

# Hatch Court Light Industrial Area ~~& Stirling Crescent Precinct~~ – Local Structure Plan

## Standard Structure Plan

**Prepared for**  
 City of Kalamunda  
 PO Box 42,  
 KALAMUNDA WA 6926

**History and Status of this Document**

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## TABLE OF AMENDMENTS

| Amendment No. | Summary of the Amendment | Date Supported by Council | Date approved by WAPC |
|---------------|--------------------------|---------------------------|-----------------------|
|               |                          |                           |                       |
|               |                          |                           |                       |

## Executive Summary

The Hatch Court Light Industrial Area and ~~Stirling Crescent Precinct (HCLIA & SCP)~~ – Local Structure Plan (LSP) encompasses approximately 26.679 hectares of land generally bounded by Adelaide Street to the north, Kalamunda Road to the south, Perth Airport-controlled land to the west, and existing residential development to the east. Stirling Crescent connects Kalamunda Road and Adelaide Street. ~~dividing the Structure Plan area into two distinct precincts: the Hatch Court Precinct and the Stirling Crescent Precinct.~~

The Hatch Court Precinct is zoned 'Light Industry', ~~while the Stirling Crescent Precinct is zoned 'Urban Development' under the City of Kalamunda Local Planning Scheme No. 3 (LPS3).~~

The Structure Plan provides a detailed planning framework for the orderly subdivision and development of both precincts. Within the Hatch Court Precinct, it implements the existing 'Light Industry' zoning under LPS3 and establishes a comprehensive framework to guide future industrial development. ~~Within the Stirling Crescent Precinct, the Structure Plan provides for residential development at densities of R25 and R30, facilitating a logical transition to the surrounding residential neighbourhood.~~

A key component of the Structure Plan is the proposed road network, including a new road connection between Hatch Court and Adelaide Street through the Hatch Court Precinct. This connection will replace the existing Hatch Court/Stirling Crescent intersection, which is proposed to be closed. The internal road network has been designed to accommodate RAV4 vehicle movements and improve connectivity to the broader regional road network while minimising industrial traffic on adjoining residential streets.

The Structure Plan also incorporates a new living stream that will connect the two existing Resource Enhancement Wetlands located within the eastern and western portions of the Structure Plan area. A minimum 15-metre buffer is proposed around each wetland to protect and enhance their ecological values while integrating stormwater management with environmental outcomes.

Essential infrastructure and utility services are located in close proximity to the Structure Plan area and can be extended or upgraded to accommodate future subdivision and development. ~~It is noted that the provision of sewer to the Stirling Crescent Precinct will be subject to more detailed design investigation due to the level of fill required (currently estimated at 1-1.5m) to achieve a gravity fed system. Such an amount of fill will be a factor in residential lot design/yield outcome.~~

The Structure Plan has been prepared in accordance with the requirements of the *Planning and Development (Local Planning Schemes) Regulations 2015*, the provisions of City of Kalamunda Local Planning Scheme No. 3, and the Western Australian Planning Commission's WA Planning Manual – Guidance for Structure Plans (August 2023). It provides the statutory planning framework required to facilitate the coordinated subdivision and development of the land for industrial ~~and residential~~ purposes.

The Structure Plan comprises three parts:

- **Part One – Implementation:** Sets out the statutory planning framework, implementation provisions and subdivision and development requirements applicable to the Structure Plan area. This section also includes the Structure Plan Map (Plan 1).

- **Part Two – Explanatory Section:** Provides the background information, planning context and technical justification supporting the Structure Plan, drawing upon the findings of the accompanying specialist investigations.
- **Part Three – Technical Appendices:** Contains the specialist technical reports prepared in support of the Structure Plan, including:
  - Bushfire Management Plan;
  - Traffic Impact Assessment;
  - Infrastructure and Servicing Strategy;
  - Local Water Management Strategy;
  - Environmental Assessment Report;
  - Site and Soil Evaluation; and
  - Geotechnical Report.
  - Economic Impact Assessment

A summary of the proposed land uses and key Structure Plan statistics is provided in **Table 1**.

| Item                                                           |                                                      | Reference                |
|----------------------------------------------------------------|------------------------------------------------------|--------------------------|
| Total Structure Plan Area                                      | 26.679ha                                             | 2.2                      |
| Area of each land use zone:                                    |                                                      |                          |
| • <del>Residential</del>                                       | <del>4.9126ha</del>                                  | <del>5.2</del>           |
| • Light Industry                                               | 21.57ha                                              |                          |
| Area of reserves:                                              |                                                      |                          |
| • New Road Reserves                                            | 1.4088ha                                             | 5.3                      |
| • <del>Public Open Space/Drainage</del>                        | <del>0.29ha</del>                                    | <del>5.5 &amp; 5.6</del> |
| Area of environmental/drainage features:                       |                                                      |                          |
| • Wetlands & Buffer                                            | 3.0591ha                                             | 5.13                     |
| • Living Stream                                                | 0.6415ha                                             | 5.6                      |
| <del>Estimated lot yield (Residential density of R25/30)</del> | <del>140 lots</del>                                  | <del>5.4</del>           |
| <del>Estimated dwellings</del>                                 | <del>140 dwellings</del>                             | <del>5.4</del>           |
| <del>Estimated density per site hectare</del>                  | <del>28.5 dwellings</del>                            | <del>5.4</del>           |
| <del>Estimated population</del>                                | <del>350 residents @ 2.5 people per household.</del> | <del>5.4</del>           |
| Primary Schools                                                | None                                                 | 5.9                      |
| High Schools                                                   | None                                                 | 5.9                      |
| Total Structure Plan Area                                      | 26.679ha                                             | 2.2                      |

Table 1 – Land Use Summary

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# Part One - Implementation

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## **PART ONE – IMPLEMENTATION**

### **1.0 Structure Plan Area and Operation**

#### **1.1 Structure Plan Area**

This Standard Structure Plan (Structure Plan) applies to the below properties:

| Address                                        | Land Area     |
|------------------------------------------------|---------------|
| <b>Hatch Court Precinct</b>                    | <b>25.824</b> |
| Lot 201 (No. 614) Kalamunda Road, High Wycombe | 2.023ha       |
| Lot 200 (No. 584) Kalamunda Road, High Wycombe | 8.070ha       |
| Lot 1 (No. 51) Stirling Crescent, High Wycombe | 1.118ha       |
| Lot 10 (No. 9) Hatch Court, High Wycombe       | 1.08ha        |
| Lot 11 (No. 15) Hatch Court, High Wycombe      | 1.076ha       |
| Lot 12 (No. 19) Hatch Court, High Wycombe      | 1.241ha       |
| Lot 13 (No. 23) Hatch Court, High Wycombe      | 1.383ha       |
| Lot 14 (No. 27) Hatch Court, High Wycombe      | 1.613ha       |
| Lot 15 (No. 24) Hatch Court, High Wycombe      | 1.011ha       |
| Lot 16 (No. 14) Hatch Court, High Wycombe      | 1.003ha       |
| Lot 51 (No. 26) Hatch Court, High Wycombe      | 1.001ha       |
| Lot 52 (No. 30) Hatch Court, High Wycombe      | 2.165ha       |
| Lot 53 (No. 29) Hatch Court, High Wycombe      | 1.037ha       |
| Lot 8 (No. 37) Stirling Crescent, High Wycombe | 1.001ha       |
| Lot 9 (No. 29) Stirling Crescent, High Wycombe | 1.003ha       |

The above properties are the land contained within the inner edge of the line denoting the Structure Plan Boundary on the Structure Plan Map (Refer to Plan 1). The Structure Plan is in effect from the date stated on the cover and for a period of 10 years.

#### **1.2 Structure Plan Content**

This Structure Plan comprises the following sections:

- Part One – Implementation. Includes the Structure Plan Map and outlines the requirements that will be applied when assessing land use, subdivision and development applications over the Structure Plan Area.
- Part Two – Explanatory Section. To support the Structure Plan contained in Part One by providing the background and explanatory information used to prepare the Structure Plan.
- Part Three – Technical and specialist reports prepared in support of the Structure Plan

#### **1.3 Structure Plan Operation**

In accordance with Schedule 2, Part 4 of the *Planning and Development (Local Planning Schemes) Regulations 2015* (Regulations), this Structure Plan shall come into operation when it is approved by the Western Australian Planning Commission (WAPC) pursuant to Schedule 2, Part 4, Clause 22 of the Regulations.

Pursuant to clause 27(1) of Schedule 2 of the Regulations:

*A decision-maker for an application for development approval or subdivision approval in an area covered by a structure plan that has been approved by the Commission is to have due regard to, but is not bound by, the structure plan when deciding the application.*

Pursuant to clause 28(1) of Schedule 2 of the Regulations, this Structure Plan will have effect for a period of 10 years, commencing on the day the WAPC approves the plan.

The operation of the Structure Plan shall be in accordance with LPS3 and the Regulations.

## 2.0 Purpose

The purpose of the Structure Plan is to:

- Provide a planning framework to guide future use, subdivision and development of the land.
- Conserve and enhance the existing environmental features of the land.
- Facilitate high-quality light industrial ~~and residential~~ development that protects the amenity afforded to existing residents in the area.

## 3.0 Staging

### Hatch Court Precinct

Unlike a typical residential area where staging can be more easily defined, the industrial development will have different staging considerations. Accordingly, the staging and future development of the Hatch Court Precinct will be a matter for individual landowners to determine, taking into account prevailing market conditions, demand for industrial lots and lead times for the delivery of any required infrastructure.

Also influencing the development timing within the Hatch Court Precinct will be the funding and means of delivery of the proposed road through Lot 13 which will be addressed separately through appropriate mechanisms and decision(s). The funding associated with this as well as the upgrade of Hatch Court will be addressed by separate decisions. A Special Area Rate model is expected to be necessary.

## 4.0 Subdivision and Development Requirements

### 4.1 Land use zones and reserves

#### Zones

The Structure Plan Map (Plan 1) outlines the land uses, zones and reserves applicable within the Structure Plan area. The zones and reserves designated under this Structure Plan apply to the land within the Structure Plan area as though they were incorporated into LPS3.

#### Road Reserves

The Structure Plan provides for a new road connection extending from Hatch Court through Lot 13 (No. 23) Hatch Court to Adelaide Street. The proposed road reserve will be 20m wide and constructed to a Restricted Access Vehicle (RAV) 4 standard. The existing Hatch Court road reserve will be retained at a width of 18 m and upgraded to accommodate RAV4 access which will require an increased road seal width of 10m. The proposed road alignment from Adelaide Street to Hatch Court will result in the amalgamation of the existing battle axe access legs into the proposed road reserve with the new road providing access to the impacted properties, although it is possible that this preferred alignment may need to be altered slightly in the event that landowners do not agree.

The existing Hatch Court/Stirling Crescent intersection will be closed to protect the residential amenity of properties along Stirling Crescent. A cul-de-sac will be constructed at the western end of Hatch Court. Construction

of the cul-de-sac will require the affected landowners to cede land free of cost, without entitlement to compensation.



In addition to the proposed road reserves, the Structure Plan identifies access locations for Lot 200 (No. 584) Kalamunda Road. These locations correspond with the existing crossovers. No additional access points to Stirling Crescent or Kalamunda Road will be permitted to minimise industrial vehicle movements and maintain traffic safety on these roads.

A shared access point is also proposed along the common boundary of Lots 11 and 12 Hatch Court to minimise the number of crossings over the proposed living stream. The shared access aligns with the existing easement that currently provides access to these properties.

#### Wetlands

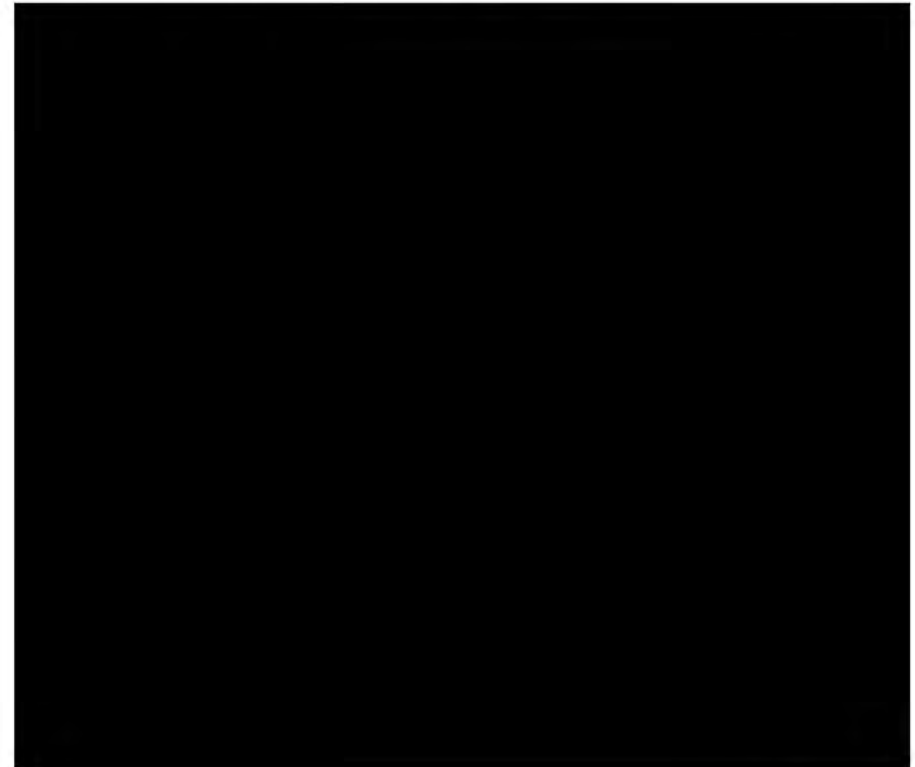
The Structure Plan includes two Resource Enhancement Wetlands which will be retained in private ownership and managed in accordance with approved Wetland Management Plans provided as part of the subdivision/development application process. These wetlands are recommended to be provided with a 15m buffer in order to protect and enhance the ecological values. There is a minor encroachment into the wetland buffer for the proposed road connecting Hatch Court to Adelaide Street.

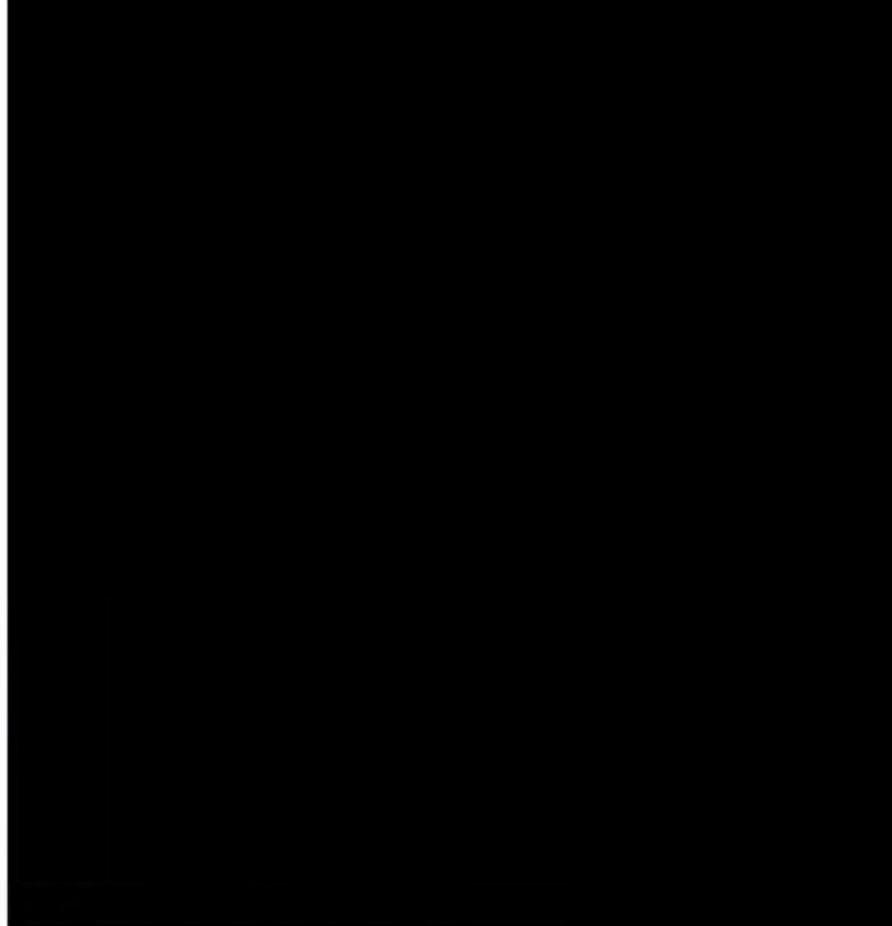
#### Living Stream

The Structure Plan proposes a living stream that connects the two existing wetlands within the Structure Plan area. This is a critical piece of drainage infrastructure and is intended to replace the existing drainage easement

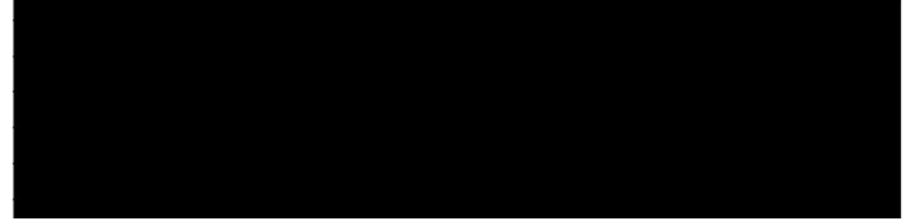
that impacts Lots 10, 11, 12, 13, 52 and 53 Hatch Court. It is proposed to realign the living stream/drainage corridor to run parallel to Hatch Court in order to maximise the developable area on Lots 11, 12 and 13. As part of the realignment a section with a reduced width of 15m is proposed to connect the wetland on Lot 11 to the living stream running along Hatch Court which will be a total width of 43m.

It is expected that the living stream will be retained in private ownership with a modified drainage easement to protect this land. As part of developing the impacted lots, it is expected that the living stream will be developed in accordance with the concept plan provided as part of the Local Water Management Report (LWMR).





#### 4.2 ~~Density and Development~~



#### Minimum Lot Sizes

All industrial development within the Hatch Court Precinct will be subject to a minimum lot size of 1ha.



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#### 4.3 Other requirements

##### Notifications on title

Notifications(s) is / are to be placed on titles of all affected lots to advise:

- i. That the lot is located within an area which has been declared bushfire prone and may be subject to a bushfire management plan and additional construction requirements may apply in accordance with Australian standard (AS3959) Construction of buildings in bushfire prone areas (as amended).

A BAL assessment and contour plan will be submitted with subdivision applications.

Restrictive covenant

A restrictive covenant may be required on titles of all affected lots that have been assessed as BAL-40 or BAL-Flame Zone, with notice of this restriction to be included on the diagram or plan of survey (deposited plan) to advise that no habitable buildings are to be built within areas as BAL-40 or BAL-Flame Zone.

Bushfire protection

The Structure Plan is supported by a Bushfire Management Plan (BMP) (Appendix 2). Regardless of whether the land has been formally designated as bushfire prone, any buildings to be erected on land identified as falling within 100 metres of a bushfire hazard shall comply with the requirements of Australian Standard (AS3959) Construction of buildings in bushfire prone areas (as amended).

Local Water Management Report

A Local Water Management Report (LWMR) has been prepared to support the Structure Plan (Appendix 3). The LWMR design objectives seek to deliver best practice outcomes using a water sensitive design approach, including detailed management approaches for:

- Stormwater management that incorporates water sensitive urban design practices;
- Management of stormwater flows prior to discharge;
- Flood protection from localised floods;
- Groundwater resource management;
- Creation of new riparian habitat as part of creating a Living Stream
- Protection and enhancement of wetland ecosystems within the subject land; and
- Sustainable water servicing

The LWMR will be subject to more detailed development in the future through the preparation of an Urban Water Management Plan (UWMP) and Stormwater Management Plans as conditions of subdivision and development approval to be undertaken by landowners and developers.

Subdivision and development of land within the Structure Plan area should be in accordance with the principles of the LWMR. It is acknowledged that this detailed design may result in refinement to the final size, location and configuration of identified drainage areas, notwithstanding the principles and modelling of the LWMS are still to be met.

Wastewater Management

Wastewater management for land within the Hatch Court Precinct will be dealt with through onsite treatment and disposal in a manner that avoids detrimental impacts on the environment and water resources. This will be undertaken in line with the requirements of State Planning Policy 2.9 – Planning for Water and the submitted Site and Soil Evaluation (Appendix 4).

Infrastructure arrangements

All infrastructure necessary to service the future subdivision and development that will occur within the Structure Plan area shall be upgraded, modified, or extended, where applicable. This shall be considered in detail as part of detailed engineering design, required as a condition of subdivision and development approval.

The submitted Engineering Servicing Report (Appendix 5) details the necessary infrastructure upgrades required to facilitate subdivision and development within the precinct.

Infrastructure Contributions and Responsibilities

**Hatch Court Precinct** – Development within the Hatch Court Precinct is dependent on the coordinated delivery of key road infrastructure which includes the delivery of the new 20m wide RAV4 road connection from Hatch Court through the Adelaide Street and also the upgrade of the existing 18m wide Hatch Court road reserve to a RAV4 standard together with the construction of a cul-de-sac at the Stirling Crescent intersection.

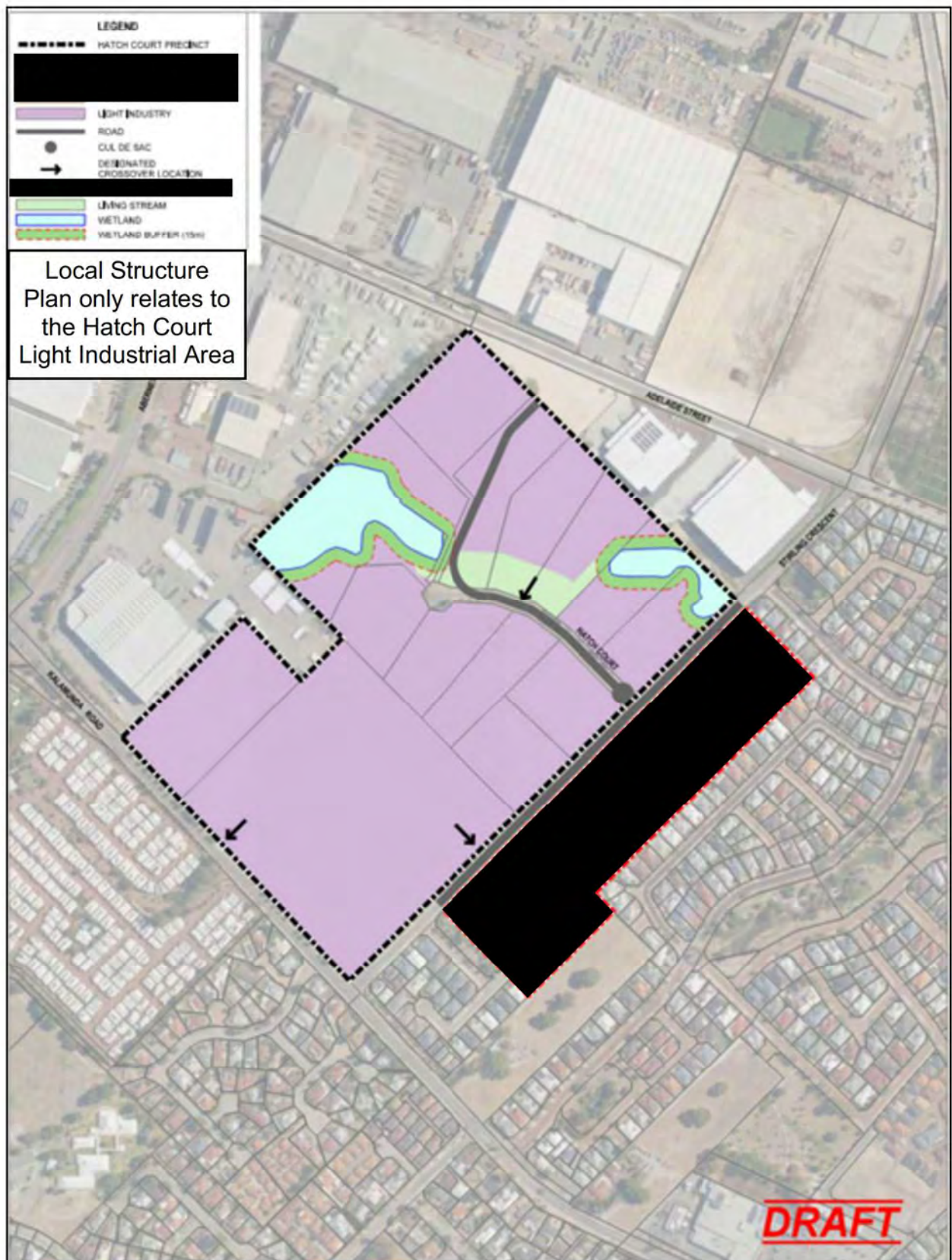
Due to the extent of development within this precinct that has already been approved, it is proposed to fund these common infrastructure upgrades via a Special Area Rate (SAR).



## 5.0 Additional Details

| Additional Information                                          | Approval Stage                                     | Consultation Requirement    |
|-----------------------------------------------------------------|----------------------------------------------------|-----------------------------|
| <b>Landscape Plan</b>                                           | Development Application                            | City of Kalamunda           |
| <b>Urban Water Management Plan / Stormwater Management Plan</b> | Subdivision / Development Application              | DWER and City of Kalamunda  |
| <b>Bushfire Attack Level Assessment and Plan</b>                | Subdivision / Development Application              | DFES and City of Kalamunda  |
| <b>Wetland Management Plan</b>                                  | Condition of Subdivision / Development Application | City of Kalamunda and DBCA. |
| <b>Transport Impact Statement/Assessment</b>                    | Subdivision / Development Application              | DPLH and City of Kalamunda  |
| <b>Living Stream Design Report</b>                              | Condition of Subdivision / Development Application | City of Kalamunda and DBCA. |
| <b>Acid Sulphate Soils Investigation / Management Plan</b>      | Condition of Subdivision / Development Application | City of Kalamunda           |

# Hatch Court Light Industrial Area Structure Plan



Plan 1 – Structure Plan Map

## Part Two – Explanatory Section

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**PART TWO – EXPLANATORY SECTION****1.0 Introduction and Purpose**

This report has been prepared on behalf of the City of Kalamunda in support of the Local Structure Plan that will satisfy the requirements of Table 4 within Local Planning Scheme No. 3.

The Structure Plan will provide for light industrial development within the Hatch Court Precinct ~~and residential development within the Stirling Crescent Precinct.~~ The Structure Plan aligns with the Metropolitan Region Scheme, City of Kalamunda Local Planning Scheme No. 3, and the Planning and Development (Local Planning Schemes) Regulations 2015. The purpose of the Structure Plan is as follows:

- Provide a planning framework to guide future use, subdivision and development of the land.
- Conserve and enhance the existing environmental features of the land.
- Facilitate high-quality light industrial ~~and residential~~ development that protects the amenity afforded to existing residents in the area.

The project team involved in delivering the Structure Plan includes:

- City of Kalamunda – Project Manager.
- Dynamic Planning and Developments – Town Planning.
- Peritas – Engineering.
- PGV Environmental – Environmental.
- PTG Consulting – Traffic Engineering.
- Galt Geotechnics – Geotechnical Engineering.
- Bushfire Prone Planning – Bushfire.
- Oversby Consulting – Hydrology.
- LK Advisory – Infrastructure Funding

**2.0 Site and Context Analysis****2.1 Location**

The Structure Plan is located within the suburb of High Wycombe, within the municipality of the City of Kalamunda. The Structure Plan area is located approximately 17 kilometres east north east of the Perth CBD, 6 kilometres south of the Midland Town Centre and abuts Perth Airport land. Services and amenities in the vicinity of the Structure Plan area include:

- High Wycombe Village Shopping Centre on Kalamunda Road (1km).
- High Wycombe Train Station (4km).
- High Wycombe Primary School (1.5km)
- Bus routes on Kalamunda Road.

Figures 3 and 4 below illustrate the Structure Plan in its regional and local context, respectively.

**2.2 Area and Land Use**

The Structure Plan area includes properties with a total land area of approximately 26.679ha ~~which is broken into two (2) distinct precincts:~~

**1. Hatch Court Precinct – 26.679ha**

The properties within each precinct and their area has been summarised in the below table.

## Hatch Court Light Industrial Area Structure Plan

| Address                                        | Land Area       |
|------------------------------------------------|-----------------|
| <b>Hatch Court Precinct</b>                    | <b>25.824ha</b> |
| Lot 201 (No. 614) Kalamunda Road, High Wycombe | 2.023ha         |
| Lot 200 (No. 584) Kalamunda Road, High Wycombe | 8.070ha         |
| Lot 1 (No. 51) Stirling Crescent, High Wycombe | 1.118ha         |
| Lot 10 (No. 9) Hatch Court, High Wycombe       | 1.08ha          |
| Lot 11 (No. 15) Hatch Court, High Wycombe      | 1.076ha         |
| Lot 12 (No. 19) Hatch Court, High Wycombe      | 1.241ha         |
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| Lot 15 (No. 24) Hatch Court, High Wycombe      | 1.011ha         |
| Lot 16 (No. 14) Hatch Court, High Wycombe      | 1.003ha         |
| Lot 51 (No. 26) Hatch Court, High Wycombe      | 1.001ha         |
| Lot 52 (No. 30) Hatch Court, High Wycombe      | 2.165ha         |
| Lot 53 (No. 29) Hatch Court, High Wycombe      | 1.037ha         |
| Lot 8 (No. 37) Stirling Crescent, High Wycombe | 1.001ha         |
| Lot 9 (No. 29) Stirling Crescent, High Wycombe | 1.003ha         |

At present the structure plan includes primarily existing rural residential properties with some existing light industrial development on Kalamunda Road. It is commented that a number of planning approvals have already been granted for light industrial development within the Hatch Court Precinct which has been summarised below:

1. 29 Stirling Crescent – two (2) warehouses with incidental offices.
2. 37 Stirling Crescent – four (4) warehouses with incidental offices.
3. 14 Hatch Court – seven (7) warehouses with incidental offices.
4. 27 Hatch Court – a warehouse and truck turning area.

To the north of the Structure Plan is the established Hazelmere Industrial Area (within the City of Swan municipality) which is primarily transport and logistics type industrial development with access to key regional roads such as Abernethy Road, Great Eastern Highway Bypass and Roe Highway. To the south and east of the Structure Plan is established single residential development and to the west of the site is the Perth Airport and an existing freight railway line.

In addition to the broader land uses surrounding the Structure Plan, on the southern side of Kalamunda Road is the existing Hillview Lifestyle Village at 597 Kalamunda Road.

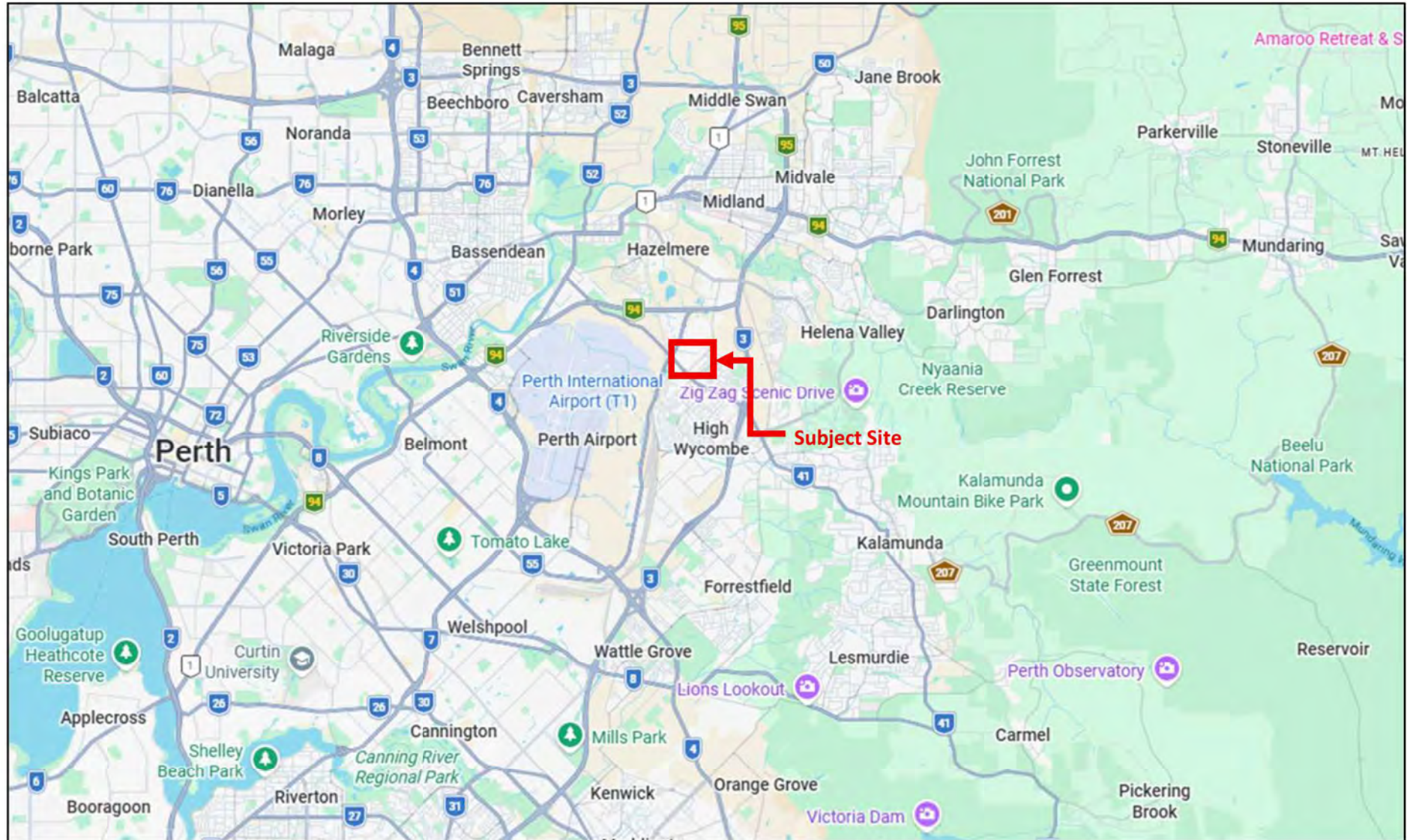


Figure 1 – Regional Context (Source: Google Maps)



Figure 2 – Local Context

### 2.3 Legal Description and Land Ownership

The structure plan has a total area of 31.882ha. The Certificate of Title and Property Details are detailed in Table 2 below.

| Lot | Street Address       | Vol / Folio | Lot Area |
|-----|----------------------|-------------|----------|
| 201 | 614 Kalamunda Road   | 1753/162    | 2.023ha  |
| 200 | 584 Kalamunda Road   | 1320/147    | 8.07ha   |
| 1   | 51 Stirling Crescent | 1689/340    | 1.118ha  |
| 10  | 9 Hatch Court        | 1746/269    | 1.08ha   |
| 11  | 15 Hatch Court       | 1748/115    | 1.076ha  |
| 12  | 19 Hatch Court       | 1746/274    | 1.241ha  |
| 13  | 23 Hatch Court       | 1746/275    | 1.384ha  |
| 14  | 27 Hatch Court       | 1746/273    | 1.613ha  |
| 15  | 24 Hatch Court       | 1739/267    | 1.011ha  |
| 16  | 14 Hatch Court       | 1739/268    | 1.003ha  |
| 51  | 26 Hatch Court       | 2504/940    | 1.001ha  |
| 52  | 30 Hatch Court       | 2504/941    | 2.165ha  |
| 53  | 29 Hatch Court       | 2504/942    | 1.037ha  |
| 8   | 37 Stirling Crescent | 1689/341    | 1.001ha  |
| 9   | 29 Stirling Crescent | 1689/342    | 1.003ha  |

Table 3 – Certificate of Title & Property Details

### 2.4 City of Kalamunda Local Planning Scheme No. 3

Under the provisions of the City of Kalamunda Local Planning Scheme No. 3 (LPS3), the Structure Plan is zoned partly 'Light Industry' (Hatch Court Precinct) and partly 'Urban Development' (Stirling Crescent Precinct) as illustrated in Figure 3 below.

In accordance with Clause 4.2 of LPS3, the relevant objectives for the Light Industry and Urban Development zones are:

#### Light Industry

- To provide for predominantly light industry located in proximity to residential areas.
- To ensure that industries are environmentally compatible with surrounding zones and activities.
- To ensure that the movement of goods and services in and out of the zone cause minimal impact on residential land in the vicinity.

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In addition to the applicable zone objectives, Clause 5.23 and Table 4 of LPS3 set out additional requirements applicable to the Hatch Court Precinct within the Structure Plan area which specify that:

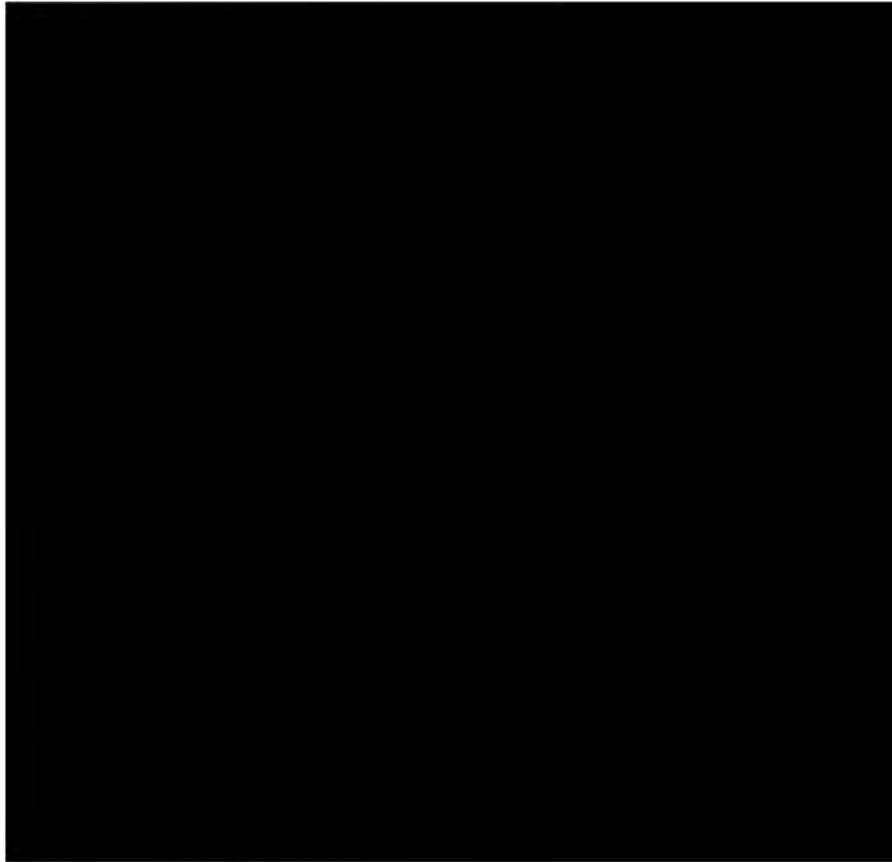
1. A structure plan is to be prepared and approved for the land pursuant to Part 4 of the deemed provisions and is to specifically address:
  - a) Traffic management including:

- *Provision of future vehicular access to be primarily via Adelaide Street;*
  - *Ensuring any vehicular access to Kalamunda Road does not reduce existing levels of access for adjacent properties; and*
  - *Access for lots with frontage to Stirling Crescent being provided via an internal road only.*
- b) *Appropriate interface with existing residential development along Stirling Crescent including setbacks, landscaping, fencing and façade treatment provisions;*
- c) *The identification and protection of environmentally significant areas within the land through the provision of appropriate buffers.*
- d) *The identified bushfire risk in accordance with State Planning Policy 3.7 and Guidelines for Planning in Bushfire Prone Areas.*
2. *Subdivision and / or development is to be generally in accordance with the approved structure plan.*



Figure 3 – City of Kalamunda LPS3 Zoning

## 2.5 State Policies

*State Planning Policy 2.9 – Water*

State Planning Policy 2.9 – Water is a broad policy that ensures planning and development suitably considers all matters pertaining to water resources. Applicable to the proposed Structure Plan are matters relating to waterways and wetlands, water use and infrastructure, water quality, stormwater and groundwater and wastewater. The objectives of the policy are to:

- *Protect and improve the environmental and the social, cultural and economic values of the state's water resources.*
- *Protect public health and the long-term supply of good quality and affordable drinking water.*
- *Manage the risk of flooding to people, property and infrastructure.*
- *Ensure the secure and sustainable supply, use, disposal and re-use of water resources.*
- *Ensure future development is resilient to the water related impacts of climate change.*
- *Minimise future costs and protect public health by ensuring that appropriate wastewater infrastructure is provided.*

Further detail on the application of State Planning Policy 2.9 – Water is addressed in Section 5.6, 5.7 and 5.13 of the report as it relates to the proposed Local Water Management Report, onsite treatment and disposal effluent within the Hatch Court Precinct and wetland management.

*State Planning Policy 3.7 – Planning in Bushfire Prone Areas*

State Planning Policy No 3.7 – Planning in Bushfire Prone Areas (SPP 3.7) applies to land identified and designated by the Fire and Emergency Services Commissioner under the *Fire and Emergency Services Act 1998 (as amended)*. Such areas are identified on the Map of Bush Fire Prone Areas. Designation of an area as being bushfire prone reflects the potential of bushfire to affect that site.

Under the provisions of SPP 3.7, strategic planning proposals are to be accompanied by the following information:

- The results of a BHL assessment determining the applicable hazard level(s) across the subject land, in accordance with the methodology set out in the Guidelines. BHL assessments should be prepared by an accredited Bushfire Planning Practitioner; or*

- b) *Where the lot layout of the proposal is known, a BAL Contour Map to determine the indicative acceptable BAL ratings across the structure plan area, in accordance with the Guidelines. The BAL Contour Map should be prepared by an accredited Bushfire Planning Practitioner; and*
- c) *The identification of any bushfire hazard issues arising from the relevant assessment; and*
- d) *Clear demonstration that compliance with the bushfire protection criteria in the Guidelines can be achieved in subsequent planning stages.*

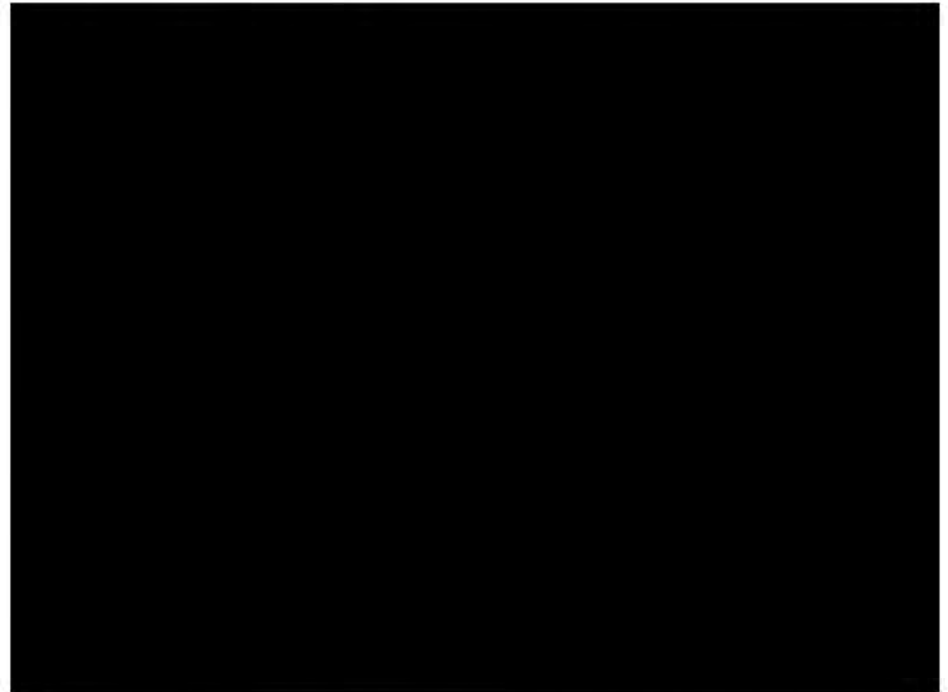
Further detail on bushfire planning for the Structure Plan is contained under Section 5.12 of this report.

#### *State Planning Policy 4.1 – Industrial Interface*

State Planning Policy 4.1 – Industrial Interface (SPP 4.1) ensures planning decisions consider the locational constraints of land uses, the significant investments represented, and the current and future benefits and costs to communities when assessing proposals where land use conflict may exist or result. The objectives of this policy are to:

- *Ensure the impacts of industrial land uses are considered at all stages of the planning process;*
- *Adequately separate industrial land uses and any resulting off-site impacts and/or safety risks from incompatible land uses to:*
  - *Protect industrial areas to improve long-term operational certainty*
  - *Avoid, mitigate or manage potential impacts on the health and amenity of people and the environment*
  - *Promote co-location of like uses to minimise the impact area; and*
- *Plan the land use transition between industrial land uses/infrastructure facilities and sensitive land uses by providing compatible zones, reserves and land uses.*

Further detail on how State Planning Policy 4.1 – Industrial Interface was considered as part of the design of the Structure Plan is addressed in Section 5.2 & 5.3 of the report, with specific reference to the interface with the Stirling Crescent Precinct and existing residential development south of Kalamunda Road.



#### *Development Control Policy 5.1 – Regional Roads (Vehicular Access)*

Development Control Policy 5.1 – Regional Roads (Vehicular Access) is in place to limit and control access to regional roads within the Perth Metropolitan Region. The objectives of the policy are to:

- *To outline planning principles to be applied in the determination of proposals for vehicle access to regional roads*

- To ensure that vehicle access to regional roads and the type of abutting developments is controlled and conforms with sound town planning principles.
- To improve traffic flow and safety on all regional roads, either new or existing, by minimising the number of junctions or driveways.

Further detail on how this policy was considered in relation to access to and from Kalamunda Road has been addressed in Section 5.3 of this report.

## 2.6 Local Government Planning Strategies and Policies

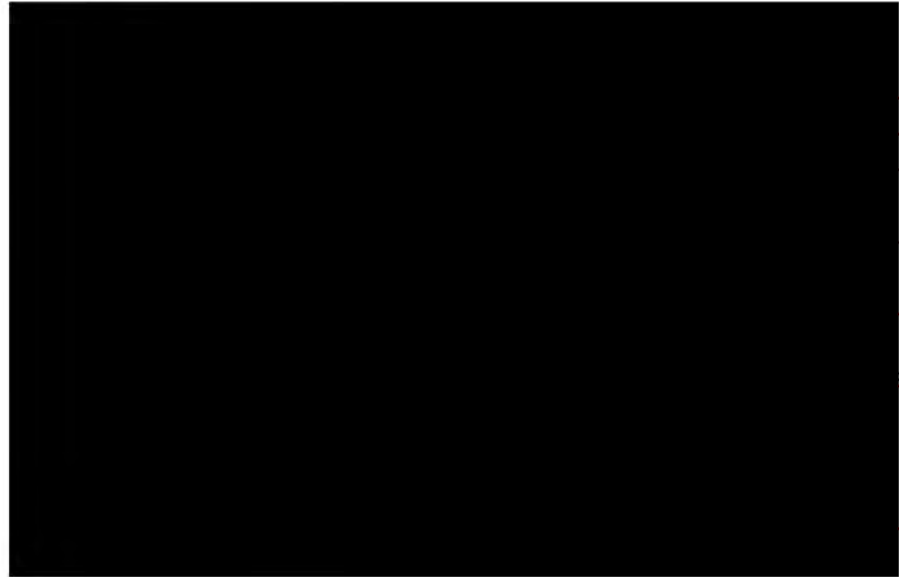
### *City of Kalamunda Local Planning Strategy*

The Local Planning Strategy (LPS) has been prepared to set out the long-term planning directions for the City and to guide land use planning within the City. The Local Planning Strategy was endorsed in 2013 with a new Local Planning Strategy currently being drafted. The objectives of the Local Planning Strategy include:

- To be a guiding document that provides strategy planning direction to the year 2031.
- To set out the direction for economic, social, and environmentally sustainable development based on a comprehensive analysis of State, regional and local planning issues and objectives.
- To give direction to the Shire of Kalamunda Council, the Department of Planning, the Western Australian Planning Commission (WAPC) and the Minister for Planning, in the assessment of Scheme amendments, subdivision and development applications and to provide strategic support for this decision making.
- To provide the basis for coordinated decision making on future servicing of the Shire by local, State government and servicing agencies.

- To provide a rationale for the strategic direction for growth and development to all stakeholders.
- To provide the context for coordinated planning and programming of physical and social infrastructure for the Shire.
- To identify further studies or investigations required within the Shire to meet objectives for creating good quality environments.

The Structure Plan area is identified in the Local Planning Strategy as an Urban Expansion area. ~~Development within the Stirling Crescent Precinct would be consistent with the intent of the Local Planning Strategy but~~ industrial development within the Hatch Court Precinct would not. However, given the date of the Local Planning Strategy and the present scheme zoning of 'Light Industry' it is evident the strategic direction for this precinct has changed since the endorsement of the Local Planning Strategy.



  
*Local Planning Policy 35 – Hatch Court Light Industrial Area*

The intent of Local Planning Policy 35 – Hatch Court Light Industrial Area is to provide a framework for which subdivision and development within the Hatch Court Precinct can occur ahead of the adoption of a Local Structure Plan, Development Contribution Plan and Design Guidelines for the area. The objectives of the policy are to ensure that subdivision and development:

- a) Does not prejudice or preclude the orderly and proper planning of the area via the Structure Plan;*
- b) Does not prejudice or preclude the timely and coordinated delivery of common infrastructure that is reasonably required for and generated by development in the area; and*
- c) Is accompanied by relevant details and technical information to address these requirements; and*
- d) If approved, is subject to a condition requiring satisfactory arrangements to be made with the City for payment of the landowner's development contribution through a developer contribution Plan or alternative rating model option in future, once the preferred infrastructure funding model is adopted.*

The framework for subdivision and development provided by Local Planning Policy No. 35 has been considered in detail as part of preparing the Structure Plan. Adopting the provision contained within the Structure Plan will suitably address the provisions included in Local Planning Policy 35.

### 3.0 Opportunities and Constraints Analysis

#### 3.1 Bushfire Hazard

A Bushfire Management Plan has been prepared to accompany the Structure Plan in order to address the requirements of SPP3.7 as the subject site is identified as being located within a bushfire prone area. Details on how the Bushfire Management Plan impacts the Structure Plan are addressed in Section 5.12 with the report included in Appendix 2.

#### 3.2 Wetlands

There are two existing Resource Enhancement Wetlands (UFI 16226 and 15940) within the Hatch Court Precinct of the Structure Plan. As part of the Environmental Assessment Report completed to inform the Structure Plan (Appendix 6), a detailed assessment of these wetlands was undertaken to verify their classification and boundary whilst also recommending a 15m buffer in order to protect and enhance the ecological values of the wetlands. Details on how the wetlands and their buffers will be managed as part of the Structure Plan are addressed in Section 5.13.

#### 3.3 Traffic and Access

The Structure Plan has the potential to capitalise on access to an existing RAV network and broader regional road upgrades as part of the Great Eastern Highway Bypass Interchanges Project. As part of this project Abernethy Road will be upgraded to a RAV7 standard with an upgraded intersection at Adelaide Street which is planned to become the one of the primary access points to Abernethy Road and the Great Eastern Highway Bypass with the existing Stirling Crescent and Great Eastern Highway Bypass intersection to be closed.

Separate local road upgrades to Adelaide Street are occurring to enable RAV4 access on Adelaide Street between Stirling Crescent and Abernethy Road which includes a new intersection between Lot 101 and Lot 102 Adelaide Street, High Wycombe which has been constructed and has facilitated the Peak Court road reserve that will connect the Structure Plan to Adelaide Street. It is however relevant to mention that the existing section of Adelaide Street has conditional RAV4 access in place already.

In addition to the broader regional road network, the Structure Plan also has frontage to Stirling Crescent and Kalamunda Road which have predominant residential interfaces. As a result, it is necessary to limit the impact of industrial traffic onto these roads in accordance with the requirements of Table 4 in LPS3 and Development Control Policy 5.1.

Details on how the Structure Plan ties into the existing broader regional road network and limits the impact of industrial traffic on the surrounding residential street interfaces has been addressed in Section 5.3 of this report.

#### 3.4 Acid Sulphate Soils & Contaminated Sites

The Structure Plan area is mapped as having a mixture of low to moderate and moderate to high risk of Acid Sulphate Soils. This was examined as part of the geotechnical investigations that were carried out as part of the Structure Plan (Appendix 7) which confirmed the likely presence of Acid Sulphate Soils. As such, it has been recommended that as a condition of subdivision and development applications, more detailed site specific investigations are carried out with site specific management plans potentially being necessary.

None of the properties within the Structure Plan area are noted as being contaminated sites on the DWER Contaminated Sites Database.

### 3.5 Ground and Surface Water

Groundwater is at, or close to, the surface around the drainage line, with separation increasing to more than 3m in the higher portion. Flows generally head in a north westerly direction and water quality testing indicated a slightly elevated inherent acidity and high to very high alkalinity concentrations which indicates sufficient self-buffering capacity to maintain an acceptable pH in the event of Acid Sulphate Soils generation.

The subject land's surface water predominantly infiltrates into the sandy soils except during intense heavy rain events. The exception is for those areas of the subject land where the groundwater comes to or close to the surface e.g. within 0.3m of the surface. This means that the runoff is generally greatest during large thunderstorms or in late winter when groundwater is at its highest.

The subject land has multiple catchments where water either discharges off site or is infiltrated within the trapped lows. Furthermore, there are significant upstream catchments that feed into the subject land. Details on how water management is proposed to be addressed as part of the Structure Plan is discussed in Section 5.6.

### 3.6 Aboriginal and European Heritage

There is part of a listed Aboriginal Cultural Heritage Site mapped on the site, Site ID 3719 Munday Swamp. There are also lodged Aboriginal Cultural Heritage Sites within the Structure Plan which are:

- Place ID 30039, Stirling Crescent Swamp
- Place ID 124, High Wycombe 05.
- Place ID 125, High Wycombe 06.

These sites are illustrated below in Figure 4.

Lodged Aboriginal Cultural Heritage Sites are mapped from information which has been received in relation to an Aboriginal cultural heritage place, but is yet to be assessed under Section 5 of the *Aboriginal Heritage Act 1972*.

### 3.7 Servicing

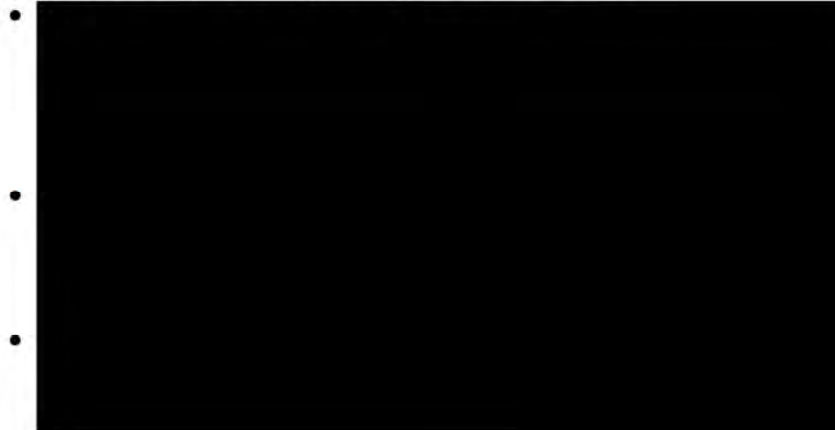
All necessary services exist within the vicinity of the Structure Plan area and are able to be upgraded to suitably service future development Lot sizes and development within the Hatch Court Precinct is able to be provided with onsite treatment and disposal of effluent ~~but the provision of reticulated sewer to the Stirling Crescent Precinct will require the extension and upgrade of existing infrastructure. Due to the depth of the existing sewer infrastructure on Stirling Crescent to the north, it is anticipated that a level of fill and retaining (estimated at 1-1.5m) will be necessary in parts of the Stirling Crescent Precinct to facilitate a suitable sewer extension. The extent of the fill and retaining will be determined through a detailed design investigation.~~

### 3.8 Design Considerations

In considering the design of the Structure Plan, the following design considerations have informed the proposed industrial development, ~~the location and density of residential development, the location and size of public open space and the road layout.~~

- Proximity to the existing RAV network along Adelaide Street and ability to extend it into the Hatch Court Precinct which will appeal to a wider array of industrial businesses.
- The need to balance protecting and enhancing the existing Resource Enhancement Wetlands and achieving a suitable industrial development footprint on a number of different landholdings.

- The need for stormwater conveyance through the Hatch Court Precinct and desire to enhance this through the provision of a living stream which also considers the developability of the impacted landholdings.
- The amenity benefits to the eventual employment population of proximity to a proposed living stream.
- The need to protect existing and future residential amenity by limiting industrial traffic onto Stirling Crescent and Kalamunda Road. This ultimately informed the closure of the Stirling Crescent and Hatch Court intersection as well as the access controls imposed on Lot 200 (No. 584) Kalamunda Road.



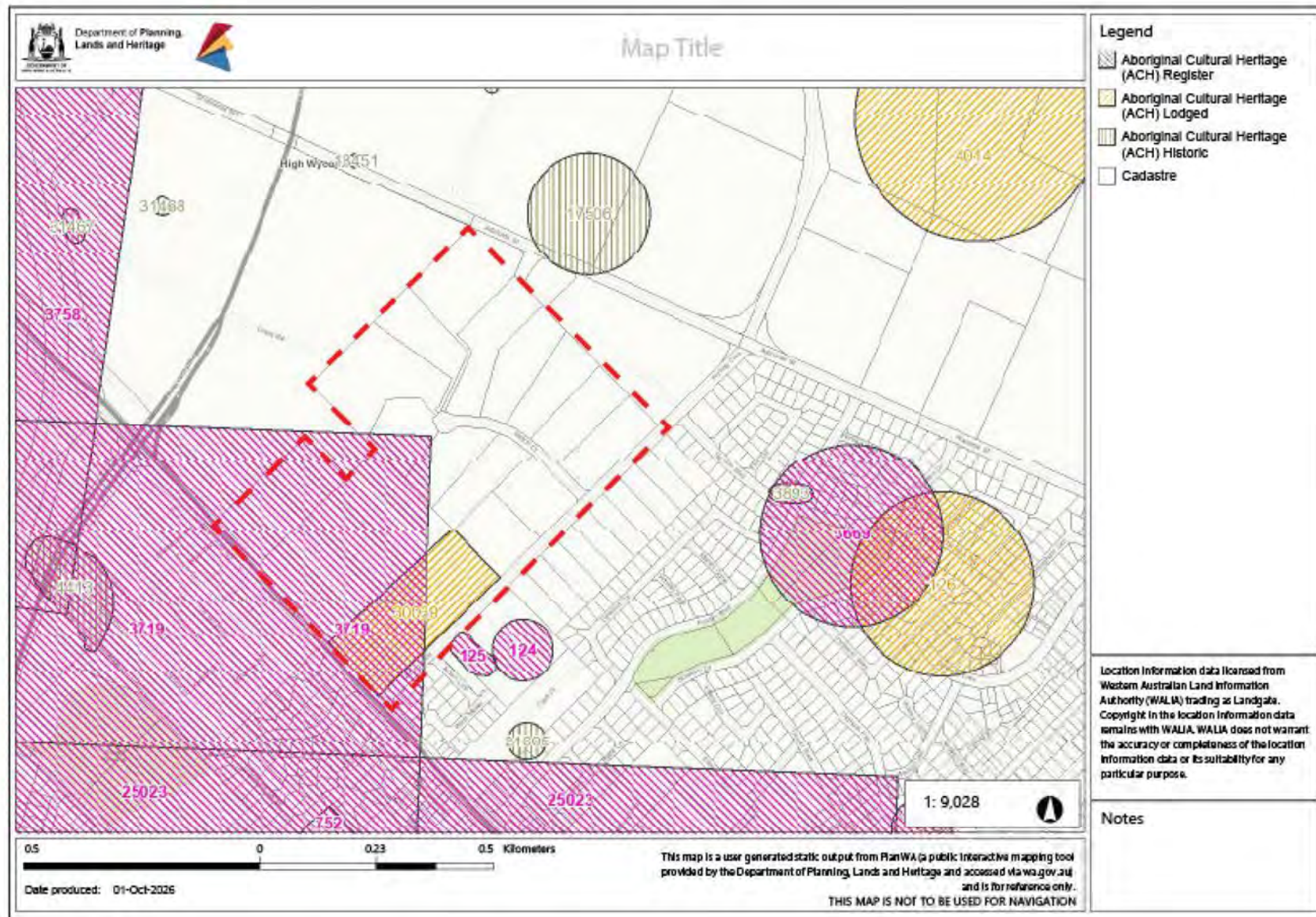


Figure 4 – Aboriginal Heritage Mapping

#### 4.0 Stakeholder and Community Engagement

Prior to formal lodgement of the Structure Plan, a number of preliminary discussions were held between the City of Kalamunda and the appointed project team with respect to assembling all relevant background information and providing input into the final Structure Plan being considered for lodgement. Other pre-lodgement engagement that has occurred included:

- Engagement with landowners within the Structure Plan area and those within the immediate vicinity of the project via letters.
- Direct engagement with landowners within the Structure Plan area via one-on-one meetings.
- Extensive information pertaining to the project being made available to the affected landowners and the broader local community via the City's Engage Page on its social media platform, including fact sheets and a form enabling interested landowners to outline their specific areas of interest to the project.
- Discussions with the Department of Water and Environmental Regulation (DWER) with regard to the proposed living stream.
- Liaison with Water Corporation around the available servicing capacity for the Structure Plan area.
- Correspondence with Main Roads to discuss how the Great Eastern Highway Bypass Interchanges project would impact the proposed Structure Plan.

## 5.0 Design Response

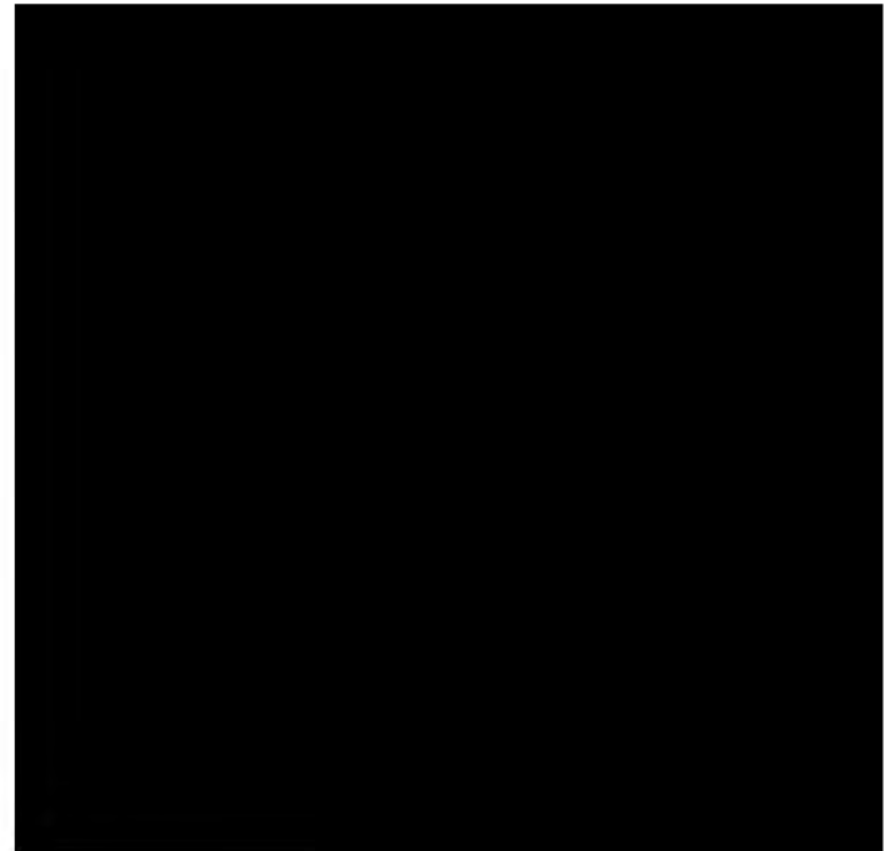
### 5.1 Purpose

The purpose of the Structure Plan is as follows:

- Provide a planning framework to guide future use, subdivision and development of the land.
- Conserve and enhance the existing environmental features of the land.
- Facilitate high-quality light industrial ~~and residential~~ development that protects the amenity afforded to existing residents in the area.

### 5.2 Community Design

The Structure Plan provides a framework for the delivery of light industrial development within the Hatch Court Precinct, consistent with the existing zoning under LPS3, ~~and residential development within the Stirling Crescent Precinct with the land use permissibility to be consistent with the corresponding zones under LPS3. The proposed residential density within the Stirling Crescent Precinct of R25 – R30 is considered to be appropriate considering the existing lot sizes, integration with abutting residential development and proximity to local amenity and public transport. Alternate land use outcomes that were considered for the Stirling Crescent Precinct included:~~



As part of considering the land use outcomes within the Structure Plan, an Economic Impact Assessment was completed to identify quantifiable economic impacts that may arise from development as part of the Structure Plan. A copy of this report is included in Appendix 9 with the key economic benefits summarised below:

- A projected \$539.2-\$665.1 million of construction output (direct and indirect) to the economy.

- The construction phase is estimated to generate between 335-414 direct construction jobs, plus another 451-556 production-induced indirect FTE jobs and 425-524 consumption-induced indirect FTE jobs elsewhere in the economy.
- Resultant development is likely to be anchored by transport, postal and warehousing, manufacturing and construction, followed by wholesale trade, mining and other services (i.e. repair and maintenance), and supplemented by business services, professional services and other supporting services benchmarking to the current industrial mix in the existing Forrestfield / High Wycombe industrial precinct.
- Once construction is completed, it is anticipated that a total of 2,235-2,792 direct and indirect jobs in the local and regional economy will be generated.
- The ongoing employment from within the Structure Plan will result in \$887.2-\$1,108.6 million in direct and indirect economic output per annum.
- ~~The Stirling Crescent Precinct has the capacity to generate up to \$14.5-\$15.8 million in consumption expenditure per year.~~
- The industrial ~~and residential~~ development within the Structure Plan will generate approximately \$1.4-\$1.7 million ~~of additional~~ rates revenue per annum.

A copy of the relevant Structure Plan is illustrated in Figure 5 below. An overview of the key elements is provided in Table 3 below.

| Item                                                |                                                      |
|-----------------------------------------------------|------------------------------------------------------|
| Total Structure Plan Area                           | 26.679ha                                             |
| Area of each land use zones:                        |                                                      |
| • <del>Residential</del>                            | <del>4.9126ha</del>                                  |
| • Light Industry                                    | 21.57ha                                              |
| Area of reserves:                                   |                                                      |
| • New Road Reserves                                 | 1.4088ha                                             |
| • <del>Public Open Space/Drainage</del>             | <del>0.29ha</del>                                    |
| Area of environmental/drainage features:            |                                                      |
| • Wetlands & Buffer                                 | 3.0591ha                                             |
| • Living Stream                                     | 0.6415ha                                             |
| <del>Estimated lot yield (Residential R25/30)</del> | <del>140 lots</del>                                  |
| <del>Estimated dwellings</del>                      | <del>140 dwellings</del>                             |
| <del>Estimated density per site hectare</del>       | <del>28.5 dwellings</del>                            |
| <del>Estimated population</del>                     | <del>350 residents @ 2.5 people per household.</del> |
| <del>Primary Schools</del>                          | <del>None</del>                                      |
| High Schools                                        | None                                                 |
| Total Structure Plan Area                           | 26.679ha                                             |

Table 3 – Structure Plan Summary

## Hatch Court Light Industrial Area Structure Plan

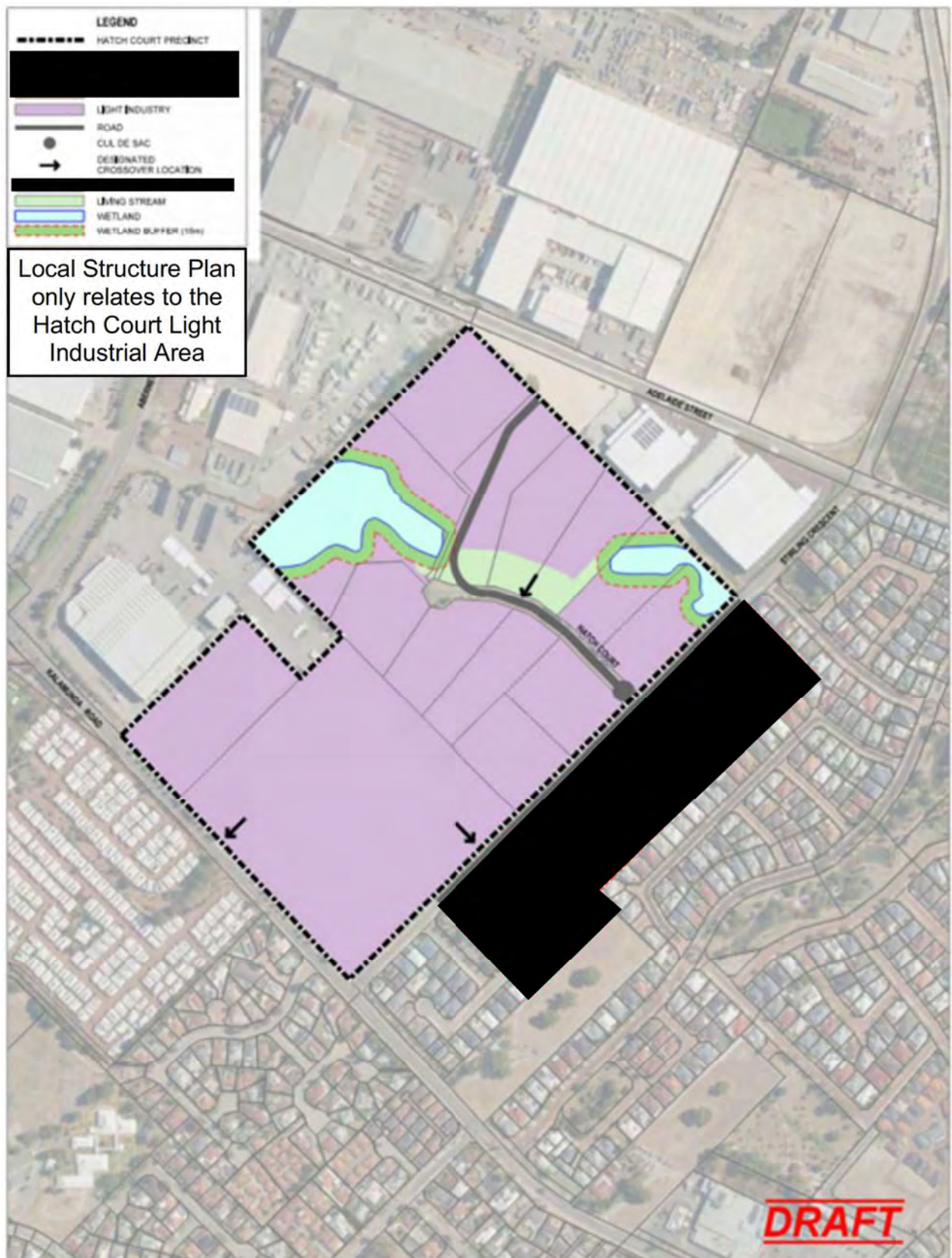


Figure 5 – Structure Plan

### 5.3 Movement Network

#### Hatch Court Precinct

The proposed road network within the Hatch Court Precinct includes the construction of a new 20m wide RAV4 road from Hatch Court to Adelaide Street through Lot 13 which is owned by the City of Kalamunda. In addition, the existing Hatch Court road reserve will be retained at 18m wide and the seal width upgraded to accommodate RAV4 traffic with the existing intersection with Stirling Crescent to be closed and replaced with a cul-de-sac in order to limit industrial traffic onto Stirling Crescent in accordance with the requirements of Table 4 of LPS3. The proposed road network followed an extensive review process whereby a range of options were contemplated. These options and various pro's and cons are set out in Table 4 below.

Where the new road connection to Adelaide Street ties in to the existing Hatch Court, there will be surplus land that results. It is undetermined as to what purpose this land will be used for as it will be at the discretion of the City of Kalamunda, one possibility including the creation of a small lot for lease to a telecommunication service to allow a telecommunication monopole.

In addition to the proposed road network, access restrictions are also being imposed as part of the Structure Plan. This is applicable to Lot 200 Kalamunda Road and Lots 11 and 12 Hatch Court. The access restrictions associated with Lot 200 relate to limiting access and egress points to Kalamunda Road and Stirling Crescent to the existing crossover locations in order to:

1. Suitably manage the industrial / residential interface in accordance with State Planning Policy 4.1 and protect the residential amenity of existing properties fronting these roads by limiting the extent of industrial traffic utilising these roads.
2. Comply with the provisions of Table 4 in LPS3 which seeks to avoid direct access to Stirling Crescent.

3. Comply with Development Control Policy 5.1 by limiting and rationalising access to regional roads such as Kalamunda Road.

The access restrictions and requirement for shared access to Hatch Court for Lots 11 and 12 seeks to limit the number of crossings over the living stream. A similar restriction exists currently with an access easement in place across the drainage corridor to facilitate shared access to the two existing dwellings.

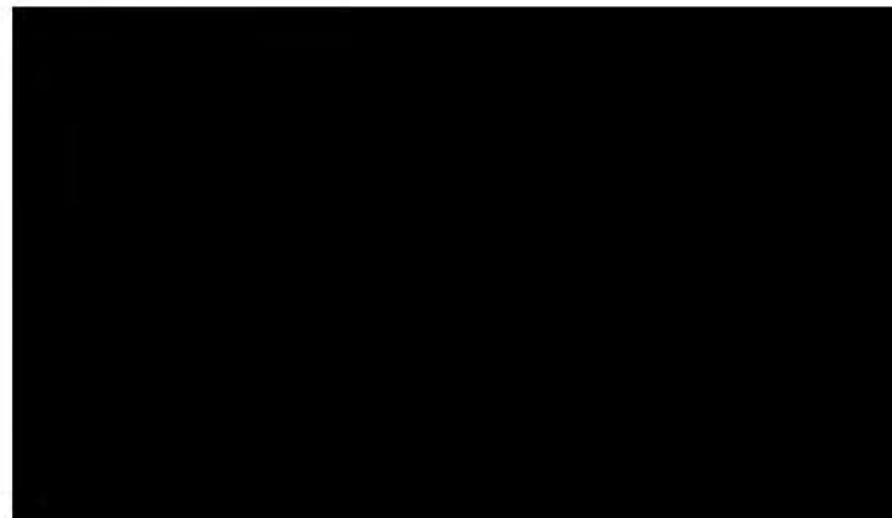




Figure 6 — Access Street Requirements

| Option                                                                                                                                              | Pros                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Cons                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Option 1 – Extension and construction of LSP Road through to Kalamunda Road with Hatch Court becoming a cul-de-sac</b>                           | <ul style="list-style-type: none"> <li>• More even distribution of traffic on the broader road network and less pressure on Adelaide Street intersection.</li> <li>• Improved options for the development/subdivision of Lot 200.</li> <li>• Complies with the planning scheme objectives to keep industrial traffic off Stirling Crescent as much as possible.</li> <li>• Modelling would suggest a level of service shown below for the relevant intersections.</li> </ul> | <ul style="list-style-type: none"> <li>• Road extension and intersection will require either a signalised intersection or roundabout to RAV4 standard to be supported by MRWA.</li> <li>• Cost of delivery is significant.</li> <li>• Strong preliminary community objection to access/intersection with Kalamunda Road and additional industrial traffic onto Kalamunda Road.</li> <li>• Kalamunda Road east of Abernethy Road is not a designated RAV route.</li> </ul> |
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| <b>Option 2 – Retention and modification of Hatch/Stirling intersection to allow access/egress onto Stirling with restricted industrial access.</b> | <ul style="list-style-type: none"> <li>• More even distribution of traffic on the broader road network and less pressure on Adelaide Street intersection.</li> <li>• Cost implications not as significant as other alternatives.</li> <li>• Modelling would suggest a level of service shown below for the relevant intersections.</li> </ul>                                                                                                                                | <ul style="list-style-type: none"> <li>• Non-compliant with the scheme provisions as it permits industrial traffic (albeit limited) onto Stirling Crescent which is likely to impact the amenity of the residential development on the opposite side of Stirling Crescent.</li> <li>• Doesn't provide Lot 200 with any additional road access and would infer that existing frontages to</li> </ul>                                                                       |
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| Option                                                                                      | Pros                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cons                                  |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
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|                                                                                             | <table> <tr> <td>I-2_Stirling Crescent/Adelaide Street</td><td>14.5</td><td>B</td></tr> <tr> <td>I-3_Stirling Crescent/Kalamunda Road</td><td>29.0</td><td>D</td></tr> <tr> <td>I-4_Kalamunda Road/Site Access 2</td><td>19.8</td><td>C</td></tr> <tr> <td>I-5_Stirling Crescent/Hatch Court</td><td>6.2</td><td>A</td></tr> </table><br><table> <tr> <td>PM Peak</td><td colspan="2">Option 2</td></tr> <tr> <td></td><td>Delay</td><td>LOS</td></tr> <tr> <td>I-1_Adelaide Street/Site Access 1</td><td>6.3</td><td>A</td></tr> <tr> <td>I-2_Stirling Crescent/Adelaide Street</td><td>17.8</td><td>C</td></tr> <tr> <td>I-3_Stirling Crescent/Kalamunda Road</td><td>101.3</td><td>F</td></tr> <tr> <td>I-4_Kalamunda Road/Site Access 2</td><td>35</td><td>E</td></tr> <tr> <td>I-5_Stirling Crescent/Hatch Court</td><td>6.4</td><td>A</td></tr> </table>                                                                                                                                                                                                  | I-2_Stirling Crescent/Adelaide Street | 14.5     | B | I-3_Stirling Crescent/Kalamunda Road | 29.0  | D   | I-4_Kalamunda Road/Site Access 2  | 19.8 | C | I-5_Stirling Crescent/Hatch Court     | 6.2  | A | PM Peak                              | Option 2 |   |                                  | Delay | LOS | I-1_Adelaide Street/Site Access 1 | 6.3      | A | I-2_Stirling Crescent/Adelaide Street | 17.8  | C   | I-3_Stirling Crescent/Kalamunda Road | 101.3 | F | I-4_Kalamunda Road/Site Access 2                                                                                                                                                                                                                                                                                                                                                                                                                          | 35 | E | I-5_Stirling Crescent/Hatch Court | 6.4 | A | <p>Kalamunda and Stirling for this lot will facilitate industrial traffic access for as of right vehicles.</p> <ul style="list-style-type: none"> <li>Would conflict with existing DA approvals that have been granted which required a proposed cul-de-sac to be contemplated.</li> </ul> |
| I-2_Stirling Crescent/Adelaide Street                                                       | 14.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | B                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-3_Stirling Crescent/Kalamunda Road                                                        | 29.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | D                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-4_Kalamunda Road/Site Access 2                                                            | 19.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-5_Stirling Crescent/Hatch Court                                                           | 6.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| PM Peak                                                                                     | Option 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
|                                                                                             | Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LOS                                   |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-1_Adelaide Street/Site Access 1                                                           | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-2_Stirling Crescent/Adelaide Street                                                       | 17.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-3_Stirling Crescent/Kalamunda Road                                                        | 101.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | F                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-4_Kalamunda Road/Site Access 2                                                            | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | E                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-5_Stirling Crescent/Hatch Court                                                           | 6.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| <b>Option 3 – Cul-de-sac at Hatch Court and no additional LSP roads through to Lot 200.</b> | <ul style="list-style-type: none"> <li>Most cost effective option with respect to facilitating development in the precinct.</li> <li>Complies with local planning scheme objectives to restrict industrial traffic on Stirling Crescent.</li> <li>Consistent with DAP decisions in the precinct.</li> <li>Modelling would suggest a level of service shown below for the relevant intersections.</li> </ul><br><table> <tr> <td>AM Peak</td><td colspan="2">Option 3</td></tr> <tr> <td></td><td>Delay</td><td>LOS</td></tr> <tr> <td>I-1_Adelaide Street/Site Access 1</td><td>6.4</td><td>A</td></tr> <tr> <td>I-2_Stirling Crescent/Adelaide Street</td><td>15.2</td><td>C</td></tr> <tr> <td>I-3_Stirling Crescent/Kalamunda Road</td><td>29.0</td><td>D</td></tr> <tr> <td>I-4_Kalamunda Road/Site Access 2</td><td>19.8</td><td>C</td></tr> </table><br><table> <tr> <td>PM Peak</td><td colspan="2">Option 3</td></tr> <tr> <td></td><td>Delay</td><td>LOS</td></tr> <tr> <td>I-1_Adelaide Street/Site Access 1</td><td>6.4</td><td>A</td></tr> </table> | AM Peak                               | Option 3 |   |                                      | Delay | LOS | I-1_Adelaide Street/Site Access 1 | 6.4  | A | I-2_Stirling Crescent/Adelaide Street | 15.2 | C | I-3_Stirling Crescent/Kalamunda Road | 29.0     | D | I-4_Kalamunda Road/Site Access 2 | 19.8  | C   | PM Peak                           | Option 3 |   |                                       | Delay | LOS | I-1_Adelaide Street/Site Access 1    | 6.4   | A | <ul style="list-style-type: none"> <li>Doesn't provide Lot 200 with any additional road access and would infer that existing frontages to Kalamunda and Stirling for this lot will facilitate industrial traffic access for as of right vehicles.</li> <li>More concentrated distribution of traffic through the Adelaide Street intersection – despite this, modelling indicates a suitable level of performance, noted in the 'pros' column.</li> </ul> |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| AM Peak                                                                                     | Option 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
|                                                                                             | Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LOS                                   |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-1_Adelaide Street/Site Access 1                                                           | 6.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-2_Stirling Crescent/Adelaide Street                                                       | 15.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-3_Stirling Crescent/Kalamunda Road                                                        | 29.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | D                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-4_Kalamunda Road/Site Access 2                                                            | 19.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| PM Peak                                                                                     | Option 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
|                                                                                             | Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LOS                                   |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |
| I-1_Adelaide Street/Site Access 1                                                           | 6.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A                                     |          |   |                                      |       |     |                                   |      |   |                                       |      |   |                                      |          |   |                                  |       |     |                                   |          |   |                                       |       |     |                                      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                           |    |   |                                   |     |   |                                                                                                                                                                                                                                                                                            |

| Option                                                                                                           | Pros                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cons                                  |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|-----------------------------------|-----|---|---------------------------------------|------|---|--------------------------------------|------|---|---------|----------|--|--|-------|-----|-----------------------------------|-----|---|---------------------------------------|------|---|--------------------------------------|------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                  | <table> <tr> <td>I-2_Stirling Crescent/Adelaide Street</td><td>18.7</td><td>C</td></tr> <tr> <td>I-3_Stirling Crescent/Kalamunda Road</td><td>101.3</td><td>F</td></tr> <tr> <td>I-4_Kalamunda Road/Site Access 2</td><td>35</td><td>E</td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | I-2_Stirling Crescent/Adelaide Street | 18.7     | C | I-3_Stirling Crescent/Kalamunda Road                                                                                                                                                                                                                                                | 101.3 | F   | I-4_Kalamunda Road/Site Access 2  | 35  | E |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-2_Stirling Crescent/Adelaide Street                                                                            | 18.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-3_Stirling Crescent/Kalamunda Road                                                                             | 101.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | F                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-4_Kalamunda Road/Site Access 2                                                                                 | 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | E                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Option 4 – minor extension of the LSP road through to Lot 200. Retention of cul-de-sac at Hatch.</b>          | <ul style="list-style-type: none"> <li>Relative to other contemplated options (except Option 3), the extent of upgrades and associated cost is reduced.</li> <li>Provides additional access options/outlet for Lot 200 traffic to go back to the Adelaide Street intersection. This is likely to assist in reducing industrial traffic on Kalamunda Road and Stirling Crescent.</li> <li>Modelling would suggest a level of service shown below for the relevant intersections.</li> </ul> <table> <tr> <td>AM Peak</td><td colspan="2">Option 4</td></tr> <tr> <td></td><td>Delay</td><td>LOS</td></tr> <tr> <td>I-1_Adelaide Street/Site Access 1</td><td>7.0</td><td>A</td></tr> <tr> <td>I-2_Stirling Crescent/Adelaide Street</td><td>16.5</td><td>C</td></tr> <tr> <td>I-3_Stirling Crescent/Kalamunda Road</td><td>26.5</td><td>D</td></tr> </table><br><table> <tr> <td>PM Peak</td><td colspan="2">Option 4</td></tr> <tr> <td></td><td>Delay</td><td>LOS</td></tr> <tr> <td>I-1_Adelaide Street/Site Access 1</td><td>6.8</td><td>A</td></tr> <tr> <td>I-2_Stirling Crescent/Adelaide Street</td><td>20.2</td><td>C</td></tr> <tr> <td>I-3_Stirling Crescent/Kalamunda Road</td><td>68.2</td><td>F</td></tr> </table> | AM Peak                               | Option 4 |   |                                                                                                                                                                                                                                                                                     | Delay | LOS | I-1_Adelaide Street/Site Access 1 | 7.0 | A | I-2_Stirling Crescent/Adelaide Street | 16.5 | C | I-3_Stirling Crescent/Kalamunda Road | 26.5 | D | PM Peak | Option 4 |  |  | Delay | LOS | I-1_Adelaide Street/Site Access 1 | 6.8 | A | I-2_Stirling Crescent/Adelaide Street | 20.2 | C | I-3_Stirling Crescent/Kalamunda Road | 68.2 | F | <ul style="list-style-type: none"> <li>More concentrated distribution of traffic through the Adelaide Street intersection – despite this, modelling indicates a suitable level of performance, noted in the ‘pros’ column.</li> <li>Lot 200 subdivision and development is still likely to rely on access/egress from Stirling Crescent and Kalamunda Road.</li> <li>Reduced industrial development potential and places an imposition on 24 Hatch Court and/or 26 Hatch Court.</li> <li>Benefit of road extension will not be even throughout the precinct which will complicate the infrastructure funding process.</li> <li>Greater cost than Option 3, which is the most cost effective.</li> </ul> |
| AM Peak                                                                                                          | Option 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                  | Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LOS                                   |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-1_Adelaide Street/Site Access 1                                                                                | 7.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-2_Stirling Crescent/Adelaide Street                                                                            | 16.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-3_Stirling Crescent/Kalamunda Road                                                                             | 26.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | D                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PM Peak                                                                                                          | Option 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                  | Delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | LOS                                   |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-1_Adelaide Street/Site Access 1                                                                                | 6.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-2_Stirling Crescent/Adelaide Street                                                                            | 20.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | C                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I-3_Stirling Crescent/Kalamunda Road                                                                             | 68.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | F                                     |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Option 5 – Extension of LSP road through to Lot 200 and then a subsequent extension to Stirling Crescent.</b> | <ul style="list-style-type: none"> <li>Relative to other contemplated options the extent of upgrades and associated cost is reduced but this assumes cost of road within Lot 200 will be borne entirely by the developer of Lot 200.</li> <li>More even distribution of traffic on the broader road network and less pressure on Adelaide Street intersection.</li> <li>Modelling would suggest a level of service shown below for the relevant intersections.</li> </ul> <table> <tr> <td>AM Peak</td><td colspan="2">Option 5</td></tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | AM Peak                               | Option 5 |   | <ul style="list-style-type: none"> <li>Non-compliant with the scheme provisions as it permits industrial traffic (albeit limited) onto Stirling Crescent which is likely to impact the amenity of the residential development on the opposite side of Stirling Crescent.</li> </ul> |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| AM Peak                                                                                                          | Option 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |          |   |                                                                                                                                                                                                                                                                                     |       |     |                                   |     |   |                                       |      |   |                                      |      |   |         |          |  |  |       |     |                                   |     |   |                                       |      |   |                                      |      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Option | Pros                                  | Cons     |     |
|--------|---------------------------------------|----------|-----|
|        |                                       | Delay    | LOS |
|        | I-1_Adelaide Street/Site Access 1     | 6.4      | A   |
|        | I-2_Stirling Crescent/Adelaide Street | 15.4     | C   |
|        | I-3_Stirling Crescent/Kalamunda Road  | 29.4     | D   |
|        | I-6_Stirling Crescent/Site Access 3   | 4.6      | A   |
|        | PM Peak                               | Option 5 |     |
|        |                                       | Delay    | LOS |
|        | I-1_Adelaide Street/Site Access 1     | 6.4      | A   |
|        | I-2_Stirling Crescent/Adelaide Street | 19.2     | C   |
|        | I-3_Stirling Crescent/Kalamunda Road  | 184.9    | F   |
|        | I-6_Stirling Crescent/Site Access 3   | 5.4      | A   |

- Timing of delivery is uncertain given the development timeframe for Lot 200 is likely to be protracted.
- Reduced industrial development potential and places an imposition on 24 Hatch Court and/or 26 Hatch Court.
- Benefit of road extension will not be even throughout the precinct which will complicate the infrastructure funding process.

Table 4 – Road Access Options

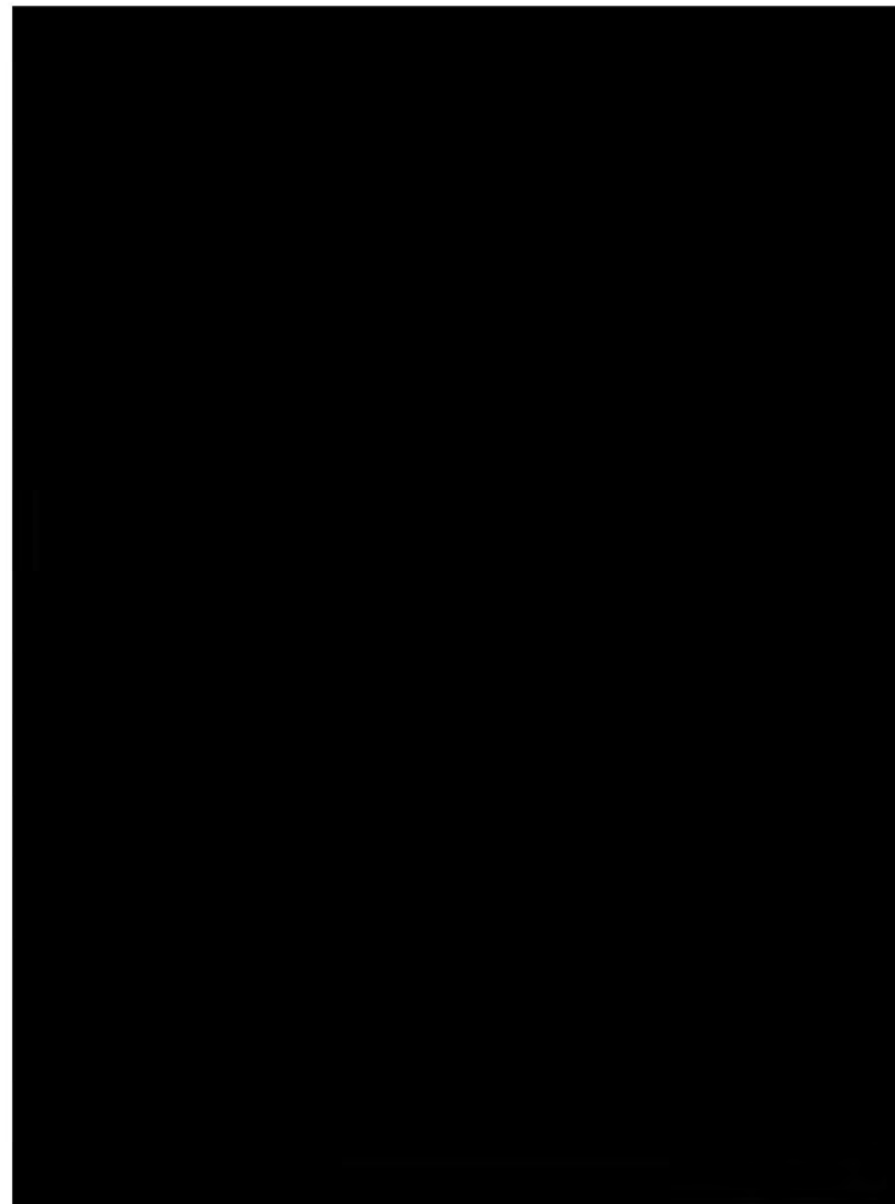
## 5.4 Lot Layout

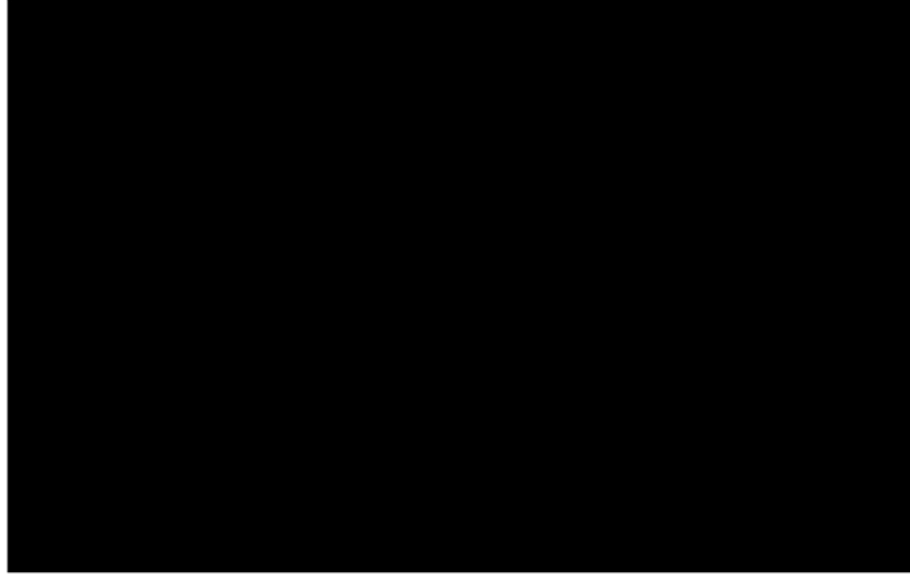
### Hatch Court Precinct

The proposed light industrial development within the Hatch Court Precinct is proposed to occur with a minimum 1ha lot size in order to encourage larger industrial uses and businesses that support transport and logistics type operations that will benefit from the RAV4 road network and the proximity and access to the broader regional road network. The 1ha minimum lot size will remove further fragmentation of landholdings within the Precinct and assist in achieving greater consistency in lot size and land use integration with the broader Hazelmere industrial area to the north.

In many instances within the Precinct, the amalgamation and rationalisation of industrial land will also be encouraged in order to assist in achieving more meaningful industrial development. Examples of this might include amalgamation of smaller portions of industrial land with adjoining properties where impacted by wetland areas i.e. Lot 52 Hatch Court or where the proposed structure plan road severs Lot 13 with the western side of this property to be amalgamated with the adjoining Lot 14 Hatch Court.

Light industrial development within the Hatch Court Precinct will be required to comply with the relevant development requirements outlined in LPS3 and any applicable local planning policies. In this regard, it is intended that a separate local planning policy will be prepared to outline design guidelines for the Hatch Court Precinct, similar to Local Planning Policy 19 – MKSEA Design Guidelines and Local Planning Policy 27 – Forrestfield/High Wycombe Industrial Area Design Guidelines. These design guidelines will be established to provide controls around site specific measures such as interface with the wetlands and living stream, protection of residential amenity and built form and landscaping expectations.

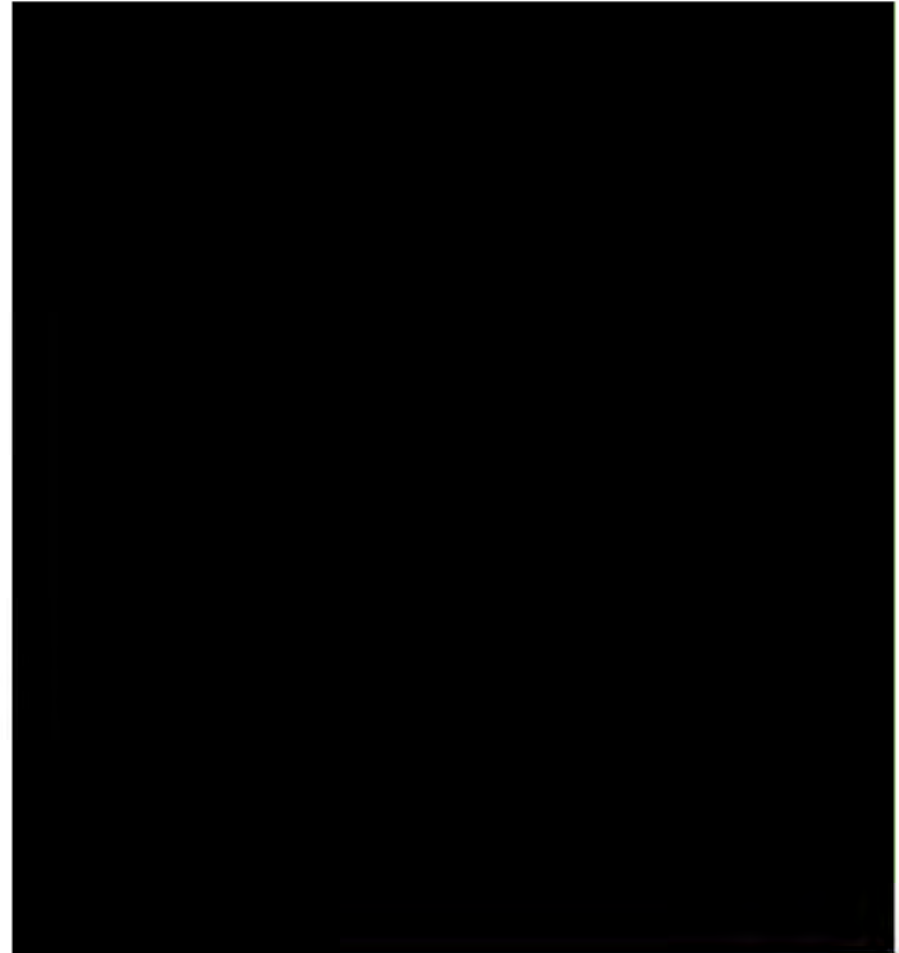




## 5.5 Public Parkland

### Hatch Court Precinct

The Hatch Court Precinct will have no areas of public parkland with the existing Resource Enhancement Wetlands and the associated 15m buffer to be retained in private ownership. This is also consistent with the proposed living stream with the exception being that this will also have an easement over it, similar to the existing drainage corridor, to facilitate City and any relevant servicing agency access, should it be required.



## 5.6 Water Management

At present surface water within the Structure Plan generally flows into the existing drainage corridor or into existing road reserves with discharges occurring into the Perth Airport land. Consultation with Perth Airport has confirmed that the total discharge rate into their land needs to be at or below a requirement of  $0.041\text{m}^3/\text{s}/\text{ha}$ .

A detailed analysis of pre-development drainage modelling was undertaken as part of preparing the LWMR (Appendix 3) in order to inform the required water management within the Structure Plan. Two pre-development scenarios were modelled which have been summarised below:

- Scenario 1. The early rural option allows for flows to move through the drainage line with no restrictions downstream of Stirling Crescent, plus no constructed impervious areas outside of road reserves. There are however large areas of impervious surfaces created by areas of winter inundation which contribute discharge directly to the main flow channel.
- Scenario 2. The 1997 land use option incorporates the restriction to flow generated by the driveways and culverts across the open drain, plus an increase in impervious areas due to driveways, houses, etc. It also takes into account filling of some low areas.

In general, the aim of drainage management for the site is to generally manage the water flows so that water treatment is achieved and that the major storms are controlled prior to release. As the Structure Plan's

proposed development contains both industrial and residential areas, the strategies have been designed to accommodate the particular land use within the relevant catchment. Furthermore, the proposed design accommodates the upstream flows that are likely to enter the subject land, while keeping the total discharge rates at or below the Perth Airport stormwater requirement of 0.041m<sup>3</sup>/s/ha.

The existing wetland and open drain system is also to be enhanced into an eastern and western rehabilitated wetland system and a connecting Living Stream. The Living Stream replaces the existing degraded drainage line that currently connects the two wetland systems. The initial eastern section of the Living Stream is to be composed of a rock lined channel, with planting pockets to direct the flow southward towards Hatch court. At this point the Living Stream will turn in a west North-westerly direction, with the systems sides reducing to a 1:6 slope, planted with native riparian vegetation.

An overview of the key water management strategies for the Structure Plan are set out below with Figure 6 providing a visual overview of the LMWR key elements.

#### Water Conservation and Servicing

- All lots are to be connected to a potable reticulated water main to provide security of supply.
- ~~All future residential lots are to be connected to mains sewerage.~~
- All industrial lots are to utilise suitable on-site effluent management including secondary treatment, compliant with the approved Site and Soil Evaluation.
- The Living Stream landscaping is to be primarily irrigated via stormwater and the shallow natural groundwater.

#### Stormwater Management

- ~~All new residential lots will detain and infiltrate the 5% AEP on site, as per the City of Kalamunda's guidelines.~~

- All new industrial lots will detain and infiltrate stormwater so that their 1% AEP runoff is in keeping with the requirements of the downstream Perth Airport drainage network.
- Bioretention systems and/or soakwells assist with treatment of stormwater with the new road networks.
- The Living Stream and retained Wetlands assist with treatment and detention of stormwater from the subject land and upstream catchments.
- ~~The Southern POS basin will retain and infiltrate all stormwater discharged into it up to and including the 1% AEP.~~
- The lot detention, POS basins and Living Stream / Wetland network detain all peak flows to at / below pre development rates as well as meeting the Perth Airport discharge rate.

#### Flood Management

- All lot levels will be designed to maintain a minimum separation clearance of 300mm between the habitable floor levels and the 1% Annual Exceedance Probability (AEP) flood levels generated on site.
- All lot levels will be designed to maintain a minimum separation clearance of 500mm between the habitable floor levels and the 1% Annual Exceedance Probability (AEP) flood levels of the Living Stream and main POS detention basin.
- The Living Stream and Wetland network allows for 1% AEP flood flows to traverse the subject land site as well as providing safe storage.

#### Groundwater Management

- Inflow to the groundwater is to be treated in bioretention gardens and Living Stream / Wetland network.
- Where necessary the subject land is to be lifted using clean fill to maintain necessary separation to the groundwater.
- Subsoil systems are to be installed to control groundwater rise in areas with groundwater less than 1.5m from the surface.

- ~~Mains sewerage will remove potential pollutants from the residential lots for treatment off site.~~
- Secondary treatment of industrial lot wastewater will assist with minimising pollutants moving into the groundwater.
- Removal of stock and large gardens is likely to reduce nutrient loads to the groundwater.

#### Ecosystem Protection and Enhancement

- The stormwater system will assist with capturing sediments, large debris, nutrients and other pollutants from stormwater runoff, protecting the subject land wetlands.
- New riparian ecosystems creation will be undertaken through converting the current degraded drainage line into a Living Stream.
- Bioretention systems will provide some limited habitat to fauna throughout the subject land.
- The wetlands are to be enhanced through weed control and revegetation as well as being protected in reserves with appropriate buffers

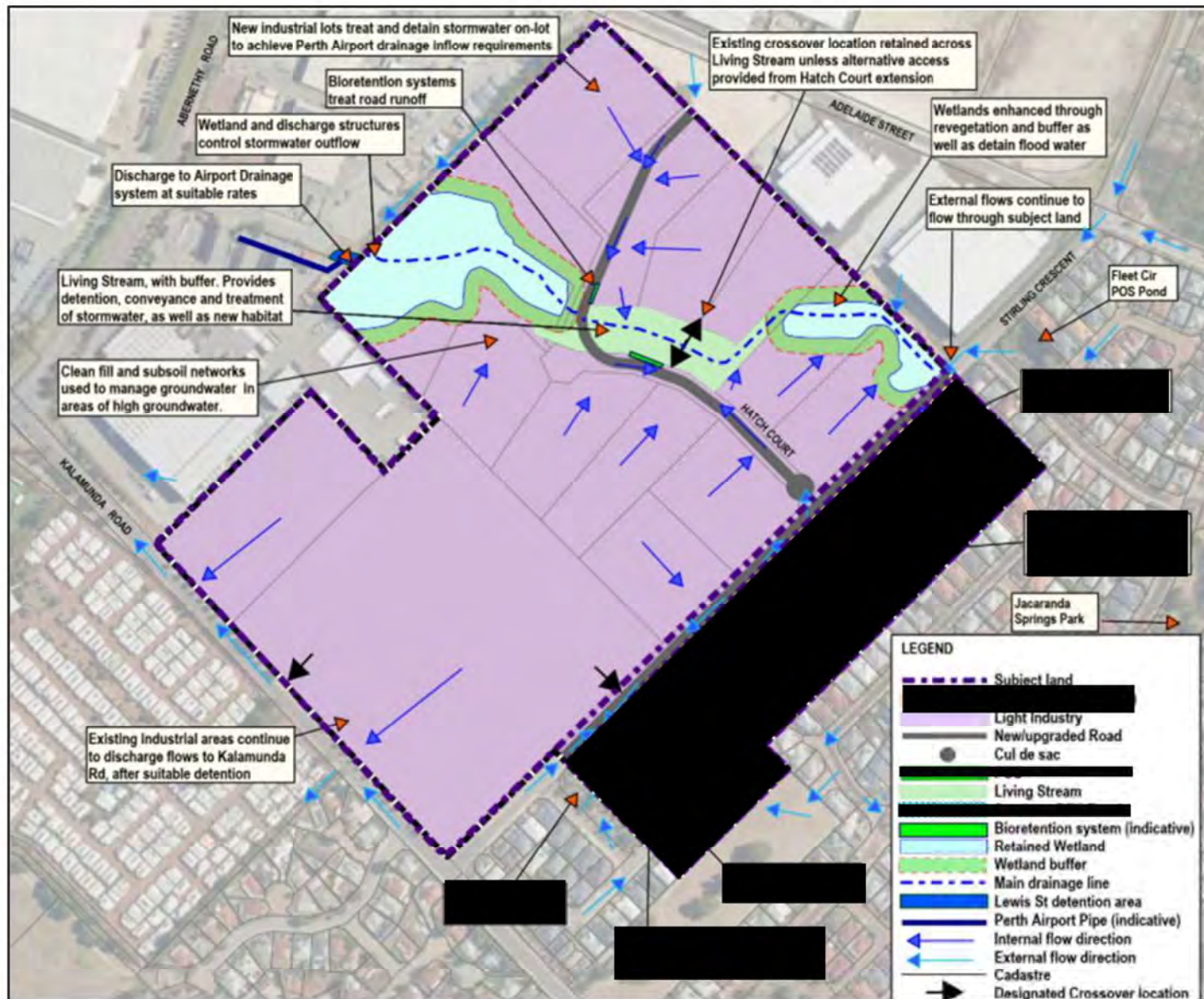


Figure 7 – LWMR Key Elements Plan

## Hatch Court Light Industrial Area Structure Plan

The spatial impacts of the proposed water management on the Structure Plan, outside of the pre-determined wetland and wetland buffer areas (as these are dictated by environmental factors) include:

1. The provision of a 43m wide living stream that runs parallel to Hatch Court after being reoriented from the existing Resource Enhancement Wetland in the northeast corner of the Structure Plan via a 15m wide rock lined channel with planting pockets. A cross section of the proposed Living Stream and 15m wide channel is set out in Figure 7 and 8 below. The Living Stream will be retained in private ownership, protected by an easement similar to the existing drainage channel and constructed as part of development occurring on the impacted lots. The detailed design of the Living Stream will be addressed through a Living Stream Design Report which will be undertaken by either the City of Kalamunda or the developer of the first lot through which the Living Stream will be created.

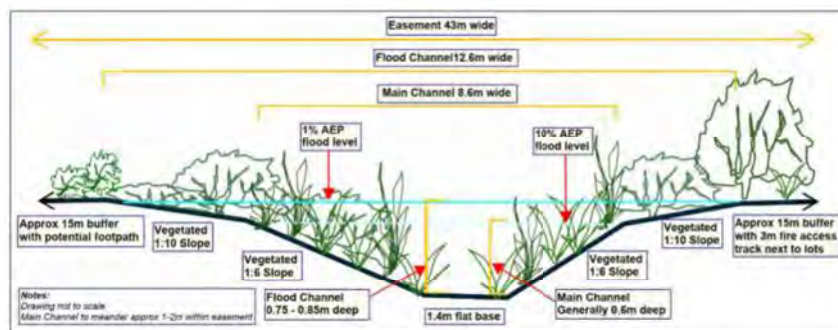


Figure 8 – Living Stream Cross Section

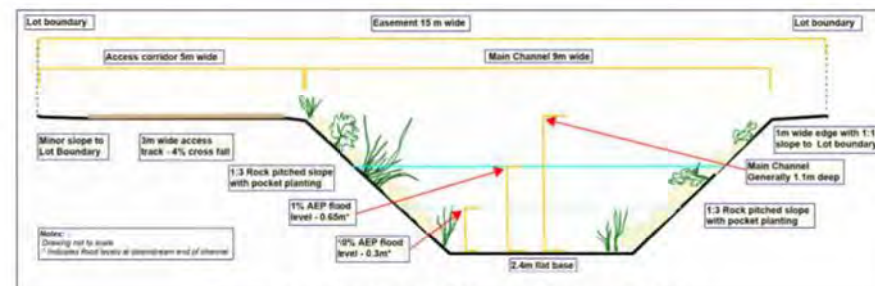


Figure 9 – Rock Lined Channel Cross Section

Further detailed analysis of the proposed stormwater drainage system is detailed in the Local Water Management Report included in Appendix 3.

### 5.7 Utilities & Infrastructure Servicing

An Engineering Servicing Report has been prepared by Peritas which details that the Structure Plan will have no servicing impediments to the future intended light industrial ~~and with residential development in the Stirling Crescent Precinct to be the subject of further detailed design and consultation with Water Corporation given the level of fill required and potential lack of capacity in the existing sewer network to accommodate a gravity fed reticulated sewer connection.~~ A copy of the Engineering Servicing Report is included in Appendix 5 with a summary of the findings below.

**Earthworks** – site grading and earthworks will be kept to a minimum and be guided by individual servicing requirements (specifically disposal of effluent) in addition to achieving a minimum 0.5m clearance above the 1% AEP flood level of 36m AHD.

**Water** – all development within the Structure Plan will be serviced by reticulated water. Existing infrastructure will require upgrading to provide the necessary capacity for future development which can be done as part of the subdivision and development process.

*Sewer [Hatch Court Precinct]* – it is not planned that the Hatch Court Precinct will be provided with a reticulated sewer connection and as such developments will be required to be provided with a secondary treatment system and suitable disposal areas on site for all effluent. The suitability of this was examined in the Site and Soil Evaluation (Appendix 4) which confirmed that onsite treatment and disposal was suitable with the requirements being:

- A land application area of 1000sqm that needs to be setback at least 6m from the Living Stream and wetland areas.
- Disposal can occur via leach drains with flatbed leach drains or concrete leach drains likely to be acceptable.
- Any leach drains should achieve a minimum of 1.5m clearance from groundwater which can be achieved through fill and site specific geotechnical investigations.
- All treatment systems will need to include secondary treatment capabilities.

*Electrical* – there is existing overhead and underground power infrastructure within the existing road reserves in the Structure Plan. All lots within the Structure Plan will be served with underground power with the cost of upgrades to be borne by the developer.

*Telecommunications* – existing telecommunications infrastructure is present with the Hatch Court and Stirling Crescent road reserves with capacity for all lots within the Structure Plan to be service with Telstra telecommunications services.

*Gas* – existing gas infrastructure exists in both Hatch Court and Stirling Crescent with critical assets within the Stirling Crescent and Kalamunda Road reserves. Works within 15m of these critical assets will require ATCO approval. Given the presence of existing infrastructure reticulated gas services are available to the Structure Plan.

In addition to the availability of services, development within the Structure Plan will require the delivery of a range of common infrastructure which includes:

- **Hatch Court Precinct** – Development within the Hatch Court Precinct is dependent on the coordinated delivery of key road infrastructure which includes the delivery of the new 20m wide RAV4 road connection from Hatch Court through the Adelaide Street and also the upgrade of the existing 18m wide Hatch Court road reserve to a RAV4 standard together with the construction of a cul-de-sac at the Stirling Crescent intersection. Due to the extent of development within this precinct that has already been approved, it is proposed to fund these common infrastructure upgrades via a Special Area Rate (SAR).

~~basis or through an alternate funding and delivery model such as a Developer Contribution Plan (DCP).~~

## 5.8 Activity Centre and Employment

The Structure Plan does not propose the creation of any new activity centres.

## 5.9 Schools

The Structure plan does not propose the creation of any new school sites, ~~with the low residential use to be encompassed within existing school catchments.~~

## 5.10 Public Transport

The nearest public transport service to the Structure Plan is the 278 bus route which travels between High Wycombe and the Midland Train Station, with bus stops on Kalamunda Road. The other relevant bus route is the 277 bus which also services High Wycombe and the Midland Train Station, the closest stop for this bus route is on Kalamunda Road near Cyril Road.

## 5.11 Pedestrian and Cycle Network

There is a 2.4m -wide footpath provided along one side of Adelaide Street, Stirling Crescent and Kalamunda Road. In addition, there is also a 1.8m-wide footpath along Wem Mews and Acton Link. Sealed Shoulders are provided along both sides of Kalamunda Road which connect the Structure Plan to Roe Highway and the Great Eastern Highway Bypass, and both sides of portions of Abernethy Road.

There will be no proposed internal pedestrian/cycle networks within the Hatch Court Precinct since access is mainly by personal vehicles and

~~delivery vehicles. The Stirling Crescent Precinct will provide a 1.8m-wide footpath will be available east of the proposed road, consistent with the existing footpath available along Wem Mews. This will also tie into the existing footpath on Stirling Crescent.~~

## 5.12 Bushfire Management

The Bushfire Management Plan (Appendix 2) assessed all vegetation within 150m of the Structure Plan area to determine the applicable bushfire threat on future development. As this is an existing, largely developed, area, the bushfire threat from surrounding areas is limited which is reflected in the post development vegetation classification which is provided in Figure 9 below.

The primary bushfire threat on future development will be the retained vegetation within the two wetland areas and the revegetation/landscaping that will occur within the living stream and the proposed wetland buffers. This contributes to the proposed BAL ratings noted in Figure 10 below with a number of properties being impacted to varying degrees by a BAL-40 and BAL-FZ rating. These lots will ultimately be the subject of a site specific Bushfire Management Plan at the time of subdivision and development which will also be informed by a site specific Wetland Management Plan and Landscaping Plan (associated with the living stream) which will provide clarity on the revegetation outcomes proposed within the wetland buffer and living stream areas.



Figure 10 – Post Development Vegetation Classification



Figure 11 – Post Development BAL Ratings

### 5.13 Wetland Management

The Structure Plan includes two existing Resource Enhancement Wetlands which were examined in detail as part of the Environmental Assessment Report prepared by PGV (Appendix 6). PGV firstly examined their current classification and mapping and determined that in accordance with the *Wetlands of the Swan Coast Plain Volume 2*, they were suitably classified and the extent of the mapped wetlands was also accurate, which is affirmed by DBCA who recently undertook their own independent assessment of each wetland and modified the mapping to what exists currently.

In accordance with EPA Guidance Statement 33, a generic buffer distance of 50m is recommended for Resource Enhancement Wetlands. However, the Guidance Statement also acknowledges that a site-specific buffer assessment can be undertaken to determine a suitable buffer based on:

- The wetland's values.
- The activities, land uses or development near the wetland, existing and proposed.
- The threats posed by the adjacent activities, land uses or development.

PGV's site specific buffer assessment associated with the two Resource Enhancement Wetlands has determined that a 15m buffer is considered suitable for both wetlands which will result in the following outcomes:

- Reinstatement of natural soils by the removal of fill in the wetland buffers.
- Protection from pollutants to the wetland by retaining the 15mm rainfall event in biogardens and sediment forebays, oil separators, Gross Pollutant Traps and separated washdown facilities.
- Provision of controlled surface water flows to the wetland to maintain the hydrological regime.
- Reinstatement of native vegetation within the wetland buffer, improving the condition of the wetland.

- Improved fauna habitat values providing a sedgeland for birds, reptiles and amphibians.
- Management of deleterious impacts such as uncontrolled access, rubbish and feral animals.
- Reduced weed vectors to the wetland

There is a minor encroachment proposed into the 15m buffer for the proposed road connecting Hatch Court through to Adelaide Street. However, given the historical use of this land has been for the purposes of a driveway, the proposed road is unlikely to impact the outcomes for the wetland, and the inclusion is considered appropriate.

Due to the classification of the wetlands being 'Resource Enhancement' (as opposed to 'Conservation Category', DBCA is unlikely to assume ownership and management of them and as such a decision on the suitability of the 15m buffer rests with the City of Kalamunda and the WAPC.

A similar situation applies to the tenure of the wetlands which are proposed to be retained in private ownership and integrated into future development within the Hatch Court Precinct. Management of the wetlands will be in accordance with approved Wetland Management Plans which will be a condition of any development or subdivision approval granted for properties impacted by the wetlands.

Further detailed analysis of the existing wetlands and the suitability of the proposed 15m buffer is included in the Environmental Assessment Report in Appendix 6.

