

SUBDIVISION AND DEVELOPMENT GUIDE PLAN

LOT 900 FISHERIES ROAD,
MYRUP

SHIRE OF ESPERANCE

PREPARED BY:

burgess design group
TOWN PLANNING + URBAN DESIGN



Lot 900 Fisheries Road, Myrup

Shire of Esperance

February 2012

Subdivision and Development Guide Plan

Issue 2

Prepared for: **Myrup Fly-in Estate Pty Ltd**

Prepared by: Burgess Design Group
351 Newcastle Street, Northbridge W.A. 6003
PO Box 374, Northbridge W.A. 6865
Telephone: (08) 9328 6411
Facsimile: (08) 9328 6511
Website: www.burgessdesigngroup.com.au
Email: reception@burgessdesigngroup.com.au

Project Planner: Trent Durward

Job code: MYA ESP ST


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**FORMAL ADOPTION OF THE SUBDIVISION AND DEVELOPMENT GUIDE PLAN
FOR LOT 900 FISHERIES ROAD, MYRUP**

SHIRE OF ESPERANCE FINAL APPROVAL

Adopted for final approval, pursuant to Clause 4.7.2 and Clause 1.1 Schedule 4 (SU4) of the Shire of Esperance Local Planning Scheme No. 23, by resolution of the Council of the Shire of Esperance at the meeting held on the 26 day of July 2011.


.....
MAXWELL O. HEASMAN

SHIRE PRESIDENT


.....
MS OSBORNE
CHIEF EXECUTIVE OFFICER

WESTERN AUSTRALIAN PLANNING COMMISSION

ENDORSEMENT

Endorsed, pursuant to Clause 4.7.2 and Clause 1.2 Schedule 4 (SU4) of the Shire of Esperance Local Planning Scheme No. 23, by resolution of the Western Australian Planning Commission on the _____ day of _____ 20_____.

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

.....

by an officer of the Commission duly authorised by the Commission for that purpose.

**RECORD OF AMENDMENTS MADE TO THE SUBDIVISION AND DEVELOPMENT
GUIDE PLAN FOR LOT 900 FISHERIES ROAD, MYRUP**

AMENDMENT NO.	DESCRIPTION OF AMENDMENT	DATE OF COUNCIL ENDORSEMENT



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1.0 INTRODUCTION

Burgess Design Group has been appointed on behalf of Myrup Fly-in Estate Pty Ltd, the registered owners of Lot 900 Fisheries Road (corner Merivale Road), Myrup (hereon referred to as the 'subject land') to prepare a Subdivision and Development Guide Plan required by zoning provisions of Shire of Esperance Local Planning Scheme No. 23.

The site is bounded by Fisheries Road to the north west, Mullet Lake Nature Reserve and Merivale Road to the south and private landholdings to the north east.

The Subdivision and Development Guide Plan will facilitate the subdivision and development of a fly-in estate to complement the existing airfield and airfield related operations on the site. The proposed development aims to foster all aspects of flying including the advantage of residential development alongside light aircraft storage, student flight training, charter flying, scenic tour flying, flying for sport, gliding, ultra-lights, providing accommodation for flying patrons and small aircraft repair, maintenance and re-fuelling.

The concept of fly-in estates, whilst relatively new to Western Australia, is well established in the United States. Often these facilities are termed as 'Airparks'.

The following report provides an overview of the site characteristics, the local and regional context, findings of preliminary technical investigations and explains the rationale of the SDGP design and the statutory framework that will guide its implementation.

The SDGP has been formulated by Burgess Design Group in collaboration with a team of specialist consultants, who have provided technical input in relation to matters as follows:

Esperance Environmental Esperance Surveys Hydrosolutions	Environmental and Fire Management Plans; Site Feature Survey; and Hydro Geological Report.
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1.1 Abbreviations

Abbreviations used in this report are summarised below for ease of reference:

AAMGL	Annual Average Maximum Groundwater Level
AHD	Australian Height Datum
ASS	Acid Sulfate Soils
DEC	Department of Environment and Conservation
PASS	Potential Acid Sulfate Soils
SDGP	Subdivision and Development Guide Plan
LPS23	Shire of Esperance Local Planning Scheme No. 23
WAPC	Western Australian Planning Commission



2.0 SITE ANALYSIS

2.1 Location

The site is located on the north-eastern corner of the intersection of Fisheries Road and Merivale Road, Myrup, approximately 8 kilometres north-east of the Esperance town site.

Mullet Lake Nature Reserve, which is vested in the Department for Environment and Conservation (DEC) for conservation of flora and fauna, abuts the southern boundary of the site.

Surrounding land uses are primarily of a rural nature.

Refer to **Figure 1 – Location Plan**.

2.2 Legal Description, Restrictions and Encumbrances

The site is situated within the locality of Myrup and has a total legal land area of 115.8138 hectares and gains direct access to Fisheries Road and access to Merivale Road (via an easement across Mullet Lake Reserve), both being constructed and gazetted roads.

The site is formally described as:

- Lot 900 on Deposited Plan 52183, Certificate of Title Volume 2714 Folio 98.

There are no restrictions or encumbrances registered on the Title.

Refer to **Appendix 1 – Certificates of Title and Draft Survey Plan**.

2.3 Topography

The site is relatively flat, rising from approximately 8 metres AHD adjacent to the intersection of Fisheries Road and Merivale Road to a height of approximately 12 metres AHD along the north – east and southern boundaries.

Refer to **Figure 2 – Landform**.

2.4 Land Capability and Suitability

A land capability assessment was commissioned by the Shire of Esperance during the development of its Limited Rural Strategy. It showed, at the time of its preparation, that the area of Lot 900 proposed to be developed for residential development has a high capability for un-sewered rural-residential development (Limited Rural Strategy, Shire of Esperance, 1999, part B, Pg 37 – 50).

It is acknowledged that the Limited Rural Strategy is limited in its scope and has been superseded by the Local Planning Strategy (LPS), discussed later in this report. To this end it provides some background to the proposal and context to the preparation of the LPS.



The proposal has been through significant review, through both the rezoning generally and full environmental review as part of the rezoning process. Through this process there are numerous and varied requirements for environmental and planning management of the proposal. These are explicitly stated in the Special Use Schedule of LPS23 and have been addressed in this report and the accompanying Fire and Environmental Management Plans.

In terms of the uses of the site in the last 12 years (since the formulation of the Limited Rural Strategy) none are such that have affected the availability of water, or the climate or soil types on the subject land, all factors that may change the capability of land.

The proposed development of the site for residential and airfield related activities utilises land capable of accommodating rural residential development. It aims to maximise the use of otherwise unproductive rural land and introduces land use and management controls for the benefit of sensitive areas contained within the site and the surrounding areas including the adjacent Mullet Lake Nature Reserve.

2.5 Acid Sulphate Soils

The lot is listed as having a high risk of disturbing acid sulphate soils (ASS). The desired management of ASS is to leave them undisturbed, and this is the case with the proposed SDGP. A management plan and assessment to facilitate the removal and remediation of the soil in accordance with the Department of Environment and Conservation (DEC) guidelines will need to be prepared and addressed at the subdivision stage.

2.6 Existing Use and Development

The site has been operating as an Airfield with associated uses since 1992. The site was cleared during the late 1950's to early 1960's with the primary purpose of grazing stock.

Historically, to encourage pasture growth, fertiliser was used, however, since around 1990 no fertiliser has been applied to the site and there has been a return of flora and fauna (both native and exotic) to the area. The site supported typically 3 sheep/ha up to around 1994.

The site currently includes gravelled airstrips, aligned broadly from south-west to north-east (runway 04-22), and south-east to north-west (runway 32-14). The runways were initially grass, with the gravelling of the runways commencing in 1996.

The following table outlines the existing development on the site.

Development	Description/Function
Two airstrips (runways)	Runway 32-14 and Runway 04-22
One main gravel access road	Referred to as Road 1
A gravel road off Road 1	Providing access to proposed lots 28 - 33 – referred to as "Bill Green's Close"
A gravel taxiway	Taxiway 2 – with established kikuyu and cooch grassed verges providing access to Runway 32 – 14 for proposed Lots 19 – 23, 28 – 33
A gravel taxiway	Taxiway 4 – providing access for proposed lots 3, 24, 25 and 27 to Runway 32/14



A gravel taxiway	Taxiway 3 – providing access from runway 32 – 14 to the proposed aircraft refuelling area, the grassed plane park, Hangar Lots 1 – 18 and holiday accommodation on Lot 26
A gravel taxiway	Taxiway 1 - gravelled and kikuyu grassed on either side of gravel to service lots 34 – 35
A Road	Road 2, 6m formed gravel road to service proposed lots 37 – 45
A residence	Located on proposed Lot 28
Seven individual aircraft hangars	Located on proposed Lots 19, 20, 22, 24, 28 - 33
A four plane hangar complex	Proposed Lots 1, 2, 6 and 10
A terminal building	Comprising a terminal, storage shed and a hangar. The hangar will comprise proposed Lot 18.

Refer to **Figure 3 – Aerial Photo**.

2.7 Road Network

Lot 900 gains direct frontage to Fisheries Road, a gazetted and constructed public road, along the north west boundary and also enjoys access to Merivale Road via an easement across a Council reserve associated with Mullet Lake Nature Reserve. The 20 metre easement is consistent with the easement illustrated on Deposited Plan 52184.

Fisheries and Merivale Roads are reserved as Important Local Roads under LPS23, where Fisheries Road provides direct access to the services and facilities offered in Esperance.

2.8 Service Infrastructure

The site is connected to the existing power and telephone network. Additional power infrastructure has been provided to connect the central area of Lot 900 to the transmission lines located in Fisheries Road.

There is no reticulated water or sewerage supply to the site or in the near vicinity. The provisions of the Special Use 4 zone outline the requirements for the provision of water and effluent disposal to be provided at the time of development.

LPS23 Schedule 4 – Special Use Zones states as follows for the Myrup Fly-in Estate:

7.0 Water Supply

7.1 Each single house and any holiday accommodation shall be provided with a water tank with a minimum capacity of 120,000 litres.

8.0 Effluent Disposal

8.1 On site effluent disposal shall be the responsibility of individual landowners.

8.2 Council shall require the use of approved Alternative Aerobic Treatment Unit Systems."



3.0 PLANNING FRAMEWORK

Outlined below is a summary of the relevant strategic and statutory documents that guide the use, subdivision and development of the site as well as a background to the formulation of the superseded Scheme Amendment No. 51, prepared under superseded Scheme No. 22

3.1 Shire of Esperance Local Planning Scheme No. 22 Amendment No. 51

A preliminary report regarding the proposed development was submitted to the Shire on 4 February 1997. On 18 February 1997 Council voted to support the proposal in principal and invited the applicant, Myrup Fly-in Estate Pty. Ltd. to submit more detailed site investigations, including suggested land use controls for Council's further consideration.

The original Concept Plan was submitted to the Shire on 19 November 1998, and went before full Council on 14 June 1999. Council again agreed to support the rezoning, with the proposal finally approved by the Shire's Works Committee on 21 June 1999. The Scheme amendment was given the number 29A, and was submitted by the Shire to the Environmental Protection Authority (EPA) to ascertain the level of environmental assessment required.

On 19 November 1999 the EPA set the level of assessment as an Environmental Review, and Draft Environmental Instructions were issued.

A letter was received from the Department of Environmental Protection (DEP) on 4 January 2000 stating that there were no appeals on the Draft Environmental Review Instructions.

Significant modifications to the original Amendment 29A documentation occurred following its initiation by Council in 1999. As a result it was decided by Council, in conjunction with the Department of Planning, that Amendment 29A needed to be abandoned as it could not be advertised in its current form.

Amendment No. 51 was prepared in late 2008 to replace Amendment 29A. Amendment No. 51 and amendments to the Local Planning Strategy were subsequently advertised and approved by Council on 26 May 2009.

Amendment 51 to the Shire of Esperance Local Planning Scheme No. 22 was gazetted on 18 December 2009 and in February 2010 Local Planning Scheme No. 23 was gazetted, carrying forward the provisions from Amendment 51.

3.2 Strategic Framework

3.2.1 Shire of Esperance Local Planning Strategy

The Shire of Esperance Local Planning Strategy (LPS), took effect on 4 February 2010, was prepared to guide the review of the Shire's Local Planning Scheme No. 22 and the preparation of Scheme No. 23.

The LPS provides a land use planning framework to manage population growth and land use pressures over a ten to fifteen year period and provides a basis for the zoning and provisions of Scheme No. 23.

The LPS recognises the airstrip at Myrup as providing facilities for light aircraft, where the Esperance Airport provides for commercial and general aviation requirements, including access for the Royal Flying Doctor Service.



3.3 Statutory Framework

3.3.1 Shire of Esperance Local Planning Scheme No. 23

The site is zoned Special Use 4 under the Shire of Esperance Local Planning Scheme No. 23 (LPS23). Refer to **Figure 4 – Shire of Esperance Local Planning Scheme No. 23**.

The objective of the Special Use 4 zone is:

“To provide for Airfield and aircraft related operations including a ‘Fly-In Estate’ to provide for all aspects of flying including residential development alongside aircraft storage, student flying training, charter flying, scenic tour flying, flying for sport, gliding, ultra-lights, short term accommodation for flying patrons and small aircraft maintenance and repair associated with the land use and environmental management controls to protect the subject land and adjoining Mullet Lake Nature Reserve.”

Subdivision and development of the land shall be in accordance with an approved Subdivision and Development Guide Plan, prepared in accordance with the provisions of LPS23.

The following uses are permitted at Council’s discretion:

- Airfield
- Club Premises
- Educational Establishment
- Fuel Depot
- Holiday Cottages
- Home Occupation
- Private Recreation
- Public Utilities
- Telecommunications Infrastructure
- Single House

Incidental activities which are consistent with the objective may be considered by Council.



4.0 SUBDIVISION AND DEVELOPMENT GUIDE PLAN

4.1 General

The proposed Subdivision and Development Guide Plan (**Appendix 2**) outlines the proposed survey strata subdivision of Lot 900 comprising; 18 residential lots; one lot which will accommodate 4 holiday accommodation units; and 23 hangar lots.

The remaining land area is to become common property to accommodate proposed airfield operations and to retain existing native vegetation. The subdivision proposal consists of the following:

PROPOSED LOT NUMBER	PROPOSED DEVELOPMENT	EXISTING DEVELOPMENT
Lots 1, 2, 4 – 7, 9 –13, 16 – 18	14 additional multi hangar style hangar sites	Hangars currently exist on the proposed Lots 1, 2, 6, 7 and 18. Lot 18 consists of the hangar for Lot 18 and is attached to the Terminal Building and Storeroom (outside Lot 18). The hangar building is to be used in a similar manner to a garage or carport in a strata complex which house more than one vehicle. There are no habitable areas within the mandatory distance which give rise to the requirement for a fire rated wall. (Shire of Esperance pers comm. 17 August 2010)
Lots 3, 19 – 23 - 25 & 27	Individual hangar sites.	Hangars on Proposed lots 19, 20, 22 & 24.
Lot 26	1 x 4 Accommodation units for pilots and their passengers.	Currently vacant.
Lot 28	Existing residence and hangar.	Existing residence and hangar.
Lot 29 - 33	Residential Lots with hangars.	Hangars on proposed lots 29 - 33.
34 – 45	Residential Lots (minimum 2200m ²).	Currently vacant.

Note: The originally proposed Lots 3, 8, 14, 15, 19 and 46 – 54 no longer exist. The proponent wishes to retain the existing lot numbers.

The common property associated with the proposal will comprise of:

- Existing runways 32 – 14 and 04 – 22;
- All existing and proposed roads, causeways, taxiways and associated aircraft parking areas;
- Terminal Building (incorporating space for a flying school, including offices and lecture rooms) and attached storage shed for maintenance and storage of airfield maintenance machinery (e.g. tractor, slasher and lawnmower);
- Shed for storage of Fuel Truck and/or Trailer; and;
- Vegetated areas, including grassy verges alongside the existing runways and taxiways and native vegetation in undeveloped areas.



4.2 Staging

It is intended to undertake the development in two stages. Please refer to **Appendix 3** for a Staging Plan.

4.2.1 Stage One

- Runway 04 - 22 is 1300 metres long, of which 1200 metres is currently gravelled;
- It is proposed to complete the southern end to its intended length of 1300 metres, consistent with runway 32 -14;
- Taxiway 1 will be formed to the east side of Road 1, up to proposed Lot 45 and to link up with Runway 32-14. The taxiway will be grassed and will vary in widths from 20 metres – 30 metres at strategic points to allow aircraft to pass each other safely. It is important to note that where taxiways are shown, the areas presently support a mix of kikuyu and couch grass all year round;
- Multi-hangar complex Lots 1-18 will be created and sold as land packages;
- Nine (9) residential lots 28-36 will be created, and will be sold as land packages;
- Power will be provided to all lots created as part of this stage (as would be required); and
- Nine (9) individual hangar lots 3, 19 – 25 and 27 will be created and sold as land packages.

4.2.2 Stage Two

- Building C will be constructed;
- Road 2 will be constructed (adjoining the southern boundary to Lots 37-45);
- The final nine (9) residential lots 37-45 will be created, and sold as land packages;
- Accommodation Unit Lot 26 will be created and the building will be constructed; and
- Power will be provided to all lots created as part of this stage (as would be required).

4.3 Lot Location, Size and Layout

The majority of the proposed 18 residential lots are located on high, well drained land, which has previously been identified by the Shire of Esperance as being suitable for un-sewered Rural Residential development (Limited Rural Strategy, Shire of Esperance 1999, part B, P. 37-50).

The location of the proposed residential lots has been carefully planned to be away from the Samphire Wetlands on site, and to be on currently grassed areas. There is currently a 100 - 250 metre wide vegetated strip between the subject land boundary and Merivale Road. This vegetation strip will conceal the view of the proposed residential lots from Merivale road.

Proposed residential lot sizes range from 2,200m² to 4,000m² and are sized to provide sufficient area on each lot for a residence, hangar, water tank and effluent disposal unit. The proposed lots are provided with frontage to a constructed road and access to the airstrip via a shared taxiway.



4.4 Servicing Infrastructure

The proposed residential lots will be provided with power and telephone infrastructure.

Effluent disposal will be via Alternative Treatment Units (ATU's), as required by LPS23, to minimise potential leachate to surrounding sensitive water bodies. Shire of Esperance approval for the installation of ATU systems will be required and Department of Health approval may be required.

Water supply will be via the installation of water tanks on each residential lot, and in accordance with clause 5.18 of LPS23, whereby storage tanks of not less than 120,00 litres capacity are required

4.5 Holiday Accommodation

The proposed holiday accommodation units are to be used by pilots and their passengers when visiting and flying into the Myrup Fly-in Estate. This will be the primary use of the accommodation. Holiday accommodation means two or more units on one lot leased for holiday and/or educational accommodation purposes, none of which is occupied by the same tenant for a continuous period of more than four months.

The use and development of the building is to comply with the development requirements of LPS23 and car parking (although tenants will arrive by plane) will be provided in accordance with LPS23 standards (1 per unit). The assessment of this is to be undertaken through the Development Application process.

4.6 Environmental Management

In accordance with the EPA Environmental Review Instructions issued in November 1999, an Environmental Review document was prepared. The document outlined the main environmental factors associated with the proposed development, and the proposed environmental measures to be implemented to ensure that there are no adverse environmental impacts resulting from the construction or operation of the proposed land use. These have always been detailed within LPS 23.

The key environmental factor in relation to the proposed use of the site is the presence of wetlands on the adjoining Mullet Lake Nature Reserve.

The Nature Reserve is part of the Lake Warden system, and is one of eleven systems recognised in Western Australia as being of international importance under the Ramsar Convention of Wetlands, 1990.

Ramsar is an intergovernmental treaty which provides the framework for international cooperation for the conservation of wetland habitats. Therefore, it is necessary to demonstrate that the proposed land use will not adversely affect the ecology of the Wetlands through impacts on surface water and groundwater quality resulting from inappropriate effluent disposal and fuel storage.

These impacts have been investigated and appropriate environmental and land use conditions have been proposed to mitigate against any adverse impact.

The Council's Rural Strategy indicates that most areas within the subject land area are considered to have a very low capability for farming activities such as grazing, lupins or cereal cropping.



Accordingly, LPS No. 23 introduced specific land use and environmental management controls to ensure the protection of these sensitive areas that could not otherwise be achieved if the land remained within the 'Rural' zone.

The following environmental factors associated with the rezoning were assessed:

- Vegetation;
- Wetlands;
- Migratory birds;
- Endangered non-migratory birds;
- Groundwater;
- Surface Water;
- Noise; and
- Aboriginal Culture and Heritage.

A discussion of each of these environmental factors with regard to the existing environment, potential impact, proposed management and predicted outcome is provided in the Environmental Review document prepared for the subject land.

The Esperance Lakes Nature Reserves Management Plan 1999-2009 (hereon referred to as "the Management Plan") covers the management of five (5) nature reserves within DEC's Esperance district.

The Management Plan has been prepared to resolve present land use conflicts, to plan for future needs and to ensure that nature reserves are protected and maintained. The Mullet Lake Nature Reserve, adjacent to the subject land, is one of the nature reserves covered by the Management Plan.

The primary objective of the Management Plan is to *'Maintain and restore the natural environment, and to protect, care for and promote the study of indigenous flora and fauna, and to preserve any feature of the archaeological, historic or scientific interest'*.

In terms of the development of land adjoining the nature reserves, the Management Plan's objective is to encourage sympathetic management between adjoining land and the Reserves. Strategies include the adoption of planning controls over future subdivisions and other development proposals to minimise the impact on the lake catchment areas.

The Management Plan also outlines various strategies in relation to the management of the Reserves for the conservation of resources. These include strategies for:

- Catchments and hydrology;
- Vegetation and flora; and
- Cultural Heritage.

Specific management and development provisions relating to the proposed use of the land, recommended as part of the Environmental Review, have been incorporated as 'Special Use' provisions and 'Environmental Conditions' within the LPS23. The provisions included are consistent with the objectives of the Management Plan.



4.7 Strata Management

A Strata Management Committee will be established as part of the Survey Strata Subdivision. This will provide an additional level of management and enforcement for the on site operations, and will enable the operation of the proposed estate to be largely self policed by the Management Committee. The formation of the Committee is in response to Council concerns regarding responsibility for environmental and land use management of the subject land and Fly-in Estate.

As part of the proposed Survey Strata Subdivision, it would be necessary to prepare a Management Statement detailing issues associated with the operation of the land, addressing flying time limitations, land management control, building material standards, high phosphorous and nitrogen removal effluent systems, fire management and recording/monitoring number of flights and aircraft movements.

The Management Committee would act as a watchdog to ensure that adequate standards for the above matters are met.

The establishment of the Management Statement will be undertaken in consultation with Council as part of the Survey Strata Subdivision application process.

4.8 Fire Management

The subject land is considered to be a low risk area in relation to bush fire hazard due to its high level of access from adjacent roadways, and the predominant type of vegetation associated with Samphire wetlands. The design of the proposed development allows potential fire events to be controlled; this is due to the layout of on site roads, runways and taxiways, which create frequent strategic firebreaks and provide access for fire fighting.

The highest risk days are those on which a north wind occurs. If a fire starts on a residential lot it will most likely be intercepted by a 20-30 metre wide taxiway or a 6 metre wide roadway, both being completely free of fuel.

Taxiways and roads are readily accessible to fire fighting equipment. The closest fire brigade, the Quarry Road Brigade, is less than 3 kilometres from the subject land.

A Fire Management Plan for the subject land has been prepared by Esperance Environmental, refer **Appendix 4**, in liaison with relevant agencies including FESA and the Shire of Esperance.

The Fire Management Plan for the subject land will include the provision of large rain water storage tanks for fire fighting purposes and a DEC agreed 30 metre low fuel buffer zone along the southern boundary of the site adjacent to the reserve, plus a 30m setback of lot boundaries to the southern boundary. This includes a 12 metre roadway and a 18 metre kikuyu grass strip.

4.9 Integration with Adjacent Development

The Subdivision and Development Guide Plan shows the layout of the proposed development and depicts key land uses. As mentioned previously, the introduction of land uses and management measures will ensure greater protection for the Mullet Lake Nature reserve than could otherwise be achieved under the 'Rural' zoning.



The proposal acknowledges the importance of managing the interface of the subject land with the adjacent reserve in conjunction with the DEC.

The 30 metre DEC agreed low fuel buffer zone will create a fire break plus a buffer for the reserve. The DEC have not agreed to establish a mineral earth break within the reserve. There is currently 100-250 metre distance between the subject land's boundary and Merivale Road. This area is covered predominantly with Banksia and will conceal the proposed residences from Merivale Road.

It is considered that the proposed development effectively integrates with, and has no adverse impacts on, adjoining land uses.

4.10 Development Provisions

A list of "Special Use Provisions" for the subject land are included within Schedule 4 of the Shire's Local Planning Scheme No. 23 and addresses development issues relating to the maintenance of the existing airfield and the development and operation of the proposed Fly-in Estate.

The existing land use status of the site as an operating airfield and its relative unsuitability for rural uses provides an opportunity to create a special development that makes best use of the land, and which is also compatible with meeting the stated environmental objectives.

The focus of such development can thus be on the overall enhancement of the site through the careful location of houses, and restrictions on land use and management controls.

In response to the special conditions of Schedule 4 of LPS23an Environmental Management Plan has been formulated by Esperance Environmental, this is attached at **Appendix 5**. The Environmental Management Plan addresses the following elements and management; Water, Vegetation, Noise, Wetlands Vegetation, Contamination and Aboriginal Heritage.

A brief summary of management measures is provided below and further detailed in the Management Plan at **Appendix 5**.

4.10.1 Vegetation

A Vegetation Management Plan has been developed which will include the following management measures:

- No clearing of areas north east of Runway 32 – 14;
- Weed control;
- Fire management; and
- Exclusion of stock.

4.10.2 Wetlands

A Wetland Management plan has been developed which will include the following management measures:

- Landscaping and revegetation of the subject land; and
- Drainage and nutrient management.



4.10.3 Birds

A Noise Management Plan has been developed to ensure minimising impact on birds from Mullet Lake Reserve. Planes reach high altitude quickly, with minimal disturbance to the wetlands, this has been the case since 1992, where there have been no known bird strikes. Helicopters landing and taking off will also be required to take off in a northerly direction (towards Fisheries Road) and are to try and avoid flying over Mullet Lake Nature Reserve at low altitude.

4.10.4 Groundwater

A Water Management Plan has been developed which will include the following management measures:

- All residences install individual waste treatment systems to ensure that all effluent is treated to the satisfaction of the Department of Health.
- Fuel Spill Action Plan to ensure that if there is a fuel spill, clean up is immediate and there will be no environmental impact on the site or adjacent wetlands.
- Waste Oil Disposal Plan to ensure that all workshop waste oil is disposed of properly, offsite.

4.10.5 Surface Water

Surface water will be managed by natural flow. There are two main exits for surface water along the southern boundary. One is to the east of runway 32-14 and the other is to the west of the main access road. Both exits avoid any of the proposed residential developments.

Table drains alongside runways act as natural waterways directing water southward and away from the onsite residences. There will be no reticulated water scheme installed on the subject land.

4.10.6 Noise

A Noise Management Plan has been developed which will include the following management measures:

- All aircraft using the airfield are light aircraft category. No planes larger than 5,700 kilograms will operate from the airfield;
- There is a predicted total of 40 planes to be stored on site, with an average 2-3 flights each per week. Additionally there will be training flights which currently averages 3 per week plus drop-ins. The busiest period is December to February when training movements are higher;
- DEC shall be notified a minimum of 14 days prior to special events.
- Written permission will be sought from the Shire of Esperance where:
 - The annual average weekly number of 100 flights is expected to be exceeded;
 - The number of flights in any seven day period is expected to exceed 150, inclusive of training flights. (i.e. during an Air Rally or other special events);
 - Written permission from the Shire of Esperance shall be sought a minimum of 14 days prior to the special event;



- Runway 04 – 22 has a special procedure for right hand circuits which is specifically utilised to avoid aircraft overflying Quarry Road residences to the south west. This procedure will continue to operate as normal airfield procedure;
- If any noise complaints are received, they will be dealt with immediately by the Strata Management Committee and the Shire of Esperance will be informed in writing;
- There will be no night time operations from the Myrup Fly-in Estate; and
- The Noise Management Plan will also address minimising noise for birds, as referred to in 4.10.3 above.



5.0 CONCLUSION

Burgess Design Group, appointed by Myrup Fly-in Estate Pty Ltd, have prepared the preceding Subdivision and Development Guide Plan and report to guide the orderly subdivision and development of Lot 900 Fisheries Road, Myrup.

The proposed development of a fly-in estate on Lot 900 has been the subject of a number of strategic and statutory planning decisions over recent years that have firmly established the framework to guide the future development of the land for residential and airfield related activities.

The aerial scenic value around Esperance is considered to be world class. Esperance also boasts ideal flying conditions with flat country, moderate climate, and freedom from controlled airspace. The proposed fly-in estate airstrips are 10 nautical miles away from Esperance Airport and thus the circuit areas of both airports have sufficient separation, adding to this the proposed estate has the convenience of being located closer to the town centre than the existing Esperance Airport, located over 25 km from town.

The comprehensive environmental investigations and management plans prepared in support of this SDGP will ensure the development of the land will be undertaken in a manner that responds to the local context and protects the natural environment.

It is proposed to retain as much of the native vegetation as possible and undertake the proposed development in harmony with the existing environment. All areas north-east of existing Runway 32-14 will remain undeveloped, this area will be retained as during the wetter months of the year parts of this area become wetlands.

Burgess Design Group respectfully seeks Council's support for the adoption of the SDGP and endorsement by the Western Australian Planning Commission.

FIGURE 1
LOCATION PLAN



LEGEND:

Subject Land..... 

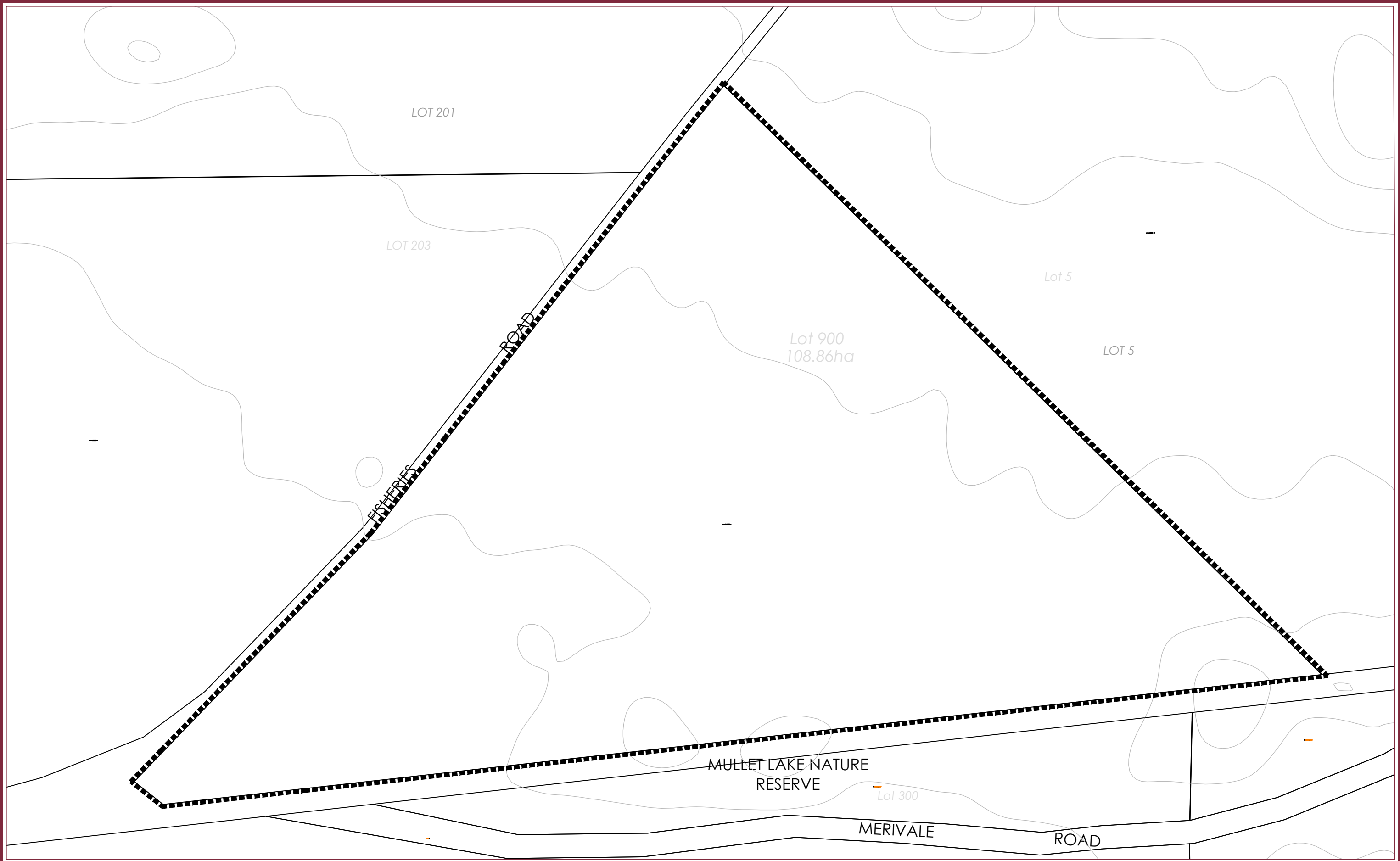


NORTH

SCALE 1:NTS (A3)

LOCATION PLAN
Myrup Fly-In Estate
LOT 900 Fisheries Road

FIGURE 2
LANDFORM PLAN



LEGEND:
 Subject Land



0 100m
 SCALE 1:6000 (A3)

LANDFORM PLAN
 Myrup Fly-In Estate
 LOT 900 Fisheries Road

FIGURE 3
AERIAL PHOTO



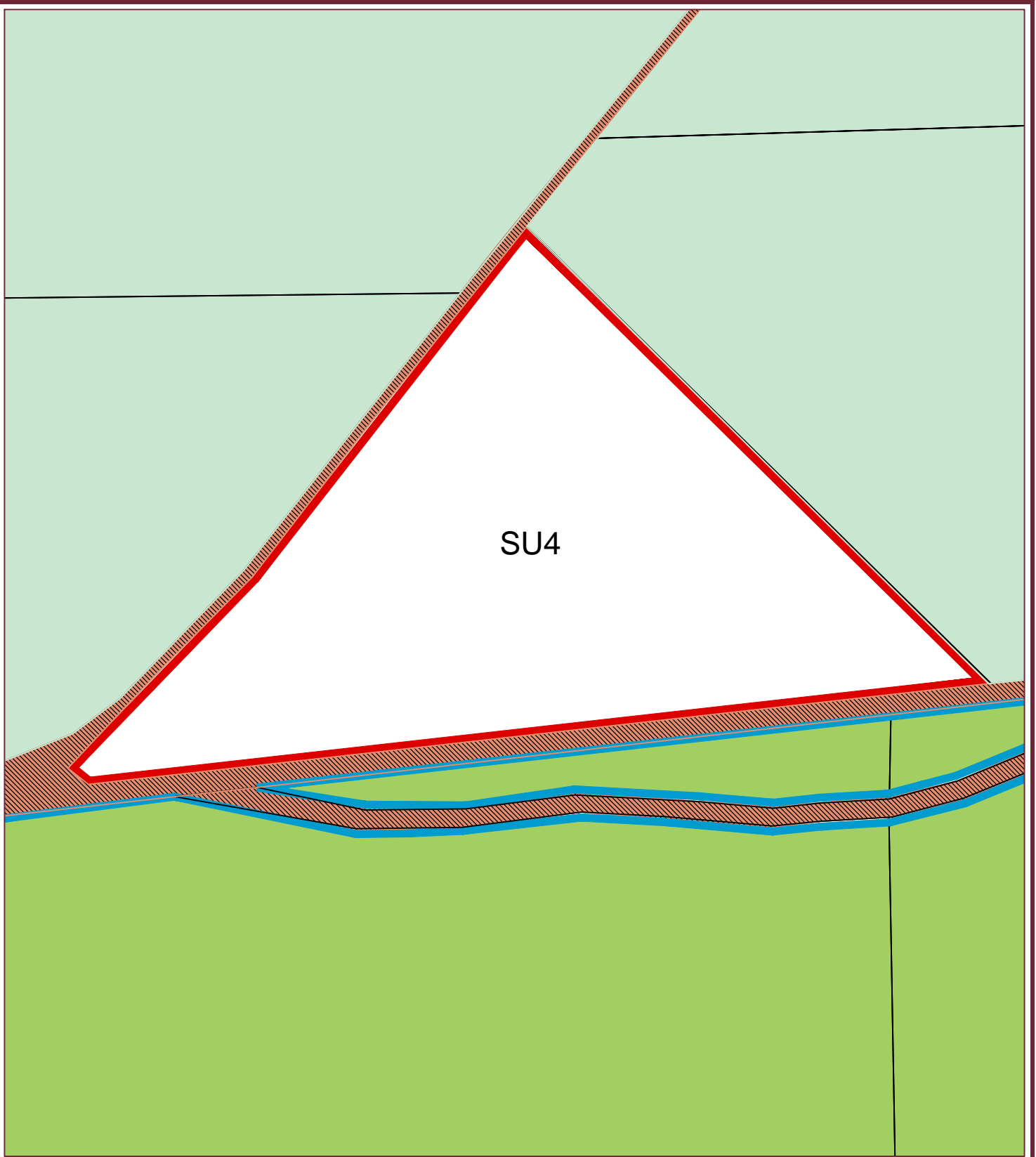
LEGEND:
 Subject Land


 NORTH
 0 100m
 SCALE 1:6000 (A3)

AERIAL PHOTO
 Myrup Fly-In Estate
 LOT 900 Fisheries Road

ESPERANCE

FIGURE 4
SHIRE OF ESPERANCE LOCAL PLANNING
SCHEME No. 23



LEGEND:

LOCAL SCHEME RESERVES

-  Important Local Road
-  Wetlands of Significance

ZONES

-  Agriculture - General

OTHER

-  **SU4** Special Use



LOCAL PLANNING SCHEME No.23

Myrup Fly-In Estate

Lot 900 Fisheries Road

SHIRE OF ESPERANCE

SCALE 1:NTS (A4)

NORTH
 Planner: TD
 Client: MYRUP FLY-IN ESTATES PTY LTD
 Date: 11.1.11
 Plan No: MYA ESP 7-03

APPENDIX 1
CERTIFICATES OF TITLE
AND DRAFT SURVEY PLAN

WESTERN



AUSTRALIA

REGISTER NUMBER 900/DP52183	
DUPLICATE EDITION 1	DATE DUPLICATE ISSUED 15/4/2009

RECORD OF CERTIFICATE OF TITLE
UNDER THE TRANSFER OF LAND ACT 1893

VOLUME **2714** FOLIO **98**

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

R. Roberts

REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 900 ON DEPOSITED PLAN 52183

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

MYRUP FLY-IN ESTATE PTY LTD OF 5TH FLOOR, 5 BARRACK STREET, PERTH
(AF K894402) REGISTERED 30 MARCH 2009

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

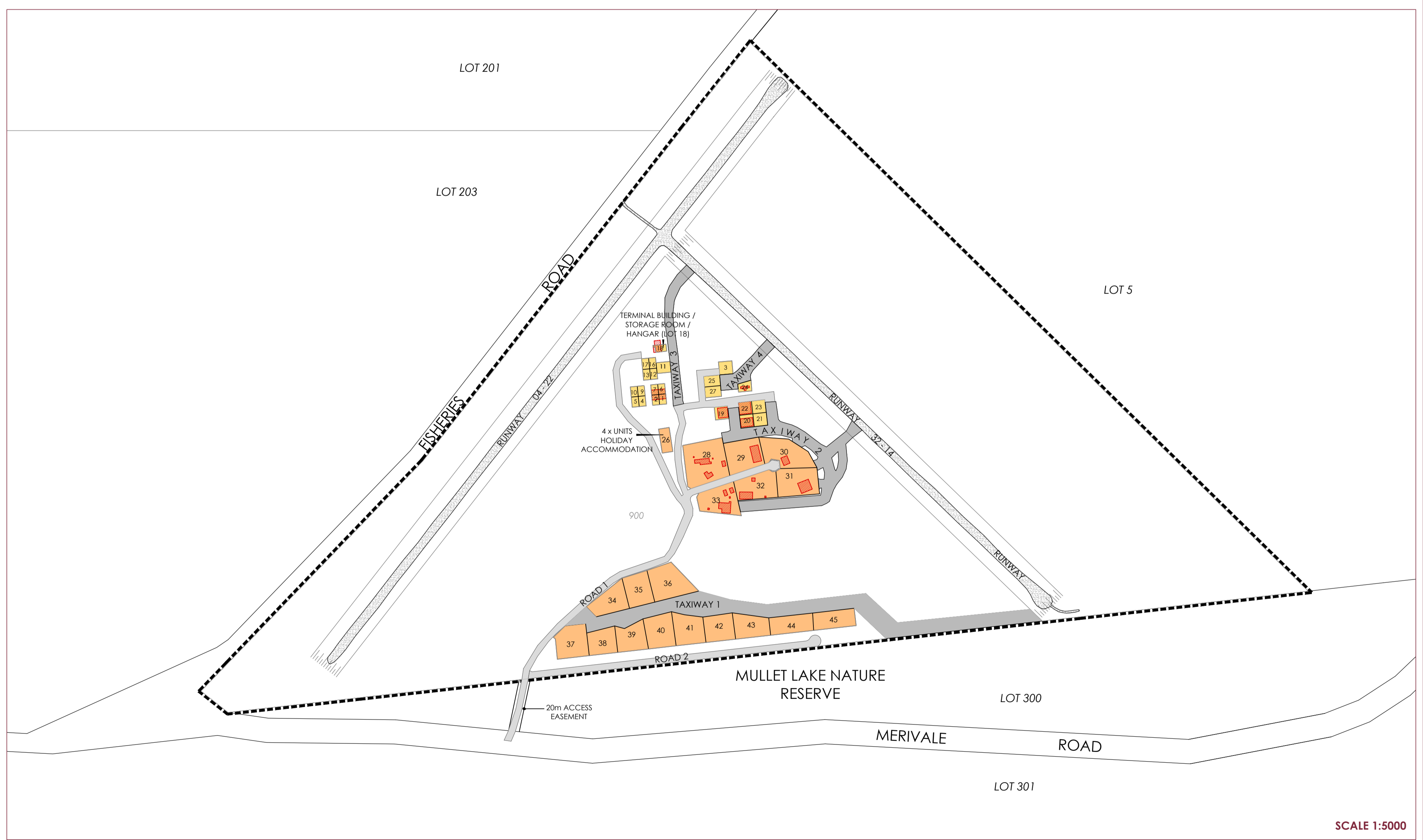
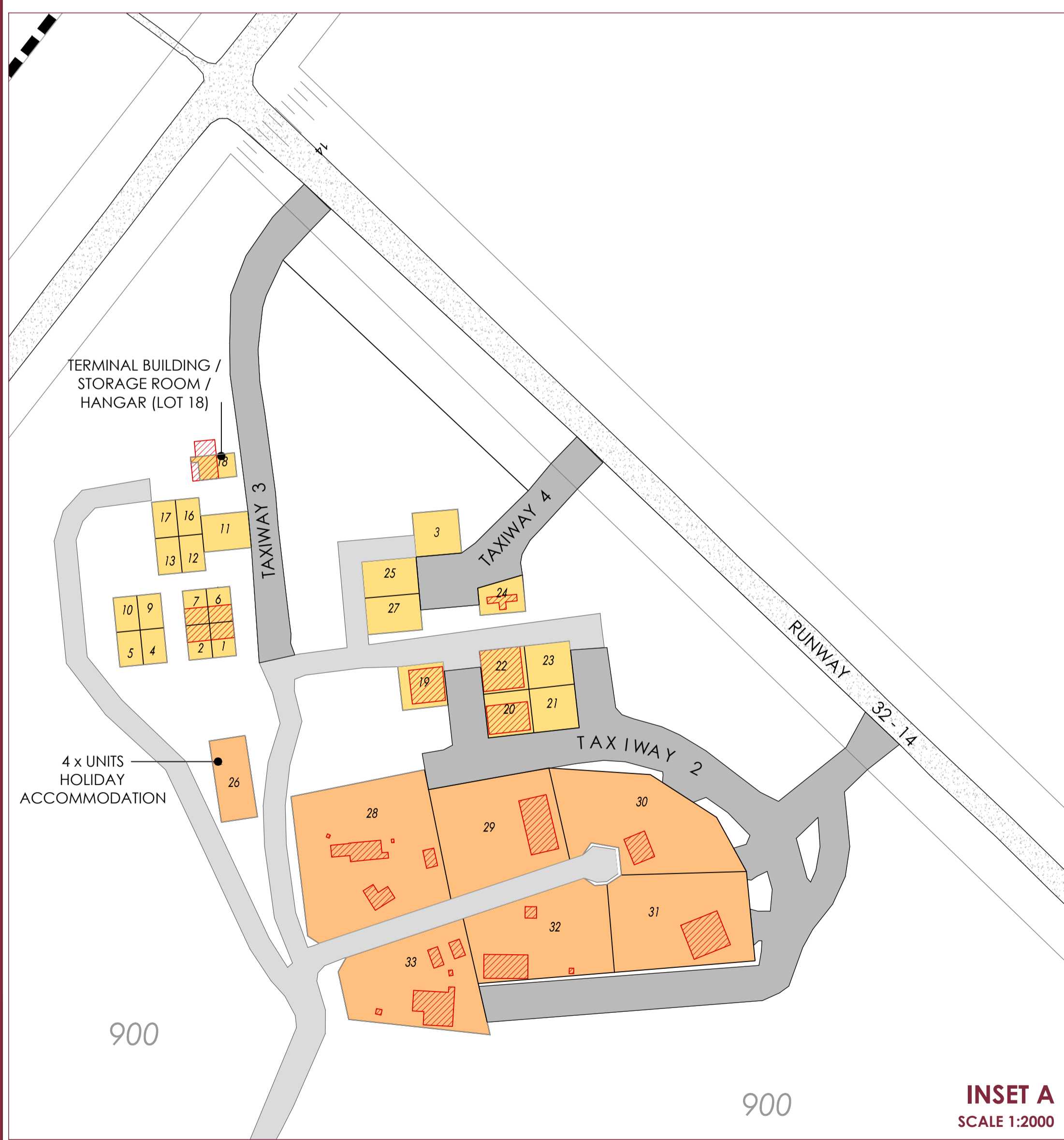
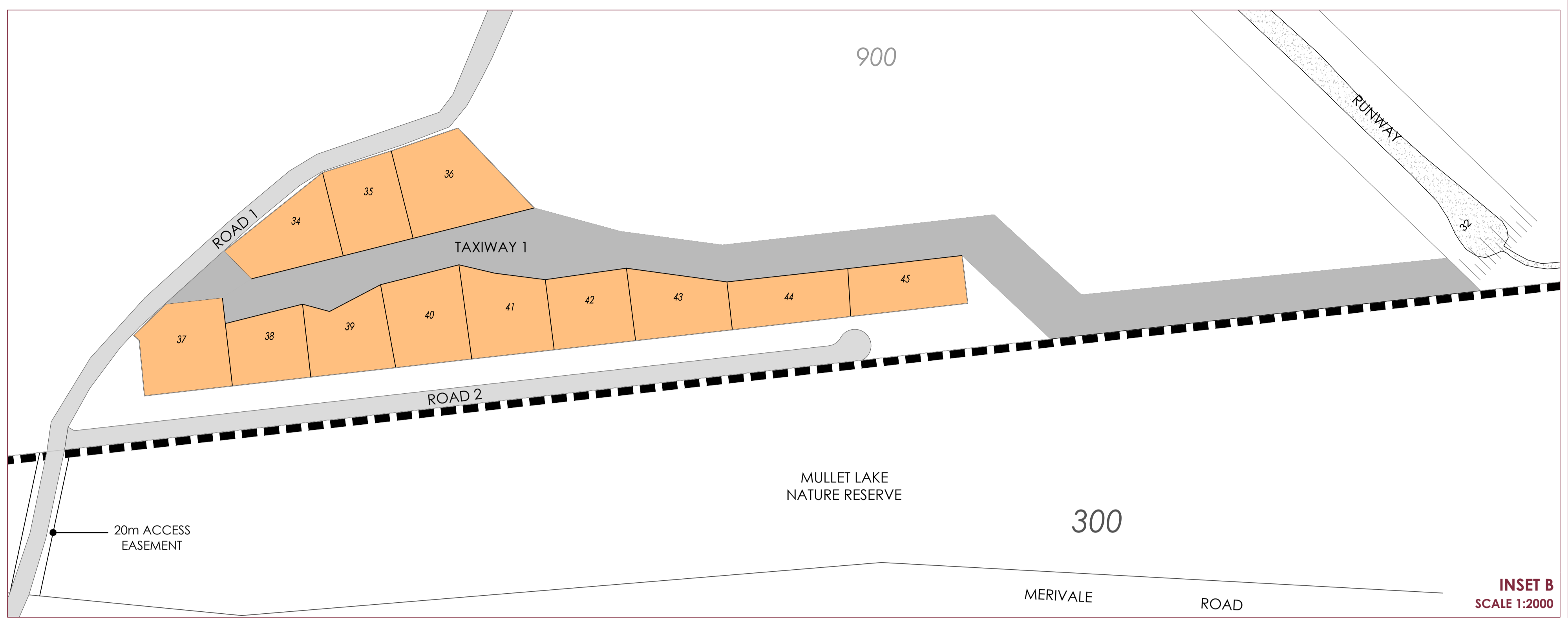
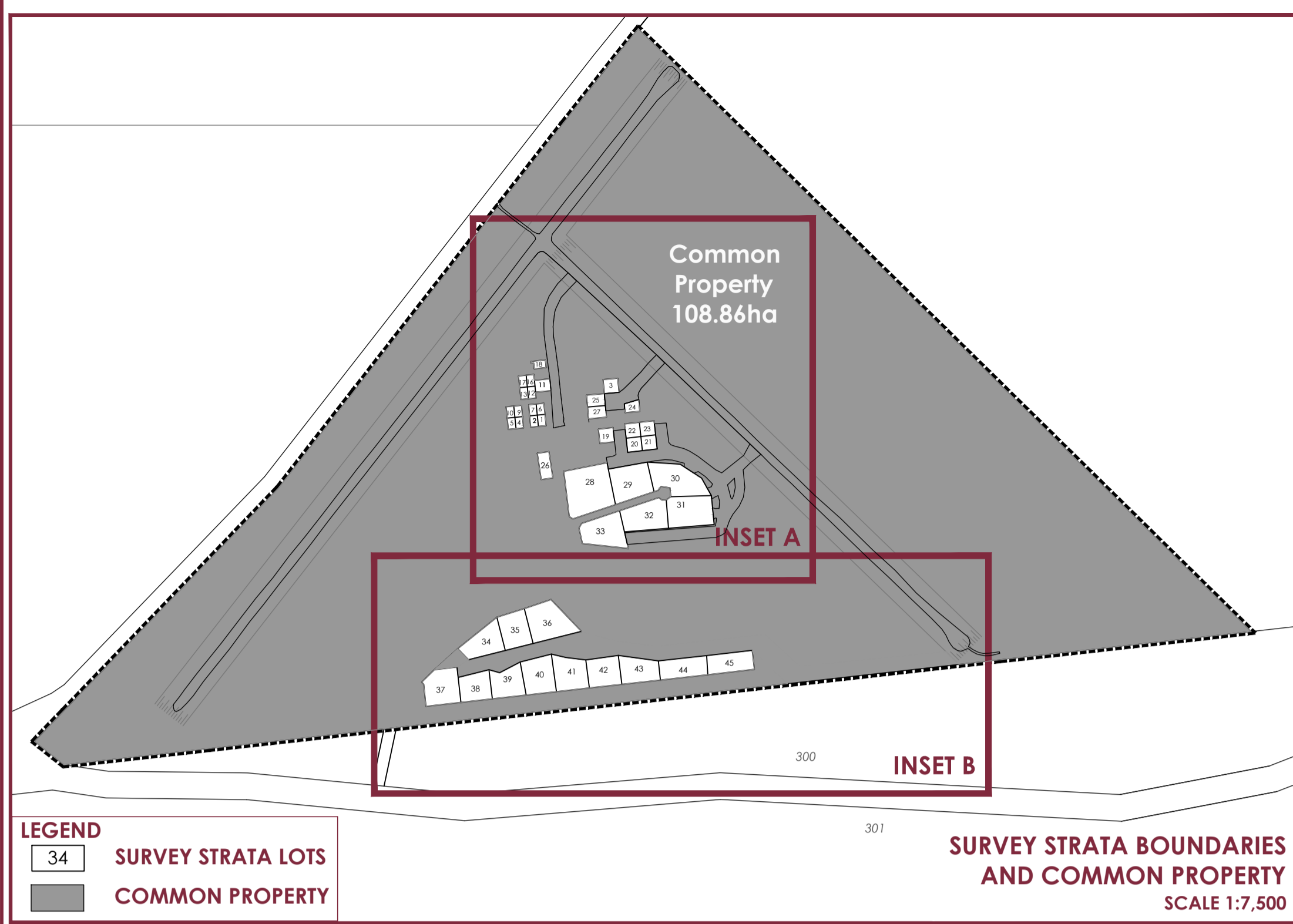
-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

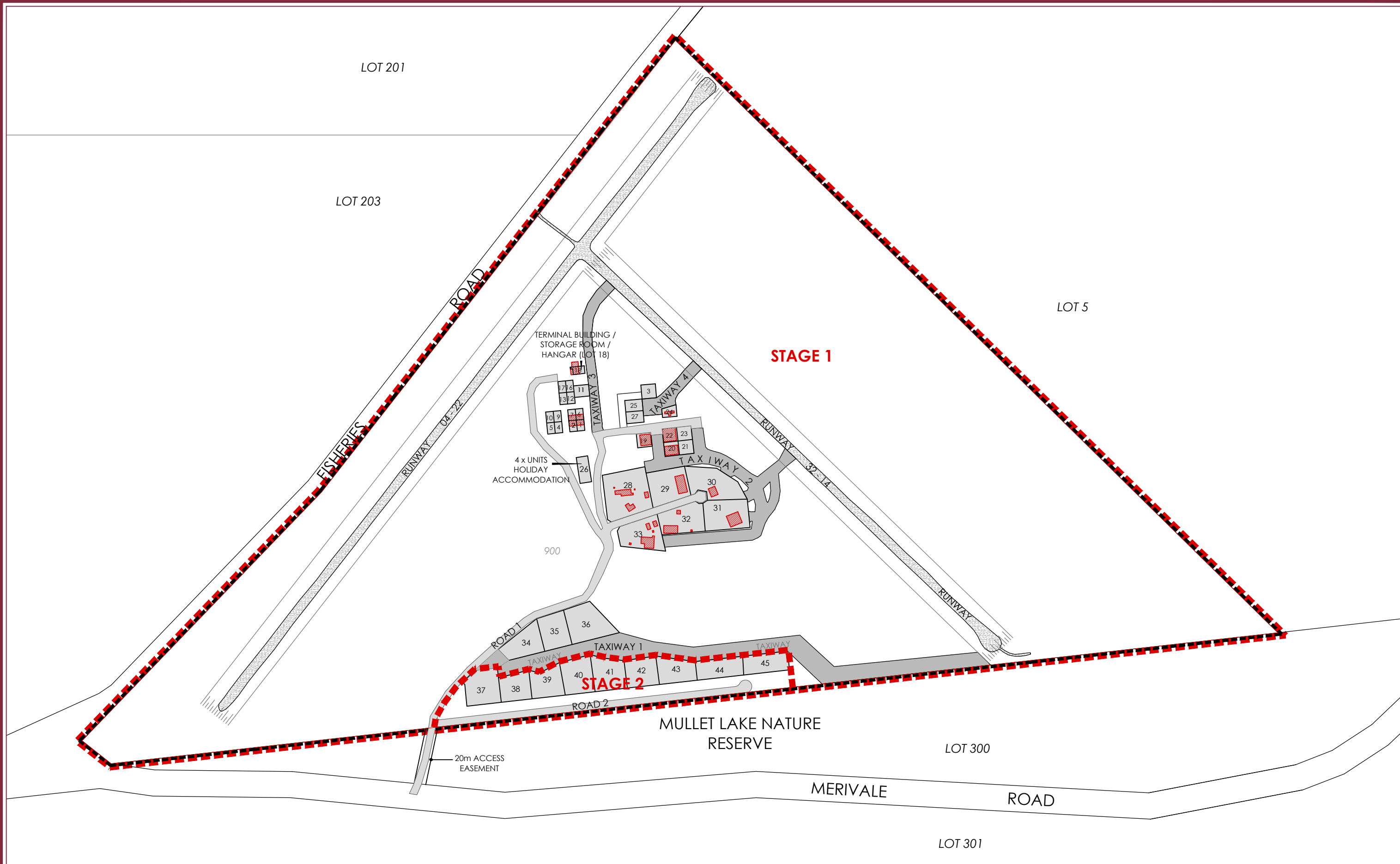
SKETCH OF LAND: DP52183 [SHEET 1].
PREVIOUS TITLE: 1497-780.
PROPERTY STREET ADDRESS: LOT 900 FISHERIES RD, MYRUP.
LOCAL GOVERNMENT AREA: SHIRE OF ESPERANCE.

APPENDIX 2
SUBDIVISION AND DEVELOPMENT GUIDE
PLAN





APPENDIX 3

STAGING PLAN



LEGEND:

-  Subject Land
-  Staging Boundary



NORTH



APPENDIX 4
FIRE MANAGEMENT PLAN

FIRE MANAGEMENT PLAN

Myrup Fly-In Estate Lot 900 Fisheries Road, Esperance



Prepared by
Esperance Environmental
Box 414, Esperance, WA 6450

With assistance from
Esperance Surveys
PO Box 985 Esperance WA 6450

5 August 2011

Rev	Description	Author	Checked	Approved	Authorised	Date
4	Updated with resolutions from Esperance Shire July 2011	SP	NW	SP	SP	5 August 2011

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1.0 INTRODUCTION

This Fire Management Plan is required by Special Use 4 zoning provisions in Shire of Esperance Local Planning Scheme No 23.

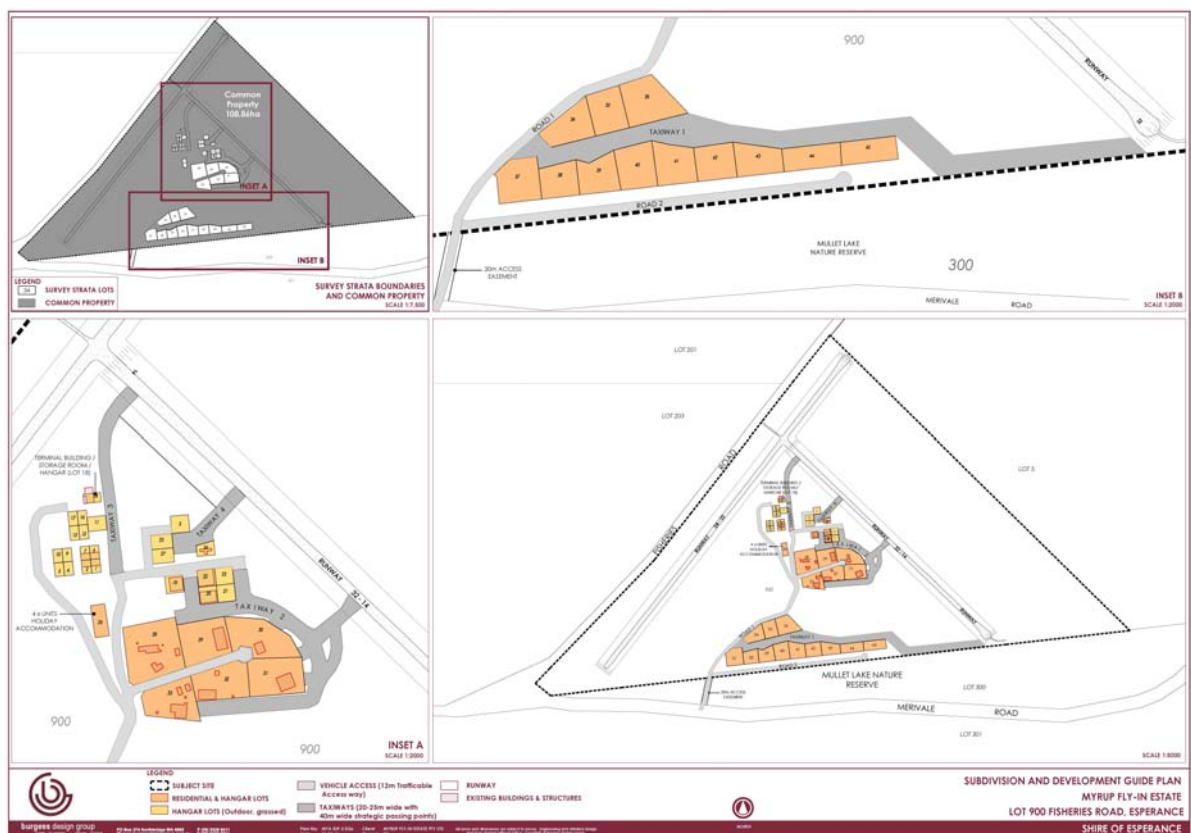
2.0 SUBDIVISION AND DEVELOPMENT DESIGN

Due to the triangular shape of the block, fire management for protection of the subdivision is required on three sides – north-east, north-west and south of the subdivision. Refer to Figure 1 below for the site plan.

The design of the proposed development allows potential fire events to be controlled due to the layout of roads, runways and taxiways which make frequent strategic fire breaks and provide access for fire fighting.

Lot 900 is bordered on the north-west by existing road formation, Fisheries Road, and behind that farmland, to the north-east by farmland with areas of sparse low remnant vegetation and to the south by the Mullet Lake Nature Reserve, (Reserve A23825).

The northern section of the Mullet Lake Nature Reserve is dissected by Merivale road. The section of the Reserve to the north of Merivale Road (25 – 250m in width), immediately south of Lot 900 is primarily unconsolidated dunes dominated by Banksia and Melaleuca, being low-tall scrub ranging in height from 1 – 4 metres, and is presently in a state of decline. Fire control is most important along this southern edge.



3.0 TOPOGRAPHY AND VEGETATION

Lot 900 itself is mainly flat with lower lying damp/seasonally wet areas scattered over the majority of the block with the exception of an area of deeper sand along the southern boundary of the site. This sand ridge which runs along the southern edge of the property, is where the bulk of the residential developments are proposed. The land slopes gently upwards towards the southern boundary, with an approximate rise of 2 metres, but a slope of less than 10°.

The lot is characterised by an abundance of *Nuytsia floribundi* (Christmas Tree) over pasture grasses with patches of *acacia* (Wattle) and banksia on the deeper sands and paperbark on the swamplands along with dozens of lesser height species including samphire. Since Lot 900 was destocked almost ten years ago, regeneration of bush, and in particular paperbark, has occurred.

The existing remnant vegetation is mostly contained east of the runway 32-14. Sparse vegetation also lies along the temporary watercourse between the lots along the southern boundary (lots 34 – 45) and the lots further north (lots 28 – 33 and hangar lots). This is mainly paperbarks and low samphire bush.

There are large tracts of cleared area being the taxiways, runways and access roads to the blocks which make frequent fire breaks across the site.

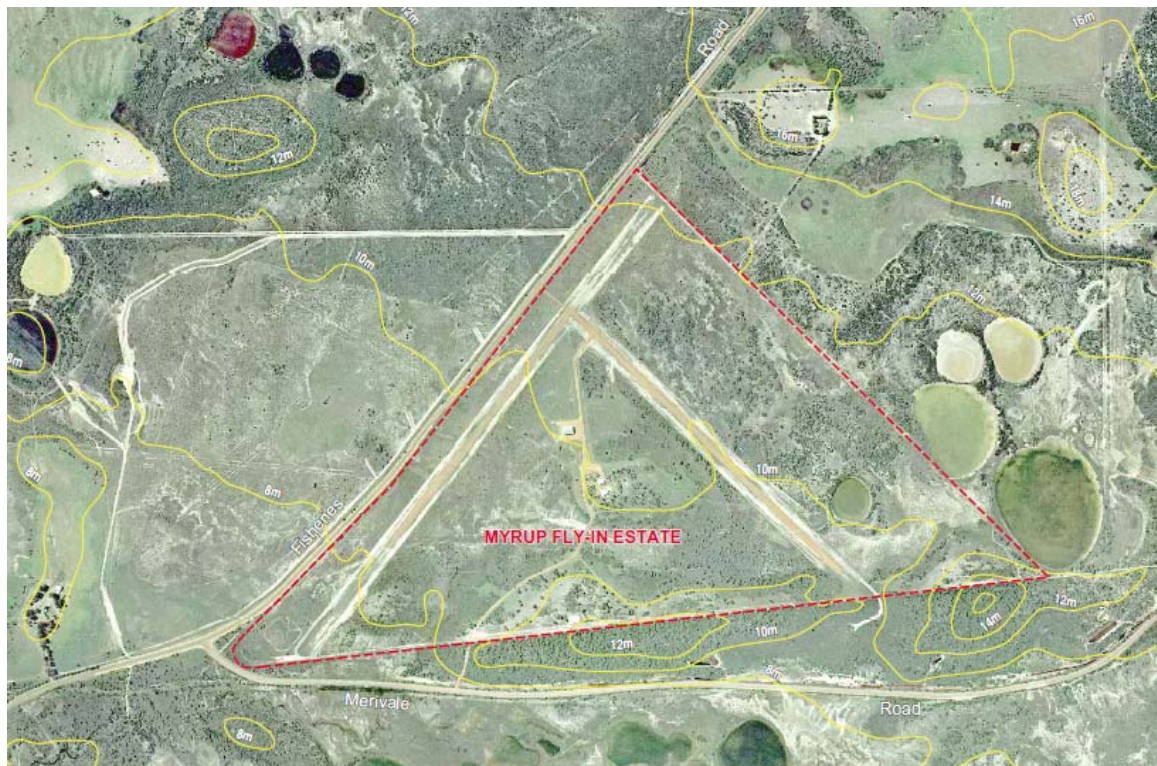


Figure 2. Topography of Lot 900.



Figure 3. Aerial Photo of the site showing vegetation on Lot 900.

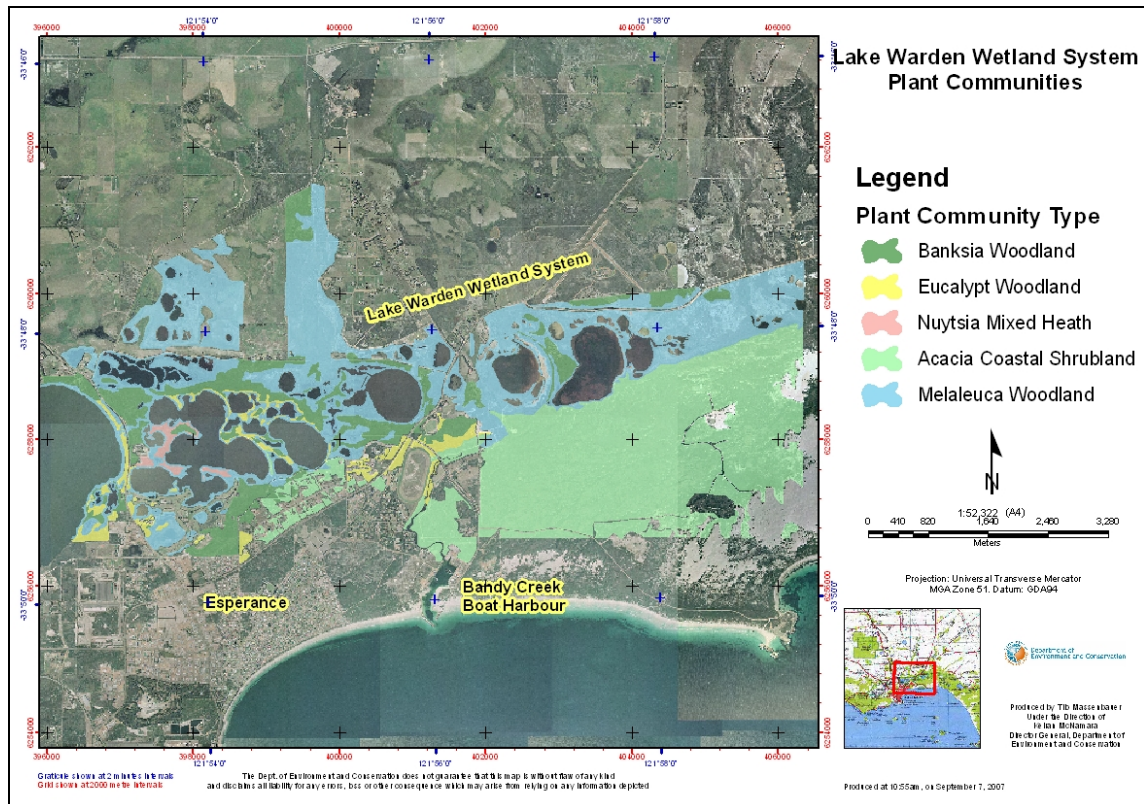


Figure 4. Plant communities in the Wetland System to the south of Lot 900, showing the banksia community to the south of Lot 900.

4.0 BUSH FIRE HAZARD ASSESSMENT

The bush fire hazard assessment takes into account existing site conditions that include:

- topography with particular reference to ground slopes and accessibility;
- vegetation cover – both remnant and likely revegetation;
- relationship to surrounding development.

Using the WAPC/FESA *‘Planning for Bushfire Protection’* Bush Fire Hazard Assessment (BFHA) guidelines and an inspection of the property, this proposal is rated **high**. To the south is the Mullet Lake Nature Reserve which is composed of tall shrubs (Class C, Type 13, <10° slope).

The Mediterranean climate experienced by this area is such that the majority of rain falls in late Autumn through to early Spring. This rainfall supports substantial vegetation growth which dries off in Summer/Autumn. The combination of prevailing winds and dry vegetation poses a fire risk and building protection zones and hazard reduction zones are considered essential for the protection of life and property, and to ensure that frequent and uncontrolled burning does not degrade existing and replanted vegetation.

The DEC have agreed to maintain a low fuel area within the adjacent Reserve to a width of 30 metres adjacent to the boundary of Lot 900, for a length of 700 metres. The Department of Environment and Conservation will not however establish a mineral earth break within the reserve. This low fuel area to the south of the property will assist with the strategic firebreak system for protection of the proposed subdivision, particularly the blocks along the southern boundary (lots 37 – 45), but this does not relieve the subdivider from maintaining and installing a strategic firebreak within the property between the southern blocks and the reserve land. In addition to the external strategic firebreak installed along the boundary of the reserve, this is combined with a 12 m width roadway and an 18 metre width grass strip on the property and immediately adjacent to the property boundary. Setbacks of ten metres from the lot boundaries will also be required. In the future, this strategic fire break may be of assistance to the DEC for fire control or back burning programs on the Mullet Lake Nature Reserve.

Provided the requirements of this Fire Management Plan are maintained, the risk to people’s lives and damage to property within the proposed subdivision can be reduced.

5.0 FIRE MANAGEMENT PLAN

The aim of the Fire Management Plan is to reduce the threat to residents and fire fighters in the event of bush fire within or near the site.

The site has been developed to incorporate the following fire management methods:

- Strategic Firebreaks
- Location of water sources and storage (domestic and fire fighting)
- Access roads
- Building exclusion areas
- Fuel Reduction
- Building Protection Zones
- Hazard Separation Zones

- Fire Suppression Response
- Building Standards

5.1 Strategic Firebreak System for Fire Service Access & Internal Firebreaks

A Strategic Firebreak is a firebreak that is located to provide strategic access for fire fighting equipment. This firebreak must be no less than 20m wide with a 4m high vertical space cleared of all flammable material and have a 4m trafficable surface for fire fighting vehicles. The strategic firebreak is to be slashed annually to a maximum height of 100mm. The strategic firebreak is to be constructed to the satisfaction of the Shire of Esperance and comply with Fire Service Access standard as described in WAPC/FESA *Planning for Bushfire Protection.*, as shown in Table 1 below.

Table 1. Minimum Strategic Firebreak Standards

Minimum trafficable surface	4m
Horizontal clearance	20m
Minimum Vertical clearance	4m
Maximum grades	1 in 8 (12.5%)
Maximum grade permissible over <50m	1 in 5 (20%)
Maximum average grade	1 in 7 (14.4%)
Maximum weight capacity	15t
Maximum crossfall	1 in 33 (3%)
Curves minimum inner radius	12m
Passing bays	Every 200m
Turn around areas	Every 500m

DEC has agreed to maintain a 30 metre low fuel buffer adjoining the southern boundary of the reserve. Such a buffer shall be established and fuel reduction burns will be undertaken as juvenile periods of key flora indicator species permit. DEC will not however establish a mineral break within the reserve, as this may increase the risk of and disease introduction into the nature reserve, and risks the likelihood of any cleared fire break being used for inappropriate uses (see Section 7.4). This Firebreak will be immediately adjacent to a 12 m trafficable road and an 18 m grass strip of low fuel area, which will be maintained by the Strata Management Committee, who will oversee maintenance of the property, and be funded by levies from all lot owners on an annual basis.

The location of this strategic firebreak has been approved by Shire of Esperance, the Department of Environment and Conservation and the District Manager of the Fire and Emergency Services Authority and may be used by fire appliances for access in the event of a bushfire, particularly in the Mullet Lake Nature Reserve to the south of Lot 900.

The Southern Grass Taxiway 1 is 25 m in width (with areas of 40m width for passing) and provides additional protection for the next row of southern blocks (lots 34 – 36) from a fire from the south.

The two main runways, runway 32-14 on the western side, and 04-22 on the eastern side, combined with the various taxiways and access roads make strategic fire breaks across the other areas of the site.

Protection of the subdivision, particularly the lots 28 – 33, hangar lots and other aircraft-related development from the north-east and north-west are provided by the two existing runways. Runways are 25 metres gravelled with an overall cleared area of 70 metres. In addition the taxiways and roadways across the site make further firebreaks. Taxiway 2 is 25 metres in width

and all exits from Runways 32-14 are 20 metres width. Service roads are all 12 metres in width (including gravel area of 8 – 10 metres with 200mm compressed gravel) and adjacent grass verges). The main access to the site (Road 1) is 10 metres gravelled and 2 metres grass verge. Road 2 is 8 metres gravel and 2 metres verge either side.

All roads on site are constructed with gravel in accordance with the engineering standards of the Shire of Esperance.

5.1.1 Internal Firebreaks

Each owner/occupier is required to construct internal firebreaks in accordance with the Shire of Esperance Firebreak Notice unless an alternative individual fire management plan has been submitted and approved by the Shire of Esperance. Alternative firebreaks are encouraged if the creation of a standard firebreak would cause erosion or loss of visual amenity by crossing steep dunes.

5.2 Fire Fighting Water Storage Tank

There is a 110,000 litre tank and adjacent hardstand area installed for the purpose of fire fighting on Lot 900, adjacent to the four-plane hangar complex (hangars 1, 2, 6 and 7) and is adequate for FESA requirements in fighting fires within and around the subdivision. This tank has connections compatible with the quarry road fire brigade equipment. Procedures are to be put in place to ensure the tank is kept full at all times. The tank can be accessed either from the main access road or from the emergency access gate on Fisheries Road (refer to Site Plan – Figure 1). Maps showing the location of fire fighting water supplies are to be provided to the Shire of Esperance and the local Quarry Road fire brigade.

The strata management committee also have available for fire fighting a trailer unit with 1,000 litre water tank and pump system.

5.3 Access Roads

The access roads and taxi ways on Lot 900 shall have a combined minimum trafficable surface of 4 metres width and a minimum width of 6 metres. Turning areas should be available for both conventional two-wheel-drive vehicles of residents and for large fire appliances. The following standards in the following table will apply.

Table 2. Minimum Public Road Standards

Minimum trafficable surface	4m
Horizontal clearance	6m
Maximum grades	1 in 8 (12.5%)
Maximum grade permissible over <50m	1 in 5 (20%)
Maximum average grade	1 in 7 (14.4%)
Maximum weight capacity	15 tonnes
Maximum crossfall	1 in 33 (3%)
Curves minimum inner radius	12m
Passing bays	Every 200m
Turn around areas	Every 500m and within 50m of the house and at water tanks.

These road standards have been met across the site. The road width along the strategic fire break to the south is a width of 12 metres so provides ample room for passing and turning around for fire fighting vehicles. All other service roads on site are also a width of 12 metres, with a gravelled width ranging from 8 – 10 metres.

There are two access way from the site. One is the main access road from Merivale road (Road 1). The second is an emergency access way off Fisheries Road through Runway 04-22. This access way is to be kept open and may not to be locked at any time except by order of the Shire of Esperance. A rural gate has been installed to allow access for fire fighting equipment. This gate is 10 metres wide and the access road through to Runway 04-22 is also 10 metres wide, to allow large fire trucks to access the site.

5.4 Building Exclusion Areas

All lots are located within the strategic firebreak system. Apart from the terminal building and the fuel truck storage shed, all buildings and houses will be restricted to within the individual lots.

The buildings and houses constructed on the lots along the southern boundary are to have a minimum setback of 10 metres from the southern side of the block. This is to ensure that there is minimum 70 metres low fuel area between any building and the nature reserve to the south.

All development requires the planning approval of the Shire of Esperance and dwellings along this southern boundary shall be in accordance with the specifications and Australian Standard AS 3959 (as amended) for *Construction of Buildings in Bushfire-Prone Areas*.

5.5 Fuel Reduction

5.5.1 Remnant Vegetation

The remnant vegetation to the east of runway 32-14 will not be cleared. Runway 32-14 of 70 metres in total width acts as a firebreak from the residences to the south-west of this runway. Remnant vegetation elsewhere across the site will be managed to ensure any dead material or debris is removed to reduce fire risk.

The Mullet Lake Nature Reserve to the south of the site is covered with low - tall shrubs, mainly Banksia, which pose a high fire risk to the site. The DEC have agreed to maintain a 30 metre wide strip for a length of 700 metres of low fuel area to reduce fire risk from this reserve. This is in addition to the firebreak within the site.

5.5.2 Cleared Areas

All grass fuels on cleared areas during the summer months each year are to be maintained to a height of no greater than 10 cm. This is to apply to the strata management committee for the common areas, particularly the edges of the runways, grass taxiways and grassed plane park, and to the owners/occupiers of the individual lots.

This can be achieved by mowing or slashing of grass fuels. Grazing animals have been restricted from the site so fuel reduction by grazing is not possible.

5.6 Hazard Separation

There must be physical separation between bush fire hazards and development in low, medium and high bush fire hazard areas. Hazard separation zones assist in reducing fire intensity when a bush fire impacts on buildings within a subdivision.

Bush fire fuel within hazard separation zones between buildings and remnant vegetation must be maintained below 10 cm in height over the summer season. This height can be maintained by slashing, or other means. Isolated trees may remain in this area if fallen debris is removed.

All buildings should generally be located a minimum of 100 metres from the boundary of public bushland or conservation reserves. In exceptional circumstances, the Shire of Esperance may

permit a dwelling to be constructed within 80 metres of such a reserve but if it does the Level 3 building standard of Australian Standard AS 3959 (as amended) for *Construction of Buildings in Bushfire-Prone Areas* shall apply.

A Hazard Separation Zone of a minimum of 70 metres is required within this subdivision and must be provided between the remnant vegetation on the adjacent reserve and the lots along the southern boundary. This can be achieved by implementing and maintaining the strategic firebreak system and building exclusion zones, carrying out fuel reduction as described in Section 5.5 or by alternative methods approved by FESA and the Shire of Esperance.

Ideally, the hazard separation zone should be located inside the boundaries of the subdivision as problems can arise when essential elements of a bush fire hazard reduction program are located offsite and clearing of land and maintenance of reduced fuel levels on land in other ownership falls outside of the control of the developer.

However, due to the sand ridge along the southern edge of the property, being elevated well draining land suitable for residential development, the location of the residences is closer to the property boundary than is possible to maintain the hazard separation zone entirely within the property. The hazard separation zone is comprised of the 30 metre low fuel area along the edge of the reserve, combined with the 12 metre wide gravel roadway and the 18 metre grass strip adjacent to the roadway within the property itself. In addition the lot owners along the southern boundary are required to have a setback of at least 10 metres from the southern property boundary.

5.7 Building Protection Zones

The building protection zone is a low fuel area immediately surrounding a building. Building protection zones will reduce bush fire intensity close to dwellings, and will minimise the likelihood of flame contact with buildings.

The building protection zone and the hazard separation zone are crucial for this subdivision, particularly the lots along the southern boundary. It is essential that the strata management committee together with the lot owners maintain the building protection and hazard separation zones to have any degree of safety.

The building protection zone makes up part of the Hazard Separation Zone.

Building protection zones vary in size depending on slope. Zones should be a minimum of 20 metres wide on flat land with the width of the zone increasing as the slope increases. The size must be in accordance with the following table from Planning for Bushfire *Protection* December 2001, AS 3.6.2 on page 42.

Table 3. Building Protection Zones.

Slope	Building Protection Zone
0°-5°	20m
5°- 10°	20m
10°-15°	25m
15°-20°	30m
Over 20°	40m

Due to the low slope, the building protection zone for this subdivision will be 20 metres.

Features such as driveways, vegetable patches, lawn, or landscaped gardens (including deciduous trees) may form part of building protection zones. Isolated trees and shrubs may be

retained within building protection zones. Fire fuel debris e.g. wood piles should not be within the protection zone.

The planting of fire resistant trees and shrubs to enhance the landscape and serve as windbreaks is encouraged. A list of suitable species is provided in the WAPC/FESA *Planning for Bushfire Protection*. Planting of trees within the building protection zone can be carried out provided that when the tree matures branches do not overhang the house or buildings. This affords the opportunity for property owners to put appropriate firebreaks around the lot and the building area. When trees begin to mature the outside row, i.e. nearest to any firebreak, is to be pruned to 4m vertical clearances to allow access for firefighting vehicle close to the trees.

The area within the building protection zone must fulfil the following conditions:

- Bushfire fuels must be maintained below a height of 10cm in height.
- Trees and/or branches, which may fall on the house, must be removed.
- Lower branches of the remaining trees must be trimmed.
- All leaves and grass must be removed from within the building protection zone area. Grass is to be maintained at no more than 10 cm in height.

5.8 Fire Suppression Response

The main Esperance fire station is located within 8 km by road from the subdivision. The Quarry Road Fire Brigade is located less than 3 km by road. This is within the 5 - 10 minute response time recommended in the Bush Fire Protection Policy.

5.9 Building Standards

In accordance with the WAPC/FESA *Planning for Bushfire Protection* Bush Fire Hazard Assessment (BFHA) guidelines, and an inspection of the property this subdivision is rated **high**. Any areas that have a BFHA of between Moderate and Extreme constitute a **Bush Fire Prone Area**. In Bush Fire Prone Areas all habitable buildings must comply with the Australian Standard for *Construction of Buildings in Bush Fire Prone Areas* (AS 3959 as amended).

Individual dwellings on each lot shall be designed and built to conform with:

- The Homeowner's Bush Fire Survival Manual published by FESA.
- The Shire of Esperance Specifications and Requirements as detailed on any planning consent or building permit.
- Australian Standard AS3959 (as amended) for Construction of Buildings in Bushfire-Prone Areas.

Copies of *The Homeowner's Bush Fire Survival Manual* and a copy of this Fire Management Plan will be issued to **each** property owner by the strata management committee at the sale of the allotment.

It is noted that a low-pitched roof together with closed eaves, metal mesh fly screens and vent covers will provide optimum safety protection in bush fire prone areas. In addition a simple shaped, single storey house on the ground and not on stilts is recommended. If the building is elevated then the underneath area should be completely enclosed so as not to allow sparks or embers to blow beneath the house. These design features are discussed in more detail in *The Homeowner's Bush Fire Survival Manual* and the Australian Standard AS 3959 (as amended).

Level 3 construction of AS-3959 shall be required for any dwelling located within 80 metres of public bushland or conservation reserves, which includes the blocks along the southern boundary.

6.0 SUMMARY

6.1 Overall Fire Threat

The design of this subdivision and the facilities constructed at the time of the development are such that with implementation of this Fire Management Plan, the fire threat to persons and property within the subdivision is significantly reduced. Unless all the owners and occupiers of this subdivision: -

- cooperate to implement this Fire Management Plan,
- adhere to the conditions of this Fire Management Plan at all times; and
- comply with the Shire of Esperance Firebreak Notice unless specifically exempt,

then the risks to persons and property will increase dramatically.

This is a high fire risk area. It is essential that the strata management committee maintain the required strategic fire breaks along the southern boundary and liaise with the DEC to ensure that they annually maintain the required 30m low fuel area along the edge of the Reserve. Each owner and occupier of this subdivision are required to maintain fuel reduction and fire management of the remaining vegetation once houses and buildings have been constructed.

It is essential that building protection and hazard separation zones are maintained with due vigilance.

7.0 RESPONSIBILITIES

7.1 Property Owner's Responsibility

The owners and occupiers of this subdivision will be responsible for undertaking, complying with this Fire Management Plan and implementing measures to protect their own assets. The following conditions apply to property owners in succession:-

- Each purchaser is to receive a copy of this Fire Management Plan, *The Homeowner's Bush Fire Survival Manual* and the Shire of Esperance Firebreak Notice from the vendor at the time of sale.
- Owners and occupiers should read and implement the Fire Management Plan, *The Homeowner's Bush Fire Survival Manual*, and the Shire of Esperance Firebreak Notice. The Shire and FESA can provide advice on implementation. This is particularly important prior to construction of a building and in association with change of ownership.
- Owners/occupiers will be required to comply with the Shire of Esperance Firebreak Notice or submit for approval a detailed Fire Management Plan of their lot showing what measures they intend to take to reduce the fire risks on their property. This may be in addition to the requirements of this Fire Management Plan. If an alternative Fire Management Plan is not submitted and approved then they are expected to comply with the Firebreak Notice issued annually by the Shire of Esperance.

- Development is to be in full compliance with the requirements of the Shire of Esperance Policy DS-42 *Planning for Bush Fire Protection*.
- Comply with building standards as required by Shire of Esperance, including construction of habitable buildings to Australian Standard *Construction of Buildings in Bush Fire Prone Areas* (AS 3959 as amended) and *The Homeowner's Bush Fire Survival Manual* or equivalent for the blocks along the southern boundary (lots 37 – 45)
- Fuel Hazard Reduction is to be carried out as detailed in Section 5.5
- All grass fuels on the cleared areas during the summer months (approximately November 1st – April 31st each year) are to be maintained to a height of no greater than 100mm in accordance with Section 5.5.
- Any portion of the 70 metre Hazard Separation Zone within the lot boundary is to be installed and maintained in addition to the Building Protection Zone as detailed in Sections 5.6 and 5.7.
- Setback from southern properties must be 10 metres (lots 37 – 45)
- A 20 metre Building Protection Zone is to be installed and maintained around all buildings as detailed in Section 5.7
- All gutters and buildings must be regularly inspected and any leaves removed from the roof and gutter areas. This will limit the potential for fires to start in the roof in the event of any sparks landing on the roof or in the gutters.
- Branches overhanging the roofs of buildings should be cut back a minimum of 2 metres from the eaves to reduce the amount of leaf litter that can fall onto the roof and gutters of buildings.

7.2 Strata Management Committee's Responsibility

The following conditions apply to the strata management committee both before each subdivided lot is sold and following any stage of the subdivision being given clearances for final approval:

- A Section 70A Notification is to be lodged on each Certificate of Title proposed by this subdivision. The Notification shall alert purchasers of land and successors in Title of the responsibilities of this Fire Management Plan.
- A copy of this Fire Management Plan, the Shire of Esperance Firebreak Notice and *The Homeowner's Bush Fire Survival Manual* will be supplied to each property owner on sale of the allotment.
- Proof that purchasers have been advised of the Fire Management Plan must be noted on all Contracts of Sale.
- Subsequent to the issue of Final Approval for this subdivision, the strata management committee will have responsibility to maintain strategic fire breaks, roadways and taxiways as described in this plan so that they act as the necessary fire breaks.
- The Emergency fire access is to be maintained to the standard of the Strategic Firebreak Specifications as outlined in Section 5.3 to a surface trafficable by conventional two wheel drive vehicles.
- The strata management committee must comply with the Shire of Esperance Firebreak Notice and maintain the permanent strategic firebreaks and emergency access.

- Provide permanent water supply for fire fighting purposes and right of access by FESA.

7.3 Responsibility of the Shire of Esperance

The responsibility for compliance with the law rests with individual property owners and occupiers and the following conditions are not intended to unnecessarily transfer the responsibilities of the strata management committee and the subsequent owners/occupiers to the Shire of Esperance. The Shire of Esperance however does have statutory control and responsibility to ensure that aspects of this Fire Management Plan and community fire safety are maintained and to facilitate incorporation of the Fire Management Plan into the district fire fighting strategy.

The Shire of Esperance shall be responsible for:

- Endorsing a Section 70A Notification for each Certificate of Title affected by this Fire Management Plan.
- Developing and maintaining District Fire Fighting Facilities.
- Maintaining in good order and condition the district water supplies and equipment for fire fighting purposes.
- Providing advice on standards and methods to achieve community fire protection to owners /occupiers of land.

7.4 DEC Responsibilities

- Department of Environment and Conservation has agreed to maintain a 30 metre low fuel buffer adjoining the southern boundary of the reserve. DEC will not however establish a mineral earth break within the reserve, nor will it burn this buffer on an annual basis (as this would lead to a total destruction of the vegetation integrity of the natural reserve). Instead DEC will establish and maintain low fuel levels in accordance with the wildfire threat and/or as juvenile periods of key flora indicator species permit.

APPENDIX 5
WATER, VEGETATION, WETLANDS, NOISE
AND CONTAMINATION ENVIRONMENTAL
MANAGEMENT PLAN

Myrup Fly-In Estate

ENVIRONMENTAL MANAGEMENT PLANS



**Including water, vegetation, wetlands, noise, and
contamination**

5 August 2011

Rev	Description	Author	Checked	Approved	Authorised	Date
5	Updated with Shire of Esperance resolutions July 2011	SP	NW	SP	SP	5 August 2011

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1.0 INTRODUCTION

Myrup Fly-In Estate, Lot 900 Fisheries Road, is zoned Special Use 4 under the Shire of Esperance Local Planning Scheme No. 23.

A list of “Special Use Provisions” for Lot 900 Fisheries Road, are included within Schedule 4 of the Shire’s Local Planning Scheme No. 23 and addresses development issues relating to the maintenance of the existing airfield and the development and operation of the proposed Fly-in Estate.

In response to these special conditions this Environmental Management Plan has been prepared. The Environmental Management Plan addresses the following elements and management; Water, Vegetation, Noise, Wetlands Vegetation, Contamination and Aboriginal Heritage.

The key environmental factor in relation to the proposed use of the site is the presence of wetlands on the adjoining Mullet Lake Nature Reserve.

The Nature Reserve is part of the Lake Warden system, and is one of nine systems recognised in Western Australia as being of international importance under the RAMSAR Convention of Wetlands, 1990.

RAMSAR is an intergovernmental treaty which provides the framework for international cooperation for the conservation of wetland habitats. Therefore, it is necessary to demonstrate that the proposed land use will not adversely affect the ecology of the Wetlands through impacts on surface water and groundwater quality resulting from inappropriate effluent disposal and fuel storage.

2.0 LOCATION

Myrup Fly-In Estate, Lot 900 Fisheries Road, is located approximately 5 km east of Esperance, immediately at the north-east corner of the junction between Fisheries road and Merivale road.

Mullet Lake Nature Reserve, which is vested in the Department for Environment and Conservation (DEC) for conservation of flora and fauna, abuts the southern boundary of the site.

Surrounding land uses are primarily of a rural nature.

3.0 OBJECTIVE OF THE ZONE

The Amendment proposes to facilitate the development of a Fly-In Estate to complement the existing airfield and airfield related operations.

The proposed development aims to foster all aspects of flying including the advantage of residential development alongside light aircraft storage, student flying training, charter flying, scenic tour flying, flying for sport, gliding, ultra-lights, providing accommodation for flying patrons and small aircraft repair and maintenance associated with the land use and environmental management controls to protect the subject land and adjoining Mullet Lake Nature Reserve.

4.0 MANAGEMENT REQUIREMENTS

Provision shall be made to Council's satisfaction that prospective purchasers and occupiers of land within Special Use Zone No.5 (SU4) are provided with a copy of these Special Use SU4 Provisions prior to entering into an agreement to acquire any property.

5.0 CONTACT

Queries regarding this management document should be directed to:

Noel Willing
Secretary
Myrup Fly-In Estate

Tel. (08) 9078 3063
Mob. 0427 783 063
Email. kalanjie@bordernet.com.au

6.0 ABOUT MYRUP FLY-IN ESTATE

Lot 900 has been operating as an Airfield with associated uses since 1992. The site was cleared during the late 1950's to early 1960's with the primary purpose of grazing stock. The site supported typically 3 sheep/ha up to around 1994. Since stock have been removed, there has been a return of vegetation (both native and exotic species) and fauna to the area.

The proposed development allows the creation of 18 residential lots on high well-drained land (refer Figure 1), most of which will be located on land previously identified by the Esperance Shire as suitable for residential development (Esperance Shire Rural Strategy, 1999). The lot numbers have been reduced from the originally proposed 40 and then 27 to now 17 to ensure that all residential developments are located on land suitable for such development.

Lot sizes proposed range in area from 2200 - 4000 m² and provide sufficient area for a residence, a hangar and an effluent disposal unit. The lots will be provided with frontage to a constructed road and access to the existing airstrip will be via a shared taxiway. A number of other uses are proposed, including an office and lecture room to allow for a flying school (periodic training on an individual basis), hangars, a non-permanent refuelling installation and accommodation units.

The key environmental factor in relation to the proposed use of the site is the presence of wetlands on the adjoining Mullet Lake Nature Reserve. The Nature Reserve is part of the Lake Warden Wetlands System. This system is one of nine areas in WA recognised as Wetlands of International Importance under the Ramsar Convention on Wetlands, 1990. This convention is an intergovernmental treaty which provides the framework for international cooperation for the conservation of wetland habitats. Therefore, it is necessary to demonstrate that the proposed Fly-In Estate will not adversely affect the ecology of the Ramsar wetlands through impacts on surface water and groundwater quality resulting from inappropriate effluent disposal and fuel storage. The potential impacts have been investigated and the proposed management measures are summarised in the report

Shire of Esperance Town Planning Scheme No. 22 Amendment No. 51, Rezoning of Lot 7 Fisheries Road, Esperance, from "Rural" to "Special Use", Supporting Environmental Report, March 2009, along with the proposed management measures for additional environmental factors identified by the Environmental Protection Authority.

6.1 Existing Developments

The site currently includes two gravelled airstrips aligned broadly from south-west to north-east (04-22), and south-east to north-west (32-14). In addition, there are currently (refer to Figure 1):

- one main gravel road on the site (i.e. Road 1), including a gravel access road off Road 1 (access to proposed Lots 28 – 33);
- a gravel road (i.e. Road 2) to service proposed lots 37 – 45;
- a gravel/grass taxiway (i.e. Taxiway 1) to provide access for proposed lots 34-45 to Runway 32-14;
- a gravelled taxiway (i.e. Taxiway 4) to provide access for proposed lots 3, 24, 25 & 27 to Runway 32-14;
- a gravelled taxiway (i.e. Taxiway 2) with established Kikuyu and Couch grassed verges (providing Lots 19-23 and 28 – 33 with access to Runway 32-14);
- a gravelled taxiway (i.e. Taxiway 3) providing access from Runway 32-14 to the existing terminal building/training room, the proposed aircraft refuelling area, grassed plane park and hangar lots;
- a residence and hangar (proposed Lot 28);
- a terminal building and workshop (Buildings A & B);
- nine aircraft hangars (proposed Lots 19, 20, 22, 24 and 29-33); and
- a (four plane) hangar complex (proposed Lots 1, 2, 6 & 7).

6.2 Proposed Developments

It is proposed to undertake a Survey Strata Subdivision comprising 40 lots with a total area of less than 10 ha. This is approximately 10% of the total site area. The number of residential lots has been significantly reduced to 18 from the originally proposed 40 following the January 1999 flood, and the proposed residential lots have been re-aligned. There are 22 hangar lots. There is one lot for an accommodation unit. The development, as indicated on Figure 1, is summarised below in Table 1.

Table 1 Existing and Proposed Development.

LOT NUMBERS	DESCRIPTION	EXISTING DEVELOPMENT	PROPOSED DEVELOPMENT
Lots 1 - 18	14 multi-complex Hangar Lots being 13m x 11m (approx 143m ²)	A (four plane) Hanger Complex on proposed Lots 1, 2, 6 and 7. Lot 18 (part of the terminal building)	✓

LOT NUMBERS	DESCRIPTION	EXISTING DEVELOPMENT	PROPOSED DEVELOPMENT
Lots 3, 19 - 25, 27	Individual Hangar Lots	Hangars on Lots 19, 20, 22 and 24	✓
Lot 26	1x4 Accommodation Units	-	✓
Lot 28	Existing Residence and hangar (approx 4000m ²)	✓	-
Lots 29 - 33	Residential Lots (approx 3500m ²)	Hangars on proposed Lots 29 - 33	✓
Lots 34 – 45	Residential Lots (approx 2200m ²)	-	✓

Note: The originally proposed lots 8, 14, 15, and 46 - 54 no longer exist. The proponent wishes to retain the original lot and hangar numbers.

The remaining land area would become Common Land to accommodate existing and proposed airfield operations and to retain existing native vegetation. The common land will be managed by a strata management committee which will be funded by levies from the block owners. The Common Land associated with the proposal will comprise of all other areas including:

- existing Runways 32-14 and 04-22;
- all existing and proposed roads, taxiways and associated aircraft parking areas;
- Terminal Building (incorporating space for a flying school, including offices and lecture rooms) and attached storage shed for maintenance and storage of existing airfield maintenance machinery (e.g. Tractor, slasher and lawn mower);
- Storage Shed for Fuel Truck or Trailer; and
- Vegetated areas, including grassy verges alongside the existing runways, taxiways and native vegetation in undeveloped areas.

6.3 Staging

It is intended to undertake the development in two stages:

6.3.1 Stage 1

Runway 04-22 is 1,300m long, of which 1,200 metres is currently gravelled. It is proposed to complete the gravelling of this runway on the southern end to its intended length of 1,300 metres, consistent with Runway 32-14.

Hanger Lots 1 – 18 will be completed (Hanger Lots 1, 2, 6 and 7 and 18 already exist).

Hangar Lots 3, 19 – 25 and 27 will be created. (hangars are present on Lots 19, 20, 22 and 24)

Residential Lots 29 - 36 will be created (Lot 28 already exists and hangars are present on Lots 29 - 33).

Power will be provided to all lots created as part of this stage including Building A, Hangar Lots 1 - 18, Hangars 25,27 and 29, and Residential Lots 34 - 36 (Lots 20 – 25, 28, 29 – 33 and Building A already have power).

6.3.2 Stage 2

Stage 2 developments, possibly two years later, would include the following:

Building C, a small shed, will be constructed. It will be designed and bunded to accommodate a small trailer/truck fitted with an approved tank for holding AVGAS 100 and fitted with pump and metering equipment and fire extinguishers as required.

Residential Lots 37 - 45 will be created, and sold as land packages with their boundaries set back 18 metres from Road 2 verge.

Accommodation Units on Lot 26 will be created, and the required buildings will be constructed.

Power will be provided to the Accommodation Units on Lot 26 and Residential Lots 37 – 45.

7.0 LAND USE

Incidental activities which are consistent with the objectives of this special use zone may be considered by Council. Any proposals which may have an impact on groundwater quality will be referred to the Department of Water for comment, prior to determination by Council.

8.0 LOCATION OF STRUCTURES AND BUILDINGS

Setbacks for buildings and structures on residential lots shall be as determined by the R5 code of the Residential Design Codes of Western Australia, and that determined by the Fire Management Plan for the site.

All other setbacks shall be determined by Council in accordance with the Subdivision and Development Guide Plan. Notwithstanding this, aircraft hangars may be approved with a nil setback on all lots adjacent to compliance with the Building Code of Australia. No development is permitted on land north-east of runway 32-14.

9.0 BUILDING DESIGN, MATERIALS AND COLOUR

Dwellings and outbuildings shall be designed and constructed of materials which complement the character of the area.

10.0 VEGETATION MANAGEMENT

10.1 Topography and Vegetation

Lot 900 itself is mainly flat with lower lying damp/seasonally wet areas scattered over the majority of the block with the exception of an area of deeper sand along the southern boundary of the site. This sand ridge which runs along the southern edge of the property, is where the bulk of the residential developments are proposed. The land slopes gently upwards towards the southern boundary, with an approximate rise of 2 metres, but a slope of less than 10°.

The lot is characterised by an abundance of *Nuytsia floribundi* (Christmas Tree) over pasture grasses with patches of *acacia* (Wattle) and banksia on the deeper sands and

paperbark on the swamplands along with dozens of lesser height species including samphire. Since Lot 900 was destocked over fifteen years ago, regeneration of bush, and in particular paperbark, has occurred.

The existing remnant vegetation is mostly contained east of the runway 32-14. Sparse vegetation also lies along the temporary watercourse between the lots along the southern boundary (lots 34 – 45) and the lots further north (lots 28 – 33 and hangar lots). This is mainly paperbarks and low samphire bush.

There are large tracts of cleared area being the taxiways, runways and access roads to the blocks which make frequent fire breaks across the site.

A vegetation study carried out by the Esperance Wildflower Society stated that that there were no declared rare, threatened or other priority flora detected in the survey area.

The vegetation survey concluded that the deeper sand areas show a lot of impact of historical grazing and are degraded in comparison with the area to the south of the boundary fence. Samphire bushland areas are weedy at the edges and more intact within. Very few areas of completely bare soil were seen overall. Weed infestations are considerable throughout, with some major problem species established including Cape Tulip, Geraldton Carnation Weed and African Boxthorn. A total in excess of 150 species from 48 plant families were recorded. Diversity is reduced in the sand-plain area, with large open spaces populated by weed species. Greater diversity is found on the wet samphire areas examined in winter, due to the presence of annuals.

The Esperance Lakes Nature reserves have several problem areas where weeds have established. Weeds identified in close proximity to the Mullet Lake Nature Reserve include the South African Boxthorn, which is present on Lot 900 and the Victorian Tea Tree.

10.2 Vegetation Protection

No clearing of vegetation shall occur except for:

- Clearing to comply with the requirement of the Bush Fires Act 1954 (as amended) and Fire Management Plan;
- Clearing as may reasonable be required to construct an approved structure;
- Trees which are dead, diseased or dangerous;
- Clearing to gain vehicular access to an approved structure or any other clearing which may be approved by Council; and
- Clearing to give effect to the adopted Subdivision and Development Guide Plan.

10.3 Clearing Restrictions

There will be no clearing of land to the north-east of runway 32-14.

10.4 Block Boundaries

The lots have been pegged and the block boundaries have been designed to encourage retention of the existing munji trees, and 90% of these trees lie along block boundaries. The intention is for the surrounding vegetation between these trees to also be retained.

10.5 Landscaping and Revegetation

Revegetation of the Fly-In Estate including residential lots with native species is encouraged subject to fire management restrictions.

The Small Landowners Association through the Esperance Regional Forum have been assisting the Strata Management Committee with the planting of native species to assist in lowering the water table. They have provided a trailer which mounds the land in rows and approximately 5,000 individual plants were planted in July 2010 on an area of about 6 hectares east of Runway 04-22, west of the main access road, in the open area where no development has been proposed (refer Figure 8). The planting included low varieties of various natives, mainly paperbarks to complement the existing samphire grass, which still remains between the rows. The species planted were all present on the site already, and they included:

- *Melaluca cutilaris* (saltwater paperbark)
- *Eucalyptus occidntalis* (flat topped yate)
- *Atriplex semi baccata* (berry saltbush)
- Knotted club brush
- Sea rush
- Pale rush
- *Melaleuca brevgifolia* (mallee honey myrtle)
- *Melaleuca lanceolata* (rottnest tea tree)
- *Melaleuca thyoides* (salt lake honey myrtle)
- *Eucalyptus halophile* (salt lake malle)
- *Acacia cyclops* (coastal wattle)
- *Hakea adnata*

10.6 Exclusion of Stock

It is a requirement that there is no stock on the site. Kangaroos and emus are controlled, although not completely removed.

10.7 Weed Management

One of the jobs of the strata management committee is weed management. This activity will be funded through levies from the lot owners. There is a weed control sprayer who lives permanently on the site, and he is regularly monitoring and spraying when needed. Although total eradication across the site is impossible, every effort is being made to stop encroachment, particularly on the southern boundary where the land abuts the Mullet Lake Nature Reserve.

The Esperance Lakes Nature reserves have several problem areas where weeds have established. Weeds identified in close proximity to the Mullet Lake Nature Reserve include the South African Boxthorn, which is present on Lot 900 and the Victorian Tea Tree. The Department of Environment and Conservation manage weeds through Policy No. 14 (Weed Management).

Road 2 and Taxiway 1 were formed in October 2010, and Road 2 is 200mm thick gravel and 6 metres wide and its southern edge lies along the reserve boundary (refer Figure 1). On the northern edge of Road 2 there is a 24 metre width of planted Kikuyu and serradella, as part of the fire break. This grass strip extends to the edge of the southern boundary of Lots 38 – 45. This boundary will be constantly patrolled for spot spraying of weeds.

The edges of the Kikuyu grass areas need to be sprayed twice a year to avoid this spreading into the adjacent reserve, particularly the edges of the grass verges of Taxiway 1, along the southern boundary. Also, along each side of the 24 m grass strip adjacent to Road 2 along the southern boundary. Monitoring will be conducted to ensure that the areas of Lot 900 that border the wetland and remnant vegetation areas are managed appropriately.

All runways and gravel roadways on site will be sprayed as required to control undesirable weeds such as wild oats.

As part of the agreement with the Esperance Regional Forum to revegetate the Estate, the Estate was required to undertake a weed management program to prepare the ground before planting. This involved implementing a spraying program to control weeds.

Weed control has continued to take place since planting on all common ground as required. There is available a spray unit to control weeds chemically, including the cape tulip when it comes into flower each spring. Due to the proximity to the wetlands, care is taken when choosing chemicals for spraying and glyphosate has been used for controlling cape tulip. Other problem weeds onsite include Geraldton Carnation Weed and African Boxthorn. Weed management appropriate to the species will be undertaken, particularly after germination.

The flip chart “Southern Weeds and their Control” by John Moore (Agriculture Department, Albany) is used to assist in identifying and controlling weeds.

Individual block owners are responsible for their own weed management.

10.8 Fire Management

A detailed Fire Management Plan has been prepared for the site, *Fire Management Plan, Myrup Fly-In Estate, Lot 900 Fisheries Road, Esperance*.

10.9 Summary

The proposed development has been designed around the existing open spaces. This will ensure that the majority of the existing native vegetation will be retained.

All areas north-east of the existing Runway 32-14 will not be developed. During wetter periods in the year, parts of this area are predominantly wetland.

The proposed residential lots have been sited on areas currently containing mainly pasture grasses. Residential lot boundaries have been worked out so that the majority of the existing Christmas trees (*Nuytsia floribunda*) lie on the lot boundaries. The proposed residential lots have been sited to be away from the Samphire Bushland onsite.

The current 25 – 250 metre wide strip of vegetation between the Lot 7 boundary and Merivale road will conceal the residential lots from view from Merivale road.

There is not expected to be an adverse impact on vegetation on the adjacent Mullet Lake Nature Reserve.

11.0 LOCAL WATER MANAGEMENT STRATEGY

This local water management strategy addresses potential impacts, monitoring and management issues relating to wetlands and waterways, flood risk, groundwater and surface water quality, drainage and nutrient management, landscaping and revegetation, effluent disposal and stormwater management.

As part of the environmental investigations onto the site, a full hydrogeological study was conducted in 2001 by Hydrosolutions Pty Ltd. and a report prepared (*Hydrological Investigations into Myrup Fly-In Estate, Esperance, Stuart Jefferies*)

A total of eleven groundwater monitoring bores, six trial pits, and three surface water sampling points were established.

The soils onsite are of duplex type, with shallow sands overlying silty clays. Site bores on the low ground generally encountered a sandy, gritty or silty mottled green, yellow or orange clay. Bores on the higher ground in the south, where the majority of the residences are proposed to be sited, encountered a light yellow or grey fine grained sand to between 1 to 5.5 meters depth, overlying sandy clay (Hydrosolutions, 2001).

11.1 Wetlands and Waterways

Immediately south of the site lies the Mullet Lake Nature Reserve. The Nature Reserve is part of the Lake Warden Wetlands System. This system is one of eleven areas in WA recognised as Wetlands of International Importance under the Ramsar Convention on Wetlands, 1990. This convention is an intergovernmental treaty which provides the framework for international cooperation for the conservation of wetland habitats. Therefore, it is necessary to demonstrate that the proposed Fly-In Estate will not adversely affect the ecology of the Ramsar wetlands through impacts on surface water and groundwater quality resulting from inappropriate effluent disposal and fuel storage.

There is a wetland area on site north-east of runway 32-14 and this area will not be developed.

There is a temporary watercourse on site which flows only during periods of heavy rain in winter, for a duration of 1 – 2 days only. Refer to Figure 5.

11.2 Surface Water

Surface water is managed by natural flow, from when it enters the site from adjacent properties to the north, until it leaves the site along the southern boundary. Surface water flow is shown below in Figure 5. There are two main exits for surface water along the southern boundary. One is to the east of runway 32-14 and the other is to the west of the main access road. Both exits avoid any of the proposed residential developments.

Table drains alongside runways act as natural waterways directing water southward and away from the onsite residences.

11.3 Groundwater

The groundwater chemical analyses as part of the hydro geological study indicate a saline or brackish water low in nutrients. Brackish water is present in groundwater recharge areas. Groundwater possesses a high turbidity (average 364 Nephelometric turbidity units (NTU)) and pH is in the range 6.9 to 7.6. Groundwater is present at depths of between 0.15 and 4.65 m below ground level. The highest depth to groundwater is found on the southern side of the site where the majority of the residences are proposed.

Groundwater flow onsite occurs from northeast to southwest, reflecting the prevailing surface water drainage (Hydrosolutions, 2001) (refer Figure 6). The topographically low ground in the south-western corner of Lot 900 is a potential groundwater discharge zone during periods of elevated groundwater levels in the wet months (Hydrosolutions, 2001). Groundwater discharge occurs generally to the Lake Warden Wetland System to the southeast.

11.4 Flood Risk

On 5 January 1999 a rain event resulted in flooding which affected Lot 900 and resulted in flooding of the low ground in the south-west of the site, along with the southern end of Runway 04-22. The storm event resulted in a total of 210 mm precipitation over Esperance over a period of 56 hours. This is more than a quarter of the annual average rainfall of 670 mm per year. Estimation of the rainfall event was considered to indicate an Annual Return Interval in excess of 100 years, estimated at between 300 to 330 years (Hydrosolutions, 2001). None of the proposed residential lots were impacted by this flood event. The developments have been kept away from the flood risk areas, keeping to the highest know water levels.

The site itself is not prone to flooding. The flooding that occurred in January 1999 has been noted by the Department of Environment and Conservation as being a 1 in 300 year flood event. The flooding that occurred on the site was primarily due to lack of adequate drainage under Merivale road. Since this flood event, more culverts have been installed under this road in order to improve surface water drainage and to stop surface water impoundment adjacent to Merivale road, as shown on Figure 6. The surface water impoundment that occurs during high rainfall events occurs mainly on reserve land adjacent to Merivale road and not on the site itself. Since the flood event the Department of Environment and Conservation have been undertaking detailed studies with the aim of determining options for controlling the lake levels in the Lake Warden Wetlands System.

A similar rain event occurred on 5 January 2007 with 153 mm rain in a 24 hour period which caused slightly more flooding in the south west corner of the site than in 1999. The DEC has prepared a preliminary flood map of the Lake Warden Wetland system and this is shown in Figure 7. This map demonstrates that none of the proposed lots are affected by flooding. Since this rainfall event, which resulted in the weir at Bandy Creek collapsing, a new flow management system has been installed which will further assist in ensuring flow through of through the lake system during heavy rainfall events.

11.5 Drainage and Nutrient Management

Measures have been taken to ensure that the release of nutrients is managed so as to reduce risk of any increased nutrients entering the adjacent Mullet Lake Nature Reserve. This includes effluent disposal measures, stormwater management, landscaping and revegetation and water supply, as discussed further in the sections below.

11.5.1 Effluent Disposal

On site effluent disposal shall be the responsibility of the individual landholders.

It was found through the hydro geological study that the soils possess adequate infiltration capacity and depth to groundwater to permit effluent disposal. In addition, due to the proximity of the Mullet Lake Nature Reserve, it is important to control any nutrient release to the site which could impact ground or surface water. Therefore, the site shall require the use of approved Alternative Treatment Units (ATU's), and this has also been required by Council under the Special Conditions for the amendment. The installation of the proposed Alternative Treatment Units (ATU) for effluent treatment will minimise potential leachate to surrounding sensitive water bodies, and will ensure that all effluent is managed properly.

The disposal of treated effluent will take place on the individual blocks onto shrubs and gardens as determined by the block owners. There is predicted to be 100% take-up of nutrients into the plants therefore there will be no additional nutrients being disposed of into the soils.

The kikuyu taxiways and grass areas on common land will generally survive without any additional water or nutrients supplied.

The existing residence on site was constructed in 1995, and had a regular double-tank septic system installed. Groundwater monitoring results from the bores downstream from this residence has shown no increase in either phosphorus or nitrogen levels due to the presence of the septic system.

11.5.2 Stormwater Management

Stormwater is managed by natural flow from when it enters the site to when it exits. To manage stormwater across the site, runways are equipped with table drains along each side which direct the water runoff southwards and away from the residential developments on site. Refer to Figure 5 – surface water flows. This figure shows a temporary water course running between the two areas of residential development. There are adequate culverts installed under the main access road for when this temporary water course holds water, which is during heavy rainfall events, and for a duration of 1 – 2 days.

Water which enters the site from properties north of Lot 900 is immediately directed away from the residences due to the existence of the runways and adjacent table drains.

All access roads on the site are equipped with culverts where required to manage surface water runoff. This is shown in Figure 8 below.

Due to the sandy nature of the soil along the south of the property, stormwater generated on the residential blocks will drain through the soil and no stormwater management is proposed here. Excess rain may drain north to the temporary water course and exit through the south-west exit.

For the residential lots in the centre of the site, any runoff will be directed around the residences and to the temporary watercourse and again through the south-west exit. Culverts have been installed under the access roads in this area to ensure that water flow is not impeded during rainfall events.

11.6 Water Supply

Each single house and any holiday accommodation shall be provided with a water tank with a minimum capacity of 120,000 litres. There will be no scheme water on site.

11.7 Landscaping and Revegetation

Landscaping and revegetation is discussed under Section 10 – Vegetation Management, Subsection 10.7 – Landscaping and Revegetation. The re-vegetation area is shown in Figure 8 above.

12.0 ACID SULPHATE SOILS

The lot is listed as having a high risk of disturbing acid sulphate soils (ASS). The desired management of ASS is to leave them undisturbed, and this is the case with the proposed SDGP. If these soils are to be disturbed a management plan to facilitate the removal and remediation of the soil in accordance with the Department of Environment and Conservation (DEC) guidelines will need to be prepared and addressed at the subdivision stage.

13.0 WASTE OIL

This waste oil disposal plan has been developed to ensure all workshop waste oil is disposed of appropriately, offsite.

Instructions on proper waste oil disposal will be documented and distributed to all residences and hangar owners across the site.

As there is no qualified plant mechanic on site, every 100 hours a qualified mechanic will be required on site to service the planes. The mechanic is aware of disposal requirements for waste oil and will be required to remove from site all waste oil. Each 50 hours, plane owners are able to undertake their own oil change. Plane owners will be required to dispose of their waste oil appropriately as per the disposal instructions.

The Waste Oil Disposal Plan is included in Appendix C.

14.0 FUEL SPILL ACTION PLAN

A fuel spill action plan has been developed to minimise the occurrence of fuel spills and to ensure that if there is a fuel spill, clean up is immediate and there will be no resulting environmental impact on the site or on the adjacent wetlands.

During Stage 2 of the developments, a fuel trailer storage shed will be constructed along with an adjacent concrete hardstand area. The storage shed will be bunded and will store

the fuel trailer under cover. The concrete hardstand area will be graded to ensure that any fuel spill will not run off into the surrounding gravel areas.

A written procedure will be developed for refuelling and be placed at the refuelling area.

The refuelling will take place on the concrete hardstand area adjacent to the fuel trailer storage shed. The delivery hose and flow control will be maintained regularly to eliminate any possibility of spillage due to malfunction.

A drum of sawdust will be available in the adjacent shed to be used in the event of any spills occurring during refuelling. Should fuel escape the refuelling area any contaminated material will be removed and disposed of offsite. Refer to the Fuel Spill Action Plan in Appendix D for more detail.

Until such time as the fuel trailer storage shed and adjacent hardstand is constructed in Stage 2 of the developments, all planes will be required to refuel at the Esperance Airport in Gibson. The only exception to this is for the training plane to be refuelled inside the training hangar. A fuel spill action plan has been developed for this and is included in Appendix D.

15.0 NOISE MANAGEMENT

This noise management plan addresses measures for the monitoring and management of noise including take-offs and landings, special procedures for airfield operation, flight circuits, special events, recording and monitoring of noise related complaints and monitoring, management and minimising impacts on birds and nearby residences.

15.1 Complaints Procedure

A complaints procedure will be developed stating that if any noise complaints are received, they will be dealt with immediately by the Strata Management Committee, and also passed to the Council. Appendix A shows a noise complaint log sheet that will be used to record the details of each complaint and ensure that the information is passed to Council.

15.2 Flight Restrictions

There will be no night time operations from the Estate.

No aircraft larger than 5700 kgs may operate from the Estate.

The number of daily flights shall not exceed 40 flights unless where part of a 'special event' as approved by Council or for emergency purposes. The annual average weekly number of flights shall not exceed 100 flights. The number of flights in any seven day period shall not exceed 150 flights.

Written permission from the Council shall be sought a minimum of 21 days prior to any 'special event' such as Air Rally or deemed special event by the Council. The Council may request details of the 'special event' as it sees fit including but not limited to management plans and hours of operation. The Council may require the Myrup Fly-In Estate notify the local community of any 'special event'.

15.3 Recording of Flight Details

All pilots are required to keep a log book of their flights to and from the Estate. This information can be used to determine the number of flights that have taken place from the Estate. For flight training, information on flight numbers can be obtained from the trainer. The Strata Management Committee are required to submit details on the annual number of flights to the Council annually (take offs and landings of all types).

15.4 Noise Study

A noise study was conducted in September 2001, and a report prepared on predicted noise levels due to operation of the airfield and associated operations, *Myrup Fly-In Estate, Environmental Noise Study, January 2002*. The study concluded that that after expansion of the Estate, there will be a marginal increase in the overall noise level (1 dB(A)). This is considered to be an insignificant impact and would have negligible impact.

No values of L_{Amax} greater than 65 dB(A) were received at noise sensitive premises when planes were operating from the Estate. Based on less than 20 flights per day in the long term, noise levels are not expected to exceed the EPA recommended levels of 60 dB(A) L_{eq} or 65 dB(A) L_{max} .

15.5 Minimising Impacts on Birds

The Mullet Lake Nature Reserves is listed on the National Estate Register in recognition of its significance for waterbird conservation.

The lakes on the Mullet Lake Nature Reserves are extremely important for the Hooded Plover, a threatened marine species listed under the Commonwealth *Environmental Protection and Biodiversity Act 1999* (EPBC Act) restricted to southern Australia (non-migratory). The lakes in the Esperance area including Lake Warden, Woody Lake and the lakes within the Mullet Lake Nature Reserves support over 10% of the total population of this species. Therefore, it is important to ensure that the noise due to aircraft does not impact the birds.

The airstrip has been in operation since 1992, and during busy times there are 26 flights per week. Planes reach a high altitude quickly, with minimum disturbance to waterbirds. There have been no observations of birds being affected by light aircraft noise.

Bird life in the area is already in proximity to heavy vehicle movement from nearby Fisheries and Merivale roads, and observations of the effect of heavy vehicle movements on Fisheries road on nesting, loafing and feeding waterfowl within small subsidiary lakes adjacent to the road have indicated a high degree of either tolerance or acclimatisation to road noise and vehicle transit.

Currently the flight paths avoid flying directly over the lakes. Only aircraft from the light aircraft category or smaller will operate on the Estate (<5,700 kgs). There will be no night time operations from the Estate, as there are no landing lights and none are proposed.

There have been no known bird strikes in the past due to the operation of the airfield, and the possibility of a future bird strike is considered low.

There is not expected to be a loss of bird habitat on the adjacent Mullet Lake Nature Reserve as a result of the proposed development. In addition temporary wetland areas on Lot 900 will remain protected.

15.6 Special Right Hand Circuit

The airfield has adopted a special procedure for a right hand circuit on Runway 04. This is to avoid planes flying of the nearby Quarry road residences (refer Figure 9).

Additional measures may be implemented to avoid flights over nearby residences.

15.7 Construction Activities

Construction will be managed in accordance with the requirements of the Environmental Protection (Noise) Regulations 1997.

16.0 ABORIGINAL CONSULTATION

Item 13.1 of the Special Conditions requires that consultation with responsible aboriginal representative organisations, including the Goldfields Land and Sea Council shall be undertaken prior to development or subdivision into survey strata lots.

Invitation to comment on the proposed developments was submitted on 15 February 2010 to the Esperance Aboriginal Corporation, Esperance Aboriginal Community Inc. and the Goldfields Land and Sea Council. A copy of the development plan and a copy of the Special Conditions accompanying the approval for Amendment 51 of Town Planning Scheme 22 was included in the invitation to comment.

17.0 MOSQUITO NUISANCE

Due to the proximity of the residences to the wetlands within the Mullet Lake Nature Reserve, there may be a risk of mosquito nuisance.

Notification in the form of a memorial shall be registered against the Certificate of Title of all residential lots created within the Estate advising of the existence of a hazard or other factor affecting the use of enjoyment of the land. The memorial is to state: *This lot is in close proximity to mosquito breeding areas. The mosquito species is known to carry Ross River Virus and other diseases.*

APPENDIX A
FIGURES

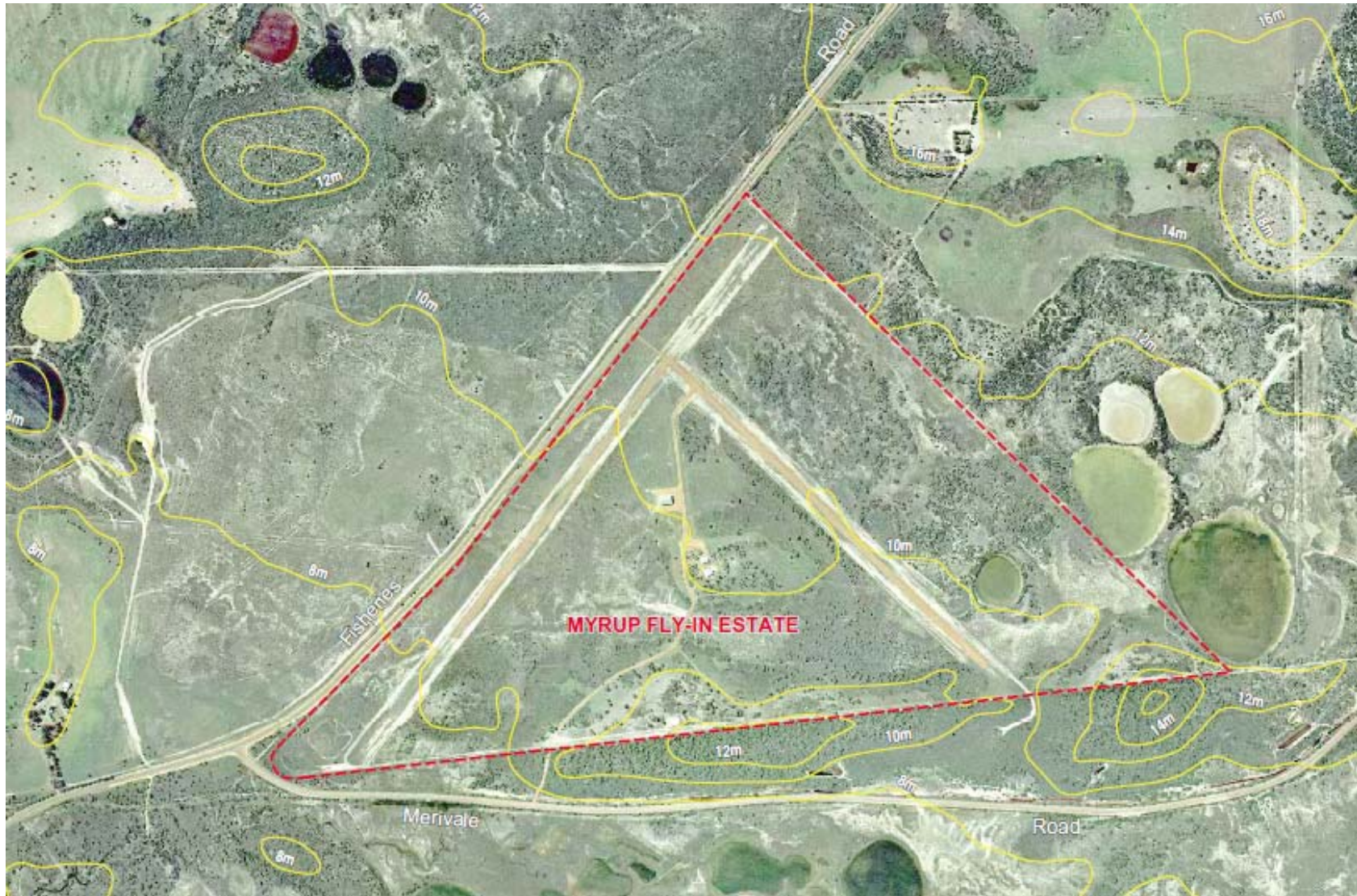


Figure 2. Topography of Lot 900.



Figure 3. Aerial Photo of the site showing vegetation on Lot 900.

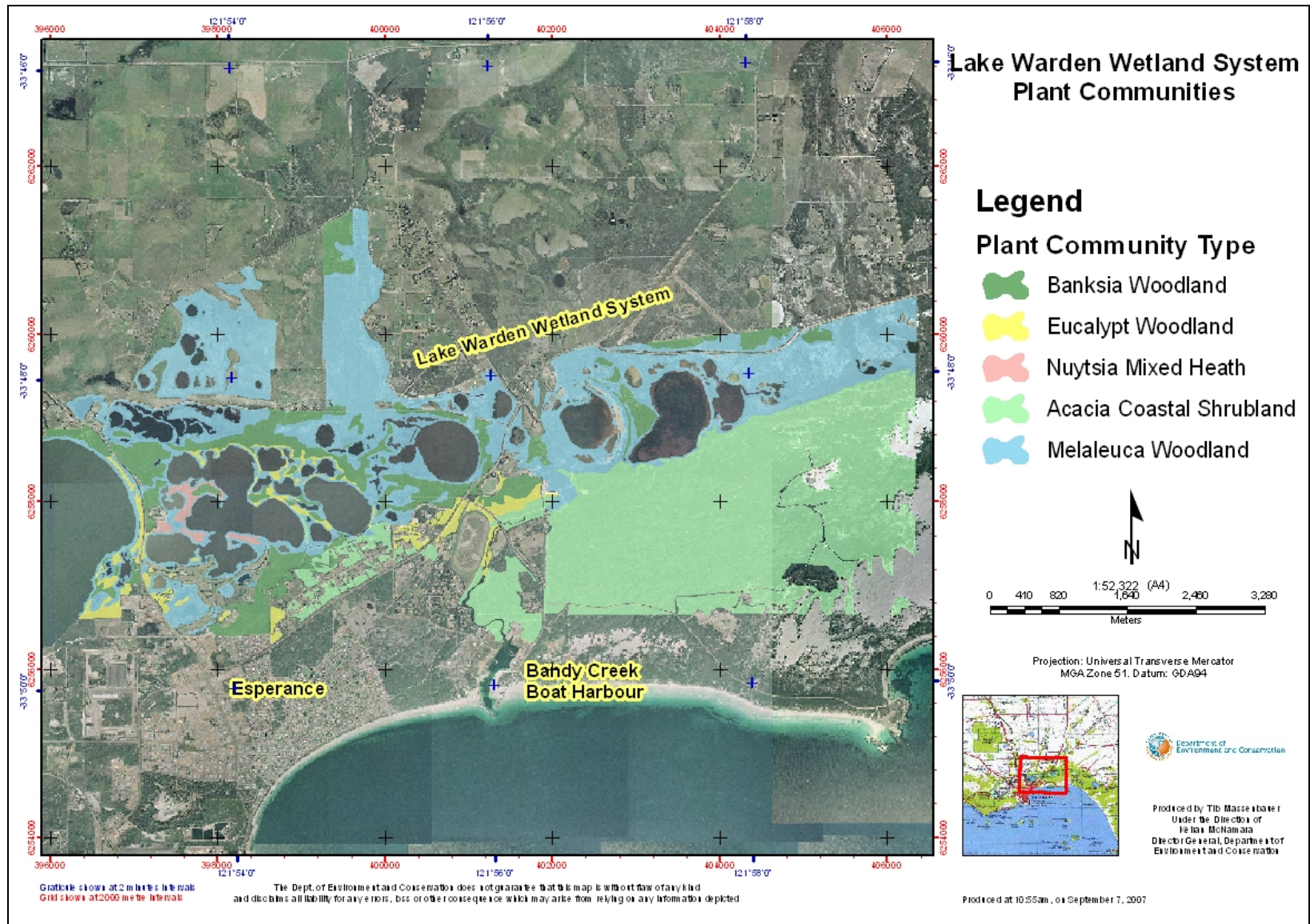


Figure 4. Plant communities in the Wetland System to the south of Lot 900, showing the banksia community to the south of Lot 900.

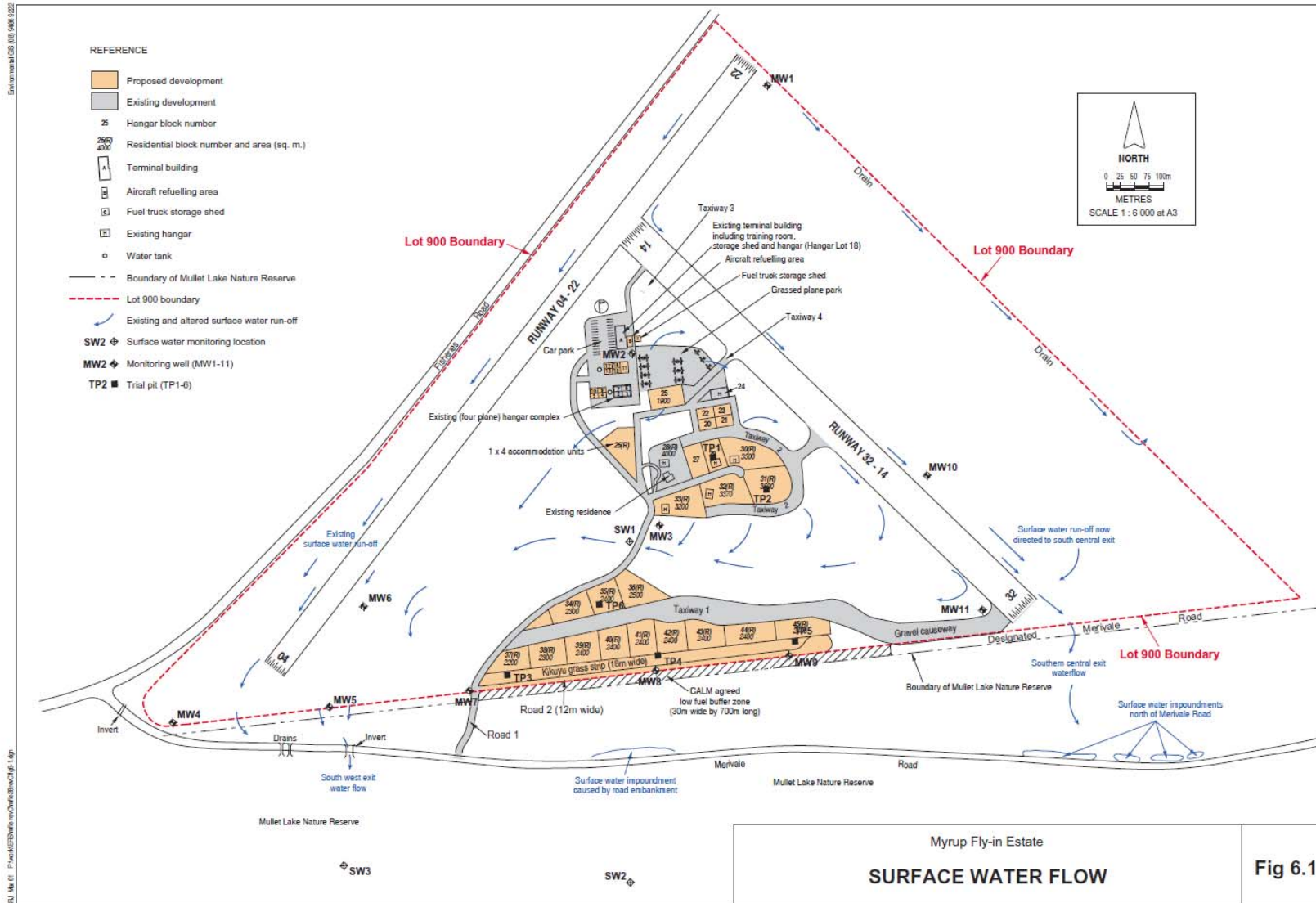


Figure 5. Surface water flows across Lot 900.

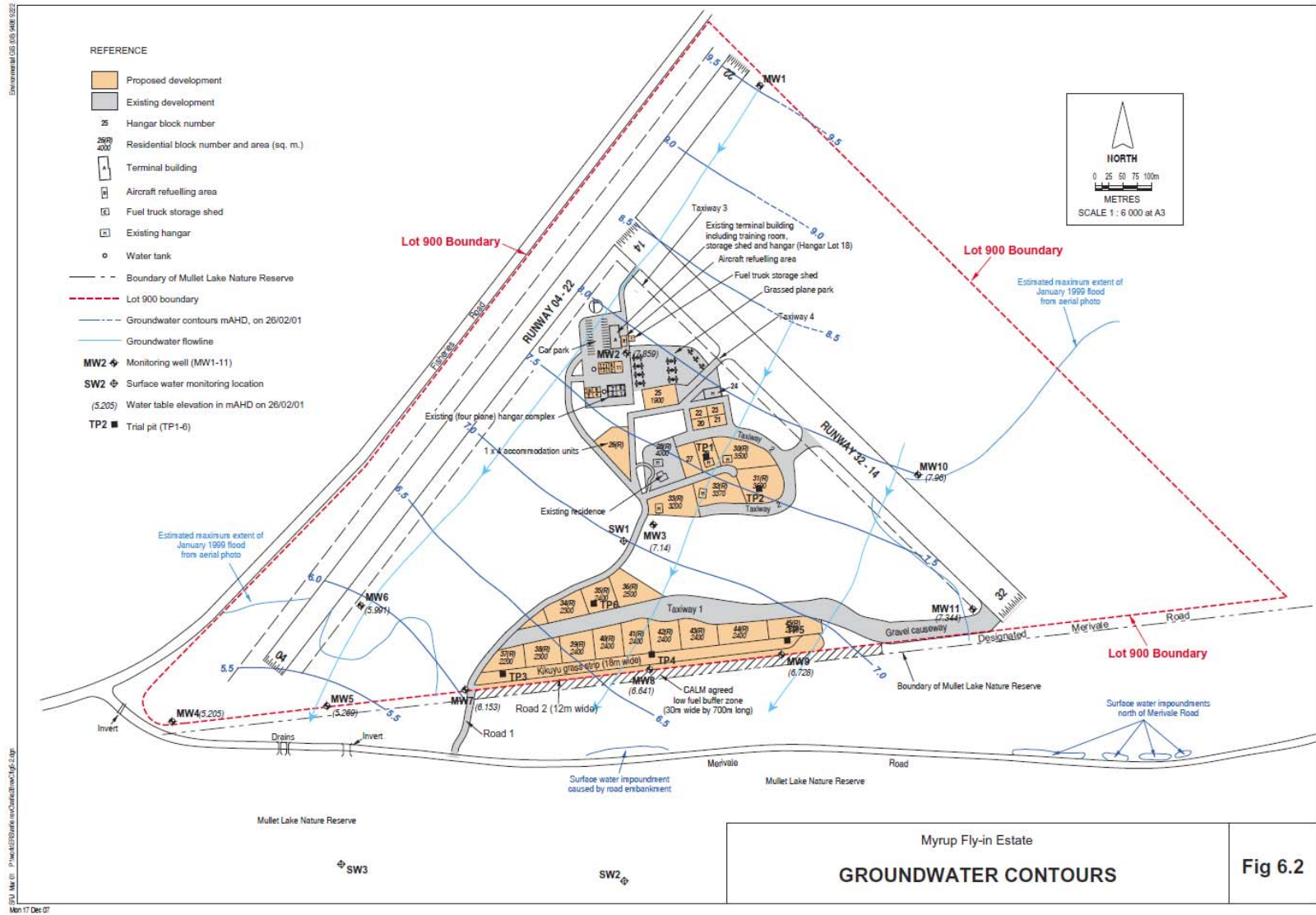


Figure 6. Groundwater Contours.

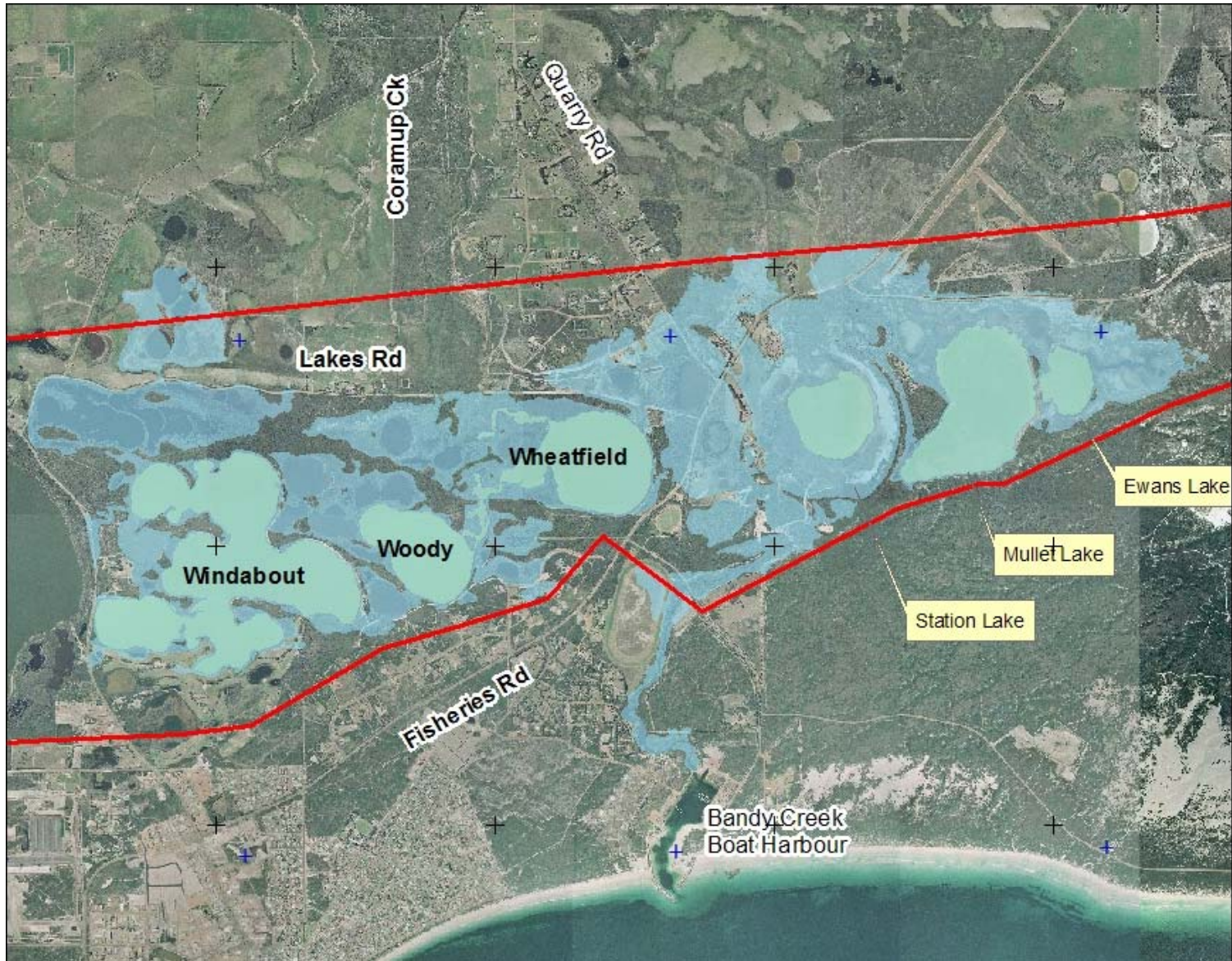


Figure 7. Map showing flooding risk around the wetland system including Lot 900.

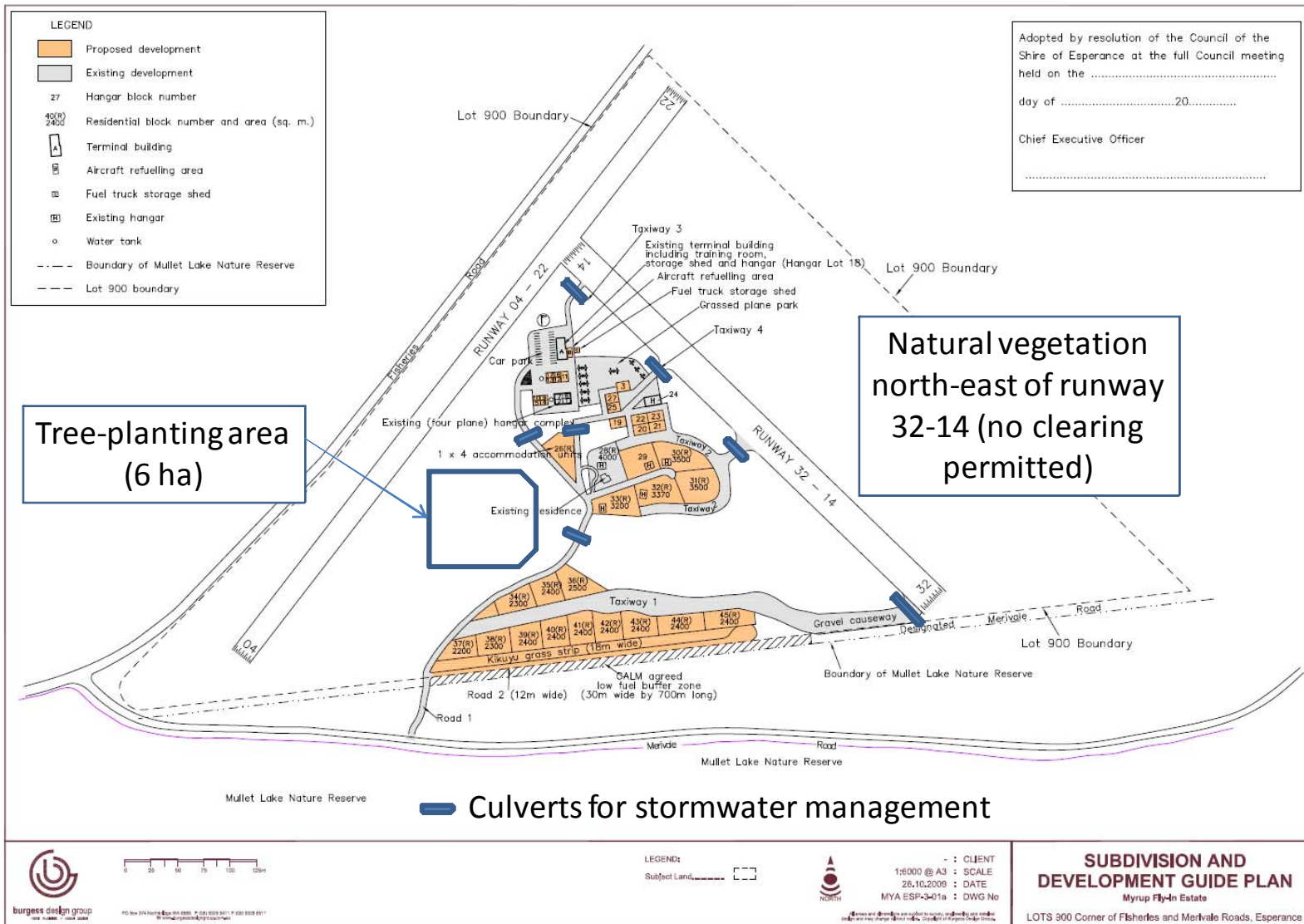


Figure 8. Stormwater management on the site.

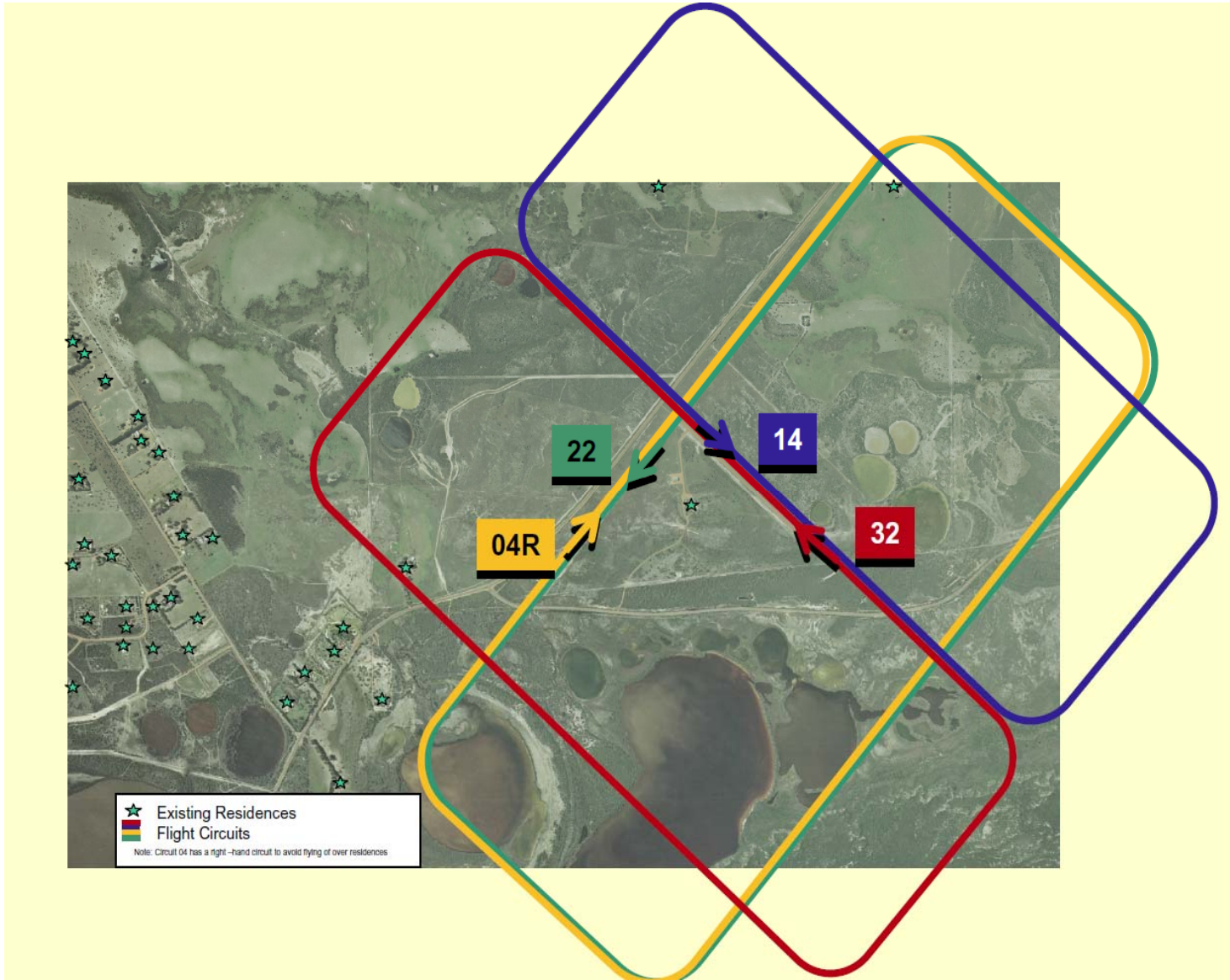


Figure 9. Flight circuits showing right hand circuit on Runway 04.

APPENDIX B
NOISE COMPLAINTS LOG SHEETS

Myrup Fly- In Estate Noise Complaints Log Sheet

Date	Complainant	Telephone Number	Address	Nature of Complaint	Follow-up Action	Follow-up actions complete (tick when complete)	Shire notified (tick when complete)
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C
WASTE OIL DISPOSAL PLAN

Waste Oil Disposal Plan

Myrup Fly-In Estate

1. The aim of this waste oil disposal plan is to outline the procedure for appropriately disposing of waste oil generated onsite due to aircraft maintenance.
2. In the event of a qualified mechanic being called to site for plane maintenance and oil changes, the mechanic will be responsible for ensuring proper disposal of the waste oil, offsite.
3. For maintenance to planes conducted by residents of the Estate, it will be their responsibility to dispose of waste oil appropriately offsite.
4. Waste oil is to be taken to the Wylie Bay Waste Management Centre and disposed of in the green oil recycling tank.
5. Any waste oil spilled must be collected and removed immediately, including any surrounding contaminated soil. This must also be taken offsite and disposed of at the Wylie Bay Waste Management Centre.

APPENDIX D
FUEL SPILL ACTION PLAN

Fuel Spill Action Plan

Myrup Fly-In Estate

1. The aim of this fuel spill action plan is to outline measures to be taken in event of a fuel spill while refueling aircraft at the refueling area.
2. Until such time as the refueling area is fully operational, in Stage 2 of the developments, all refueling is to take place at the Esperance Airport in Gibson. The only exception to this rule is for the training plane to refuel inside the training shed. A fuel spill action plan for this refueling is in place.
3. In event of a fuel spill please **ring the groundsman** _____ **immediately on** _____ and advise of a fuel spill.
4. Cover the fuel spill on the hard stand and any adjacent area with the sawdust from the drum located inside the fuel shed. Allow the fuel to be absorbed. Refer to the instructions posted on the outside of the sawdust drum.
5. Collect the contaminated saw dust using the shovel provided and empty it into the spare empty oil drum located in the fuel shed. Ensure that any soil that may have been contaminated with the fuel is also excavated and removed. The groundsman has been trained and will assist with this.
6. The groundsman will dispose of the sawdust and contaminated soil at the local tip. He will advise the local tip operator of the contents requiring disposal to ensure proper disposal.
7. Complete the fuel spill record sheet located in fuel shed to record details of the spillage including name, date, time and quantity spilled/recovered.
8. The groundsman will be responsible for refilling the sawdust drum and making any repairs to the gravel area outside the hardstand.

Fuel Spill Action Plan

Mackagri Aviation Flying School

The aim of this fuel spill action plan is to outline measures to be taken in event of a fuel spill while refueling aircraft in the Mackagri Aviation hangar.

Refueling must take place on the concrete floor of the hangar, with the door fully open for ventilation.

In the event of a fuel spill:

1. **Ring the grounds man Dave Wohling immediately on 9071 5846** and advise that there has been a fuel spill.
2. Cover the fuel spill on the concrete floor and any adjacent area with the sawdust from the drum located inside the hangar. Allow the fuel to be absorbed.
3. Collect the contaminated saw dust using the shovel provided and place it in the empty drum located in the hangar for that purpose.
4. Ensure that any soil that may have been contaminated with the fuel is excavated and removed. The grounds man has been trained and will assist with this.
5. Complete the fuel spill record sheet located at the back of the fuel log book in the hangar to record details of the spillage including name, date, time and quantity spilled/recovered.

The grounds man will dispose of the sawdust and contaminated soil at the local tip. He will advise the local tip operator of the contents requiring disposal to ensure proper disposal.

Mackagri Aviation is responsible for refilling the sawdust drum and making any repairs to the gravel area adjacent to the hardstand.

These instructions must be posted on the wall adjacent to the sawdust drum.

Emergency Contact:

David Ford
Chief Flying Instructor
Mackagri Aviation Flying School
Mobile: 0407 036 173