

Socio-Economic Impact Assessment:

Proposed Flight College Frogs Hollow



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**This report has been prepared for
Sports Aviation Flight College Australia**

by

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1 Executive Summary

1.1 The proposal

Sports Aviation Flight College Australia proposes to establish a flight training school for Recreational Pilots operating from Frogs Hollow Aerodrome. Training will be conducted under the auspices of Recreational Aviation Australia. A Recreational Pilot's Certificate or License enables a pilot to fly ultra-light and Light Sport Aircraft.

The college will cater to a Chinese market to service a perceived ongoing demand for pilots in that country and a recreational demand. Delivery of the project will be staged, but once the project is operating at full capacity, there will be a total of 360 students at any one time, and 1,200 students serviced each year.

To support the flight training school, over 200 full time equivalent employees will be required including management, flight instructors, Aviation English instructors, squadron assistants, administration and support workers, flight theory instructors, squadron leaders, kitchen/café/gift shop staff, and aircraft ground staff.

We understand that staff will be sourced from Australia and that the operator intends to provide a scholarship program to support the employment of people within the locality. The operator expects to employ around 170 people locally.

The proposal will require the construction of a number of buildings at Frogs Hollow ALA with an estimated value of \$10.45 million.

It is proposed that flying operations will involve up to 40 aircraft in the air at any one time, and will be conducted between 0700 and 1800 Monday to Friday, with flying taking place 15 days each month and an annual shutdown between 10 December and 10 February. Limited flight training is proposed on a Saturday, with no flight training proposed on a Sunday or during night time hours.

Flying operations will take place in:

- The training area, being a 25 Nm (45 km) radius around the airfield;
- The circuit area, being approximately a 2 km radius around the airfield; and
- At nearby airfields such as Polo Flat, Merimbula, Mallacoota, Cooma, Moruya and Bombala.

1.2 Likely positive impacts

The development is expected to have a positive impact on tourism industries in Bega Valley LGA, providing 200 direct tourism jobs, opportunities for other tourism expenditure by trainees at the college, and showcasing the Sapphire Coast Region to the very large Chinese tourist market.

The development aligns with Bega Valley Council and state government strategic documents which stress the importance of the development of new businesses, provision of skilled employment, accessing domestic and international tourism markets and diversification of the tourism industry.

The development will provide full time employment for an estimated 200 people, and another 106 indirect jobs. In addition, expenditure by households employed by the development will provide another estimated 10 jobs in the locality. It is noted that employment meets the definition of 'tourism' employment as tourism expenditure is defined as expenditure by visitors to a region, where visitors are people spending less than a year in a region.

The proposed development will make a positive contribution to regional development through provision of a new export industry, providing opportunities for skilled employment in the areas of flight and language training, accessing the international Chinese tourist market and diversifying the Bega Valley LGA tourism industry outside the peak summer period.

In the local context, the significant outward migration of young adults suggests the lack of appropriate skilled entry level positions in the LGA, and provision of such positions will be a significant opportunity.

There are a number of nearby airfields with low levels of usage, including Mallacoota, Cooma Snowy Mountains, and Bombala. Additional usage of these airfields will generate additional income through landing fees, and so reduce the cost to the community of maintenance of the airfields.

1.3 Potential negative impacts

We have also considered the main issues raised in submissions to the exhibition of the proposal, particularly where these are more likely to occur or may be more serious in nature.

There are likely to be amenity impacts associated with the proposed development as a result of the intensity of flight operations. These amenity impacts are likely to consist of noise impacts, visual impacts and perhaps loss of privacy if overflying by aircraft results in people changing their behaviour.

While there is likely to be a diminution of amenity in the immediate locality, the level of amenity with respect to noise, visual impacts and loss of privacy will be in accordance with regulatory standards with regard to noise generation and height of overflying.

There are likely to be particular areas in the wider locality, including tourist destinations such as beaches and wilderness areas like national parks, where overflying by large numbers of aircraft would be expected to have significant adverse impacts on character and amenity. As noted below, there are opportunities to mitigate such impacts.

While operation is expected to be within appropriate normative standards with regard to noise and height of overflying, there is much evidence of conflict between airfields and nearby residential uses, particularly arising from complaints regarding noise. Again, there are opportunities to mitigate and manage such impacts.

Impacts on existing tourism industries are most likely to relate to amenity impacts, and have the same opportunities for mitigation as for residential uses, and coastal and wilderness areas.

Adverse impacts on other tourism industries could result in economic costs, particularly from loss of employment. However, 90% of tourism employment is located in a few areas in Bega Valley LGA that are remote from Frogs Hollow airfield, and adverse amenity impacts could be reduced with the adoption of recommended mitigation measures.

It is also likely that there would be some adverse impacts upon less tangible aspects of character and amenity in the immediate locality (that is, the way in which local residents experience their area), depending on the ultimate intensity of operations and the flight and training paths adopted. As discussed below, care in the choice of flight paths, and potential actions to reduce intensity would reduce these experiential impacts for residents, but may not eliminate them. For example, properties with a vantage point from which they can clearly see aircraft in operation and hear them even below accepted noise levels would likely experience an adverse change to their existing rural vista and experience. It is likely that these changes to the experiences of residents would be quite localised, and would decrease as properties are located further away from the most intensive operations. Such impacts to built-up urban areas, key tourist destinations and wilderness areas can likely be eliminated with an appropriate choice of flight paths that avoid these areas.

In terms of safety concerns that have been raised, based on an analysis of aviation statistics, operation of the flying school is expected to result in 3.6 accidents each year on average, including one fatality every eleven years and three serious injuries every year. 1.6 of these accidents are expected to occur off the airfield. Of the accidents, fire is expected to be involved in one accident every eight years. While an accident could involve a third party, there was no record of such occurrences in the years 2016 and 2017, and it appears highly unlikely that local resident or homes would be affected.

Further, compared to road crashes, operation of the flying school is expected to increase the number of crash related fatalities in Bega Valley LGA by 3%, and the number of crashes by around 3%. Therefore, whilst there is likely to be an increased number of transport-related crashes, this is a relatively small increase in the local safety context.

There are six surrounding airfields which could be used as part of flight training. These are Moruya, Merimbula, Polo Flat, Cooma Snowy Mountains, Bombala and Mallacoota. All of these were reported to have sufficient capacity to include increased operations; however, intensive circuit operations may conflict with existing parachute operations at Moruya Airfield. Adverse amenity impacts could be experienced at Merimbula and Moruya airfields due to the proximity of residential uses.

In terms of existing uses, development could lead to the displacement of Frogs Hollow Flyers and Bega District Model Club.

1.4 Neutral Impacts

Other issues raised by the community have also been considered, but are likely to be neutral in their effect, or have no evidence base.

While land values are often cited as an economic impact, the net effect is zero, as changes in land values are a transfer between owners and purchasers or between landlords and tenants. The true economic cost reflected in change in land values is the cost associated with amenity impacts,¹ and this is considered elsewhere in the SIA.

There is no evidence from the literature to support claims of an adverse impact on agriculture from operation of the proposed flight school.

Impacts on health have also been raised as a concern. We understand the operation of the flying school will comply with relevant normative standards with regard to noise, and that the aircraft will comply with relevant normative standards with regard to pollution. As these standards are a matter of public policy, we assume that they have been put in place to guard against adverse health impacts (amongst other impacts) and that compliance will minimise the risk of adverse health impacts.

1.5 Cost Benefit Analysis

A cost benefit analysis has been conducted so as to understand the net economic impact of the proposal in accordance with NSW Treasury Guidelines and taking into account methodology and values set out in Transport for NSW Guidelines for Economic Appraisal of Transport Investment and Initiatives. We estimate the net annual benefit of the proposal in the range of:

Net Annual Benefit = \$6.8 million - \$7.0 million

Benefit Cost Ratio = 4.6 – 5.1

The major unquantified impact is any costs that might be incurred by other tourist industries, with the annual value of these industries to the local economy valued at **\$29.9 million**. The areas of Bermagui, Tathra, Bega, Merimbula and Eden contain 87% of tourism employment in Bega Valley (using ABS 2016 Accommodation and Food Services as a proxy).

In the unlikely event that the flight school affected the character and amenity of these other areas of the Shire to the extent that *all* tourism visitation, employment and expenditure were lost, the benefits from the flight school would outweigh this loss by a factor of two.

1.6 Possible mitigations

Taking into account the potential negative impacts identified above, the following are recommended as mitigations that are likely to be effective.

¹ The Treasury (2017) *NSW Government Guide to Cost-Benefit Analysis*, page 59.

Hours of operation

The proposed hours of operation are 0700 to 1800 Monday to Friday, with some reduced flight operations on Saturday. These hours of operation are in line with noise abatement hours for heavily used airfields in urban environments. For example, circuit training at Sydney Bankstown is permitted between 0600 and 2200, Monday to Friday and between 0700 and last light on Saturday and Sunday.

The reduced flying on Saturdays and no flying on Sundays will provide opportunities for other users of the airfield such as Bega District Model Club and Frogs Hollow Flyers.

The annual shutdown period of 10 December to 10 February is likely to coincide with the peak tourism visitation period, and so will significantly mitigate any impacts on other tourism industries and on visitor experiences.

However, the intensity of operations proposed for Frogs Hollow airfield may lead to adverse amenity impacts for local residents. Further mitigation could be provided through reducing the time and focus of activities. For example, the hours at Frogs Hollow could be reduced somewhat by not operating the flying school on the weekend, or starting later than proposed on weekdays, for example, 8am. Alternately, intensity could be reduced by relying on another local air field as the starting point for the day's flying activities and transporting trainees by bus to this location (for example, Cooma-Snowy Mountains, Bombala or Mallacoota).

Area of operations

A significant mitigation of potential amenity impacts in the immediate locality can be achieved by restricting operations as much as possible to the west side of Frogs Hollow Aerodrome so as to avoid overflying rural residential development along Newlyn's Place and Moorlands Lane. This can be achieved by flying right hand circuits on runway 18 and by restricting use of runway 09/27 for use only when required e.g. for adverse cross winds. An inspection of topographical maps shows this area contains one residential property, and it should be possible to put procedures in place to ensure this property is not overflowed so as to minimise amenity impacts.

Approach points to the circuit area should be designated so as to minimise overflying of residences prior to entering the circuit.

In terms of the wider locality, overflying of urban areas should be avoided to minimise impacts on both residents and the main tourist areas. In particular, operations should avoid the urban areas of Bermagui, Tathra, Bega, Merimbula and Eden. Flying parallel or along the coast is also likely to have an impact, particularly if aircraft fly over beaches, and so coastal flying should be conducted 1-2 km offshore to minimise impacts. Tracking along the coast within 1-2 km should be restricted to an area north of Tathra and south of Bermagui so as to minimise impacts on tourist areas and wilderness areas.

Negotiations should be held with National Parks to agree appropriate operational areas which will minimise impact on wilderness areas.

We understand the accepted methodology for assessing amenity impacts for larger aerodromes is the preparation of contour maps associated with the Australian Noise Exposure Forecast (ANEF)

system. Such contours have been prepared for Merimbula Airport, and these are based on 3,800 training movements each year by 2033, the forecast for moderate growth of existing training movements.² If use of Merimbula and Moruya airports is proposed, preparation of ANEF charts based on greater number of training movements at both airports should be prepared. This would inform an evaluation of the number of training movements that would comply with appropriate noise criteria and allow for a complying intensity of operations. Approach points to the circuit training area for both airports should be established to minimise overflying of built up areas and other sensitive locations such as beaches.

Procedures should be put in place to enable coordination with parachute operations at Moruya Airport. These could include agreeing time slots or having communication protocols in place to avoid conflicts between circuit training and parachute drops.

In general, training flight paths and training areas should be identified which avoid as much as possible, and in order of priority:

- Urban areas
- Areas associated with tourist uses such as beaches and lakes
- National Parks
- Dwellings

Varying flight paths during the day could also reduce intensity over specific properties.

Flight paths that parallel the highway may have similar impacts to existing traffic and so reduce new impacts. Operations over state forests and offshore are likely to have generally low amenity impacts.

Monitoring of operations

Compliance noise monitoring should be undertaken, with a higher intensity in the early days of operation, to confirm assumptions made in noise modellings and to ensure there are not adverse impacts on nearby residents.

A complaints line should be set up, and all complaints should be logged and regularly analysed with respect to flight paths. Where possible flight paths should be revised to minimise complaints. The register should be made available to Council upon request.

Other users

Provide an opportunity for Frogs Hollow Flyers to relocate within the airfield and for Bega Valley Model Club to relocate to other land associated with the development.

Economic Development

The following actions would enhance regional economic development potential and local social and economic benefits, and should be considered:

² REHBEIN Airport Consulting (2013) *Merimbula Airport Master Plan 2033*, Figure 8.

- Develop and implement a detailed local employment and training policy that gives priority to employing and training local people wherever possible.
- Develop and implement a local purchasing policy that gives propriety to purchasing goods and services locally where possible.
- Collaborate with local and regional tourism associations and individual businesses to develop a program of activities for students that maximises positive interaction with and benefits to local businesses, including during students' free time in the evenings and weekends.
- Partner with local and regional tourism associations to develop a promotional campaign on the region to increase tourism visitations from mainland China in general, and leveraging off increased awareness of the region generated by students at the flying school and their visitors.
- Develop and implement cross-cultural awareness programs that provide for increased community integration including introductions to the local culture and area for students, and for local residents to Chinese culture and local students including welcoming activities, opportunities to share experiences and culture, for example, film nights, interpreted 'meet and greet' sessions, music and art nights, opportunities for home visits, open days at the proposed facility, collaborations with local primary and high schools, English/Mandarin conversational classes, etc.

1.7 Conclusions

The major positive impacts of the proposal relate to increased employment in the locality, with the major adverse impacts consisting of adverse amenity impacts, with these likely to affect residents and tourists, and by extension, the existing tourist industry; and impacts on safety.

The cost benefit analysis shows that the benefit of the proposal in terms of employment is sufficient to offset amenity impacts on residents and the cost of crashes. The major potential area of conflict is in impacts on the tourist industry, and calculations support mitigations to minimise impact of the proposal on existing tourist industries so as to maximise total benefit to the community.

While the valuation of externalities using Transport for NSW data shows the economic cost of amenity impacts to be low on average, such impacts are likely to be considered costlier by particular individuals, particularly if they bear a disproportionate share of the impacts. While noise impacts are expected to be within normative standards, there are opportunities to mitigate amenity impacts and such mitigations are likely to enhance community support for the proposal.

The proposal is likely to be significantly improved from a social and economic perspective if proposed mitigation measures set out above (or similar actions), are undertaken in the further planning and operation of the project.

2 Considerations for the SIA

2.1 Overview

Judith Stubbs and Associates has been requested by the Applicant, Sports Aviation Flight College Australia, to undertake a Socio-Economic Impact Assessment in relation to DA 10-2017-445-1 for the development of a recreational aircraft flying school and ancillary facilities at Frogs Hollow Aircraft Landing Area.

It is first important to frame the Socio-Economic Impact Assessment (SIA) in terms of:

- Relevant considerations from case law and good practice;
- Council's scope as provided to the Applicant;
- Council's requirements for the assessment of Social and Economic Impacts as set out in the Bega Valley DCP 2013; and
- The nature of the main concerns raised by the local community in any submissions or consultations.

Each of these considerations is set out below.

2.2 Legal Framework for the SIA

2.2.1 Relevant Considerations

The consideration most directly relevant to this assessment of social impacts is (s79C(1)(b)) of the Act. However, issues related to the suitability of the site (s79C(1)(c)), the nature and reasonableness of submissions (s79C(1)(d)) and related matters in the public interest (s79C(1)(e)) are also assessed to the extent that they are relevant to considerations of social impacts.³

2.2.2 Definition of Locality

In defining the locality of the proposed development, I have been guided by the decision of the NSW Court of Appeal in *Randall Pty Ltd v Willoughby City Council* (2005) 144 LGERA 119 at 130-131, where it was noted that the concepts of "impact" and "locality" will interact, and that,

[s]ubject to identifiable outer limits of connotation, [s 79C(1)(b)] should be construed as leaving to the consent authority, or the Commissioner on appeal, the identification of what constitutes a relevant impact in a particular case and what constitutes the appropriate locality within which to consider the impact.

I have also been guided by the observation of Jagot J in *Milne v Minister for Planning & Anor* [No. 2] [2007] NSWLEC 66 at par [24] that 'the nature of the development and its impacts will influence the scope of the locality to be considered'.

³ Section 79C is now section 4.15 of the Act.

Accordingly, as discussed later, I have defined the ‘locality’ having regard to relevant features of the proposed development and the nature of the surrounding area, including the local geography and the nature and distribution of surrounding uses and populations, and the activities proposed.

2.2.3 Nature of Social Impacts

The identification of social and economic impacts is also informed by good practice, relevant case law and planning principles.⁴

Some impacts may be more readily quantified, measured or observable, and amenable to more ‘objective’ study. Other impacts may be more subjective or experiential, and better understood through the qualitative methodologies that seek to understand the impact on different groups in terms of their experiences and perceptions. Both are valid considerations for social impact assessment.

Likewise, the social planning concept of ‘amenity’ has tangible and intangible dimensions. The former includes the physical characteristics of an area, such as its visual or scenic qualities, the form of the natural or built environment, its urban footprint and relationship between and concentration of land uses, and other physical indicia including pedestrian and traffic movement that have an impact on the quality of life experienced by those in the relevant locality.

The intangible dimensions of ‘amenity’ include residents’ subjective perception of their locality in relation to matters such as their quality of life, community identity and culture, sense of place, social relationships and community cohesion.

Again, both measurable or objectively observable impacts as well as more subjective understandings of affected communities in the relevant locality are important in the assessment.

The reasonableness and factual basis of community concerns is also important to the proper assessment of social impacts in a given locality, so that the subjective concerns or fears of residents needs to be balanced against the extent to which such fears are reasonably or factually based.

Finally, in the balancing of the likely social and economic impacts of a proposed development, it is important to understand the distribution and consequences of both negative and positive impacts, noting that often such impacts are not evenly distributed. For example, adverse impacts may be principally experienced at a highly localised geographic scale, whereas community benefits may be experienced more widely.

⁴ My views on amenity, for example, are guided by accepted practice in Social Impact Assessment as well as statements relating to the technical meaning of amenity from planning decisions such as *Broad v Brisbane City Council and Anor* (1986) 59 LGRA 296; *Perry Properties Pty Ltd v Ashfield Council* (No. 2) (2001) 113 LGRA 301; *Dixon v Burwood Council* (2002) 123 LGRA 253; *New Century Developments Pty Ltd v Baulkham Hills Shire Council* (2003) 127 LGRA 303; *Bad Girls Maroochy P/L v Chief Executive of Dept of Tourism, Racing & Fair Trading & Anor* [2004] QCA 45; *Telstra Corp Ltd v Hornsby Shire Council* (2006) 146 LGRA 10; and *Macedon Ranges Shire Council v Romsey Hotel Pty Ltd* [2008] VSCA 45 at par [58].

Whilst all of these types of considerations are important to the assessment, ultimately the weighing of these considerations and findings of the SIA is a matter for the decision maker in the determination of the application.

2.3 Council's Request for Socio-Economic Impact Assessment

Bega Valley Shire Council has asked Sports Aviation Australia to provide a Socio-Economic Impact Assessment in support of Development Application 10-2017-445-1 for development of a recreational aircraft flying school and ancillary facilities at Frogs Hollow Aircraft Landing Area.

The scope of the assessment was set out in an email dated 16 February 2017. The text of that email is reproduced at Attachment 1 and summarised by themes and key requirements below.

Broadly, Council has requested that the **Socio-Economic Impact Assessment (SIA)**:

- Clearly detail the existing socio-economic context and changes that the proposed development would have on that context. This includes the existing amenity of the area including community views about the amenity and context;
- State the objectives of the development, detail activities, and consider the impacts of the proposed development and activities, including community views;
- Analyse any feasible alternatives to the carrying out of the development, including the consequences of not carrying out the development.

More specifically, Council has requested that the SIA identify the likely impacts of the development, their nature and extent, in terms of issues identified, including:

Economic Impacts, including:

- Document existing conditions and use of the airfield;
- Potential impacts on existing local established industries, including:
 - Agriculture (dairying) and horticulture, and
 - Tourist operations including wilderness coast branding.
- Potential impact upon surrounding residences and future residences.
- Potential impact upon other airports proposed to be used for flight circuit training and their associated communities.
- Potential impact from reduced capacity at Frogs Hollow for any other use;
- Financial gain/loss to the community;
- Impact on local economic and business development.

Social Impacts, including:

- Consideration of the social matters raised in the written submissions, including of noise, amenity, lifestyle, privacy, safety and biodiversity;
- Significant change to the existing character and identity of the community;
- Impacts on health and safety of the surrounding area; and
- Change in the amenity of the area from a change in the hours or patterns of activity within the area.
- An overall assessment of socio-economic impacts, including whether on balance the proposal favours the public interest.

Council has requested that, **in determining the level of detail** that should be included in the report, consideration should be given to:

- how important the issues appear to be to the affected community;
- the likelihood of there being serious social consequences or potential future conflict if the matters are not addressed;
- the likelihood of the issues being impacted on by the proposed development;
- the examination of issues that are practical and achievable;
- how reasonable and appropriate the issues are to the development.

Council notes that it is important to **identify any mitigation measures** required to address potential issues identified in the assessment.

This SIA has been prepared in response to that scope and draws upon reports by other experts as appropriate. The SIA has also been prepared with regard to good practice in social impact assessment, and relevant case law that informs the assessment of 'locality' as well as relevant matters for consideration.

2.4 Bega Valley DCP 2013

The Bega Valley DCP 2013 sets out the requirements for assessment of Social and Economic Impacts at Section 5.4.

The objectives of requiring a Socio-Economic Impact Assessment are:

- The amenity created by services and facilities is preserved.
- A liveable and sustainable community is achieved by considering both environmental and economic issues.
- The views of the people most affected are taken into account.
- Effective community/local government participation is promoted.

- Positive and negative impacts are identified early so as to allow the proper consideration of proposed developments.
- Determine and assess possible measures for the management or mitigation of likely impacts.
- The impacts on amenity are equitably distributed in the community.
- The applicant can present the anticipated effects of the development in a detailed and balanced form for Council consideration, showing how it will meet Council's Social Plan and other relevant planning instruments and policies.
- Impacts that are acceptable to the community can be identified.

The requirements for the Socio-economic Impact Assessment are:

- State the objectives of the development or activity proposed.
- Analyse any feasible alternatives to the carrying out of the development, including the consequences of not carrying out the development.
- Identify the likely impacts of the development, their nature and extent, in terms of issues identified for the specific development.
- Evaluate the social and economic impacts by:
 - Scoping: identify issues and affected groups
 - Profiling: data collection, historic trends, assessing current social and economic context
 - Predicting: identify possible future impacts
 - Assessing: analyse the impacts
- Consult with the community and other local agencies to determine the acceptable limits of impacts associated with the development.
- Justify the carrying out of the development with respect to social and economic considerations.

2.5 Considerations from Consultation

2.5.1 Summary of Public Submissions

We understand Bega Valley Council received 462 public submissions in response to the exhibition of the Development Application. These were provided to JSA in summary format. Of these, 14 submissions are duplicates, 57 are the 'Green' form letter, 64 are the 'Brown' form letter and 4 are the 'Buff' form letter, leaving around 323 individual submissions, noting that some of these submissions may also include a form letter as part of the submission.

A thematic analysis has been carried out of the submissions by JSA. This was in order to understand the major themes in the submissions, and the relative importance of the issues raised to the community. As noted above, Council's scope requests that the focus of the research for this

SIA is on those issues that are likely to be of greatest concern to the community as well as those that have the potential to be more significant in their impacts. This also forms the testing ground for the assessment of reasonableness of community concerns, as discussed later.

The outcome of JSA's thematic analysis is shown in the graphs below. The number of people raising different issues is greater than the total number of submissions as many of the submissions raised more than one issue or 'theme', and each of these was counted by JSA.

We have looked at this in two ways - the first including form letters, and the second excluding form letters (or, more correctly, only including issues once). This is in recognition that individual submissions generally require more commitment of time to development, and may show a greater level of consideration on the part of the person preparing the submission. Nonetheless, there is a reasonable level of consistency between the two methods of thematic analysis, as shown below.

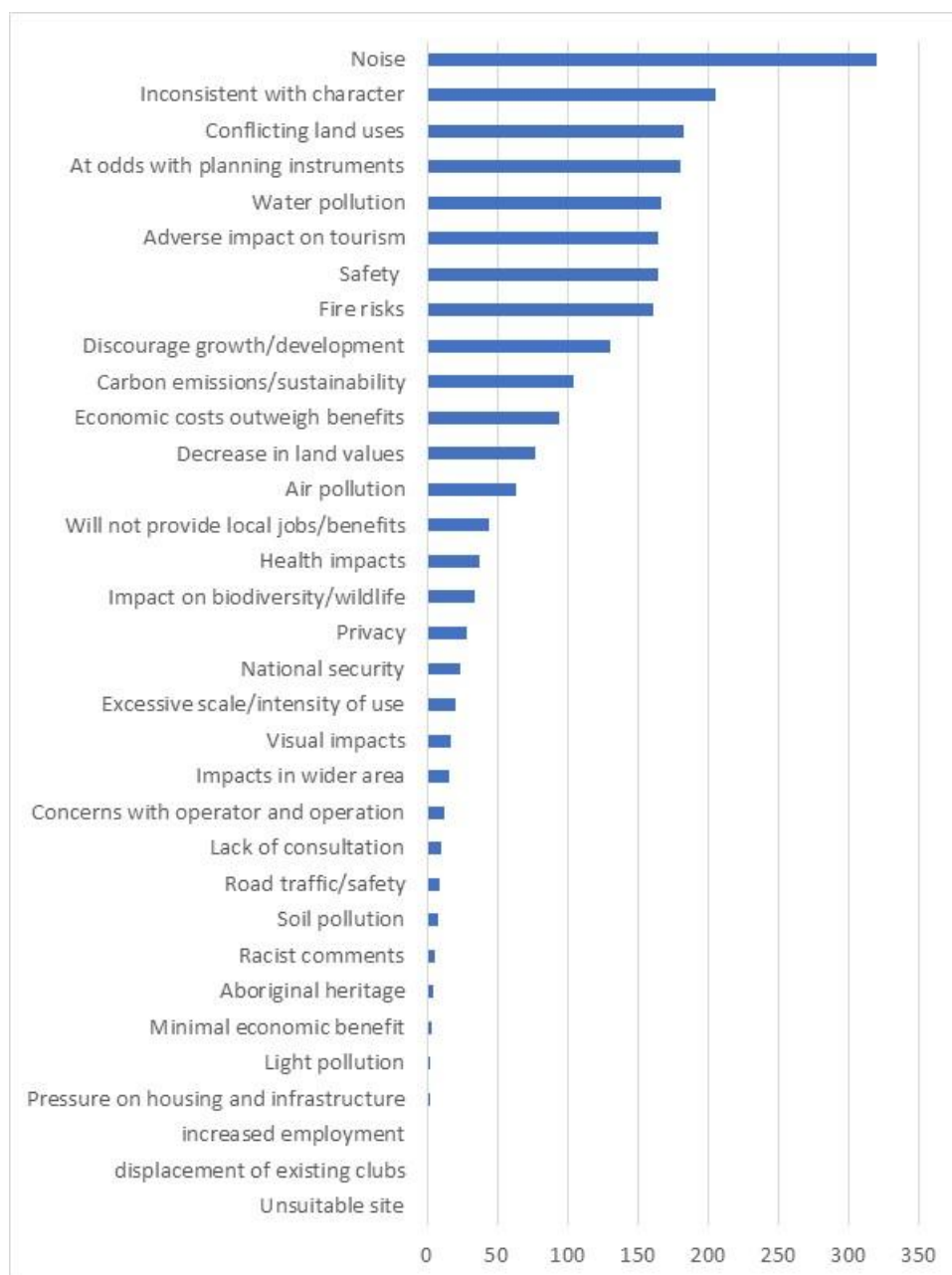


Figure 2.1: Themes identified in submissions, all submissions

Source: JSA 2009

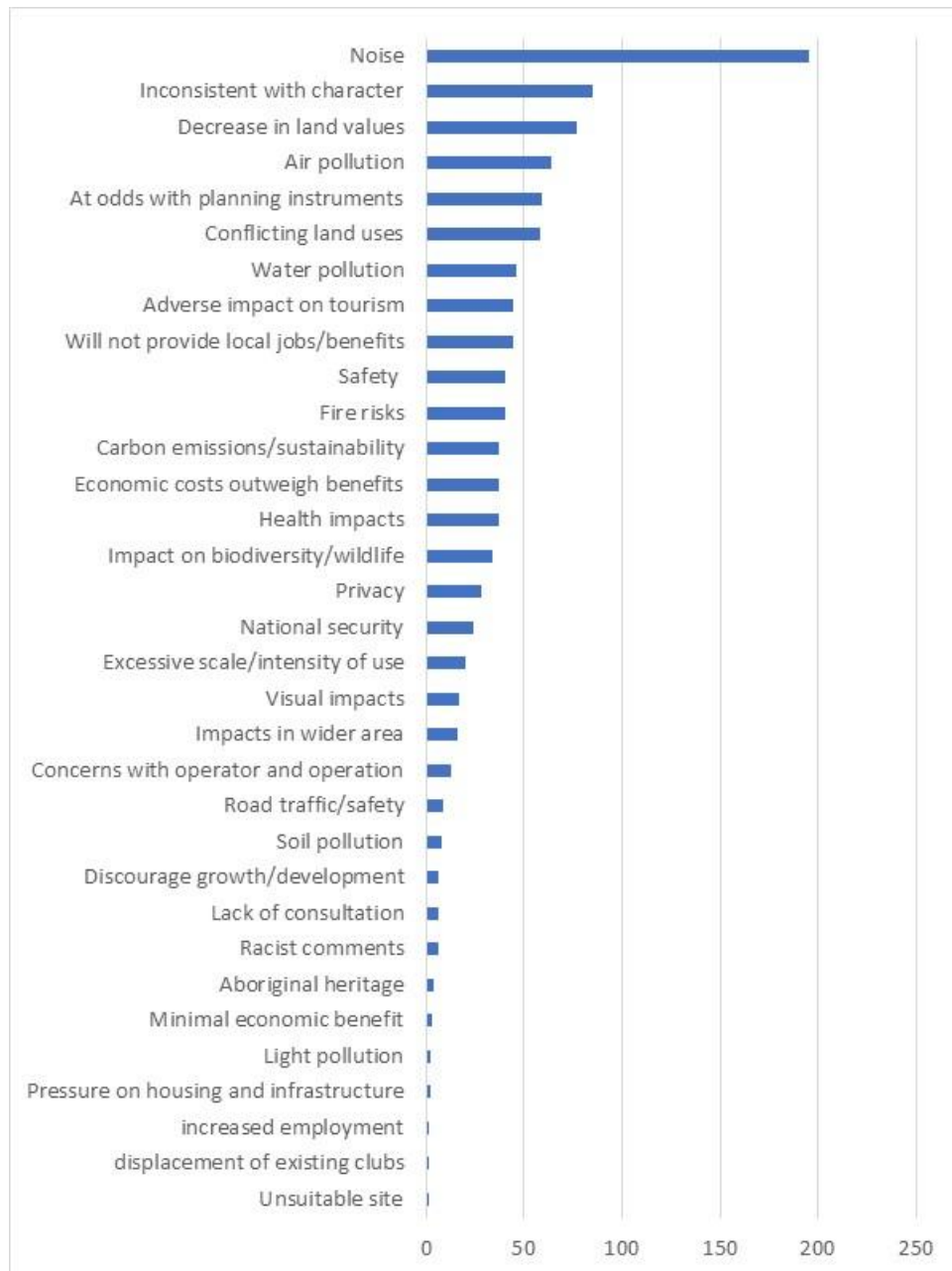


Figure 2.2: Themes identified in submissions, excluding form letters

Source: JSA 2009

By far, the major concern in each type of analysis was ‘**Noise**’ from the proposed operation. Typical comments from Submissions are provided at **Attachment 2**. A few typical comments in relation to *noise include the following*.

“Our idyllic lifestyles will be decimated by the noise of hundreds of light aircraft circling above us every day” #8

"The noise impacts (though deemed to be acceptable in the noise impact report) would not be acceptable and would in fact be very annoying to those living adjacent to the airstrip" #14

"The noise impacts will cause mental distress to residents and affect livestock" #23

"The noise impacts will affect the entire valley. Noise will echo off the surrounding ranges and "with ten aircraft in the air everyday nowhere in the valley will be quiet." #38

The noise pollution from small aircraft flying around above my home for hours on end, day after day will be an awful intrusion on my daily life" #89

The second major theme was adverse impacts upon the **'Character' of the locality**, with typical comments including the following.

"28 ultralight planes, circling above the surrounding farmland and residential areas from 7am to 6pm every day, indefinitely, would mean the end of the areas rural serenity" #99

"The cost to the tranquil nature and country ambience of the Valley environment, which are among the very positive characteristics of this community and why many people choose to live here, far exceeds the benefits, if any, of this proposed development" #222

"It will destroy peace and tranquillity forever - we will lose lifestyle quality and the existing character of the picturesque Bega Valley" #370

Other themes where there were around or greater than 100 responses were as follows.

'Conflicting Land Uses' including the following typical comments:

"Our orchard and vegetable garden would also be detrimentally affected" #276

"This proposal will have a devastating impact upon the clean and green reputation of the Bega Valley and will impact upon the Bega Cheese brand and general reputation of the region." #212

"The proposed flight school could compromise the organic certification of farms located close the subject site" #59

"These little planes can make quite a lot of noise if flying quite low, which scare cattle and disturb resting times" #98

"Currently the Bega Valley has a good reputation for our beef cattle and this proposal could damage this reputation, directly affecting farm incomes. The dairy industry would also suffer." #257

The application is **'At Odds with Planning Instruments'**, including,

"The proposal is unsuitable to our Shire and is in conflict with the Aims of the Bega Valley LEP, particularly where it says "to protect agricultural lands by preventing land fragmentation and adverse impacts from non-agricultural land uses". The proposal is directly at odds with the first aim of the plan and Council's efforts to mitigate the effects of climate change." #385

“The proposal fundamentally contravenes the objectives and desired character statements in the Development Control Plan 2013. The application contravenes the furtherance or protection of: a pastoral, agricultural, rural living or environmental landscape; agriculture or rural living as primary land uses; agricultural land or rural living amenity” #259

Another issue, with around 100 comments, relates to **‘Water Pollution’** and **‘Carbon Emissions’** although this outside of the scope of this SIA, and likely addressed by other experts.

‘Adverse Impacts upon Tourism’ is also a major issue raised. This includes the following types of comments:

“The Bega Valley and Sapphire Coast has a reputation for its pristine environment. Tourism and agriculture are the major industries of the region. Both of these industries will be impacted by the noise and pollution caused by this proposal. The tourist base will diminish and the local tourism providers will be impacted.” #335

“It will significantly damage our tourism industry which is based on the serenity of the district” #370

“Such detriment would include reduced return on investment by existing tourism industry operators and reduced retail revenue if tourist visitation rates were to be lessened due to any diminution of the Shire's status as a premier tourist destination as a result of the introduction of discordant development. Tourism is an extremely competitive industry and the Shire's fortunes are closely related to it” #233

Other issues most frequently mentioned by objectors related to **‘Safety Risks’** and increased risks associated with **‘Fire’**, for example,

“Fire and safety risks from the use of unreliable small planes and large storage of fuels on bush fire prone land.” #176

“We have serious concerns about the safety levels of learner pilots flying in such large quantities over our property. Their planes are far more prone to accidents and are especially affected by wind and adverse weather. As they are learners there are also increased risks of accidents and problems due to lack of experience. If a plane was to crash there is a risk to our safety and the potential for damage, fire and even death” #395

“The land is bush fire prone. 360 trainee pilots will likely increase the risk of bush fire through the possibility of a crash. Should a fire occur, will the facility have the capability to fight such a fire?” #89

A further major issue raised related to the likelihood that the proposal would **‘Discourage Growth and Development’**, including that,

“The proposal will discourage people from moving to this region and will have a negative impact on investment and sustainable development in the surrounding area.” #122

“The proposal will discourage people from moving here and negatively impact the local construction industry.” #23

There was also a view from a large number of objectors that the **‘Economic Costs of the Development would Outweigh the Benefits’**, and that it would **‘Not Provide Jobs or Related Benefits’**, with comments including that,

“This project does not demonstrate a level of community benefit in the form of permanent local employment, ongoing local expenditure or services, or other economic benefits which could outweigh the manifest community detriment that would inevitably flow if it were to be approved.” #233

“If the proposal involves Chinese funding then the claimed benefits for the local economy are doubtful” #46

“There will be little or no commercial interaction with local businesses and therefore no contribution to the local economy.” #102

“Mostly staff will have to be recruited from outside of the Bega Valley, and the positions will be subject to market fluctuations and not overly secure” #33

Other issues that would be included from an analysis of the second graph above include concerns related to **‘Decreased Land Values’**, **‘Health Impacts’**, and **‘Impacts on Biodiversity’**.

In the case of **land values**, the following are some of the typical concerns:

“The development will negatively impact land values in the surrounding areas” #4

“Aircraft noise will result in devaluation of property prices. If the development is approved, it will be difficult to reduce noise and pollution problems” #6

With respect to **health concerns**, the following was noted:

“The flight school will cause cumulative noise impacts over the Bega Valley's quite places, which are important to protect for our health and well-being.” #1

“It will have negative impacts on residents including to their health and wellbeing and many residents will feel compelled to leave the region” #142

The following are some typical comments related to **biodiversity** impacts:

“Creeping habitat destruction is certain as busy airports generally become ecological wastelands.” #10

“The proposal will impact upon the bird life in our area (Newlyns Estate), including the two families of hawks. A bird strike with one of the birds would be terrible.” #47

Finally, there were concerns raised with **‘Privacy’**, including the following:

“The planes will be fitted with Go-Pro cameras which would violate personal privacy in all the areas over which the planes will be flying.” #223

“Residents under the flight paths will have their privacy invaded constantly” #318

To the extent to which they areas relevant to the assessment of social and economic impacts, these are examined at various points in the SIA below.

2.5.2 Summary of Door Knock in the Immediate Locality

Judith Stubbs and Associates carried out a survey of residents in the immediate locality on 4 and 5 April 2018 during the day. Twenty nine properties were door knocked. Of these, respondents from nine properties completed a survey, three refused, and there was no one home at the remaining properties.

Three of the respondents had lived in the area for more than ten years, with the balance living there for less than three years. Eight respondents were home owners, with one renter.

Seven respondents cited peace and quiet, or serenity as the best thing about living in the area. Other responses included having animals, growing fruit and vegetables, rural community and privacy.

No respondent would change anything about the neighbourhood, and eight were very positive about the neighbourhood, with one respondent not answering this question.

One respondent saw employment as a positive impact of the proposal, with the remaining eight seeing nothing positive. All respondents had concerns about the development with the most common concern being:

- noise (9 responses);
- followed by privacy, pollution, and intensity of use (3 responses each);
- visual impacts (2 responses); and
- one response each for lack of local employment, creation of an Asian enclave, security related to the NBN ground station, safety, over development, change to way of life and intrusion.

No respondent proposed any mitigations that could address their concerns.

2.6 Submissions from Authorities

Overview

Five submissions were received from authorities. No significant issues were raised, however the Department of Infrastructure, Regional Development and Cities stressed the importance of managing noise impacts. The NSW EPA advised that the industrial noise policy was inappropriate, and we understand that noise modelling has been revised to use appropriate criteria.

CASA

CASA responded to Council on 13 November 2017. CASA had no comment other than to refer council to standards for Aeroplane Landing Areas.

Department of Infrastructure, Regional Development and Cities

The Department of Infrastructure, Regional Development and Cities responded to Council on 15 February 2018. **The department proposed some options for noise mitigation including preferred flight paths for circuit training, noise abatement procedures including training hours, number of circuits and a fly friendly agreement.** The department also stressed the importance of ensuring potential residents were fully informed as to the likely aircraft impacts.

NSW EPA

The NSW EPA responded to Council on 6 December 2017. The letter advised that the Industrial Noise Policy has been superseded, and that the EPA **considered the criteria in the Policy inappropriate for managing aircraft noise while taking off, landing and in the air.** Council was referred to Airservices Australia for appropriate criteria.

NSW Rural Fire Service

The NSW Rural Fire Service responded to Council on 11 December 2017. The letter set out conditions for the proposed development relating to Asset Protection Zones, Water and Utilities, Access, Evacuation and Emergency Management, and Design and Construction.

Recreational Aviation Australia

Council received a letter of support for the proposed development from Recreational Aviation Australia on 12 February 2018.

2.7 Other Interviews

Sapphire Coast Tourism

An interview was conducted with the executive officer. He saw that the development was a big opportunity in introducing new people into the region. Visiting Friends and Relatives is a large source of visitors and has the potential to grow visitation.

China is not a priority market in the area and the area will be difficult for Chinese Tourist to tour, generally due to concerns around language.

The main concern was whether the proposed development would detract from the unspoiled south coast. Key areas for tourism are Eden, Merimbula, Tathra and Bermagui. Eden is the most visited area for daytrippers.

The value of tourism in Bega Valley has been estimated at \$412 million per year with employment of around 5,000 people.

There are lots of National Parks in the area so amenity impacts could be important. Effective mitigation would be to minimise impacts on coastal areas, National Parks and key tourism precincts.

Bega Chamber of Commerce

No response was received to messages left with this organisation.

Merimbula Chamber of Commerce

No response was received to messages left with this organisation.

Bega Valley Shire Business Forum Inc

A submission was received from Bega Valley Shire Business Forum Inc which we understand represents all Chambers of Commerce within the Shire. The text of that submission is set out below.

The Bega Valley Shire Business Forum Inc (BVSBF) has resolved at its General Meeting to lodge a formal submission objecting to the proposal. "BVSBF wishes to note that it represents all Chambers of Commerce and like organisations within the Shire, and has a goal of facilitating and actively supporting the establishment of appropriate commercial development with the Shire. In this case, however, the project is not appropriate". The proposal fails fundamental "net community benefit" planning principles. The proposal fails to satisfy social, economic and environmental standards set out in Sustainable Development principles under Sections 5 (i) & (vii) and 79C (1) (b) of the Environmental Planning and Assessment Act 1979.

Bega Valley Shire (also known as the Sapphire Coast) has spent many millions of dollars in marketing investment and tourism promotion of our area as a pristine tourist destination and a superior "seachange" and "treechange" location that is clean with a non-polluted natural environment. Thousands of tourists come here to get away from the pressure, stress and noise of city life and to enjoy levels of peace and tranquillity not found in many tourist destinations. Tourism is the most important asset the Shire has, and figures for 2016/17 show that direct spend from visitors is estimated at \$412m, which equates to approximately 40% of Bega Valley's total jobs. Spending rates are increasing each year.

"This project does not demonstrate a level of community benefit in the form of permanent local employment, ongoing local expenditure or services, or other economic benefits which could outweigh the manifest community detriment that would inevitably flow if it were to be approved. Such detriment would include reduced return on investment by existing tourism industry operators and reduced retail revenue if tourist visitation rates were to be lessened due to any diminution of the Shire's status as a premier tourist destination as a result of the introduction of discordant development. Tourism is an extremely competitive industry and the Shire's fortunes are closely related to it".

The consultants' report does not adequately address the community's concerns regarding loss of amenity due to noise from very frequent flights, a marked increase in airborne chemical particulates, the "industrial" nature of high activity rates, loss of privacy and general aesthetics. Further concern is noted with the intention to provide everything in house, and therefore provide no guarantee of job creation or local spending. There is no guarantee that the proposal will be built or operated by the current proponents. Concern has been raised that a certified organic farmer is at risk of losing his certification due to proximity to the subject site, should the

development proceed. The site is not recognised or registered with CASA, which raises the question as to who will monitor aircraft movements. The constant noise will cause health impacts. The noise management plan does not meet current standards, nor does it address the quantity of aircraft or consider the flight crash zone, being Jellat Flats [near Tathra, and 10 kms from Frogs Hollow Airfield]. The flying school does not fit the model our Shire has invested in, of being unspoilt, clean, green, pollution free, offering peace and tranquillity to all who come, whether as tourists or permanent residents. The proposal would detrimentally affect the entire Bega Valley Shire.

National Parks (Victoria)

An interview was conducted with a ranger team leader stationed at Mallacoota and with the Area Chief Ranger Snowy Croajingalong. With regard to flight operations, there were two wilderness areas of concern. One is to the east of Mallacoota up to the [NSW] border and adjoins Nadgee Nature Reserve. The other is to the west of the airfield from Shipwreck Creek to Wingan Inlet, known as the Sandpatch Wilderness Area. National Parks relies on wilderness branding for the area. Multiple aircraft flights over those areas would impact on wilderness experiences. The critical area is along the coast, where there are walking routes, so coastal flying should be avoided in these areas. Impacts could be mitigated if aircraft flying to Mallacoota flew along the Princes Highway and then tracked to the coast along Mallacoota Road or along Mallacoota Inlet, as the Inlet is heavily used by pleasure craft. Impacts could also be mitigated if low flying was avoided.

National Parks (NSW)

An interview was conducted with the area manager based at Merimbula. He raised concerns regarding environmental impacts and impacts on bird and fauna communities. He would be concerned regarding overflying Bournda National Park and other national parks as it would detract from the visitor experience. Nadgee nature reserve is a wilderness area. Other wilderness areas are Wadbilliga. Particular areas of sensitivity (promoted for their wilderness experience) include multi day wilderness walks in Ben Boyd and Nadgee. South East Forest National Park is less heavily used. He also raised concerns regarding birdstrike and threatened species.

An interview was conducted with the area manager based at Merimbula. Coastal fringe of Mimosa Rocks is a sensitive area, and there are culturally sensitive areas and campgrounds in the coastal area.

Mallacoota Airfield

An interview was conducted with the Aerodrome Reporting and Safety Officer on 23 April 2018. He advised that the airfield was 8 km out of town so a bit isolated. Currently the airfield gets 12 flights a week, so usage by the flight school is unlikely to be a problem as the airfield is not that busy. DELWP has a base on the airfield for firefighting, and he thought that if firefighting operations were in place, other users would likely avoid the airfield due to the intensity of use.

Merimbula Airfield

An interview was conducted with the manager. The airfield is not heavily used with five RPT services daily and about 800 movements per month.

It is located right in the heart of Merimbula and any continuous operation would generate noise issues with the community and have done so in the past.

Polo Flat

An interview was conducted with the owner of Polo Flat Airfield. The owner ran a flying school there for many years but is in the process of selling the airfield.

With regard to Polo Flat, he advised that the locals are happy to have the airfield used. He didn't think the level of use [by aircraft from Frogs Hollow] would be a problem. He had had one complaint in twenty years. Concerns are mitigated by conducting flight operations to the east of the airfield.

The airfield currently gets 20 movements a week, with some periods of more intensive use. When he was running the flying school, there were 150-200 movements a week, with up to five aircraft in the circuit at one time.

Cooma Snowy Mountains

An interview was conducted with the Aviation Manager. He advised that the airfield is lightly used with one RPT flight six days a week, and with a greater frequency in the winter skiing season. Typically, the airport would have less than five movements per day and could accommodate training aircraft, subject to commercial negotiations. The airport is 15 kms out of Cooma and the same distance from Berridale, and there is no history of complaints.

Bombala

An interview was conducted with the Group Manager Facilities. He advised that the airfield is not used much and that there are few facilities available. Council would like to see some income from it [and this would come from increased usage through landing fees]. Usage is very low, with maybe one aircraft movement a month. There is not enough activity to base any opinion on complaints.

Moruya

An interview was conducted with the Airport Co-ordinator. He said that intensive flight operations would conflict with the existing sky diving school operated at the airfield as currently parachutists land on the airstrip. This can be co-ordinated with irregular aircraft flying in and out, but would be difficult to co-ordinate with aircraft in the circuit. The aerodrome currently has 20,000 movements a year of which the parachute school accounts for 7-8,000 movements. The parachute school operates 7 days a week.

He currently receives complaints at a rate of about one a month. These mostly come from the Broulee and South Head area. Complaints generally relate to noise, but also to low level coastal movements of aircraft which are unrelated to the airfield.

Frogs Hollow Flyers

An interview was conducted with a member of the club. The flying school will have an impact on the club. While a site will be provided, it will be an impact to relocate hangers and buildings,

particularly given the age of members. Currently there are around 80 members (including 20 active pilots) flying 12-14 aircraft, most of which are based there. The club generally flies on Sunday afternoons, however there will be departures at other times. The main advantage of the field is that an ASIC card is not required there compared to Merimbula.

Bega District Model Club

We were unable to contact this organisation. A written submission was received from Bega District Model Club and is reproduced below.

I write on behalf of the Bega District Model Club (BDMC). We do not want to hinder that sale of the property belonging to Mr and Mrs Eric Johnston who have very generously allowed us use of their land. We acknowledge that the proposed Flight School will bring benefits to the Bega Valley Shire. However we have considerable concern that there is no mention of a site for BDMC. We have spoken with the applicant, Mr Boyle, and in this conversation he advised us that he had a site set-aside for us away from the main airfield. Plans were made to meet to discuss the matter further, however time commitments have not permitted us to meet prior to the submission cut-off date, hence this submission. We are concerned that a site for BDMC may be rejected by Council because it does not appear on the Development Application. Currently we fly from the full-sized airstrip which we have shared with Frogs Hollow Flyers Aero Club since the BDMC's formation in 1976. We have also sought and gained CASA approval to use the Frogs Hollow Airstrip and have a set of procedures in place that allows the safe use of the flying field by both clubs. Radio Control Model Planes come under the CASA umbrella whose rules we must comply with. Our Club's future would most certainly be jeopardised if forced to identify another location suitable for our needs. Our club is not large with 29 members, however we feel that we are an important asset to the sporting/recreational activities in the Bega Valley Shire and play an important role creating a sense of community for our members, and generally operating as a type of community facility.

2.8 Scoping of potential socio-economic impacts

Drawing on the range of considerations above, the following table provides a synthesis of the main issues that need to be considered in the assessment of adverse and positive social and economic impacts of the proposed development. These issues will then be explored in the analysis that follows.

Table 2.1: Scoping of Likely Social Impacts

Area	Impact	Potential Positive impacts	Potential Adverse impacts
Amenity of the locality	There will be a significant intensification of the existing use of the airfield resulting in increased aircraft movements and related impacts		Amenity may be reduced through: Noise Air pollution Water pollution Soil pollution Light pollution Reduced privacy

Area	Impact	Potential Positive impacts	Potential Adverse impacts
			Visual impacts Traffic impacts Impacts on biodiversity
Character of the locality	There will be a significant intensification of the existing use of the airfield resulting in increased aircraft movements and related impacts		The intensification of use may result in a change of the character of the locality
Conflicting land uses	There will be a significant intensification of the existing use of the airfield resulting in increased aircraft movements and related impacts		Amenity impacts may conflict with residential uses in the locality Amenity impacts may conflict with tourism uses in the locality Noise and pollution may conflict with agricultural uses in the locality
Tourism industry	The development will cater to a large tourist market	The development will lead to an expansion and diversification of tourism in the locality	Amenity impacts may conflict with existing tourism uses in the locality
Alignment with strategic goals	There will be a significant intensification of the existing use of the airfield resulting in increased aircraft movements and related impacts	The proposal may support strategic directions expressed in various planning documents	The proposal may be antithetical to strategic directions expressed in various planning documents
Economic impact	The development will provide significant employment but may reduce employment in other industries	The development may provide employment in the locality both during construction and during operation	The development may have an adverse impact on tourism industries The development may have an adverse impact on agricultural industries
	The development may have an impact on land values in the locality	Additional employment may result in increased demand for housing in the locality	The amenity impacts of the development may lead to reduced land values in the locality
Regional Development	The development will introduce a new industry and market to the area	The development may make a positive contribution to Regional Development through exposure to new markets	
Safety and Fire Risks	There will be a significant intensification of the existing use of the airfield resulting in increased aircraft movements and related impacts		There may be an elevated safety and fire risk from the operation of large numbers of aircraft
Health Impacts	There will be a significant intensification of the existing use of the airfield resulting in increased aircraft movements and related impacts		Increased pollution and noise may adversely affect people's health

Area	Impact	Potential Positive impacts	Potential Adverse impacts
Other airfields	The development is likely to rely on other nearby airfields to meet its training requirements	Increased use of nearby airfields may result in increased income to offset maintenance costs	Increased use of nearby airfields may conflict with existing usage Increased use of nearby airfields may result in amenity impacts in surrounding areas
Existing Recreational Activities	The site currently contains an aero club and a model aircraft club		The aero club and model aircraft club may be displaced

Source: JSA 2017

3 The Proposal

Sports Aviation Flight College Australia proposes to establish a flight training school for Recreational Pilots operating from Frogs Hollow Aircraft Landing Area (ALA). Training will be conducted under the auspices of Recreational Aviation Australia. A Recreational Pilot's Certificate or License enables a pilot to fly ultra-light and Light Sport Aircraft.

The college will cater to a Chinese market to service a perceived ongoing demand for pilots in that country and a recreational demand. Delivery of the project will be staged, but once the project is operating at full capacity, there will be a total of 360 students at any one time, and 1,200 students serviced each year.

A new group of students will arrive each month for a three month training course. Each group of students will spend the first two months studying Aviation English, with the last month used for flight training. As such, one third of the 360 students (120) will be engaged in flight training on any one day, and one third of these, or 40 students, will be engaged in flight training at any one time. The course is expected to cost \$45,000 for the full package including transport to and from Australia, meals and accommodation; giving an annual turnover of \$54 million.

To support the flight training school, over 200 full time equivalent employees will be required including management, flight instructors, Aviation English instructors, squadron assistants, administration and support workers, flight theory instructors, squadron leaders, kitchen/café staff, and aircraft ground staff.

We understand that staff will be sourced from Australia and that the operator intends to provide a scholarship program to support the employment of people within the locality. The operator expects to employ around 170 people locally.

The proposal will require the construction of a number of buildings at Frogs Hollow ALA with an estimated value of \$10.45 million. These include:

- A main building incorporating offices, toilets and eating facilities;
- Ten squadron compounds incorporating accommodation for students, laundry facilities and classrooms;
- Ten hangars, each storing six aircraft; and
- Two workshop buildings.

A site will be provided within the site for the relocation of Frogs Hollow Aeroclub and associated buildings.

Flying operations will take place in:

- The training area, being a 25 Nm (45 km) radius around the airfield;
- The circuit areas, being approximately a 2 km radius around the airfield; and
- At nearby airfields such as Polo Flat, Merimbula, Mallacoota, Cooma, Moruya and Bombala.

It is proposed that flying operations take place between 0700 and 1800 Monday to Friday. There will be limited flying on Saturday and no flying on Sunday. Training will take place year round, with the exception of the period 10 December to 10 February, when an annual shut down will occur. Each student will spend 15 days each month on flight training, with 9-10 of those days in the wider locality and 5-6 days spent on training in the circuit area.

During the flight training period, there will be a maximum of 40 aircraft in the air at any one time, with these spread out across the flight training area, including training in the circuit area at Frogs Hollow and nearby airfields. Where circuit training is taking place, there will be a maximum of 6 aircraft in the circuit.

Due to the number of students, circuit training will take place at other nearby airfields, with final arrangements depending on negotiations between Sports Aviation Flight College Australia and the various airfield operators.

Circuit training will take place at lower levels, typically at 1,000 feet above ground level except when taking off and landing; while wider area operations will typically be at 4,000 feet above ground level or more.

Operations are expected to be of high intensity. If all aircraft left from Frogs Hollow Airfield, there would be an aircraft taking off or landing every 2 minutes 40 seconds on average between 0700 and 1800. If all training aircraft were to use the same cross country route on a particular day, there would be an aircraft flying overhead every 2 minutes 15 seconds for three 1.5 hour periods during the day.

For aircraft to undertake other training, such as stalls and basic flying operations, each in its own designated area to avoid conflict with other aircraft, in the 40 km radius, there would be one aircraft in each 125 square kilometres, an area about 11 km square. However practically this area would be reduced, as some areas, such as urban centres, would not be available due to restrictions on operations under the Civil Aviation Regulations.⁵

There will be opportunities for students to interact with the local community. Sundays will be used for recreational days with the college offering a program of visits to the Snowy Mountains region, Canberra, Merimbula, Pambula and Eden. Buses will be available to take students to local towns at other times, such as evenings and Saturdays.

⁵ See for example regulation 155.

4 The Locality

4.1 The Physical Context

In defining the locality of the proposed development, I have been guided by the decision of the NSW Court of Appeal in *Randall Pty Ltd v Willoughby City Council* (2005) 144 LGERA 119 at 130-131, where it was noted that the concepts of “impact” and “locality” will interact, and that,

[s]ubject to identifiable outer limits of connotation, [s 79C(1)(b)] should be construed as leaving to the consent authority, or the Commissioner on appeal, the identification of what constitutes a relevant impact in a particular case and what constitutes the appropriate locality within which to consider the impact.

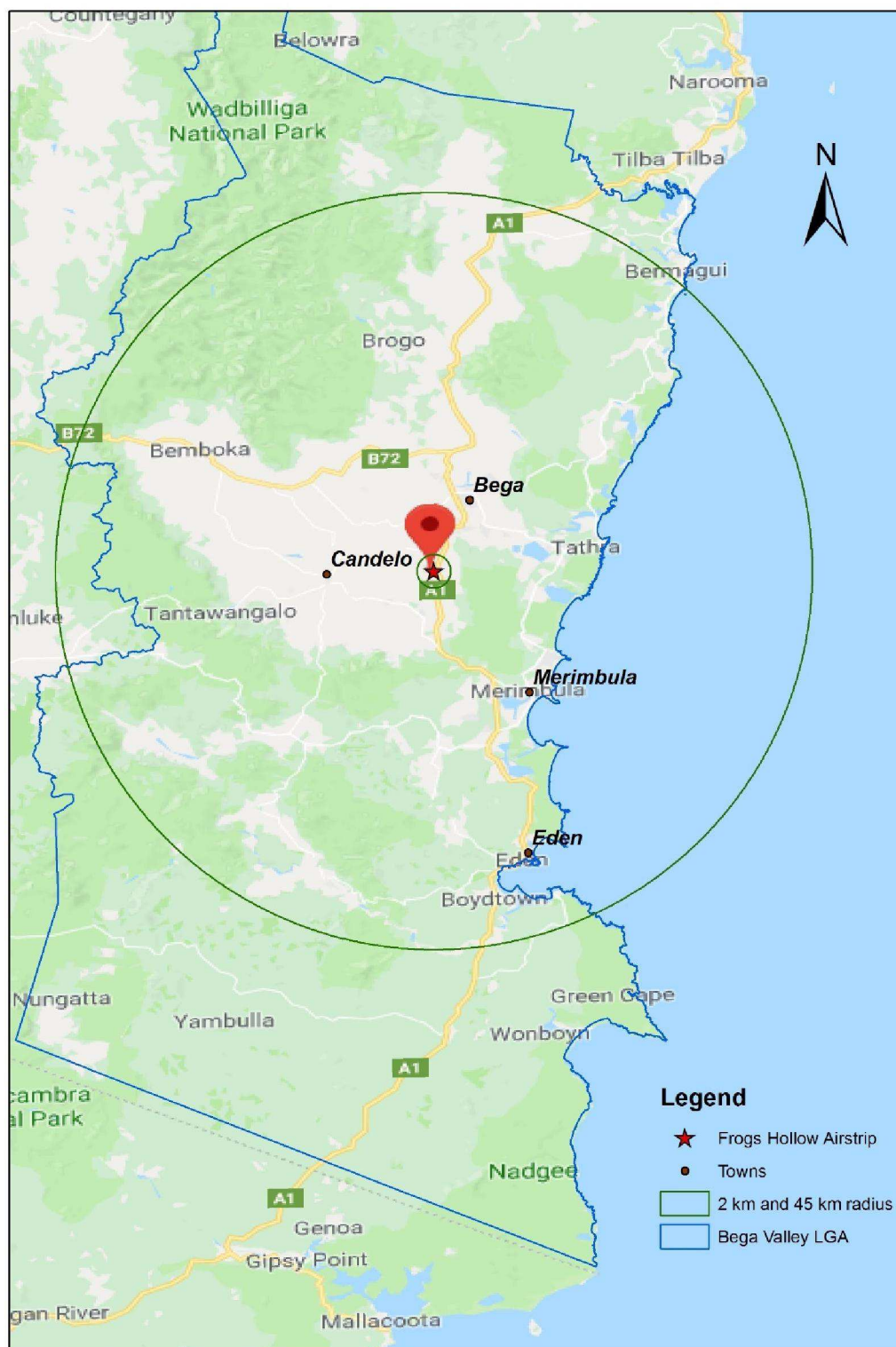
I have also been guided by the observation of Jagot J in *Milne v Minister for Planning & Anor* [No. 2] [2007] NSWLEC 66 at par [24] that ‘the nature of the development and its impacts will influence the scope of the locality to be considered’.

Accordingly, I have defined the ‘locality’ having regard to relevant features of the proposed development and the nature of the surrounding area, including the local geography and the nature and distribution of surrounding uses and populations, and the activities proposed.

This report assesses impacts in three localities:

- The immediate locality is the 2 kilometre radius around the airfield (the circuit area) where the impacts of high frequency low level flights will be experienced as aircraft take off and land, or conduct circuit training.
- The secondary locality is the 25 nautical mile radius (45 kilometres) around the airfield (the training area) and areas around other airfields where the impacts of increased frequency of overflying will be experienced.
- The wider locality is taken as the LGA of Bega Valley, where the economic impacts of the proposal will be experienced.

These localities are shown on the map below in the context of Bega Valley Shire and nearby towns.



Map 4.1 Frogs Hollow Airstrip in the context of Bega Valley LGA

Source: JSA 2018

4.2 Description of Land Uses in the locality

The immediate locality contains a range of different land uses.⁶ These include:

- Rural residential properties typically around 10 hectares in size, generally clustered around Newlyn's Place and Moorlands Lane, and on the highway with residences in Newlyn's place between 1 and 2 kms from the airfield, and residences in Moorlands Lane typically 1 km from the airfield;⁷
- Grazing properties of 1-200 hectares, generally to the west of the airfield including, within two kms, Ayr Park to the south west and Frogs Hollow to the north. The grazing properties appear to be used for beef cattle. We were unable to obtain further details with regard to grazing properties, such as usage and possible organic certification, as, of the two properties door knocked, one refused an interview and there was no one home at the other on two occasions. We understand Frogs Hollow and surrounding land will form part of the airfield purchase, and the buildings will be used to accommodate training staff;⁸
- Light industrial and recreation uses including:
 - Frogs Hollow Aeroplane Landing Area, and including Bega District Model Club (flying model aircraft) and Frogs Hollow Flyers aero club;
 - Sapphire Coast Kart Club racing track;
 - Storage of building materials at the intersection of Princes Highway and Frogs Hollow lane;
 - Majestic Motor Homes producing motor home conversions at the intersection of Princes Highway and Frogs Hollow lane;
 - Bega Valley Council's Central Waste Facility located off Wanatta Lane, about 4 kms south of the airfield;
 - An NBN satellite ground station facility located off Wanatta Lane, about 4 kms south of the airfield; and
- Areas of woodland.

On a site inspection, Frogs Hollow airfield and associated buildings were not generally visible from surrounding areas, (apart from glimpses from the highway just north of the access road to the airfield), due to distance, intervening topography and screening by trees. Aircraft operations were not taking place during the time of the visit, however it seems likely that aircraft flying in the circuit area at 300 metres above ground level would be visible across much of the surrounding area.

⁶ JSA site visit 5 April 2018.

⁷ Estimated by reference to EAC Redsquare mapping.

⁸ Estimated by reference to EAC Redsquare mapping.

The highway is a significant impact in the area, and vehicles on the highway and their accompanying noise were evident from much of Newlands Place. The council tip and the NBN station were visible from some locations along Wanatta Lane. The highway and airfield were not evident from areas visited on the east side of the highway, due to both intervening terrain and screening by trees.

Pictures of the different land uses are shown below.



Figure 4.1: Rural residential development, Newlyn Place.

Source: JSA site visit 5 April 2018



Figure 4.2: Central Waste Facility, Wanatta Lane.

Source: JSA site visit 5 April 2018



Figure 4.3: NBN Satellite Ground Station, Wanatta Lane.

Source: JSA site visit 5 April 2018



Figure 4.4: Grazing property, Wanatta Lane.

Source: JSA site visit 5 April 2018



Figure 4.5: Go Kart track, Frogs Hollow.

Source: JSA site visit 5 April 2018



Figure 4.6: Bega District Model Club, Frogs Hollow.

Source: JSA site visit 5 April 2018



Figure 4.7: Frogs Hollow Flyers, Frogs Hollow.

Source: JSA site visit 5 April 2018



Figure 4.8: Storage of building materials, Frogs Hollow Lane.

Source: JSA site visit 5 April 2018



Figure 4.9: Majestic Motorhomes Factory, Frogs Hollow Lane.

Source: JSA site visit 5 April 2018

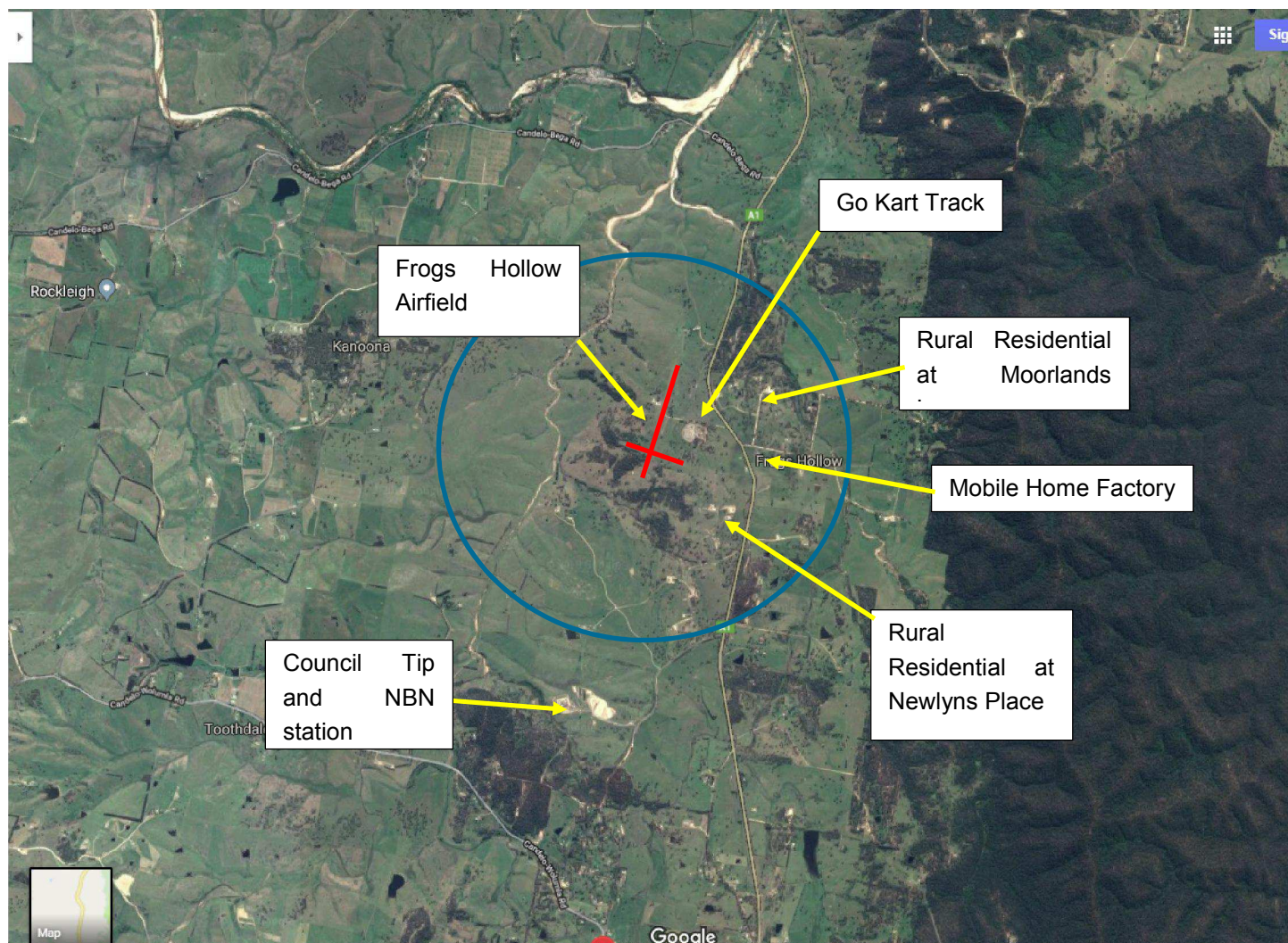


Figure 4.10: Locality sketch showing uses in the area and approximate 2 km radius.

Source: Google maps, JSA site visit 5 April 2018

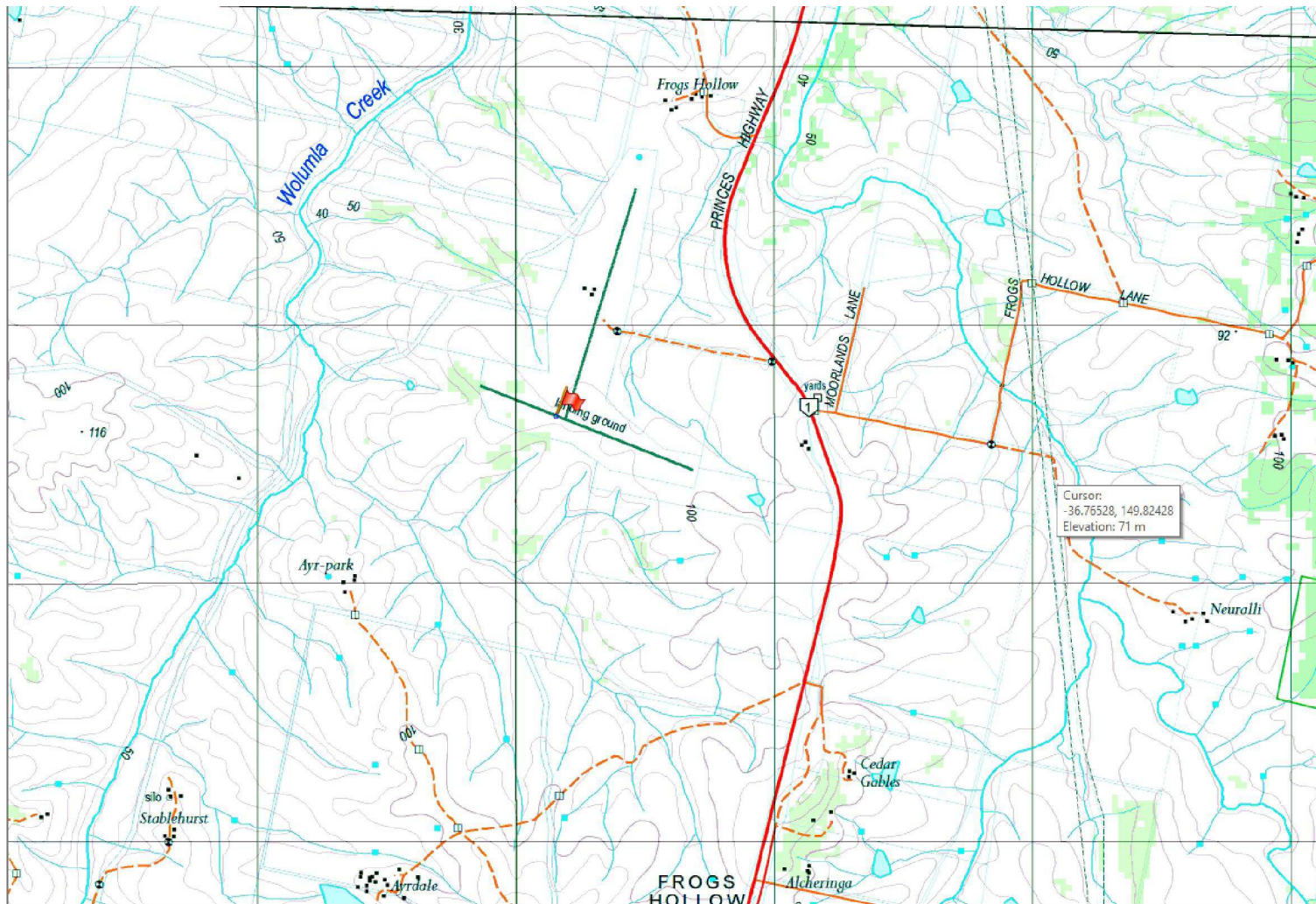


Figure 4.11: Locality sketch showing other properties in the locality.

Source: NSW Topographical Maps (2012)

4.3 Demographic Context of the Locality

4.3.1 Socio-Economic Context of the Immediate Locality

Demography

The immediate locality is situated within SA1 1102001. Details are shown on the map below. This SA1 has an area of 64 km² compared to 13 km² for the immediate locality.

Estimates for population and number of dwellings in the immediate locality have been obtained by a pro-rata apportionment on area, suggesting a population of 88 people across 26 occupied dwellings in the immediate locality.

The table below shows the estimated population and estimated number of dwellings in the immediate locality.

Table 4.1: The immediate locality

	SA1 1102001	The immediate locality (estimated) ⁹
Population	435	88
Occupied Private Dwellings	130	26
Unoccupied Private Dwellings	14	3

Source: ABS Quickstats and JSA calculation

Other indicators are shown in the table below. The immediate locality is slightly older than NSW more generally, with lower levels of educational attainment. Residents predominantly speak English at home, and the unemployment rate is very low. People are less likely to be employed as managers and professionals and more likely to be employed as labourers, machinery operators and drivers.

Median incomes are around 90% of those for NSW. The proportion of couple families with children is in line with NSW. Levels of car ownership are high, as would be expected from the rural location.

Levels of home ownership (outright or mortgage) are high by comparison with NSW.

In terms of SEIFA indexes of disadvantage and employment occupation, the SA1 is in line with the median for similar areas in NSW.

⁹ At a site visit on 4-5 April 2018, 29 dwellings were identified in the immediate locality, supporting the use of this estimate.

Five year mobility is similar to that for NSW, and the population aged 65+ is somewhat less than that for NSW.

Seventeen percent of residents are employed in the tourism related categories of retail and accommodation and food services, suggesting that the tourism industry is important to people in the immediate locality.

Table 4.2: Demographic indicators (place of usual residence)

	SA1 1102001	NSW
Median Age	41	38
Bachelor Degree or Diploma	26.2%	36.0%
Certificate IV or III	25.5%	16.5%
English only spoken at home	91.1%	68.5%
Unemployment rate	1.5%	6.3%
Managers and Professionals	33.3%	37.1%
Labourers, Machinery operators and drivers	18.5%	15.9%
Median weekly household income	\$1,343	\$1,486
Couple family with children	45.5%	45.7%
Two or more motor vehicles	89%	53%
SEIFA (IRSD)	1023 (6 th decile)	1000
SEIFA (EO)	986 (5 th decile)	1000
Owner occupancy	87%	66%
Top five Industries of employment for people resident in the locality (2 digit)	<ul style="list-style-type: none"> • Agriculture • Preschool and School Education • Food Product Manufacturing • Public Administration • Food Retailing 	<ul style="list-style-type: none"> • Professional, Scientific and Technical Services • Food and Beverage Services • Preschool and School Education • Other Store-Based Retailing • Construction Services
Same address five years ago	58%	58%
Proportion of population aged 65+	14.8%	16.2%

Source: ABS Quickstats, TableBuilder and JSA calculation

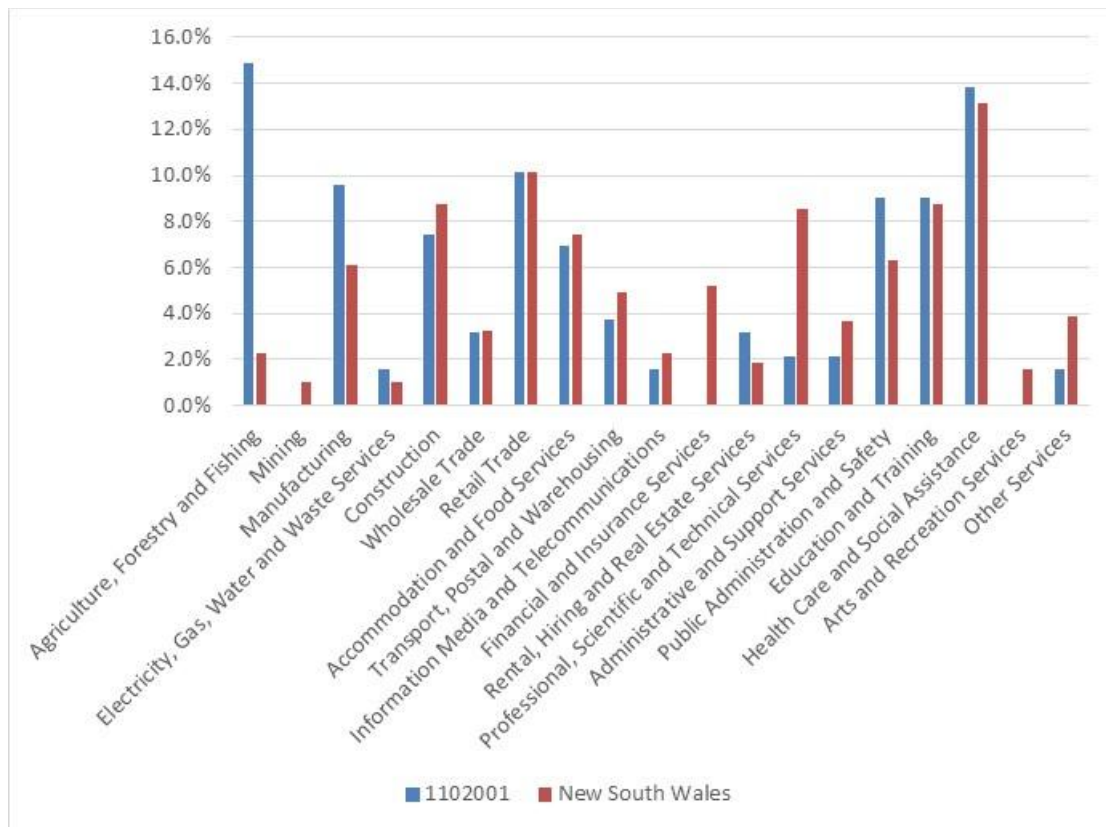
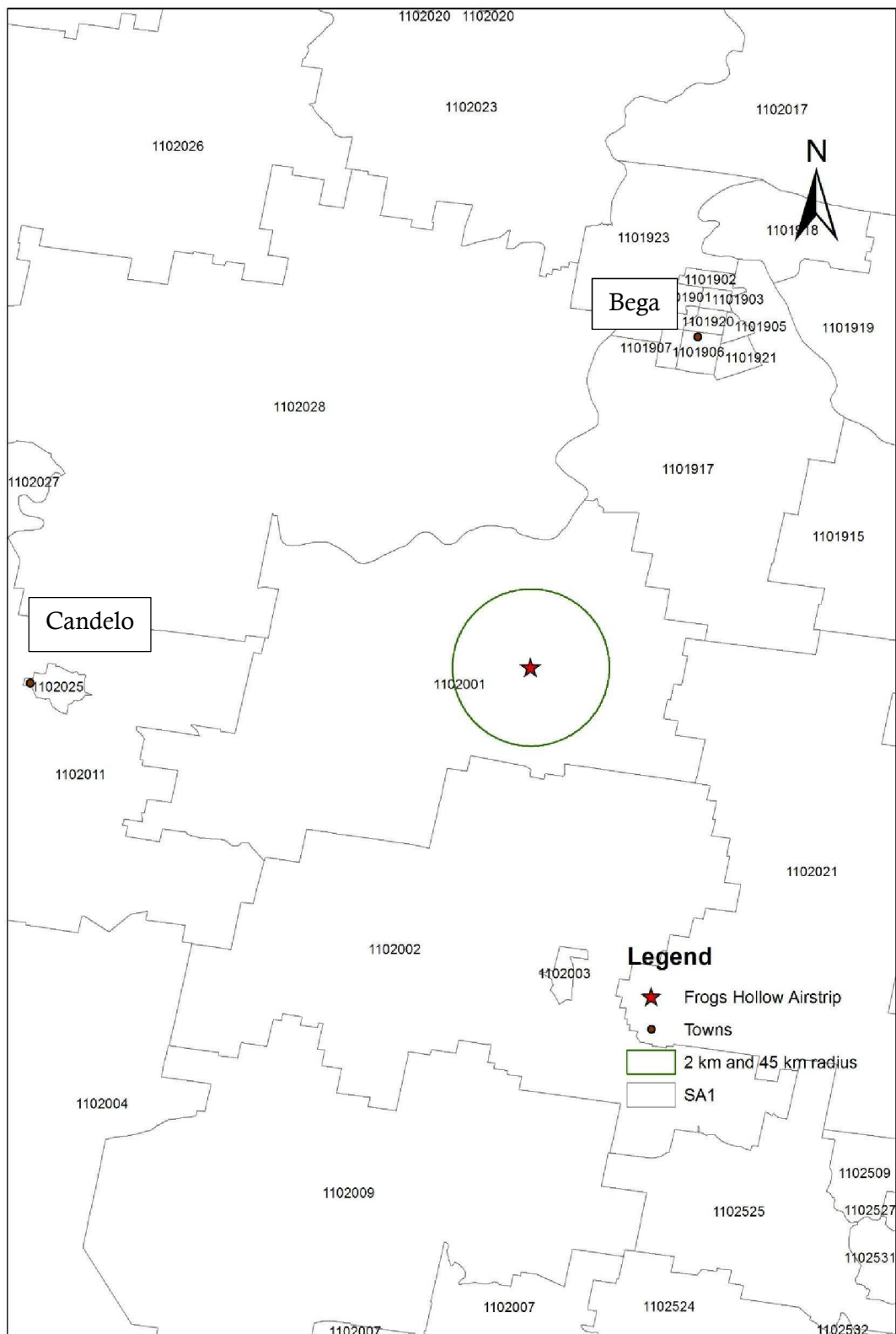


Figure 4.12: Industry of employment of residents compared to NSW.

Source: Google maps, JSA site visit 5 April 2018



Map 4.2 Frogs Hollow Airstrip in the context of ABS SA1 areas

Source: JSA 2018

Employment in the immediate locality

Employment data (that is data pertaining to people who work in the area rather than live in the area) is available at the DZN level. The primary locality is situated within DZN 110208164. Details are shown on the map below. The DZN has an area of 355 km².

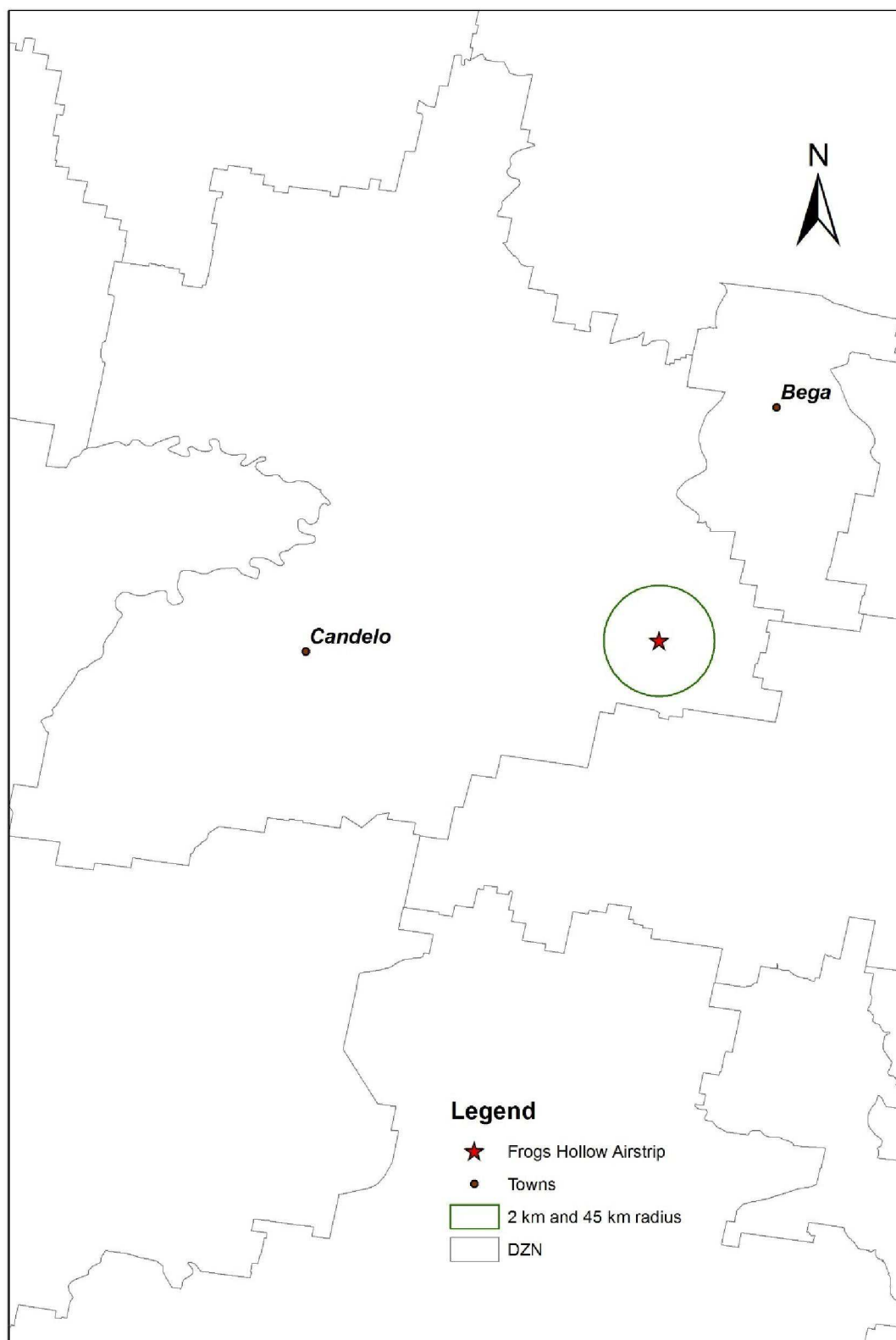
Using a pro-rata approach on area as described above, the estimated agricultural employment in the immediate locality is 4 people. There appears to be tourism related employment within the DZN including in Clubs (Hospitality); Pubs, Taverns and Bars; and Cafes and Restaurants, with 12 people employed in these categories, however this is likely to be an overestimate due to census randomisation procedures. It is likely that most of this employment is in the township of Candelo, which is outside the primary locality.

Table 4.3: Employment in DZN 110208164

Employment category	No of people employed	
	(note that values are subject to randomisation so that the true value of small values could be between 1 and ten).	
Agriculture	115	
Inadequately described	12	
Primary Education	10	
House Construction	7	
Building Construction, nfd	5	
Electrical Services	5	
Clubs (Hospitality)	5	
Transport, Postal and Warehousing, nfd	5	
Road Freight Transport	5	
Defence	5	
Vegetable Growing (Outdoors)	4	
Motor Vehicle Body and Trailer Manufacturing	4	
Carpentry Services	4	
Pubs, Taverns and Bars	4	
Computer System Design and Related Services	4	

Employment category	No of people employed (note that values are subject to randomisation so that the true value of small values could be between 1 and ten).
Building and Other Industrial Cleaning Services	4
Other Goods Wholesaling nec	3
Fuel Retailing	3
Cafes and Restaurants	3
Postal Services	3
Scientific Research Services	3
Accounting Services	3
State Government Administration	3
Other Social Assistance Services	3
Total	261

Source: ABS Quickstats and JSA calculation



Map 4.3 Frogs Hollow Airstrip in the context of ABS DZN areas

Source: JSA 2018

Key Tourism Facilities

Accommodation and food services are major indicator of tourism industries.

The figures below show “TripAdvisor” searches for accommodation and food services in the immediate locality. No accommodation and food services are identified in the immediate locality, suggesting that the immediate locality is not characterised by tourist uses.

The nearest tourist use appears to be a bed and breakfast about five kms to the south on Old Mill Road. There is a cluster of Airbnb premises at Wolumla, about eight kms to the south. The proposed flying school is unlikely to be visible from these areas due to distance and intervening terrain, particularly the ridge line followed by Wanatta Lane.

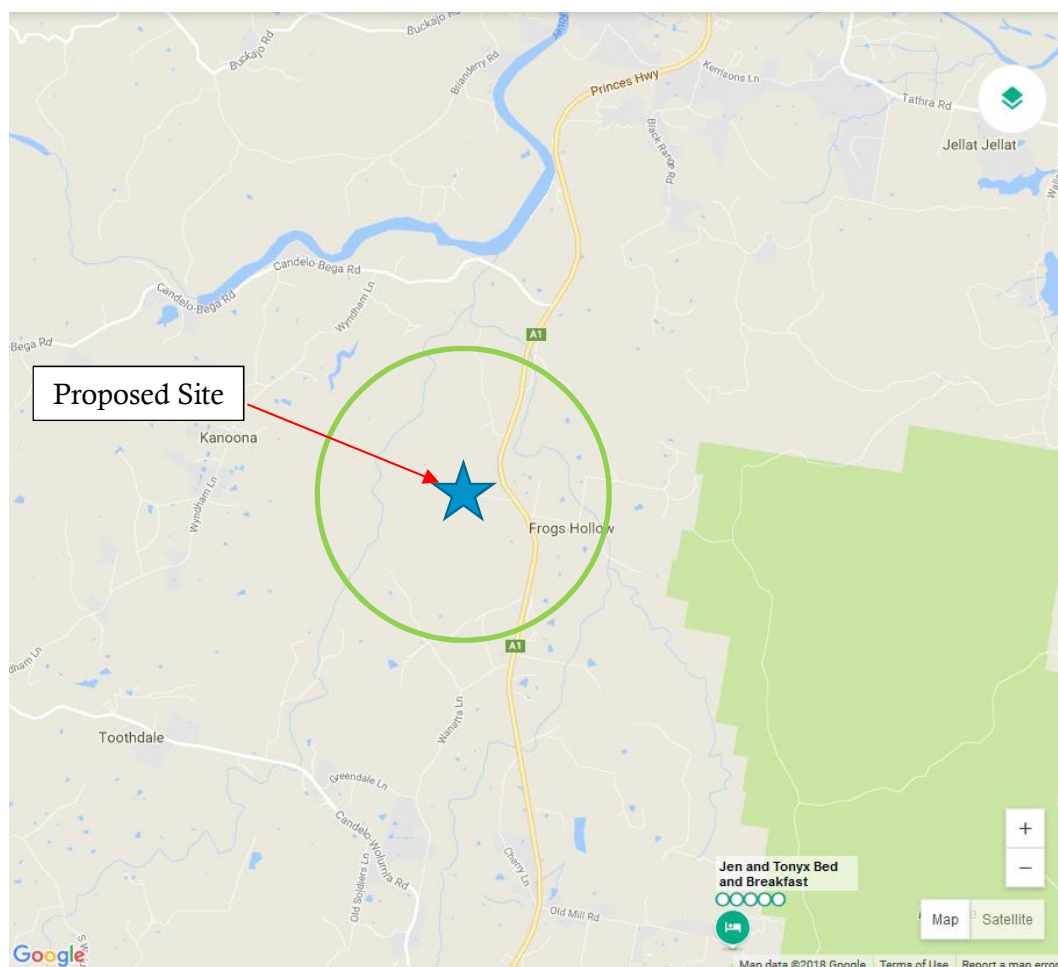


Figure 4.13: Accommodation services in the immediate locality showing 2 km radius.

Source: TripAdvisor. 10 April 2018



Figure 4.14: Restaurants in the immediate locality showing 2 km radius.

Source: TripAdvisor. 10 April 2018

The figures below show “Airbnb” searches in the immediate locality. There is a cluster of Airbnb facilities around Wolumla but nothing in the immediate locality.

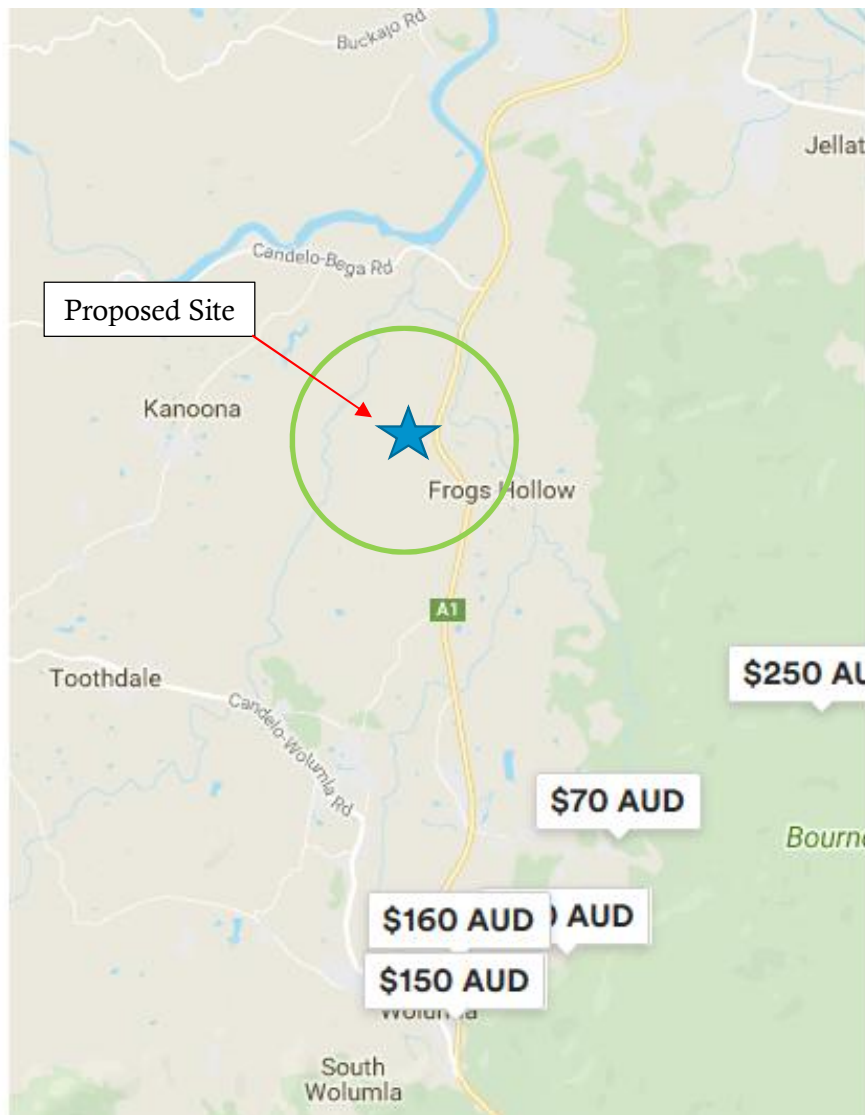


Figure 4.15: Airbnb in the immediate locality showing 2 km radius.

Source: TripAdvisor. 10 April 2018

Agriculture

Agriculture in the locality and surrounds appears to consist of grazing for beef cattle. The land to the north along Candelo Bega Road consists of river flats along the Bega River and appears to be a richer farming area, with evidence of dairy farms and cropping. Much of the land to the south and east is uncleared, likely because it is unsuitable for agriculture.

There was no evidence of intensive agriculture, such as horticulture in the locality or of signage pertaining to organic certification during the site visit.

4.3.2 Socio-Economic Context of the Wider Locality

Demography

At the 2016 census, the population of Bega Valley LGA was just over 33,000 people.

Other demographic indicators are shown in the table below.

The immediate locality is much older than NSW more generally, with lower levels of educational attainment. Residents predominantly speak English at home, and the unemployment rate is low. People are less likely to be employed as managers and professionals and more likely to be employed as labourers, machinery operators and drivers.

Median incomes are around two thirds of those for NSW. The proportion of couple families with children is high compared to NSW. Levels of car ownership are similar to those for NSW.

Levels of home ownership (outright or mortgage) are high by comparison with NSW.

In terms of SEIFA indexes of disadvantage and employment occupation, the SA1 is in line with the median for similar areas in NSW.

Five year mobility is similar to that for NSW, and the population aged 65+ is nearly twice that for NSW.

Table 4.4: Demographic indicators (place of usual residence)

	Bega Valley LGA	NSW
Median Age	51	38
Bachelor Degree or Diploma	26.9%	36.0%
Certificate IV or III	22.6%	16.5%
English only spoken at home	89.5%	68.5%
Unemployment rate	5.4%	6.3%
Managers and Professionals	29.6%	37.1%
Labourers, Machinery operators and drivers	19.6%	15.9%
Median weekly household income	\$986	\$1,486
Couple family with children	52.7%	45.7%
Two or more motor vehicles	57%	53%
SEIFA (IRSD)	976 (6 th decile)	1000
SEIFA (EO)	959 (6 th decile)	1000
Owner occupancy	73%	66%
Top five Industries of employment (2 digit)	<ul style="list-style-type: none"> • Food and Beverage Services • Preschool and School Education • Food Product Manufacturing • Construction Services • Other Store-Based Retailing 	<ul style="list-style-type: none"> • Professional, Scientific and Technical Services • Food and Beverage Services • Preschool and School Education • Other Store-Based Retailing • Construction Services
Same address five years ago	62%	58%
Proportion of population aged 65+	25.9%	16.2%

Source: ABS Quickstats, tablebuilder and JSA calculation

Migration

The graphs below show inward, outward and net inward migration for Bega Valley LGA for the period 2011-2016. There is a net outward migration of people aged 20-29. This is typical of regional areas where young people leave the area for training and employment opportunities elsewhere. There is also a large net inward migration for older people, suggesting the popularity of Bega Valley LGA as a retirement destination, again typical of seaside areas.

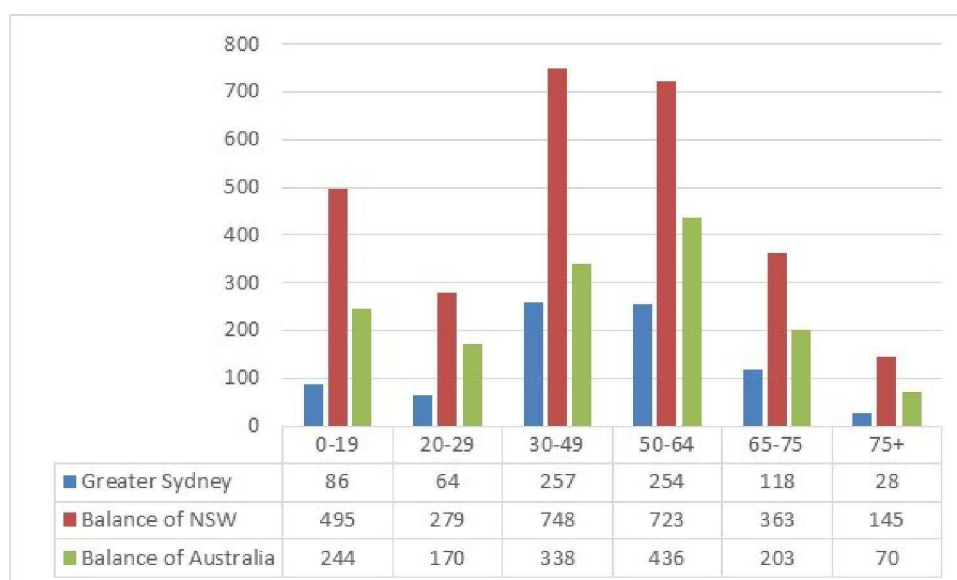


Figure 4.16: Bega Valley LGA, inward migration 2011-2016.

Source: ABS Census 2016

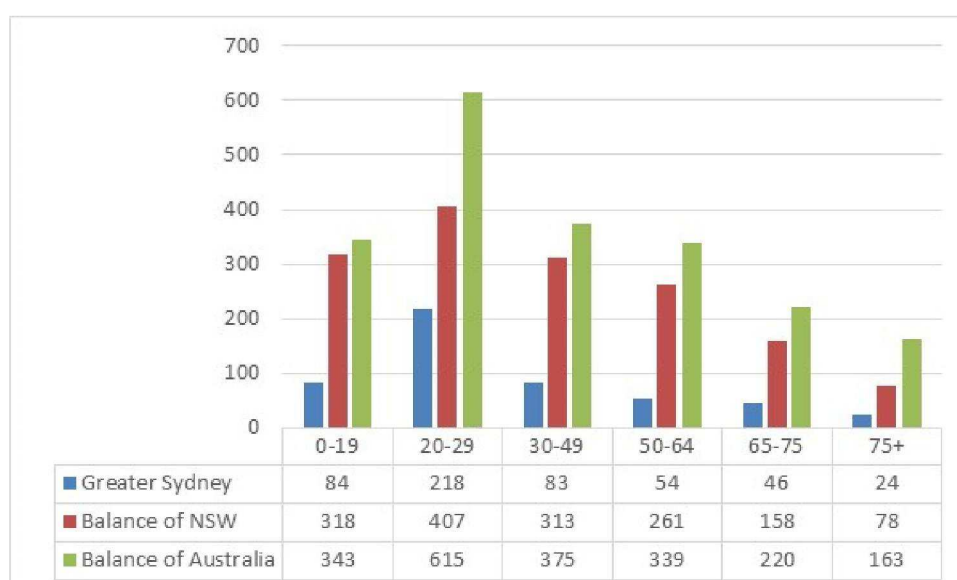


Figure 4.17: Bega Valley LGA, outward migration 2011-2016.

Source: ABS Census 2016

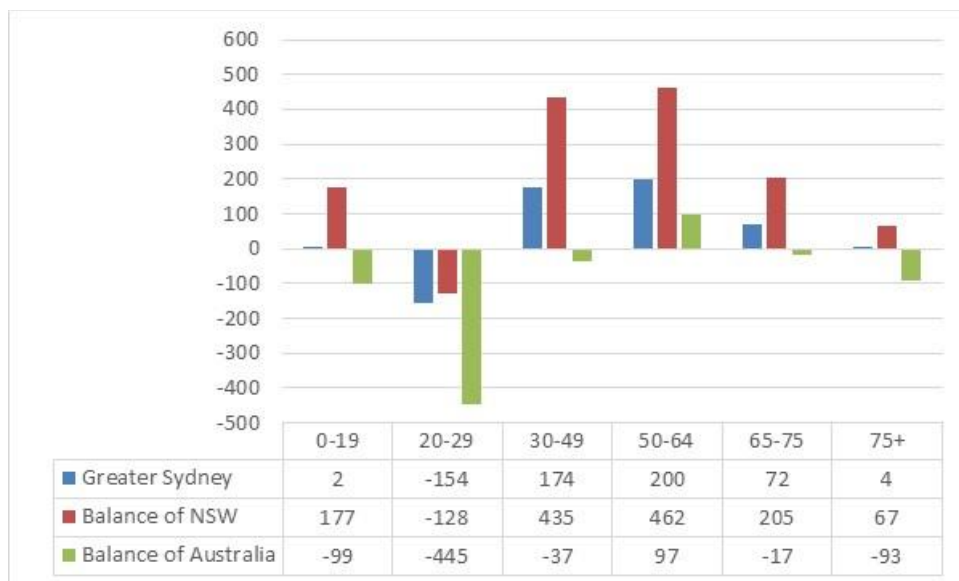


Figure 4.18: Bega Valley LGA, net inward migration 2011-2016.

Source: ABS Census 2016

Employment

The table below shows employment trends in Bega Valley LGA over time. There has been a 10% increase in employment over the period, an annual increase of 0.9%. Much of the growth has been in part time employment, with full time employment increasing by 4.8% over the period. Bega Valley lags well behind NSW in the ratio of jobs to population, and jobs growth in Bega Valley was 10%, is much worse than that for NSW at 22%, providing a strong case for regional development and encouragement of new industries. More importantly, employment in tourism (using retail trade and accommodation and food services as a proxy) decreased between 2006 and 2016.

Table 4.5: Employment trends in Bega Valley LGA

	2006	2016	Change
People employed Bega Valley	10,872	11,940	1,068
Full time employment Bega Valley	5,960	6,246	286
Part time employment Bega Valley	4,293	4,922	629
Jobs to population ratio Bega Valley	0.35	0.36	+0.01
Jobs to population ratio NSW	0.42	0.45	+0.03
Jobs growth Bega Valley			9.9%
Jobs growth NSW			22.2%
Tourism Employment Bega Valley (retail trade and accommodation and food services)	2,917	2,879	-38

Source: ABS 2016, 2006

The graph below shows the distribution of employment in Bega Valley LGA by comparison with NSW and regional NSW.

Bega Valley LGA has a relatively diverse economy, and is typical of regional economies however there are higher relative levels of employment in:

Manufacturing reflecting the importance of the Bega Cheese factory to the LGA; and

Retail trade and accommodation and food services, reflecting the importance of tourism to the LGA.

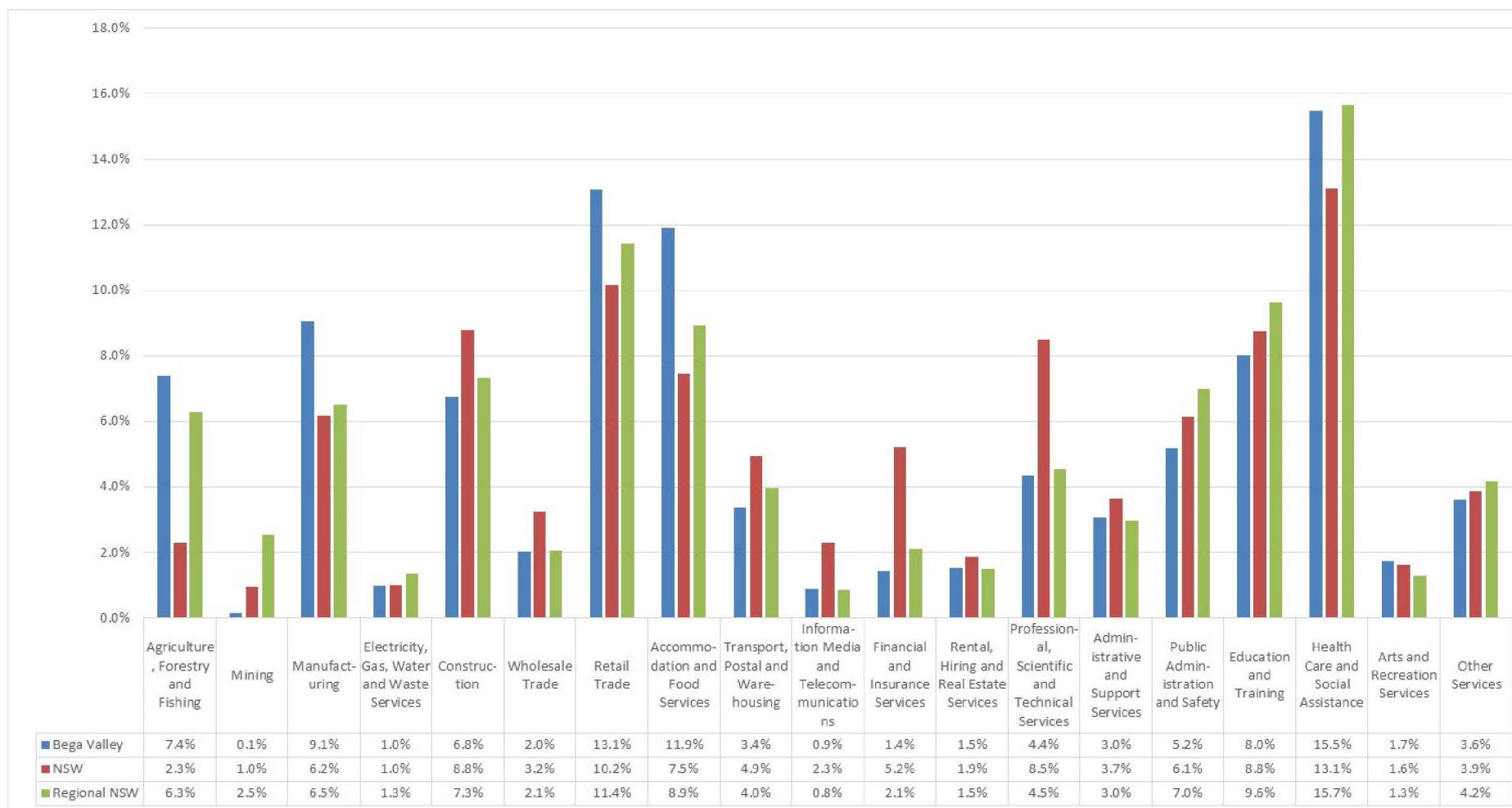


Figure 4.19: Employment profile for Bega Valley LGA compared to NSW and regional NSW.

Source: ABS Census 2016

Table 4.6: Top ten industries by employment for Bega Valley LGA

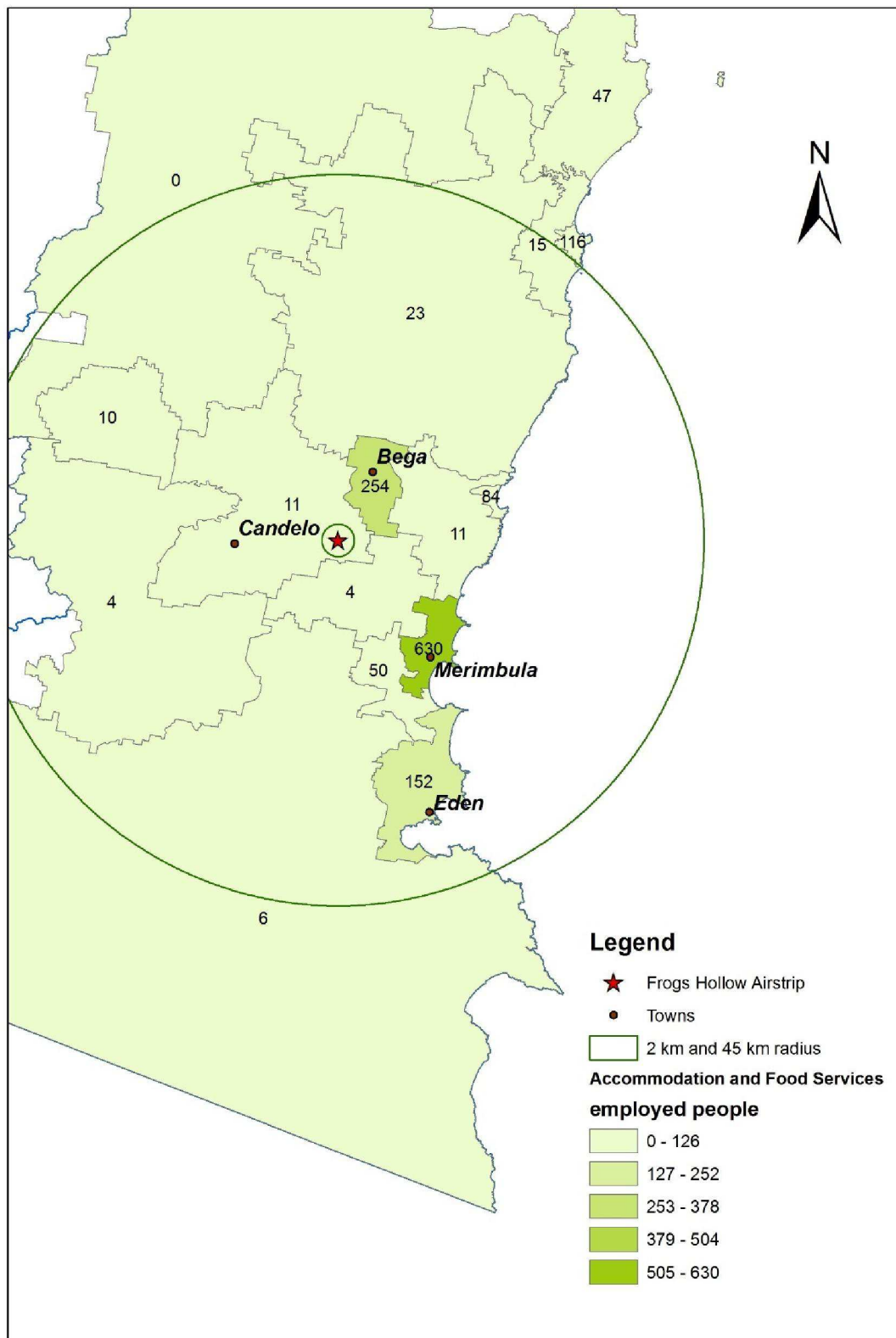
Four digit industry code	Three digit industry code	Two digit industry code	One digit industry code
Cheese and Other Dairy Product Manufacturing	School Education	Food and Beverage Services	Health Care and Social Assistance
Hospitals (except Psychiatric Hospitals)	Dairy Product Manufacturing	Preschool and School Education	Retail Trade
Supermarket and Grocery Stores	Cafes, Restaurants and Takeaway Food Services	Food Product Manufacturing	Accommodation and Food Services
Aged Care Residential Services	Hospitals	Other Store-Based Retailing	Manufacturing
Primary Education	Supermarket and Grocery Stores	Agriculture	Education and Training
Accommodation	Residential Care Services	Food Retailing	Agriculture, Forestry and Fishing
Cafes and Restaurants	Accommodation	Medical and Other Health Care Services	Construction
Local Government Administration	Local Government Administration	Hospitals	Public Administration and Safety
Clubs (Hospitality)	Clubs (Hospitality)	Construction Services	Professional, Scientific and Technical Services
Dairy Cattle Farming	Dairy Cattle Farming	Public Administration	Other Services

Source: ABS Quickstats and JSA calculation

The proposal will add 200 jobs to the area. The majority of these will be full time jobs in Education and Training.

Tourism Distribution and Uses

The map below shows employment in the ABS Census Category “Accommodation and Food Services” by place of work. This category is used as a proxy for tourism industries. It can be seen that employment in Accommodation and Food Services is overwhelmingly concentrated in the Merimbula area, with this DZN containing 44% of employment in this category for Bega Valley LGA. Lesser concentrations are found in Bega and in Eden.



Map 4.4 Distribution of employment in Accommodation and Food Services for Bega Valley LGA

Source: ABS Census 2018, JSA 2018

Tourist industries, as represented by restaurants and accommodation, are clustered in the coastal areas of Bermagui, Tathra, Merimbula-Pambula and Eden. There are also tourist industries associated with the towns of Bega, Candelo and Bomboka, however these are of lesser scale. These areas are generally remote from the proposed airfield, with the nearest areas, Candelo and Bega, nine kilometres from Frogs Hollow Airfield.

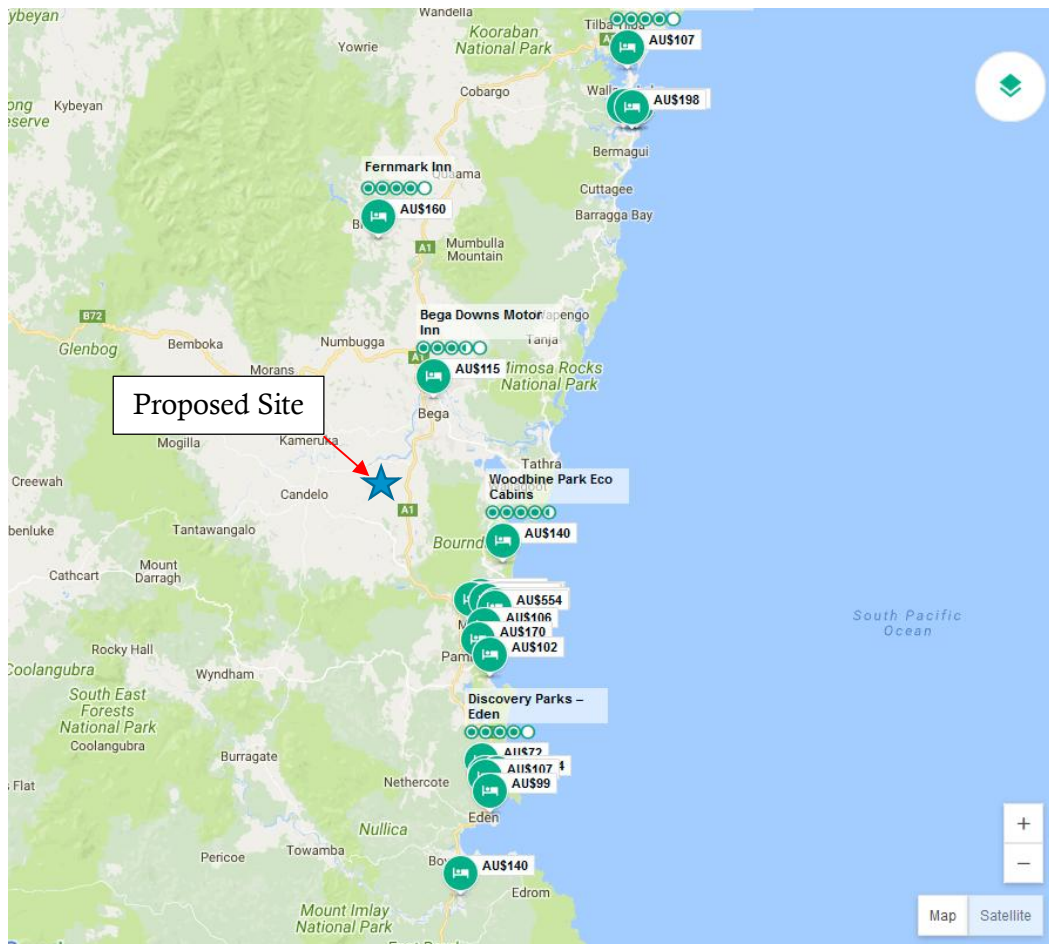


Figure 4.20: Accommodation services in the wider locality.

Source: TripAdvisor. 10 April 2018

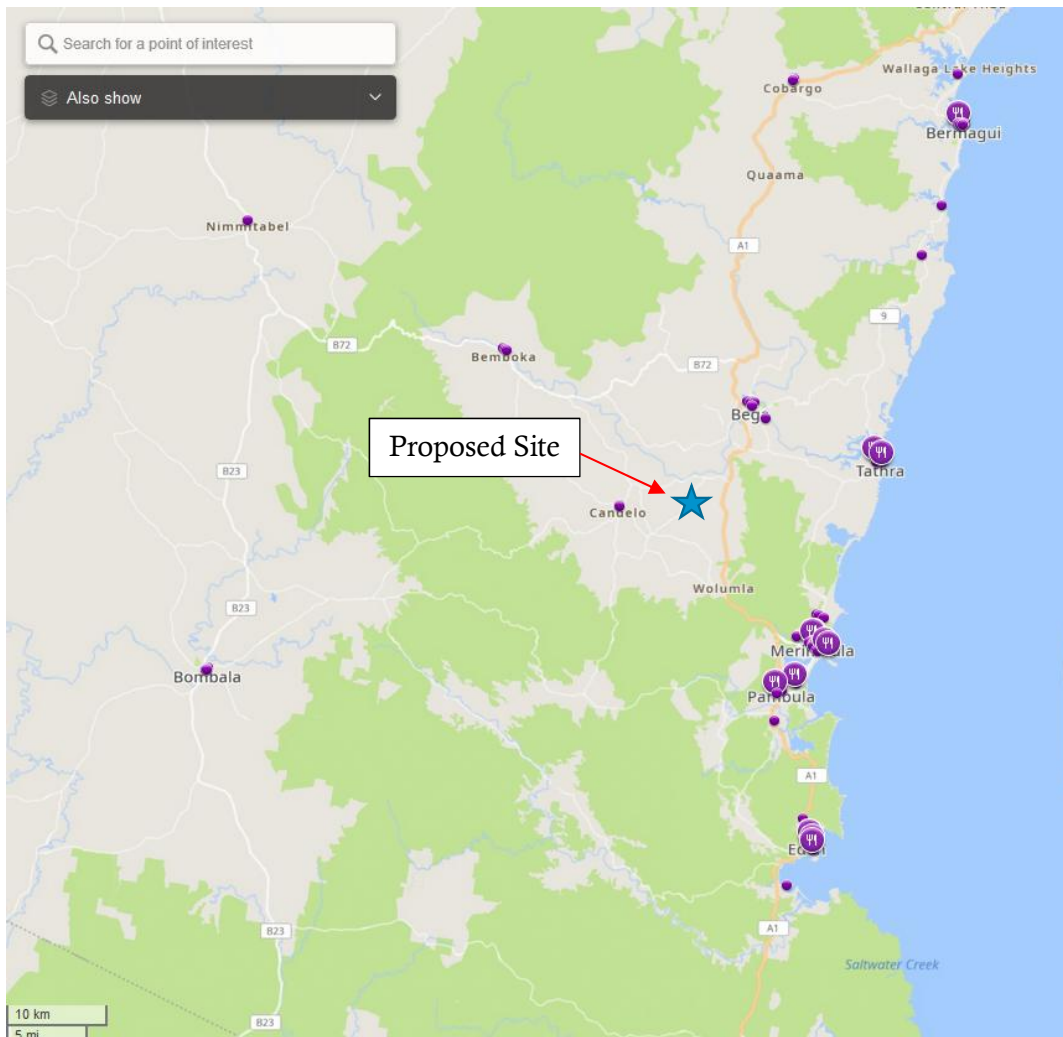


Figure 4.21: Restaurants in the wider locality.

Source: TripAdvisor. 10 April 2018

4.4 Possible flight paths within the wider locality

In accordance with the Civil Aviation Act and Regulations, aircraft are largely not restricted to specific paths, however some possible direct flight paths are shown below in order to understand potential amenity impacts in the wider locality. We are advised that flights would typically be made at 4,000 feet or more above ground level, however regulations allow overflying as low as 500 feet above ground level.

The sketch below shows a direct flight path (red line) from Frogs Hollow to Merimbula airfield. The direct path is predominantly over rural areas to the south of Frogs Hollow and Bournda Nature Reserve.

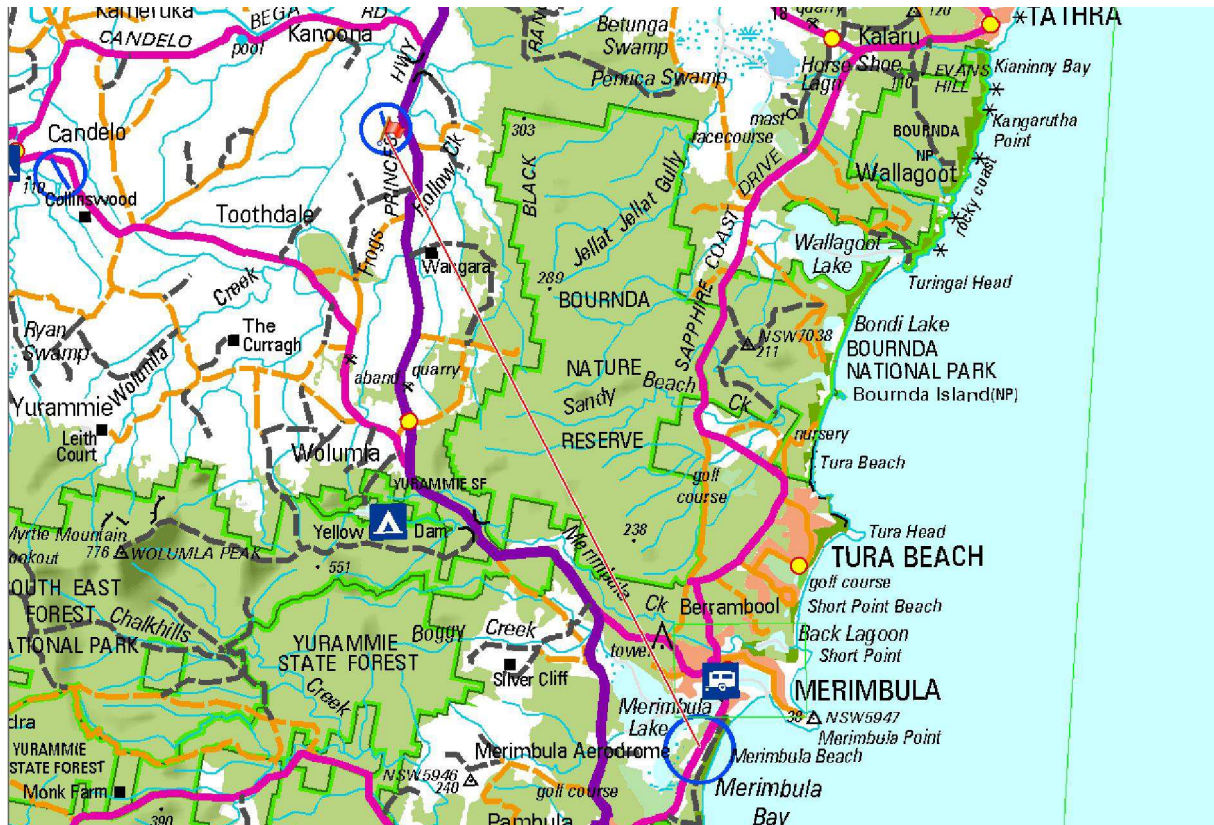


Figure 4.22: Direct flight path, Frogs Hollow to Merimbula Airfield.

Source: NSW topographic maps

The sketches below show a direct flight path (red line) from Frogs Hollow to Moruya Airfield. The flight path overflies agricultural areas, Bega township, Biamanga National Park, Bodalla State Forest and Moruya Heads.

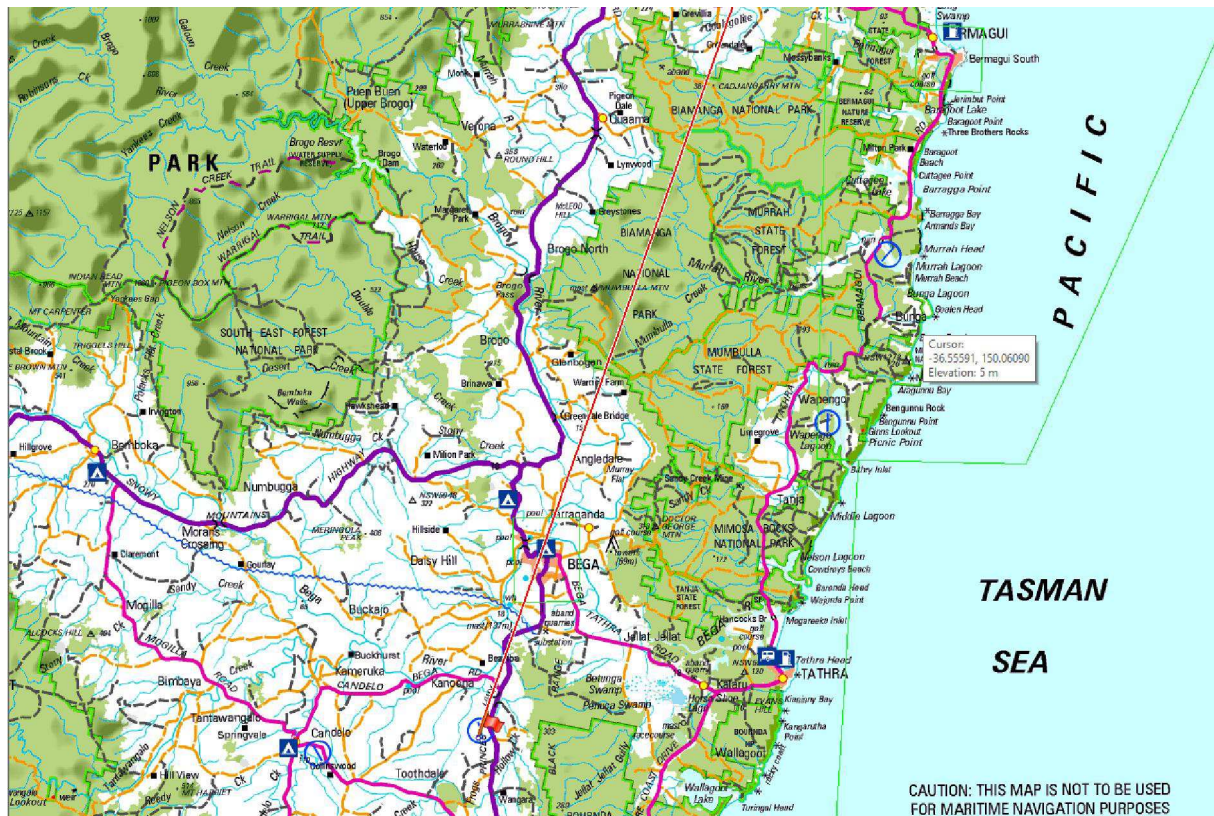


Figure 4.23: Direct flight path, Frogs Hollow to Moruya Airfield (a).

Source: NSW topographic maps



Figure 4.24: Direct flight path, Frogs Hollow to Moruya Airfield (b).

Source: NSW topographic maps



Figure 4.25: Direct flight path, Frogs Hollow to Moruya Airfield (c).

Source: NSW topographic maps

The sketch below shows a direct flight path (red line) from Frogs Hollow to Bombala airfield. The route overflies agricultural land, South-East Forest National Park and state forests.

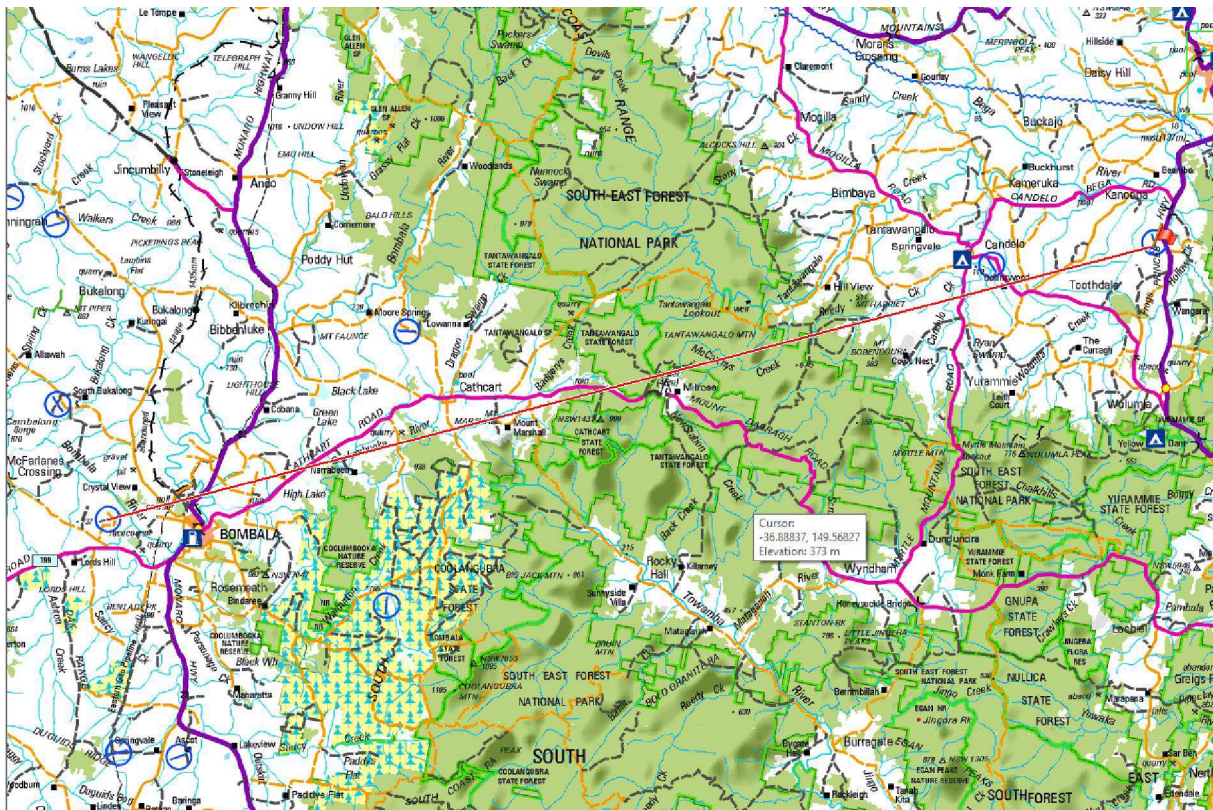


Figure 4.26: Direct flight path, Frogs Hollow to Bombala Airfield.

Source: NSW topographic maps

The sketches below show a direct flight path (red line) from Frogs Hollow to Polo Flat. The route overflies agricultural land and Wadbilliga National Park.

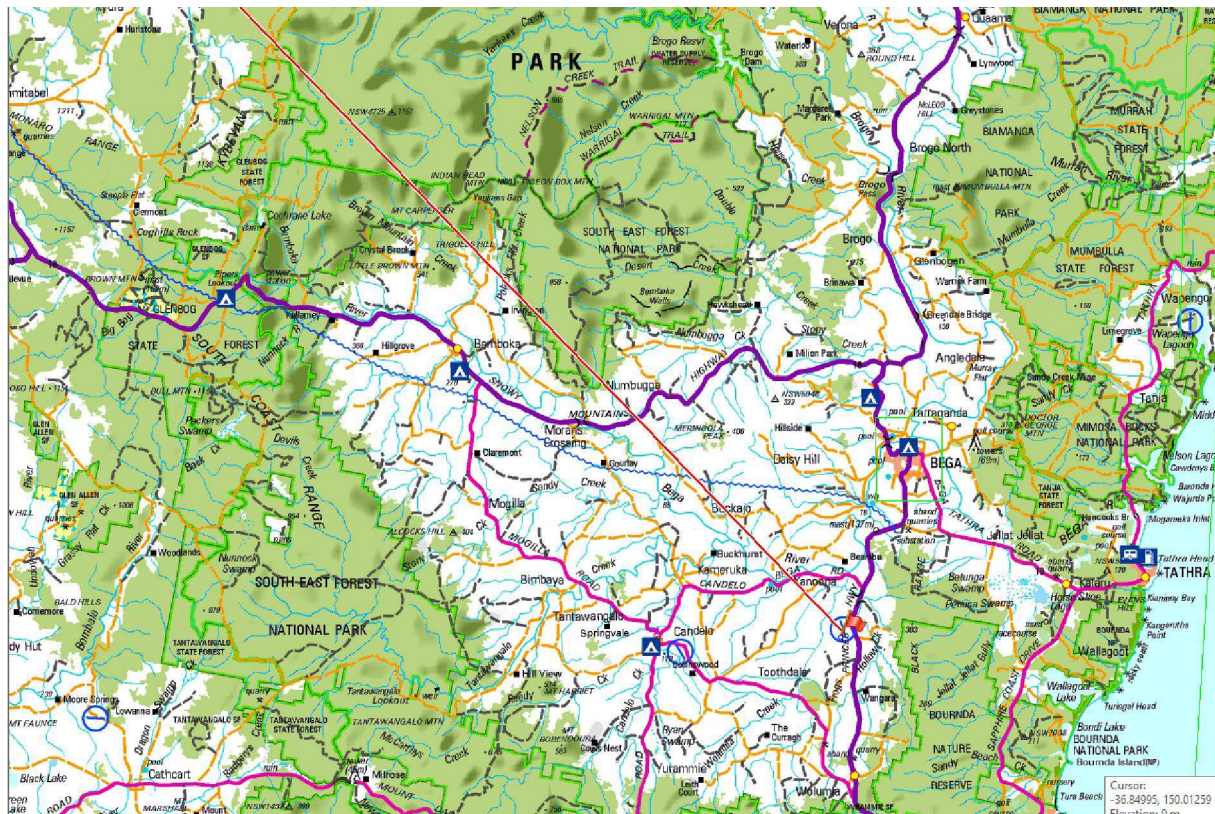


Figure 4.27: Direct flight path, Frogs Hollow to Polo Flat Airfield (a).

Source: NSW topographic maps

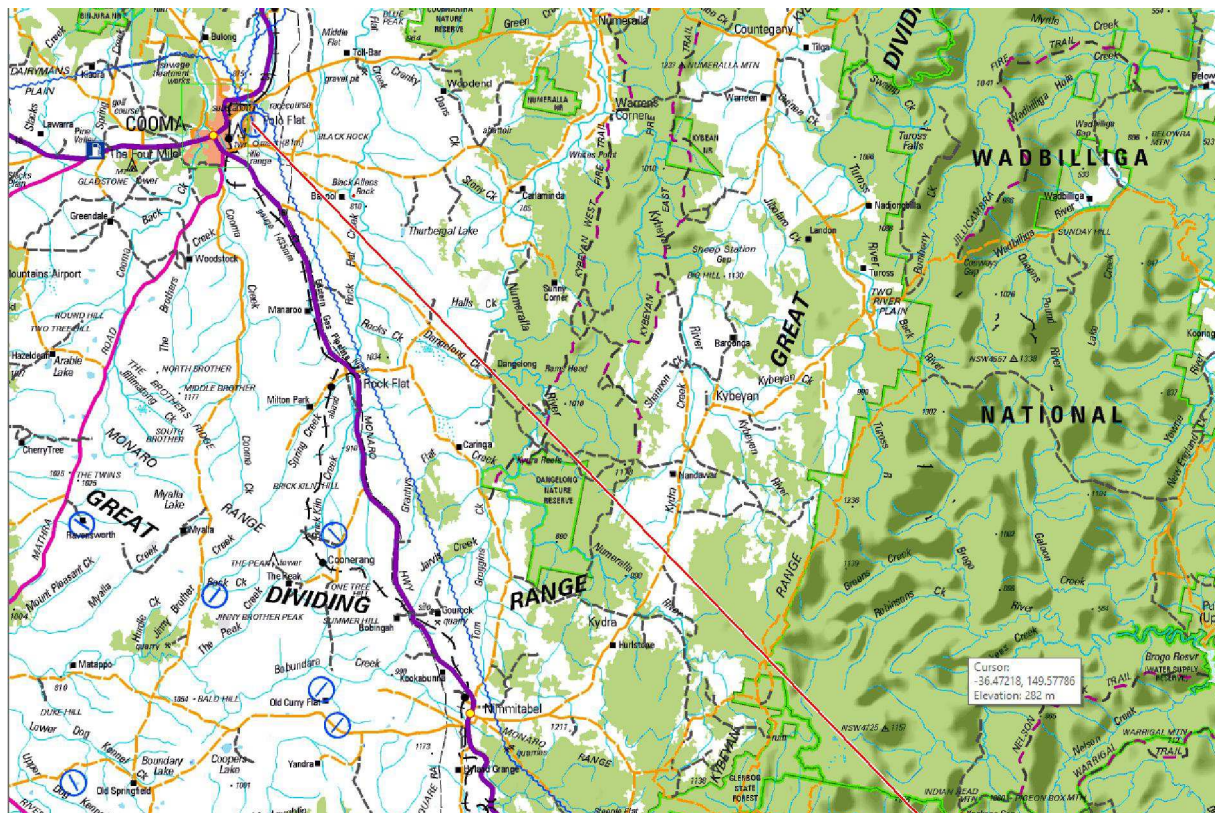


Figure 4.28: Direct flight path, Frogs Hollow to Polo Flat Airfield (b).

Source: NSW topographic maps

The sketches below show a direct flight path (red line) from Frogs Hollow to Cooma Snowy Mountains airfield. The route overflies agricultural land and South East Forest National Park.



Figure 4.29: Direct flight path, Frogs Hollow to Cooma Snowy Mountains Airfield (a).

Source: NSW topographic maps

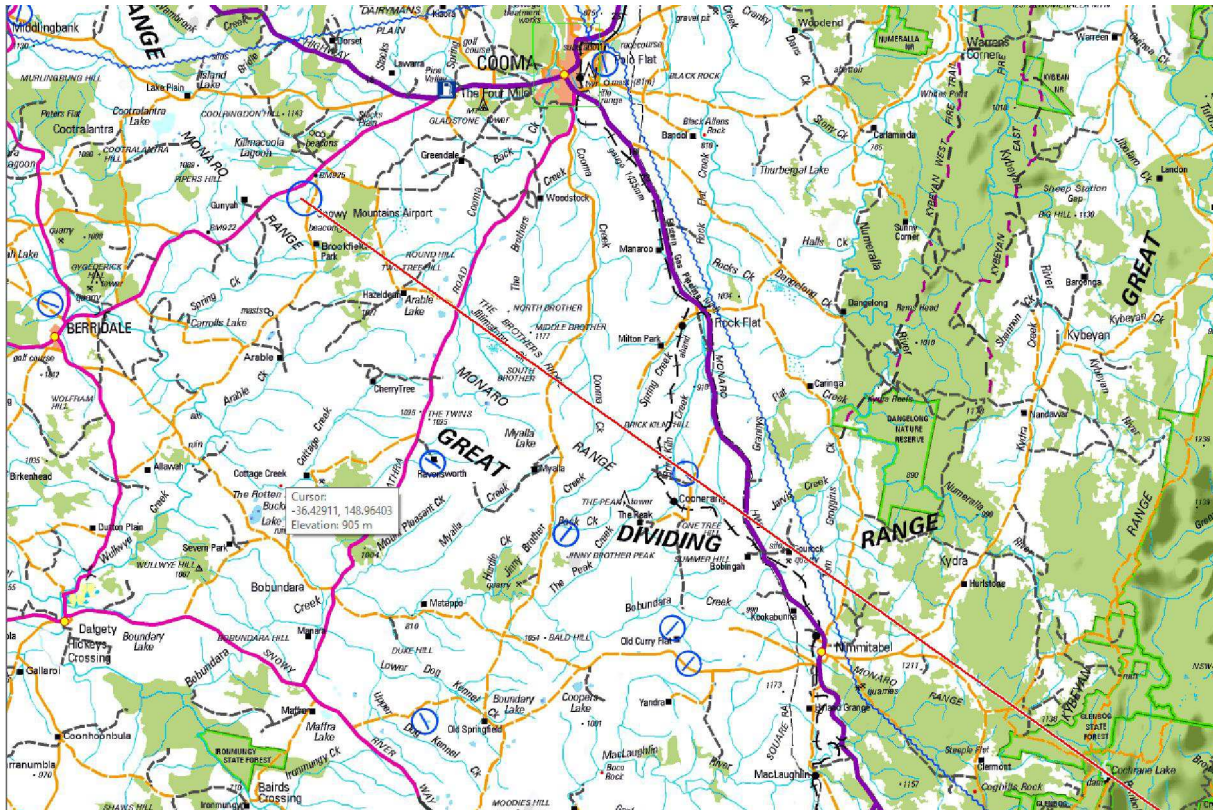


Figure 4.30: Direct flight path, Frogs Hollow to Cooma Snowy Mountains Airfield (b).

Source: NSW topographic maps

The sketches below show a direct flightpath (in red) from Frogs Hollow to Mallacoota airfield. The route overflies agricultural land, South East Forest National Park, Mt Imlay National Park, Croajingalong National Park and extensive areas of state forest.



Figure 4.31: Direct flight path, Frogs Hollow to Mallacoota Airfield (a).

Source: NSW topographic maps



Figure 4.32: Direct flight path, Frogs Hollow to Mallacoota Airfield (b).

Source: NSW topographic maps



Figure 4.33: Direct flight path, Frogs Hollow to Mallacoota Airfield (c).

Source: NSW topographic maps

5 Noise Impacts

We understand the conclusions of the assessment of noise impacts are as set out below.

The assessment is based on the actual noise measurements of the test aircraft conducted during different fixed circuits and at different locations.

The assessment methodology in accordance with AS2021 requires aircraft noise levels associated with “light general aviation aerodromes without ANEF charts” to comply with $L_{ASmax} < 70 \text{ dB(A)}$ and $L_{Aeq,24hr} < 48\text{dB(A)}$.

Based on the above criteria:

- (1) Assessment of cruise, decent approach and landing scenarios:

The measured L_{ASmax} noise levels for all the test flights are found to be less than 70 dB(A).

By limiting the number of flights to no more than 200 per day (i.e. 24 hours), the $L_{Aeq, 24hr}$ noise level is determined to comply with the criterion of 48dB(A).

- (2) Assessment of take-off and climb scenarios:

An aircraft should reach an elevation of at least 500 ft [AGL] before flying over any residential properties in order to comply with the L_{ASmax} level of 70 dB(A).

We understand this to mean that overflying any dwelling less than 200 times in 24 hours at an elevation of at least 500 feet (150 metres) will ensure compliance with appropriate noise criteria.

We are also advised that “the equivalent noise level with the aircraft climbing from approximately 2000ft to approximately 4,000ft would be approximately 10dB less than the measured scenario”.¹⁰

¹⁰ Email, NGH Environmental, 2 May 2018.

6 Impacts on ‘Character’

The character of the immediate locality is predominantly rural, with a combination of rural residential properties, grazing properties, areas of woodland and light industrial and recreation uses, including use of the current aeroplane landing area. The area is also dominated by the Princes Highway with traffic evident from much of the immediate locality. The buildings and facilities of the proposed development do not appear to be generally visible from the highway, although glimpses are available, and the main impact on character of the locality would likely arise from the density of flight operations in the area, in particular related to noise and the visibility of aircraft from some vantage points in the immediate locality.

It is likely that there would be some adverse impacts upon less tangible aspects of character and amenity in the immediate locality. These less tangible aspects of amenity relate to the way in which local residents experience their area, for example, as a ‘tranquil rural area’. For example, properties with a vantage point from which they can clearly see aircraft in operation and hear them even below accepted noise levels would likely experience an adverse change to their existing rural vista and experience in the area.

However, it is likely that these changes to the experiences of residents would be quite localised, and would decrease as properties are located further away from the most intensive operations at Frogs Hollow. The extent of these impacts on character and amenity will to a large extent depend on the ultimate intensity of operations and the flight and training paths adopted. Care in the choice of flight and training paths, and potential actions to reduce intensity discussed later in relation to potential mitigations, would reduce these experiential impacts for residents, but may not eliminate them.

There are particular areas in the wider locality, including tourist destinations such as beaches and wilderness areas like national parks, where overflying by large numbers of aircraft would be expected to have significant impacts on character and the way in which people experience these areas. There are opportunities to significantly mitigate such impacts, as discussed later. If flight paths avoid these key areas, such impacts will likely be eliminated in the wider locality.

7 Potential Conflict of Land Uses

7.1 Residential Uses

There is likely to be conflict between residential uses and the airfield, particularly from the significant intensification of use associated with the proposed flying school with the most likely impact arising from noise.¹¹ This is well understood and documented, for example many airfields in close proximity to residential areas (such as Merimbula airfield) restrict circuit operations to one side of the airfield to avoid overflying residential areas. Other airfields, such as Bankstown, have noise abatement procedures in place.¹²

Noise abatement procedures may include:¹³

- Time restrictions e.g. night time operations may be restricted
- Circuits may be restricted to one side of an airfield to avoid overflying residential areas
- Certain runways may be preferred to others to minimise overflying of residential areas
- Approach points may be designated for airfields to avoid overflying residential areas (and for other reasons such as to facilitate air traffic control and separation with controlled air space)
- Logging of complaints and regular analysis of complaints with respect to flight paths including responsive corrective action where necessary¹⁴
- Compliance noise monitoring¹⁵

Such approaches are largely successful in enabling the operation of airfields with large numbers of aircraft movements in dense urban areas such as Sydney and Bankstown airports. Given the largely rural nature of much of Bega Valley, the use of such techniques should enable the proposed development to minimise impacts on residential uses in the shire.

7.2 Agricultural Uses

A number of submissions have raised concerns regarding the impacts of flight operations on agriculture. These concerns relate to impacts on stock and impacts on organic certification. These concerns seem to be either unlikely or mitigable.

¹¹ For example, in the first quarter of 2016, contacts from 438 complainants were received through Airservices Australia Noise Complaints and Information Service for the Sydney area, which includes Sydney, Bankstown and Camden Airfields. http://www.airservicesaustralia.com/wp-content/uploads/Q1_2016_Sydney_Bankstown_Camden_ANIR-1.pdf, page 31, accessed 30 April 2018.

¹² AIP ERSA March 2018.

¹³ See for example AIP ERSA March 2018, Sydney /Bankstown Noise Abatement Procedures

¹⁴ See for example <http://aircraftnoiseinfo.bksv.com/bankstown/complaints/>

¹⁵ See for example <http://aircraftnoiseinfo.bksv.com/bankstown/noise-monitoring/>

A recent review of research on the impacts of noise on animals, particularly farming animals,¹⁶ reported the following findings of relevance to the proposed intensification of operations at the airfield:

- Thresholds for discomfort for cattle were noted at 90-100 dB...¹⁷
- Dairy breeds are more sensitive to noise than beef breeds.¹⁸
- Noise developed during transport was shown to increase the heart rates of free-ranging cattle while cattle habituated to the sounds of cars and trucks will readily graze along highways and seldom react. Sheep appear to adapt to increased noise levels...¹⁹
- Scientific sources indicate that noise in farm animal environments is a detrimental factor to animal health. Especially longer lasting sounds can affect the health of animals.²⁰
- Noise as high as 80 dB had no negative effect on dairy cows...²¹
- A majority of the studies reviewed suggests that there is little or no effect of aircraft noise on cattle. Adverse effects of low-altitude flights have been noted in some studies but have not been uniformly reproduced in other studies.²²
- Studies using simulated aircraft noise at levels of 100 dB to 135 dB found only minor effects on ... boars and sows.²³
- Noise at 90 dB seemed not to affect productivity and egg quality of laying hens.²⁴
- A majority of the literature reviewed indicates that domestic animals exhibit behavioural responses to overflights but generally seem to habituate to the disturbances over a period of time.²⁵
- The noise threshold expected to cause a behavioural response by cattle is 80 to 90 dB.²⁶
- Mares adapted to the flyovers over the course of a month.²⁷

In summary, the findings suggest that domestic animals will habituate to overflying, and that adverse effects may be experienced with exposure to noise levels of the order of 80 dB and higher. By comparison, the predicted noise level from the operation of aircraft in cross country flight is understood to be less than 70 dB. We understand that measured noise levels were 73 dB(A) for aircraft taking off and at 200 feet above the measurement point and 62 dB(A) directly under the flight path at monitoring location M1.

¹⁶ Broucek, J. (2014) Effect of Noise on Performance, Stress, and Behaviour of Animals, Slovak Journal of Animal Science., 47 (2):111-123

¹⁷ *Ibid*, page 112

¹⁸ *Ibid*, page 112

¹⁹ *Ibid*, page 113-114

²⁰ *Ibid*, page 114

²¹ *Ibid*, page 114

²² *Ibid*, page 114

²³ *Ibid*, page 115

²⁴ *Ibid*, page 115

²⁵ *Ibid*, page 117

²⁶ Broucek *op cit*, page 118

²⁷ *ibid*, page 118

With regard to organic certification, the level of organic certification in the surrounding area cannot be ascertained. We have reviewed an appropriate standard, the Australian Certified Organic Standard 2017 V.1 so as to form a view as to whether the proposed flight operations may have an impact.

Particular concerns in the standard appear to relate to the use of mineral or manmade fertilizers, the use of genetically modified or treated seeds, and the use of pesticides.²⁸

There is a possible risk arising from soil contamination in the case of an aircraft crash, however this is likely to be a low probability event. Contamination could occur from oil and fuel spillages. It should be noted that the use of leaded AVGAS in Rotax engines is not recommended,²⁹ and we are advised that AVGAS would not be used in conjunction with the proposed flight school. In the case of such an event, contamination could be managed by having appropriate procedures in place, such as the removal of contaminated soil.

²⁸ Australian Organic (2017) *Australian Certified Organic Standard 2017 V.1* at 4.1, 4.2.11, 4.5,

²⁹ http://www.rotaxservice.com/rotax_tips/rotax_feed4.htm accessed 24 April 2018.

8 Tourism Impacts

8.1 What is tourism?

Tourism expenditure is defined as expenditure by visitors to a region, where visitors are people spending less than a year in a region. A tourism industry is thus any industry that provides goods or services for consumption by visitors to a region, and is not confined to leisure activities.

Australian Bureau of Statistics Publication 5249.0 - Australian National Accounts: Tourism Satellite Account, 2016-17 provides a range of commentary around tourism industry in the explanatory notes.

While employment is defined in the census by the nature of goods and services produced, tourism is defined by the nature of the consumer.

“Implicitly, tourism is included in the core national accounts. The products purchased by visitors, and produced by suppliers, are all part of the economic activity measured in the national accounts. However, while all the products that are produced and consumed in meeting tourism demand are embedded in the core accounts, they are not readily apparent because 'tourism' is not identified as an industry or product in international statistical standards. In the Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006 edition, underlying the Australian national accounts, industries are defined on the basis of the goods and services which they mainly produce. On the other hand, the tourism industry is defined according to the status of the consumer. That is, it is the characteristics of the consumer that determine whether the production is included within the scope of tourism.”

The definition of tourism is wide ranging.

“The term 'tourism' in the international standards is not restricted to leisure activity. It also includes travel for business or other reasons, such as education, provided the destination is outside the person's usual environment.”

Tourism relates to the activities of visitors.

“The central statistical entity in tourism statistics is the 'visitor'. The scope of tourism in the international standards comprises the activity of visitors.

A visitor is defined in the international standards as:

'...a traveller taking a trip to a main destination outside his/her usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited.' (International Recommendations for Tourism Statistics 2008, para 2.9).”

8.2 Tourism in the locality

8.2.1 Tourism NSW

Tourism NSW provides tourism data for the South Coast sub-region which covers Nowra to Eden including Jervis Bay, Ulladulla, Batemans Bay, Moruya, Narooma, Bega and Merimbula.

In the year ended March 2016, the sub-region received nearly 2.6 million domestic overnight visitors and around 81,000 international overnight visitors, the majority of who travelled for holiday (around 70%).

Separate data is not published for Bega Valley Council LGA.

8.2.2 JSA estimates of tourism activity

Methodology

Four digit data on 'industry of employment by place of work' is available from the ABS 2016 Census.³⁰ That data contains more than 700 industry classifications and allows for a fine-grained analysis of the nature of employment in geographical areas down to SA2 level.

While some industries are clearly associated with tourism (such as accommodation and restaurants and the like), there will be underlying demand from the resident population and from tourists who are visiting friends and relatives for personal reasons rather than visiting an area due to tourist attractions such as site seeing, specialty shopping or outdoor recreation and the like.

Australian Bureau of Statistics Publication 5249.0 identifies the following industries as providing direct tourism employment:³¹

- Accommodation
- Ownership of dwellings
- Cafes, restaurants and takeaway food services
- Clubs, pubs, taverns and bars
- Rail transport
- Taxi transport
- Other road transport
- Air, water and other transport
- Transport equipment rental
- Travel agency and tour operator services

³⁰ Employment classification can be obtained at different levels. Classifications are in the form X.XXX. One digit classification contains 19 classifications, with these further broken down to a total of 105 classifications at two digit level, some hundreds at three digit level and over 700 at four digit level.

³¹ Australian Bureau of Statistics *Publication 5249.0 - Australian National Accounts: Tourism Satellite Account, 2016-17*.

- Cultural services
- Casinos and other gambling services
- Sports and recreation services
- Automotive fuel retailing
- Other retail trade
- Education and training

No further detail is provided with respect to sub categories, nor to apportionment between local underlying demand and day and overnight visitation for tourist-specific purposes. The table below shows the four digit employment categories that we have assumed are associated with these categories.

Table 8.1: Industries Providing Direct Tourism Employment

ABS Category	ABS four digit subcategories
Accommodation	Accommodation and Food Services (All four digit categories)
Ownership of dwellings (All other industries)	Property Operators and Real Estate Services, nfd Property Operators, nfd Residential Property Operators Real Estate Services
Cafes, restaurants and takeaway food services	Accommodation and Food Services (All four digit categories)
Clubs, pubs, taverns and bars	Accommodation and Food Services (All four digit categories)
Rail transport	Rail Passenger Transport
Air, water and other transport (includes taxi transport, other road transport)	Road Passenger Transport, nfd Interurban and Rural Bus Transport Urban Bus Transport (Including Tramway) Taxi and Other Road Transport Water Passenger Transport Air and Space Transport Scenic and Sightseeing Transport
Transport equipment rental (Road transport and transport equipment rental)	Motor Vehicle and Transport Equipment Rental and Hiring, nfd Passenger Car Rental and Hiring Other Motor Vehicle and Transport Equipment Rental and Hiring
Travel agency and tour operator services	Travel Agency and Tour Arrangement Services
Cultural services	Museum Operation Parks and Gardens Operations, nfd Zoological and Botanical Gardens Operation

ABS Category	ABS four digit subcategories
	Nature Reserves and Conservation Parks Operation Performing Arts Operation Performing Arts Venue Operation
Casinos and other gambling services	Casino Operation
Other sports and recreation services	Sports and Recreation Activities, nfd Sports and Physical Recreation Activities, nfd Health and Fitness Centres and Gymnasias Operation Sports and Physical Recreation Clubs and Sports Professionals Sports and Physical Recreation Venues, Grounds and Facilities Operation Sports and Physical Recreation Administrative Service Horse and Dog Racing Activities, nfd Horse and Dog Racing Administration and Track Operation Other Horse and Dog Racing Activities Amusement and Other Recreation Activities, nfd Amusement Parks and Centres Operation Amusement and Other Recreational Activities nec
Education and training	Sports and Physical Recreation Instruction
Automotive fuel retailing Other retail trade (Retail trade)	Retail Trade (All four digit categories)

Source: ABS Census 2011, JSA analysis

We have considered employment on a population weighted basis, that is, employment in relevant industries per 100,000 resident population. In order to understand underlying (non-tourist) demand in the various industries, we have used employment data for NSW.

In 2016 in the categories shown in Table 8.1 above, there were 9,598 people employed in NSW per 100,000 population by Place of Work. In 2015-16, there were 164,000 direct tourism related jobs in NSW,³² equivalent to 2,193 jobs per 100,000 population. This gives a net underlying (non-tourist) demand of 7,405 jobs per 100,000 population.³³

Estimate of tourism employment

Applying this methodology to Bega Valley LGA, and adjusting for Place of Work and Census undercounting, 891 direct tourism jobs are estimated for Bega Valley LGA.

Estimates of tourism employment are also provided by .IDcommunity.³⁴ In 2015/16, they estimated direct tourism employment in Bega Valley LGA at 945 people, or 728 full time equivalent workers.

Comparing these estimates, it is likely that tourism directly employs around 900 people in Bega Valley LGA, with an upper limit of 1,000 people.

³² <http://www.destinationnsw.com.au/our-industry/economic-value> accessed 9 April 2018.

³³ $9,598 - 2,193 = 7,405$.

³⁴ <https://economy.id.com.au/bega-valley/tourism-value> accessed 9 April 2018.

Similar estimates can be obtained using Census Data for 2006. Using the JSA methodology above, 963 direct tourism jobs were estimated for Bega Valley for 2006, suggesting that employment in tourism has fallen over the period by around 7.5%.

We have used a similar approach in the past and found a good correlation with estimates in Tourism Satellite Accounts.

A similar trend is found in .IDcommunity data, where 1,122 direct tourism jobs were estimated for 2006/07, a fall of 16%, supporting the findings of our analysis.

Sapphire Coast Tourism has estimated employment in tourism in Bega Valley and these estimates are relied upon by Bega Valley Shire Business Forum Inc. in their written submission. These are for 3,319 direct jobs and 1,609 indirect jobs. The assumptions underlying these estimates are not explicit but appear to have been back calculated from estimates of tourism expenditure.

The South Coast Tourism Satellite Account 2013-14 (covering the coastal LGAs of Wollongong, Shellharbour, Kiama, Shoalhaven, Eurobodalla and Bega Valley) estimates 13,600 direct tourism jobs and 6,600 indirect tourism jobs for the South Coast.

The estimates of indirect tourism jobs reflect the ratios in the South Coast Tourism Satellite Account.

The Sapphire Coast Tourism estimates of direct employment show that one quarter of the tourism employment in the South Coast Region is based in Bega Valley LGA. By contrast, Bega Valley LGA contains 8% of the population of the South Coast Region and 7% of employment. In the key employment categories of retail and accommodation and food services, Bega Valley LGA contains 8% of employment in these sectors in the South Coast Region. On a simple pro rata allocation of direct tourism employment in the South Coast Region, 1,088 jobs would be expected.³⁵ All LGAs in the South Coast Region contain significant tourism industries, so it is not the case that tourism is clustered in Bega Valley LGA.

The estimate of 3,319 direct jobs exceeds the total employment in the key tourism employment sectors of Retail and Accommodation and Food Services in Bega Valley in 2016 of 2,879, and this is unlikely, as there will be employment in these sectors to service people working in other major employers in Bega Valley such as agriculture and Manufacturing. Consequently, we have not relied on the estimates by Sapphire Coast Tourism.

8.3 Tourism impacts of the proposal

8.3.1 Compatibility of flight operations with existing tourism

We have not systematically investigated the relationship between high intensity flight operations as there is likely to be a high correlation between flight movements and tourism activity due to

³⁵ 13,600 jobs X 8% = 1,088 jobs.

the use of aircraft by tourists for transport and the presence of heavily used airports in tourist destinations such as the Gold Coast.

Claimed possible impacts include impacts on Wilderness Coast Branding, noise and pollution and reduction of visitation.

Wilderness Coast Branding

The Sapphire Coast Tourism website contains the logo “Australia’s Coastal Wilderness”. The basis of this branding appears to arise from a 2011 document, Australia’s Coastal Wilderness National Landscape Experiences Development Strategy.³⁶ That document sets out the basis of the branding.³⁷

Australia’s Coastal Wilderness (ACW) is a National Landscape stretching over 300 kilometres that is home to a World Biosphere Reserve and some of the world’s richest diversity of flora and fauna.

The Tourism Australia National Landscapes program identifies places of national significance that offer distinctive Australian natural and cultural experiences, beyond an individual National Park or Government boundary to deliver conservation, social and economic outcomes while offering unforgettable experiences to lure the international ‘Experience Seeker’. This philosophy is epitomised in Australia’s Coastal Wilderness positioning statement:

‘This hidden pocket of Australia’s endless coastline is where you can get close and share your love of nature. Immerse yourself in the natural beauty of tall forests, lakes and beaches in this unspoilt coastal wilderness’

The coastal wilderness area is shown in the sketch below.

³⁶ EC3 Global (2011) *Australia’s Coastal Wilderness National Landscape Experiences Development Strategy*.

³⁷ *Ibid*, page ii.

Regardless, some key attractions are identified including Croajingalong National Park and Nadgee Nature Reserve, and coastal walks such as the Light to Light walk and the Wilderness Coast Walk and these attractions could be adversely impacted by overflying. With regard to such attractions, impacts could be mitigated by reducing overflying of National Parks and similar areas. There are extensive areas of grazing land, state forest and ocean where flight operations could be conducted with minimal impact. Where operations are proposed over National Parks e.g. to access Mallacoota Airfield, consultation could be conducted with National Parks to minimise impacts by agreeing appropriate lanes to minimise impacts on other users.

9 Compatibility with Planning Objectives

9.1 Introduction

A number of submissions raise concerns regarding compatibility of the development with planning objectives and strategic goals for the area. A consideration of relevant documents is set out below.

9.2 Bega Valley LEP 2013

The particular aims of Bega Valley LEP 2013 are:

- (a) to protect and improve the economic, natural and social resources of Bega Valley through the principles of ecologically sustainable development, including conservation of biodiversity, energy efficiency and taking into account projected changes as a result of climate change,
- (b) to provide employment opportunities and strengthen the local economic base by encouraging a range of enterprises, including tourism, that respond to lifestyle choices, emerging markets and changes in technology,
- (c) to conserve and enhance environmental assets, including estuaries, rivers, wetlands, remnant native vegetation, soils and wildlife corridors,
- (d) to encourage compact and efficient urban settlement,
- (e) to ensure that development contributes to the natural landscape and built form environments that make up the character of Bega Valley,
- (f) to provide opportunities for a range of housing choice in locations that have good access to public transport, community facilities and services, retail and commercial services and employment opportunities,
- (g) to protect agricultural lands by preventing land fragmentation and adverse impacts from non-agricultural land uses,
- (h) to identify and conserve the Aboriginal and European cultural heritage of Bega Valley,
- (i) to restrict development on land that is subject to natural hazards,
- (j) to ensure that development has minimal impact on water quality and environmental flows of receiving waters.³⁸

The proposal aligns strongly with aim (b) in that it will provide employment for an estimated 200 people in a tourist enterprise responding to emerging markets in China.

The primary locality is zoned SP2 (Air Transport Facility) and RU1 Primary Production.³⁹ The objectives of the RU1 zone are:

³⁸ Bega Valley LEP 2013, clause 1.2(2).

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To encourage development for tourism-related activities and other development that is compatible with agricultural activities, which will not adversely affect the environmental and cultural amenity of the locality.
- To maintain and protect the scenic value and rural landscape characteristics of land in the zone.

The proposal is consistent with the objectives for the RU1 zone and aligns strongly with the fifth dot point in that it will develop tourism-related activities which are compatible with agricultural activities, however there is likely to be some impact on cultural amenity of the locality.

9.3 Economic Development Strategy

The Bega Valley Shire Council Economic Development Strategy⁴⁰ identifies five roles for Council in Economic Development. These are:

- Embracing business and a stronger economy;
- Providing the foundations;
- Embracing opportunity;
- Partnering for success; and
- Enhancing visitor experiences.

Success will be measured by:

- Keeping local businesses;
- Growing local businesses; and
- Attracting new businesses.

The proposal is aligned with particular actions and outcomes under the strategy. These include:

- Consider and implement ways of encouraging and attracting start-up businesses in the Region;⁴¹

³⁹ Bega Valley LEP 2013, Zone RU1 Primary Production.

⁴⁰ Bega Valley Shire Council (2015) *Economic Development Strategy*

⁴¹ *Ibid*, page 10

- Develop partnerships and programs to encourage both potential workers and employers to work together to achieve positive outcomes;⁴²
- More skilled workers in emerging and needed industries;⁴³
- Support local tourism operators to deliver high quality products to the regions visitors;⁴⁴
- High quality promotions showcasing the best of the Shire for both domestic and international visitors;⁴⁵
- Increased visitor numbers for longer stays;⁴⁶ and
- Increased visitor numbers allowing for expansion of services to cater to demand.⁴⁷

9.4 Community Strategic Plan

Bega Valley Shire Council's Community Strategic Plan⁴⁸ sets out a number of goals and strategies. The proposed development is aligned with a number of these goals and strategies.

These include:

- Goal 3: Our economy is prosperous, diverse and supported by innovative and creative businesses, with this measured by economic growth and value of tourism to the economy; and
- Goal 4: We have meaningful employment and learning opportunities for people in all stages in life, with this measured by school retention, university and vocational education and training subjects and attendance, household income, and unemployment rate.

9.5 Sapphire Coast Destination Management Plan

The Sapphire Coast Destination Plan⁴⁹ sets out a number of recommendations, and the proposed development is in alignment with a number of these.

They include:

Every effort must be made to penetrate the inbound tourism market, using all the advantages held by the region...,⁵⁰ and

Expand the range of quality visitor experiences to extend the existing and potential markets beyond summer peak season recreation.⁵¹

⁴² *Ibid*, page 20

⁴³ *Ibid*, page 20

⁴⁴ *Ibid*, page 22

⁴⁵ Bega Valley Shire Council *op cit*, page 22

⁴⁶ Bega Valley Shire Council *op cit*, page 22

⁴⁷ Bega Valley Shire Council *op cit*, page 22

⁴⁸ Bega Valley Shire (undated) *Community Strategic Plan*

⁴⁹ Ashley Fuller and Associates Pty Ltd (undated) *Sapphire Coast Destination Management Plan*

⁵⁰ *Ibid*, page 24

9.6 South East and Tablelands Regional Plan

The South East and Tablelands Regional Plan⁵² is the high-level document underpinning development across the region. It sets out a vision for the region, informed by specific goals and directions. The proposed development aligns with a number of these including:

- Tourism and agricultural exports are expanding through the region's strategic location and connection to global markets...;⁵³
- International and domestic visitors visit the Snowy Mountains and the South Coast throughout the year...;⁵⁴
- Accessing global markets to drive regional economic development;⁵⁵
- Increasing numbers of domestic and international tourists will enable the region to be one of NSW's premier year round destinations;⁵⁶
- The Regional Plan focuses on the following priority growth sectors to diversify the economy:
 - tourism...;⁵⁷
 - Grow tourism in the region;⁵⁸ and
 - Promote and support the Shire as a base for innovation and entrepreneurs.⁵⁹

⁵¹ *Ibid*, page 24

⁵² NSW Planning and Environment (2017) *South East and Tablelands Regional Plan*.

⁵³ *Ibid*, page 8

⁵⁴ *Ibid*, page 8

⁵⁵ *Ibid*, page 12

⁵⁶ *Ibid*, page 13

⁵⁷ *Ibid*, page 15

⁵⁸ *Ibid*, page 26

⁵⁹ *ibid*, page 59

10 Health impacts

We understand the operation of the flying school will comply with relevant normative standards with regard to noise, and that the aircraft will comply with relevant normative standards with regard to pollution. As these standards are a matter of public policy, we assume that they have been put in place to guard against adverse health impacts (amongst other impacts) and that compliance will minimise the risk of adverse health impacts.

11 Safety Impacts

11.1 Accidents

Summary

At peak operation, the proposed flying school will have 1,200 students per year, each flying 30 hours, with total annual flying hours of 36,000 hours.

The rate of accidents in Recreational Aviation is about twice that in private and business operations aviation, and the fatality rate is 1.6 times that of private and business operations aviation. Compared to road transport, fatalities in Recreational Aviation are 140 times more likely for each hour of exposure; and the likelihood of a fatality or serious injury is six times higher.⁶⁰

Flying training generally has lower rates of accidents and fatalities compared to private and business operations, and, based on available data, the combination of flying training with recreational aviation is expected to reduce accidents by 60% and fatalities and serious injuries by a factor of 7.

Using these data, the operation of the flying school is expected to result in one fatality every eleven years,⁶¹ three serious injuries every year,⁶² and 3.6 accidents each year.⁶³

There is no data to support involvement of third parties in terrain collisions (such as striking houses or bystanders), and, of the 2.4 expected terrain collisions each year, fire could be expected in one collision every 8 years.⁶⁴ Around one third of the terrain collisions are likely to occur during take off and landing and will occur on the airfield, so that 1.6 (three every two years) of the terrain collisions would occur in the wider locality. Impacts on others can be further mitigated by restricting aircraft operations over built up areas where there is more likelihood of an aircraft striking a house or person.

Data

The table below shows rates of death, injury and accident rates for selected types of flight operations. Similar rates are provided for motor vehicles as a comparator.

⁶⁰ This may reflect that many car crashes happen at lower speeds, and cars are equipped with seat belts, air bags and the like which mitigate the impact of collisions on occupants.

⁶¹ $36,000 / 1,000,000 \times 28.3 \times 1.6 / 17.8 = 0.09$ fatal accidents each year

⁶² $36,000 / 1,000,000 \times 28.3 \times 1.3 \times 1.4 / 0.6 = 3.1$ serious injuries per year

⁶³ $36,000 / 1,000,000 \times 248.6 \times 49.1 / 121.4 = 3.6$ accidents per year

⁶⁴ $1 / (2.4 \times 5\%) = 8.33$

Table 11.1: death, injury and accident rates for selected flight operations

Activity	Rate (Five year average 2010-2014)	Expected incidents based on 36,000 hours per year	Comment
Road Transport			
Road Fatalities	0.5 per 100 million vehicle kilometres travelled		
Road Fatalities	0.2 per million hours (assuming average speed of 40 km/hr)		
Hospitalised Injuries	14.6 per 100 million vehicle kilometres travelled		
Hospitalised Injuries	5.8 per million hours (assuming average speed of 40 km/hr)		The total fatality plus injury rate was 6.0 per million hours
Ratio serious injuries to fatalities	30.9		In road transport, there were 31 hospitalisations for each fatality
Private and Business operations			
Accidents per million hours	121.4		
Fatal Accidents per million hours	17.8		The total fatality plus injury rate was 28.5 per million hours
Ratio serious injuries to fatalities	0.6		In general aviation, there were 0.6 serious injuries for each fatality
Flying Training			
Accidents per million hours	49.1		40% of private and business operations rate
Fatal Accidents per million hours	1.6		9% of private and business operations rate
Ratio serious injuries to fatalities	1.4		
Recreational Aviation			This is the category of aircraft proposed to be used at the flying school
Accidents per million hours	248.6	9	
Fatal Accidents per million hours	28.3	1	
Ratio serious injuries to fatalities	1.3	1.3	

Source: Department of Infrastructure and Regional Development (2016) *Road Trauma Australia 2016 Statistical Summary*; Australian Transport Safety Bureau (2017) *Aviation Occurrence Statistics*

The most common accident and serious incident types for recreational aircraft in the period 2006-2015 were:⁶⁵

- Terrain collisions (Collision with terrain, Controlled flight into terrain, Ground strike, Wire strike) 30%
- Aircraft control (Airframe overspeed, Control issues, Hard landing, Incorrect configuration, In-flight break-up, Loss of control, Stall warnings, Unstable approach, Wheels up landing, Other) 15%
- Powerplant/propulsion (Abnormal engine indications, Auxiliary power unit, Engine failure or malfunction, Propeller / rotor malfunction, Transmission and gearboxes, Other) 15%
- Runway events (Depart / approach / land wrong runway, Runway excursion, Runway incursion, Runway undershoot, Other) 6%
- Fuel related (Contamination, Exhaustion, Leaking or venting, Low fuel, Starvation, Other) 3%

ATSB defines an accident as an occurrence involving an aircraft where:

a person dies or suffers serious injury

the aircraft is destroyed, or is seriously damaged

any property is destroyed or seriously damaged - Transport Safety Investigation Act 2003.

Assuming accidents generally relate to the categories of Terrain Collisions and Aircraft Control;⁶⁶ 67% of accidents are likely to be terrain collisions and 33% aircraft control.

Considering impacts in the wider locality, 2.4 terrain collisions would be expected a year.⁶⁷ Other incidents, such as fuel related and power plant/propulsion would be expected to result in an emergency landing; and aircraft control and runway events would mostly take place on an airfield.

Air safety investigation records⁶⁸ have been examined for the period 2016 to date for accidents characterised as collision with terrain. There were 59 incident investigations involving collision with terrain. Of these, 20 (34%) took place near or on a runway. There was no injury or involvement of third parties in any of the incidents. Fire was mentioned in three of the incident reports (5%).

⁶⁵ Australian Transport Safety Bureau (2017) *Aviation Occurrence Statistics*, Table 34 and JSA calculation

⁶⁶ The ATSB report does not separate occurrences into the categories of accident and serious incident. The author has made this assumption based on narrative in the ATSB report.

⁶⁷ $36,000/1,000,000 \times 248.6 \times 67\% \times 40\%$ (flying school factor) = 2.4 accidents per year

⁶⁸ <https://www.atsb.gov.au/publications/safety-investigation-reports/?s=1&mode=Aviation&sort=OccurrenceReleaseDate&sortAscending=descending&occType=Collision%20with%20terrain&occCategory=Accident&occurrenceClass=&typeOfOperation=&initialTab=2>
accessed 24 April 2018.

11.2 Bird strike

For the nine years 2010-14, there were 0.45 bird strikes per 10,000 movements in the category of general aviation.⁶⁹ The proposed operation is expected to result in 18,000 movements per year⁷⁰ at peak operation, with this equating to an expected 0.81 bird strikes per year. The vast majority of these will occur in the environs of the airfield.⁷¹ The most common types of strike in NSW were bats/flying foxes, galahs, lapwing/plover and magpie,⁷² with these comprising 52% of bird strikes.

⁶⁹ Australian Transport Safety Bureau (2017) *Australian Aviation Wildlife Strike Statistics*, Table 2.

⁷⁰ 1,200 students at 15 movements each student during the course = 18,000 movements.

⁷¹ Australian Transport Safety Bureau *op cit*, Figure 6.

⁷² *Ibid*, Table 14.

12 Other Airfields

12.1 Introduction

There are six airfields in the surrounding area that can be used for training. These are Polo Flat, Merimbula, Mallacoota, Cooma, Moruya and Bombala. Of these, all but Polo Flat are public airfields and are available for general aviation use. Polo Flat is privately owned and access is by prior arrangement.⁷³

Of the six airfields, intensive use would be expected to have minimal potential amenity impacts at Mallacoota due to the isolated location, as would Cooma – Snowy Mountains and Bombala as they are set in areas of larger grazing properties. Potential impacts at Polo Flat are largely mitigated as circuit operations are restricted to the rural area to the east of the airfield. There is the potential for significant amenity impacts at Merimbula and Moruya airfields, as at both of these airfields residential areas and areas used for tourism industries may be overflowed by aircraft taking off and landing and conducting circuits.

12.2 Polo Flat

Polo Flat airfield is about 50 nautical miles (85 kms) or one hours flight to the north west of Frogs Hollow. The airfield is adjacent to an industrial area on the eastern edge of Cooma township. Circuit operations are confined to the east of the airfield⁷⁴ so residential areas to the west will not be overflowed by aircraft operations. The airfield is shown in the figure below.

An inspection of topographical maps for the area shows six residential properties to the east of the airfield within 2 kms of the centre of the main runway. These dwellings have the potential to sustain some amenity impacts due to overflying.

⁷³ AIP ERS March 2018.

⁷⁴ AIP ERS March 2018.



Figure 12.1: Polo Flat Airfield showing approximate 2 kilometre radius.

Source: Google

12.3 Merimbula

Merimbula airfield is about 10 nautical miles (20 kms) to the south east of Frogs Hollow. Circuit operations are confined to the east of the airfield⁷⁵ so residential areas to the west will not be overflowed by aircraft operations. The airfield is adjacent to Merimbula township. The airfield is shown in the figure below.

Aircraft operations will overfly residential properties around Fishpen Road and Ocean Drive with consequent potential amenity impacts. The area includes housing and holiday accommodation. In 2016, this area contained 222 private dwellings and 308 people. One third of dwellings were unoccupied, suggesting a high proportion of holiday cottages in the area. Areas along Arthur Kaine Drive to the south of the airfield will also be overflowed. In 2016, there were no residents in this area. The area contains a motel, and Pambula Golf Course will be overflowed.

We understand that the ANEF chart for Merimbula airport shows these properties to be located outside the ANEF 20 contour, which is the accepted level for residential properties according to AS 2021. These charts have been developed based on projected movements, including 3,800 training movements by 2033.⁷⁶ The effect on the ANEF contours of a significant increase in training movements has not been assessed.

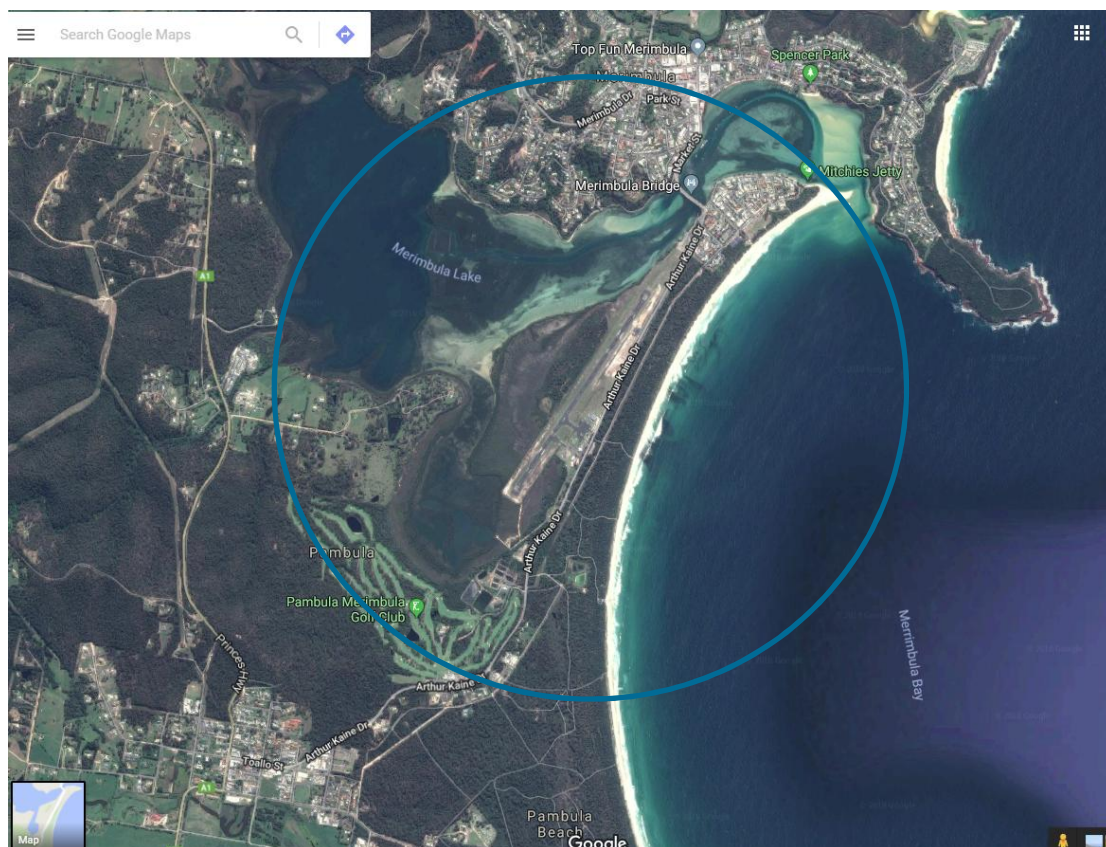


Figure 12.2: Merimbula Airfield showing approximate 2 kilometre radius.

Source: Google

⁷⁵ AIP ERS March 2018.

⁷⁶ REHBEIN Airport Consulting (2013) *Merimbula Airport Master Plan*, page 31.

12.4 Mallacoota

Mallacoota airfield is about 50 nautical miles (90 kms) to the south of Frogs Hollow. The airfield is about 5 km south west of Mallacoota township and is set in an area of state forest, with Croajingalong National Park to the south and west and the Tasman Sea to the south east. Operations on the main north south runway are restricted to the east side of the field.⁷⁷ Aircraft using the east west runway will overfly a small portion of Croajingalong National Park to the south west of the airfield. The airfield is shown in the figure below.

An inspection of topographical maps showed no residential properties within the area, with the nearest residences at Mallacoota, 5 km to the north east.

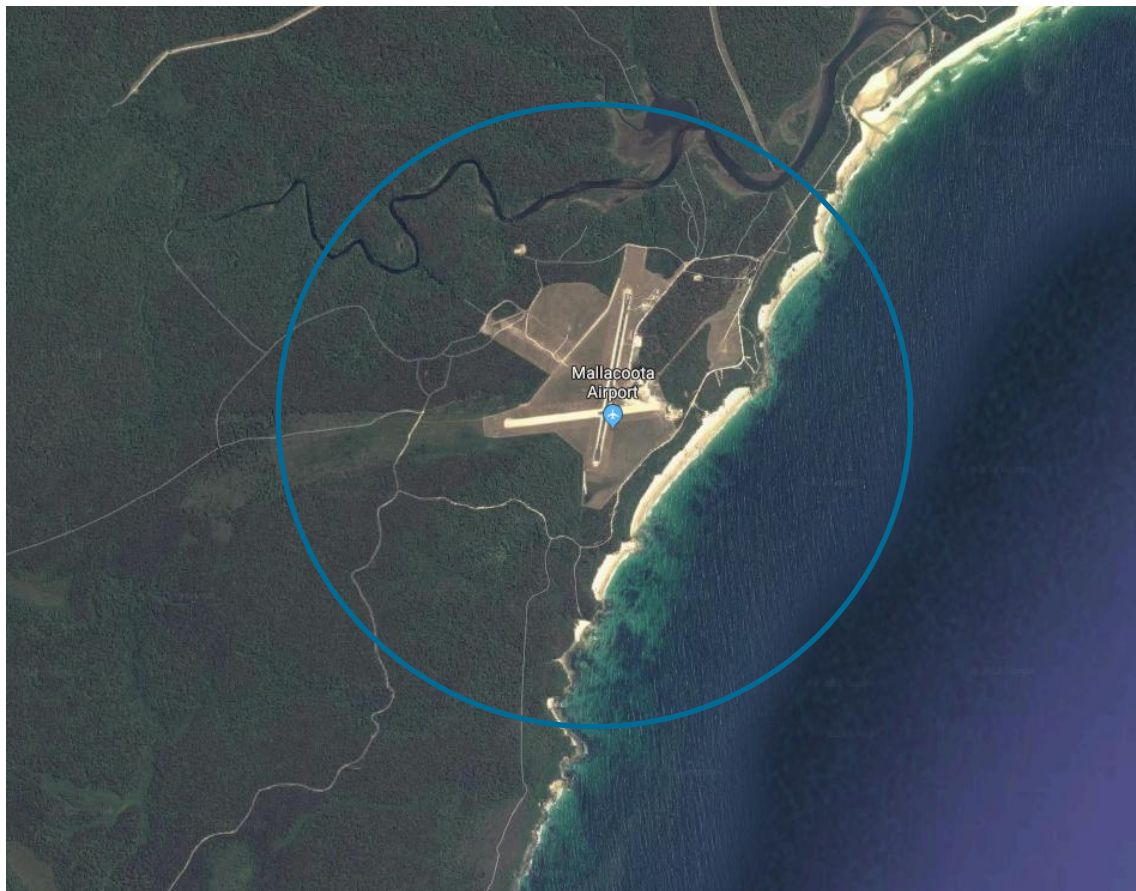


Figure 12.3: Mallacoota Airfield showing approximate 2 kilometre radius.

Source: Google

⁷⁷ AIP ERSA March 2018.

12.5 Cooma

Cooma - Snowy Mountains airfield is about 50 nautical miles (90 kms) or one hours flight to the north west of Frogs Hollow. The airfield is set in an area of grazing properties. The airfield is shown in the figure below.

An inspection of topographical maps shows two residential properties within two kms of the airfield, one to the west and one to the east.



Figure 12.4: Cooma – Snowy Mountains Airfield showing approximate 2 kilometre radius.

Source: Google

12.6 Moruya

Moruya airfield is about 55 nautical miles (100 kms) or one hour's flight to the north of Frogs Hollow. The airfield is set in an area of state forest, and is adjacent to Moruya Race Course to the west and Moruya Heads township and Eurobodalla National Park to the south. The airfield is currently used for ultralight training and for parachute operations.⁷⁸ The airfield is shown in the figure below.

Aircraft may overfly residences and tourist facilities in Moruya Heads with potential amenity impacts, and this area contained around 1,000 people and 550 dwellings in 2016, although most of these dwellings will not be affected.

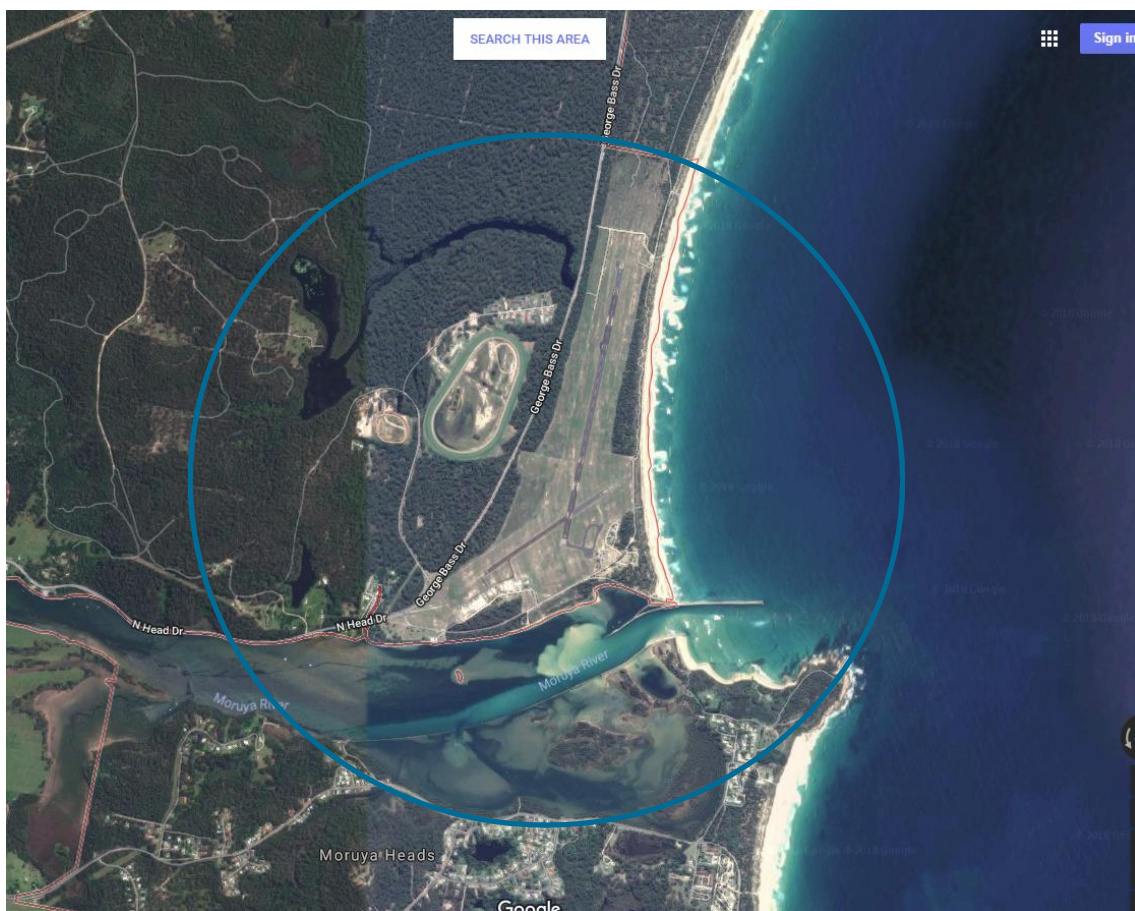


Figure 12.5: Moruya Airfield showing approximate 2 kilometre radius.

Source: Google

⁷⁸ AIP ERSa March 2018.

12.7 Bombala

Bombala airfield is about 30 nautical miles (60 kms) or 40 minutes flight to the west of Frogs Hollow. The airfield is set in an area of grazing properties, and is about 5 km to the west of Bombala township.

The airfield is shown in the figure below.

An inspection of topographical maps shows four residential properties within two kms of the airfield.



Figure 12.6: Bombala Airfield showing approximate 2 kilometre radius.

Source: Google

13 Land Values

Increases in land values are not an economic benefit or a cost, as increases and decreases are a transfer between owners and purchasers or between landlords and tenants. However, impact on land values, particularly a decrease, is often cited as an economic impact by those responding to development applications.

The additional jobs will generate a demand for additional housing within the locality, through either an inward migration of labour or else a reduction in outward migration of labour. Based on an average household size of 2.2 for Bega Valley LGA,⁷⁹ the population of Bega Valley LGA could be expected to increase by up to 440 as a result of the development, an approximate 1.3% increase in the population of Bega Valley LGA.

At the level of NSW, there is a strong correlation between the CPI adjusted median price of housing and median rental as shown in the graphs below.

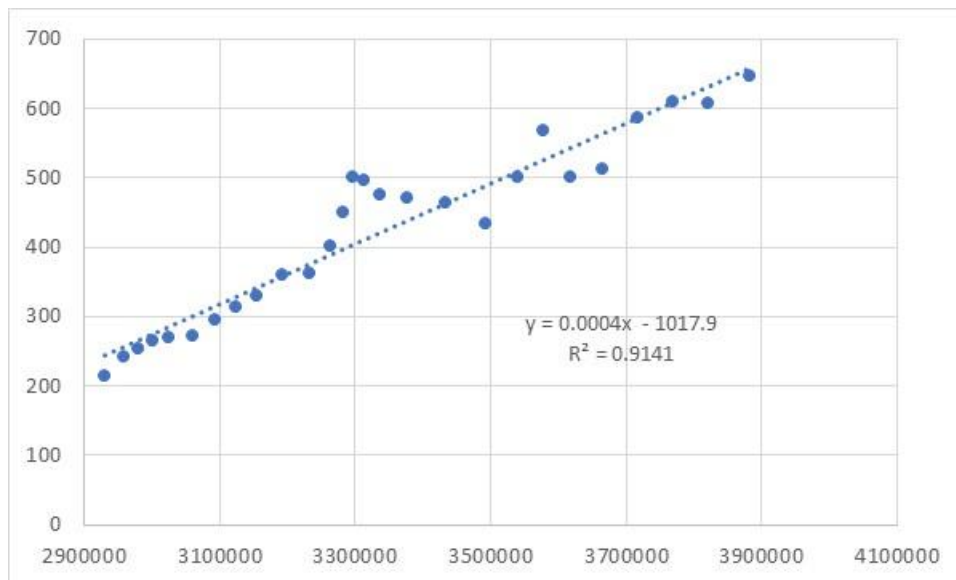


Figure 13.1: Relationship between median sales price and population for Bega Valley (CPI adjusted) ($p=0.000$).

Source: HNSW Rent and Sales Report time series data, ABS CPI data, JSA calculation

⁷⁹ ABS Quickstats

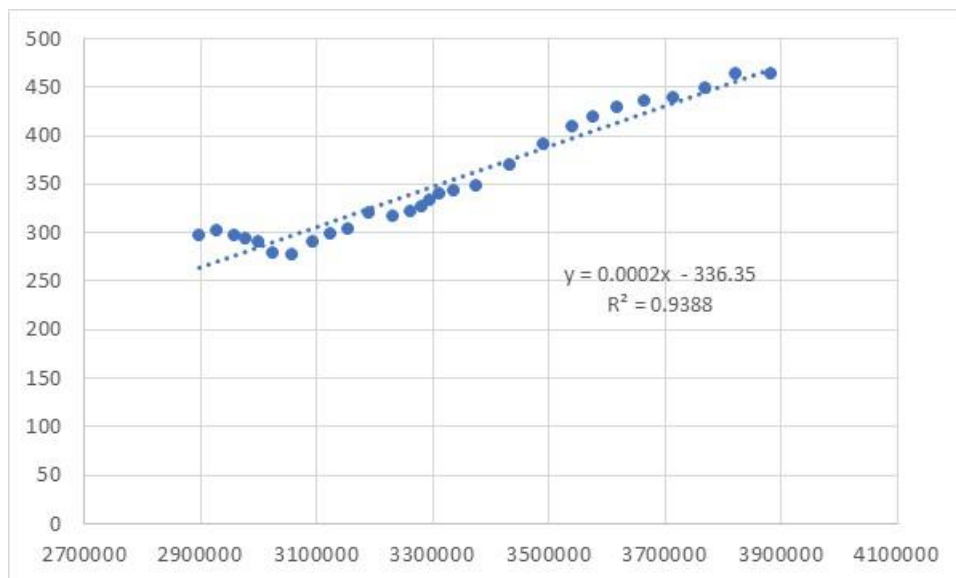


Figure 13.2: Relationship between median rental and population for NSW (CPI adjusted) ($p=0.000$).

Source: HNSW Rent and Sales Report time series data, ABS CPI data, JSA calculation

However there is no significant relationship between population and median sales prices for South Coast SA3 (incorporating Bega Valley and Eurobodalla LGAs), as shown below. While this may be an artefact of the small data set, it also suggests that there are relatively few supply constraints on housing in Bega Valley LGA.

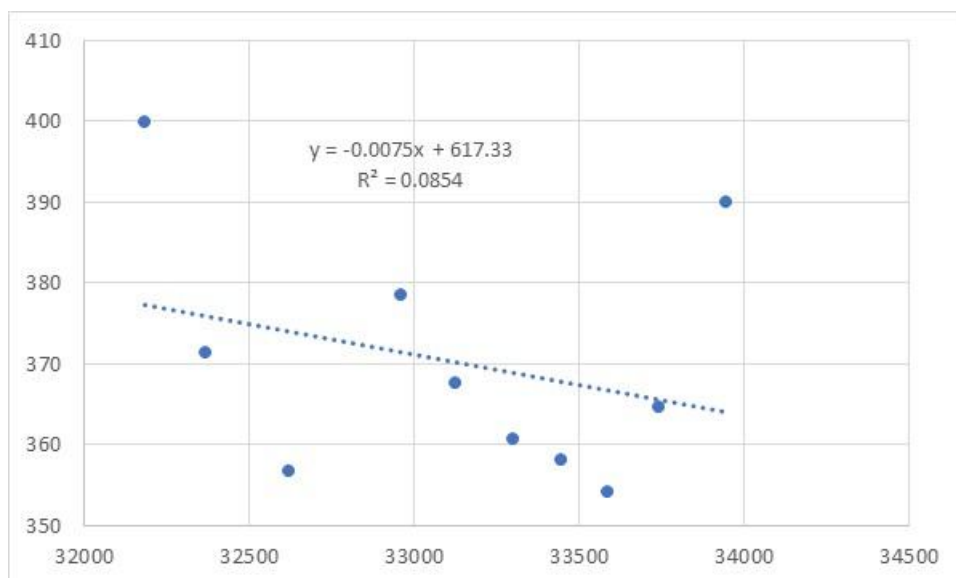


Figure 13.3: Relationship between median sales price and population for South Coast (CPI adjusted) ($p=0.412$).

Source: HNSW Rent and Sales Report time series data, ABS CPI data, JSA calculation

However there is a strong relationship between increasing population and increasing rents at the local level. Consequently, the increase in population of 440 people would be expected to lead to an increase in median three bedroom rents of \$6 per week. This would be a cost to tenants, offset by an equivalent benefit to land lords.

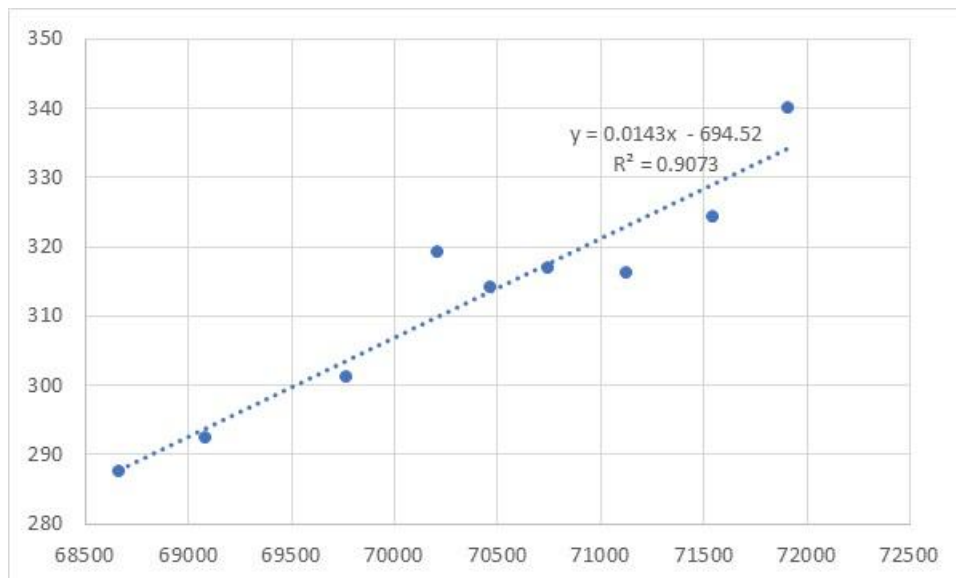


Figure 13.4: Relationship between median 3 bedroom rent and population for South Coast (CPI adjusted) ($p=0.000$).

Source: HNSW Rent and Sales Report time series data, ABS CPI data, JSA calculation

It is possible that proximity to an airport with high frequency flight operations has an impact on nearby land values, although it is difficult to identify areas subjected to high frequency flight operations with control areas where “all other things are equal” and there are not enough such airports to compile a comprehensive data base suitable for statistical analysis, particularly in light of the wide variation of property values across urban locations. Such an analysis including Sydney Airport is likely to be heavily skewed by the high level of inner city property prices in areas under flight paths.

There are two suburbs immediately to the west of Camden Airport, an airport with high frequency training activities. Circuit operations at Camden are restricted to the north of the airfield,⁸⁰ consequently one of these suburbs, Ellis Lane, is overflown and the other, Grasmere is not.

For sales for the year commencing 1 January 2017, the median sales price for properties in Ellis Lane was \$1,270,000 with an average area of 4,455 m². By contrast, the median sales price for Grasmere was \$1,420,000 with an average area of 4,100 m². In this instance similar properties appear to attract a 12% premium where not overflown by aircraft. However findings can be strongly contextual. As an example, the medium sales prices in Chipping Norton, a suburb

⁸⁰ AIP ERS March 2018.

overflowed by aircraft from Bankstown airport, was \$895,000. In the adjacent suburb of Moorebank, the median sales price (excluding non residential properties) was \$902,000, suggesting a premium of 1% where not overflowed by aircraft.

The existence of an airfield at Frogs Hollow may have already affected land prices in the area. There were 16 sales of vacant land with area between 1 and 10 ha at Frogs Hollow for the period 2014-16. The median price per ha was \$27,000 for an average lot size of 7 ha. For the same period, there were 222 sales of similar land within Bega Valley LGA with a median sales price per ha of \$46,000, with an average lot size of 4 ha.⁸¹ This suggests that land values are lower in Frogs Hollow by comparison with Bega Valley LGA more generally. While there are likely to be a number of factors contributing to this difference in price, it is likely to include a reduction in value due to the proximity of the airfield.

⁸¹ Data from EAC Redsquare data base and JSA analysis.

14 Impact on Regional Economic Development

As well as providing direct tourism employment, the development provides opportunities for other tourism expenditure by trainees at the college. More importantly, the development will showcase the Sapphire Coast Region to around 1,200 Chinese nationals per year.

China has become much wealthier in recent years and the outbound tourism market has expanded. In the first half of 2017, outbound tourist visits by Chinese nationals reached 62.03 million, up 5.1% compared with the same period of last year.⁸²

The International Visitors Survey⁸³ shows that in the year ended December 2017, Australia received 1,251,000 visitors from China. These visitors stayed for 52,444,000 nights or an average of 42 nights per visitor, and spent \$10,439 million, or an average of \$8,345 per visitor. The Chinese visitor market comprised the largest group of overseas tourists to Australia in 2017, exceeding visitors from New Zealand by 20,000 visitors. Chinese visitors have the highest spend per visitor of any group, and their expenditure is 64% greater than the average spend for all international visitors.

In addition to the opportunity to showcase the region to this large market, there is likely to be ancillary tourism associated with the development, such as students returning to the area, or family or friends staying in the area during training.

⁸² http://en.cnta.gov.cn/Statistics/TourismStatistics/201710/t20171013_842557.shtml

⁸³ Tourism Research Australia: International Visitors Survey, Table 1a.

15 Evaluation of Socio-Economic Impacts

15.1 Positive Impacts

15.1.1 Tourism

As discussed in section 8 above, the proposed development will be a tourism industry, providing an additional 200 tourism jobs in Bega Valley LGA. This is a 20% increase on estimates of current tourism employment in the Shire and should also be considered in the light of a ten year trend of falling tourism employment within Bega Valley LGA.

As well as providing direct tourism employment, the development provides opportunities for other tourism expenditure by trainees at the college. More importantly, the development will showcase the Sapphire Coast Region to around 1,200 Chinese nationals per year.

The Chinese tourism market is significant, as discussed in Section 14 above, and there is potential for additional tourism activity from visiting friends and relatives of students at the flying school; and from former students and their friends and relatives revisiting the area.

15.1.2 Alignment with strategic goals

A range of strategic documents are considered in Section 9 above. These documents share common themes around the development of new businesses, provision of skilled employment, accessing domestic and international tourism markets and diversification of the tourism industry.

The proposed development aligns with all these themes, as it is a new business in Bega Valley LGA, providing 200 jobs including skilled jobs in the areas of flight training and language, accesses the international tourism market and diversifies the Bega Valley LGA tourism industry outside the peak summer period.

15.1.3 Employment impacts

The proposed development will provide full time employment for an estimated 200 people. This will be a genuine benefit as the employment generated by the development is not dependent on local consumption, but rather is funded from overseas, as the development will effectively be an export industry. The median individual income for people employed in Adult Community and Other Education n.e.c.⁸⁴ was \$770 per week in 2016.⁸⁵

There will be additional employment generated as a result of consumption by the flying school in the wider locality. ABS no longer publishes “multipliers” due to concerns about their misuse, however there will be additional employment generated by purchases such as supply of fuel, supply of food and supply of water. Recreational expenditure by students will also contribute to additional employment in the locality.

⁸⁴ This classification includes operation of flying schools.

⁸⁵ ABS Census 2016 and JSA calculation

There will be further employment generated as a result of consumption by employees and their families in the wider locality and it is possible to obtain estimates of local expenditure by employees using the household expenditure survey. Households typically spend 35% of after tax income in areas such as food and non-alcoholic beverages, alcoholic beverages, tobacco products, clothing and footwear, education, personal care, and miscellaneous goods and services, and much of this would be expected to be purchased locally, suggesting a retail expenditure from those employed at the development of around \$2.0 million per year.⁸⁶ This is equivalent to an additional 10 people employed in other sectors.⁸⁷

Destination NSW reports indirect employment as a result of tourism as 0.53 jobs for each direct job. Using this approach, the 200 direct jobs provided would be expected to generate another 106 jobs.⁸⁸

The cost of construction has been estimated at \$10.45 million over four years. This is equivalent to the employment of 14 people over the four year construction period.⁸⁹ There will also be additional jobs associated with suppliers, such as concrete suppliers and additional employment associated with household consumption.

We have estimated the total annual value of employment associated with the proposal as \$8.0 million in direct employment,⁹⁰ \$4.2 million in indirect employment,⁹¹ and \$2.0 million in consumption, giving a total value of \$14.2 million in employment as a result of the proposed development.

15.1.4 Impacts on land values

Increases in land values are not an economic benefit or a cost, as increases and decreases are a transfer between owners and purchasers or between landlords and tenants. However impact on land values, particularly a decrease, is often cited as an economic impact.

The additional jobs will generate a demand for additional housing within the locality, through either an inward migration of labour or else a reduction in outward migration of labour. Based on an average household size of 2.2 for Bega Valley LGA,⁹² the population of Bega Valley LGA could be expected to increase by up to 440 as a result of the development, an approximate 1.3% increase in the population of Bega Valley LGA.

There is limited data available for change in median sales prices for the South Coast Region, and what data is available shows no relationship between median sales prices and population ($R^2=0.09$, $p=0.41$). However the increase in population in the area is likely to lead to an increase in rents, estimated in Section 13 above at \$6 per week for a three bedroom house. This will be a benefit to owners of rental property in Bega Valley LGA.

⁸⁶ $\$770 \times 52 \text{ weeks} \times 200 \text{ employees} \times 70\% \text{ (taxation)} \times 35\% = \$1,961,960$

⁸⁷ Assumes 25% labour component and typical salary of \$50,000 per year.

⁸⁸ <https://www.destinationnsw.com.au/our-industry/economic-value> accessed 11 April 2018, 90,900 indirect jobs are reported for 171,100 direct jobs.

⁸⁹ Assuming 25% direct labour component and median weekly construction income in Bega Valley of \$47,000.

⁹⁰ $\$770 \times 200 \text{ employees} \times 52 \text{ weeks} = \$8,008,000$.

⁹¹ $\$770 \times 106 \text{ employees} \times 52 \text{ weeks} = \$4,244,240$.

⁹² ABS Quickstats

15.1.5 Regional Development

As discussed above, the proposed development will make a positive contribution to regional development through provision of a new export industry, providing opportunities for skilled employment in the areas of flight training and language, accessing the international Chinese tourist market and diversifying the Bega Valley LGA tourism industry outside the peak summer period.

In the local context, the significant outward migration of young adults suggests the lack of appropriate skilled entry level positions in the area.

15.1.6 Other Airfields

There are a number of nearby airfields with low levels of usage, including Mallacoota, Cooma Snowy Mountains, and Bombala. Additional usage of these airfields will generate additional income through landing fees, and so reduce the cost to the community of maintenance of the airfield.

15.2 Adverse Impacts

15.2.1 Amenity impacts

There are likely to be amenity impacts associated with the proposed development as a result of the intensity of flight operations. There are three areas where these may be experienced, the immediate locality, the wider locality and satellite air fields used for circuit training.

Impacts are likely to be most marked in the immediate locality where there will be a significant increase in the density of flight movements compared with the existing usage of the aeroplane landing area, and where aircraft are flying at lower levels. These amenity impacts are likely to consist of noise impacts, visual impacts and perhaps loss of privacy if overflying by aircraft results in people changing their behaviour. We have estimated the likely number of people to be affected by amenity impacts in the immediate locality at 88 people.

While there is likely to be a diminution of amenity in the immediate locality, the level of amenity with respect to noise, visual impacts and loss of privacy will be in accordance with community standards with regard to noise generation and height of overflying. The noise report has found that, subject to the adoption of appropriate mitigations (imposing upper limits on flight activity), the operation of the flight college will comply with applicable normative standards. We understand flight operations will be conducted in accordance with appropriate regulations with regard to minimum height above terrain, being 500' minimum or 1,000' over built up areas and so would comply with normative standards relating to visual impacts and loss of privacy.

Other potential amenity impacts have been raised, including as pollution and traffic.

The traffic report⁹³ finds that adverse traffic impacts can be mitigated by the provision of works at the intersection of the airfield access road and the Princes Highway.

There is a regulatory system in place with regard to pollution under the Protection of the Environment Operations Act, and if residents had concerns regarding pollution during operation of the flying school, they would have recourse under this act.

Amenity impacts in the wider locality are likely to be somewhat less than those in the immediate locality, as the density of aircraft will be much less and aircraft will be operating at greater heights, understood to be 4,000' to 10,000'. Adverse amenity impacts such as noise and visual impacts are expected to be experienced most markedly in residential areas, and outdoor tourist areas and wilderness locations such as beaches and National Parks, due to the presence of sensitive receivers in these locations.

Amenity impacts at other airfields used for circuit training will be similar to impacts in the immediate locality and so would comply with appropriate normative standards, and will be similar to existing impacts at other airfields, however the scale of usage is likely to result in a significant intensification of use.

There are a range of mitigations available to minimise amenity impacts associated with airfields and these are discussed above in Section 7.1.

15.2.2 Character impacts

It is likely that there would be some adverse impacts upon less tangible aspects of character and amenity in the immediate locality. These less tangible aspects of amenity relate to the way in which local residents experience their area, for example, as a 'tranquil rural area'. For example, properties with a vantage point from which they can clearly see aircraft in operation and hear them even below accepted noise levels would likely experience an adverse change to their existing rural vista and experience in the area.

However, it is likely that these changes to the experiences of residents would be quite localised and would decrease as properties are located further away from the most intensive operations at Frogs Hollow. The extent of these impacts on character and amenity will to a large extent depend on the ultimate intensity of operations and the flight and training paths adopted. Care in the choice of flight and training paths, and potential actions to reduce intensity discussed later in relation to potential mitigations, would reduce these experiential impacts for residents, but may not eliminate them.

There are particular areas in the wider locality, including tourist destinations such as beaches and wilderness areas like national parks, where overflying by large numbers of aircraft would be expected to have significant impacts on character and the way in which people experience these areas. There are opportunities to significantly mitigate such impacts, as discussed later. If flight paths avoid these key areas, such impacts will likely be eliminated in the wider locality.

⁹³ Tasman Engineering Consultants *Traffic Assessment Report for Sports Aviation Australia At the Intersection of the Access of The Proposed Development and The Princes Highway*.

15.2.3 Impacts on Residential Uses

While operation is expected to be within appropriate normative standards with regard to noise and height of overflying, there is much evidence of conflict between airfields and nearby residential uses, particularly arising from complaints regarding noise.

There are opportunities to mitigate and manage such impacts, as discussed in Section 7.1 above.

15.2.4 Tourism impacts

While it has been claimed that the proposed development will have a deleterious effect on other tourist industries, this claim is difficult to test, as airports with high densities of flight movements are often associated with areas with a large tourism industry such as the Gold Coast in Queensland.

Based on the analysis in Section 4.3 above, there is no evidence of tourism industries operating in the immediate locality. The majority of tourism employment in Bega Valley LGA is associated with the Merimbula area. If there were concerns regarding the impact of overflying aircraft in this area affecting tourism, a condition of consent could restrict overflying of the Merimbula area, or nominate designated flight paths to minimise impacts.

Impacts on other tourism industries are most likely to relate to amenity impacts and have the same opportunities for mitigation as discussed for residential uses above.

15.2.5 Agricultural impacts

There is no evidence to support claims of an adverse impact on agriculture from operation of the proposed flight school as discussed in section 7.2 above.

15.2.6 Alignment with strategic goals

A number of submissions stated that the proposal was at odds with the aims of Bega Valley LEP 2013.

With regard to aim (a) we understand there will be some impacts on biodiversity, however the biodiversity assessment⁹⁴ concluded

“With the effective implementation of these measures, the impacts of the proposal are considered manageable and not likely to be significant.”

Building design is understood to comply with appropriate standards with regard to energy efficiency, and the site is unlikely to be affected by climate change, due to its distance from the shoreline.

With regard to aim (b), the proposal appears to align with this aim.

With regard to aim (c), we understand that there will be some impacts on remnant native vegetation, and this is addressed by the biodiversity assessment, as discussed above.

With regard to aim (d), the development does not appear to comprise urban settlement.

⁹⁴ NGH Environmental (2017) *Biodiversity Impact Assessment Frogs Hollow Recreational Flight School*

With regard to aim (e), the buildings are not expected to be visible from surrounding areas, are in accordance with maximum building heights under the Bega Valley Local Environmental Plan 2013, and in any case, the area has a variety of industrial uses.

With regard to aim (f), the development does not provide housing.

With regard to aim (g), the development does not contribute to the fragmentation of agricultural land and there is no evidence that the operation will adversely impact on agriculture.

With regard to aim (h), we understand the development does not affect cultural heritage.

With regard to aim (i), we understand the land is partially bushfire prone, however the Rural Fire Service has provided General Terms of Approval for the proposed development.

With regard to aim (j), we understand that the development will minimally impact on water quality and environmental flows.

15.2.7 Economic Impacts on other industries

There is no evidence to support claims of adverse impacts on agricultural industries. Adverse impacts may be expected on leisure tourism uses, however the impact is difficult to quantify. Impacts on tourism are likely to relate to amenity impacts, and mitigations are available to minimise these impacts, as discussed above.

15.2.8 Impacts on land values

Increases in land values are not an economic benefit or a cost, as increases and decreases are a transfer between owners and purchasers or between landlords and tenants. However impact on land values, particularly a decrease, is often cited as an economic impact.

There is evidence to suggest that overflying of urban land associated with airfield operations leads to a reduction in land values, however impacts are difficult to quantify and are likely to be strongly contextual. Based on two case study examples, reductions could range from 1% to 12%, depending on context.

Land values for smaller blocks (1-10 ha) in the Frogs Hollow area are about 60% of prices per ha for similar land generally within Bega Valley LGA. The generally lower value of land in this area is likely to include a component allowing for existing uses in the area, including Frogs Hollow Airfield.

Any further impacts on land values can be mitigated through measures targeting amenity impacts.

15.2.9 Safety and Fire Risk

As discussed in Section 11 above, operation of the flying school is expected to result in 3.6 accidents each year on average, including one fatality every eleven years and three serious injuries every year. 1.6 of these accidents are expected to occur off the airfield. Of the accidents, fire is expected to be involved in one accident every eight years. While an accident could involve a third party, there was no record of such occurrences in the years 2016 and 2017.

By comparison, there were two road fatalities recorded for Bega Valley LGA in 2016, and 17 for the five year period 2012-16, or around three per year.⁹⁵ There were 582 recorded road injuries for the five year period, or 116 per year.

The Bega Valley Bush Fire Management Committee *Bush Fire Risk Management Plan* states that:

“The Bega Valley BFMC area has on average 60 bushfires a year of which 3-4 can be considered significant. Major fires in extreme conditions are rare ... but can be devastating.”

Operation of the flying school is therefore expected to increase the number of crash related fatalities in Bega Valley LGA by 3%, and the number of crashes by around 3%. The number of fires is expected to increase by 0.2%, and fire risk would be further mitigated by the proposed shut down over December and January.

Ability to respond to such incidents is likely to be within the capacity of existing emergency services, given the relatively small expected increase in incidents. Firefighting provision is also to be made available as part of the proposed development.

15.2.10 Health impacts

We understand the operation of the flying school will comply with relevant normative standards with regard to noise, and that the aircraft will comply with relevant normative standards with regard to pollution. As these standards are a matter of public policy, we assume that they have been put in place to guard against adverse health impacts (amongst other impacts) and that compliance will minimise the risk of adverse health impacts.

15.2.11 Other airfields

There are six surrounding airfields which could be used as part of flight training. These are Moruya, Merimbula, Polo Flat, Cooma Snowy Mountains, Bombala and Mallacoota. All of these had sufficient capacity to include increased operations, however intensive circuit operations may conflict with existing parachute operations at Moruya Airfield.

Of the six airfields, intensive use would be expected to have minimal potential amenity impacts at Mallacoota due to the isolated location, as would Cooma – Snowy Mountains and Bombala as they are set in areas of larger grazing properties. Potential impacts at Polo Flat are largely mitigated as circuit operations are restricted to the rural area to the east of the airfield. There is the potential for significant amenity impacts at Merimbula and Moruya airfields, as at both of these airfields, residential areas and areas used for tourism industries will be overflown by aircraft taking off and landing and conducting circuit operations.

Approaches to Mallacoota airfield would need to avoid wilderness areas to the east and west to avoid impacts on these areas, and a suitable corridor exists along the highway and Mallacoota Inlet.

⁹⁵ <http://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/nsw.html?tabnsw=8> accessed 30 April 2018.

15.2.12 Displacement of existing recreational activities

The Frogs Hollow Airfield currently includes Frogs Hollow Flyers with 80 members flying 12-14 aircraft, with the highest usage on Sundays; and Bega District Model Club with 29 members flying model aircraft on the airfield.

We understand that the development provides land to enable Frogs Hollow Flyers to relocate within the airfield. We further understand that a suitable site has been reserved for the Bega District Model Club within the wider property proposed to be acquired by Sports Aviation Flight College Australia. The flying school will not use the airfield on Sundays, and Saturday usage will be light, providing weekend opportunities for Frogs Hollow Flyers to use the airfield.

There will be time for the users to relocate, as the staging plan means that relocation will not be required until later stages in the development.

15.3 Net Socio-Economic Impacts

15.3.1 Benefit – Cost Analysis

Most of the probable costs and benefits of the proposal are quantifiable, using widely accepted methodologies including *NSW Government Guide to Cost-Benefit Analysis*⁹⁶ and *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives*.⁹⁷

For the purpose of the cost-benefit analysis we have taken the system boundary to be Bega Valley LGA and the areas surrounding possible satellite airfields.

Quantifiable costs and benefits

The major benefit associated with the proposal is the value of local employment. While employment would not normally be claimed as a benefit,⁹⁸ in this case it is legitimate as the proposal will receive its income from outside the system boundary, that is it will be an export industry. We have also claimed employment during construction, as we understand the majority of investment will also come from overseas. We have made the reasonable assumption that the employees of the proposal will live within Bega Valley Shire. These estimates will be an **underestimate** to the extent that profits from the operation go to residents of Bega Valley Shire and the extent that indirect employment takes place in Bega Valley Shire.⁹⁹

Annual Benefit employment = \$8.0 million¹⁰⁰

Annual Benefit construction employment = \$0.7 million¹⁰¹

⁹⁶ The Treasury (2017) *NSW Government Guide to Cost-Benefit Analysis*

⁹⁷ Transport for NSW (2018) *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives*.

⁹⁸ For a variety of reasons, such as concerns regarding double counting, unemployment rates and transfer of consumption expenditure.

⁹⁹ Indirect employment could include for example baggage handlers at Sydney Airport, and so would be a benefit in the NSW context but not in the Bega Valley context.

¹⁰⁰ See section 15.1.3 above.

Total Annual Benefit = \$8.7 million

The major quantifiable costs relate to the amenity impacts of the proposal and the costs of crashes. Transport NSW publishes externality unit costs for passenger vehicles and buses.¹⁰² We understand the motors in the proposed aircraft are similar in size to those in passenger cars and so we have adopted these rates in our calculation. Based on an estimated 36,000 flying hours per year at an average speed of 60 knots, the estimated distance flown each year is 3.95 million kms.

If all flying took place in urban environments, the annual cost of externalities is estimated at \$0.5 million. If all flying took place in rural environments, the annual cost of externalities is estimated at \$0.3 million.

Total Annual Externality Cost = \$0.3 million - \$0.5 million

Transport NSW publishes estimates of willingness to pay to avoid death or injury.¹⁰³ With regard to the flying school, most of the costs of the death or injury of an overseas student will be experienced overseas, rather than in Bega Valley LGA and so should not be included in the cost benefit analysis. However direct costs, such as police and fire should be included. Estimates of cost of crashes has been based on a 50/50 split of death or injury between overseas students and Australian flight instructors, generally rural crashes, 0.09 fatalities per year, 3.1 serious injuries per year, and 3.6 other accidents.¹⁰⁴

Annual Cost of Crashes = \$1.4 million¹⁰⁵

Net Annual Benefit = \$6.8 million - \$7.0 million

Benefit Cost Ratio = 4.6 – 5.1

Unquantifiable costs and benefits

The major unquantifiable cost is the possible impact on other tourist industries. While there is no evidence on which to assess a reduction in the size of other tourist industries as a result of the operation of the flying school, it is possible to carry out a sensitivity analysis. The consideration of reduction in the size of the tourist industry is a legitimate cost, as, similar to the proposed flying school, in the context of Bega Valley Shire tourism is an import industry and so not reliant on local consumption, however at the level of NSW or Australia, incorporation of domestic travel would not be a benefit as this expenditure would be transferred to other goods and services.

Local estimates of tourism employment appear grossly inflated, as discussed in Section 8.2.2 above. Three different estimates (the JSA estimate, the .IDcommunity estimate, and an apportionment of Satellite Account Estimates for the South Coast tourist region) suggest that local direct employment in tourism is around 1,000 people. Taking a similar approach to that

¹⁰¹ \$10.45 million at social discount rate of 7% in accordance with treasury guidelines.

¹⁰² Transport for NSW, *op cit*, Table 58. This includes costs for air pollution, greenhouse gas emission, noise, water pollution, nature and landscape, urban separation, and upstream and downstream costs.

¹⁰³ Transport for NSW, *op cit*, tables 53 and 54.

¹⁰⁴ This will be an overestimate as costs for death and injury include cost of associated accidents, however one accident may include more than one death or serious injury

¹⁰⁵ $\$7,471,119 \times 0.5 \times 0.09 + \$381,037 \times 0.5 \times 3.1 + \$69,878 \times 0.5 \times 3.6 + \$155,050 \times 0.5 \times 0.09 + \$173,115 \times 0.5 \times 3.1 + \$12,712 \times 0.5 \times 3.6 = \$1,350,775$

used above for the proposed flying school of only considering direct employment, and for the same reasons, the value of the local tourism industry to Bega Valley Shire can be estimated.

Median income for people employed in the categories of Retail and Accommodation and Food Services in Bega Valley LGA was \$575 per week, with this rate likely reflecting the level of part time work in these industries. Using this data, the annual benefit of tourism employment in Bega Valley LGA can be estimated.

Annual Employment Benefit = \$29.9 million¹⁰⁶

For an overall adverse economic impact, the proposed flying school would need to reduce employment in other tourist industries by 23%,¹⁰⁷ that is, it would need to result in a reduction of visitors to the region by 23%. This is an overestimate, as a reduction in tourist visitation would be expected to result in a reduction in road crashes, deaths and injuries with an accompanying benefit to offset some of the lost employment.

If it is assumed that the major impact on other tourism industries are amenity impacts, primarily relating to noise and visual impacts, then the impact on other tourist industries can be mitigated by not overflying these areas. The areas of Bermagui, Tathra, Bega, Merimbula and Eden contain 87% of tourism employment in Bega Valley (using Accommodation and Food Services as a proxy as set out in Map 4.4 above). If the impact of the flight school led to the loss of all tourism employment in other areas of the Shire but was not experienced in these key areas, the benefits from the flight school would outweigh this loss.

Other non-quantifiable benefits include:

Ancillary tourism by trainees at the college;

Alignment with strategic goals, particularly as these relate to economic development in the locality; and

Additional usage of nearby airfields, leading to increased income to offset maintenance costs.

Non quantifiable costs include:

Impacts on the character of the locality; and

Displacement of existing recreational activities.

15.3.2 Statement of net impact

The major positive impacts of the proposal relate to increased employment in the locality, and the major adverse impacts consist of adverse amenity impacts (with these likely to affect residents and tourists, and by extension, the existing tourist industry); and impacts on safety.

The cost benefit analysis above shows that the benefits of the proposal in terms of employment is more than sufficient to offset amenity impacts on residents and the cost of crashes. The major area of conflict is in impacts on the tourist industry, and calculations above would support

¹⁰⁶ \$575 X 1,000 people x 52 weeks = \$29.9 million.

¹⁰⁷ \$7.0 million / \$29.9 million = 23%.

mitigations to minimise impact of the proposal on existing tourist industries so as to maximise total benefit to the community.

While the valuation of externalities above shows the economic cost of amenity impacts to be low on average, such impacts are likely to be considered costlier by particular individuals, particularly if they bear a disproportionate share of the impacts. While noise impacts are expected to be within normative standards, there are opportunities to mitigate amenity impacts and such mitigations are likely to enhance community support for the proposal.

15.3.3 Mitigations

Hours of operation

The proposed hours of operation are 0700 to 1800 Monday to Friday, with some reduced flight operations on Saturday. These hours of operation are in line with noise abatement hours for heavily used airfields in urban environments. For example, circuit training at Sydney Bankstown is permitted between 0600 and 2200, Monday to Friday and between 0700 and last light on Saturday and Sunday.

The reduced flying on Saturdays and no flying on Sundays will provide opportunities for other users of the airfield such as Frogs Hollow Flyers.

The annual shutdown period of 10 December to 10 February is likely to coincide with the peak tourism visitation period, and so will significantly mitigate any impacts on other tourism industries and on visitor experiences.

However, the intensity of operations proposed for Frogs Hollow airfield may lead to adverse amenity impacts for local residents. Further mitigation could be provided through reducing the time and focus of activities. For example, the hours at Frogs Hollow could be reduced somewhat by not operating the flying school on the weekend, or starting later than proposed on weekdays, for example, 8am. Alternately, intensity could be reduced by relying on another local air field as the starting point for the day's flying activities and transporting trainees by bus to this location (for example, Cooma-Snowy Mountains, Bombala or Mallacoota).

Area of operations

A significant mitigation of potential amenity impacts in the immediate locality can be achieved by restricting operations as much as possible to the west side of Frogs Hollow Aerodrome so as to avoid overflying rural residential development along Newlyn's Place and Moorlands Lane. This can be achieved by flying right hand circuits on runway 18 and by restricting use of runway 09/27 for use only when required e.g. for adverse cross winds. An inspection of topographical maps shows this area contains one residential property, and it should be possible to put procedures in place to ensure this property is not overflown so as to minimise amenity impacts.

Approach points to the circuit area should be designated so as to minimise overflying of residences prior to entering the circuit.

In terms of the wider locality, overflying of urban areas should be avoided to minimise impacts on both residents and the main tourist areas. In particular, operations should avoid the urban

areas of Bermagui, Tathra, Bega, Merimbula and Eden. Flying parallel or along the coast is also likely to have an impact, particularly if aircraft fly over beaches, and so coastal flying should be conducted 1-2 km offshore to minimise impacts. Tracking along the coast within 1-2 km should be restricted to an area north of Tathra and south of Bermagui so as to minimise impacts on tourist areas and wilderness areas.

Negotiations should be held with National Parks to agree appropriate operational areas which will minimise impact on wilderness areas.

We understand the accepted methodology for assessing amenity impacts for larger aerodromes is the preparation of contour maps associated with the Australian Noise Exposure Forecast (ANEF) system. Such contours have been prepared for Merimbula Airport, and these are based on 3,800 training movements each year by 2033, the forecast for moderate growth of existing training movements.¹⁰⁸ If use of Merimbula and Moruya airports is proposed, preparation of ANEF charts based on greater number of training movements at both airports should be prepared. This would inform an evaluation of the number of training movements that would comply with appropriate noise criteria and allow for a complying intensity of operations. Approach points to the circuit training area for both airports should be established to minimise overflying of built up areas and other sensitive locations such as beaches.

Procedures should be put in place to enable coordination with parachute operations at Moruya Airport. These could include agreeing time slots or having communication protocols in place to avoid conflicts between circuit training and parachute drops.

In general, training flight paths and training areas should be identified which avoid as much as possible, and in order of priority:

- Urban areas
- Areas associated with tourist uses such as beaches and lakes
- National Parks
- Dwellings

Varying flight paths during the day could also reduce intensity over specific properties.

Flight paths that parallel the highway may have similar impacts to existing traffic and so reduce new impacts. Operations over state forests and parallel to the coast and offshore are likely to have generally low amenity impacts.

Monitoring of operations

Compliance noise monitoring should be undertaken, with a higher intensity in the early days of operation, to confirm assumptions made in noise modellings and to ensure there are not adverse impacts on nearby residents.

¹⁰⁸ REHBEIN Airport Consulting (2013) *Merimbula Airport Master Plan 2033*, Figure 8.

A complaints line should be set up, and all complaints should be logged and regularly analysed with respect to flight paths. Where possible flight paths should be revised to minimise complaints. The register should be made available to Council upon request.

Other users

Provide an opportunity for Frogs Hollow Flyers to relocate within the airfield and for Bega Valley Model Club to relocate to other land associated with the development.

Economic Development

Develop and implement a detailed local employment and training policy that gives priority to employing and training local people wherever possible.

Develop and implement a local purchasing policy that gives propriety to purchasing goods and services locally where possible.

Collaborate with local and regional tourism associations and individual businesses to develop a program of activities for students that maximises positive interaction with and benefits to local businesses, including during students' free time in the evenings and weekends.

Partner with local and regional tourism associations to develop a promotional campaign on the region to increase tourism visitations from mainland China in general, and leveraging off increased awareness of the region generated by students at the flying school and their visitors.

Develop and implement cross-cultural awareness programs that provide for increased community integration including introductions to the local culture and area for students, and for local residents to Chinese culture and local students including welcoming activities, opportunities to share experiences and culture, for example, film nights, interpreted 'meet and greet' sessions, music and art nights, opportunities for home visits, open days at the proposed facility, collaborations with local primary and high schools, English/Mandarin conversational classes, etc.