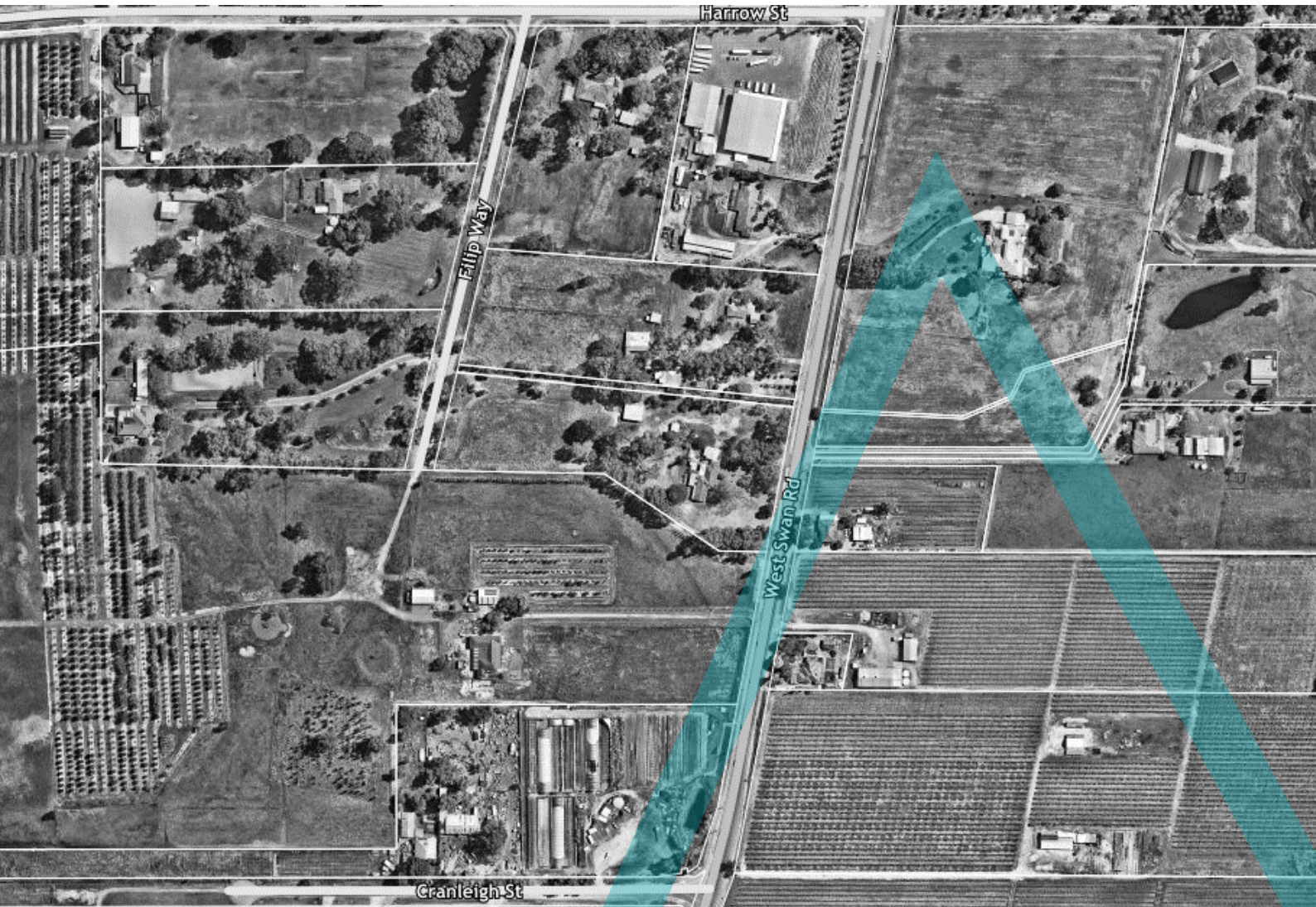


# urbanista

TOWN PLANNING



PROPOSED

AGRICULTURE – INTENSIVE AND

INDUSTRY – PRIMARY PRODUCTION

**NO. 5531 (LOT 9) WEST SWAN ROAD, WEST SWAN**

**FILED**

7 JUN 2024

*Via eLodgment*

STATE ADMINISTRATIVE  
TRIBUNAL



This report has been prepared by Urbanista Town Planning on behalf of the landowners for the proposed development at 5531 West Swan Road, West Swan.

Rev	Author	Date	Reviewed	Date
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# 1 INTRODUCTION

## 1.1 BACKGROUND

Urbanista Town Planning has been engaged by the landowners of No. 5531 West Swan Road, West Swan to prepare and submit an application for a mixed-use development at the subject site. At the time of the submission of the application, it was anticipated that the proposal would be considered by the Joint Development Assessment Panel.

However, on 6 August 2021, the Swan Valley Planning Scheme No. 1 was gazetted and in accordance with Part 1 – Preliminary, Clause 5, the proposal must now be determined by the Western Australian Planning Commission. Additionally, with respect to any proposed development on the land, the provisions of the Scheme also apply.

In consultation with the Department of Planning, Lands and Heritage as well correspondence received from the City of Swan, an amended proposal is provided for the Commission's consideration. This report also provides a detailed assessment of the proposal in accordance with the Scheme provisions to comprehensively demonstrate the merit of the proposal, and its capability of being recommended for development approval.

The Swan Valley Statutory Planning Committee ('**SVSPC**') determined to refuse the proposed development Ref 21-50655-1 at its meeting held on 6 December 2022 for the following reasons.

*That the Swan Valley Statutory Planning Committee resolves to refuse the application for Agriculture – Intensive, Industry-Primary Production, and Restaurant at Lot 9 (No.5531) West Swan Road, West Swan for the following reasons:*

1. *The proposed Restaurant is contrary to the provisions of the Swan Valley Planning Scheme No.1 (the Scheme) as:
  - a. *The land use is not consequent on, naturally attaching, appertaining, or relating to the predominant use of the land and is therefore not incidental and not permissible on land within the Priority Agriculture zone of the Scheme; and*
  - b. *Without agricultural production being established on the subject land, the land use would be inconsistent with the Aims of the Scheme and the Objectives of the Priority Agriculture zone which require such development to be incidental and complementary to agriculture production.**
2. *Approval of the proposal would be contrary to the Government Sewerage Policy 2019 as it has not been demonstrated that onsite effluent disposal can be appropriately managed on the subject land.*

Given the SVSPC's decision to refuse the application, an appeal was lodged with the SAT for the review of the decision in January 2023.

Since this time, the Proponent has undertaken water and soil testing in August 2023 and as a result, the application has been amended as follows:

- Removal of café.
- Removal of the water reuse irrigation area.
- Removal of water tanks.
- Removal of children’s play equipment.
- Removal of all carparking in the front setback area and proposed vehicle access off West Swan Road.

Following the amendments, the proposed land use is now *Agriculture – Intensive* and *Industry – Primary Production*.



## 2 THE AMENDED PROPOSAL

### 2.1 THE OPERATOR

The property is owned by Jesuome Australia Pty Ltd ('the Owner') and the operation of the property will be undertaken by Aulong Int'l (Australia) Pty Ltd ('the Operator'). The Operator is a wholesaler and importer of specialty products, specifically Asian food products. The Operator currently manages a wholesale warehouse at No. 20 Clipper Parade, Canning Vale. The Owner and the Operator share a total of three (3) common Directors in each company which demonstrates there is an existing business relationship between the two.

Currently Aulong supply a range of products including fruit and vegetables and vegetables such as mushrooms, garlic, onions, pears, snow pears, frozen vegetables, imported apples, pears and lychee and are actively researching the growth of specialty mushrooms at the Canning Vale property. Figure 2 below depicts a photograph taken at the Canning Vale property, which show the trials of the growth of the specialty mushrooms. Current trials demonstrate that the propagation of the mushrooms in the proposed manner is a viable and promising alternative to traditional mushroom production in Western Australia. This is particularly relevant as research shows that mushrooms are predominantly an imported product, with limited growers in Western Australia.



*Figure 2: Growth of Mushrooms at Canning Vale Warehouse*

The Operator is proposing to import inoculated mushroom sticks from China. The raw materials for this project will be imported from China, and the import volume will reach 50,000 sticks per month. The inoculated growth medium sticks will arrive in a temperature-controlled container shipped from China held at 2-10 degrees Celsius, which prevents the growth of the mushrooms.

Once they are relocated to the on-site greenhouses, the microclimate to change growth parameters of mid 20 degrees Celsius and humidity, combined with light, triggers the growth of the mushroom mycelium.

In addition to the above, the Operator also currently supplies Jujubes (commonly known as Chinese Dates) to a total of four (4) supermarket chains across eight (8) sites within the Perth metropolitan area. The Jujubes are supplied from the Canning Vale warehouse these sites.

The Operator has advised that they are currently having trouble with obtaining reliable Jujube supplies, as most are imported. On this basis, the Operator is proposing to grow Jujubes at the subject site. Figure 3 below depicts the holes at the subject site for the planting of the Jujube trees, which was undertaken between July and August of 2021.



*Figure 3: Holes for Planting of Jujubes – implanted July/August 2021 (source: Metromap 2021)*

In placing holes in the site, the operator is seeking to prepare the land for the anticipated agricultural production of the Jujubes.

The 'Priority Agricultural' use of the site will occupy approximately 8,500sqm of the site and is located at the rear half of the site. Most of this area will be used as open orchard for the growing of Jujube trees, along with two greenhouses for the propagation of mushrooms.

The Jujube orchard is approximately 90 metres deep by 60 metres wide and will consist of approximately 600 Jujube trees, spaced 2 metres apart, across 30 rows. This equates to approximately 5,800sqm of open orchard area. It is proposed to plant up to 1,000 Jujube trees, on an area of around 5,800sqm in the buffer areas and edges.



Figure 4: Extent of the amended proposal

This land use also includes two mushroom sheds to grow Oyster and Shitake mushrooms, and to support seasonal demands for fruit, vegetables and flowers. The largest mushroom shed 19.3 metres by 16 metres and will produce mushrooms in an area of up to 310sqm. The smaller mushroom shed is just over 200sqm and divided into two halves, to produce mushrooms, with options for vegetables or flowers within each half.

The mushrooms will be sorted and processed in the warehouse located behind the existing dwelling. Separate rooms and sorting areas will allow for this to be conducted as efficiently as possible.

It is anticipated that the production of the Jujube and mushrooms will require the employments of three (3) staff and operate between 10am to 5pm during weekdays, whilst being able to respond as necessary to the seasonal demands and the stages of crop growth.



### 3 DEVELOPMENT CONTEXT

#### 3.1 DEVELOPMENT SITE

The proposed development is located at No. 5531 (Lot 9) West Swan Road, West Swan. The subject site has a total land area of 18,388m<sup>2</sup>, with a frontage of 98.5m to West Swan Road, 65.93m to Filip Way at the rear and a total depth of 237.64m.

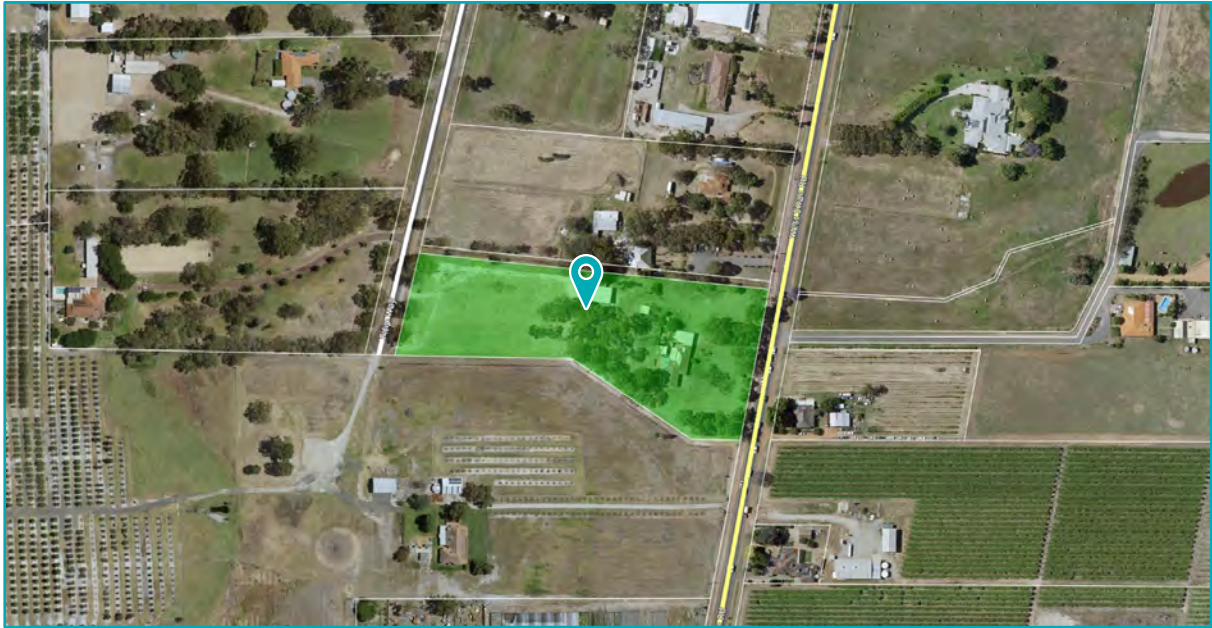


Figure 12: Local Context Aerial Image (MetroMap – May 2021)

The property is predominantly flat at 16m AHD and currently contains one single dwelling which is to be retained. There is a 4.5 metre wide drainage channel abutting the entire length of the northern side boundary of the lot, owned by the City of Swan.



Figure 13: Aerial Photograph of the Site and Surrounding Lots (MetroMap April 2021)



### 3.2 LOCAL CHARACTER

A review of development and character within the immediate locality of the development site has revealed characteristics associated with certain types of development. Notable developments are indicated in the image below.



Figure 14: Context Map

Commercial land uses such as Fusion on Swan at No. 5601 West Swan Road, the Margaret River Chocolate Factory at No. 5123, Action Auctioneers and Valuers at No. 5691 and KoffeeWorks/Le Marrakech at 4752 West Swan Road all exist within proximity to the subject site.

Margaret River Chocolate Factory (No. 5123)



Action Auctioneers and Valuers (No. 5691)



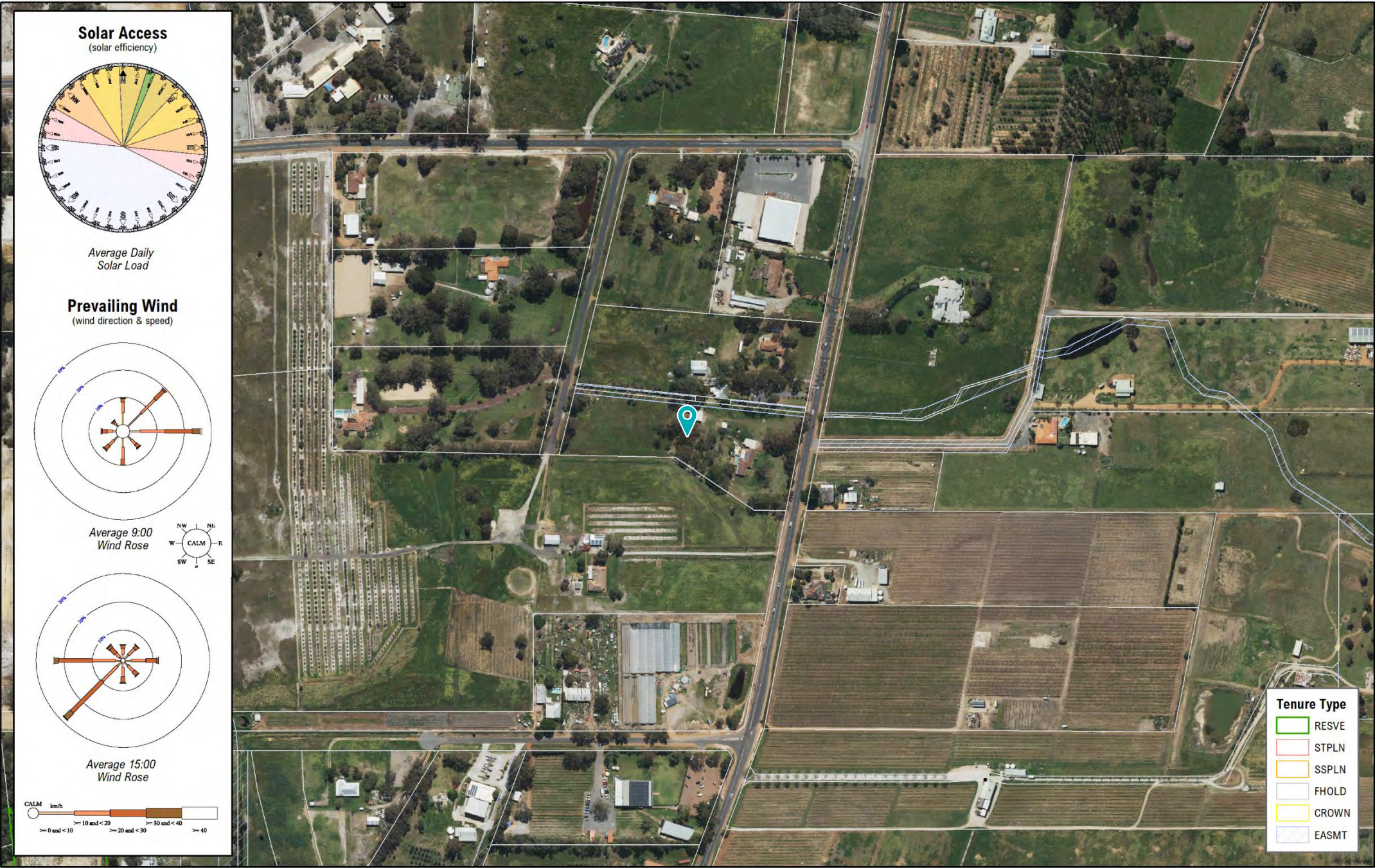
Fusion on Swan (No. 5601)



KoffeeWorks and KwikKoffee (No. 4752)





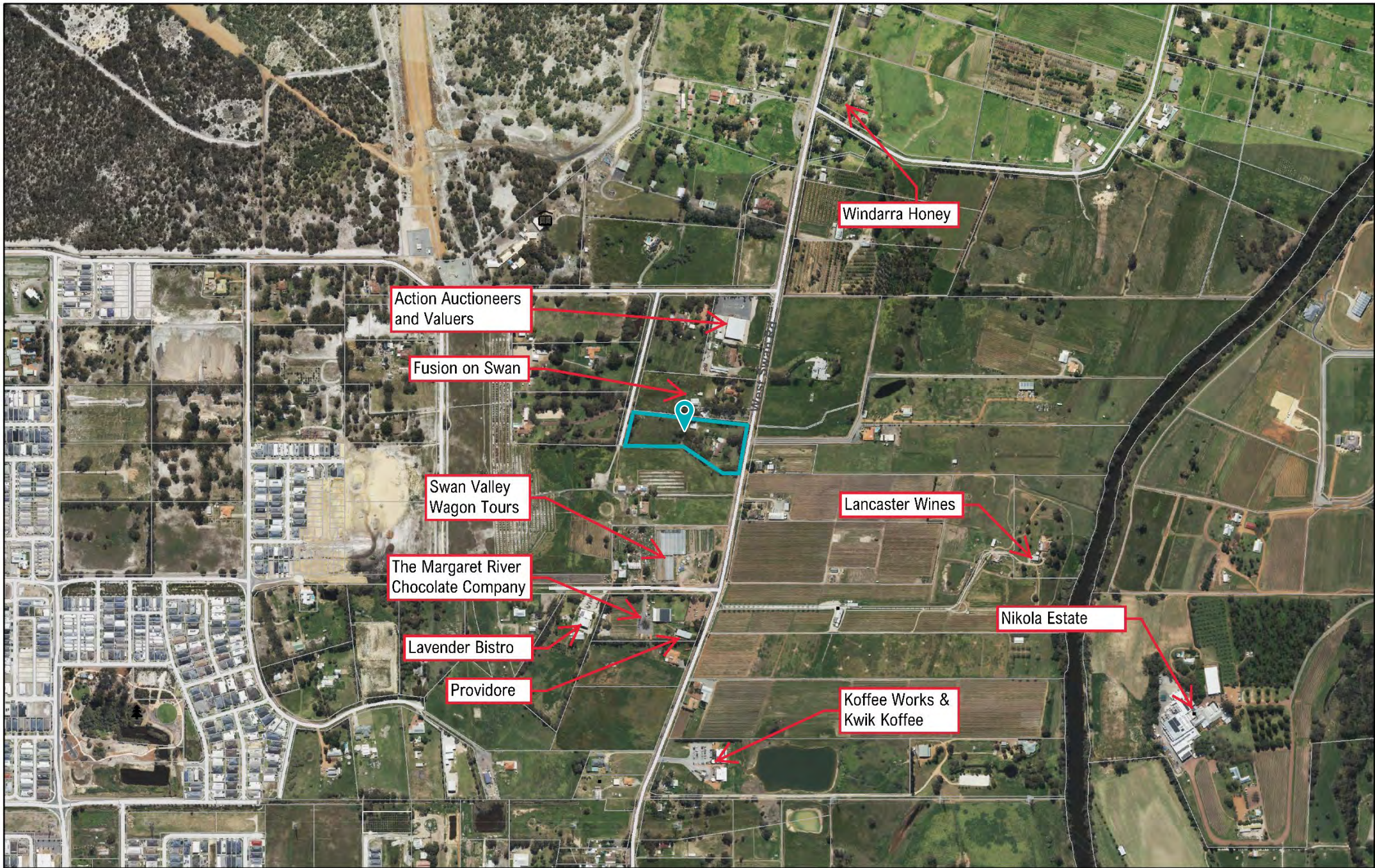


**CONTEXT PLAN AERIAL**

**5531 WEST SWAN ROAD WEST SWAN**

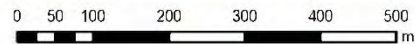
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**BROAD CONTEXT PLAN AERIAL**

5531 WEST SWAN ROAD WEST SWAN



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PCG94 & AHD





## 4 PLANNING CONTEXT

### 4.1 SWAN VALLEY PLANNING SCHEME NO. 1

The subject site is zoned 'Rural' under the Metropolitan Region Scheme and 'Priority Agricultural' in the Swan Valley Planning Scheme No. 1 ('SVPC 1' or 'the Scheme'). Figure 17 below depicts the property's zoning with respect to the Scheme's Zoning Map.

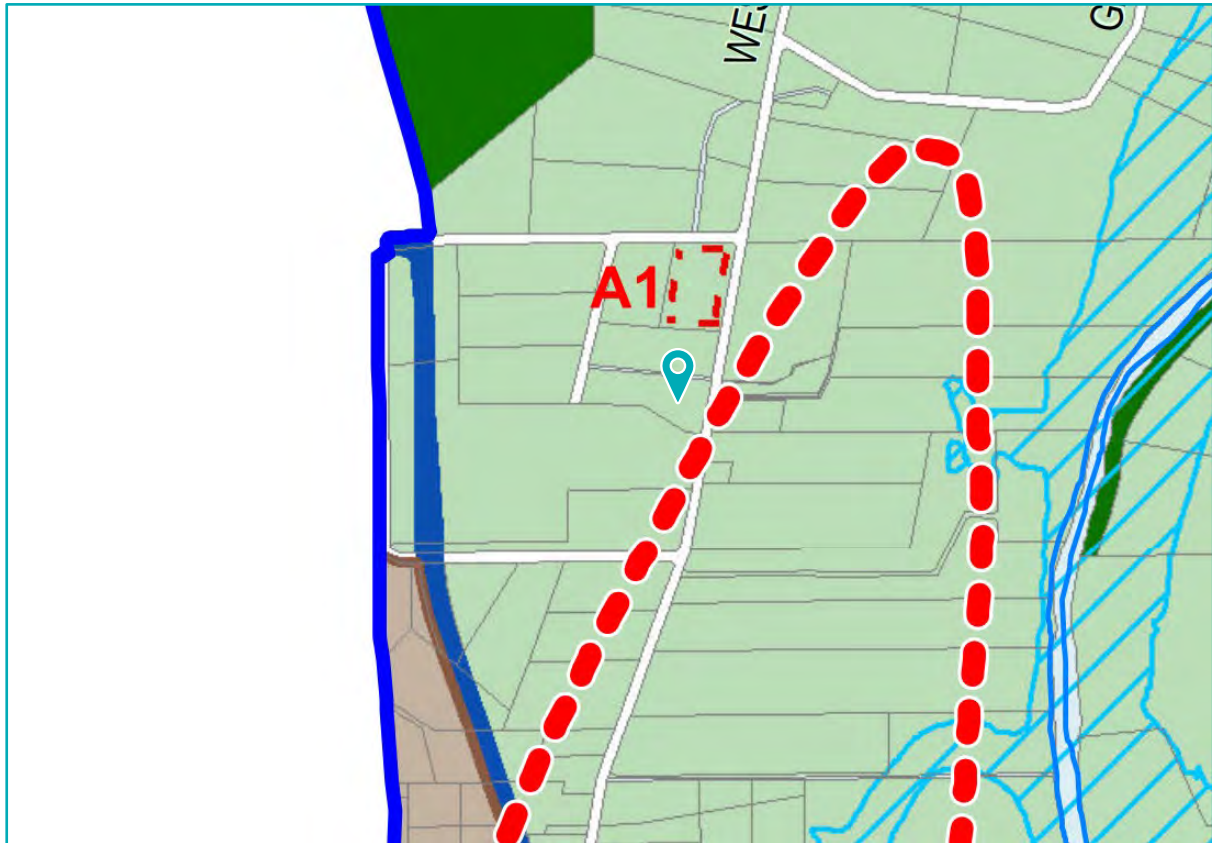


Figure 17: Swan Valley Planning Scheme No. 1 Zoning – 'Priority Agricultural'

Table 3 of the Scheme provides the land use permissibility table and depicts the appropriate uses that can be considered in this zone. An assessment against the Scheme requirements is provided in the Planning Assessment and Justification section of this report.

In accordance with the Scheme Zoning, the development proposal will facilitate a Agriculture – Intensive land use and Industry – Primary Production land use. It is understood that the property is in an area that is characterised by agricultural uses, that are important to both the local community and tourists visiting the area, due its location in the Swan Valley.

### 4.2 SPP 5.1: LAND USE PLANNING IN THE VICINITY OF PERTH AIRPORT

The objectives of SPP 5.1 are to:

- Protect Perth Airport from unreasonable encroachment by incompatible (noise sensitive) development, to provide for its ongoing development and operation



- Minimise the impact of airport operations on existing and future communities with reference to aircraft noise.

The site is in an area below 20 ANEF, and therefore, development is considered ‘acceptable’ for all building types. Notwithstanding, per note 1 of appendix 1 for building sites outside but near to the 20 ANEF contour, the proposed commercial uses are acceptable within the 20-25 ANEF contour, shown in the image below.

Building type	Forecast noise exposure level (ANEF)			
	less than 20 ANEF (Note 1)	20 to 25 ANEF (Note 2)	25 to 30 ANEF	30 to 35 ANEF
House, home unit, flat, caravan park	Acceptable	Conditionally Acceptable	Unacceptable (Note 4) (Note 5)	Unacceptable (Note 4) (Note 5)
School, university	Acceptable	Conditionally Acceptable	Unacceptable (Note 4) (Note 5)	Unacceptable (Note 4) (Note 5)
Hospital, nursing home	Acceptable	Conditionally Acceptable	Unacceptable (Note 4) (Note 5)	Unacceptable (Note 4) (Note 5)
Hotel, motel, hostel	Acceptable	Acceptable	Conditionally Acceptable	Unacceptable (Note 4) (Note 5)
Public building	Acceptable	Conditionally Acceptable	Conditionally Acceptable	Unacceptable (Note 4) (Note 5)
Commercial building	Acceptable	Acceptable	Conditionally Acceptable	Conditionally Acceptable
Light Industrial	Acceptable	Acceptable	Acceptable	Conditionally Acceptable
Other industrial	Acceptable	Acceptable	Acceptable	Acceptable

Figure 16: Assessment Table Adapted from AS2021

### 4.3 LOCAL PLANNING POLICIES

The SVPS 1 does not specify car parking standards for applicable land uses for the development proposal. On this basis, guidance from the City of Swan’s *POL-TP-129 Vehicle Parking Standards* has been taken for matters relating to car parking requirements for each of the proposed uses on the site. The previous report submitted, details the car parking arrangements and number of bays. It is taken that these arrangements and number of bays are acceptable.

## 5 PLANNING ASSESSMENT AND JUSTIFICATION

The statutory planning framework applicable to the development is outlined in the table below.

Key statutory planning framework documents
1. Swan Valley Planning Scheme No.1 ('SVPS1')
2. State Planning Policy 7.0 – Design of the Built Environment ('SPP7.0')
3. Planning and Development (Local Planning Schemes) Regulations 2015 ('Deemed Provisions')

An assessment of the proposed development's performance against the relevant provisions of the planning framework is detailed in this section of the report. This report provides evidence to support development approval by demonstrating how the proposal satisfies these relevant development standards, design guidance, and objectives, and why it is capable of approval.

### 5.1 SWAN VALLEY PLANNING SCHEME NO. 1

#### 5.1.1 Zone Objectives

An assessment against the 'Priority Agriculture' objectives of the Swan Valley Planning Scheme No. 1 ('SVPS 1') is provided in the table below.

Swan Valley Planning Scheme No. 1 Objectives	Assessment Comments
To protect priority agricultural land in the Swan Valley including existing vineyards and other areas of horticulture from incompatible land use and development.	The proposal is for an agricultural land use that is the key objective of the zone.
To provide for long-term agricultural production in the Swan Valley by preventing further subdivision of land and protecting good quality soils from non-agricultural use and development.	No subdivision of the land to facilitate the development proposal is proposed.
To limit hospitality and tourism development and land use to where it is incidental and complements agricultural production and does not detract from the rural character and amenity of the area.	There is no hospitality or tourism development proposed as part of the amended application.
To ensure all land use and development enhances the cultural heritage, natural environment and protects the unique rural landscape character of the Swan Valley.	The mix of uses on the subject site is consistent with the existing development in the locality, predominantly agricultural. The proposal also accords with the objectives to protect and enhance the agricultural nature of the Swan Valley area as a new agricultural business is proposed. It is considered that there are no aspects to this proposal that will be detrimental to the natural environment.

### 5.1.2 Land Uses

The table below lists the most applicable land uses defined in the SVPS 1 for the proposal.

Swan Valley Planning Scheme No. 1	Assessment Comments
<p><b>Agriculture – Intensive (P)</b>  <i>Means premises including outbuildings, rural structures and earthworks use for commercial production purposes associated with any of the following –</i></p> <p>(a) <i>the production of grapes, vegetables, flowers, exotic or native plants, or fruit or nuts;</i></p> <p>(b) <i>the establishment and operation of plant of fruit nurseries;</i></p> <p>(c) <i>the development of land for irrigated fodder production or irrigated pasture (including turf farms)</i></p>	<p>It is considered that the Agricultural – Intensive use is the predominant use as it constitutes the largest conglomerate activity and operation at the site.</p>

Swan Valley Planning Scheme No. 1	Assessment Comments
<p><b>Industry – Primary Production (D)</b>  <i>means premises used to carry out primary production business, including –</i></p> <p>(a) <i>cultivating or propagating plants, fungi or their products or parts (including seeds, spores, bulbs and similar things) in any physical environment;</i></p> <p>(b) <i>manufacturing dairy produce from raw material;</i></p> <p>or c. <i>a workshop servicing plant or equipment used in primary production businesses.</i></p>	<p>It is considered that the Industry – Primary Production use is met as the operations on site is for the cultivation and propagation of Jujubes and Mushroom species. The operations of these species are processed in green houses and other buildings on site.</p>

Each of the above uses have been listed with their permissibility indicated in brackets as either (P) or (D). Each land use permissibility means the following:

- *P means the use is permitted if it complies with any relevant development standards and requirements of this Scheme.*
- *D means that the use is not permitted unless the Commission has exercised its discretion by granting development approval.*

For the purposes of understanding the land use definitions, Schedule 1 – Terms Referred to in Scheme of the SVPS 1 provides the following definition for ‘predominant use’:

*“means the primary use of premises to which all other uses carried out on the premises are incidental”.*

### 5.1.3 General Development Requirements

Part 5 of the SVPS 1 provides for site and development requirements for each Zone within the Scheme. Clause 37 of Part 5 refers to Schedule 5 of the Scheme which provides for Additional Site and Development Requirements for the relevant zone.

The below Table is an extract from *Schedule 5 – Additional Site and Development Requirements* from SVPS 1. The below table provides an assessment against the requirements applicable to ‘All Zones’ and the ‘Priority Agricultural’ zone of the SVPS 1.

Zone & Requirement	Provision	Assessment Comments
<b>All Zones</b>		
<b>Subdivision</b>	<i>Not applicable – no subdivision proposed.</i>	
<b>Development</b>	2.1 No more than one dwelling/single house (excluding ancillary dwellings and caretaker’s dwellings) is permitted on any lot in any zone, except in the Residential zone subject to compliance with all relevant Scheme requirements.	The existing Single House is proposed to be retained. No more than one dwelling is proposed in the development.
	2.2 All development is to minimise impacts on native vegetation and include adequate buffers from bushland, wetlands and waterways, in accordance with any relevant planning policies and State planning policies.	There is no bushland, wetland, or significant waterway on or adjacent to the site.
	2.3 All development is to be consistent with the rural character of the Swan Valley, in accordance with any relevant Scheme provisions and planning policies.	It is considered the proposal is consistent with the rural character of the Swan Valley for the following reasons: <ul style="list-style-type: none"> <li>• Through the use of building colours and materials that are reflective of the rural character in the area.</li> <li>• Ensuring the building bulk does not impose the streetscape. Typically, buildings are significantly set back from the primary street frontage.</li> <li>• Ensuring there is adequate landscaping provided on the site. The design of the development makes use of the existing mature trees on the site.</li> </ul>

		<ul style="list-style-type: none"> <li>Ensuring the agricultural land use is the predominant use on the site.</li> </ul>
	<p>2.4 All development must include landscaping, fencing, access and car parking in accordance with relevant planning policies or may be conditioned as part of development approval.</p>	The development's design incorporates landscaping, fencing and suitable access from West Swan Road and car parking in accordance with the City of Swan's Car Parking Policy.
	<p>2.5 On-site effluent disposal is to be in accordance with the Government Sewerage Policy, including any buffers to the Swan-Canning Development Control Area and special requirements for nutrient management within sewage sensitive areas.</p>	No proposed changes to the proposed sewage and water treatment.
	<p>2.6 Transportable buildings and sea contained (unless fully enclosed within a building) are not permitted in any zone without development approval subject to the requirements listed in the Scheme.</p>	<i>Not applicable – no transportable building(s) or sea containers proposed.</i>
	3. Keeping of Livestock	<i>Not applicable – no subdivision proposed.</i>
<b>Priority Agricultural Zone</b>		
<b>Subdivision</b>	<i>Not applicable – no subdivision proposed.</i>	
<b>Development</b>	<p>2.1 No development may occur within the Priority Agricultural zone without development approval of the Commission (unless exempted under Clause 56 of this Scheme)</p>	The proposal is submitted for development approval.
	<p>2.2 All applications for development approval must satisfactorily demonstrate how the proposed development is consistent with the aims of the Scheme, objectives of the zones, any other relevant provisions of the Scheme, planning codes and planning policies.</p>	As detailed above, the proposal is consistent with the objectives of the Priority Agricultural zone. An assessment against the site-specific provisions is also provided in the below table.
	<p>2.3 All outbuildings and rural structures are to comply with the following:</p> <p>a. Floor area not to exceed 200m<sup>2</sup> for an individual building or structure, or</p>	<p>a. Not applicable.</p> <p>b. Not applicable.</p> <p>c. The Commission has not adopted any policies relating to the location</p>

	<p>a total of 300m<sup>2</sup> on the lot for non-commercial uses, hobby farms, lifestyle properties and similar uses;</p> <p>b. Floor area of outbuildings and rural structure for commercial rural uses to be at the discretion of the Commission based on satisfactory demonstration of commercial justification as part of a development application.</p> <p>c. Location, design and landscaping to be in accordance with any relevant policy.</p>	<p>and design of landscaping in the SVPS. Notwithstanding, the development's design ensures that as many as possible of the existing mature trees are retained.</p>
	<p>2.4 An ancillary dwelling – rural is to be located behind the single house and screened from view from primary and secondary (where applicable) streets, in accordance with any relevant planning policy.</p>	<p><i>Not applicable – no ancillary dwelling proposed.</i></p>
	<p>2.5 Development associated with non-rural uses such as tourism and hospitality must be located and designed so as to avoid impacts or interruption to existing or possible future use of rural land for agriculture. Adequate buffers and/or management plans may be required as conditions of approval to prevent land use conflict.</p>	<p><i>Not applicable – no non-rural uses proposed.</i></p>
	<p>2.6 All development is to be in accordance with the minimum setbacks, maximum site coverage and maximum building height outlined in Table 1, unless otherwise specified in a planning policy prepared under this Scheme.</p>	<p><i>An assessment against the additional Table 1 requirements is provided below.</i></p>

As required in Clause 2.6 above, the below Table is an extract from *Schedule 5 – Additional Site and Development Requirements* from SVPS 1. The below table provides an assessment against the Minimum Setbacks, Maximum Site Coverage and Maximum Building in the 'Priority Agricultural' zone of the SVPS.

**Table 1: Minimum setbacks, maximum site coverage and maximum building height in Priority Agriculture zone**

REQUIREMENTS			ASSESSMENT COMMENTS
<b>Minimum Setbacks for Lots Greater than 2,000m<sup>2</sup></b>	Primary street setback	30 metres	Minimum setback of Restaurant to primary street boundary is 34 metres.  <b>Complies.</b>
	Secondary street setback	20 metres	<i>Not applicable – no secondary street.</i>
	Side and rear boundary setbacks	15 metres	Minimum side and rear boundary: 5.48 metres  <b>Does not comply.</b>
<b>Maximum Site Coverage for lots greater than 5,000m<sup>2</sup></b>	Aggregate total building footprint	N/A	<i>Not applicable.</i>
	Domestic building footprint	10% of lot area or 500m <sup>2</sup> , whichever is the lesser.	Commercial Workshop: 371.5sqm
	Agricultural building footprint	300m <sup>2</sup> floor area OR Greater than 300m <sup>2</sup> at the discretion of the Commission, having regard for: a) Existing and approved development on the lot; b) Impact of the proposed development on land under vines or orchards; c) Purpose for which the proposed agricultural building is proposed; d) any other matters the Commission deems relevant.	Mushroom Greenhouse 1: 308.66m <sup>2</sup> Mushroom Greenhouse 2: 201.68m <sup>2</sup> Existing Shed: 180m <sup>2</sup>  The total agricultural building footprint is 690.34m <sup>2</sup> .
<b>Maximum building height</b>	Wall height (roof concealed)	7 metres	



## 6 DEVELOPMENT CONSIDERATIONS

### 6.1 GEOTECHNICAL REPORT

A Geotechnical Report has been prepared by Perth Geotechnics and is provided in Attachment 1. The site is classified 'H1' based on surrounding site conditions and laboratory testing, including Bore Hole investigations, shown in the images below.

Soil from Bore Hole shown in attached Geotech Report.



Dynamic Cone Penetrometer (DCP) shown in attached Geotech Report



The site is capable of re-classification to 'M' or 'S' per the remedial measures and site preparation techniques discussed within section 6.2 of the attached Geotechnical Report.

**Table 3.** General Definition of Site Class

Site Class	Soil Description	Characteristic Surface Movement (mm)
A	Most SAND and ROCK sites with little or no ground movement due to moisture content variation	little or no ground movement
S	Slightly reactive clayey or silty SAND, which will cause slight ground movement due to moisture content variation	$0 < Y_s \leq 20$
M	Moderately reactive clayey or silty soil which will cause moderate ground movement due to moisture content variation	$20 < Y_s \leq 40$
H1	Highly reactive clayey or silty soil which will cause high ground moved due to moisture content variation	$40 < Y_s \leq 60$
H2	Highly reactive clayey or silty soil which will cause high ground moved due to moisture content variation	$60 < Y_s \leq 75$
E	Extremely reactive clayey or silty soil which will cause extreme ground movement due to moisture content variation	$Y_s > 75$

Figure 19: Excerpt of Table 3 of attached Geotech Report defining 'site Class'

The soil within the site is comprised of mostly silty and clayey sand to a depth of 2m and the results of permeability testing area shown in the image below. Stormwater will not be able to drain through the soak well and is recommended to be disposed of off-site or to the council drainage system.

Preparatory works will follow Australian Standard AS3798 *Guidelines on earthworks for commercial and residential developments*. Earthworks will be controlled and a compacted sand



pad of 700mm will be installed for a site classification of ‘M’ or alternatively 1200mm for a site classification of ‘S’. Compaction must satisfy a moisture condition of -1% to +2% and will following the City of Swans requirements for retaining walls and fill material.

Permeability Test ID	Co-ordinates (GDA94)		Permeability Rate		Soil Description	Test Depth (m)
	Easting	Northing	cm/sec	m/day		
FPT1	404 201	6 475 855	$7.3 \times 10^{-4}$	0.63	Sandy Clay	0.5
FPT2	404 188	6 475 889	$8.5 \times 10^{-4}$	0.73	Sandy Clay	0.5

Figure 20: Excerpt from Geotechnical Report – Soil Permeability results

The recommendations provide that strip and pad footings are a feasible foundation option, provided that the recommendations of section 6.2 are as follows, allowing a bearing pressure of 100 kPa. The site preparation and compaction will be verified by a geotechnical engineer throughout construction and ahead of concrete pouring.

## 6.2 LAND CAPABILITY ASSESSMENT

The Land Capability Assessment prepared by Landform Research (Attachment 3) concludes that Jujubes and mushrooms can accommodate on site as the soil and water and conditions are suitable for their productions.

### 6.2.1 Soils

In terms of the proposed horticultural production at the site the following soil properties are observed:

Soil Property	Assessment Comment
Water Repellence <i>Non-wetting characteristic of a soil type, resulting in lower soil moisture and reduced crop growth in winter.</i>	Water repellence of soil is minimal, which means that there is no significant impact on land capability and if required, be easily treated to increase water absorption within the soil.
Soil Compaction <i>Results from tractor/machinery movements, compacting soils and reducing aggregates.</i>	Soil compaction at the site is acceptable, as compaction for rural land uses is an expected practice and will not impact agricultural growth.
Dispersible Soils <i>Soils containing sodium in the clay content can disperse when wet, leading to erosion and subsoil tunnel formation.</i>	Is minimal to none meaning there will not be a significant impact on the land’s capability for agricultural production.
Wind Erosion <i>Can impact on sands and loose soils when inadequate soil cover is retained.</i>	No concerns.
Water Erosion	No concerns.

<i>Can occur where there is inadequate soil cover, steep slopes, high sand content and dispersibility.</i>	
<b>Rooting Depth</b> <i>The depth roots can penetrate depends on texture changes in soil, proximity of bedrock, stone in the soil, hard clay layers and soil compaction.</i>	No concerns.
<b>Salinity</b> <i>The proportion of salt in the soil.</i>	No concerns.
<b>Soil Acidity</b> <i>The amount of calcareous material within the soil, the types of crop grown, fertiliser usage and the proportion of clay.</i>	Can be managed through traditional agricultural practices.
<b>Soil Moisture Storage</b> <i>The ability of a soil to retain water determines the potential for crop growth and amount of rainfall and irrigation required.</i>	Generally good water holding ability, with some more elevated sandy areas of moderate storage.
<b>Water Logging</b> <i>Water can lay on the surface, clogging the pores in the soil, leading to reduction in oxygen, loss of nitrogen and reduced crop growth.</i>	There is no evidence of waterlogging on site, therefore there are no concerns.
<b>Soil Workability</b> <i>The ease that soil can be cultivated. Waterlogging, presence of stone and slope can impact on the ease of cultivation.</i>	No waterlogging, stone in soils or significant slopes are present, therefore there are no concerns.

The above demonstrates that the soils at the subject site are highly capable of supporting horticultural uses, with the ability to plant Jujube trees in the allocated soil type.

### 6.2.2 Water Availability

In terms of the availability of water to the site, the report advises the following:

<b>Water Available</b>	<b>Availability and Capacity</b>
Surface Water Sources	There are no surface water sources of water.
Ground Water Sources	Groundwater is available and there is a licensed bore on site, licensed for 5,000 kL per year. The bore is located just east of the existing dwelling on Lot 5531.
Rainwater	It is possible to generate some additional water by the collection of rainwater, but generally this is not significant. For example, a 200 m <sup>2</sup> roof area will generate around 140 kL water per year.
Scheme Water	Scheme water is available at site. It is assumed that sufficient availability can be used to supplement bore water. It is proposed that the mushroom sticks will be misted with scheme water.

### 6.3 WASTE WATER

No proposed changes to existing waste water arrangements.

## 6.4 WATER USE REQUIREMENTS

### 6.4.1 Jujube Orchard

The agricultural use of the site will occupy approximately 8,300sqm of the site and will be located at the rear half of the site. Most of this area will be used as open orchards for Jujube production with two mushroom greenhouses located in the centre of the site.

The open orchard is approximately 90m deep by 60m wide and will consist of approximately 600 trees initially, spaced 2m apart across 30 rows. That equates to around 3,000 m<sup>2</sup>. It is proposed to add further trees to up to 1,000 trees on an area of around 5,000 m<sup>2</sup>, later, in the buffer areas and edges.

The proponent has already prepared planting sites across 3,000 m<sup>2</sup> of the orchard area with space for around 600 trees.



*Figure 21: Potted Jujube trees waiting to be sold (Source - Mid Valley Trees) The Jujube orchard will be planted in a similar manner.*





Figure 22: Fruiting Jujube (Source – Flower Pictures)

#### **Irrigation Requirements for Jujube Orchard**

*Although jujube trees can survive with very little water, irrigation is an important factor to produce a good yield of quality jujubes. Irrigation scheduling has a direct impact on tree health and fruit yield, size and quality. Without correct scheduling an orchard is more susceptible to nutrient deficiencies, physiological disorders, pests and diseases.*

*Soil characteristics will influence the type and timing of your irrigation program. Moisture will drain towards the root zone and plant utilisation and water use efficiency will depend on how long it is held there.*

The location has around 0.8 ha and 5,000 kL irrigation, reliable rainfall of around 800 mm and, with the nature of the soils, it is likely that alternative land uses will be based on irrigated agriculture.

The trees require approximately 3–8 megalitres per hectare (ML/ha or 3,000 – 8,000 kL per hectare) over the growing season, depending on site specific soil and climate. For the currently prepared site of 3,000 m<sup>2</sup> the water use requirement will be 1, 000 – 2,400 kL per year, well within the capability of the bore allocation of 5,000 kL per year. Even with an expansion to 5,000 m<sup>2</sup> of planting the bore water requirement will be a maximum of 4,000 kL per year.

DPIRD notes that micro sprinklers are a good option for tree crops such as jujubes. They noted that compared to larger sprinklers they are efficient, saving water by only watering the ground under the trees and not the inter-rows. They work on lower pressure and are cheap to run. Trickle and drip irrigation are efficient, economical systems that are well suited to jujubes. The proposed methods of irrigation will be in two sections depending on the source of the water.

### 6.4.2 Mushrooms

Mushroom production will use scheme water through the use of steam/mist applicators.

The Operator is proposing to import inoculated mushroom sticks from China. The raw materials for this project will be imported from China, and the import volume will reach 50,000 sticks per month. The inoculated growth medium sticks will arrive in a temperature-controlled container shipped from China held at 2-10 degrees Celsius, which prevents the growth of the mushrooms.

Once they are relocated to the on-site greenhouses, the microclimate to change growth parameters of mid 20 degrees Celsius and humidity, combined with light, triggers the growth of the mushroom mycelium.



Figure 23: Oyster, Umbrella and Shiitake Mushroom Varieties

## 7 CONCLUSION

The proposed development at No. 5531 West Swan Road has been duly considered in accordance with the relevant local planning framework, namely the *Swan Valley Planning Act 2020* and the Swan Valley Planning Scheme No. 1.

The proposed development has been amended based on and subsequent plans amended following a SAT mediation as outlined in the attached cover letter.

It is recommended that the Department of Planning, Lands and Heritage reconsider to approve this addition to the local area.