

## **11.1. TUMUT AERODROME DRAFT MASTER PLAN - ATTACHMENTS**

Attachment Titles:

1. Tumut Aerodrome Draft Master Plan

**Attachment 1 - Tumut Aerodrome Draft Master Plan(1)**



Australia's leading airport advisers and aerodrome safeguarding specialists

Aerodrome Master Plan 2023

**TUMUT AERODROME**

*Prepared for: Snowy Valleys Council*





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## ACKNOWLEDGEMENT OF COUNTRY

We acknowledge the traditional custodians of this land and pay respects to Elders past and present.

We recognise Aboriginal people as the original custodians of the lands that comprise the Snowy Valleys Council area and pay our respects to the leaders of the traditional custodians of this land.

Together we acknowledge the contributions of Aboriginal Australians to this country we all live in and share together.

Snowy Valleys Council is committed to enhancing the knowledge and understanding of our communities about the history, heritage and cultures of Aboriginal Australians.

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## 1. PLANNING CONTEXT

### 1.1. Background

Tumut Aerodrome is a community asset owned and operated by the Snowy Valleys Council (SVC) located 4 km north of the Tumut CBD. As a certified aerodrome, SVC is obliged to maintain compliance of the Airport with the Civil Aviation Safety Authority (CASA) Manual of Standards Part 139 (MOS 139).

The Snowy Valleys Council local government area is located in the South West Slopes region of New South Wales, Australia. This area was formed in 2016 from the merger of the Tumut Shire with the neighbouring Tumbarumba Shire.

The council area comprises 8,960 square kilometres and covers the western side of the southernmost portion of the Great Dividing Range and foothills in New South Wales. Large sections of the local government area are contained within national parks.

The airport supports general aviation and is a primary asset for aerial firefighting in the region.

The location of Tumut Aerodrome within the Snowy Valleys Council LGA boundary is shown in the map at Figure 1.



Figure 1 Tumut Aerodrome within the Snowy Valleys Council LGA

**1.2. Site description**

Tumut Aerodrome is a Code 1 non precision approach certified aerodrome with a sealed runway 17/35 that is 1060 m long and 18 m wide.

The airport is located to the north of the town of Tumut in the New South Wales South West Slopes region. A location diagram is provided in Figure 2 (source: Google Earth):



Figure 2 Tumut Aerodrome in relation to Tumut township

An overview of the aerodrome site is shown in Figure 3 (source: Google Earth).

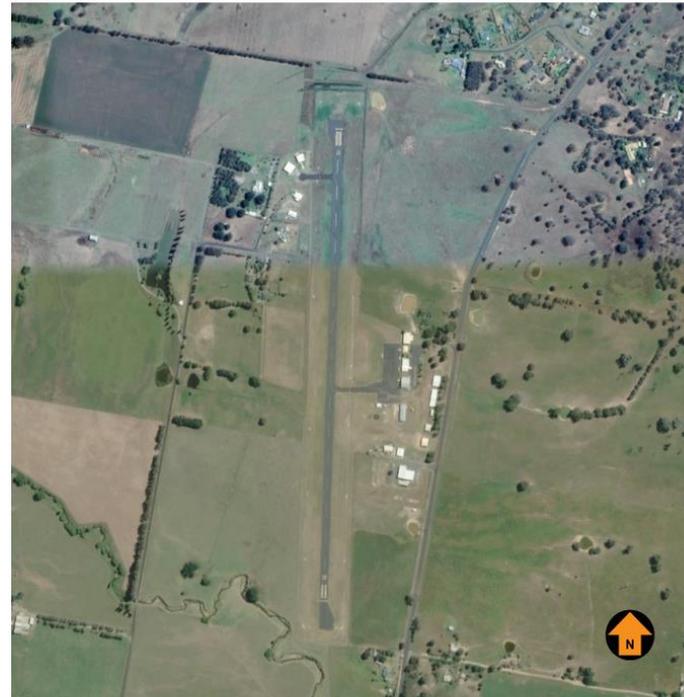


Figure 3 Tumut Aerodrome site

## AVIATION PROJECTS

### 1.3. Regional characteristics

Characteristics of the region are set out in this section.

#### Population

The Snowy Valleys Council area has a population of 14,901 people and Tumut has a population of 6,700 people (2021 Census).

The average age is 45. Population growth in 2021 was 0.24% which is below the NSW Regional average of 0.88%.

#### Economy

The Snowy Valleys Council area is predominantly rural. The main township is Tumut, with smaller townships at Adelong, Batlow and Tumbarumba, and villages at Brungle, Jingellic, Khancoban, Rosewood, Talbingo and Tooma.

The largest industries are agriculture, forestry and fishing. Rural land is used largely for agriculture, particularly beef cattle farming and timber production. Sheep grazing, fruit growing and power generation are also important industries.

### 1.4. Climate and Meteorology

Regional weather is described generally in the 2007 Royal Commission report titled 'Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impacts' as follows:

*The southeast experiences a so-called Mediterranean climate, with hot, dry summers and mild, wet winters. The winter and spring rains allow fuel growth, while the dry summers allow fire danger to build. This normal risk is exacerbated by periodic droughts that occur as a part of natural interannual climate variability.*

Responding to the bushfire season from late spring through summer is a regular activity for NSW Rescue Fire Service (RFS) contracted aircraft at Tumut Aerodrome and the provision of suitable RFS facilities is a primary consideration of this Airport Master plan.

### 1.5. Regional aviation

The closest certified airports to Tumut include the ACT capital city airport of Canberra, located approximately 90 km to the east and the NSW regional airports of Wagga Wagga, located 70 km west, and Cootamundra, located 70 km north.

Canberra Airport provides a full range of international and domestic passenger services.

Wagga Wagga airport is one of the busiest regional airports in NSW, serviced by Qantaslink and Rex providing passenger services to Brisbane, Sydney, Melbourne, Gold Coast and other regional hubs. A general aviation precinct supports heavy maintenance facilities, the Australian Airline Pilot Academy and various training, freight and charter operators as well as catering to private and recreational flying.

Cootamundra Aerodrome is a small airport catering to general aviation.

Tumut Aerodrome's location in relation to the certified regional airports of Canberra, Wagga Wagga and Cootamundra is shown in Figure 4.

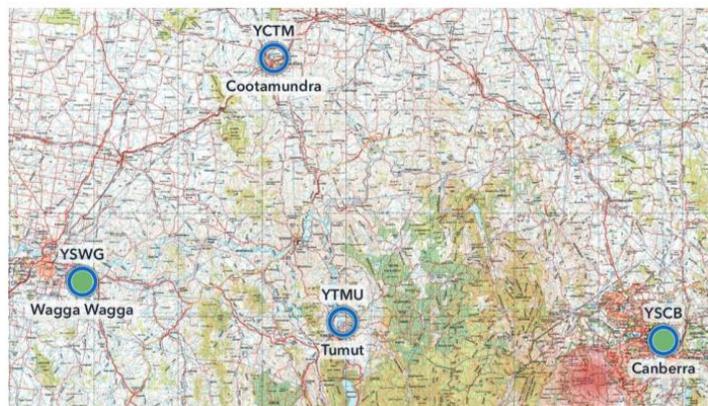


Figure 4 Tumut Aerodrome in relation to other certified regional airports

## AVIATION PROJECTS

### 1.6. Role and history

Tumut Aerodrome was constructed in the 1960s, replacing an earlier airfield known as Butler's Field on a nearby property.

Once used as a link in public transport routes, the airport is now home to a local aeroclub, and otherwise serves mostly recreational pilots.

Tumut Aerodrome has played a critical role as a key base for aerial firefighting during bushfire crisis events.

### 1.7. Current operations

Current aircraft operations primarily include:

- Aeromedical and emergency services aircraft operated by NSW Ambulance, Police and Fire and Rescue NSW
- General aviation aircraft operating for business, recreational flying and maintenance
- Recreational light sport aircraft conducting private and training flights.



Figure 5 Typical light aircraft at Tumut Aerodrome

### 1.8. Strategic intent

Snowy Valleys Council intends to ensure that the Tumut aerodrome is appropriately positioned to deliver the positive social and economic benefits associated with the region.

The key objectives for Tumut Aerodrome are:

- Maintaining the ability for aircraft to operate safely
- Facilitating the ability for the airport to grow and expand in response to demands
- Promoting the role of the airport and its significance as a community and commercial asset
- Safeguarding the airport's long-term plans and continued aviation operations
- Ensuring compliance with relevant regulations
- Protecting operational airspace through off airport planning provisions

### 1.9. Purpose of master planning study

The purpose of the Master Plan is to act as the basis for the timely and coordinated development of aviation facilities and infrastructure, aviation, and non-aviation land use, and for appropriate management of the airport environment.

The master plan is expected to guide the overall development of the airport over the next 20-years, identify key issues facing the airport and provide concepts or options for addressing these issues.


**AVIATION PROJECTS**
**1.10. Planning horizons**

The Master Plan nominally considers a planning horizon of 20 years, comprised of initial, interim, advanced and ultimate development.

The time frame for initial development is 1 to 5 years, for interim development 5 to 10 years, for advanced development 10 to 15 years and for ultimate development from 15 to 20 years.

**1.11. Aerodrome Committee**

Snowy Valleys Council conducts the Tumut Aerodrome Committee with the following stated purpose:

*The Aerodrome Committee is an advisory committee of Council responsive to community needs. The effectiveness of the committee depends on community support.*

*The focus of the Committee shall be on long-term strategic planning, with the outcome being recommendations for inclusion in Council's Delivery Program. Discussions should consider funding priorities, service levels and planning for a sustainable future.*

*Furthermore, the Aerodrome Committee shall provide comment on aerodrome matters, as presented in Aerodrome Committee reports.*

The Aerodrome Committee has been engaged as part of the airport master plan stakeholder consultation process

**1.12. Snowy Valleys Council –Community Strategic Plan 2028**

The Community Strategic Plan 2028 is described as the strategic foundation to create strong vibrant communities across the Snowy Valleys Council area.

Infrastructure development is a key strategic theme:

*Our communities desire a high quality of infrastructure, particularly roads and transport infrastructure to enable connectivity and support local industry. Investment and maintenance of local infrastructure such as community amenities and facilities is also essential to achieve the community vision set out in this Plan.*

**1.13. Snowy Valleys Council 2018 – 2028 Strategic Asset Management Plan**

In the Snowy Valleys Council 2018-2028 Strategic Asset Management Plan, aerodromes are classified as Transport class assets. The following relevant asset management objective is defined:

*5. Maintenance and operations plans will be developed to ensure assets are maintained to a level of service that meets the community's needs, within the resources available and priority of service against other service areas*

**1.14. NSW State Environmental Planning Policy (Transport and Infrastructure) 2021**

NSW state development controls allow development for the purpose of an airport by or on behalf of a public authority without consent on specific land use zones.

Development permitted without consent for the purpose of an air transport facility includes construction works and fencing, drainage or vegetation management in connection with an air transport facility.

Development permitted with consent within the boundaries of an existing air transport facility development includes the following:

- (a) passenger transport facilities,
- (b) facilities for the receipt, forwarding or storage of freight,
- (c) hangars for aircraft storage or maintenance,
- (d) commercial premises,



- (e) industries,
- (f) recreation areas, recreation facilities (indoor) or recreation facilities (outdoor),
- (g) residential accommodation,
- (h) tourist and visitor accommodation.

### 1.15. Tumut Local Environmental Plan 2012

In the Tumut Local Environmental Plan 2012, the following provisions are provided for protection of airspace operations, and permitted use of land within the airport development area:

#### 6.9 Airspace operations

(1) The objectives of this clause are as follows—

(a) to provide for the effective and ongoing operation of the Tumut Airport by ensuring that its 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 carried out.

(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 Tumut Airport.

**Obstacle Limitation Surface Map** means the Obstacle Limitation Surface Map for Tumut Airport prepared by the relevant Commonwealth body.

**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 Tumut Airport.

#### 6.10 Development in areas subject to aircraft noise

(1) The objectives of this clause are as follows—

(a) to prevent certain noise sensitive developments from being located near the Tumut Airport and its flight paths,

(b) to assist in minimising the impact of aircraft noise from that airport and its flight paths by requiring appropriate noise attenuation measures in noise sensitive buildings,

(c) to ensure that land use and development in the vicinity of that airport do not hinder or have any other adverse impacts on the ongoing, safe and efficient operation of that airport.



(2) This clause applies to development that—

(a) is on land that—

(i) is near the Tumut Airport, and

(ii) is in an ANEF contour of 20 or greater, and

(b) the consent authority considers is likely to be adversely affected by aircraft noise.

(3) Before determining a development application for development to which this clause applies, the consent authority—

(a) must consider whether the development will result in an increase in the number of dwellings or people affected by aircraft noise, and

(b) must consider the location of the development in relation to the criteria set out in Table 2.1 (Building Site Acceptability Based on ANEF Zones) in AS 2021–2000, and

(c) must be satisfied the development will meet the indoor design sound levels shown in Table 3.3 (Indoor Design Sound Levels for Determination of Aircraft Noise Reduction) in AS 2021–2000.

(4) In this clause—

**ANEF contour** means a noise exposure contour shown as an ANEF contour on the Noise Exposure Forecast Contour Map for the Tumut Airport prepared by the Department of the Commonwealth responsible for airports.

**AS 2021–2000** means AS 2021–2000, Acoustics—Aircraft noise intrusion—Building siting and construction.

**Schedule 1 Additional permitted uses**

**1 Use of certain land in the Airport Development Area**

(1) This clause applies to land identified as “Airport Development Area” on the Airport Development Area Map.

(2) Development for the purposes of commercial premises, rural industries and storage premises is permitted with development consent if the development is ancillary to Tumut Airport.

The airport development Area Map is shown in Figure 6. Note the aerodrome land is zoned SP2 and surrounding land is zoned RU1.

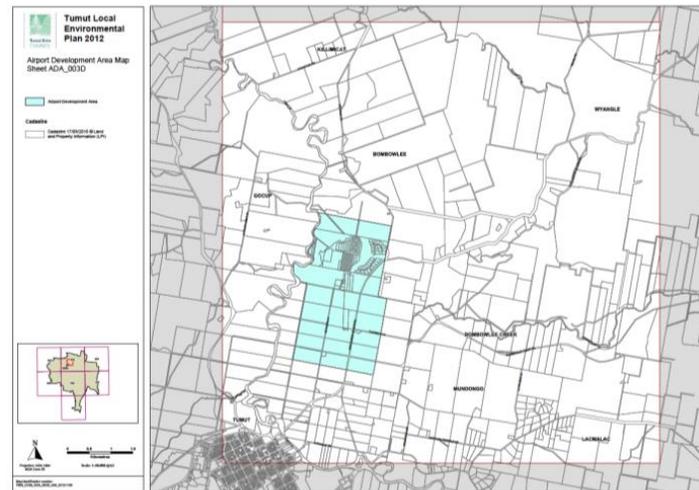


Figure 6 Airport Development Area Map



#### 1.16. Scope and Limitations

The scope of work for the master planning study involved the following requirements:

- Assessment of the airport's current facilities, land use and operations including both aviation and non-aviation usage
- Analysis of the trends affecting the present and future use of the aerodrome with consideration to the social, demographic, and economic opportunities
- Identify opportunities to increase revenue and improve the financial viability of the aerodrome
- Assessment of the current regulatory requirements and their implications on future operations, land use and development
- Establish a strategic vision and objectives for the airport through consultation with key stakeholders
- Establish appropriate aerodrome safeguarding controls to prevent the potential encroachment of incompatible activities and development in the vicinity of the airport.
- Provide recommendations and plans for scheduled future infrastructure requirements (airside and landside) based on expected future growth.

#### 1.17. Methodology

The master planning study was conducted generally in accordance with the Australian Airports Association Airport Practice Note 4 - Regional Airport Master Planning Guideline and modified according to the Scope of Work.

The following key activities were conducted during the course of the study:

- Inception meeting and site orientation
- Stakeholder consultation activities including site visits
- Consolidation of stakeholder feedback
- Preparation of concept plans for client endorsement
- Preparation of draft Master Plan including drawings and plans
- Final stakeholder consultation including review of draft Master Plan
- Preparation of final Master Plan for client acceptance.



## 2. STAKEHOLDER CONSULTATION

A stakeholder consultation plan was designed to maximise the opportunity for the local community and aviation stakeholders to provide input to the development of the Master Plan.

### 2.1. Stakeholder engagement program

The following stakeholders were engaged either through face to face meeting, telephone interview or email correspondence:

- Snowy Valleys Council
- Tumut Aerodrome Committee
- NSW Rural Fire Service (RFS)
- NSW Forestry
- Tumut Aero Club
- Blue Sky Tumut Aviation Estate

### 2.2. Results of stakeholder consultation

Key stakeholder requirements identified included:

- Runway length and compliance approvals to support unrestricted operations of design aircraft used for aerial firefighting and air ambulance services. (Air Tractor AT-802, Beechcraft King Air 350i, Pilatus PC24)
- Improved taxiway layout to reduce congestion during high traffic events and improve operational efficiency and safety
- Improved night time all weather capability (AGL improvements, IWDI, PAPI installation to support straight in approach minima)

- Planned development of GA precinct to facilitate access, improve security and services and support future business
- Appropriate land use allocation to allow for efficient future expansion of airside and landside services
- Improved provision of essential services (potable water, sewage, power capacity, fast data communications, drainage etc.)
- Improved security and separation of airside and landside
- Identification of required land acquisition to ensure intended development can be achieved.

Specific requirements for NSW RFS and Forestry Co included:

- Requirement for single collocated landside/airside precinct
- Up to 50 staff on site during normal ops and up to 100+ during emergency periods
- Requirement for large landside infrastructure (Offices and Fire Control Centre, Stores, large appliance parking and maintenance for up to 25 fire vehicles, dedicated fire training ground, brigade accommodation etc)
- Requirement for airside hangar and parking for a permanent helicopter operation and parking /operational loading areas for up to 5 fixed wing and 20 rotary wing aircraft during peak emergency operations.

### 2.3. Tumut Aerodrome Master Plan Public Exhibition

The Airport Master Plan 2 will be publicly exhibited

Outcomes from the public exhibition period will be summarised here.



### 3. SWOT ANALYSIS

A Strengths Weaknesses Opportunities and Threats (SWOT) analysis has been used to identify significant areas for consideration in relation to the Tumut Aerodrome and its support of SVC's strategic objectives, as detailed in Table 1 and Table 2.

Table 1 Tumut Aerodrome SWOT analysis – Strengths and Weaknesses

<i>Strengths</i>	<i>Weaknesses</i>
<ul style="list-style-type: none"> <li>• Available land for development at northeast corner of airport</li> <li>• Established Emergency Service base (NSW RFS, RFDS, Police)</li> <li>• Established GA training, recreational, fly in business, small air park etc</li> <li>• Demand for medical transfer services</li> <li>• Attractive region for potential tourism growth</li> <li>• Availability of Avgas &amp; Jet A1</li> <li>• Viable option for runway extension to north (Feasibility study)</li> <li>• Viable options for taxiway and apron expansion (Feasibility study)</li> <li>• Development Funding available through RFS/ Forestry and Government</li> <li>• No Airspace restrictions</li> <li>• Established RNAV Approach (circling minima)</li> </ul>	<ul style="list-style-type: none"> <li>• Unplanned development of current hangar and fuel supply facilities limits layout development</li> <li>• No separated landside access for fuel delivery</li> <li>• Modest passenger facilities (terminal)</li> <li>• No established or planned RPT services</li> <li>• Lack of local infrastructure to support tourism growth (hotels, facilities etc)</li> <li>• Limited runway length</li> <li>• Lack of taxiway and apron infrastructure</li> <li>• Lack of services (no potable water, no sewerage, limited power supply capacity, no high speed comms etc)</li> <li>• Lack of developed access, roads parking etc.</li> <li>• Drainage issues need to be addressed to ensure flood risk is controlled</li> <li>• Non-compliant strip width, restricted strip width due to stock fencing</li> <li>• OLS infringements</li> <li>• Lack of straight in approach minima</li> <li>• Land acquisition required for northern development</li> <li>• Future operations limited due to non-compliant strip width</li> <li>• Unrated pavement limit to 5700kg MTOW or requires dispensation</li> <li>• Inadequate AGL for night operations</li> <li>• Terrain infringes OLS, limits approach options</li> </ul>

 **AVIATION PROJECTS**

Table 2 Tumut Aerodrome SWOT analysis – Opportunities and Threats

<i>Opportunities</i>	<i>Threats</i>
<ul style="list-style-type: none"> <li>• Runway extension and widening to better accommodate design aircraft requirements</li> <li>• Taxiway additions to improve runway access operational efficiency</li> <li>• Apron expansion to accommodate new RFS facilities, medical services and improve opportunities for GA development</li> <li>• Protect available land for future development opportunities</li> <li>• Future support for tourism by providing facilities to support charter and business services</li> <li>• Airport can support regional development</li> <li>• Facilities to support straight in approach minima, new IWDI, PAPI etc</li> </ul>	<ul style="list-style-type: none"> <li>• Slow regional growth due to lack of infrastructure development, road and freight access etc.</li> <li>• CASA may not support Code 2 with grandfathered compliance requirements for strip width and OLS (TBD)</li> <li>• Poor planning and development of remaining available land could limit future airport development. (e.g. giving away available land for speculative air park use, precludes future development of passenger facilities and expansion of GA services which is more likely to be the demand.)</li> <li>• Poor placement of new RFS facilities could limit future development opportunities</li> </ul>





## 4. EXISTING AERODROME FACILITIES

### 4.1. Aeronautical infrastructure

Tumut Aerodrome is equipped with the aeronautical infrastructure described in this section.

Runway 17/35: 1060 m x 18 m (90 m runway strip).  
Pavement 5700/580 (84PSI) Unrated

Declared distances are provided in Table 3 (source: Airservices Australia, 01 December 2022).

Table 3 Runway declared distances

Runway	TORA	TODA	ASDA	LDA
17	1060	1120 (5.29%)	1060	1060
35	1060	1120 (2.95%)	1060	1060

Note the acronyms used are defined as: take-off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA) and landing distance available (LDA).

Figure 7 shows Tumut runway 17/35 (source: Airservices Australia, 01 December 2022).

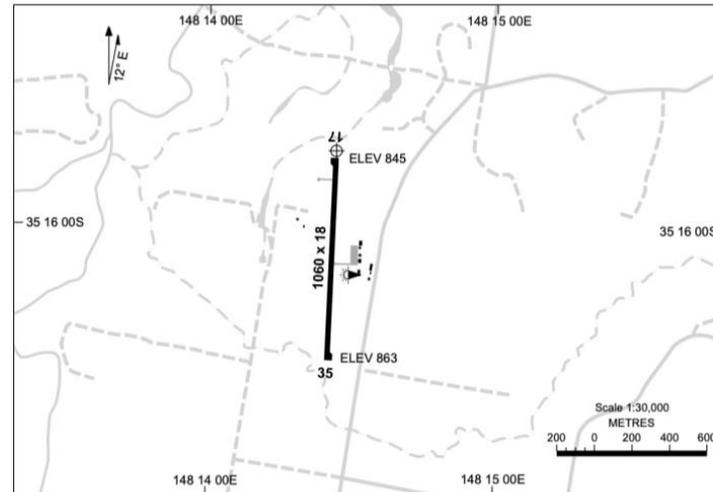


Figure 7 Tumut runway 17/35

 **AVIATION PROJECTS**

An image of runway 35, looking north from the take-off position, is provided at Figure 8.



Figure 8 Runway 35

An image of runway 17, looking south from the take-off position, is provided at Figure 9.



Figure 9 Runway 17

A sealed taxiway leads to a parking apron servicing a small passenger terminal and hangar facilities.

An additional sealed taxiway, in the location indicated below (not shown on current satellite imagery) has been constructed to service rescue fire service loading operations.

Unsealed access is provided to additional hangars located behind the main apron.

An aerial view of the parking apron and taxiway complex is provided at Figure 10 (source: Google Earth).



Figure 10 Apron and taxiways - aerial view

**AVIATION PROJECTS**

**4.2. Support facilities**

The airport has basic support facilities and is not equipped with any ground based navigational facilities. The airport is served by satellite-based navigation procedures.

The airport is located outside controlled airspace and has a common traffic advisory frequency (CTAF).

There is no air traffic control tower service.

There is no aerodrome rescue and firefighting service (ARFFS).

Onsite fuel (both Jet A1 and Avgas) is self-service only. Jet A1 is via under and over wing.

Access to the fuel facility requires airside access.

An image of the refuelling facility is provided at Figure 11.



Figure 11 Refuelling facilities

A perimeter fence encloses the airside area of Tumut Aerodrome, and the boundary is clearly marked with signage. Airside access for Tumut Aerodrome is via gates surrounding the airside and landside boundary.

**4.3. Landside development**

Landside facilities include a passenger terminal with carpark.

**4.4. Aerodrome lighting**

The aeronautical ground lighting facilities are satisfactory for current emergency services operations, but need to be upgraded to comply with current standards for all aircraft operations.

**4.5. Navigation and approach aids**

Current navigational facilities (GPS only) are satisfactory for current needs. The circling minima for the instrument approach to runway 35 could be improved to a lower, straight-in minima if the aerodrome is provided with a lit wind direction indicator at the threshold of runway 35.

**4.6. Weather information service**

Weather forecasts are not provided.

**4.7. Aerodrome rescue and firefighting services**

There is no expectation of a need for ARFFS within the master planning period.

The logo for AVIATION PROJECTS features a stylized orange and grey graphic to the left of the text 'AVIATION PROJECTS' in a bold, sans-serif font.**4.8. Ground transport**

## External network:

Access to the main airport precinct is via Wee Jasper Road. The external road network is considered adequate for the master planning horizon.

## Internal network:

The internal road network services the existing hangars. Additional internal roads will need to be constructed to service proposed RFS facilities and second general aviation precincts.

## Airside access:

Airside access is considered adequate.

## Public transportation:

There are no dedicated public transportation or rental car services provided at Tumut Aerodrome and these are not currently required as there are no scheduled passenger services.

## Car parking:

There is one main car park area adjacent to the existing passenger terminal building with car parking spaces available at no charge. Roadside parking space is available adjacent to hangars. Additional car parking will need to be provided with proposed RFS facilities and second general aviation precincts.

**4.9. Utilities and civil infrastructure**

## Water:

Town water is not currently provided to the airport site.

## Electricity:

The airport is connected to the main power grid.

## Sewer:

The airport is connected to an On-site Wastewater Management System.

## Communication:

Telephone services are provided to the airport site. Mobile phone coverage is marginal.

## Stormwater:

Stormwater run-off is managed onsite.

## Perimeter fencing:

The perimeter fence is made up of a landside/ airside boundary fence around the airport boundary.

**4.10. Grandfathered facilities**

CASA allows certain airport facilities that have been previously constructed in compliance with regulatory standards that have since been amended, to be maintained in accordance with the requirements of the previous standard, even though they are not compliant with the new standard. These facilities are referred to as being 'grandfathered facilities' and are noted in the aerodrome manual.



The Tumut Aerodrome facilities shown in Table 4 rely on grandfathered provisions.

Table 4 Grandfathered Facilities

<i>Facility (grandfathered)</i>	<i>Description of non-compliance</i>
<b>Runway Strip Width</b>	90 m overall width does not comply with Part 139 MOS 2019 of 140 m (overall) for Code 1 or 2 non-precision approach runways
<b>Approach OLS Surface Inner Edge</b>	Current width 90 m in accordance with previous standard, does not meet the Part 139 MOS 2019 standard of 140 m for Code 1 or 2 non-precision approach runways
<b>Runway Lighting System</b>	The runway lighting system had previous CASA approval to be used for emergency purposes only and was installed in accordance with an earlier standard (RPA)
<b>Obstacle Lights</b>	The obstacle lights were installed in accordance with an earlier standard and are grandfathered under the provisions of the Manual of Standards 139
<b>Runway 17 RESA</b>	RESA is 90 m when measured from the end of the runway as permitted under applicable standard prior to Manual of Standards 139 implementation
<b>Runway 35 RESA</b>	RESA is 90 m when measured from the end of the runway as permitted under applicable standard prior to Manual of Standards 139 implementation



## 5. DEMAND

### 5.1. Traffic Model

There are no scheduled air transport passenger services at Tumut Aerodrome and these services are not expected to be provided within the 20 year master planning period.

The disposition of air traffic at Tumut Aerodrome consists primarily of:

- Aeromedical turboprop aircraft
- NSW Rescue Fire Services and other emergency aircraft
- General aviation commercial and private piston single and twin engine aircraft
- Recreational Aviation Australia Light Sport Aircraft
- Commercial and private helicopters.



## 6. DEVELOPMENT OPTIONS

A study was conducted to consider, at a high level, what options might exist for improving business activity at the airport and contributing to increased airport revenue and viability as a stand-alone business.

### 6.1. Passenger transport services

Scheduled passenger services are not currently provided by any airline at Tumut Aerodrome and these are not contemplated within the master plan 20 year horizon.

### 6.2. Airpark development

Airpark developments where airport land is subdivided and sold for residential development of houses with hangars and direct runway access catering to people with aviation interests is a popular development option considered at many small airports.

The Blue Sky Tumut Aviation Estate is an established air park located adjacent to the north-western airport boundary.

Provision of additional air park facilities on existing airport land has previously been considered.

It is not proposed to provide for additional airpark-type development within the expanded aerodrome property for the following reasons:

- It is preferable not to sub-divide and sell airport land
- Airpark residents are likely to be adversely affected by aircraft noise generated at the aerodrome
- The aerodrome is an essential element of the community's resilience infrastructure and allocating land around the runway to residential purposes would prevent potentially higher value developments in the future.

### 6.3. General aviation precinct

General Aviation and Recreational Aviation Australia light aircraft movements account for the majority of the current traffic movements at Tumut Aerodrome. The airport is a popular location for private general aviation aircraft owners looking for somewhere to park and operate their aircraft and for recreational flying activities.

A limited number of leased hangar sites are available in the existing terminal precinct mostly with unsealed access. There is limited room for expansion in the existing layout.

Airport revenue through parking, hangar lease and landing fees for general aviation movements is a primary income source for the majority of small to medium sized regional airports. The provision of suitable facilities and favourable financial incentives to attract private owners and commercial charter, flying training and recreational businesses has the potential to drive a significant amount of growth at Tumut Aerodrome.

The master plan addresses these requirements through the planning of sealed access to existing hangar sites and a second general aviation precinct development dependent on future demand.

### 6.4. Emergency services

Tumut Aerodrome is a strategic location for NSW Rural Fire Service (NSW RFS) aerial firefighting deployment and serves as a base of operations for rotary and fixed wing aerial firefighting aircraft during significant bushfire events in the NSW Snowy Valley and surrounding regions.

RFS currently maintains a loading bay facility with water and media tanks with dedicated sealed runway access for fixed wing firefighting operations. Limited space is available in close proximity for parking of firefighting rotary wing aircraft.

There is an immediate requirement for an improved RFS airside facility, with landside access and better storage facilities, and for the development of a permanent RFS facility and a dedicated Fire Control Centre (FCC) to be shared with Forestry Co, to be at the airport. The master plan addresses these requirements through the planning of a permanent RFS/Forestry landside and airside facility and FCC.



## 7. PLANNING CONSIDERATIONS

### 7.1. Civil Aviation Safety Regulations

Current and future operations at Tumut Aerodrome are regulated according to the requirements set out in:

- Civil Aviation Safety Regulation 1998 (CASR) Part 139—Aerodromes describes the requirements for aerodromes used in air transport operations.
- Manual of Standards Part 139—Aerodromes (MOS 139) sets out the standards and operating procedures for certified aerodromes used in air transport operations. The current MOS 139 came into effect on 13 August 2020.

### 7.2. Aerodrome Reference Code

The standards which an aerodrome facility must meet to be suitable for use by aeroplanes within a particular range of performance and size are determined by the aerodrome reference code (ARC) chosen by the aerodrome operator.

The ARC is made up of 3 elements:

- a. a code number determined by the aeroplane reference field length (code number or runway code number); and
- b. a code letter determined by the aeroplane wingspan (code letter); and
- c. the outer main gear wheel span (OMGWS).

As the main runway 17/35 at Tumut Aerodrome is nominated as a code 1 and the relevant wingspan of aircraft using the airport is a code letter B, the airport is considered a code 1B with non-precision instrument approaches and has a reference OMGWS of 4.5 m up to but not including 6 m.

It is proposed to upgrade the ARC to code 2.

### 7.3. Viable development

After extensive consultation the following areas of business development were identified as being the most viable for Tumut Aerodrome:

- Development of facilities to support **Emergency Services** including:
  - RFS
  - Aeromedical Services
- Development of facilities to cater to **General Aviation** interests including:
  - Traditional GA charter and small scale flying training organisations
  - Recreational GA/RAA owners.

### 7.4. Facility requirements

To cater to identified viable development the following specific facility requirements were identified:

- New RFS/forestry facility with dedicated airside base of operations
- A 300 m runway extension
- Additional sealed parking areas
- Sealed development of the existing general aviation precinct
- Provision for a second general aviation precinct for future demand
- Parallel taxiways for improved runway access.



## 8. AERODROME SAFEGUARDING

In addition to state requirements, the Commonwealth Government has an interest in better planning and integrated development on and around airports and to lessen the adverse effects of aviation activity on the environment and communities. While not a planning authority, it provides guidance on broader issues such as noise around airports that can be used by statutory authorities to achieve the stated objectives. The National Airports Safeguarding Advisory Group (NASAG) has produced the National Airport Safeguarding Framework to advance this agenda. The Framework should also be taken into consideration when designing development on and in the vicinity of the airport.

### 8.1. Aircraft noise

Aircraft noise can affect the allocation of appropriate uses on and external to the airport site.

Australian Noise Exposure Forecast (ANEF) contours provide a scientific measure of the aircraft noise exposure levels around airports taking into account the frequency, intensity, time and duration of aircraft operations. Standard methodology for evaluating the noise climate around airports is defined in AS 2021-2015 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction, which recognises the ANEF contour charts as the primary method for long-term noise impact assessment.

Further information can be found in NASF Guideline A: Measures for Managing Impacts of Aircraft Noise.

### 8.2. Building generated windshear and turbulence

Building generated windshear / turbulence becomes safety critical when a significant obstacle, such as a building, is located in the path of a crosswind to an operational runway. The wind flow will be diverted around and over the buildings causing the crosswind speed to vary along the runway.



Guideline B sets out an assessment methodology to follow in assessing this risk.

Further information can be found in NASF Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports.

### 8.3. Wildlife hazard buffer zone

All wildlife on or around an airport should be regarded as a potential hazard to aircraft safety. Most wildlife strikes occur on and in the vicinity of airports, where aircraft fly at lower elevations. Flying vertebrates (e.g., birds or bats) mainly use airspace within 300 metres of the ground so are likely to conflict with aircraft when they are at their most vulnerable, i.e., immediately after take-off and during landing approaches or other low flying manoeuvres. Development should seek to avoid creating wildlife attracting land uses both on and within the vicinity of the airport.

Further information can be found in NASF Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports.

### 8.4. Lighting restriction zone

Manual of Standards Part 139 - Aerodromes establishes a restriction to lighting within the vicinity of an airport which, by reason of its intensity, configuration or colour, might endanger the safety of an aircraft. The vicinity of the airport can be taken to be within a 6km radius of the airport.

Further information can be found in NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports.



### 8.5. Operational airspace

#### Obstacle limitation surfaces

An airport's obstacle limitation surfaces (OLS) define the operational airspace that should be kept free of obstacles for aircraft operations being conducted under the visual flight rules. Both current and future (ultimate) OLS should be considered in the design of developments on and within the vicinity of the airport.

Manual of Standards Part 139 Chapter 7 provides relevant parameters for the design of the OLS.

#### PANS-OPS surfaces

PANS-OPS surfaces define the operational airspace a pilot is required to use when flying an aircraft under the instrument flight rules—that is, when relying on instruments for navigation. Development should seek to avoid any permanent encroachments into current and future PANS-OPS airspace.

Detailed information about the PANS-OPS surfaces is provided by Airservices Australia in documentation held by the Airport Manager.

Further information can be found in NASF Guideline F: Managing the Risk of Intrusions into the Protected Airspace of Airports.

### 8.6. Building restricted areas for aviation facilities

The Building Restricted Area (BRA) is defined as a volume where buildings and other objects have the potential to cause unacceptable interference to the signal-in-space transmitted by the radio navigation facility. All radio navigation facilities have a BRA defined which may extend to a significant distance from the facility. The purpose of the Building Restricted Area is not intended to prohibit development but rather to trigger an assessment of a proposed building or development for its impact on the radio navigation facility. The BRA is primarily intended to be used by Aerodrome Operators and Local Planning Authorities but is also required to be used by the systems engineer when selecting a new site for a radio navigation facility. All development applications near a radio navigation facility shall be assessed to determine if the facility BRA is infringed. If

there is no infringement the assessment process may be terminated, and the application approved.

Further information can be found in NASF Guideline G: Protecting Aviation Facilities – Communications, Navigation and Surveillance (CNS).

### 8.7. Public safety areas

NASAG has drafted Guideline I *Managing the risk in public safety areas at the ends of runways*, to mitigate the risk to people on the ground near airports by informing a consistent approach to land use at the end of Australian airport runways. Public safety areas (PSAs) seek to limit land uses that would increase the number of people in the area or result in the storage of hazardous materials in the zone.

The Guideline is intended to assist land-use planners at all levels to better consider public safety when assessing development proposals and rezoning requests and when developing strategic land use plans.

The premise of the public safety area (PSA) is to characterise the area within which a specified statistical level of risk to human life may be exceeded.

The Guideline notes that there is no single agreed tolerable level of risk defined in Australia or internationally and provides several options for the implementation of a PSA at the end of an airport runway, including the Queensland model, US DoD model and the UK public safety zone (NATS) model.

The Guideline goes on to suggest "The reasons for adopting a particular approach should be clearly justified and articulated to explain why a particular model is best suited to an airport's circumstances."

The first option referenced in the Guideline is the UK Public Safety Zone Aviation Model. This model is based on a relatively sophisticated methodology, developed by the Research and Development Directorate of NATS (formerly National Air Traffic Services Limited), that determines the individual risk profile of an airport according to:

- the statistical expectation that an aircraft crash occurs in the vicinity of the airport;

- the probability, given a crash has occurred, that it affects a particular location;
- the size of the area likely to be affected as a result of a crash; and
- the probability of fatality for people on the ground within that area.

The UK (NATS) Public Safety Zone Model is applied using a constrained cost-benefit analysis to determine specific land use restrictions.

According to the UK Government's Policy Paper *Control of development in airport public safety zones*, Updated 8 October 2021, standard dimension Public Safety Zones are established at airports that have more than 18,000 commercial air transport movements per year. The standardised shape of the PSZ (illustrated at Figure 12) that replaces the risk-based model profile has been defined using the latest data on accidents shown to be located outside the aerodrome boundary.

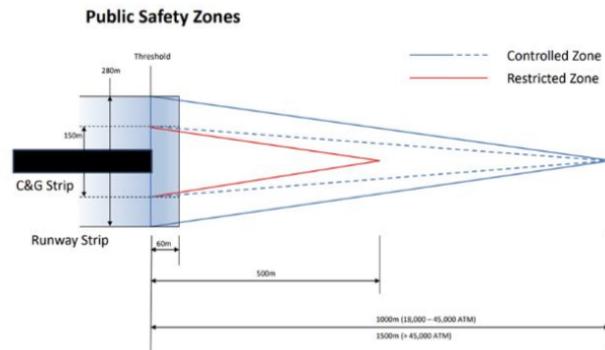


Figure 12 UK Public Safety Zone model

Since Tumut Aerodrome does not have and is not expected to have greater than 18,000 commercial air transport movements per year, the UK Public Safety Zone model would not be applied to runway 17/35 if it was subject to the UK Policy paper – *Control of development in airport public safety zones*.

The Queensland PSA model is based on an isosceles trapezoid 1000 m long, 350 m wide closest to the runway end, tapering to a width of 250 m furthest from the runway.

Queensland's State Planning Policy – state interest guidance material *Strategic airports and aviation facilities*, July 2017, Appendix 7, notes as follows:

1. The PSA dimensions indicate an area where the risk per year, resulting from an aircraft crash, to a representative individual (individual risk) is 1 in 10,000 ( $10^4$ ). As general guidance, it would be inappropriate for a use, subject to assessment against the SPP, to be exposed to a higher individual risk than 1 in 10,000 ( $10^4$ ).
2. The PSA dimensions also partially enclose an area of individual risk of 1 in 100,000 ( $10^5$ ).

The guidance material also sets out the circumstances in which a PSA would be required for a strategic airport. These circumstances are copied as follows:

A PSA is required at each end of a strategic airport's main runway if:

- the airport is listed as a 'Commonwealth place' under the Commonwealth Places (Application of Laws) Act 1970
- the airport is a joint-user airport under the control of the Department of Defence (DoD) where an arrangement under section 20 of the Commonwealth Civil Aviation Act 1988 is in force
- the airport is a defence airfield subject to the Defence Act 1903 administered by DoD
- the runway meets the following criteria:
  - i. accommodates regular public transport jet aircraft services, or
  - ii. greater than 10,000 aircraft movements occur per year (excluding light aircraft movements).

PSAs are also required for other runways (i.e., secondary or cross-runways) of strategic airports where the runway meets the aircraft movements' threshold

 **AVIATION PROJECTS**

*listed above (i.e., criteria i or ii above). Appendix 9 identifies the strategic airport runways where PSAs are required.*

There are no jet aircraft currently conducting or forecast to conduct regular public transport services at Tumut Aerodrome.

Since Tumut Aerodrome does not have and is not expected to have greater than 10,000 aircraft movements per year (excluding light aircraft movements) or regular public transport jet aircraft services, the PSA would not be applied to runway 17/35 if it was a strategic airport under the Queensland State Planning Policy.

The US Department of Defense (DoD) framework provides for Accident Potential Zones according to two runway types. The type applicable to Tumut Aerodrome (Class A Runway – less than 2438.4 m long) would have a clear zone that is 305 m wide (152.5 m either side of centreline) and 915 m long. It is understood that no airports in Australia use this type of public safety area.

Neither the Queensland nor UK PSA models would be applied to Tumut Aerodrome if it was subject to their jurisdiction, as there are insufficient numbers of nominated aircraft movements to trigger the requirement. This is reflective of the lower level of risk associated with the scope of aircraft operations conducted at the aerodrome.

Since the level of risk characterised by current and forecast scope of aircraft operations at Tumut Aerodrome is lower than that embodied in the various public safety areas models discussed in Guideline I, this concept has not been incorporated in the future planning of the airport.

Further information can be found in NASF Guideline I *Managing the Risk in Public Safety Areas at the Ends of Runways*.



## 9. MASTER PLAN

The master plan has four development stages:

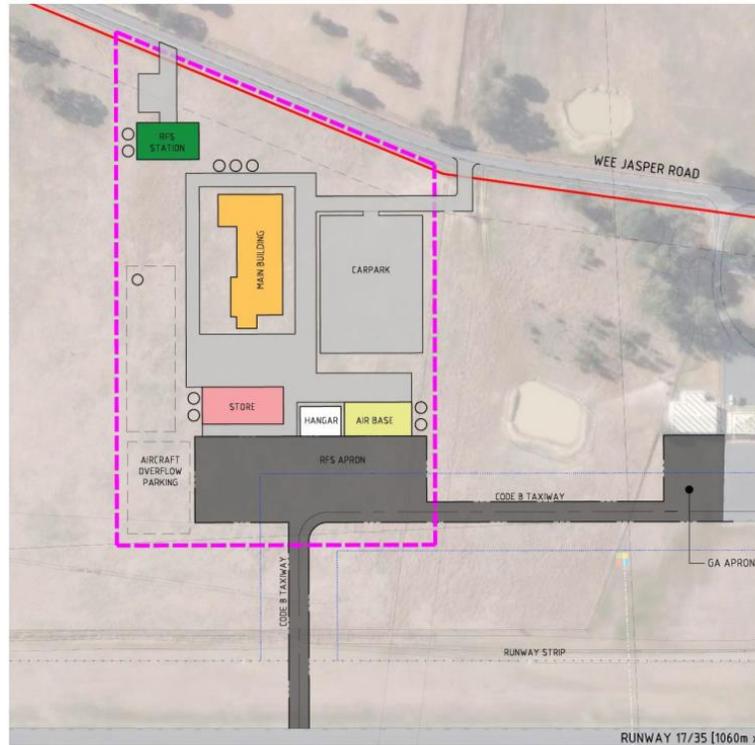
1. Initial Development Stage (1-5 years) - New RFS/Forestry precinct with associated apron and Code B Taxiways development
2. Interim Development Stage (5 to 10 years) - Expansion of existing General Aviation precinct with additional apron and Code B taxiway development
3. Advanced Development Stage (10-15 years) - Second General Aviation precinct development and central Code B parallel taxiway development
4. Ultimate Development Stage (15 – 20 years) - Runway extension and full-length parallel taxiway development

These stages and suggested time frames show a logical progression in development that could take place for planning purposes. Actual development and time frame is dependent on demand and the policies Council adopts to promote airport growth.

Overall master plan stage drawings are provided in Annexure 1. In this section individual elements are described for each development stage.



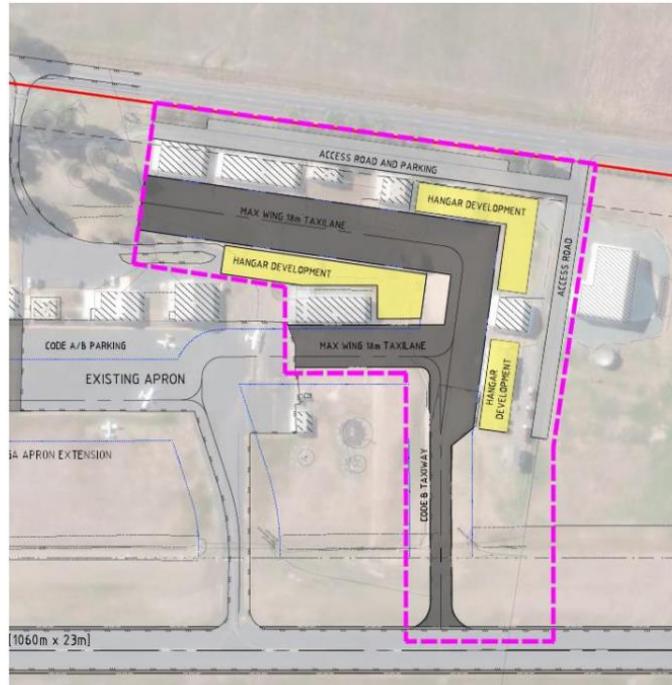
9.1. INITIAL DEVELOPMENT STAGE



- Existing apron extension
- New RFS Apron with Code B taxiway connection to runway and existing apron
- RFS / Forestry landside facility



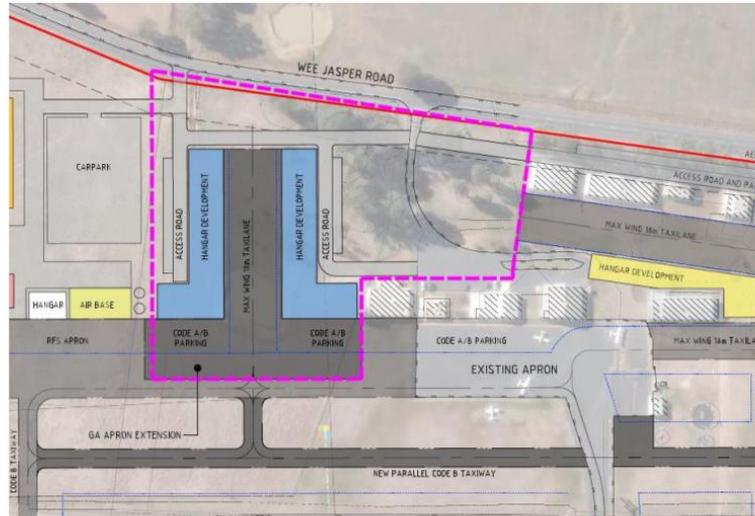
**9.2. INTERIM DEVELOPMENT STAGE**



- Expansion of existing general aviation hangar precinct
- Additional Sealed apron and Code B Taxilane development



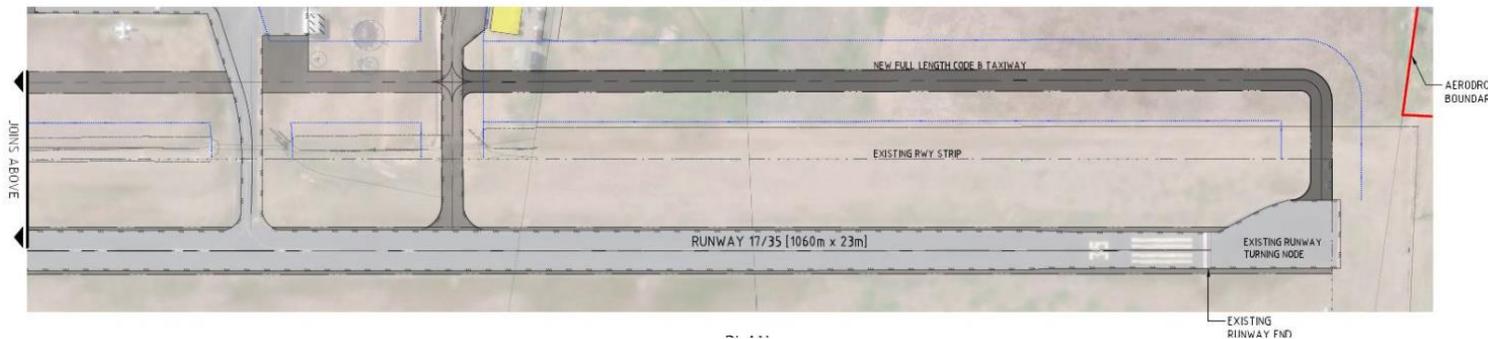
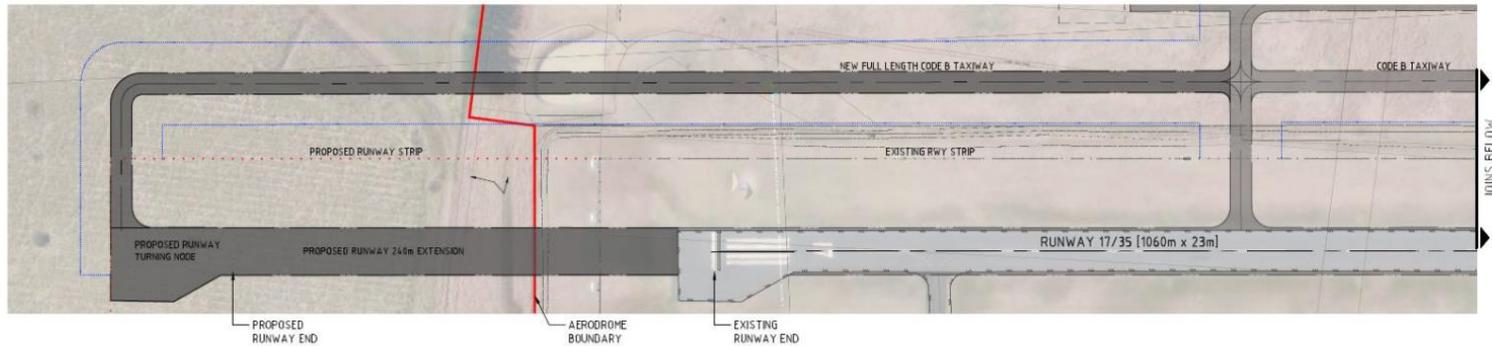
9.3. ADVANCED DEVELOPMENT STAGE



- Development of second general aviation hangar precinct
- Central parallel Code B taxiway



9.4. ULTIMATE DEVELOPMENT STAGE



- Northern 300m runway extension
- Full length parallel taxiway to 17 and 35 thresholds

## 10. GLOSSARY

AAGR	average annual growth rate	ICAO	International Civil Aviation Organization
AIAC	Australian International Aviation College	INP	instrument non-precision
AIP	Aeronautical Information Package	IWDI	illuminated wind direction indicator
AMSL	above mean sea level	LGA	local government authority
ANEF	Australian Noise Exposure Forecast	LIRL	low intensity runway lights
ARFFS	aerodrome rescue and firefighting service	MOS	Manual of Standards
AsA	Airservices Australia	MTOW	maximum take-off weight
ATC	air traffic control	NASF	National Airports Safeguarding Framework
BRA	building restricted area	NBN	National Broadband Network
CAAP	Civil Aviation Advisory Publication	NDB	Non-Directional Beacon
CAR	Civil Aviation Regulation 1988	OLS	obstacle limitation surfaces
CASA	Civil Aviation Safety Authority	PANS-OPS	Procedures for Air Navigation Services – Aircraft Operations
CASR	Civil Aviation Safety Regulation 1998	PAPI	Precision Approach Path Indicator
CTAF	Common Traffic Advisory Frequency	RFDS	Royal Flying Doctor Service
ERSA	En Route Supplement Australia	RNAV-GNSS	Area Navigation – Global Navigation Satellite System
GA	general aviation	RPT	regular public transport
GNSS	Global Navigation Satellite System	RTIL	runway end identifier lights
GPS	Global Positioning System		
GSE	ground support equipment		
HLS	helicopter landing site		

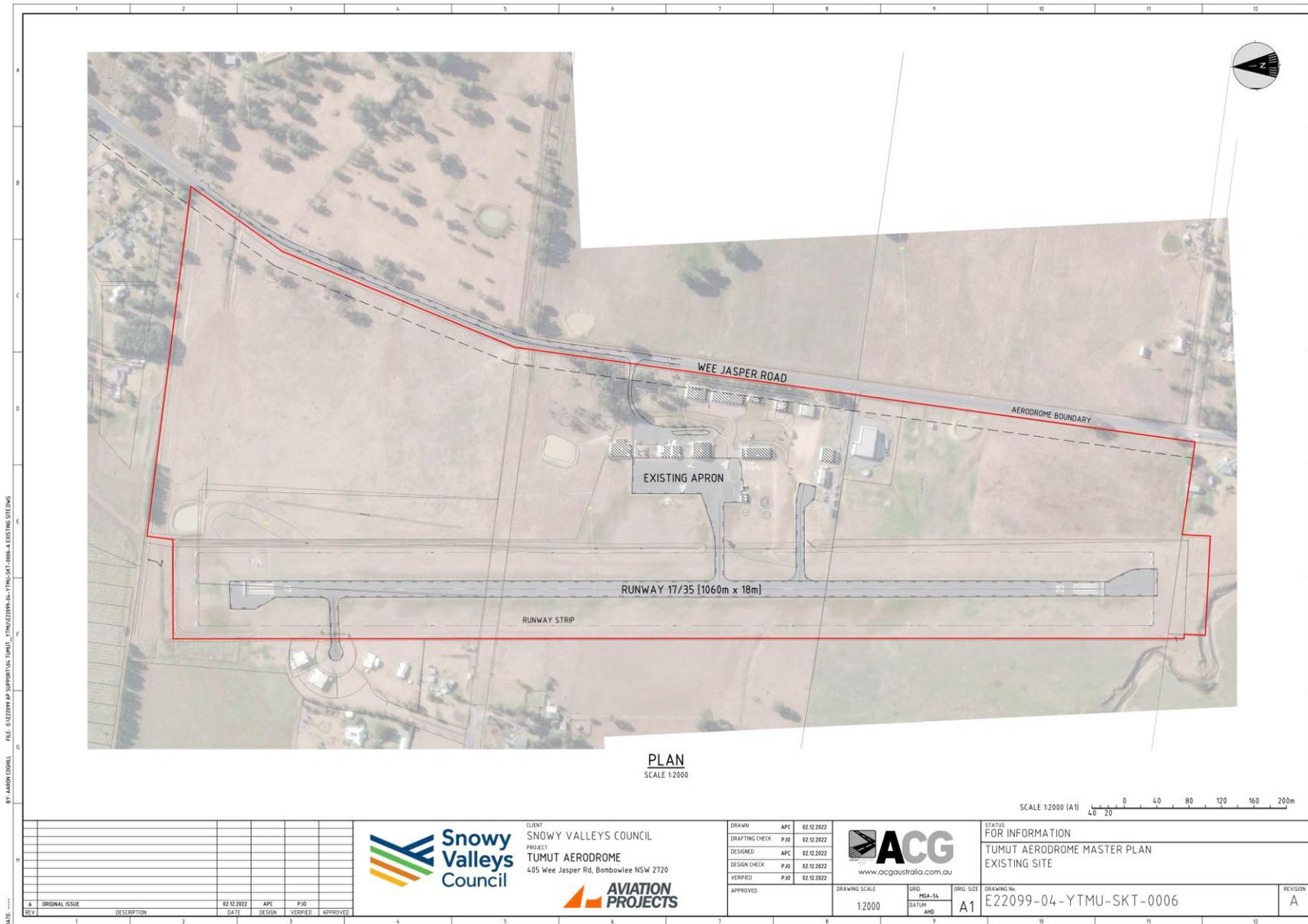
## 11. REFERENCES

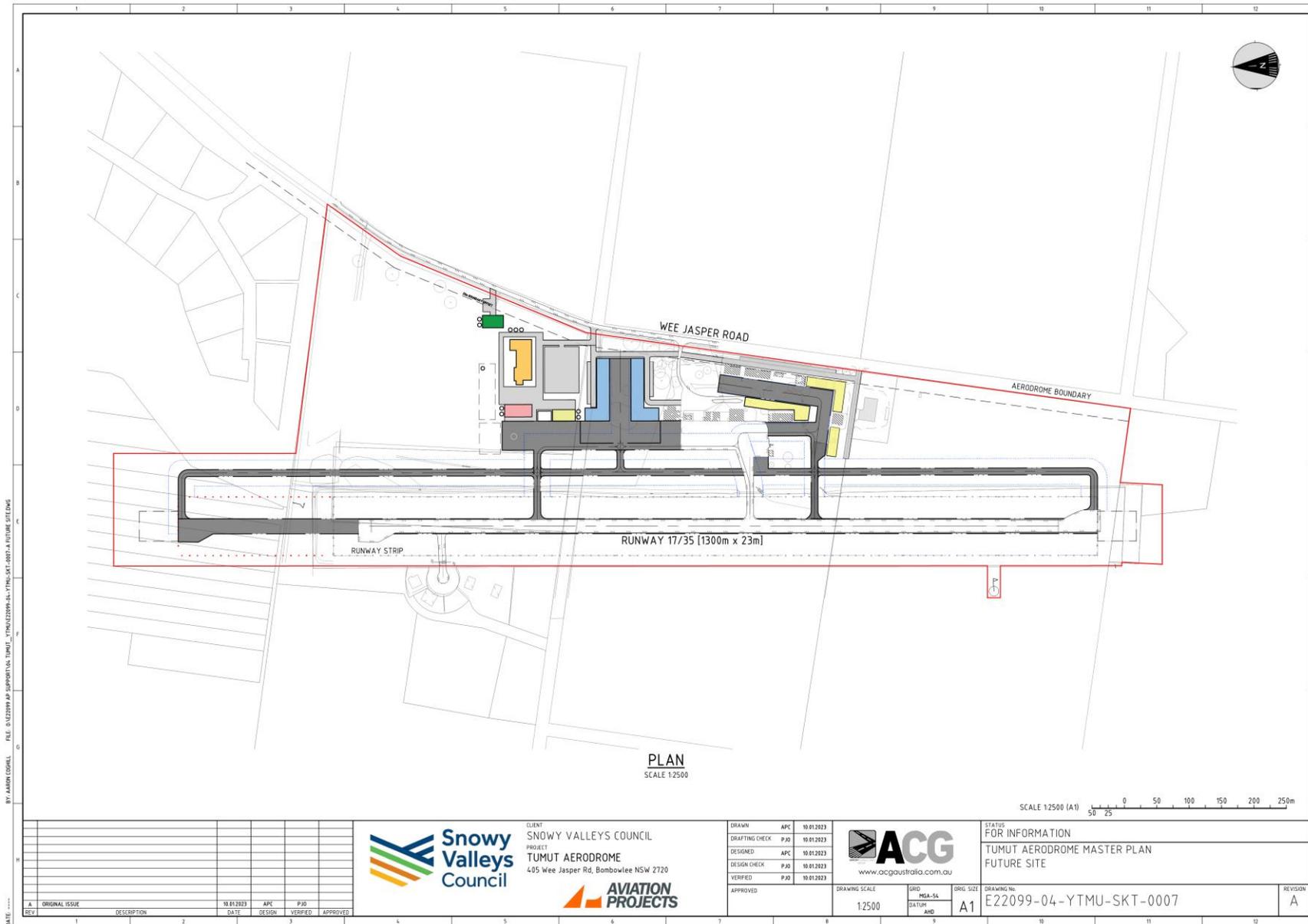
- Airservices Australia, Aeronautical Information Package; including En Route Supplement Australia (ERSA, RDS, DAP) effective 01 December 2022
- Australian Airports Association, Regional Airport Master Planning Guideline, Airport Practice Note 4
- Civil Aviation Safety Authority, Civil Aviation Safety Regulations 1998
- Civil Aviation Safety Authority, *Part 139 (Aerodromes) Manual of Standards 2019*, dated 13 August 2020
- International Civil Aviation Organization, International Standards and Recommended Practices (SARPS) Annex 14 Aerodromes, Volume 1 *Aerodrome Design and Operations* and Volume II *Heliports*

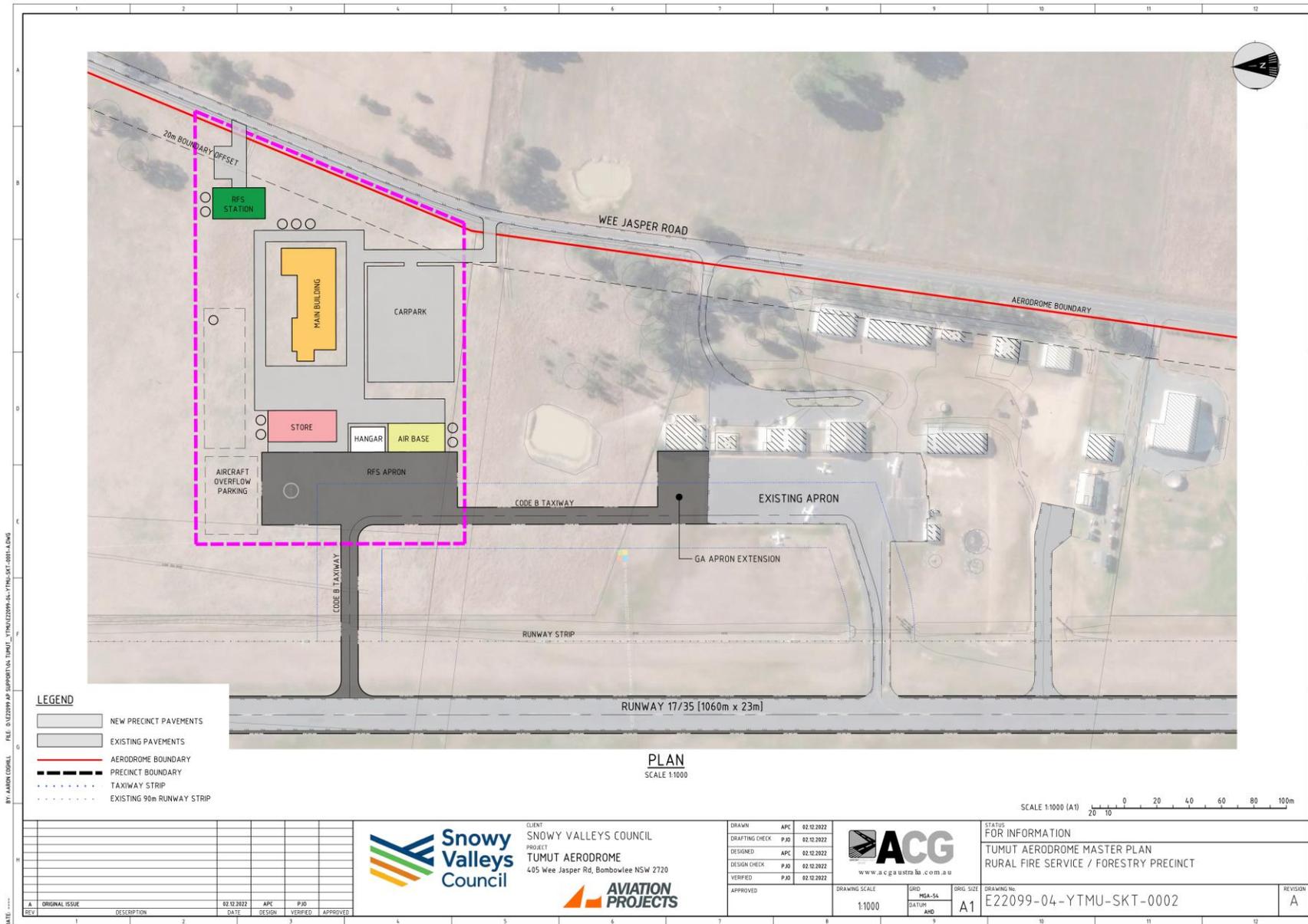
## ANNEXURES

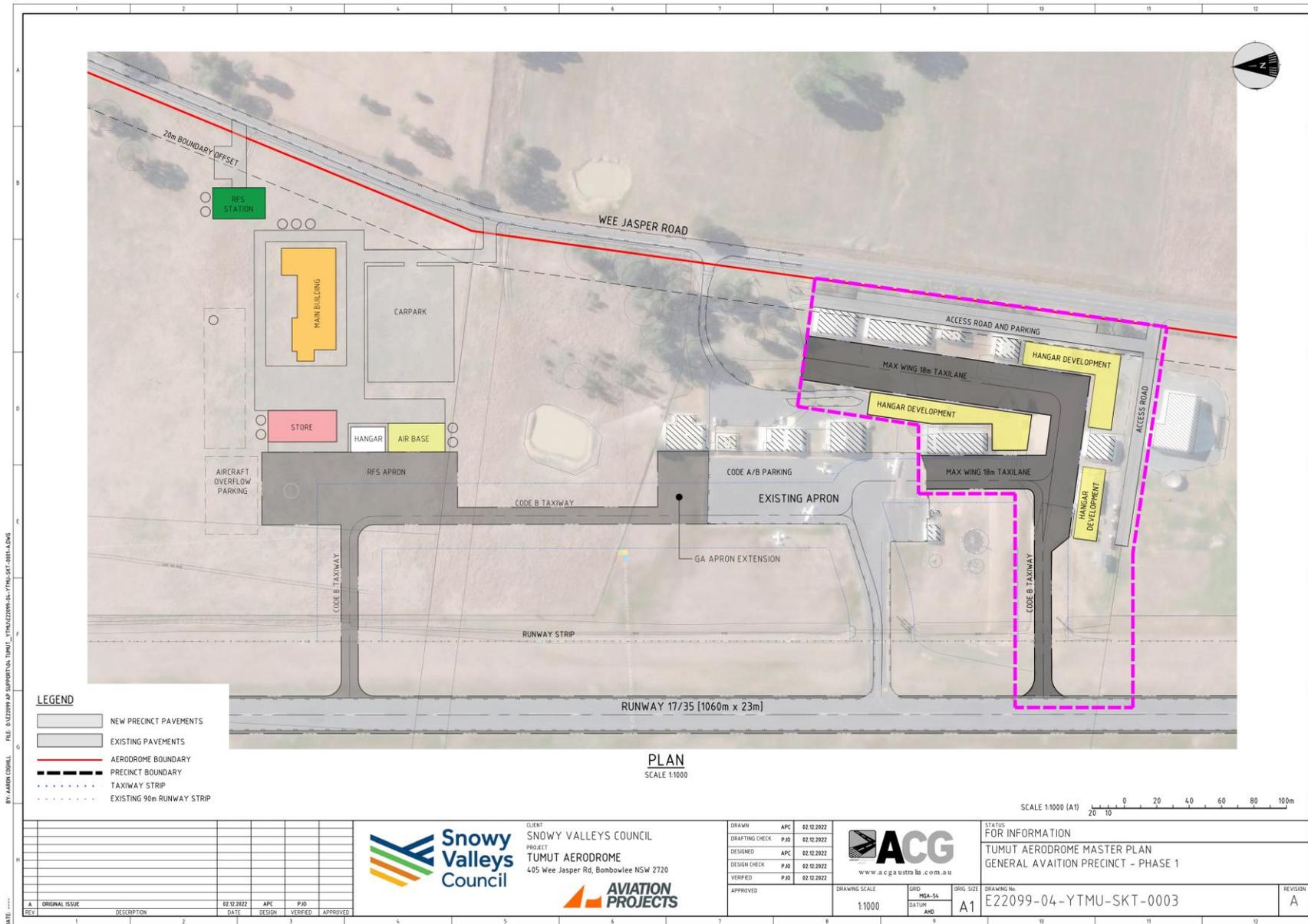
Annexures contain the following Tumut Aerodrome Master Plan Drawings:

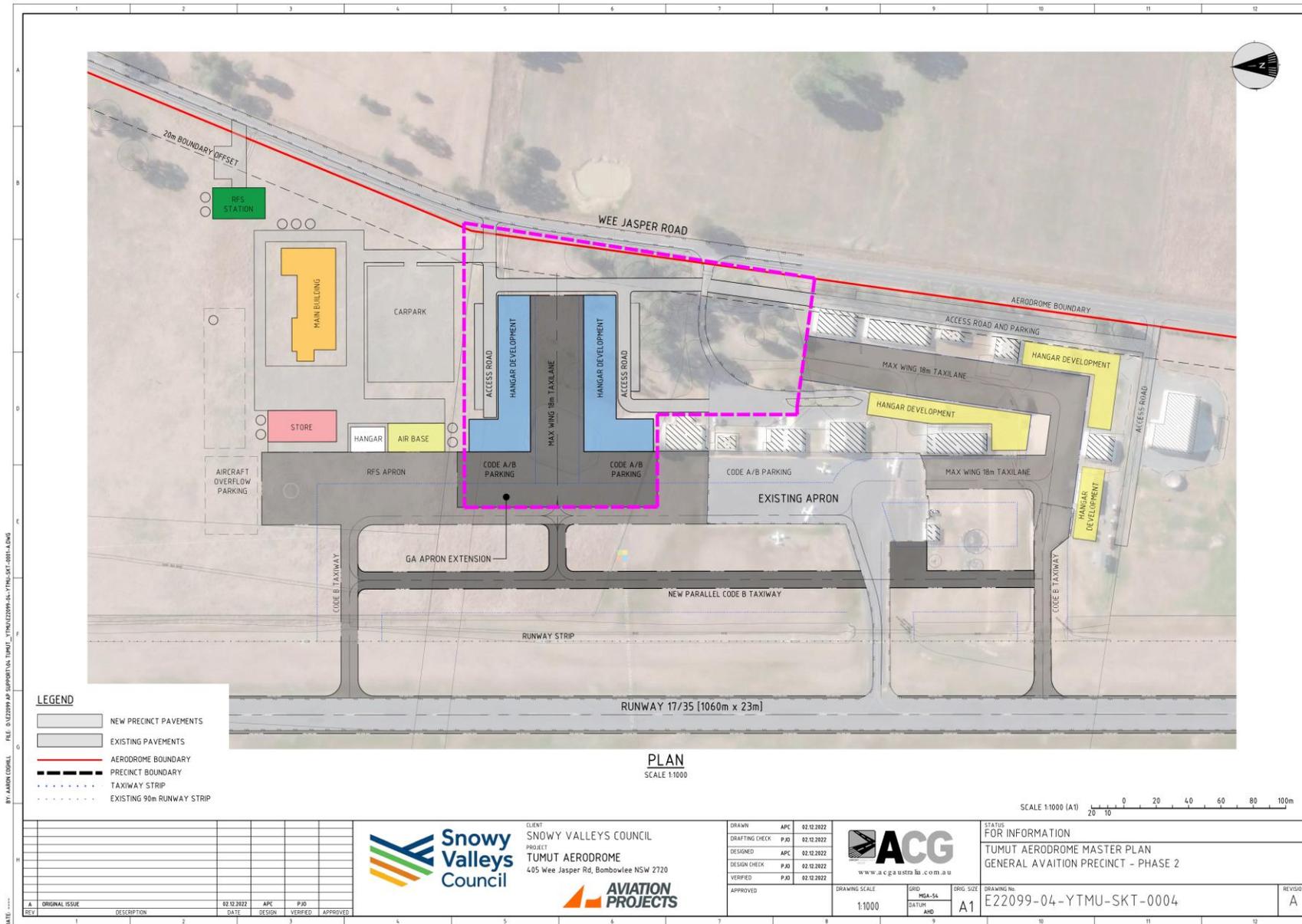
1. Existing Site [E22099-04-YTMU-SKT-0006]
2. Future Site [E2209-04-YTMU-SKT-0007]
3. Rural Fire Service / Forestry Precinct [E22099-04-YTMU-SKT-0002]
4. General Aviation Precinct – Phase 1 [E22099-04-YTMU-SKT-0003]
5. General Aviation Precinct – Phase 2 [E22099-04-YTMU-SKT-0004]
6. Runway Extension [E22099-04-YTMU-SKT-0005]
7. Wildlife Protection Zones [E22099-04-YTMU-SKT-0008]
8. Wind Shear Trigger Assessment [E22099-04-YTMU-SKT-0009]
9. Lighting in the Vicinity of Aerodromes [E22099-04-YTMU-SKT-0010]
10. Obstacle Limitation Surface (90m Strip) [E22099-04-YTMU-SKT-0011]

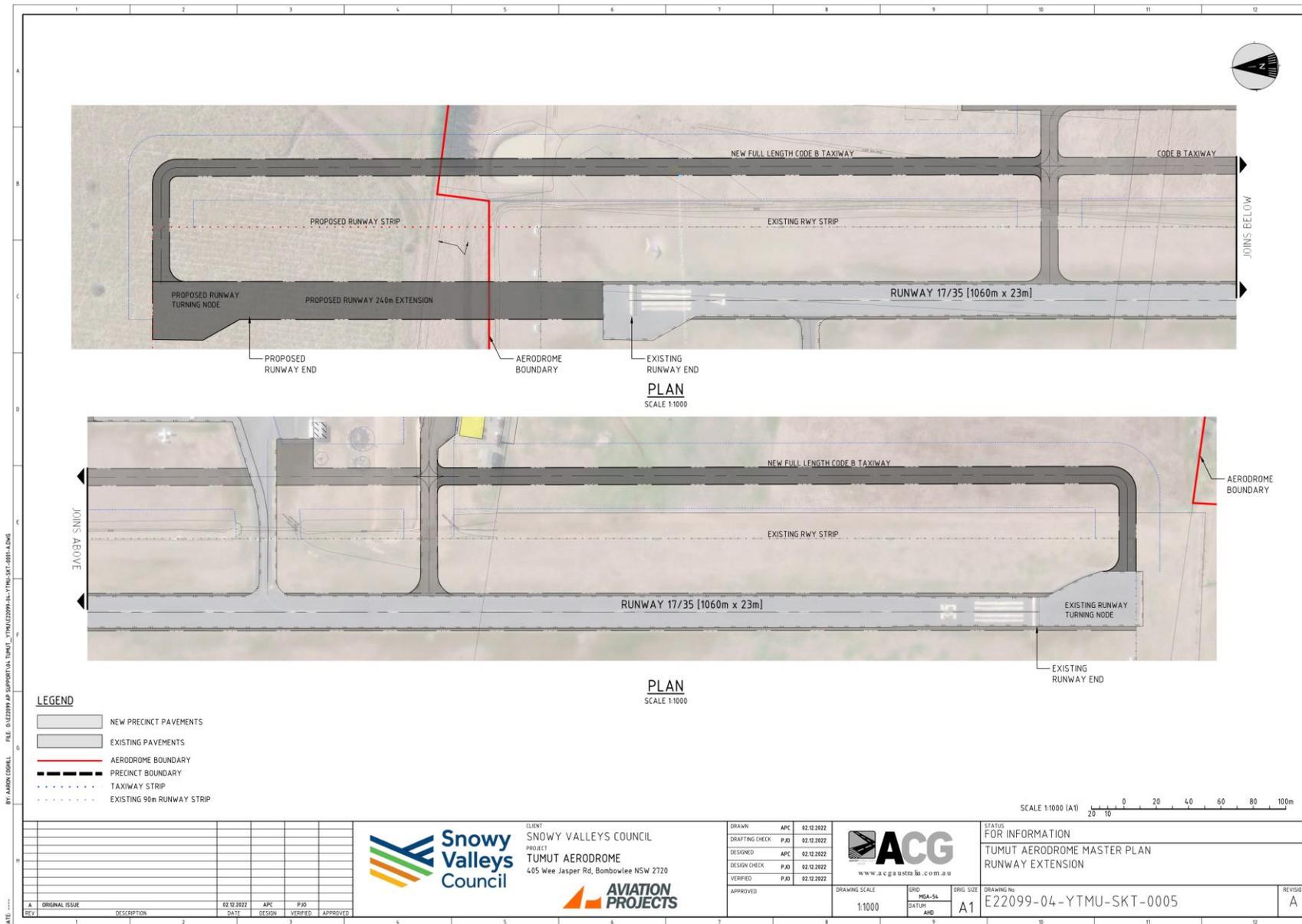


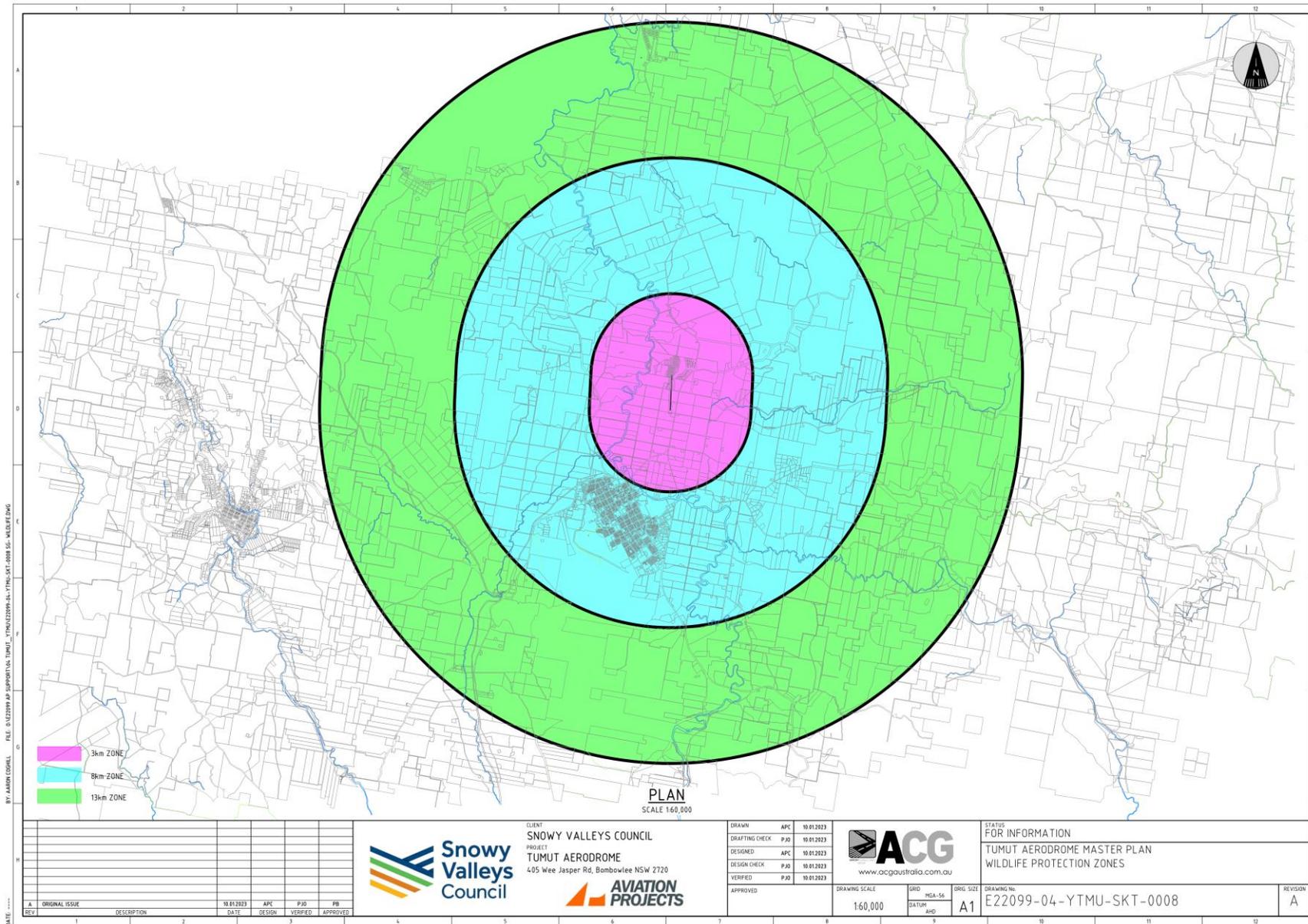


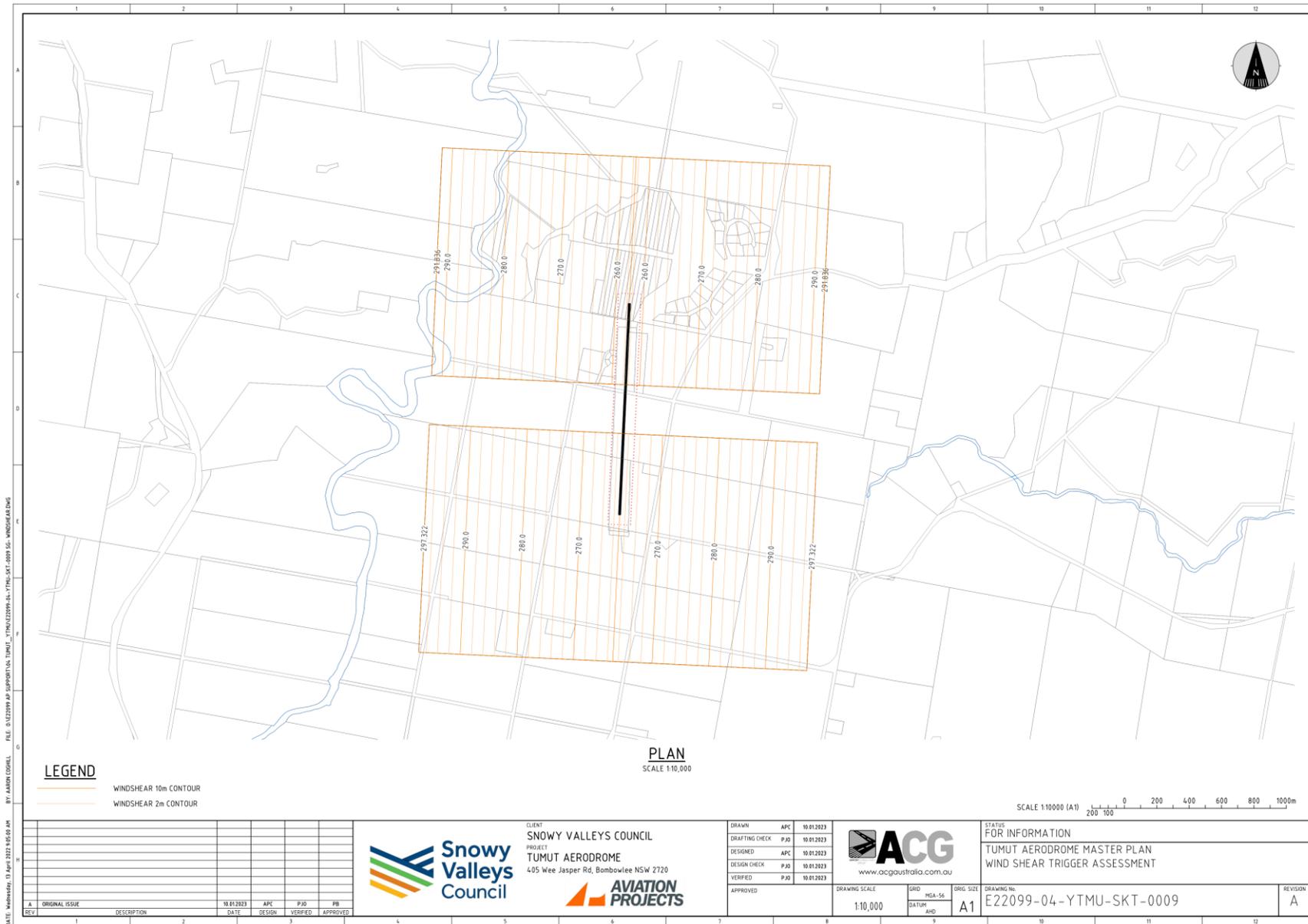


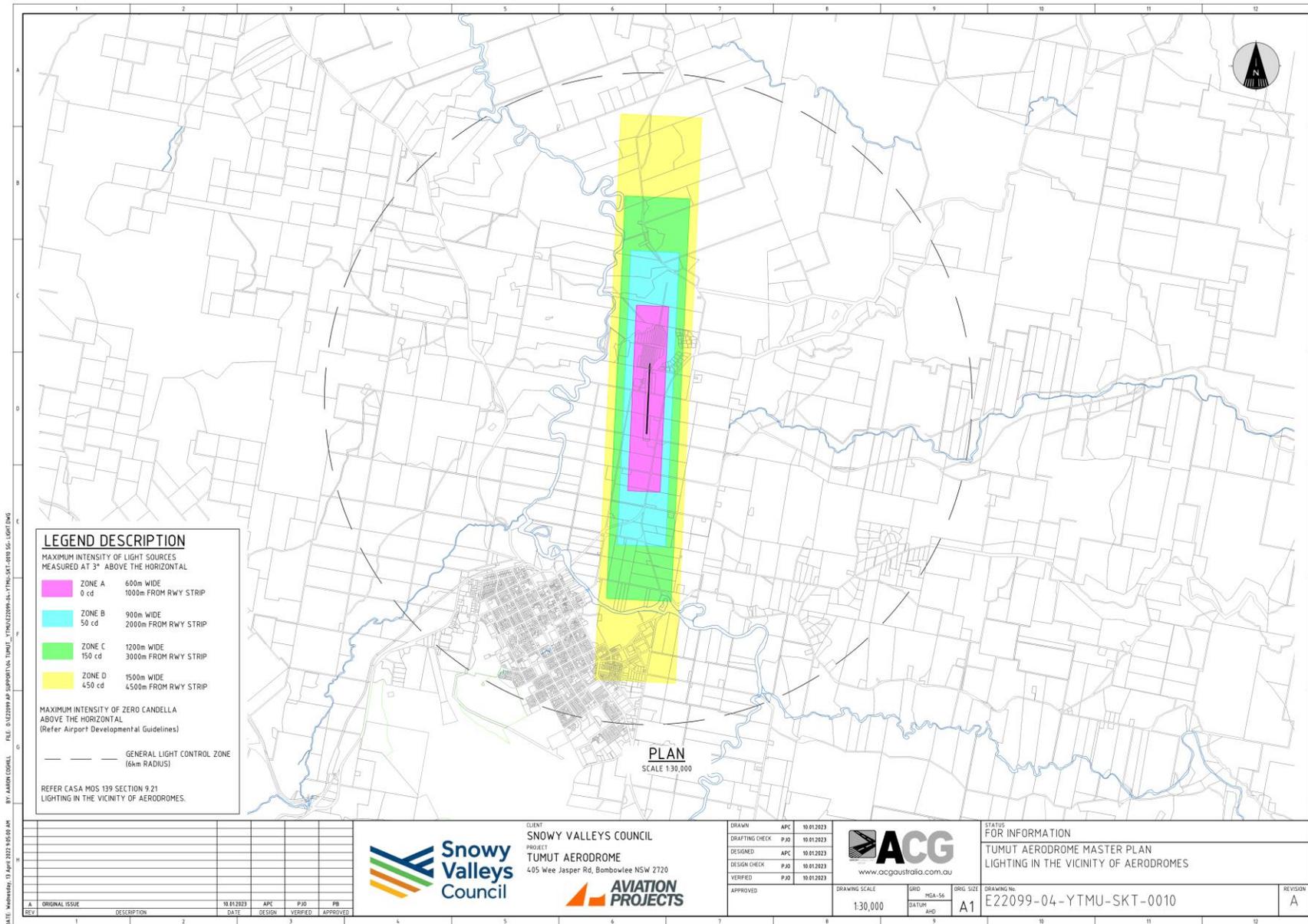


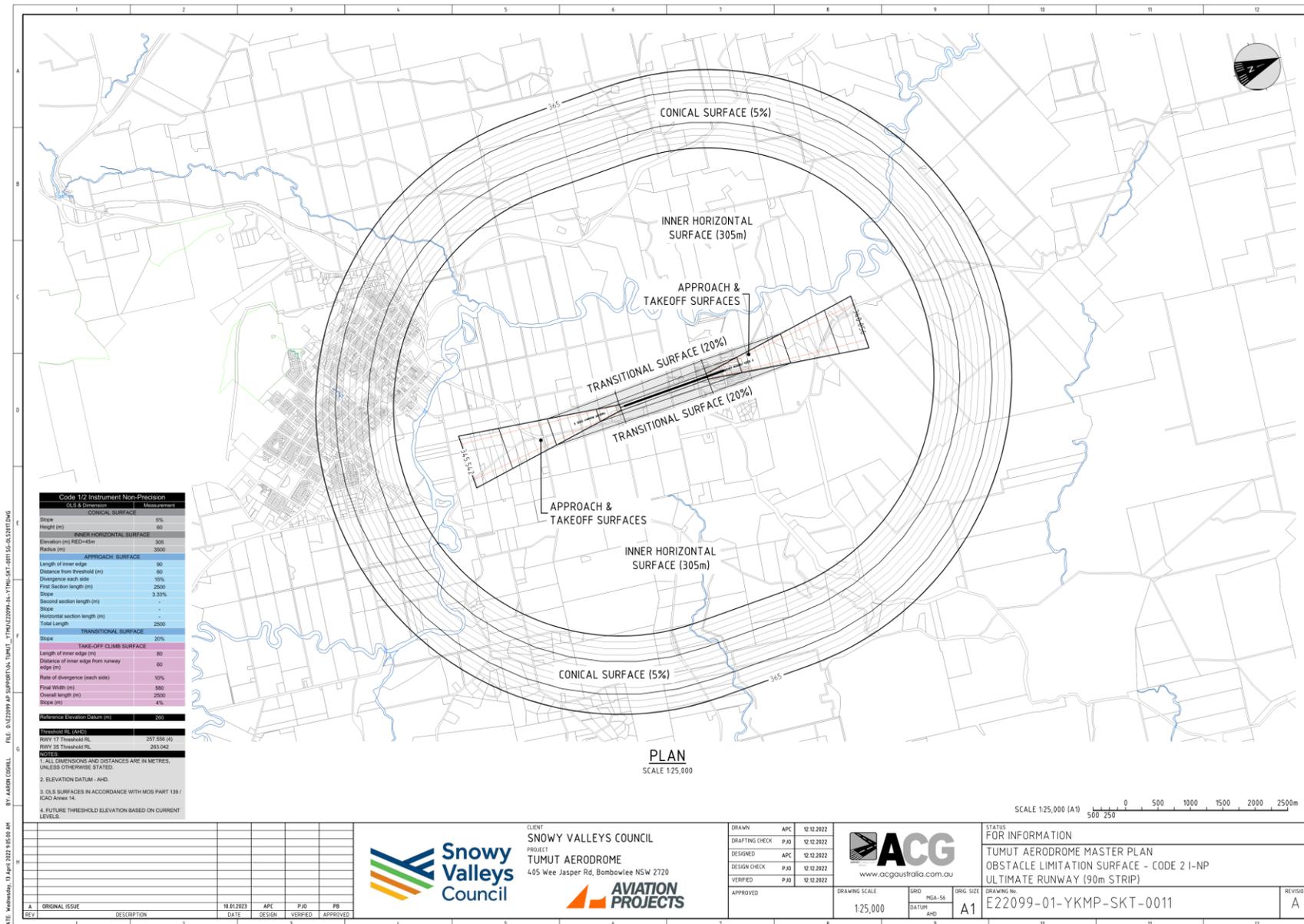












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Aviation. From the ground up.



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