, subangular to rounded sand, clay of moderate plasticity, gravel and silt layers near scarp, of alluvial origin.

2.2.3 Acid Sulfate Soils

The Department of Environment Regulation (DER) Acid Sulfate Soil (ASS) risk mapping shows the site has been classified as having mostly a moderate to low risk of Acid Sulfate Soils (ASS) occurring within 3m of the natural soil surface and activities disturbing soils at depths greater than 3m carry a high to moderate risk of disturbing ASS. However, there are three small pockets in which a

high to moderate risk of ASS occurring within 3m of the natural soil surface.

Given the areas of high to moderate ASS risk and the shallow groundwater table onsite, an ASS investigation is likely will be required prior to any dewatering and excavation works.

2.2.4 Contaminated Sites

A search of the Department of Water and Environmental Regulation's (DWER) Contaminated Sites Database on 10 September 2019 did not record any matches for the site.

The sites' agricultural practises may have included the use of chemicals, such as pesticides and herbicides, however the risk of residual contamination is considered low.

2.3 Groundwater

The site is underlain by the Superficial Armadale, Leederville and Yarragadee North Aquifers. Groundwater monitoring has been undertaken in 2010, 2011, 2012 and 2019. Groundwater levels within the greater LSP area ranges from 24.8 mAHD to 21.4 mAHD, with a generally flow of groundwater towards the south boundary. The calculated AAMGL for the subject site ranges from 24.4 m AHD to 21.2 mAHD. The pre-development AAMGL is at or above land surface for the north-western part of the subject site where the REW is located.

2.4 Surface Water

2.4.1 Wetlands

The REW was previously identified as a Conservation Category wetland (CCW). On 26 August 2010, a modification request was sent to the DEC to change its classification. On 16 December 2010, the DEC advised that due to the condition of vegetation and the wetland's limited ability to naturally regenerate, it would be re-classified as Resource Enhancement and its boundary adjusted. The REW requires a proposed buffer of 30 m from its boundary. It is likely that a Wetland Management Plan will need to be prepared and implemented at subdivision stage, in concert with specific water management planning.

2.4.2 Drainage

There are several poorly defined creeks and depressions across the site, forming seasonally inundated areas. The larger LSP areas partially drains north towards for the Forrestdale Main Drain (FMD) (and Forrestdale Lake), and south towards the Birrega Main Drain (BMD). The subject site (104 ha) drains south towards the BMD with approximately 190ha of external catchment draining through the subject site. A pre-development stormwater model was created for the subject site on XPSWMM in order to estimate the flow regime and pre-development flows going to the BMD.

2.5 Bushfire Hazard

Bushfire Prone Planning prepared the Bushfire Management Plan (BMP) to support the LSP (refer **Appendix F** – Bushfire Management Plan). A summary of the findings and management measures is provided below.

The BMP found that the proposal, as set out in this Plan has addressed the applicable legislation, policy, standards and guidelines including the four elements of the Bushfire Protection Criteria of Location, Siting and Design, Vehicular Access and Water Supply. The determination is that the proposal can meet all the requirements against the Bushfire Protection Criteria, the decision maker's assessment of this proposal is to be on the basis of it being able to meet the acceptable solutions for all four elements once construction and any applicable landscaping is complete.

The vegetation within the proposed development boundary (predominantly Grassland) has been considered and it is expected that in the future, this vegetation will be maintained in a low threat state. It will meet AS3959-2018 s2.2.3.2 requirements and will continue to be maintained in a low threat state as stipulated in the City of Armadale Firebreak Notice.

The proposed Resource Enhancement Wetland 30m buffer, Stormwater detention and Open Space areas located at Lot 8 has also been considered. The ability for the proposed development to achieve a BAL-29 or lower for future buildings is reliant on the future management of this vegetation in perpetuity. It is a requirement for these areas to continue to be maintained in a way that will not increase the risk of a bushfire to future buildings within the proposed development.

Furthermore, it is expected that once development and any applicable landscaping has been completed, indicative BAL ratings of BAL-29 or less can be achieved for each of the proposed lots.

It should be noted that, based on the proposed general industrial land use, there are no Building Attack Level (BAL) considerations required under Australian Standard 3959-2009 (AS3959); however, areas within declared bushfire prone areas will require further bushfire risk assessment to support any future subdivision or development stage to determine the level of bushfire risk mitigation to be implemented to comply with SPP 3.7.

2.6 Heritage

2.6.1 Aboriginal Heritage

A search of the Department of Planning, Lands and Heritage's Aboriginal Heritage Inquiry System undertaken on 4 October 2019 identified that no Registered or Other Heritage sites are located within site.

2.6.2 Natural & Historic Heritage

A search of the Heritage Council's Inherit database and the City of Armadale's Municipal Heritage Inventory (CoA 2008), which was reviewed in 2019 (CoA 2019), were undertaken on 4 October 2019 with no matches recorded for the site.

2.7 Opportunities & Constraints

This LSP has evolved from higher level planning documents, including the EELS and the Frameworks. As such, the opportunities and constraints for the subject site are well known and have been clearly delineated in the strategies. A summary of the context and constraints for the subject site is provided below.

2.7.1 Opportunities

Land Ownership

The subject site comprises one private landowner consortium ensuring an integrated planning process and development outcome.

Accessibility

The site has effective transport linkages with routes such as Tonkin Highway, Rowley Road, Nicholson Road-Armadale Road and Heavy Haulage routes, therefore ensuring the site has access to an appropriate road network for both freight and employment within the area.

Employment

Existing residential development lies within close proximity to the subject site with residential development underway as part of the Wungong Urban Master Plan. The development of the broader South Forrestdale Industrial precinct is expected to provide employment for the additional 120,000 people that will ultimately reside in the residential growth areas of Byford,

Haynes, Hilbert, Harrisdale and Piara Waters.

In order to deliver jobs within the sub-region employment growth needs to better match the south metropolitan sub-region's labour force and demographic profile. This would include manufacturing and agricultural sectors as well as knowledge-based employment that should be strategically located at activity and specialised centres. Additional industrial land such as the subject site, located on key east-west transport routes, will provide a local employment option for people within the south-eastern sector.

Population Growth

The population of the City of Armadale is predicted to grow from 64,400 in 2011 to 95,110 by 2050.

Infrastructure

Westport

Fremantle Port currently serves as the primary port for the metropolitan region. The inner harbor, located in Fremantle, is predicted to reach its capacity to handle container freight by 2020. Subsequently, The Westport Taskforce is developing a plan to manage WA's growing freight demands for the next 50 years and beyond. The Taskforce is holistically assessing a wide range of port and supply chain options, while balancing environmental, economic and social outcomes. Westport is now assessing the shortlist with the recommendations, including the preferred port location, design and cost, to be presented to Government for consideration by the end of 2019.

Rowley Road has been identified by the Westport Taskforce as a major freight route and will be upgraded from two lane single carriageway to four lane dual carriageway as a primary distributor. The current upgrade concept has been reflected on the proposed LSP Map.

Perth Airport

The Perth Airport Masterplan 2009 predicts that air freight at Perth Airport will double by 2029, providing vital access to both domestic and international export markets. This presents a good opportunity for future import/export businesses, given that the airport is approximately 22km north of the subject site which direct linkage via Tonkin Highway.

2.7.2 Constraints

Resource Enhancement Wetland

The structure plan proposes to retain all native vegetation within the REW and an associated 30m buffer. The proposed management of the remnant vegetation will be through a Wetland Management Plan, prepared and implemented at subdivision stage to the satisfaction of the City of Armadale.

Servicing

Water Corporation confirmed that the subject area currently falls outside a planned wastewater scheme catchment so there is presently no sewerage infrastructure near the development. Notwithstanding, Water Corporation have advised that the site is capable of being serviced by reticulated water supply – section 3.9 refers.

Water Corporation also advised that to provide reticulated sewerage to the development, a Water Corporation standard reticulation network would need to be installed within the proposed road reserves.

The reticulation network would gravity discharge to a Water Corporation owned Wastewater Pump Station at a suitable topographical low. A pressure main would then be required to discharge the waste water to a suitable connection point within the Water Corporations existing sewerage network. Water Corporation advised that a suitable route for the pressure main will

also be required, preferably within established road reserves.

There is presently no water infrastructure in or close to the proposed industrial area. Notwithstanding, Water Corporation have advised that the site is capable of being serviced – section 3.9 refers.

The western side of the site is traversed by a transmission line easement hosting one 132,000 Volt and two 330,000 Volt circuits which are critical to the Western Power high voltage network. Any development near transmission lines needs to be assessed by Western Power to determine any restrictions which maybe required e.g. building and structures setbacks.

The current proposed structure plan over Lots 6, 8 & 200 indicates a projected ultimate load of 16.6 MVA for all stages of the development. This load is based on Western Power's current minimum design load requirement of 200kVA/ha. However, the proposed development is anticipated to comprise of industrial warehousing which may require significantly less.

3. Local Structure Plan

3.1 Land Use

The proposed land uses consist of 'General Industrial' as outlined in the proceeding sections (refer to **Plan 1** - Structure Plan Map).

3.2 General Industrial

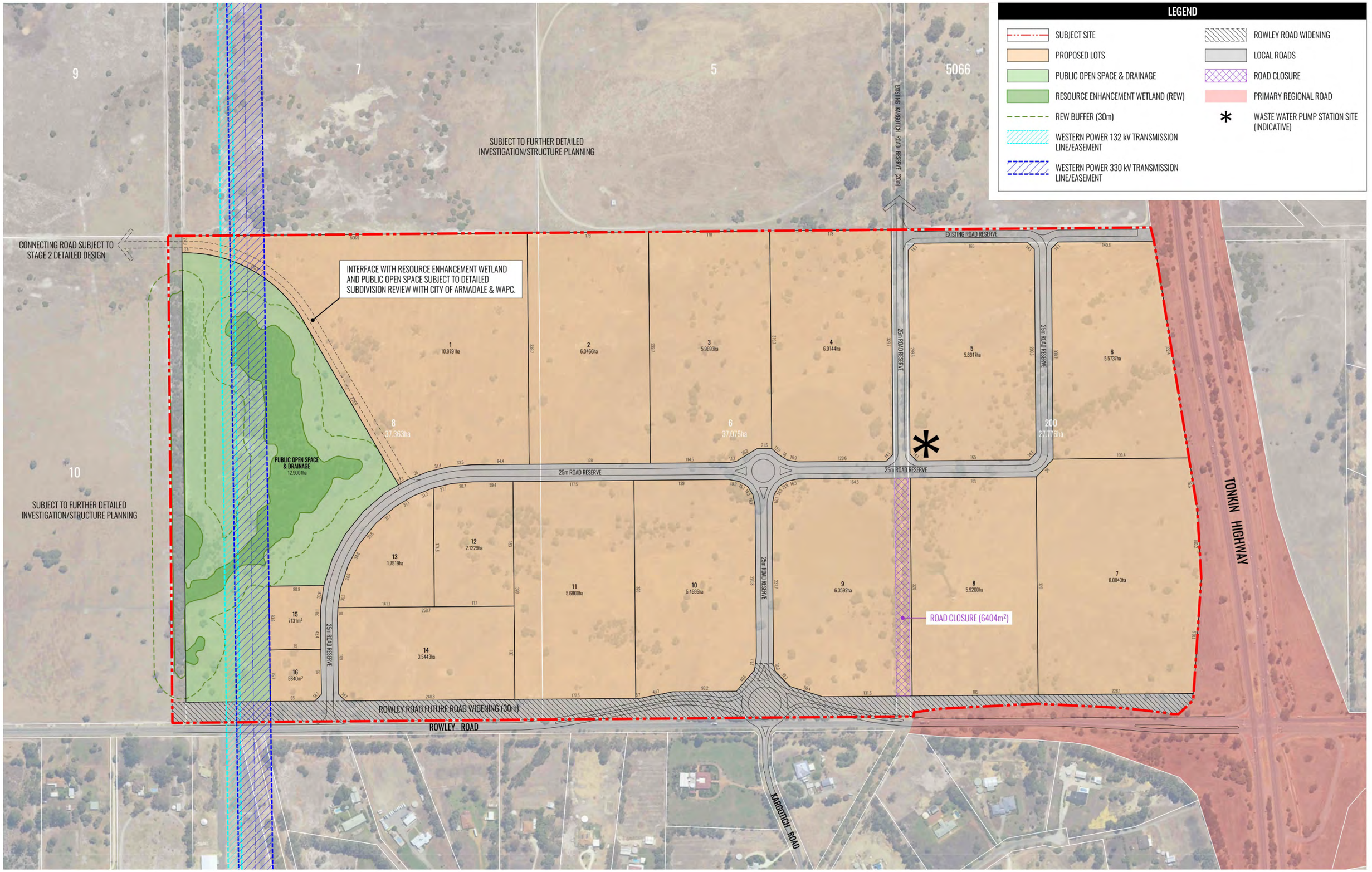
The proposed 'General Industrial' zoning will enable the development of a wide range of industrial premises that exhibit appropriate design and environmental performance in terms of amenity, noise, emissions and generation of vehicular traffic. The land use is considered to facilitate the aggregation of storage, distribution, transport and logistics activities.

3.3 Interface

The WAPC's SPP4.1 and DCP4.1 emphasise the need for adequate buffering to industrial land uses to ensure that development is compatible with surrounding commercial and/or residential areas.

SPP4.1 states that the General Industry zones should not have direct interface with sensitive zones in local planning schemes. An interface of compatible land use zones and/or reserves should be identified in local planning schemes to ensure a compatible interface is achieved. The LSP relies on the use of the 70m Rowley Road reserve to ensure appropriate separation is provided to any sensitive uses, namely rural residential allotments to the south. Rowley Road is forecast to be ultimately upgraded from a two-lane single carriageway to four lane dual carriageway. As such the amenity and impact of the 'General Industry' land use will be mitigated by the future primary distributor road.

The interface to the adjacent 'Rural Living 20' allotments which formed part of MRS *Amendment 1340/57 South Forrestdale Industrial Area Stage 2* has considered potential land use conflicts and will not expose such land to adverse impacts. The MRS 'Industrial' zoning gazetted in October 2019 facilitates future development of the amendment area for industrial purposes.



SOUTH FORRESTDALE INDUSTRIAL (STAGE 1) CONCEPT PLAN

Figure 6

3.4 Lot Sizes & Lot Yield

The structure plan conceptually proposes lot sizes ranging from 0.56ha for lots abutting the POS up to ~8ha. The predominant/average lot size across the Structure Plan area is ~6.0ha (refer to **Figure 6** – Concept Plan), albeit potential for much larger amalgamated sites is earmarked by the proponent.

The large size of the proposed lots seeks to provide sufficient space to accommodate the future industrial operations and building envisaged; namely large logistics and e-commerce distribution warehouses ranging from 20,000-50,000m2 in area. Due to the size and scale of the proposed warehouses suitable car parking and accompanied landscaped areas will be required.

The EELs states that a survey of key industry stakeholders have shown that, with the increase of transport and logistic oriented industry activities, lot sizes of 4,000 sqm or greater will continue to be in greatest demand. The creation of large allotments also provides the opportunity and flexibility of re-subdivision to create smaller lots on a case by case (market demand) basis.

3.5 Public Open Space

A public open space (POS) area is proposed along the western boundary of the Structure Plan, this for the principal purpose of Resource Enhancement Wetland retention and associated 30m buffer. The site will include vegetation protection and onsite drainage and complemented by pockets of public amenity/breakout areas. The breakdown of the POS area is illustrated under **Figure 7** and Table 1.

The vision for the public open space consists of passive recreation links utilising the drainage lines traversing the site. Native revegetation will be undertaken in the wetland buffer area and a 2.5m wide shared use pathway is proposed to line the perimeter. Informal picnic and kick-about spaces are proposed that will create a useable open space area for people working in the adjacent industrial operations.

Table 1: Public Open Space Schedule

Land Component	Approx ha.
REW Core	3.983 ha
REW Buffer (30m) – Stage 1 area	5.786 ha
POS/Stormwater Detention	4.388 ha
Total Public Open Space – Stage 1	**14.1575ha**
REW Buffer – within Stage 2	1.6644ha
Grand Total POS	**15.8219ha**

The POS is also encumbered by an easement to the State Energy Commission of Western Australia (Western Power). Planting in the easement will comprise low groundcover plantings to maintain maintenance access to Western Power standards.

3.6 Retention of On-Site Vegetation

A minimum of 4.57 ha of remnant vegetation is proposed to be retained within the POS area. The best vegetation is identified in the REW and buffer, and is in a 'Degraded to Good' condition with an overstory of *Melaleuca rhaphiophylla* and *M. preissiana* over *Kunzea glabrescens* and *Astartea* species. The REW's understory is disturbed and dominated by pasture grass and *Zantedeschia aethiopica* (Arum Lily). *Melaleuca* and *Kunzea* species were noted as naturally generating.

Should opportunity arise to retain vegetation in road reserves or landscaping areas within the broader development sites, then endeavours will be made towards retention. The retention of additional vegetation will however be highly dependent on detailed engineering design factors, including urban stormwater (hydrology) design considerations and necessary clearance (site fill) above the average natural ground water levels.

WETLAND & PUBLIC OPEN SPACE

Figure 7

NORTH

Scale: 1:3000 @ A4

0 30 60 90m

Date: 22/03/2021 **Plan:** RODSF-5-009

INDICATIVE ROAD RESERVES

Figure 8

Not to Scale @ A4
Date: 22/03/2021 **Plan:** RODSF-5-010

3.7 Access & Movement Networks

A Transport Assessment Report has been prepared by Transcore (attachment **Appendix 5** refers). The report as presented is based on the advertised version of the Structure Plan, inclusive an additional road traversing the eastern permitter of the POS and potentially connecting to the future Stage 2 industrial development.

Whilst this road is not included in the final Structure Plan Map (Plan 1) and Concept Plan (Figure 6), traffic modelling has been undertaken to rationalise the potential traffic volumes should this road connect the two industrial stages. As such, outlined below is a summary of the key findings:

- It is estimated that the 'warehousing' area (Stage 1 comprising Lots 6, 8 and 200) would ultimately generate traffic flows of 8,900 vehicles per day (vpd) and the Stage 2 'general industrial' area would potentially generate a further 16,700vpd.
- Access into this industrial structure plan area is proposed to be served by two new multi-lane roundabouts on Rowley Road (at Kargotich Rd south and at Blair Road) and a new left in / left out intersection approximately midway between those two roundabouts. These access arrangements are consistent with planning for future upgrade of Rowley Road by the DPLH and the Westport Taskforce.
- The upgrading of Rowley Road to industrial standard may be the subject of a DCP guided by the City of Armadale, or a Deed of Agreement between Stage 1 and 2 landowners.
- The standard type of industrial road within the proposed structure plan is anticipated to be a 25m road reserve with 10m road pavement width in accordance with Policy DC4.1 (**Figure 8** refers). Road reserves up to 30m may apply subject to the final drainage strategy (road-side swales) and need for any on-street parking.
- The two main entry roads into the structure plan area are anticipated to carry traffic volumes in the 7,000 to 15,000vpd range of an *Integrator B* road.
  There is potential for these roads to include a central median of 3 to 6m width and two 5m carriageways within the standard industrial road reserve of 25m. Inclusion of central medians will be subject to detailed engineering and urban stormwater management planning.

3.8 Water Management

A Local Water Management Strategy has been prepared by RPS to support the LSP and provide a structure from which subsequent development can occur, consistent with an integrated water cycle management approach (refer to **Appendix E** – Local Water Management Plan).

The following design criteria are adopted in the drainage strategy and preliminary drainage design:

- Maintain pre-development peak flow rates from the site
- Retain 10 year ARI rainfall within Lots
- Habitable floor levels at least 0.3 m above the 1% AEP flood level of the urban drainage system
- Habitable floor levels at least 0.3 m above 1% AEP flood level on the road reserve

The stormwater drainage design demonstrates that the land is capable of managing stormwater for all events up to the 1% AEP event. Rainfall up to and including the 10 year ARI will be retained within the lots using basins and/or underground storage. Roadside swales will be designed to cater for flows up to 1 in 10 year ARI rainfall events, while greater than 1 in 10 year will be conveyed via overland

flow through the road network, and via open channels running along the northern and southern boundary of the subject site.

The western part of the site, which includes the REW, will act as flood storage for the 1 in 100 year ARI event, where flows will be controlled by Rowley Road and the culverts going under it. Controls used to improve stormwater quality will roadside swales, open channels and stormwater retention systems on lots. The use of native vegetation where practicable, minimal fertiliser application and soil amendment in major drainage areas will assist with the management of groundwater and surface water quality.

Subsoil drains will be installed in road reserves and within the proposed lots, and subsoil flows will be directed into the REW via the road reserve and/or the open channels. The CGL will been set according to DoW (2013) Water Resource Considerations when Controlling Groundwater Levels, with consideration of:

- A free-flowing drainage outlet: subsoil discharge at 0.3 m above the invert of relevant drainage features
- Infrastructure protection in line with IPWEA (2016) guidelines. Post-development groundwater levels will be refined at UWMP stage
- Protection of water dependent ecosystems: The CGL will be set to maintain the baseflow of surface drainage features.

Further details on subsoil design will be provided at UWMP stage.

3.9 Infrastructure Coordination, Servicing & Staging

An Engineering Servicing Report has been prepared by JDSi Consulting Engineers to guide the future subdivision and development of the LSP area; this inclusive of initial findings and March 2021 updates corresponding to ongoing discussions with service agencies (refer to **Appendix B**).

3.9.1 Power

The electrical distribution network in the immediate area is owned and operated by Western Power. Their network currently provides power supply to mostly large rural lots via a network of 22,000/415 volt underground cables and overhead powerlines. The surrounding reticulation network is supplied from the Byford Zone Substation via the Hopkinson Road (BYF 527.0) 22,000 Volt feeder.

The current proposed structure plan over Lots 6, 8 & 200 indicates a projected ultimate load of 16.6 MVA for all stages of the development. This load is based on Western Power's current minimum design load requirement of 200kVA/ha. However, the proposed development is anticipated to comprise of industrial warehousing which may require significantly less demand; this will be dependent on each individual lot's development proposal.

The Western Power Network Capacity Management Tool indicates a current and foreseeable network capacity of less than 5 MVA available at the Byford Substation which is believed to service the majority of the Shire of Serpentine Jarrahdale. This shortfall was forecast by Western Power within their 10 Year Transmission Network Development Plan (TNDP) 2011 and their planned measure to address this was to establish a new substation in Armadale by summer 2018/19 and transfer load from Byford Substation to the new substation. As of October 2019, the new substation has not been constructed but review of the South Metropolitan Peel Sub-Regional Planning Framework (2018) indicates three new substations near the development area which are either being planned or under investigation.

330kV Powerlines

A 330kV transmission line traverses the western boundary of the subject site within the eastern portion of an 80m

easement; this solely contained within POS. Easement conditions will be detailed on the Certificates of Title of affected lots in accordance with Western Power standards; this during subsequent subdivision and development stages.

3.9.2 Telecommunications

JDSi approached the national broadband installation initiative, NBN Co. to determine if the development site is located with the NBN rollout footprint and were advised that the recommendation is that the development be serviced via our existing Fixed Wireless Service.

3.9.3 Water

The offtake point, size and route for the mains extension has not been considered in any detail by Water Corporation. Preliminary advice previously indicated that a water main of at least DN300 would likely be required in the initial stages but may need to be larger to meet hydraulic (flow) requirements for industrial firefighting purposes. All water main extensions required to serve the proposed industrial area will likely be designed, constructed and commissioned at the developers' cost unless otherwise agreed with Water Corporation.

Follow up advice received from the Water Corporation confirms that to service Stage 1 of the South Forrestdale Industrial Area, approximately 1 km of DN250 is required from the end of the current DN250 supply, near the corner of Wollaston Avenue and Forrest Road.

3.9.4 Sewer

Water Corporation confirmed that the subject area currently falls outside a planned wastewater scheme catchment so there is presently no sewerage infrastructure in close proximity to the development.

Water Corporation also advised that to provide reticulated sewerage to the development, a Water Corporation standard reticulation network would need to be installed within the proposed road reserves. The reticulation network would gravity discharge to a Water Corporation owned Wastewater Pump Station at a suitable topographical low. A pressure main would then be required to discharge the wastewater to a suitable connection point within the Water Corporations existing sewerage network. Water Corporation advised that a suitable route for the pressure main will also be required, preferably within established road reserves. The proposed Armadale Pump Station 'F' to be constructed on Hilbert Rd might provide an option for wastewater discharge.

March 2021 advice from Water Corporation confirms that the whole area can be served using a type 90 pump station located roughly in the centre of the catchment (this as generally depicted on the Local Structure Plan Map). The final location of the required pump station can be determined at the subdivision stage.

Any pump station will require appropriate land to be provided for the works and odour buffer. A route for the pressure main will also be required and must be laid along established road reserves.

Flow from the pump station for the catchment of the South Forrestdale Industrial Area can be discharged to the Forrest Road Pump Station in the Armadale Sewer District

3.9.5 Gas

The area around the development site has no reticulated gas network.

Notwithstanding, ATCO have advised that the site can be serviced via the following works:

- Installation of a DN160 Hot Tap into existing 110mm HDPE HP Pipe near the intersection of Rowley Road and Lentara Place in Hilbert.

- Construction and commissioning an extension of 980m of headworks in DN160PE pipeline from ATCO's PE High Pressure main near the intersection of Rowley Road and Lentara Place in Hilbert to the intersection of Kargotich Road and Rowley Road in Forrestdale, using trenchless tunnelling methods.
- Internal reticulation of DN63PE within the industrial development.

4. Conclusion

The Local Structure Plan as described in this report satisfies the planning frameworks adopted by the City of Armadale and the Western Australian Planning Commission and the advice received during consultation with other agencies.

The proposed General Industrial development comprising substantial lot sizes is an ideal and timely addition to the Metropolitan South East region. The Structure Plan will aid in providing a centre which is well connected to intermodal freight facilities at the Welshpool-Kewdale industrial centre and are ideally placed to take advantage of the potential synergies with major export oriented industrial centres such as Kwinana and Latitude 32, located in the Southwest sub-region. To that end, the Structure Plan provides for the development of General Industry logistic and storage warehouses as a solution to cater for the State's growing e-commerce sector.