Hay Aerodrome Master Plan

Hay Shire COUNCIL

November 2022

Foreword

The Hay Shire Council Aerodrome Master Plan establish a vision for the use of the Hay Aerodrome for the next 20 years.

The Master Plan identifies the unique opportunity aviation can provide for the Hay Local Government Area.

Acknowledgement of Country

Hay Shire Council acknowledges the Wiradjuri and Nari Nari people as the Traditional Custodians of the land and pays respect to all Elders past, present and future.

Contents

Hay Aerodrome (1920's)

Abbreviations

AAA	Australian Airports Association
ANEF	Australian Noise Exposure Forecast
ARFL	Aircraft Reference Field Length
ARO	Aerodrome Reporting Officer
CAN	Aircraft Classification Number
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations
ESRA	En-route Supplement Australia (Aeronautical Information Publication)
GA	General Aviation
GNSS	Global Satellite Navigation System
HSC	Hay Shire Council
ICAO	International Civil Aviation Organisation
LA	Light Aircraft
LGA	Local Government Area
LSA	Light Sport Aircraft
m	Metre/s
MOS	Manual of Standards
NASF	National Airports Safeguarding Framework
NOTAM	Notice to Airmen
NSW	New South Wales
OLS	Obstacle Limitation Surface
PAN-OPS	Procedures for Air Navigational Services – Aircraft Operations
PCN	Pavement Classification Number
RDA	Regional Development Australia
RFDS	Royal Flying Doctors Service
RPT	Regular Public Transport
WDI	Wind Direction Indicator

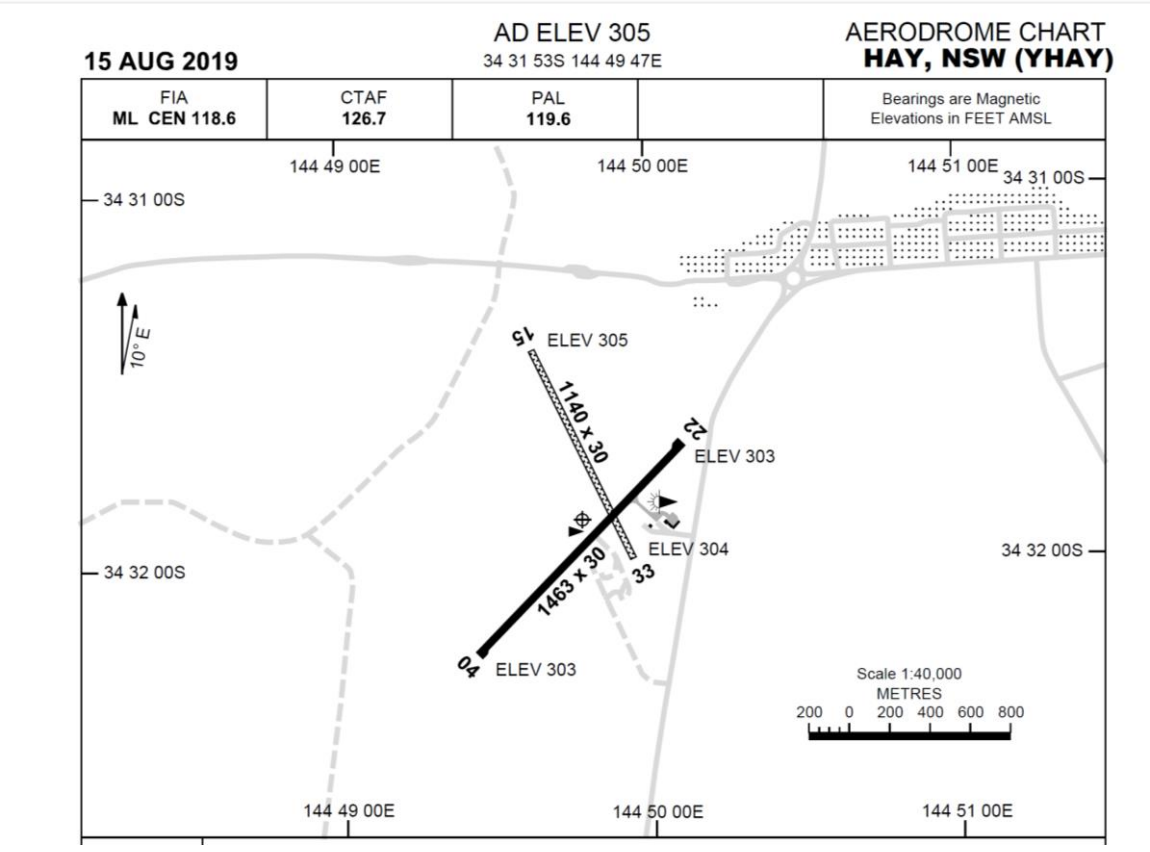
I. Introduction

Hay Aerodrome is located on the western side of and adjacent to the Cobb Highway, approximately two (2) km south of the Town of Hay. The aerodrome is situated on near level ground which is typical of the terrain extending for many kilometres in all direction from the aerodrome.

Hay Aerodrome is situated on an area of land comprising approx. 194 ha which is owned by Hay Shire Council. The Aerodrome has two runways:

- 15/33 – Gravel runway, 1440m long by 30m wide, unlit.
- 04/22 – Sealed runway, 1463m long by 30m wide, Pilot Activated Lighting available.

Hay Aerodrome has a wide range of users, with agricultural related companies use mostly larger lease areas at the south of the site, and then there are smaller lease areas to the north. Users also include recreational flyers, mail services, banking services, and medical services.



Extract from ERSA for Hay Aerodrome

II. Status Quo Analysis

2.1 Current Use and Facilities

The current use of the Hay Aerodrome site includes:

- Runways and Taxiways
- Refuelling facilities
- Hangar sites (mostly recreational use)
- Hangar sites (agricultural use)
- Terminal building
- Office building (Private ownership on leased land)
- RFS Water Tank and Container

Uses outside of the aerodrome fence, but in the ownership of Hay Shire Council includes the following:

- Grazing
- Quarry
- Unused land.

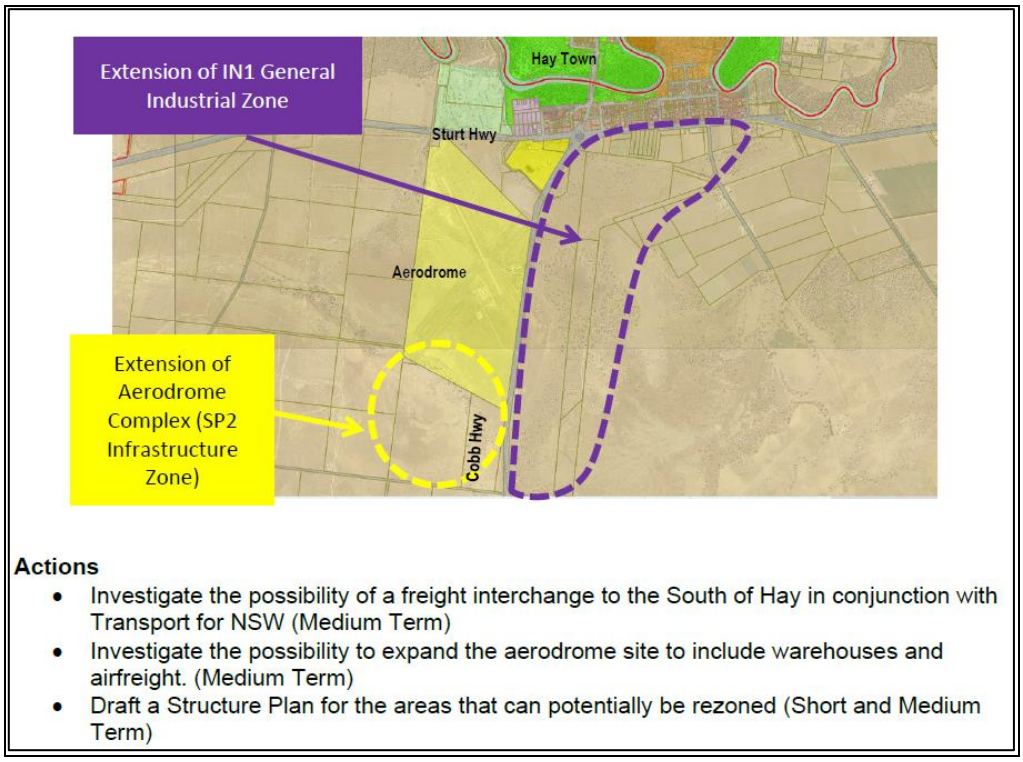
Recreational Use Hangars

See Plan A

2.2 Planning Background

Hay Local Strategic Planning Statement (LSPS)

The Hay Shire Council Local Strategic Planning Statement establishes a 20 year vision for land use planning in the Hay Shire, outlining how growth and change will be managed to maintain the high levels of environmental amenity, liveability and landscape quality that characterises the Hay Shire. The Plan states "Hay is located on the intersection of three highways" with the "opportunities for Hay to investigate the possibility of a freight interchange area – There are opportunities for Hay being equidistant between Sydney and Adelaide, and located on a route between Melbourne and Brisbane" and "investigate the possibility to expand the aerodrome site to include warehouses and airfreight (medium term)".

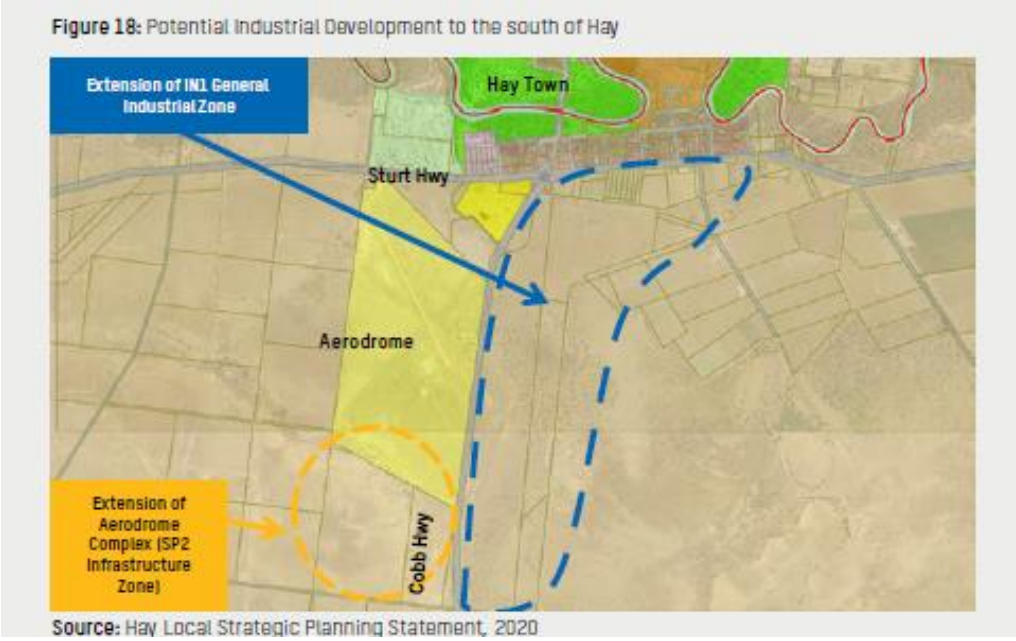


EXTRACT FROM HAY LSPS

Council adopted the LSPS in 2021.

Draft Hay Structure Plan

The Hay Structure Plan implements the recommendations of the Hay LSPS and will guide land use planning to inform future changes to Council's planning controls, including the zoning of land to ensure there is adequate supply to cater for the local needs of the community for the next 20 years. The Plan identifies the land south of the existing Aerodrome to be rezoned from RU1 Primary Production to SP2 Special Use Zone and the current Minimum Lot Size be removed, to cater for the future expansion of the Aerodrome.



EXTRACT FROM HAY STRUCTURE PLAN

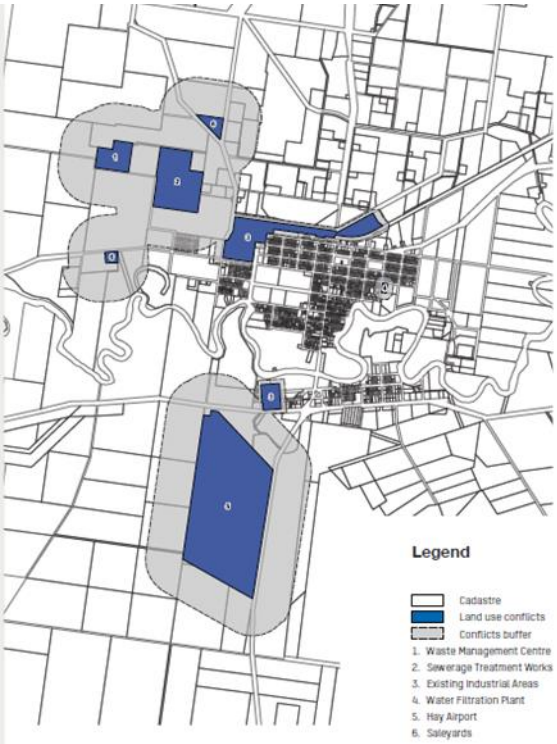
Key potential land use conflicts contained within the study area include:

1. Waste management centre
2. Sewerage treatment works
3. Existing industrial areas
4. Water filtration plant
5. Hay Airport
6. Saleyards

Consideration will therefore need to be given to the location of future residential and rural residential zoned land adjacent to productive agricultural activities.

Consideration of land use conflicts however will not need to be investigated where development involves complementary uses such as certain industries and primary production activities.

A plan showing these potential land use conflicts is provided in Figure 32.



EXTRACT FROM HAY STRUCTURE PLAN

5.6 SP2 Special Use Zone

The Structure Plan has identified two additional sites for inclusion within the SP2 Special Use Zone (Figure 40). Both of these sites form an extension of existing Council owned facilities and include:

- Hay Aerodrome.
- Hay Waste Management Centre and Sewerage Treatment Works.

Further details regarding these sites are outlined below.

The Hay LSPS previously identified a proposed expansion to the Hay Aerodrome (see Figure 18) to allow for an extension of this facility. The land is located to the south of the main township and is surrounded by land zoned RU1 Primary Production with a 90 hectare minimum lot size.

The expansion of the SP2 zone to the south will extend over rural zoned land with an agricultural land capability of Class 6 – very severe limitations. The rezoning of this land is not expected to create any land use conflicts and will ensure the ongoing protection of this facility.

The land is currently privately owned, however Council is in the process of acquiring this land to expand the airport. Further investigation of this land will also be required as it contains Cotton Bushfire Shrubland.

The Structure Plan also recommends rezoning Council owned land to SP2 that immediately adjoins or currently forms part of Hay Waste Management Centre and Sewerage Treatment Works. The rezoning of this land will allow for the ongoing protection of this important infrastructure and will also allow for an expansion of these facilities into the future if required.

As a result of the proposed rezonings, it is also recommended that the current minimum lot size requirement that applies to this land be removed.

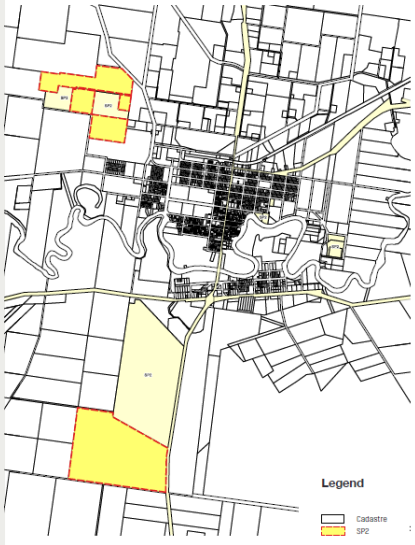


Figure 40: Proposed SP2 Special Use Zone

EXTRACT FROM HAY STRUCTURE PLAN

Hay Local Environmental Plan (LEP) 2011

The Hay LEP aims to make local environmental planning provisions for land in Hay in accordance with the relevant standard environmental planning instrument. The Plan refers to Airspace Operations, with the objective to "provide for the effective and ongoing operation of the Hay Aerodrome by ensuring that such operation is not compromised by proposed development that penetrates the Limitation or Operations Surface for that airport and protect the community from undue risk from that operation". "If a development application is received and the consent authority is satisfied that the proposed development will penetrate the Limitation or Operations Surface, the consent authority must not grant development consent unless it has consulted with the relevant Commonwealth body about the application."

Airports and *Air Transport Facilities* are permitted with consent in Zones RU1, RU4, SP2

The Hay LEP states the following:

> ***6.3 Airspace operations***
>
> *(1) The objectives of this clause are as follows—*
>
> *(a) to provide for the effective and ongoing operation of the Hay* ***Aerodrome*** *by ensuring that such operation is not compromised by proposed development that penetrates the Limitation or Operations Surface for that airport,*
>
> *(b) to protect the community from undue risk from that operation.*
>
> *(2) If a development application is received and the consent authority is satisfied that the proposed development will penetrate the Limitation or Operations Surface, the consent authority must not grant development consent unless it has consulted with the relevant Commonwealth body about the application.*
>
> *(3) The consent authority may grant development consent for the development if the relevant Commonwealth body advises that—*
>
> *(a) the development will penetrate the Limitation or Operations Surface but it has no objection to its construction, or*
>
> *(b) the development will not penetrate the Limitation or Operations Surface.*
>
> *(4) The consent authority must not grant development consent for the development if the relevant Commonwealth body advises that the development will penetrate the Limitation or Operations Surface and should not be constructed.*
>
> *(5) In this clause—*
>
> ***Limitation or Operations Surface*** *means the Obstacle Limitation Surface or the Procedures for Air Navigation Services Operations Surface as shown on the Obstacle Limitation Surface Map or the Procedures for Air Navigation Services Operations Surface Map for the Hay* ***Aerodrome****.*

relevant Commonwealth body *means the body, under Commonwealth legislation, that is responsible for development approvals for development that penetrates the Limitation or Operations Surface for the Hay* ***Aerodrome****.*

Dictionary –

air transport facility *means an airport or a heliport that is not part of an airport, and includes associated communication and air traffic control facilities or structures.*

airport *means a place that is used for the landing, taking off, parking, maintenance or repair of aeroplanes, and includes associated buildings, installations, facilities and movement areas and any heliport that is part of the airport.*

Note—

Airports are a type of ***air transport facility****—see the definition of that term in this Dictionary.*

Riverina Murray Regional Plan 2036

The Riverina Murray Regional Plan 2036 is an overarching framework to guide subsequent and more detailed land use plans, development proposals and infrastructure funding decisions for the region as a whole. The Plan "Supports and protect ongoing access to air travel", "Regional economic growth will be underpinned by the ongoing operation and expansion of air travel and related facilities across the region". "Air-based operations support essential community services, such as the Royal Flying Doctor Service" and "future opportunities for airport expansions need to be resolved through land use planning". The Plan's priorities for Hay include "capitalising on Hay's central location and improve connectivity."

The Plan also states the following:

Direction 19: Support and protect ongoing access to air travel

Regional economic growth will be underpinned by the ongoing operation and expansion of air travel and related facilities across the region.27 Maintaining 20 per cent of flight slots at Sydney Airport for regional NSW services is critical to supporting business and providing convenient air travel to Sydney for regional communities. The region's largest commuter airports are located in Albury, Griffith, Wagga Wagga and Narrandera– Leeton. In addition to traditional domestic uses, air-based operations support essential community services, such as the Royal Flying Doctor Service, and defence and training operations, such as the Royal Australian Air Force, which has a substantial airbase at Wagga Wagga. The Australian Airline Pilot Academy at Wagga Wagga trains local pilots in what will be an increasingly important sector for economic growth. Airport facilities need to be protected from the encroachment of incompatible development that could impede air service operations. Future opportunities for airport expansions need to be resolved through land use planning.

Actions

19.1 Protect airports from the encroachment of incompatible development, including airports in Wagga Wagga, Albury, Griffith and Narrandera.

19.2 Support the continued allocation of 20 per cent of flight slots at Sydney Airport to regional NSW services and seek a greater allocation in peak periods.

The Plan states the following for Hay:

Hay Shire is situated on the Murrumbidgee River and incorporates the town of Hay and the villages of Booligal, Maude and One Tree, and had a population of 2,999 in 2015. The local government area is serviced by the Sturt, Mid Western and Cobb highways, intersecting at Hay, which is halfway between Sydney and Adelaide and about 400 kilometres from Melbourne. Hay's economy is reliant on tourism, agriculture and associated industry. Its parks, sporting facilities, amenities along the Murrumbidgee River and museums make it an attractive place to live.

Priorities:

- *Recognise the value of the environment and biodiversity, and promote sustainable production and consumption through the use of environmentally sound technologies and practices.*
- *Recognise and build on the distinctive places, culture, history and natural systems of Hay, and sustainably use council-owned land.*
- *Provide road infrastructure to capitalise on Hay's central location and improve connectivity.*
- *Ensure that irrigated land is appropriately zoned and protected from inappropriate development*

Regional Economic Development (RED) Strategy – Western Murray (2018-2022)

The RED Strategies are designed around one or more local government areas that form a functional economic region as defined by economic data and community input. The Western Murray RED includes Hay LGA and sets out a vision for the region, the strategies and early-stage actions required to achieve the vision. The Plan recognises the local aerodromes such as Hay's, "provides medical services, postal services, and also essential services to the agricultural sectors." The Plan's "Infrastructure Priorities" included to "Invest in the Region's aerodrome facilities: The maintenance and upgrading of the Region's aerodrome facilities to cope with increased traffic will support the critical work done by light aircraft supporting the agriculture industry". The Plan also suggests the "use of the Region's Aerodromes to facilitate tourism" to "support the development of new visitor experiences that help extend the time visitors spend in the Region".

2.3 Environment

The natural environment of the aerodrome site consists of the following vegetation types from the north to the south:

- Weeping Myall open woodland
- Riverina Plains Grassland
- Black Box Shrubby Woodland

According to the Hay LEP, the area of the aerodrome (see attached plans B, C, D & E):

- Contains Environmentally Sensitive Biodiversity
- Can contain contaminated land
- Have areas that are bushfire prone
- Have low to moderate groundwater vulnerability.
- Be suitable for grazing
- Have cracking clays

2.4 Infrastructure and Services

The Hay Aerodrome is served by:

- Raw Water supply to the Terminal building and recreational hangars, as well as the agricultural lease sites to the south
- Electricity to the terminal building area
- On site sewer for the Terminal building toilets.
- Raw water supply to the existing grazing areas.

Stormwater is conveyed mostly by drains away from the runways, and into detention ponds and v-drains away from the site.

Stormwater Drainage works in progress (2022)

Lighting

At Hay Aerodrome a pilot Activated Lighting (PAL) system (on frequency 119.6Mhz) is provided. PAL operates the lights on runway 04/22, taxiway, apron, the illuminated wind indicator (IWI), floodlights and obstruction lights. The lighting control equipment is housed in a free standing control box near the entrance gate.

The aerodrome lighting are as follows:

- runway side lights white
- runway threshold lights green
- taxiway lights blue
- taxiway holding point lights yellow
- obstacle lights in IWI red
- Obstacle lights on tower (TELSTRA)
- Apron Floodlights
- IWI down lights

Runway Information:

(i) magnetic bearing of runways & runway number: 04/22 - 42° 23′ 31″

15/35 - 333° 17′ 08″

(ii) length, width and slope of runways: 04/22 1463 x 30 - level

15/33 1140 x 30 - level

(iii) length of clearway: 04/22 60m

15/33 60m

(iv) length of stopway: 04/22 Nil

15/33 Nil

(v) length and width of the graded and overall runway-strip 04/22 1583 x 90

15/33 1260 x 90

(vi) pavement surface type and its strength rating 04/22a PCN8/F/A/500(72PSI)/U

15/33c unrated red sandy clay

(vii) gradient from end of runway strip or clearway to the critical obstacle: **04**(6.2%); **22**(2%)

15(4%); **33**(3.61%)

(viii) supplementary take-off distances and associated gradients:

04	948	(1.6%)	1264 (1.9 %)	1349(2.2%)	1380(2.5%)	1439(3.3%) 1499(5%)
15	1167 (1.6%)		1180 (1.9 %)	1190 (2.2%)	1197 (2.5%)	
33	864	(1.9%)	1019 (2.2 %)	1076 (2.5%)	1178 (3.3%)	

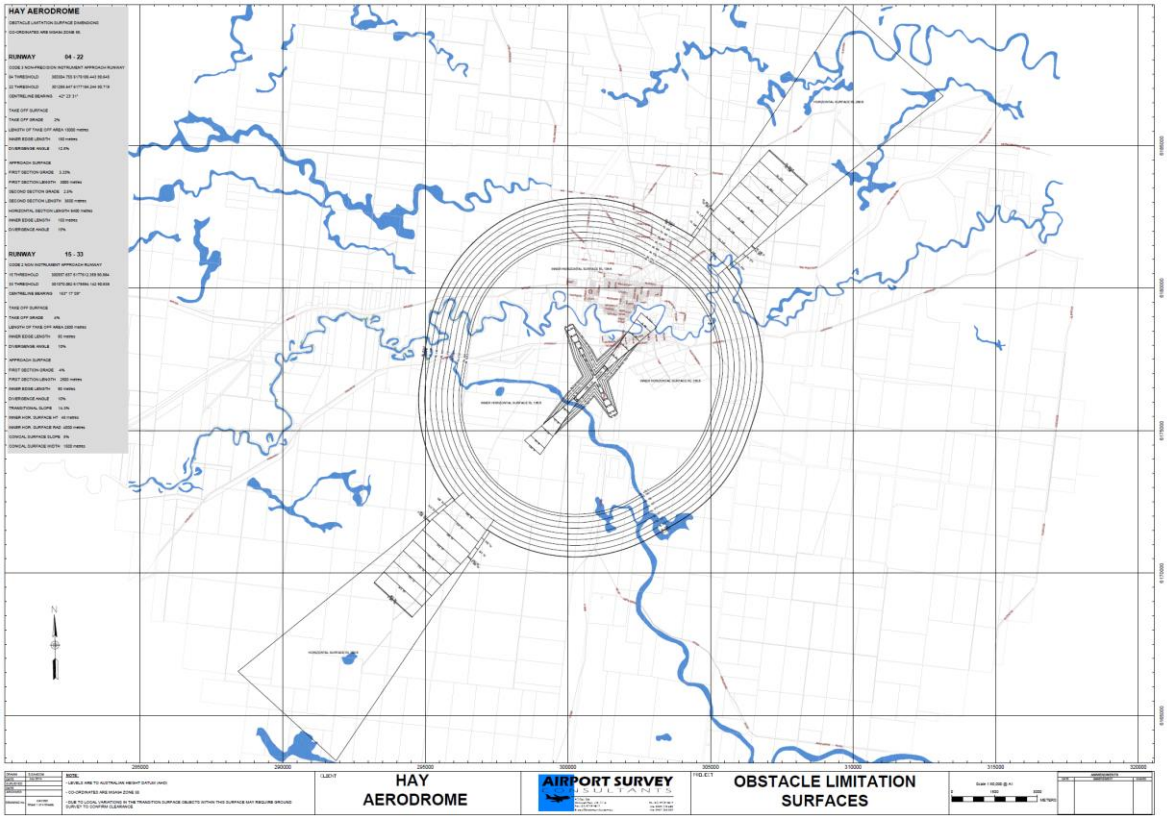
2.5 Surrounding land uses

The aerodrome site consists of normal aviation related uses, as well as grazing and quarrying on the site. Other uses around the site include (See Plan A):

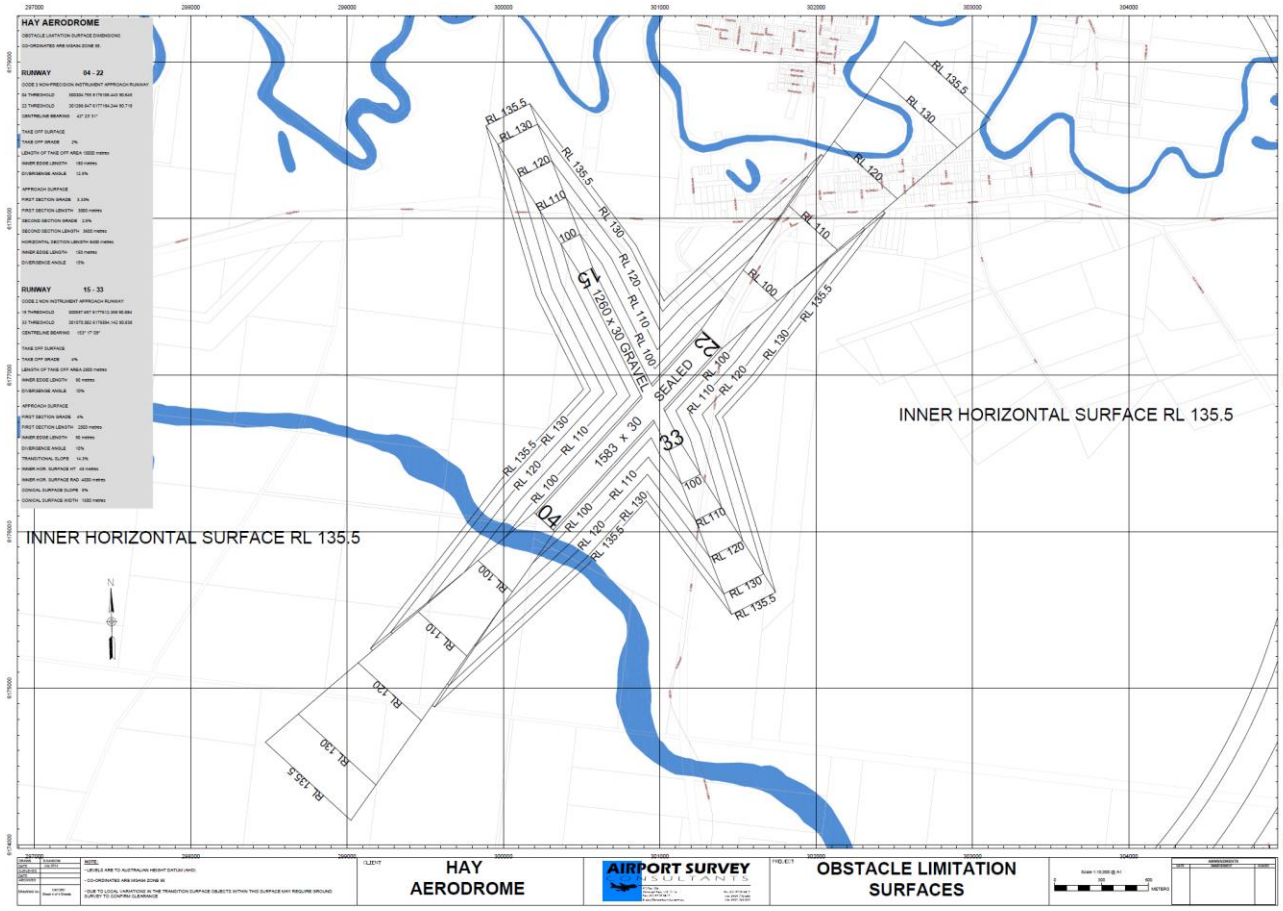
- Travelling Stock routes to the north and east
- Grazing and Agriculture to the west and south
- Urban uses to the north, including Shear Outback museum, residential areas, and industrial uses.

The larger site is bordered by two highways to the north and the east, namely the Sturt and Cobb Highways.

The proximity of urban land uses can cause some issues if the aerodrome is upgraded, and an Obstacle Limitation Survey applies (see plans below).



Extract from Hay OLS



Extract from Hay OLS

2.6 Access

Access to the Aerodrome site is mainly from the east, with two access roads off the Cobb Highway, and one access of the Sturt Highway from the north, accessing the quarry to the west of the aerodrome. (See Plan F)

2.7 Ownership and Management

The Hay Aerodrome is owned and managed by the Hay Shire Council. Lease sites within the aerodrome site is leased on a variety of lease agreements. Grazing on the sites outside of the security fencing is on an informal basis with Shear Outback.

2.8 Heritage

There are no heritage listed items in the Hay LEP, or any items listed in the AHIMS database.

III. Proposals

3.1 Vision and Objectives

Strategic Vision

The Hay Aerodrome Master Plan strategic vision is:

'The Western Riverina region prosper through the development of the Hay general aviation hub.'

This vision links to being a complementary facility to the larger regional airports and providing more scope to general aviation and freight to ensure accessibility for people and services within the regions.

Objectives

The objectives for the Hay Aerodrome Master Plan are:

- To support the growth of general aviation for recreation and sporting events;
- To attract freight facilities to the area;
- To support emergency and charter services for the region;
- To improve the aerodrome as an important regional asset; and
- To ensure an effective governance model to support consistent management of the site.

3.2 Opportunities and Constraints

The Hay Aerodrome has the following constraints (See Issues Map below):

- Limited runway length for larger aircraft
- Limited hangars
- Flooding and watercourses to the north and the south of the aerodrome, which can impact the extension of the runway to the south (See Plan G)
- Proximity to the urban areas, which can have a noise impact on the town.
- Northern end of runway encroaches on the obstacle limitation survey.
- Extension of the runway to the south will either involve purchasing or land swap with the private landholder to the southwest.
- Some older quarries to the west of the aerodrome will need to be rehabilitated or repurposed.
- No filtered water and sewerage to the site.

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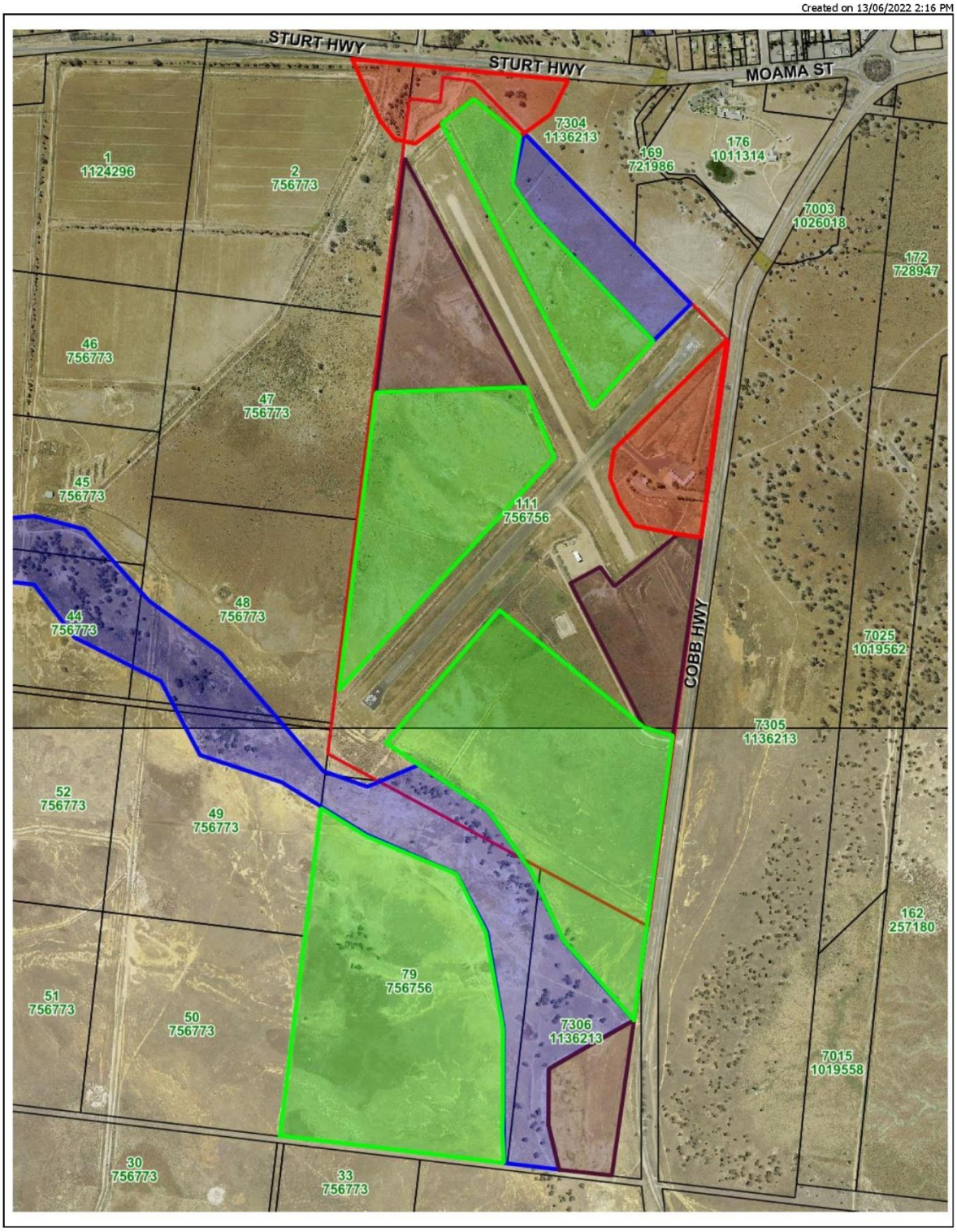

Hay Shire Council
134 Lachlan Street
PO Box 141
HAY NSW 2711
Phone: (02) 6990 1100
Fax: (02) 6993 1288
www.hay.nsw.gov.au

Important Notice!

This map is not a precise survey document. Accurate locations can only be determined by a survey on the ground.

This information has been prepared for Council's internal purposes and for no other purpose. No statement is made about the accuracy or suitability of the information for use for any purpose (whether the purpose has been notified to Council or not). While every care is taken to ensure the accuracy of this data, neither the Hay Shire Council nor the LPI makes any representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

GDA

True North, Grid North and Magnetic North are shown diagrammatically for the centre of the Hay Local Government Area. Magnetic North is correct for 2002 moving easterly by 0.04° in about five years.

Important

This map was produced on the GEOCENTRIC DATUM OF AUSTRALIA 1994 (GDA94), which has superseded the Australian Geographic Datum of 1984 (AGD66/84). Heights are referenced to the Australia Height Datum (AHD) heights.
For most practical purposes GDA94 coordinates and satellite derived (GPS) coordinates based on the World Geodetic Datum 1984 (WGS84) are the same.

Drawn By: zig1

Projection: GDA94 / MGA zone 55

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Issues Map

- Flood Prone/Water Course
- Bushfire Prone Land
- Disturbed Land/Quarry
- Grazing

Map Scale: 1:15000 at A4

The Hay Aerodrome has the following opportunities:

- The location is centrally located in relation to Sydney, Melbourne and Adelaide. This can give opportunities in logistics and freight for the site.
- The location is adjacent to the Sturt and Cobb highways.
- There are no constraints to the south of the aerodrome, which provides for opportunity for expansion to the south.
- There are the following facilities already at the aerodrome:
    - Raw water supply
    - Suitable security fencing
    - Recently upgraded taxiways and runway.
    - Hangar sites already identified and serviced by a taxiway.
    - Runway lighting (PAL) available.
- Plenty of unutilised land
- Good flying conditions with minimal fog disruption.

Sealing works in process at recreational hangars (2022)

3.3 Forecast

AIRCRAFT ACTIVITY FORECAST

Masterplans usually include aircraft activity forecasts.

Hay Aerodrome has no historical statistical records of annual aircraft activity. But notwithstanding this, growth in general aviation in Australia has been stable at 1 - 2% per annum for the last twenty years. The Commonwealth Department of Infrastructure produces general aviation activity reports annually verifying this growth trend. The other area of growth in aviation that may occur is with charter operations and freight.

AIRCRAFT AND PASSENGER TRAFFIC

Scheduled Regular Public Transport (RPT) aviation services ceased a long time ago in Hay. Given the proximity of Griffith and Melbourne to Hay, Council is realistic about the low likelihood of scheduled RPT services being reintroduced at the Hay Aerodrome in the short to medium term. Accordingly, the measurement and forecast of passenger traffic through Hay Aerodrome is not relevant to the preparation of the Hay Aerodrome Masterplan at this point.

AERODROME REFERENCE CODE

The Aerodrome Reference Code is based on the characteristics of an airplane, not the aerodrome. Once the critical airplane is determined, and then the aerodrome facilities are designed and built to meet those characteristics. The primary runway, taxiway and apron at the Hay Aerodrome have been constructed to code 3C standards, catering for airplanes with a wing span from 24m up to but not including 36m.

TABLE 1: AERODROME REFERENCE CODE EXTRACTED FROM MOS PART 139 - AERODROMES

CODE ELEMENT 1		CODE ELEMENT 2		
CODE NUMBER	AEROPLANE REFERENCE FIELD LENGTH (ARFL)	CODE LETTER	WING SPAN	OUTER MAIN GEAR WHEEL SPAN
1	Less than 800m	A	Up to but not including 15m	Up to but not including 4.5m
2	800m up to but not including 1200m	B	15m up to but not including 24m	4.5m up to but not including 6m
3	1200m up to but not including 1800m	C	24m up to but not including 36m	6m up to but not including 9m
4	1800m and over	D	36m up to but not including 52m	9m up to but not including 14m
		E	52m up to but not including 65m	9m up to but not including 14m
		F	65m up to but not including 80m	14m up to but not including 16m

REGIONAL AIRPORT MASTER PLANNING GUIDELINE

DETERMINING RUNWAY LENGTH & WIDTH

The Aeroplane Reference Field Length (ARFL) published by aircraft manufacturers for each aircraft type determines the runway length. There are a number of aircraft commonly used in the Australian aviation industry for regional passenger operations and for business charter. The most commonly used RPT aircraft operating in regional centres on the eastern seaboard are turbo prop aircraft such as the Dash 8 and SAAB 340.

Commonly used business charter aircraft include the Canadair Challenger 604 which is used by the RAAF to transport Federal Parliamentarians within Australia and the Cessna Citation/Learjet which is used by many businesses to transport senior management within Australia. These aircraft can operate into Hay unrestricted in its current configuration (i.e. the runway length, width and the current pavement strength do not limit these aircraft).

The construction materials used and the constructed depth of the pavement determine pavement strength. For a pavement to be determined suitable for an aircraft operation the designated Pavement Classification Number (PCN) should match the Aircraft Classification Number (ACN) given to an aircraft by the manufacturer. Runway 04/22 pavement strength at Hay Aerodrome has a published PCN (8), which allows for a Jetstream 31, Kingair 350, SAAB- 340m Metro III, Learjet 55 and a Jetstream 41.

TABLE 2: TYPICAL AIRCRAFT CHARACTERISTICS[1]

AIRCRAFT	SEATS	ARFL(M)[2]	MTOW(KG)[3]	ACN[4]	CODE
Metro III	19	991	6577	4	2B
Dash 8-300	50	1122	18642	10	2C
Learjet 55	8	1292	9298	6	3A
Metro 23	19	1341	7484	4	3B
Challenger 604	12	1780	21617	13	3B
Hawker 900	8	1513	12700	7	3B
Dash 8 Q400	70	1354	29347	16.5	3C
Jetstream 31	18	1440	6950	4.4	3C
ATR 72-600	68	1165	21566	12	3C
SAAB-340	35	1220	12371	5.7	3C
B737-800	180	2256	70535	46	4C
A320-200	180	2058	72000	40	4C

Note 1: For indicative purposes only. Specific values for particular aircraft should be obtained from the aircraft operator or the aircraft manufacturer. Note 2: ARFL = Aeroplane reference field length. Note 3: MTOW = Maximum take-off weight. Note 4: ACN = Aircraft Classification Number. The ACN is based on the aircraft's maximum take-off weight on a flexible pavement with a sub-grade rating of "B".

REGIONAL AIRPORT MASTER PLANNING GUIDELINE

It is recommended that runway 15/33 be lengthened to 2300m and widened to 45m to accommodate 4C aircraft

3.4 Facility Requirements

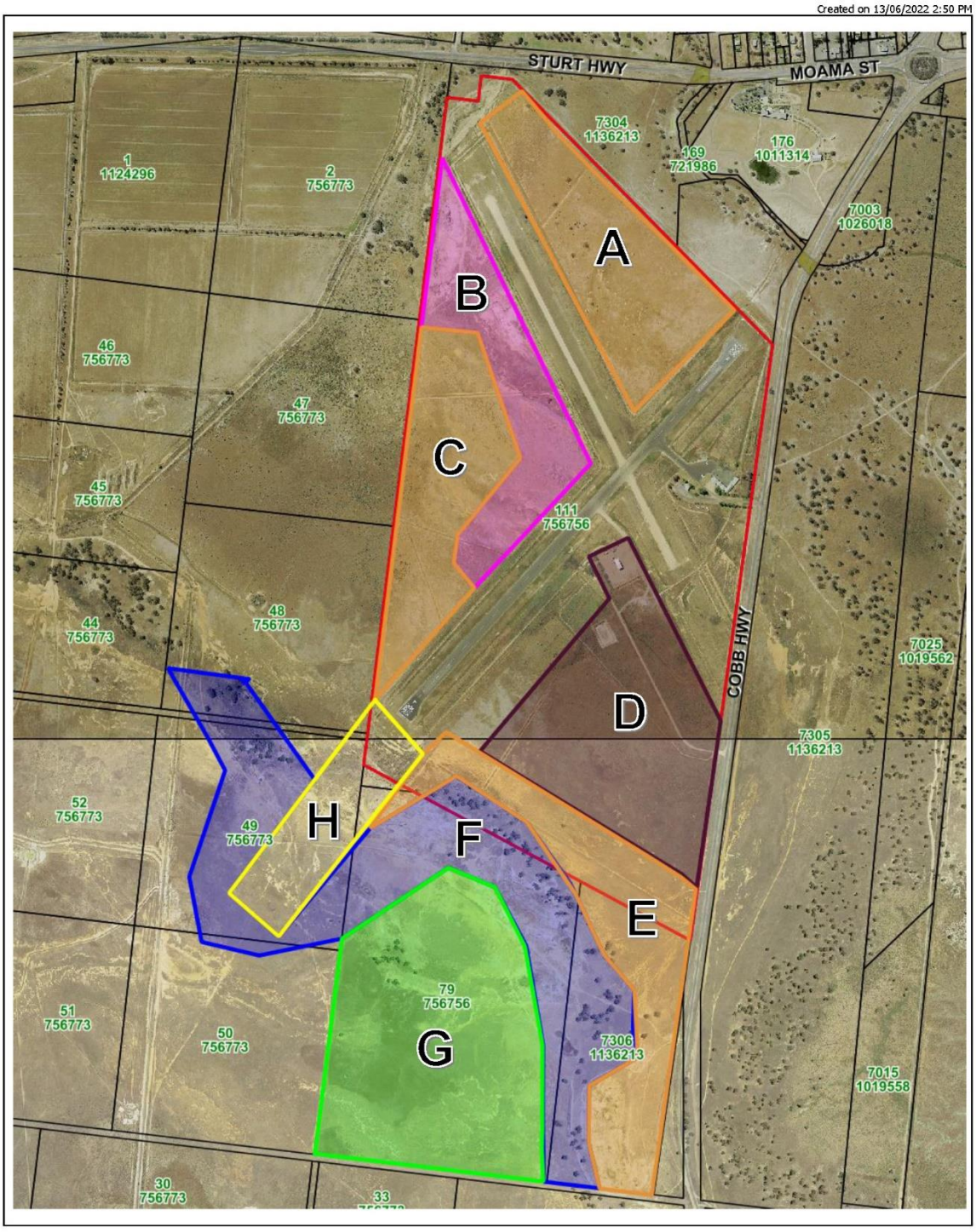
In the upgrade of the aerodrome to a higher classification for mainly freight use, the following would be required:

- Pavement – The current pavement of 04/22 is rated as PCN8/F/A/500(73PSI)/U. This will require further investigation on what would be required for 4C aircraft.
- Lighting – lighting currently conforms to the MOS139. This will require further investigation on what would be required for 4C aircraft.
- Refuelling with Avgas and JetA1. This is already being negotiated between Council and a potential supplier.
- Fencing – Fencing would need to be extended.
- Security – If a RPT service would use the Hay Aerodrome, there will be security implications.

3.5 Peripheral Facilities.

The Issues Map indicates some constraints with developing the wider aerodrome site. But there are also significant opportunities for the Hay Shire in redeveloping the Aerodrome site.

The Proposals plan shows the potential development opportunities for the Aerodrome Precinct: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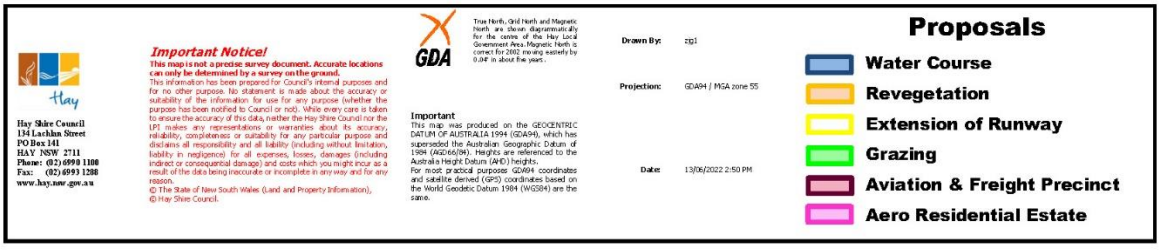
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134 Lachlan Street
PO Box 141
HAY NSW 2711
Phone: (02) 6993 1100
Fax: (02) 6993 1288
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Drawn By: zip
Projection: GDA94 / MGA zone 55
Date: 13/06/2022 2:50 PM
Proposals
Water Course
Revegetation
Extension of Runway
Grazing
Aviation & Freight Precinct
Aero Residential Estate

Area A: Revegetation

The area consists of:

- Weeping Myall open woodland of the Riverina and NSW Southwestern Slopes Bioregions
- Riverina Plains Grassland Complex
- Black Box Shrubby Woodland

The area is flood prone and Bushfire Prone.

Area A – Picture taken from the northeast

The area has been grazed, and it is proposed that the area be revegetated and left.

Area B: Aero Residential Estate

Area B is heavily disturbed by quarrying and grazing. It is proposed that an Aero Residential Estate be developed, with the following characteristics:

- Residential blocks with vehicular road access, as well as taxiway access, of sufficient size to allow the construction of a hangar at the back, which can have a gravel taxiway access.

- The development will have access of the Sturt Highway, the feasibility of which will need to be investigated.
- The development will have Potable water supply, Raw water supply, but the lots need to be of a sufficient site to accommodate and onsite sewer management system.
- The development will have stringent building control requirements to not encroach on the OLS, and still to guarantee the safety of the aerodrome.

Area B: Existing Quarry

Example of Airfield Residential development in Narromine. Note the hangar at the back of the lot, which faces a gravel taxiway.

Area C: Revegetation

Area C is heavily disturbed by quarrying and grazing. It is proposed that this area be revegetated.

Area D: Aviation and Freight Precinct

Area D is currently utilised as grazing and for agricultural aeronautical companies. The area has a separate entrance of the Cobb Highway, and is underutilised. The taxiways have recently been extended to accommodate the agricultural lease areas.

Extended Taxiway past Agricultural lease areas

It is proposed that the area be used for Aviation and freight, so that any future lessees or purchasers can utilise the land with highway and runway access to its fullest potential.

The development will require the following:

- Suitable access from the Cobb Highway
- Suitable electricity supply
- Suitable internal roads and taxiways.
- Security
- The development of Onsite Sewer Management Systems
- Suitable stormwater drainage.
- Water Supply

Area D: Picture taken along Cobb Highway frontage towards the north

The development of this area will take place in two stages:

- Development along the existing taxiway, and the existing agricultural lease areas, with improved access off the Cobb Highway. Cost approximately $1.2 million
- Development of the rest of the site, to include parallel taxiways to Runway 04/22, as well as an internal road network suited to truck movements. Cost approximately $49.9 million

Example of Airfield Industrial development in Narromine.

Area E: Revegetation

Area E is Riverina Plains Grassland Complex, and heavily disturbed by grazing and quarrying. It is proposed that this area be revegetated.

Area E: Quarrying

Area F: Watercourse

Area E is Black Box Shrubby Woodland, and is in all probability a watercourse. This area will be impacted by any lengthening of the runway. It is proposed that this area be moved where the runway will be lengthened, and revegetated.

Area F: Black Box trees

Area G: Grazing

Area G is mostly used for grazing, and the status quo is to be maintained here. This area can form part of a land swap for Area H.

Area H: Extension of the Runaway

The planned extension for the runway will be to 2300m x45m, which will give access for jet aircraft. The current runway is 1463m x 30m. This proposed lengthening of the runway will have the following implications:

- An upgrade of the lighting system will be required
- Fencing will need to be realigned

Other actions that will form part of the runway extension and the Aviation and Freight Precinct includes:

- Taxiways
- Aprons
- Lighting
- Access Roads
- Water & Sewer Supply
- Electricity & Communications
- Potentially Buildings that can be leased.

A breakdown of the potential costs of the total Aviation and Freight Precinct, with the upgrade of the runway is below:

HAY AERODROME EXPANSION PROJECT						
Item	**Description**	**Quantity**	**Unit**	**Rate**	**Stage 1 Cost**	**Stage 2 Cost**
1	*Runway Extension (108,540 sqm)*					
1.1	Earthworks	51557	cub	$15		$773,355
1.2	Subsoil Drainage	4972	m	$75		$372,900
1.3	Subbase	10854	cub	$135		$1,465,290
1.4	Base Course	29848	cub	$140		$4,178,720
1.5	Stabilised Base Course	108540	sqm	$6		$651,240
1.6	Asphalt Surfacing	27135	tonne	$350		$9,497,250
1.7	Saw Cut/Grooving Runway	1	item	$40,000		$40,000
1.8	Line Marking	1	item	$40,000		$40,000
				Sub-Total:		*$17,018,755*
2	*Taxiway (8,000 sqm)*					
2.1	Earthworks	3800	cub	$15		$57,000
2.2	Subsoil Drainage	550	m	$75		$41,250
2.3	Subbase	800	cub	$135		$108,000
2.4	Base Course	2200	cub	$140		$308,000
2.5	Stabilised Base Course	8000	sqm	$6		$48,000
2.6	Asphalt Surfacing	2000	tonne	$350		$700,000
2.7	Line Marking	1	item	$10,000		$10,000
				Sub-Total:		*$1,272,250*
3	*Aprons (30,000 sqm)*					
3.1	Earthworks	16500	cub	$15		$247,500
3.2	Subsoil Drainage	600	m	$75		$45,000
3.3	Subbase	4500	cub	$135		$607,500
3.4	Concrete Base Course	12000	cub	$500		$6,000,000
3.5	Refuelling Safety Provisions	3	item	$20,000		$60,000
3.6	Line Marking	1	item	$10,000		$10,000
				Sub-Total:		*$6,970,000*
4	*Lighting*					
4.1	Approach Lighting	1	item	$500,000		$500,000
4.2	Runway Lighting	1	item	$1,000,000		$1,000,000
4.3	Taxiway Lighting	1	item	$300,000		$300,000
4.4	Apron Lighting	1	item	$200,000		$200,000
				Sub-Total:		*$2,000,000*

5	*Access Roads*					
5.1	Earthworks	7168	cub	$15	$53,760	$53,760
5.2	Subbase	2584	cub	$135	$174,420	$174,420
5.3	Base Course	2584	cub	$140	$180,880	$180,880
5.4	Prime Seal	12920	sqm	$5	$32,300	$32,300
5.5	2-Coast Seal	12920	tonne	$8	$51,680	$51,680
5.6	Line Marking	1	item	$5,000	$2,500	$2,500
				Sub-Total:	*$495,540*	$495,540
6	*Services*					
6.1	Water Supply	3600	m	$125	$450,000	
6.2	Sewer - on site systems	3	each	$17,000	$51,000	
6.3	Electricity	1	item	$750,000	$750,000	
6.4	Communications	1	item	$75,000	$75,000	
				Sub-Total:	*$1,326,000*	
7	*Land*					
7.1	Land Swap - legals, survey	1	item	$20,000	$20,000	
7.2	Fencing	3500	m	$20	$70,000	
				Sub-Total:	*$90,000*	
8	*Buildings*					
8.1	Warehouses (50mx60m)	3	item	$800,000	$2,400,000	$4,800,000
8.2	Warehouse pavement	30000	sqm	$140	$4,200,000	$6,300,000
8.3	Warehouse service provisions	3	item	$150,000	$450,000	$450,000
				Sub-Total:	*$7,050,000*	$11,550,000
9	*Other*					
9.1	Approvals	1	item	$25,000	$25,000	
9.2	Detail Design	1	item	$100,000	$25,000	$100,000
9.3	Project Management	1	item	$200,000	$35,000	$200,000
9.4	Site Supervision	1	item	$200,000	$35,000	$200,000
9.5	Site Survey	1	item	$50,000	$15,000	$50,000
9.6	Geotech Testing	1	item	$50,000		$50,000
				Sub-Total:	*$135,000*	*$600,000*
				Total:	**$9,006,540**	**$39,906,545**
10	*Contingency*			@10%	$900,654	$9,976,636
				TOTAL:	**$9,907,194**	**$49,883,181**

IV. The Way Forward

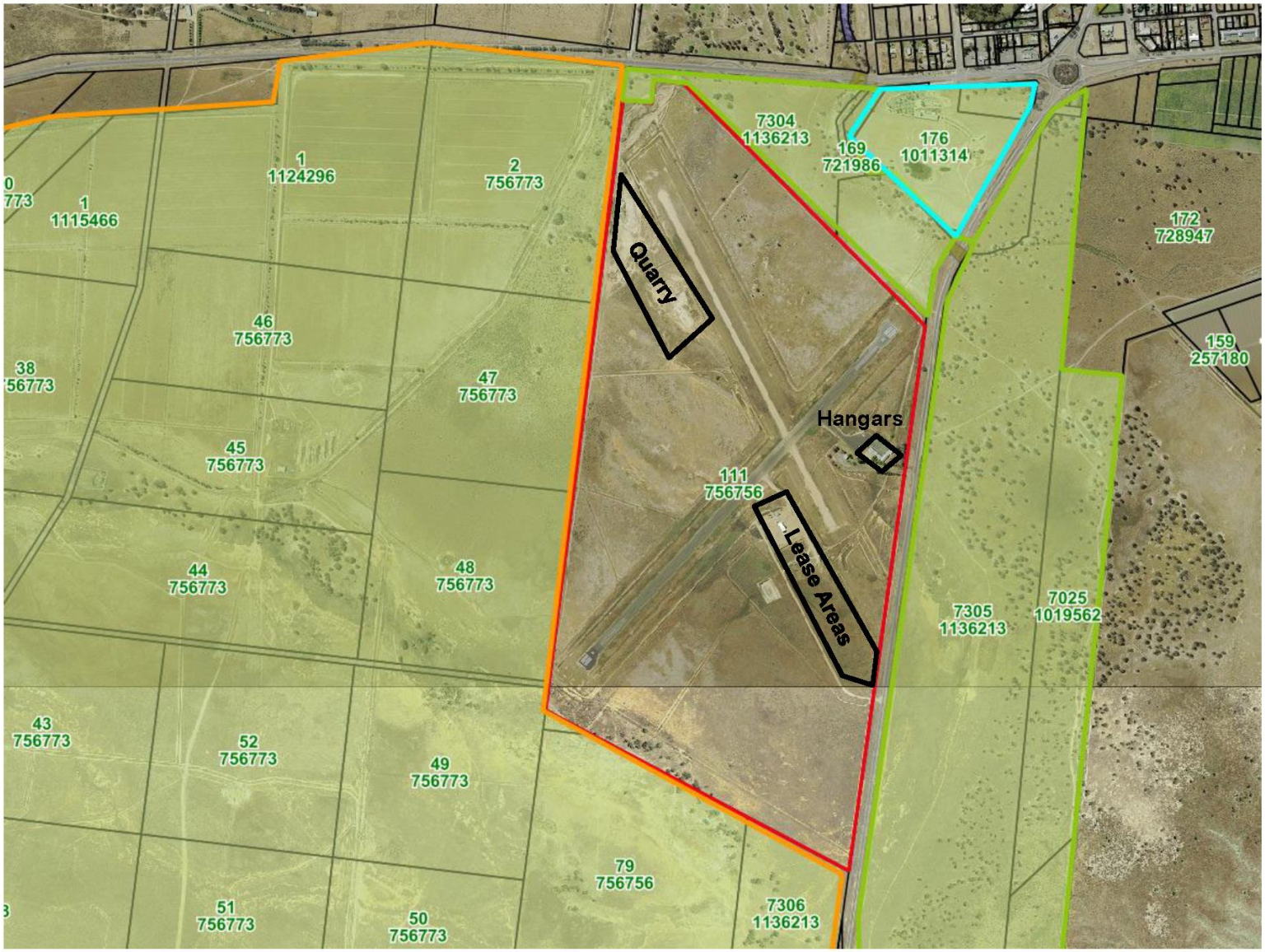
This Aerodrome Masterplan has far reaching and financially significant implications. It is envisaged that it will be externally funded.

The next steps are:

I. Costing of elements that need upgrading regardless of extension of runways or not:
    a. Conversion to LED PAL lighting
    b. Electrical Infrastructure
    c. Levee system
II. Standardizing all lease agreements for the Aerodrome
III. Formal consultation with:
    a. Surrounding landowners
    b. CASA
    c. Relevant NSW Government Departments (including Transport for NSW and OEH)
    d. Interested freight companies
    e. Current users and lease holders.
IV. After consultation, compile RFQ documentation for:
    a. Environmental studies
    b. Engineering studies
    c. Engineering design
    d. Planning applications
V. Source external funding and commence studies and applications.
VI. Finalise construction costings
VII. Construction, further Lease Agreements, and land swaps.

VIII. Attachments

- PLAN A – Surrounding Land Uses Map
- PLAN B – Environmentally Sensitive Land Map
- PLAN C - Environmental Map – Bushfire, Flooding & Potentially Contaminated
- PLAN D - Environmental Map – Murrumbidgee Groundwater
- PLAN E – Environmental Map – Land Capability
- PLAN F - Access Map
- PLAN G – 2012 Flood Aerial Photo



Travelling Stock Route (TSR)

Shear Outback Museum

Agricultural Land

Hay Shire Council
134 Lachlan Street
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Projection: GDA94 / MGA zone 55

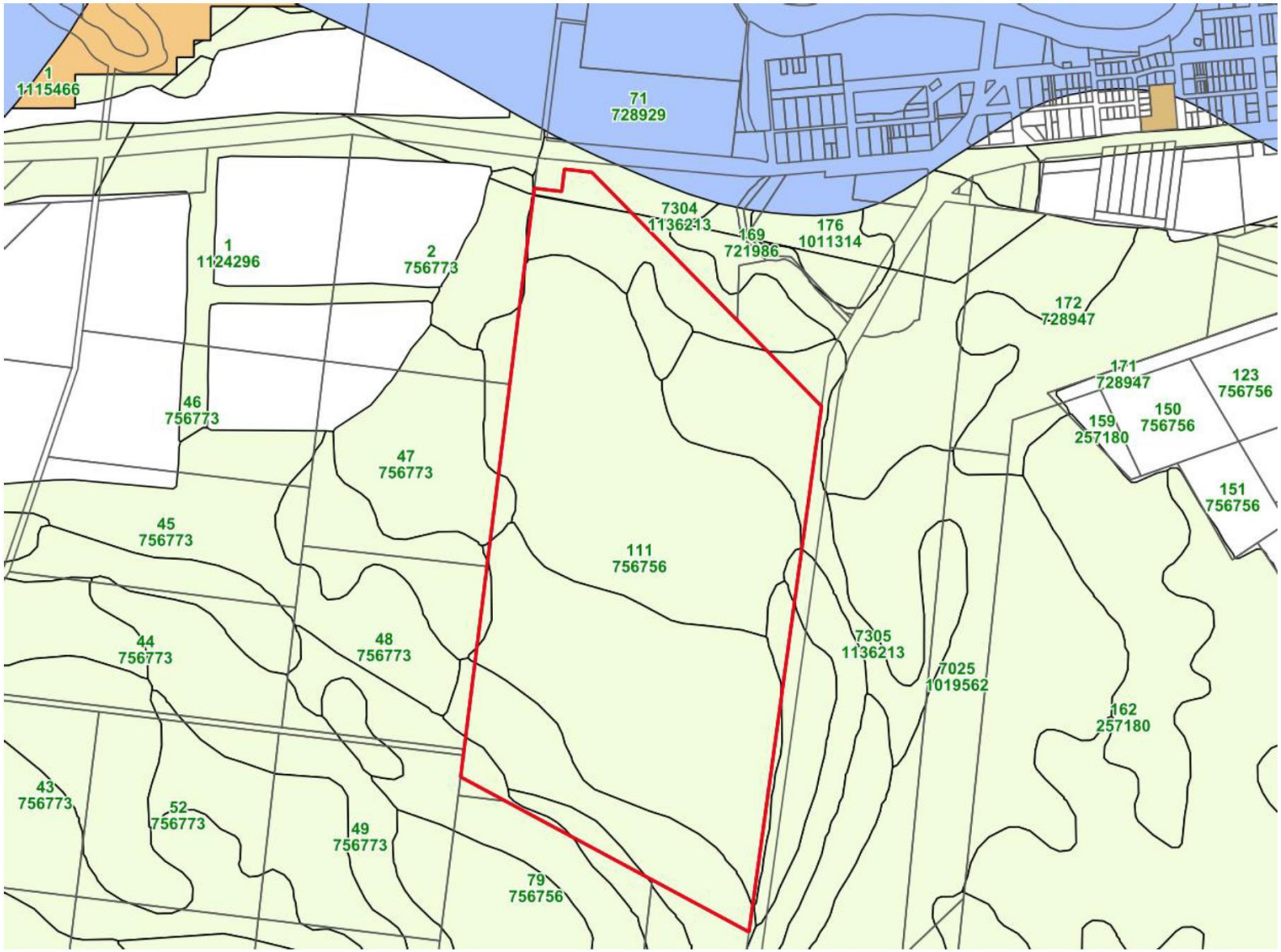
Date: 9/06/2022

Drawn By: zjg1

PLAN A

Surrounding Land Uses

Map Scale: 1:20000 at A4



- Property
- Heritage
  - Item - General
  - Item - Landscape
- Enviro Sensitive Groundwater Vuln
- Enviro Sensitive Wetlands
- Enviro Sensitive Biodiversity

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Projection: GDA94 / MGA zone 55

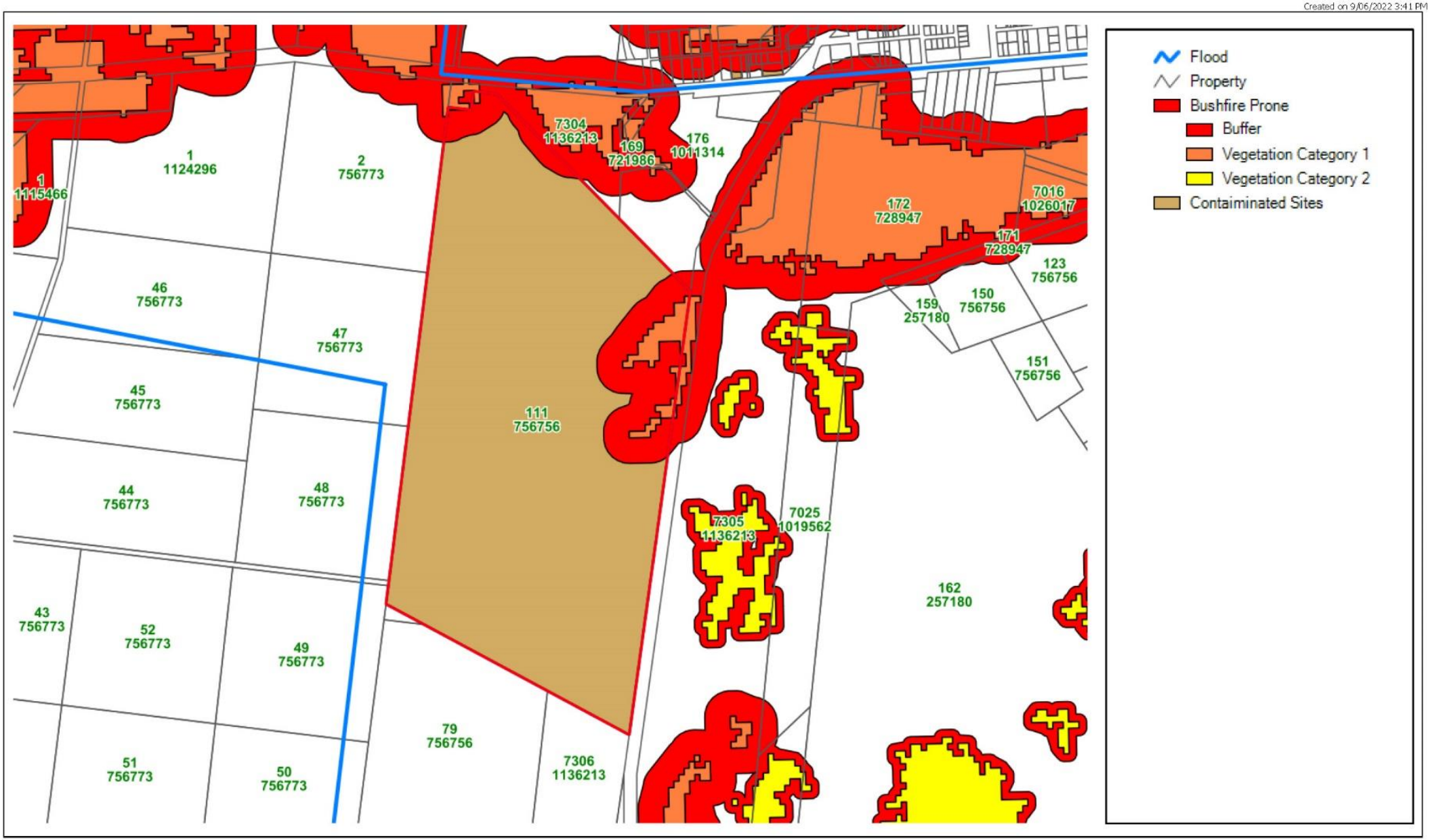
Date: 10/06/2022

Drawn By: zjg1

PLAN B

Environmentally Sensitive Layer

Map Scale: 1:20000 at A4



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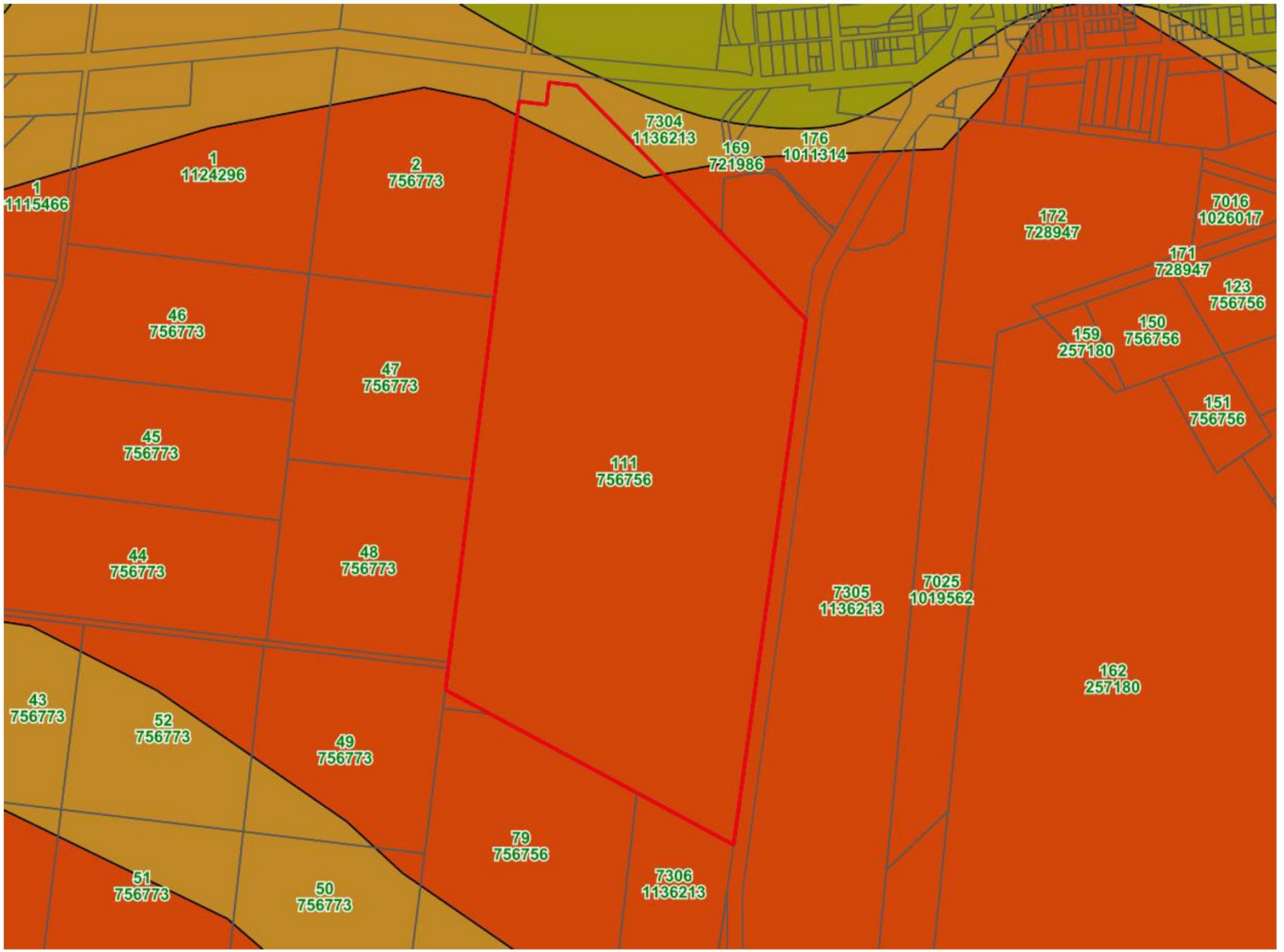
Projection:	GDA94 / MGA zone 55
Date:	9/06/2022
Drawn By:	zjg1

PLAN C

Environmental - Bushfire, Flooding, Potentially Contaminated

Map Scale: 1:20000 at A4



Boundaries
- Suburb
- LGA

NPWS Reserve

Property

Mbidgee Groundwater
- High
- Low moderate
- Moderate
- Moderately high

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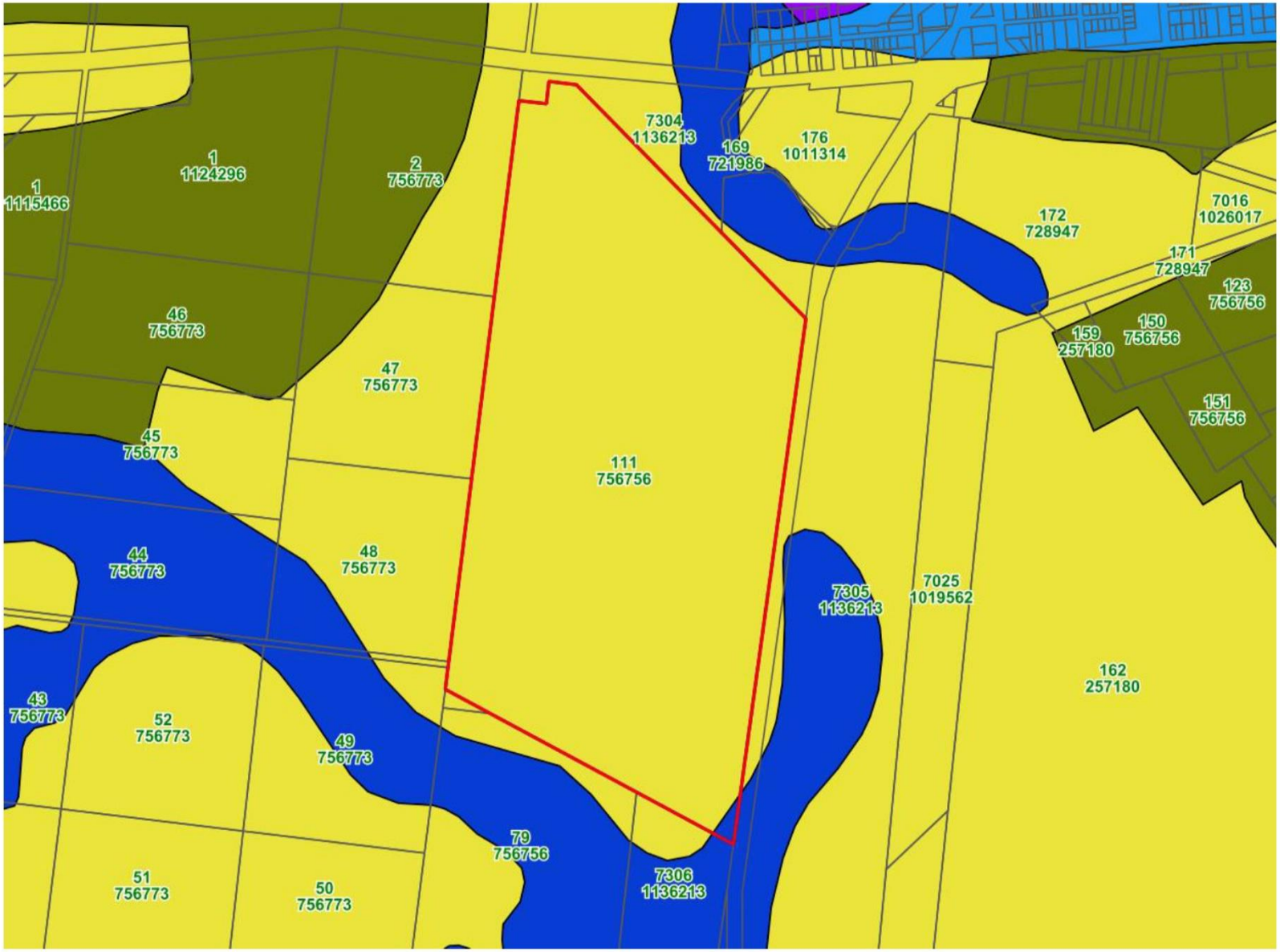
Date: 9/06/2022

Drawn By: zjg1

PLAN D

Environmental - Murrumbidgee Groundwater

Map Scale: 1:20000 at A4



Boundaries
- Suburb
- LGA

NPWS Reserve

Property

Land Capability
- FLOOD IRRIGATION
- MINING AND QUARRYING A
- NATURE RESERVE
- OTHER
- STATE FOREST
- SUITABLE FOR GRAZING W
- SUITABLE FOR GRAZING W
- URBAN AREA

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Projection: GDA94 / MGA zone 55

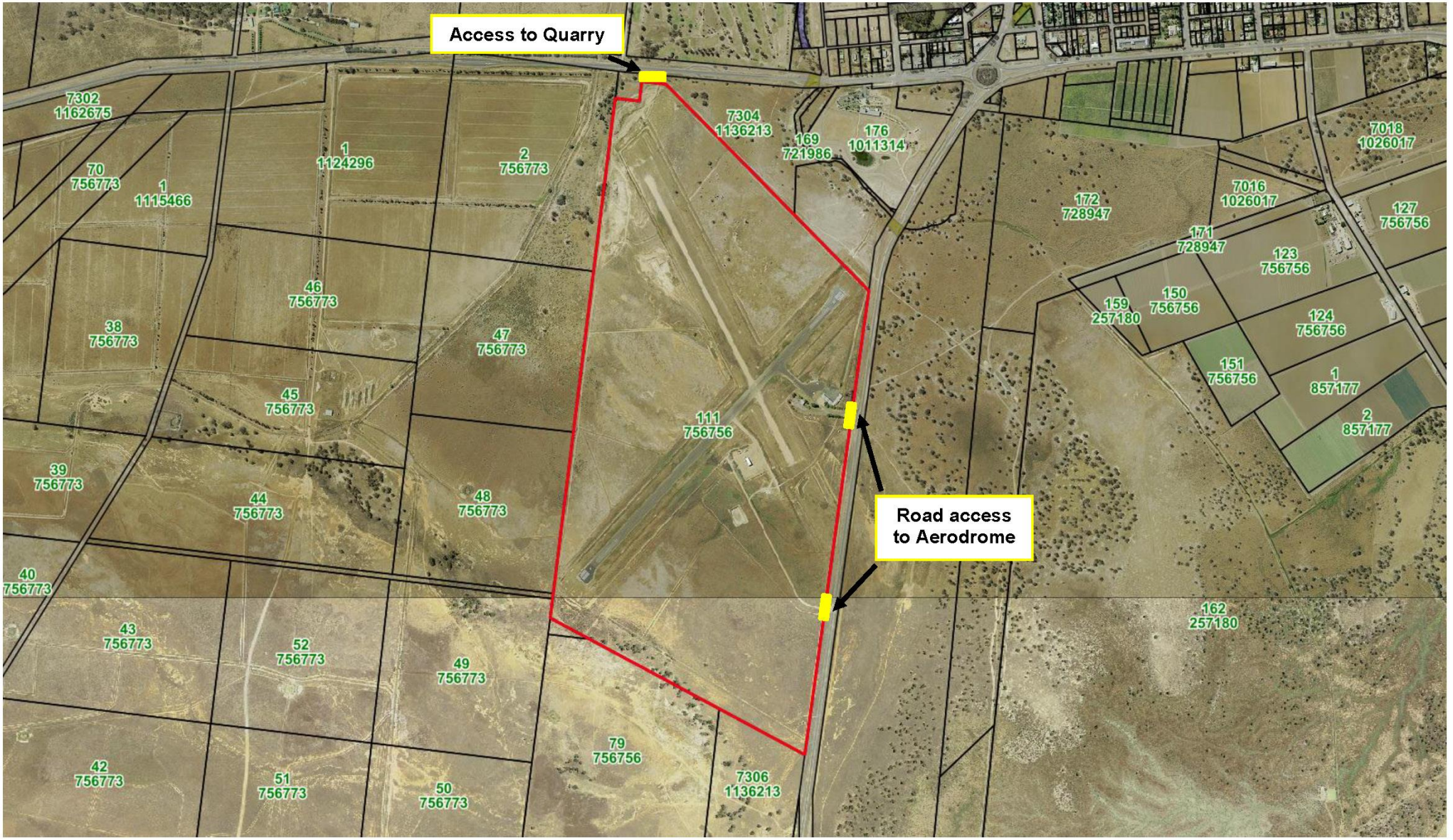
Date: 9/06/2022

Drawn By: zjg1

PLAN E

Environmental - Land Capability

Map Scale: 1:20000 at A4



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Projection:	GDA94 / MGA zone 55
Date:	10/06/2022
Drawn By:	zjg1

PLAN F

Access Map

Map Scale: 1:20000 at A4

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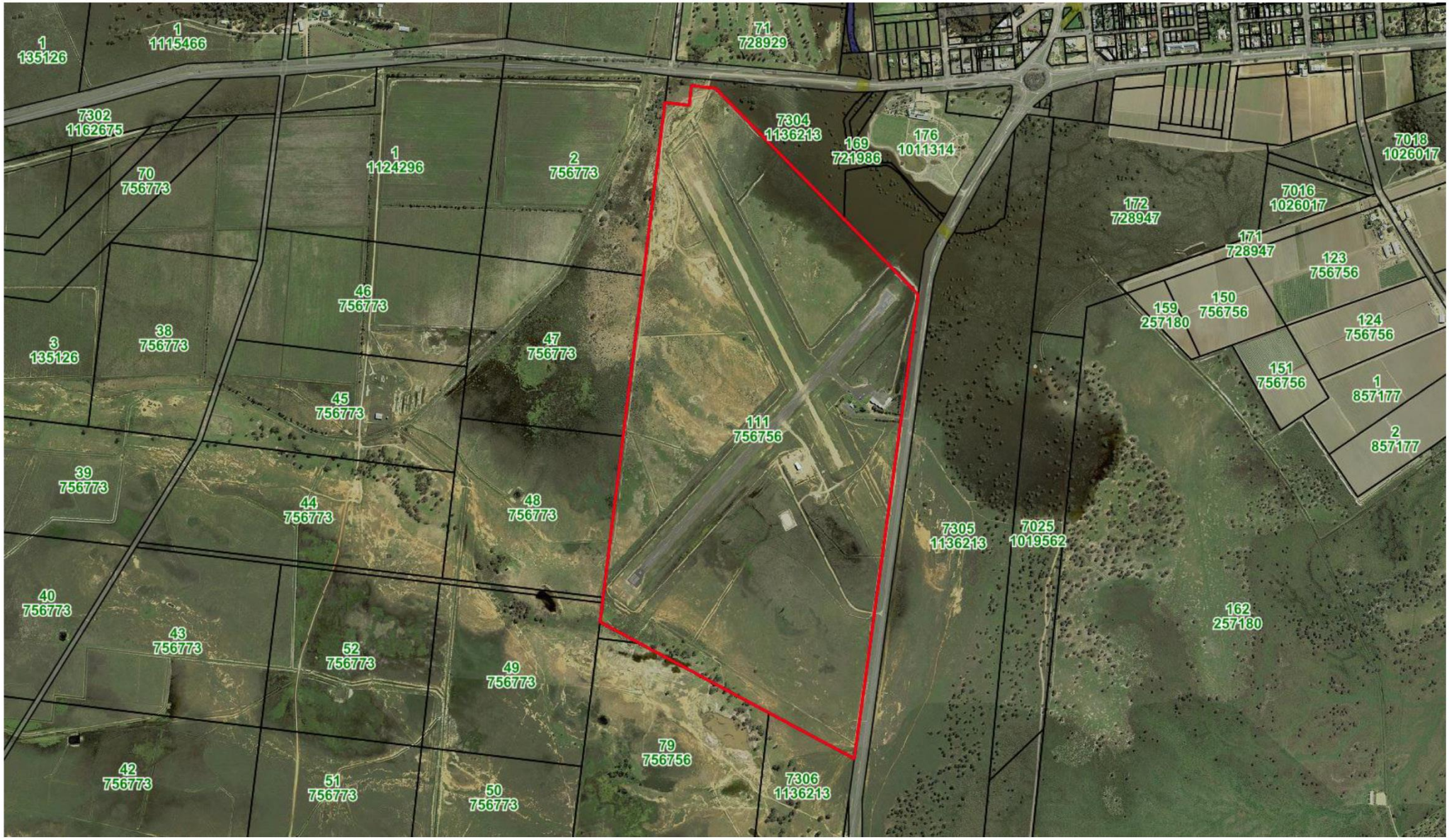

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Projection: GDA94 / MGA zone 55

Date: 11/06/2022

Drawn By: zjg1

PLAN G

2012 Flood Aerial Photo

Map Scale: 1:20000 at A4