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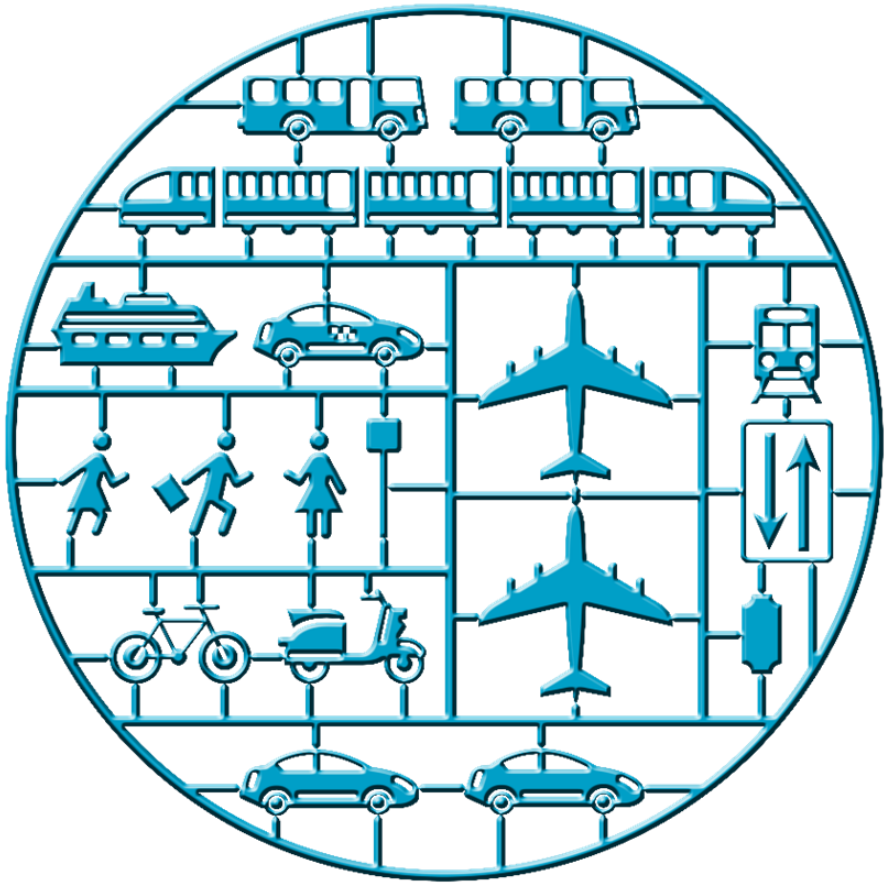

West Coast Council

Strahan Airport Feasibility Study

Final Report

16 July 2018

Contents

Figures

Tables

Glossary

Acronym	Full name
ACN	Aircraft Classification Number
CASA	Civil Aviation Safety Authority
GA	General Aviation
GRP	Gross Regional Product
GVA	Gross Value Added
LGA	Local Government Area
NBN	National Broadband Network
NVS	National Visitor Survey
PCN	Pavement Classification Number
RFDS	Royal Flying Doctor Service
RPT	Regular Passenger Transport
TWWHA	Tasmanian Wilderness World Heritage Area
UNESCO	United Nations Educational, Scientific and Cultural Organisation
YTD	Year to date

Executive Summary

Strahan Airport is a registered airport adjacent to the town of Strahan on the West Coast of Tasmania. The airport is owned and directly controlled by West Coast Council. The airport is used on a semi-regular basis (a total of approximately 170 landings per annum[1]) by non-scheduled chartered flights, emergency services, itinerant[2] general aviation flights and commercial helicopters. There are currently no Regular Passenger Transport (RPT) services to or from Strahan Airport. However, the Tasmanian Government has announced an RPT trial which will commence in late 2019, underpinned by Government funding.

Interest has been expressed by local businesses and the broader community to explore potential further opportunities associated with Strahan Airport. This desire has been reflected in the *West Coast Community Plan 2025* (the Plan)[3], which commits to investigating the case for developing and upgrading the airport infrastructure for Strahan Airport.

Becoming a sustainable regional airport

This report assesses four success factors relevant to the future of Strahan Airport:

1. Adequately maintained infrastructure
2. Strong underpinning passenger demand
3. Financially viable regular passenger transport (RPT) routes for airlines
4. Supplementary non-aeronautical opportunities.

These success factors are co-dependent and require simultaneous focus in order for Strahan Airport to realise its full potential.

Airport infrastructure assessment

The airport infrastructure assessment revealed that the current state of Strahan Airport infrastructure is suited to the current level of traffic. However, any significant increase in activity will require additional investment.

The overall recommendation with respect to infrastructure investments is that a flexible approach should be taken before implementing significant works, dependent on the realisation of demand scenarios. In order for the airport to be operationally ready to support the proposed Strahan-Hobart RPT trial, the Council will need to find funding for the relevant security upgrades and minor works on the terminal building in the near-term.

The performance of the RPT trial should provide an indication of the medium-term investment priorities in other infrastructure including the runway, apron areas, drainage, and utilities for the airport complex.

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[1] Sourced from Strahan Airport statistics recorded by Avdata, over the period of year 2015 to 2017. It is noted that Avdata only captures inbound aircraft movements, therefore the outbound volume is unknown.
[2] "Itinerant" flights are one of the two common categories of general aviation flights (the other category being "local" flights). "Itinerant" flights are distinguished from "local" flights by an association with different origin and destination airports. "Local" flights, in comparison, are defined by aircraft operations that are operating with the local traffic pattern of the airport or within the sight of the airport.
[3] https://www.westcoast.tas.gov.au/webdata/resources/files/ADOPTED%2020%20October%20WestCoastCP2025_FINAL_highres.pdf

Demand assessment

The demand assessment explored the key industries on the West Coast and the potential future demand for Strahan Airport services. These key industries include:

1. Tourism
2. Mining and resources
3. Aquaculture and commercial fishing
4. Other airport users.

Tourism

Tourism represents a critical driver of economic development on the West Coast. The region has unique tourism assets featuring wilderness and heritage. However, recent increases in visitation have significantly lagged the rest of the State. The demand assessment suggests that a sustainable RPT service to Strahan would need to be driven by tourism. Stakeholder consultation found that demand from other sources is unlikely to be sufficient to support RPT services, even under an optimistic scenario.

There are a number of significant investments and projects that will contribute to the future growth of tourism on the West Coast. These include:

- West Coast Branding Project
- West Coast Wilderness Drive
- Strahan Wharf and cruise terminal redevelopment
- Gordon River Cruise new vessel, the Spirit of the Wild
- Two additional Spirit of Tasmania vessels in 2021, bringing more tourists to Tasmania
- Development of new tourism products, e.g. mountain bike parks.

It is also commonly acknowledged that the realisation of the tourism opportunity requires a concerted effort from all levels of government, industry bodies and the industry itself to further improve the appeal and attractiveness of the West Coast region. It would also require more competitively priced air access to the region, most likely to be achieved through an RPT service rather than just increased volume of charter flights.

Mining and resources

Mining remains a significant industry on the West Coast. Demand for Strahan Airport from this sector will manifest through direct and indirect channels. Consultations revealed that certain mine operations will make direct use of Strahan Airport through travel by management staff between Strahan and mining headquarters in major cities like Hobart. This may be through the Strahan-Hobart RPT service or through private non-scheduled chartered flights.

There will be indirect demand for Strahan Airport generated through the mining sector through its contribution to employment and incomes of local West Coast residents. This will particularly be the case in the event that mines at Mount Lyell, Avebury, and Heemskirk (re)start production. This will depend on a number of commercial factors, particularly global commodity prices. However, mining demand is unlikely to underpin an RPT service, even under an optimistic scenario。

Aquaculture and commercial fishing

Continued or increased aquaculture and commercial fishing activity could support demand for Strahan Airport through three avenues: air freight of time sensitive high value product, business travel for management, and air freight of time-sensitive replacement equipment and parts, for example. However, the recent environmental challenges in Macquarie Harbour limits the prospects for growth in the region and hence aquaculture demand (like mining) is unlikely to underpin an RPT service on its own.

Other airport users

The other sources of potential demand for Strahan Airport services include RFDS, pilot training, general aviation, and general business travel. Demand from these sources demonstrates the significant community benefits that a functioning Strahan Airport provides to the West Coast. However, this group is likely to generate relatively small levels of aviation activity.

Feasibility assessment

The feasibility assessment comprises three parts:

1. Three feasible airport activity scenarios, informed by the demand analysis
2. An examination of the financial implications for Strahan Airport under each scenario
3. An assessment of the financial feasibility of an airline being able to offer RPT services between Strahan and Hobart.

Key parameters and assessment results for each of the three options are outlined in Table 1 and 2.

Table 1: Summary of key parameters for the three options

Business as Usual (Option 0)	Option 1	Option 2

• Continuation of historical levels of general aviation activity into the future
• Establish Strahan-Hobart RPT 2–year trial:
  ○ Frequency: 12 flights per week in the peak season
  ○ Anticipated commencement – end of 2018
  ○ Assumed aircraft type – Cessna 404 Titan (9 passenger seats) (or equivalent)
	• Growth (2% p.a.) in historical levels of general aviation activity
	• Continue Strahan-Hobart RPT beyond 2-year trial
		• Upgrade to Code 2B-compatible airport assuming: -
		• Growth (5% p.a.) on historical levels of general aviation activity
		• Continue Strahan-Hobart RPT beyond 2-year trial
		• Increased Strahan-Hobart RPT demand from year 6:
		  ○ Frequency: 16 flights per week in the peak season
		  ○ Anticipated commencement – 2023
		  ○ Assumed aircraft type – EMB 110 (14 passenger seats) (or equivalent)

Table 2: Headline results for the feasibility assessment of RPT service under the three options

	Option 0	Option 1	Option 2
Estimated forecast airport revenue	General aviation - $5,500 per annum RPT revenue - $0 for year 1, $10,300 per annum for year 2	General aviation - 2% growth per annum, from a base of approximately $5,500 per annum RPT revenue - $0 for year 1, $10,300 per annum from year 2 onward	General aviation - 5% growth per annum, from a base of approximately $5,500 per annum RPT revenue - $0 for year 1, $10,300 per annum from year 2 to year 5, $33,488 per annum from year 6 onward
Estimated forecast airport costs	$96,000 over three years	$204,000 over three years $4.4M in years 4 to 5	$156,000 over three years $7.1M in years 4 to 5 $330,000 in years 6 and beyond
Feasibility of RPT service	Yes, if passenger demand is above approximately 1,500 per annum	Yes, if passenger demand is above approximately 2,200 per annum	Yes, if passenger demand is above approximately 2,200 for a Cessna Titan 404 (or equivalent) operating 12 flights peak week Yes, if passenger demand is above approximately 4,500 per annum for a EMB 110 (or equivalent) operating 16 flights peak week

Conclusion and recommendations

Ultimately, an RPT service between Strahan and Hobart will only be sustainable if sufficient passenger demand is achieved. The potential of Strahan Airport therefore largely dependent on the broader economic development of the region.

If appropriately marketed and priced, the trial Strahan-Hobart RPT service should provide a strong indication of the potential feasibility of a regular service and of itself could create further opportunities for tourism in the region. It would also benefit the business community (e.g. mining, aquaculture and services) by providing easier connections to and from Hobart. In addition, stakeholder consultations found that Strahan Airport's role extends beyond its potential to accommodate RPT services – the airport has been supporting a range of general aviation usage in the region which has been critical in providing essential services, including the RFDS operations.

The following recommendations regarding the future management and development of Strahan Airport are proffered:

1. **Keep the airport operational and prevent further asset deterioration**

Experience with other airports show that small airports that close rarely re-open. A strong theme from the stakeholder consultations was that Strahan Airport is an important asset to the community. The role of the airport in the community comprises of:

- The **RFDS** provides vital healthcare access to relatively isolated parts of the West Coast
- Accessibility was also cited as an important component of **business confidence** as the region continues to grow economically. The convenience of being able to access the region by air rather than road through challenging terrain has been raised as an important enabler to future business development and investment. The availability of the airport for on-demand charter flight usage for management trips by mining and resources, aquaculture and civil government industries will continue to be an important signpost that the region is open for business
- The **recreational aviation community** from across Tasmania and interstate have an interest in being able to access Strahan Airport as a gateway to the West Coast
- The commitment of the State Government to supporting an **RPT trial** between Strahan and Hobart adds to the imperative for the requisite investment to be made at the airport to facilitate the successful completion of this trial.

Keeping the airport operational would involve undertaking the necessary minimum works to meet CASA standards and provide the necessary services and amenities for operators and visitor/tourists, as outlined in Option 0.

2. **Adopt a flexible approach to expanding airport infrastructure should high demand scenarios be realised**

There are plausible demand scenarios that would justify significant airport infrastructure investment. The analysis shows that there is some flexibility in the timing of the necessary capital expenditures. There would need to be firm evidence of increased demand in order to justify an expansion of the airport. The major piece of work required to sustain increased activity above "business as usual" levels would be the strengthening of the runway pavement in the medium term.

3. **Develop non-aeronautical revenue opportunities**

There is scope/potential for the identification of non-aeronautical revenue raising activities. For example, Devonport derives around 20% of airport revenue from non-aeronautical opportunities such as leases, advertising and parking fees. As activity at the airport increases, there would be increased scope to explore these potential other revenue streams.

4. **Explore broader options for airport governance model**

There is opportunity for consideration of the broader institutional arrangements for the airport, for example, the ownership of the airport. Experience with other airports show that small regional airports often face closure because of the financial burden on small councils. Should the airport become a more complex operation that requires large investment of capital expenditure and extensive operational oversight, there may be a case to look into other governance options, such as (part-) ownership by TasPorts, other existing airport owners/operators or other tourism businesses, etc.

5. Consider airport rebranding

The West Coast is a recognised brand in the Tasmanian tourism context. There may be merit for Strahan Airport to leverage off and capitalise on the influence of the West Coast brand as a tourist destination by renaming Strahan Airport. Considerations could be given to names such as West Coast Airport. Similar measures (e.g. the renaming of: - Busselton Airport to Busselton-Margaret River Airport; Proserpine Airport to Whitsunday Coast Airport; Coolangatta Airport to Gold Coast Airport and Ballina Airport to Ballina Byron Bay Gateway Airport) adopted by a number of other airports are understood to have contributed to raising the profiles of relevant airports.

6. Realising the potential of Strahan Airport will not happen in isolation

Airport developments are usually not a case of "if you build it, they will come". There are a number of co-dependent factors which must come together to realise the full potential of the Strahan Airport as an asset for the local region and its community, for the West Coast as well as the State. These include:

- A coordinated effort by the government agencies at all levels to support the implementation of the West Coast Branding Project and other new tourism initiatives and investments
- Initiatives from local tourism operators to work together and provide an attractive, high quality, competitively-priced and unique tourism product in the region
- The resolution of constraints to airport access with the wider region, through taxis and passenger transport for tourism and business travel as well as facilities and equipment necessary to support successful air freight logistics.

1 Introduction and scope of work

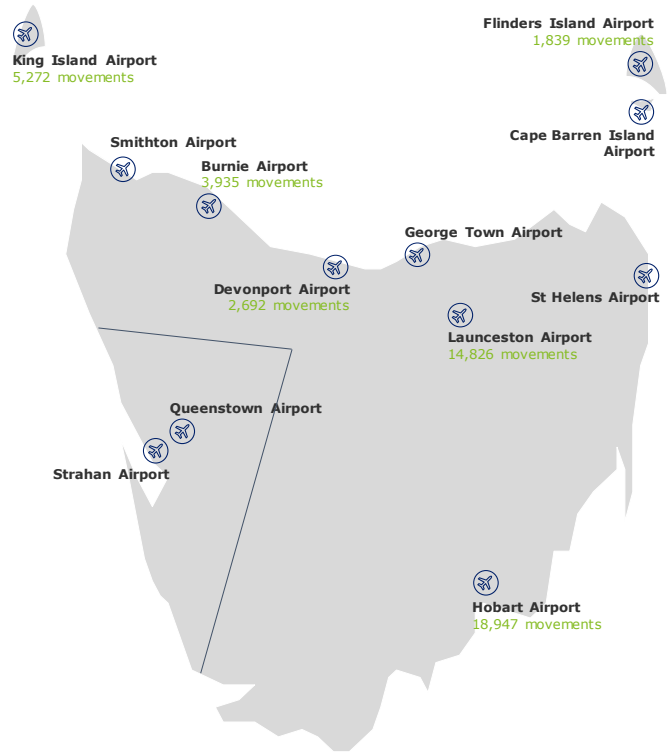
Strahan Airport is a registered airport adjacent to the town of Strahan on the west coast of Tasmania. The airport is owned and directly controlled by West Coast Council. The airport is used on a semi-regular basis (a total of approximately 170 landings per annum[4]) by emergency services, itinerant[5] general aviation flights and commercial helicopters. There is currently no RPT service to and from Strahan Airport.

Interest has been expressed by local businesses and the broader community to explore potential further opportunities associated with Strahan Airport. This desire has been reflected in the *West Coast Community Plan 2025* (the Plan)[6], which commits to investigating the case for developing and expanding major airport infrastructure for Strahan Airport.

Any assessment of Strahan Airport needs to occur within the context of other airports in the region, given contestability and/or synergies across regional airports. The existing operational airports in Tasmania are identified in Figure 1. It can be observed that:

- In close proximity to Strahan Airport (approximately 40km or a 40 minute drive), there is another airport in Queenstown. However, given that **Queenstown Airport** is currently an unregistered airport and is also perceived to be associated with more challenging weather and terrain conditions, Strahan Airport is likely to be the airport of choice in the longer-term for the West Coast region.
- There are two much larger airports in the north-western and northern region, namely **Burnie Airport** and **Devonport Airport,** as well as the small Smithton Airport. The two larger airports, of which Devonport is the largest and has the most aviation activity) are within reasonable driving distances to Strahan (approximately 3 hours) and offer RPT services. Both would pose strong competition for a developed Strahan Airport for passengers traffic.

Figure 1: Overview of current airports in Tasmania



Source: Deloitte Access Economics, Department of Infrastructure, Regional Development and Cities, Airport traffic data 2017 (RPT operations only)

[4] Sourced from Strahan Airport statistics recorded by Avdata, over the period of year 2015 to 2017. It is noted that Avdata only captures inbound aircraft movements, therefore the outbound volume is unknown.
[5] "Itinerant" flights are one of the two common categories of general aviation flights (the other category being "local" flights). "Itinerant" flights are distinguished from "local" flights by an association with different origin and destination airports. "Local" flights, in comparison, are defined by aircraft operations that are operating with the local traffic pattern of the airport or within the sight of the airport.
[6] https://www.westcoast.tas.gov.au/webdata/resources/files/ADOPTED%2020%20October%20WestCoastCP2025_FINAL_highres.pdf

1.1 Economic profile of the West Coast Council

The main catchment of Strahan Airport is considered to be the geographic area within the boundary of the West Coast Council local government area. A snapshot of West Coast's economic profile is provided in Figure 2.

Figure 2: Economic profile for West Coast Council

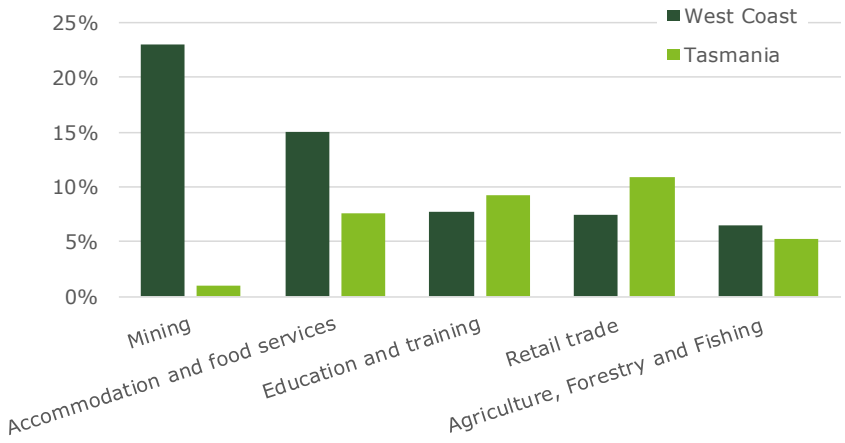
West Coast contributes to 1.3% of Tasmania's Gross Regional Product (GRP) as of 2017[1]

GRP growth for West Coast (3.5%) surpassed state-wide growth in Tasmania in 2017 (1.9%)[2]

Median house sale price was $73,000[3] on the West Coast as of 2016, the lowest in the state. However, we note that median price in Strahan is approximately $220,000.

[1] Source: West Coast Council Economic Profile, 2017
[2] Source: West Coast Council Economic Profile, Deloitte Business Outlook Dec 2017
[3] Source: Real Estate Institute, 2016

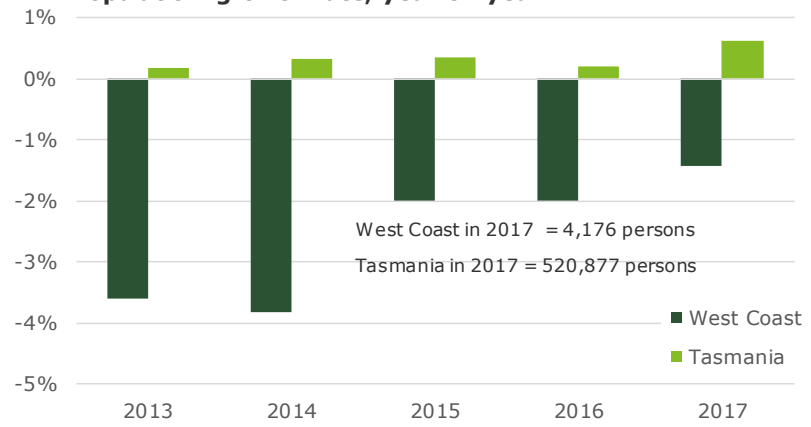
Top five industries by employment share in 2016



Source: ABS Census, 2016

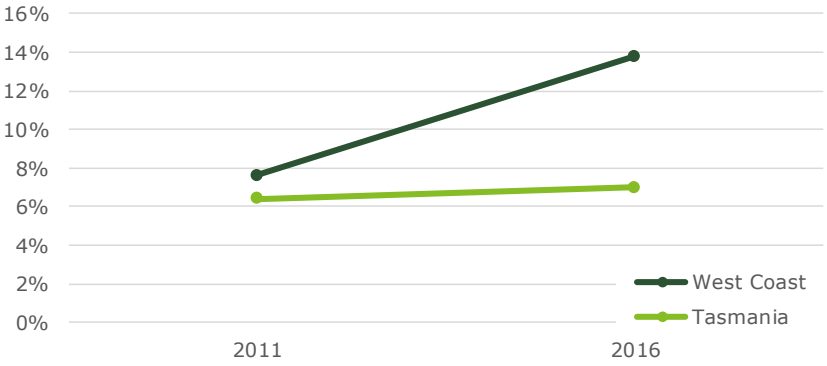
West Coast reported a population of 4,176, 0.8% of Tasmania total population as of 2016

Population growth rate, year on year



Source: ABS Estimated resident population 2013-2017

Unemployment rate



Source: ABS Census, 2016

1.2 Scope of work

Deloitte Access Economics was commissioned by West Coast Council to undertake a feasibility study into the further development of the Strahan Airport into a potential visitor and freight gateway to the Region. This work included consideration of:

- The supply and demand 'drivers' for airport development in the short, medium and long term
- The potential scope of infrastructure improvements and associated costs in line with possible future development of the facility
- the feasibility of larger aircraft landing at the airport, including regular passenger transport and potential freight services (including capital requirements that would underpin relevant upgrades)
- potential business opportunities associated with operations at the airport (based on current and potential future scenarios).

The rest of the report is structured as follows:

- Chapter 2 describes the methodology for undertaking this study
- Chapter 3 provides an infrastructure assessment of Strahan Airport
- Chapter 4 establishes potential demand profile for Strahan Airport
- Chapter 5 presents the assessment of financial feasibility of associated airline operations
- Chapter 6 explores opportunities associated with non-aeronautical activities for Strahan Airport
- Chapter 7 makes recommendation and concludes the report.

2 Methodology

Regional airports play vital social and economic roles in local communities across Australia. They provide critical access to business, health, education and recreational activities for regional communities and facilitate tourism, which is usually an important economic driver for many regional communities.

However, regional airports often face significant challenges in maintaining services. These challenges include both high spend resulting from the requirement to maintain airport assets to a compliant and usable condition/standard, and limited income due to low utilisation. As a result, regional airports are usually dependent on financial support (i.e. cross subsidisation or grant injections from time-to-time) to maintain airport services.

The sustainable regional airports usually exhibit the following characteristics:

1. Adequately maintained infrastructure.

Airport infrastructure needs to meet standards and regulation from the Civil Aviation Safety Authority (CASA). In addition, airport facilities should also meet user requirements, such as waiting areas and amenities, parking, transport and ground transfers etc. The assessment of infrastructure adequacy for Strahan Airport is discussed in Chapter 3.

2. Strong underpinning passenger demand.

Strong and sustainable passenger demand to access the destination where the airport is located is a fundamental element of the success of a regional airport. This demand could be driven by business travel, such as the need to access work opportunities (e.g. mining, industrial complexes, etc.) and to undertake occasional business engagements. Demand is also often triggered and supported by personal and leisure travel needs. In the case of leisure travel, the attractiveness of the locality as a tourism destination and the quality of the local tourism assets (e.g. accommodation, retail, sites, activities etc.) are critical co-contributing factors to success. Generally speaking, a strong local economy is usually a good indicator for strong passenger demand. The assessment of potential passenger demand for Strahan Airport is presented in Chapter 4.

3. Financially viable routes for airlines to enter.

Aeronautical revenue serves as the primarily source of income for airports. Therefore, securing the use of airports by airlines (i.e. RPT services) and other airport users (e.g. general aviation services, recreational uses) is essential in achieving the financial health of airports. However, there are often challenges for regional airports to attract users due to higher frequency and lower fares offered by competing larger airports; financial incentives to airlines/airport users are commonly offered either in the forms of direct funding or indirect concessions such as waiving of landing fees. The assessment of financial feasibility of potential airline operations in and out of Strahan Airport is provided in Chapter 5.

Figure 3: Success factors for regional airports

Source: Deloitte Access Economics

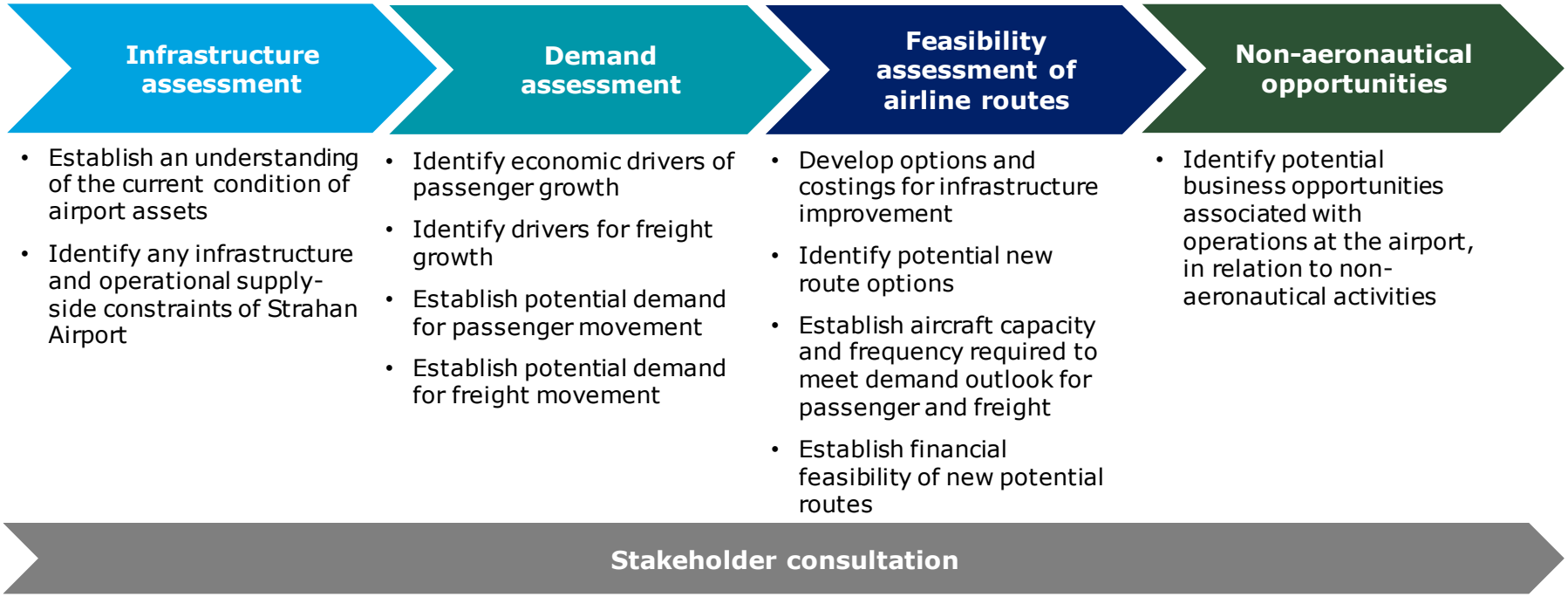
4. Supplementary non-aeronautical opportunities.

Non-aeronautical revenue supplements aeronautical revenue airports receive and is an important diversification income stream for regional airports. The assessment of opportunities associated with non-aeronautical activities for Strahan Airport is undertaken in Chapter 6.

2.1 Methodology

This study involved evaluation of each of the four success factors for Strahan Airport. The detailed methodology is outlined Figure 4.

Figure 4: Outline of detailed methodology used for this study



Source: Deloitte Access Economics

The infrastructure assessment has been informed by a site inspection and stakeholder consultations; it has also drawn on previously commissioned studies on the airport. The demand assessment has been heavily informed by stakeholder consultations, supplemented by desktop research. The feasibility assessment of airline routes brings together information obtained in infrastructure assessments and demand assessments, and estimation of financial viability using an airline operations costing tool. Whilst, the assessment of non-aeronautical opportunities has been primarily based on desktop research of other similar airports.

2.2 Stakeholder consultation

A total of 23 stakeholder consultations were undertaken for this study; either *face-to-face* or via teleconference. The purpose of the stakeholder consultations was to better understand the airport's future potential demand by key user groups as well as any issues or constraints associated with the airport. A call for submission was put out by West Coast Council to the public. A town hall meeting was also held to obtain broader community views and opinions.

Key stakeholders consulted are detailed in Table 3.

Table 3: Stakeholders consulted

Stakeholder group	Stakeholders consulted
Tourism industry	Cradle Coast Authority, West Coast Wilderness Railway, Marsden Court, RACT Destinations, For the People Agency, Wynyard Aero Club, World Heritage Cruises, Tourism Tasmania
Mining/resources	Mt Lyell Mine, Bluestone Mine, MMG Rosebery Mine, Granville Harbour Wind Farm
Aquaculture	Tassal, Fishing industry operators (including Mr Torsten Schwoch, Mr David Kelly, Mr Karl Krause, Mr Tony Jupp)
Medical/emergency	Royal Flying Doctor Service (RFDS) South Eastern Operations, Ochre Health, Queenstown Medical Union
Others	West Coast Council, Mr Tom Griffiths (former Strahan Airport manager), Department of State Growth, Par Avion

Source: Deloitte Access Economics

Key messages from the stakeholder consultations include:

- There is a common view that stakeholders do not want to see the airport deteriorate or close
- A sustainable RPT service will need to be price competitive
- There needs to be additional logistical arrangements (i.e. ground transport) to support increased activity through Strahan Airport
- Timing is crucial in leveraging complementary opportunities/developments (e.g. West Coast Branding Projects, West Coast Wilds)
- Demand for a Strahan – Hobart route is more obvious than for a Strahan – Melbourne route
- Airport demand:
    - Tourism will be the main driver
    - Aquaculture industry could have uptake of use if complementary supply chain investments are in place (i.e. local storage facility)
    - Mining industry activity is unlikely to be the main supporter of demand, especially given the largely local workforce
    - RFDS would remain a regular user.

3 Strahan Airport infrastructure assessment

Airport infrastructure needs to meet standards and regulations set by CASA as well as user requirements. This chapter presents the assessment of adequacy of Strahan Airport infrastructure to meet both minimal CASA requirements and commercial user requirements.

3.1 Findings from previous assessments and audits

3.1.1 CASA and West Coast Council audits

CASA is required to audit the safety and security of the registered airports every two years. West Coast Council is then required to "make good" any identified issues in the CASA audit. The most recent CASA audit obtained from the West Coast Council was dated 6 June 2017. It itemises a series of issues that required attention. Following review of the audit, the response from the West Coast Council and undertaking a visual inspection of the airport, it would appear that the majority of the issues have been rectified.

3.1.2 Airport Pavement

The nature and strength of the existing pavement is a significant determinant of airport sustainability and potential growth in traffic including the size and weight of aircraft. In April 2016, GHD undertook a pavement assessment of Strahan Airport for the West Coast Council[7]. Its summary included:

- To facilitate the introduction of larger aircraft operations at Strahan airport, consideration will have to be given to increasing the pavement cover over the subgrade
- The laboratory testing of the subgrade materials under the runway revealed very low strength materials with estimated subgrade California Bearing Ratio of 0.5% to 1.5%, and the test pit and ground penetrating radar data indicate pavement thicknesses of around 450 mm to 800 mm, but typically around 500 mm
- Based on the above, the pavement was modelled and found that for a 500 mm pavement thickness, the runway Pavement Classification Number (PCN) (4.0) for the DC-3 was below the required aircraft classification number (ACN) of 9.2
- The estimated PCN for the current light aircraft operations is around 3.7, which is below the minimum strength based on the ACN of 7.9 for this type aircraft
- The runway thickness would need to be a minimum of 750 mm to meet the PCN / ACN rating of 9.2 for operation of a DC-3 aircraft due to the very low strength subgrade.

It is not clear why the DC-3 aircraft was used in this pavement assessment. In later chapters, this feasibility report considers the likely pavement thickness for the most critical aircraft that has been derived from the economic and opportunity analyses.

[7] GHD, *Strahan Airport Runway Pavement Evaluation*, April 2016

3.2 Current stocktake and assessment of key infrastructure assets

This section presents the findings of assessment of airport key infrastructure based on a site inspection[8] as well as review of previous relevant study reports.

The following legend relates to Table 4 and indicates the degree of priority for each of the airport infrastructure items which have been assessed:

- represents airport infrastructure items that are assessed to be high priority in terms of enhancement required to service a functional purpose
- represents airport infrastructure items that are assessed to be sufficient for short-term purpose but may require enhancement in the medium- to long-term
- represents airport infrastructure items that are assessed to be adequate within existing and foreseeable parameters.

Table 4: Airport infrastructure items assessment ratings, description, issues and constraints

Infrastructure item	Description	Issues/constraints	Photos taken from site inspection
Runway	• Single runway (Runway 18/36), 18m X 1220m • However, both runway ends, in the threshold and touchdown areas, have a pavement width of 30m for 200m to 300m • Pavement has a PCN classification of 4/F/D/450(65psi) • Pilot–operated runway lights for night operations • Since Strahan Airport has limited tourist flights and is not served by any RPT services, the pavement areas have remained serviceable over several years due to the low frequency of over-weight aircraft movements • The level of future identified economic activity, translated into aircraft movement opportunities, will determine whether the airport should be planned for upgrading to fully meet the current needs or for some or significant increased movement frequencies and larger and heavier aircraft types.	• The reasons for not completing the paving to a full runway length width of 30m are not clear. • Pavement strength is ultra-low, tolerating a limited maximum tyre pressure of 65psi • The runway does not meet the strength classification required for regular use of even light single and twin aircraft over the next 3 years	

[8] 17th and 18th April, 2018

Runway strip[9]	Runway strip is 90m X 1340m	
Obstacle Limitation Surface[10]	1.2m penetration of the transition surface to the east of the strip There is an off-airport telecom tower on a hill to the north east	
Taxiway	One taxiway (sealed) that connects the runway to the single sealed apron on the eastern side of the runway Taxiway has lead-in markings and taxiway lights	
Apron	Apron is approximately 50m by 55m No line markings for aircraft parking Floodlighting is available – attached to a pole on the corner of the terminal building Marked designated area for emergency helicopter landing point on south-western corner of the apron, adjacent to patient transfer carport	Sealed apron capacity is limited North section of apron is unsealed and may not be serviceable for parking Light aircraft may need to be parked along the northern edge to allow access for RFDS and/or emergency helicopter
Navigational Aids	Two towers to the east of the terminal building and the main road are visible, which were previously used as a Non-Directional Beacon (now decommissioned) for bad weather instrument approaches Equipped with a GPS letdown procedure to circling altitude and a GPS instrument approach to Runway 18	No visual approach aids

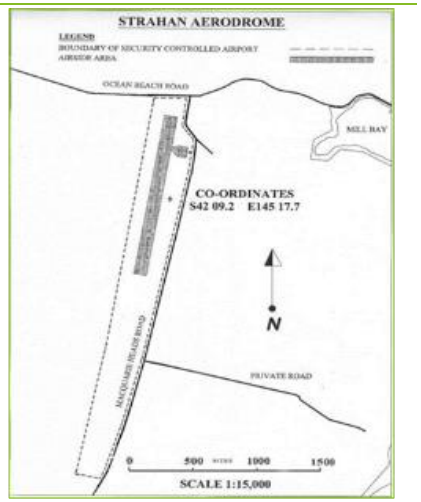
[9] A portion of ground between the runway and fly-over area which is in a condition that ensures minimal damage to an aeroplane which may run off a runway during take-off or landing

[10] A series of surfaces that set the height limits of objects around an aerodrome

	The GPS letdown technology allows aircraft to descend in Instrument Meteorological Conditions to an altitude of 840ft and 660ft above mean sea level, respectively (See Appendix A) One primary lit windsock		
Terminal building	Timber terminal building is located immediately east of the apron Some amenities and facilities are available: Lounge area with no seating Male and female toilet, reticulated from two external rainwater tanks Some storage areas including a secure cupboard for the equipment related to the pilot-activated airfield, windsock and apron flood lighting The existing terminal can be upgraded, extended in the short term If demand dictates, a new terminal can be built in another location adjacent to the existing and extended apron	The terminal is only in a fair but useable condition Currently kept permanently locked due to public misuse and vandalism Unclear whether any operator has key to terminal	 

Other buildings	An Air Ambulance/RFDS patient transfer carport, built by RFDS An emergency services container A shed containing drums of JetA1, and A 3-roller door storage shed containing: SBS and the local radio station transmitters attached to external dishes and aerials Small airport equipment and signage; such as cones, strip markers and spare signs, and Paints and small miscellaneous items.		 
Other equipment	A range of communication antenna adjacent to the terminal building and above the radio transmitter One of the antenna acts as a repeater to aid navigation of the Queenstown-Strahan tourist train	The remaining antennas could not be identified	

Drainage 	• The airport is well drained • Eastern drainage open unlined, fed by drains to the north and south of the apron • Western drainage also open unlined • Unlined drains along boundaries of the runway • No recorded flooding events according to Council	• As reported by the Council, the unlined drainage has not caused flooding events in the past • However, during the site visit, there was observation of small pools of water accumulating in depressions on the runway surface, which may pose an issue	
Utilities 	• Electricity for the terminal, buildings and the airfield lighting are supplied from the electricity grid • Septic tank connected to the toilets in the terminal	• No gas reticulation or NBN to the airport • No standby power in the event of a grid failure • Reticulated water is not available, and the only tank water is connected to the basins and toilets in the terminal	
Airport security and fencing 	• Strahan Airport is currently not required to undertake security screening of RPT, charter, general aviation, helicopter or freight operations • Approx. 120m of airside boundary fencing 1.2 m high separating the landside and the apron area with the remainder bounded by either drainage channels, earth embankments or button grass swamp	• Airport perimeter is not fully fenced. Among other things, this creates a requirement for additional checks at night to ensure that there are no animals inside the airport boundary	

Land use	• Airport is situated on crown land • Approximately 120 hectares • Available land for any future extension of the runway length to the south and/or the apron to the north	• Any future extension of the runway will need to account for poor base material of peat and bog	
Surface access and car parking	• Good road access to Strahan Village 3km away, located immediately beside Strahan-Macquarie Road • Road is in good condition and compatible with any future limousine or tour bus services • Two gravel car parks, one to the north of the terminal and one to the south of the terminal, abutting the main road • There is sufficient capacity for approximately 10 cars and is wide enough to park buses clear of the road	• Not clear if gravel car parks are on-airport or off-airport as they are outside the airport security fence.	

3.3 Other observations

3.3.1 Environmental

Any environmental assessments of the airport, or alternatively, any specific, separate reports on aspects such as flora and fauna or heritage surveys have not been identified. The West Coast Council advises that there are no issues affecting the existing airport operations or that may constrain the airport's future expansion and development. However, consultations with a local aviation consultant suggest that the area to the west between the airport strip and the beach may be designated, or otherwise considered by the community, as a wetland. This might negatively impact on any consideration of building a new runway on an alignment crossing into this area.

It has been further suggested that the area contains indigenous middens and that there are roosting sites of the orange bellied parrot to the immediate north of the airport boundary.

There are two environmental issues that would need to be considered if Strahan Airport was to be significantly expanded, and in particular, if the runway was to be rebuilt on a new alignment. From discussions, these include:

- The presence of roosting areas for the orange bellied parrot
- The environmental and community sensitivities of building into the wetlands to the west of the existing runway.

3.3.2 Prevailing winds

There have been suggestions over recent years that the existing runway, should it be rebuilt, should be rebuilt on a north-west/south-east alignment. There is no available data on the number and type of aircraft that may have had to divert from Strahan Airport to elsewhere due to excessive cross winds at the airport. Discussions with a local aviation consultant and West Coast Council provided no anecdotal information on diversions due cross-wind.

The RFDS advised that they have no record of any diversions and if the forecast cross-wind was in excess of available capability they would not launch. It was further advised that this would be a rare occurrence. The airport reporting officers were not aware of any significant diversions of other fixed wing traffic away from landing at Strahan Airport.

A full useability analysis would be needed to determine the optimum runway alignment. However, from inspection and interpretation of the wind rose[11] and based on both the existing and potential future aircraft operations into the airport, a realignment would appear unnecessary and a potential significant over-investment.

3.3.3 Noise

No noise exposure contours have been identified as having been produced for Strahan Airport. The runway approaches and departures are not over populous areas and from discussions with West Coast Council and its airport reporting officers, there has not been any noise complaints lodged from the community.

[11] A wind rose is a graphic tool which shows the frequency of occurrence of wind speed and direction at a particular location.

4 Demand assessment

Figure 5: Key demand drivers for Strahan Airport usage

Source: Deloitte Access Economics

Strong and sustainable demand for scheduled services, general aviation usage, recreational usage and, potentially, commercial air freight is fundamental to the success of a regional airport. This demand will be influenced by the major economic drivers in the region. For Strahan, the key demand drivers for usage of the airport include tourism, mining, aquaculture, medical/emergency services and others (i.e. education), as depicted in Figure 5.

4.1 Tourism

Tourism represents a critical driver of economic development for the West Coast. The region has unique tourism assets featuring wilderness and heritage.

In 2013, West Coast and the broader Tasmanian Wilderness area was again renewed on the World Heritage Listing by the United Nations Educational, Scientific and Cultural Organisation (UNESCO)[12]. Being a major gateway to the Tasmanian Wilderness World Heritage Area (TWWHA), the West Coast has been central to Tasmania's brand as a global destination for nature-based eco-tourism.

The attractiveness of West Coast's wilderness/nature brand as a tourism drawcard has been confirmed by data and information collected from the *Tourism Tracer* project[13]. As presented in Figure 6, research shows that the top strong motivators for people visiting the West Coast are:

- Observing wilderness/wildlife and natural scenery
- Experiencing Tasmania's history/heritage
- Experiencing Tasmania's food and wine/beverages.

Figure 6: Reported top visitor

Source: Tourism Tracer

[12] https://whc.unesco.org/en/list/181/indicators/

[13] Tourism Tracer is a tourist-tracking research project developed by the University of Tasmania. Tourists are strategically recruited at the three major entry points to Tasmania: Hobart Airport, Launceston Airport and on board the Spirit of Tasmania to take part in the study. Visitors who are in the State from 4 to 14 days are eligible to take part. Participating tourists are handed smart phones which record accurate, real-time data of travel patterns via a purpose-built app relaying GPS location information.

In addition to the natural attractions on the West Coast, there are several other landmark attractions across major townships such as Strahan and Queenstown, including the Western Wilderness Railway, Gordon River Cruise and King River Rafting (see Figure 7).

Figure 7: Landmark attractions on the West Coast

Source: Deloitte Access Economics

4.1.1 Key trends and characteristics of West Coast tourism

Tasmanian visitation numbers have increased significantly in recent years. However, the West Coast has not experienced the same rise.

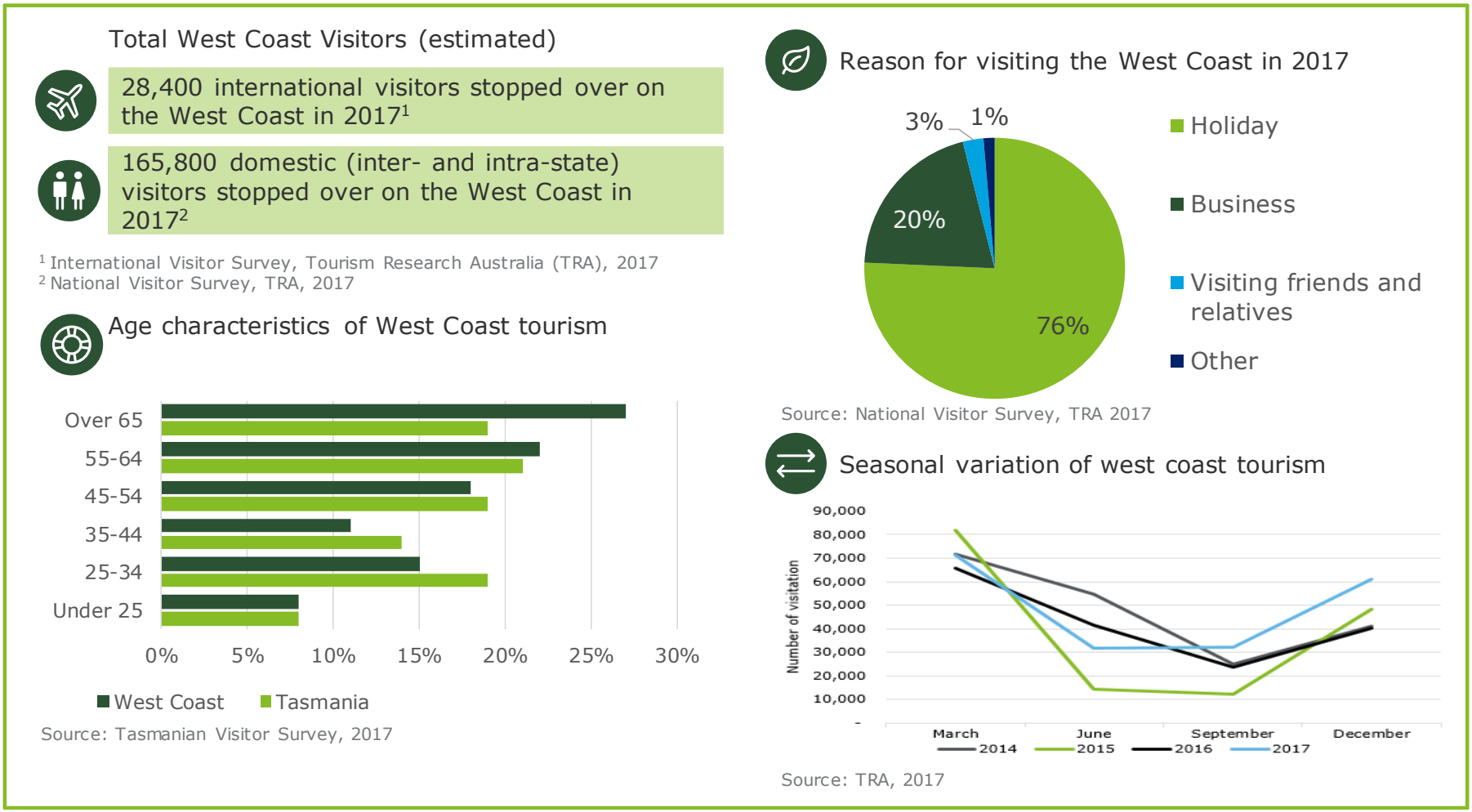
A number of factors are understood to have contributed to this disparity:

- The launch of low cost/budget airline routes into Launceston and Hobart has created a new market for a 'short-visit' Tasmania trip, which was previously largely untapped
- Tourism products offered in the West Coast are not keeping up to date with evolving market requirements. A number of stakeholders commented on the West Coast tourism assets such as accommodation services as being "outdated" and "tired"
- Limited marketing effectiveness and consequently, brand awareness of the West Coast compared to Hobart, the East Coast, Launceston and Cradle Mountain
- The West Coast has not had a significant level of private investment in tourism products or attractions in the last decade compared to other Tasmanian destinations. Recent investment has been limited to cruises on the Gordon River, tours out of Queenstown and accommodation purchases or upgrades
- Lack of ready access. As the West Coast itself does not serve as an entry point to Tasmania, Strahan's transport accessibility from the main entry points is an important consideration for in-bound tourism. The 4.5-hour drive from Hobart and 2.5- to 3-hour drive from the north-west creates a 'tyranny of distance' for Strahan and is a disincentive for short visit tourists and for some key foreign visitor segments.

Other general tourism characteristics of the West Coast include (Figure 8):

1. **Origin of visitors:** Visitors to the West Coast comprise mostly domestic visitors (85%), with a small international representation (15%). Within the domestic group, it is reported that the top three origin markets are New South Wales, Queensland and Victoria
2. **Purpose of visit**: The majority of West Coast visitation is for holiday purposes (70%), with another 20% comprising business travel
3. **Age profile**: The average age of visitors to the West Coast is older than the average age of visitors to the rest of Tasmania
4. **Seasonality**: Tourist visitation is highly seasonal with a peak period between September and April each year.

Figure 8: Characteristics of West Coast tourism



4.1.2 Current tourism use of Strahan Airport

There is very limited existing use of Strahan Airport for tourism purpose. Strahan Airport uses the platform Avdata to automatically collect landing fees for in-bound aircraft. Billable airport usage is recorded by Avdata. Historical data shows that there is an average 170 landings per year recorded at Strahan Airport. Landings across the year display a similar seasonable pattern to tourism visitation number across the year (see Figure 9). The origin of most flights to Strahan is unreported. However, the vast majority are likely to have come from Cambridge / Hobart (see Figure 10).

Figure 9: Monthly landings at Strahan Airport, 2015-2017 (3-year average)

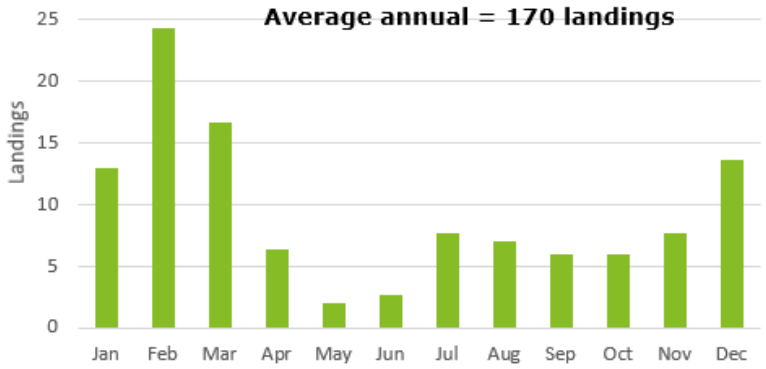
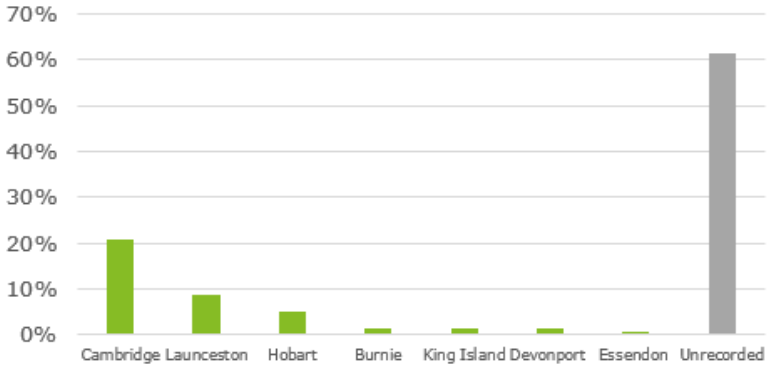


Figure 10: Airports of origin



Source: Avdata

The Avdata statistics do not record nature of landings (i.e. whether they are for the purpose of tourism, medical or general business etc.). However, based on the names of the registered users/companies, it appears that as of 2017, there were at least 60 landings per year that may relate to commercial tourism in nature, including 20 landings by Par Avion[14] and approximately another 40 landings by helicopter companies (i.e. 12 landings by Helispray, 5 by Rotor-Lift Aviation and a number of other companies that make less than 5 landings per year).

Assuming an average of 6 passengers per fixed wing flight and an average of 4 per helicopter flight, approximately 300 passengers flew to the West Coast via Strahan Airport in 2017. Relative to the total number of tourism visitations to the West Coast (approximately 190,000, see Figure 8), those that travel by air are a very small proportion (less than 0.2%).

[14] Par Avion is a brand name used by the company Airlines of Tasmania in select markets such as chartered tours.

4.1.4 Future opportunities

A common sentiment from stakeholder consultations is that there is scope for further tourism growth in the West Coast. This confidence is anchored on the uniqueness of the region in terms of its natural assets and its historically greater share of Tasmania tourism. There are a number of drivers for change that would appear to support this sentiment which are discussed below.

4.1.4.1 The West Coast Rebranding Project

The West Coast Branding Project is a council initiative supported by the State Government. The purpose of the project is to create a brand for West Coast region to shape a narrative for the area – particularly in relation to tourism but also for the whole community can buy in to in order to spark economic growth across all industries. The brand will seek to define the value for the region and promote awareness of its products and experiences.

The new brand is likely to roll out in the second half of 2018. There is wide anticipation in the community that this new branding exercise will positively contribute to the reinvigoration of community and tourism activities in the region.

4.1.4.1 Western Wilds Project

The Western Wilds Project is led by the Tasmanian Tourism Industry Council in partnership with Destination Southern Tasmania and the Cradle Coast Authority. The project seeks to create an iconic tourist drive that will encourage visitors to explore and experience the West Coast. The project is modelled on the Great Eastern Drive project, has helped contribute to significant growth in tourism on Tasmania's east coast. The project is expected to launch at the end of 2018. Although the project focuses on promoting a drive experience in the West Coast, if successful it would still create a case for entry into the West Coast, some of which may be delivered via air travel.

Figure 12: Western Wilds Logo

Source: Cradle Coast Authority

Figure 11: Stories and icons in development as part of the West Coast Branding Project

Source: West Coast Branding Project Facebook Page

Figure 13: Redeveloped cruise ship terminal

Source: The Advocate

4.1.4.1 Strahan Wharf and cruise ship terminal redevelopment

The $6.5 million investment by TasPorts on the Strahan waterfront was completed in April 2018. The upgraded wharf is expected to accommodate tourism operators and commercial fishing vessels, while the new cruise ship terminal will provide modern facilities for World Heritage Cruises and Gordon River Cruises[15].

The design of the redevelopment is reported to have 'future-proofed' the wharf for further development that may be required to support tourism growth.

4.1.4.2 Gordon River Cruise new vessel

The Gordon River attract 12% of all holiday visitors to Tasmania, the second most popular attraction in the northwest and West Coast regions behind Cradle Mountain[16]. This popularity is reflected in new investments into a cruise vessel by Gordon River Cruises, the *Spirit of the Wild*, to replace the *Lady Jane Franklin II*.[17] The new vessel is fitted with electric motors, creating a quiet cruising experience for passengers - unique in Australia.

4.1.4.1 New Spirit of Tasmania vessels in 2021

The Tasmanian Government has announced the addition of two new *Spirit of Tasmania* vessels in 2021. The new vessels are expected to bring 500 additional visitors to Tasmania per sailing[18]. It can be reasonably expected that a proportion of these visitors will visit the West Coast.

[15] https://www.theadvocate.com.au/story/5358881/grand-opening-of-65m-project-in-strahan/
[16] Tasmanian Visitor Survey, 2017
[17] On 16 June 2018 *Spirit of the Wild* commenced cruising on the Gordon River
[18] https://www.theadvocate.com.au/story/5109379/new-spirit-of-tasmania-vessels-due-by-2021/, Vessels depart Melbourne and Devonport on an almost daily basis at present.

4.1.4.2 New tourism products

Visitors in the 25 to 44- year-old age bracket are under-represented in West Coast tourism numbers, while older tourists are over-represented by the older population group (see Figure 8). This represents an opportunity to increase visitors of younger demographics by introducing/expanding on more adventure oriented experiences (e.g. mountain biking), similar to white water rafting and ATV adventures (Figure 14 captures the Strahan ATV Adventure tour. The tour is now rated '*#1 of the 17 things to do in Strahan'.*)

Other longer-term aspirations to develop more iconic attractions have also been raised in stakeholder consultations, such as a premium golf course (see Case Study on King Island Airport).

Figure 14: Strahan ATV Adventure-operated tour at Henty Dunes

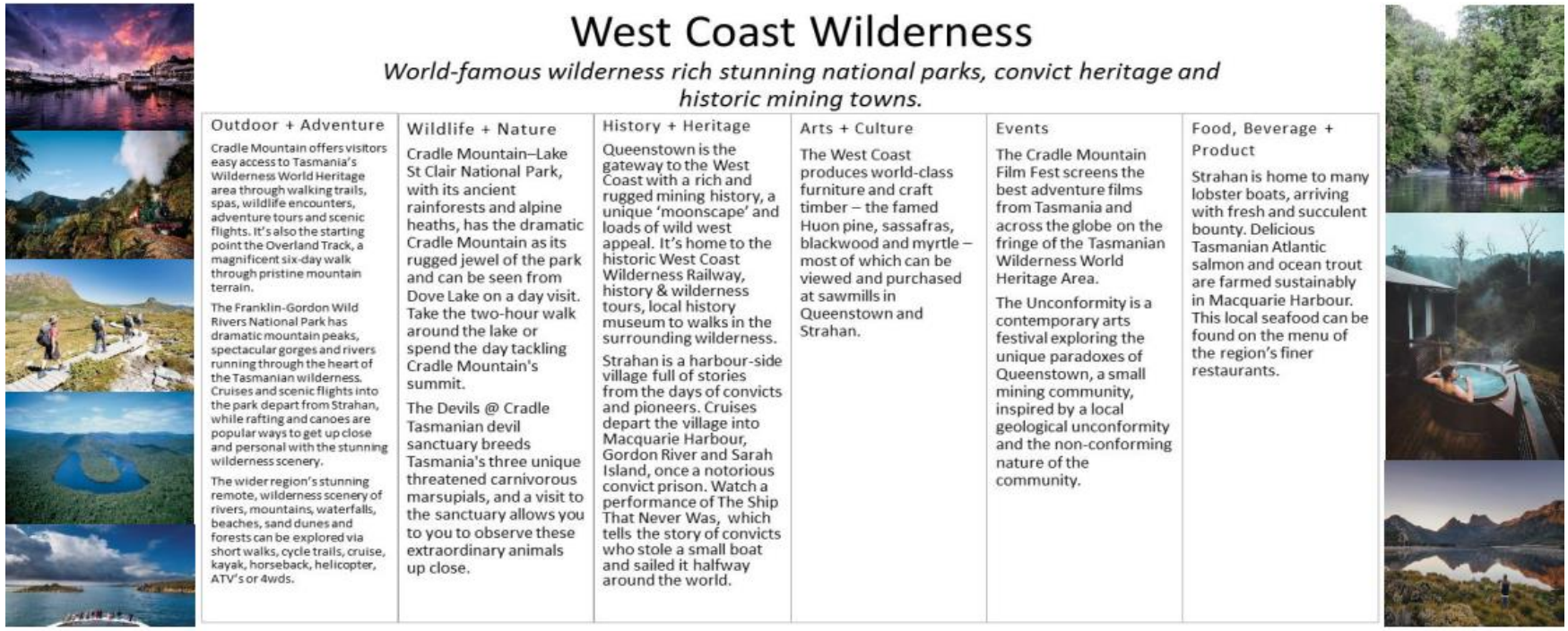
Source: TripAdvisor

4.1.4.1 Research on latent demand

Future tourism-related airport demand for Strahan is largely dependent on the tourism outlook for the broader West Coast region. Section 4.1.1 outlined a number of factors which have limited tourist numbers in recent times, including limited brand awareness and outdated product offerings. The new opportunities identified in Section 4.1.3 have the potential to improve the awareness and appeal of the region. These could all serve to stimulate future tourism demand in this region.

The extent to which these opportunities/initiatives convert to future tourism visitation is challenging to establish and would largely depend on the effectiveness of implementation. According to latent demand research[19] undertaken by the Cradle Coast Authority[20], the provision of marketing stimulus (refer Figure 15) to a group of interstate and intrastate visitors being surveyed generated a 15% increase in respondents intending to visit the West Coast region in the next two years. The increase indicates the highest level of additional demand the West Coast might achieve with current offerings.

Figure 15: Stimulus materials used in the latent demand study



Source: Cradle Coast Authority Latent Demand Research, January 2018

[19] Latent demand was measured as the difference between responses before and after being presented with marketing stimulus.
[20] Cradle Coast Authority Latent Demand Research, January 2018

It is noted that the realisation of this increase in demand would depend on a concerted effort from all levels of government, industry bodies and the industry itself to further improve the appeal and attractiveness of the West Coast region, and on the availability of significantly more price competitive air access to the region, most likely achieved through an RPT service rather than an increased volume of charter flights.

Case study: King Island Airport

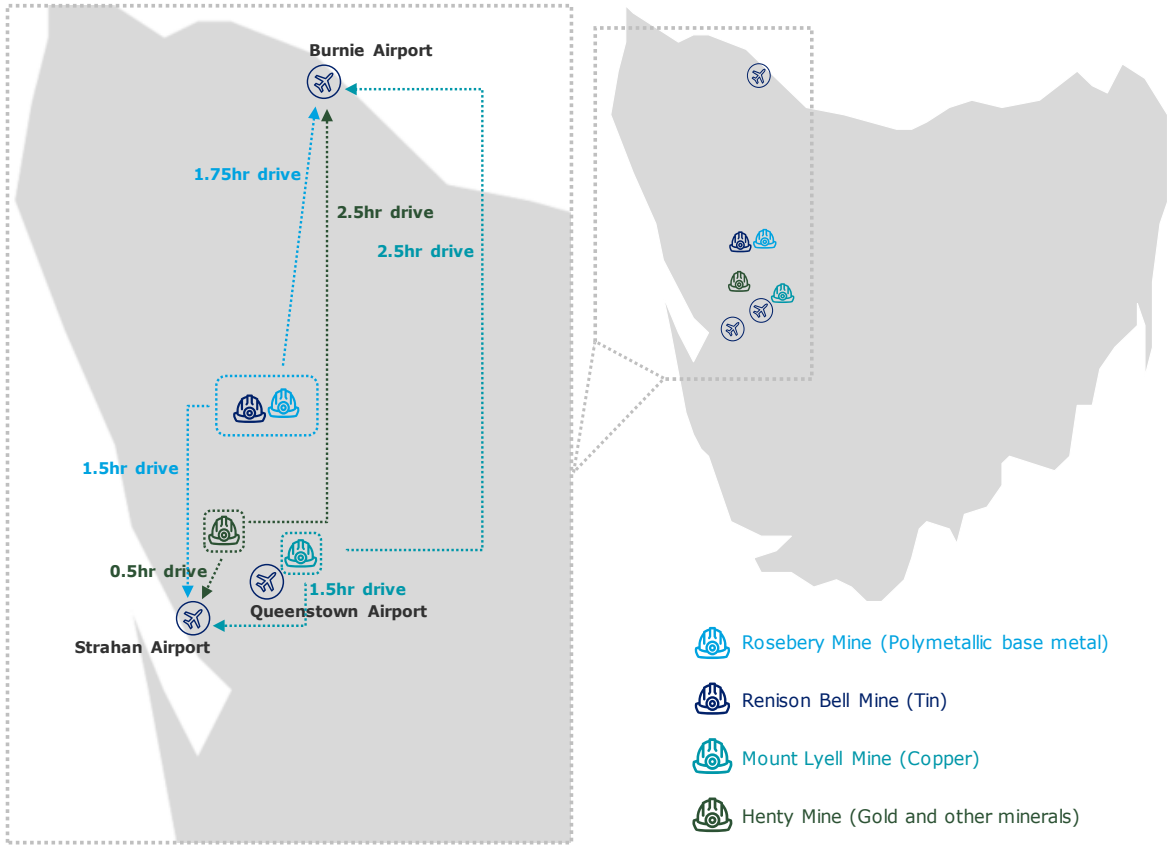
King Island represents a model of a remote Tasmanian economy that has seen substantial economic development where the local airport plays an important part. The airport is operated by King Island Council and saw 42,000 domestic and international passengers pass through its terminal in 2016/17. King Island has a clear tourism market that it targets through its world-class golf course. The airport hosts both RPT services through Regional Express, Sharp and King Island Airlines from Launceston and Essendon as well as significant non-scheduled charter volumes. In 2015, the King Island Airport terminal was upgraded with support of the Federal Government at the expense of $1.75 million.

4.2 Mining and resources

The West Coast has a broad range of resources including copper, gold, silver, zinc, and nickel. The mining industry in this part of Tasmania is a central to its economic and cultural history. The earliest European settlements on the West Coast date back to the 1890 when the Mt Lyell Copper Mine began exploration for copper in Queenstown. [21] The majority of operations today occur near Rosebery, Queenstown and Zeehan (see Figure 16). Mining operations and investigation on the West Coast have identified in-ground resources worth more than AU$11.5 billion in current prices. [22] The industry continues to contribute significantly to employment within the municipality, not only within the mining sector, but with flow-on effects to other industries such as construction, retail and accommodation.

Mining is expected to remain an important sector in the West Coast economy over the short-to-medium term, and, as such, opportunities associated with mining activities should be included in when considering the demand outlook of Strahan Airport. The most likely source of direct demand from the mining industry would be air travel by management to remote West Coast sites, although there is some potential to cater to shift workers. The outlook for the mining sector more broadly would be an important indirect trip generator through the improved macroeconomic conditions and demographic trends in the region.

Figure 16: Adjacency of key mining sites to available airports



Source: Deloitte Access Economics

[21] http://www.utas.edu.au/library/companion_to_tasmanian_history/M/Mining.htm
[22] http://www.mrt.tas.gov.au/portal/less-than-one-per-cent

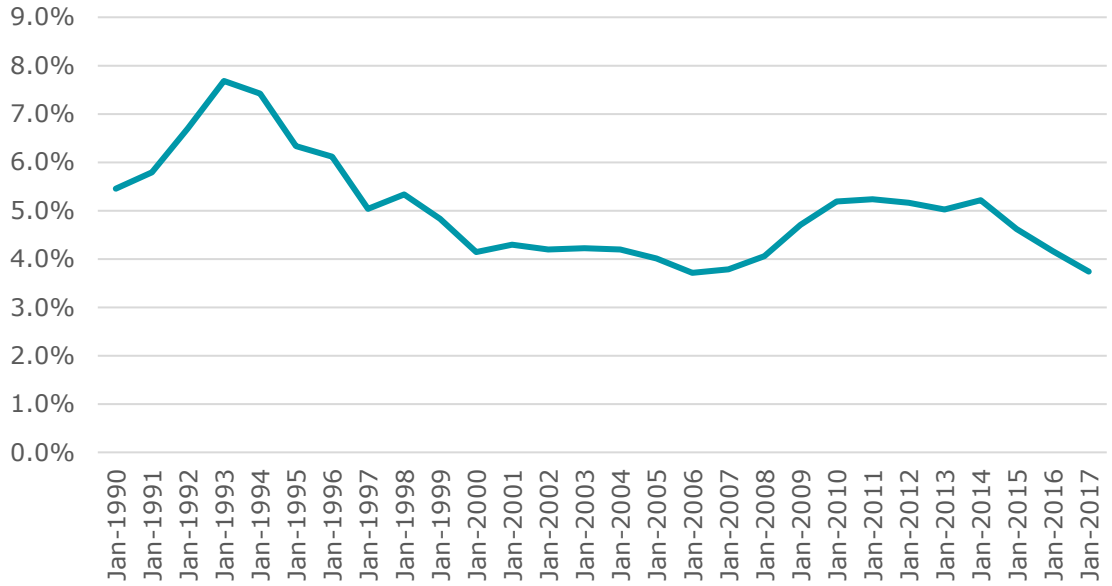
4.2.2 Key trends and characteristics

As a share of Tasmania's total Gross Value Added (GVA), mining reached its peak in 1993 (see Figure 17). While the mining sector has been a steadily falling share of Tasmanian GVA, this diversification, particularly towards service-based sectors, is in line with national trends. Mining nevertheless remains a dominant contributor to the West Coast economy, providing 22% of total employment in the region. With existing mining facilities looking to restart in the short-term, mining employment and output on the West Coast can be expected to grow.

There are several key characteristics of mining activity on the West Coast:

- A substantial segment of the mining workforce, 44%, consists of 'drive-in-drive-out' workers from regions adjacent to the West Coast (e.g. Burnie), although this varies by mine
- The mine operations on the West Coast have well-established supply chains for required inputs and mine outputs that centres on road and rail-based operators to/from Burnie
- Copper is the largest mined commodity by value and volume, with other ores including tin, nickel, gold, silver, and zinc.

Figure 17: Tasmania – mining share of GVA



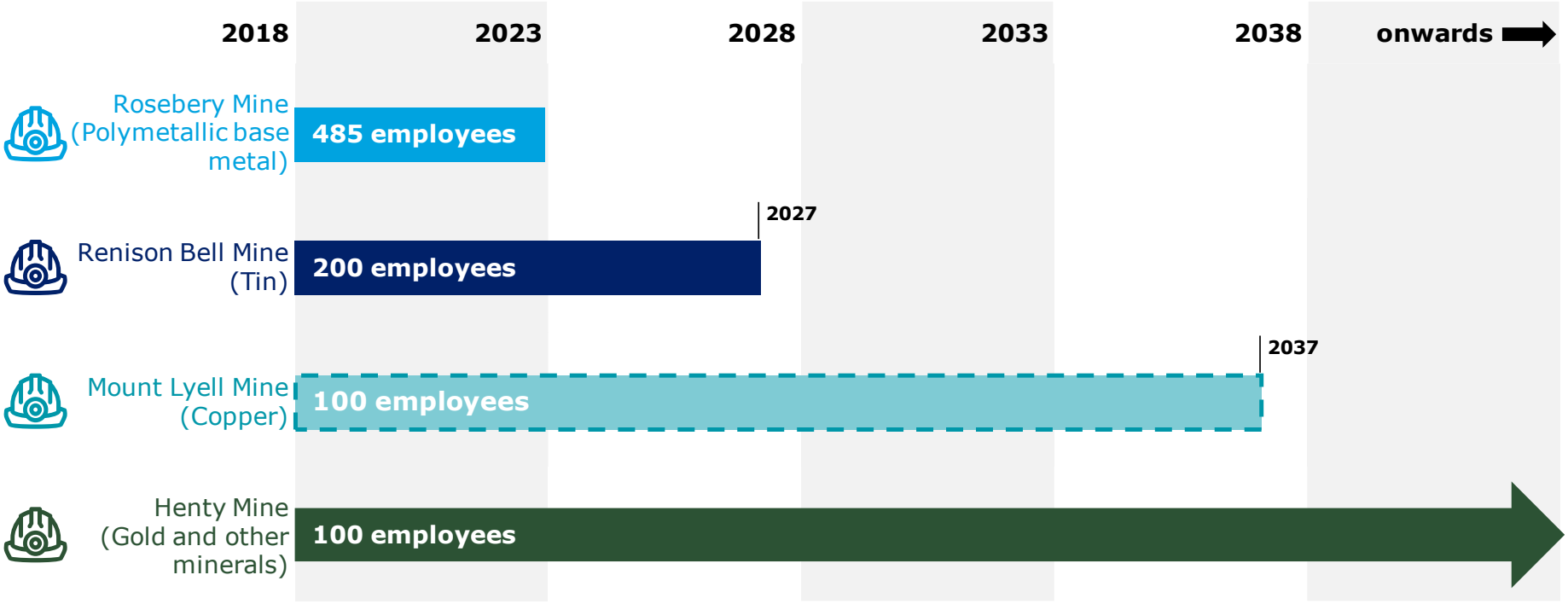
Source: ABS catalogue 5220.0, Table 7

4.2.3 Strahan Airport's current usage in mining

The currently operational mines are all based around Rosebery, north of Strahan. It is only a two-hour drive to Burnie from these mines, which means that demand for airport services to/from the mainland are normally satisfied by this larger airport. Thus, current mining activity makes little direct use of Strahan Airport.

There are currently three mines that are operational on the West Coast (see Figure 18).

Figure 18: Key mining projects and mine lives in West Coast



Source: Deloitte Access Economics
Note: The dash line border for the Mount Lyell Mine indicates that the mine is not currently operational.

4.2.4 Future opportunities

Future demand for Strahan Airport services from the mining sector will stem from currently operational mines and those with the potential to reopen in the near future. Currently non-operational mines are listed in Table 5.

Table 5: Currently under "care and maintenance" with potential for future production

Mine	Operator	Closest town	Commodity	Employees	Estimated lifespan
Mount Lyell mine	Copper Mines of Tasmania	Queenstown	Cooper	100	2037
Avebury mine	Dundas Mining	Zeehan	Nickel	200[23]	Unknown
Heemskirk mine	Stellar Resources	Zeehan	Tin	180[24]	2029[25]

Source: Deloitte Access Economics, stakeholder consultations

4.2.4.1 Mount Lyell Mine

Queenstown's Mount Lyell copper mine, at 134 years old, is the oldest mine in the region. Having been under care and maintenance for the past four years, following three fatal workplace accidents, the Mt Lyell copper mine is anticipated to restart operation after a State Government cash injection and a sale. The State Government has committed $9.5 million in the 2017-18 budget to support projects essential for the restart of the Mt Lyell mine[26]. While most of the mine's staff are either local or 'drive-in-drive-out', there was an expression of interest in the Strahan-Hobart route for management. Tentative interest in utilising at least three return trips a week was expressed.

4.2.4.2 Avebury Mine

The Avebury deposits are six kilometres west of Zeehan and were discovered in 1997[27]. Large falls in nickel prices saw the mine cease operations in January 2009. Dundas Mining's purchase of the Avebury mine from MMG Limited in 2017 raised the prospects of a restart in production. The recent increase in nickel price, largely supported by demand from the battery market, has prompted the decision of a production restart by January 2019[28].

Dundas Mining is headquartered in Burnie, and therefore may have interest in non-scheduled chartered flights between Strahan and Burnie for management once operations restart.

[23] https://www.theadvocate.com.au/story/5331645/doubts-growing-about-avebury-nickel-mine-restart/
[24] https://www.theadvocate.com.au/story/4823855/stellar-processing-options/
[25] Assuming a June 2019 start of operations - http://www.stellarresources.com.au/projects/heemskirk-tin/
[26] http://www.premier.tas.gov.au/budget_2017/electorate/braddon
[27] https://mining-atlas.com/operation/Avebury-Nickel-Mine.php
[28] http://www.abc.net.au/news/2018-07-09/avebury-nickel-mine-to-reopen-in-six-months/9957652

4.2.4.4 Heemskirk Mine

Stellar Resources Ltd has recently been granted a 12-year lease to conduct mining operations on a site northwest of Zeehan. It has spent approximately AU$11 million to date on drilling, geology, metallurgy, environment, mining and processing studies. The company intends to embark on a Definitive Feasibility Study in the coming months. According to current planning, production could begin in the June Quarter of 2019[29]. Stellar Resources is headquartered in Melbourne, so may have interest in non-scheduled chartered flights for management once operations have been restarted, but this was not able to be verified through consultations.

4.2.4.5 Currently operating mines: Rosebery, Renison Bell, and Henty Mine

The currently operational mines expressed support for the continued operation of Strahan Airport and the maintenance of the asset moving forward. The future opportunities that the currently operational mines present for Strahan Airport include:

- The Henty Mine operations makes use of Strahan Airport through private charters
- The Rension Bell Mine may have demand for a Strahan-Hobart RPT service once details such as schedules and fares have been established
- There was some interest expressed in the availability of air freight for high-value or emergency parts
- Additional demand for the RFDS out of Strahan Airport through continued mine operations.

A highlighted constraint on future use of Strahan Airport for the mine staff is the need for road transport from the Airport to the surrounding towns. Compared to the other mines in the region, Rosebery has a relatively short lifespan and is strongly oriented towards a locally sourced labour force.

Case study: Hokitika Airport

Hokitika lies on the west coast of New Zealand's South Island, on the almost identical latitude to Strahan. The economy of Hokitika has undergone significant transformation in the recent past. Once a major producer of greenstone, gold, and coal through mining, ecotourism has become the primary source of income for the people of Hokitika. Since the 1970s, there has been an RPT service between Hokitika and Christchurch among other irregular activity, similar to Strahan. The RPT service operates 2-5 times per day. For Strahan, Hokitika represents an example of not only a regional centre that was able to successfully diversify its economy, but also a regional airport that was able to play a pivotal role in that diversification.

[29] https://www.stellarresources.com.au/wp-content/uploads/2017/08/20170804-TMEC.pdf

4.3 Aquaculture and commercial fishing

Salmon farming in Macquarie Harbour began[30] in 1987. Tasmania currently produces 59% of Australia's total aquaculture production and salmon farming in Macquarie Harbour is a siginificant proportion of this output.

Continued or increased aquaculture and commercial fishing activity could directly contribute to Strahan Airport services through three avenues: air freight of just-in-time or high value product, management business travel, and flying in emergency equipment and parts.

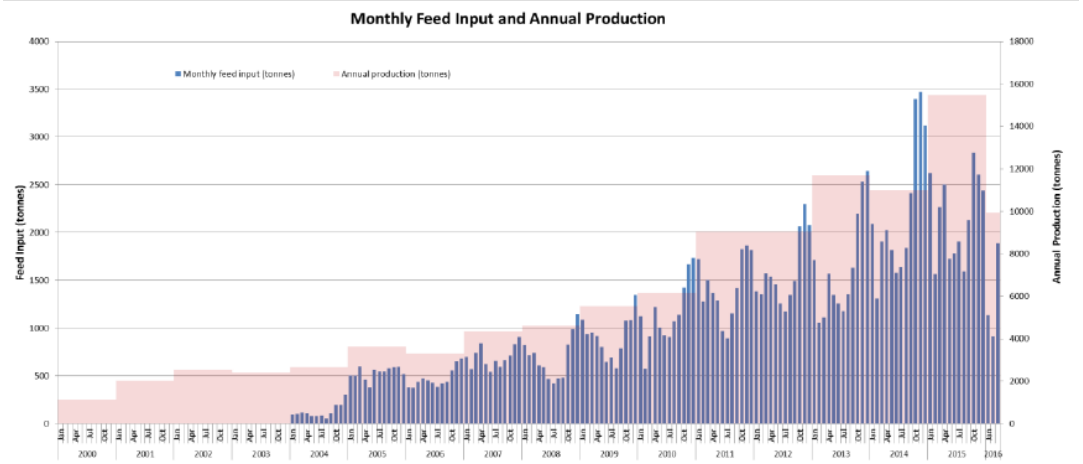
Figure 19: Salmon farming in Macquarie Harbour

Source: ABC Online

4.3.1 Key trends and characteristics in aquaculture and commercial fishing

Salmon and trout marine farming operations are well established in Tasmania in general and on the West Coast in particular. Tasmania currently produces approximately 59% of Australia's total aquaculture production by revenue[31]. In recent times, farming operations have extended and currently all of the Tasmanian salmonid producers are operating out of Macquarie. Feed inputs and production levels at Macquarie Harbour over the past 15 years can be seen in Figure 20. However, the outlook for the industry in Macquarie Harbour has recently been tempered by environmental issues. In May 2018, the Environmental Protection Authority reduced the biomass limit in Macquarie Harbour by 21%. The strong upward growth trajectory evident in Figure 20 is unlikely to continue in the short to medium term.

Figure 20: Annual production at Macquarie Harbour, 2000-March 2016 annual



Source: Department of Primary Industries, Parks, Water and Environment, Macquarie Harbour Status Report Update, April 2016

[30] http://www.abc.net.au/news/2017-06-08/how-salmon-farming-got-to-push-macquarie-harbour-to-the-limit/8349342
[31] http://clients1.ibisworld.com.au/reports/au/industry/productsandmarkets.aspx?entid=4225

Some key characteristics of the aquaculture industry include:

- A joint venture between Petuna and Tassal brought the number of producers in Macquarie Harbour to two, with the second being Huon Aquaculture
- International demand for Australian aquaculture products is declining, with Australian exports losing out to stronger production from China and from lower-cost wild-catch operations in countries like Indonesia. Buyers of high-value salmon that would warrant the use of air freight typically prefer wild-caught varieties[32]. Thus, the majority of production is for the domestic market.

Some key characteristics of the commercial fishing industry include:

- Fishing activities located in the West Coast include crayfish, abalone and shark fishing
- Crayfish production in particular makes up a sizeable share of Tasmania's fishing industry output. A quarter of the state's 1,050 tonne crayfish quota is produced on the West Coast (consults)
- Unlike the aquaculture industry structure on the West Coast, the competitive landscape in the fishing industry has a fairly low concentration, with most operators being sole proprietors or businesses with fewer than 20 employees[33].

4.3.2 Strahan Airport's current usage by aquaculture and commercial fishing

Tassal Group and Huon Aquaculture both have offices in Hobart and operations in Macquarie Harbour. Consultations revealed that there has been historical use of non-schedule charters to the West Coast when it has been cost-effective to do so. There were suggestions that there could be some demand for a regular service for management training and operations. The current uncertainty around the industry, however, made it difficult to determine whether past behaviour would be an appropriate indicator of future behaviour.

The fishing industry more broadly, particularly the crayfish trade, has historically made use of airfreight services out of Strahan Airport. The currenty supply chain uses trucks to Wynyard where the produce is shipped to King Island for processing. King Island is equipped with a storage tank, which is essential for upholding the quality of the goods in transit. Consultations revealed that the costs of maintaining a tank in Strahan became too great.

4.3.3 Future opportunities

The outlook for aquaculture and commercial fishing utilising Strahan Airport could involve some combination of air freight of just-in-time or high value product or essential inputs, and management business travel.

[32] http://clients1.ibisworld.com.au/reports/au/industry/productsandmarkets.aspx?entid=4225
[33] http://clients1.ibisworld.com.au/reports/au/industry/competitivelandscape.aspx?entid=4226

4.3.3.1 Air freight

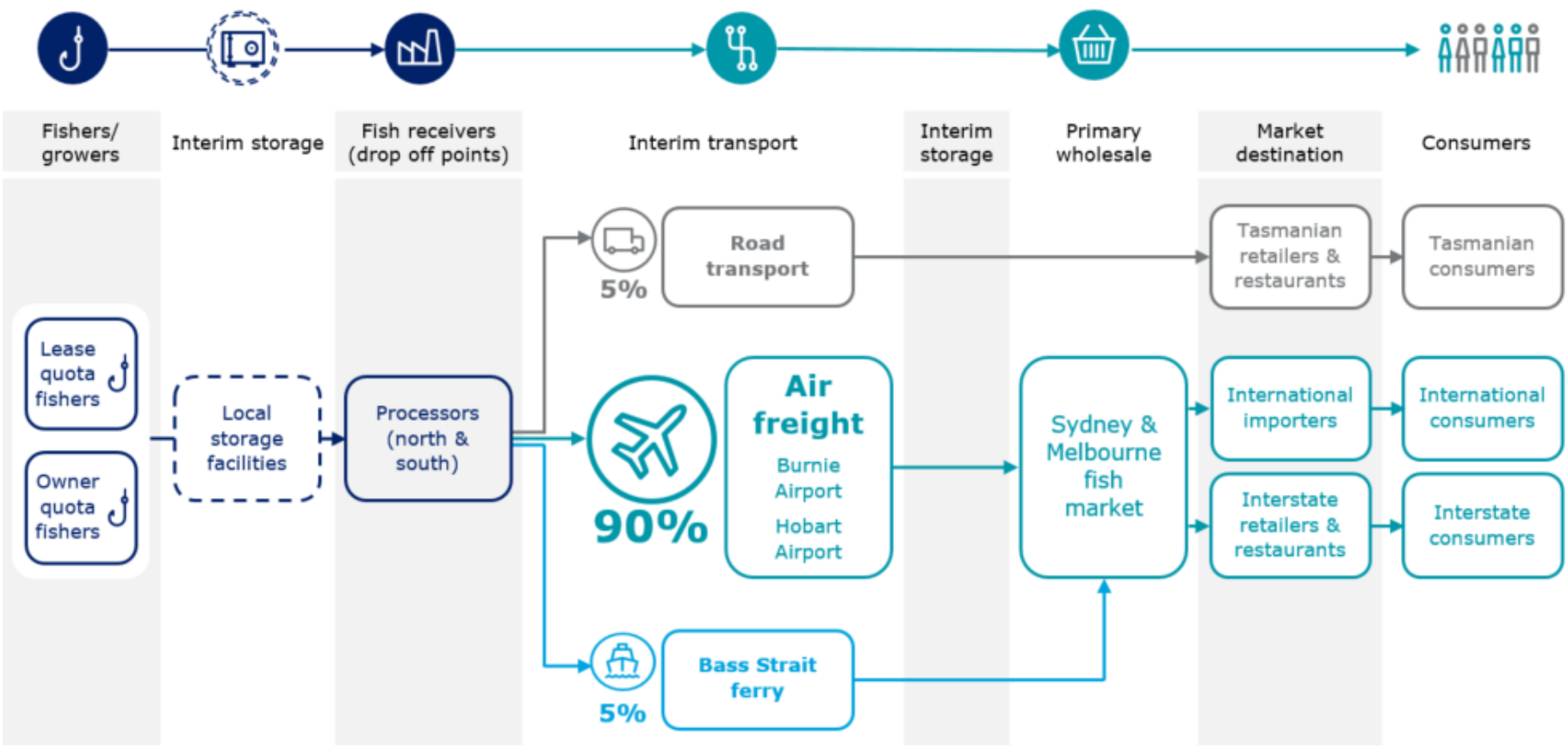
The fishing industry on the West Coast represents key sector in potential demand for air freight services. Crayfish producers in particular have seen a radical change over the past decade with crayfish prices increasing from $30/kg to $100/kg driven primarily by Asian demand. The supply chain to these final export markets currently involves trucks out of the West Coast, as the first step of a journey through Wynyard – King Island – Melbourne. Through consultations it was determined that a direct flight from Strahan to Melbourne would save an estimated $7/kg in transport costs, more than three hours of travel time, with some measurable reduction in product attrition. Historical air freight figures of around $0.8/kg for commercial freight airlines or $2.60/kg for private charters suggests that there may be scope for the profitable use of Strahan Airport for rock lobster export. There are further economic synergies in the fact that the peak crayfish season (November-June) overlaps significantly with the peak tourist season (September-April).

There were several constraints to further use of airfreight out of Strahan that emerged:

- The use of commercial freight aircraft rather than transport by non-scheduled tourist charters is much more cost-effective
- The need for a salt-water tank in Strahan to be able to fly product straight to the mainland, rather than via King Island
- Potential policy distortions caused by the Tasmanian Freight Equalisation Scheme not covering air freight – "it does not face the same natural barriers".

Establishing a viable air freight connection of aquaculture and commercial fishing products out of Strahan Airport is dependent on a range of other anciliary infrastructure, captured in Figure 21. The salmon produced by the Macquarie Harbour aquaculture industry does not go to markets that would justify the use of air freight. The commercial fishing operators on the West Coast sell produce into a supply chain that predominantly utilises air freight out of Burnie Airport and Hobart Airport. For Strahan Airport to become a viable starting point for air freighting crayfish and/or similar high-value produce, there needs to be additional investment in interim storage and processing facilities in Strahan. Currently, trucks are used to take produce to other parts of the State, including Wynyard, Burnie, and Launceston in order to prepare the produce for air freight. All emergency equipment and parts for the aquaculture industry are brought in by truck, but air transport would be considered if price-competitive.

Figure 21: Crayfish industry supply chain



Source: AJ Hobday et al. *Applied Studies in Climate Adaptation*, Chapter 16 Growth opportunities for marine fisheries and aquaculture industries in a changing climate, 2015; Deloitte Access Economics

4.3.3.1 Management air travel

Since Tassal Group and Huon Aquaculture have offices in Hobart and have previously used non-scheduled charters, there may be future scope for the use of a Strahan-Hobart RPT service. However, consultations with commercial fishing industry stakeholders did not demonstrate any material demand for business travel through Strahan Airport from this sector.

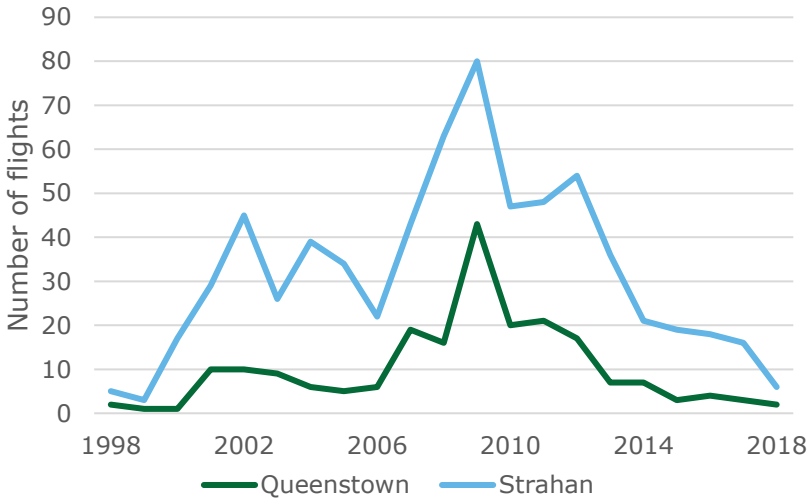
4.4 Other airport users

The other sources of potential demand for Strahan Airport services include RFDS, pilot training, general aviation, and general business travel. These will be discussed in turn.

4.4.1 RFDS and health services

There is no obvious trend in RFDS landings at Strahan and Queenstown. However, Strahan consistently records a higher level of activity.

Figure 22: Annual number of Emergency Services Landings at Strahan and Queenstown Airports (1998-2018)



Source: Royal Flying Doctors Service

The West Coast offers regional health, medical and aged care facilities through the West Coast District Hospital and HealthWest, and is serviced through the major regional hospitals at Latrobe and Burnie and a new cancer clinic under construction in Burnie[34].

4.4.2 Pilot training

Par Avion currently uses Strahan Airport for pilot training. This currently accounts for 1-3 landings per week. As pilot training school grows this number could rise. In particular, the operator has previously expressed an interest in training prospective pilots from overseas to meet the growing pilot shortage in Asia.

[34] Tasmanian Government, Department of State Growth, West Coast Economic Working Group Final Report, 2015

4.4.3 General aviation

General and recreational aviation currently represents a significant share of activity at Strahan Airport. The aerial view of the West Coast is a noted attraction among hobbyists. Furthermore, Strahan's tourist infrastructure makes for an appealing day trip for weekend lunches in the peak season. Consultations with the Wynyard Aero Club highlighted the prospect for a circumnavigation event scheduled to occur in 2020. Organisers are planning for 30-40 aircraft carrying 50-100 passengers to travel around Tasmania with overnight stops. Subject to the availability of aircraft parking and airport facilities, Strahan Airport could be a potential location for one of these overnight stops.

4.4.4 Education

UTas has expressed an interest in increasing its presence in the region. This may result in intermittent business-related demand for the Strahan-Hobart RPT service of university staff. However, any increases in demand are likely to be small.

4.4.5 General business travel

North of Strahan, the Granville Harbour Wind Farm has expressed interest in making use of a Melbourne to Strahan RPT service should one become available.

Market research conducted by a local operator indicated that 15% of survey respondents were interested in an RPT service between Strahan and Hobart for business reasons[35].

Figure 23: General aviation

Source: Wynyard Aero Club

[35] Par Avion RPT Tasmania survey, 2017

5 Feasibility assessment of Strahan Airport options

This chapter brings together information from both the assessment of Strahan Airport infrastructure (Chapter 3) and assessment of potential future demand for airport usage (Chapter 4) to develop a number of options going forward for Strahan Airport. This chapter also undertakes a feasibility assessment for each of the options identified.

5.1 Development of options for Strahan Airport

Based on the demand assessment in Chapter 4, it is considered that the base case outlook for Strahan Airport is the continuation of current/historical levels of activity. In addition, the Tasmanian State Government has committed to a 2-year trial of a RPT service between Strahan and Hobart, to commence in late 2018.[36] This forms Option 0 in this study, which represents the minimum level of activity for Strahan Airport under a business-as-usual status quo. It should be noted that Option 0 has assumed no continuation of the Strahan-Hobart RPT service beyond the 2-year trial.

Option 1 incorporates modest growth from current/historical levels of activity and assumes the Strahan-Hobart RPT service continues beyond 2 years as higher demand makes the service self-sustainable without government subsidies.

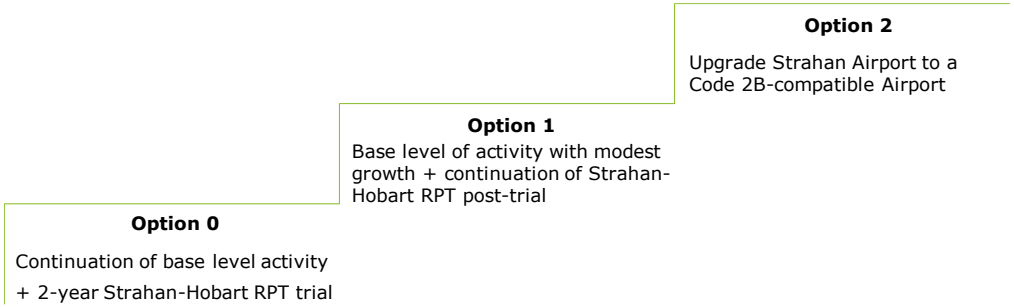
Option 2 represents a more aspirational outlook for Strahan Airport in that it incorporates higher levels of demand which would support introduction of larger aircraft, which would require the airport to be upgraded to a Code 2B-compatible airport.[37]

[36] Consultation with the Department of State Growth and https://www.theadvocate.com.au/story/5244919/flights-to-strahan-liberals-to-fund-two-year-trial/

[37] The classification of the airports is based on the characteristics of the "critical aircraft", which is the airplane with the highest requirements that can use the airport. In accordance with its own characteristics each airport is assigned a code number and a code letter (an aerodrome's reference code may be 1A, 2B, 3C, 4D, 4E, 4F). The code number refers to the reference field length. The code letter refers to the critical airplane's wingspan and the distance between the external extremities of the wheels of its main landing gear. Parameters of a code 2B airport are: 800m but < 1200m for aeroplane reference field length, 15m but <24m for wingspan, and 4.5m but <6m for outer main gear wheel span.

The high-level representation of each of the 3 options is outlined in Figure 24.

Figure 24: Development of options for Strahan Airport



Source: Deloitte Access Economics

5.2 Option 0

This section provides further detailed information on Option 0.

5.2.1 Description of Option 0

Option 0 represents the continuation of historical levels of activity at Strahan Airport as well as the addition of a 2-year Strahan-Hobart RPT trial, subsidised by the State Government. Each of these two elements are discussed below.

5.2.1.1 Continuation of historical level of activity

The continuation of the historical level of activity would be represented by approximate landings of 170 per year by aircraft of a general aviation nature, as established in Figure 25.

5.2.1.2 Strahan-Hobart RPT trial

Details of the announced Strahan-Hobart RPT trial are limited, apart from the public announcements that "*the trial service would run six times a week*" and that the State Government has "*committed up to $300,000 for the trial*"[38].

Figure 25: Hypothetical Strahan-Hobart RPT timetable, peak season (September-April)

Depart		Arrive		Day of the week
Airport	Time	Airport	Time	
Hobart	0700	Strahan	0750	Monday
Strahan	0820	Hobart	0910	Monday
Hobart	1700	Strahan	1750	Monday
Strahan	1820	Hobart	1910	Monday
Hobart	0700	Strahan	0750	Wednesday
Strahan	0820	Hobart	0910	Wednesday
Hobart	1700	Strahan	1750	Wednesday
Strahan	1820	Hobart	1910	Wednesday
Hobart	1600	Strahan	1650	Friday
Strahan	1720	Hobart	1810	Friday
Hobart	1600	Strahan	1650	Sunday
Strahan	1720	Hobart	1810	Sunday

Source: Deloitte Access Economics based on public information on Strahan-Hobart RPT trial

[38] https://www.theadvocate.com.au/story/5244919/flights-to-strahan-liberals-to-fund-two-year-trial/

A service of six times per week has been interpreted as six-return services per week (i.e. twelve one-way flights) for the purpose of the study, on the basis of the service being able to provide a reasonable level of flight frequency in order to encourage passenger take-up. A hypothetical timetable has been developed in Figure 25. Figure 25 represents a peak season (assumed to be between September and April as per historical trend demonstrated in Figure 8) timetable of 12 flights per week; during the off-season (May to August) months, flight numbers have been assumed to reduce to 4 per week.

It has also been assumed that the likely aircraft to operate the services would be either a Piper Navajo (8 passenger seats) or Cessna 404 Titan (9 passenger seats), as those aircraft types represent the two most frequently landed aircraft by Par Avion[39] in Strahan according to Avdata record.

It is understood that Airlines of Tasmania operated a Strahan-Hobart RPT route in 2003, but withdrew due to limited traffic.

5.2.2 Evaluation of Option 0

Option 0 has been evaluated from three perspectives:

- Airport infrastructure requirements and related costing estimates for Strahan Airport
- Financial implications for Strahan Airport
- Feasibility for operators to service the expected level of demand.

The aircraft model of Cessna 404 Titan has been selected for evaluation purpose, as the differences in cost and revenue associated with the Piper Navajo and Cessna 404 Titan aircraft is marginal.

The findings for the assessment of each of the three elements are presented below.

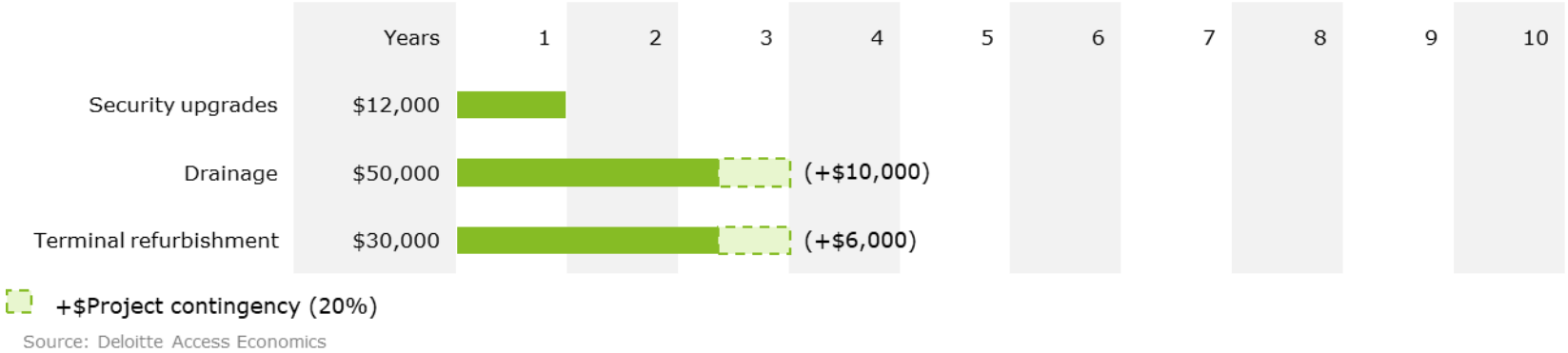
5.2.2.1 Assessment of infrastructure requirements

Minimal capital work is required for Strahan Airport to accommodate Option 0.

At the estimated level of operations for Option 0, the existing pavement, although assessed to be understrength for most single- and twin-engine aircraft operations, is likely to remain in a serviceable condition. The majority of the work recommended to be carried out relates to drainage work and terminal refurbishment. In addition, it is understood that a minor security upgrade would be required to accommodate the RPT service, at a cost of approximately $12,000. Figure 26 presents the high-level estimate of capital works required under Option 0.

[39] It is understood that there is a high likelihood of the Strahan-Hobart RPT service being operated by Pav Avion.

Figure 26: Infrastructure costing under Option 0



Source: Deloitte Access Economics

5.2.2.2 Financial implications for Strahan Airport

The financial implications for Strahan Airport under Option 0 is determined by forecast revenue associated with Option 0 and corresponding forecast cost.

Forecast Revenue

The revenue stream for Strahan Airport primarily comprises landing charges (see Table 6 for charging schedule) and it is assumed these fees are unchanged in future. There is also a charging schedule set out for fuel storage hire (see Table 6), however, it is not clear whether there is any income currently collected from this source.

Table 6: Strahan Airport charging schedule

Airport landing fees (MTOW[40] 5700kg)	Fee 2017/18
Avturbo Aircraft	$19.20 per MTOW (measured in tons) min $26.25
Avgas Aircraft	$12.60 per MTOW (measured in tons) min $26.25
Annual licence – Non-RPT Aircraft	$789.39
Helicopter landings	50% of normal landing charge for other aircraft
Fuel Storage area (weekly hire)	$45.15
Fuel Storage area (annual hire)	$1,250.00

Source: West Coast Council Annual Plan & Budget Estimates 2017/18

Under Option 0, Strahan Airport revenue can be expected from 2 channels:

- Continuation of the historical levels of general aviation activity
- Revenue from Strahan-Hobart RPT trial.

Historical revenue associated with general aviation activity for Strahan Airport is recorded in Avdata, at a level of approximately **$5,500 per annum** as a three-year average. It has been assumed that the same level of revenue (associated with historical level of general aviation activity) would continue forward under Option 0.

Revenue from the Strahan-Hobart RPT trial has been estimated to be approximately **$10,300 per annum.** This revenue has been calculated as an estimate of annual landings (refer to hypothetical timetable developed in Figure 25) multiplied by estimated landing charges for a Cessna 404 Titan.

Assumptions for the key parameters are set out as follows:

- 166 RPT landings at Strahan Airport per annum – 6 landings per week in peak season (September to April) and 2 landings per week in off-season (May to August)
- $43.32 per landing for the Cessna 404 Titan aircraft[41].

It is noted that there is an agreement (signed in February 2015) in place between West Coast Council and Airlines of Tasmania for West Coast Council to waive the landing fee at Strahan Airport for a period of 12 months, in relation to the proposed trial of Par Avion tourism flights into the facility.

[40] MTOW = maximum take-off weight

[41] The reported MTOW for the Cessna 404 Titan aircraft is 3,175kg. Based on the charging rate of $12.60 for Avgas aircraft as per Table 6, the theoretical landing charge would be $48.01. However, according to Avdata record, the actual fee charged for a Cessna 404 Titian landing has historically been $43.32. While the reason(s) for the difference in calculated landing fee and recorded landing fee is/are unknown, for the purpose of the study, the actual landing fee charged has been used for the analysis.

Although this agreement does not explicitly refer to a more generic Strahan-Hobart RPT trial, upon the advice of West Coast Council, this study has treated this agreement as effective for the Strahan-Hobart RPT trial. As a result, no additional revenue from Strahan-Hobart RPT has been included in forecast revenue for year 1 of RPT services.

Forecast cost

Forecast costs for Option 0 are:

- Regular annual operating and maintenance expenditure
- Capital expenditure required to accommodate the additional RPT service.

Historical **annual operating and maintenance expenditure** has been funded by the West Coast Council. The reported total operating and maintenance expenditure across the previous three financial years (FY2016 – FY2018) was $82,252[42]. It has been assumed that the same level of operating and maintenance expenditure would continue forward under Option 0, at **$28,417 per annum** calculated on the basis of the historical three-year average.

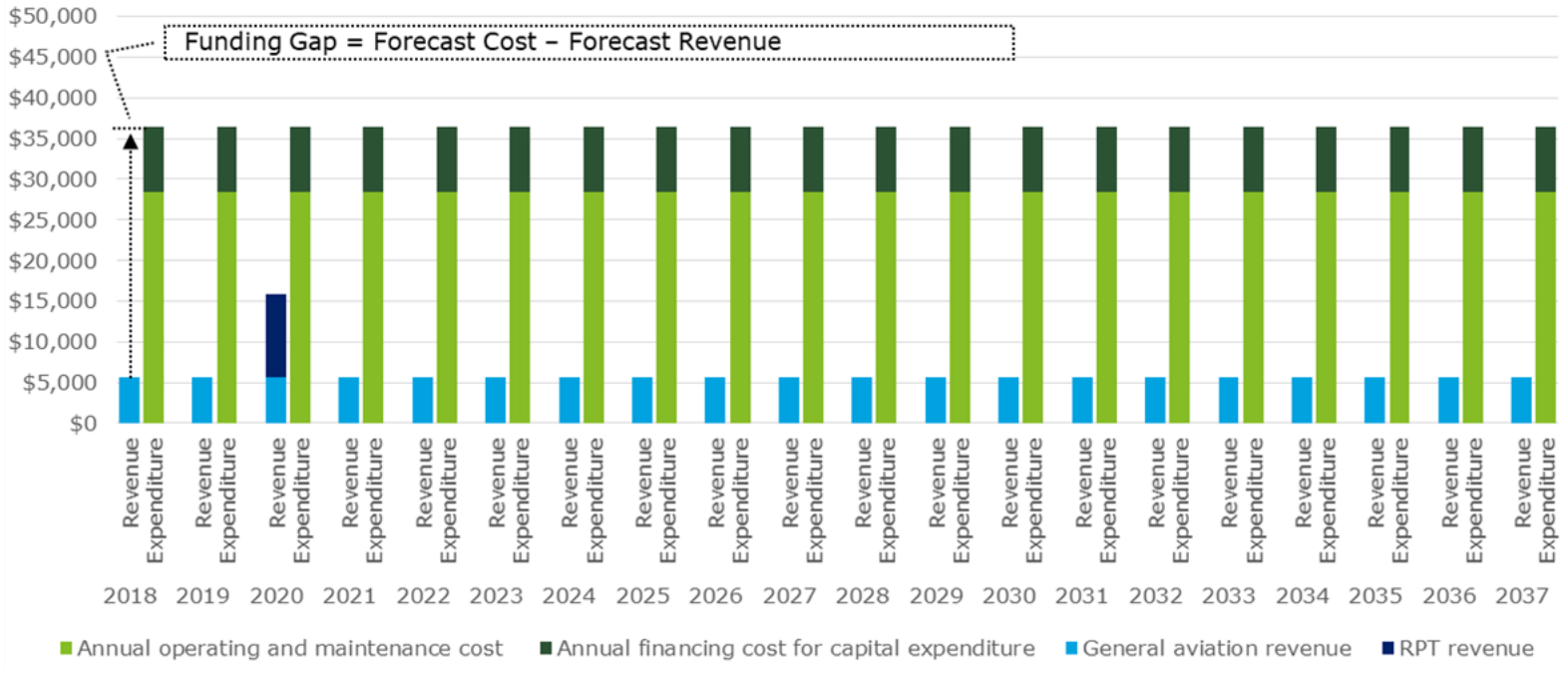
As has been established in Figure 26, capital expenditure forecasted for accommodating the RPT service is assessed to be $108,000. To understand the financial implications of this capital expenditure, the costs have been modelled as a cash flow loan repayment, assuming that this capital expenditure would be debt funded by the West Coast Council. An annual interest rate of 4.75% and a loan period of 20 years have been used to convert capital expenditure to annual financing cost. It is noted that these numbers are only illustrative of the scale of the investment required to accommodate the levels of activity described in this option. They are not meant to represent likely financial forecasts.

[42] Email received from West Coast Council on 15 May 2018.

Net financial implications

The net implications for Strahan Airport under Option 0 is provided in Figure 27. It can be observed that there is a forecast annual funding gap of approximately $30,000 between revenue and expenditure, except for year 2020 (of approximately $20,000), when RPT revenue from the 2-year trial is forecasted to add to the existing revenue collected from general aviation landings. This gap is primarily driven by forecast annual operating and maintenance cost.

Figure 27: Summary of Option 0 financial implications to Strahan Airport, forecast revenue and forecast cost



Source: Deloitte Access Economics

Note: 1. RPT revenue is only forecasted to be generated for year 2020, as Option 0 represents a 2-year only RPT trial (and therefore revenue), with year 1 RPT revenue to be relinquished as per West Coast Council's agreement with Par Avion as discussed above, assuming the RPT trial contract be awarded to Par Avion. 2. Part cost (50%, or $6,000) of the security upgrade has been committed to be contributed by the Tasmanian Government, therefore has not been included as capital expenditure required in the estimation of the funding gap.

The modelling result in Figure 27 shows that the airport operator (i.e. West Coast Council) is forecasted to incur a loss going forward under Option 0. Although this is not unique among small regional airports, considerations could still be encouraged to look into reducing this gap. One option involves the introduction of a passenger charge for the RPT service, similar to what King Island Airport has recently introduced[43]. The incorporation of a $7.5 per head passenger charge is estimated to reduce the funding gap from approximately $20,000 to approximately $10,000 for year 2020.

5.2.2.3 Operational feasibility for operators

There are mainly three categories of operators that service users of Strahan Airport, including non-commercial/recreational flight operators, commercial charter flight operators and RPT operators:

- The operational feasibility of non-commercial/recreational flights have not been discussed in this report, as it has been assumed that commercial factors are not a determinant of use of Strahan Airport
- Due to commercial charter flights primarily comprising ad hoc and on-demand trips, it could be reasonably assumed that these trips only occur if they were operationally feasible
- In comparison, the operational feasibility of RPT services has been assessed to be more uncertain, as the "regular" nature of the services requires the provision of services (which incur costs) in an environment of no guaranteed level of usage/revenue.

This section therefore focuses on assessing operational viability of the RPT service.

The operational feasibility for the operator to service the expected level of demand under Option 0 is determined by forecast total revenue and forecast total cost.

Forecast revenue

Forecast operator revenue of an RPT service is a factor of passenger demand and fare level.

The way airlines price fares can be dynamic, often employing what is termed a "yield management" strategy to optimise total revenue by, for example, charging different prices to different passengers with different levels of ability or perceived 'willingness to pay'.

There are a number of common factors that could result in different fare being charged for the same seat on the plane:

- Timing of the booking, i.e. whether the booking is made way in advance of the actual flight date or whether it is a last minute booking
- Directional differences, i.e. whether a passenger is flying from Strahan to Hobart or Hobart to Strahan
- Customer segmentation, i.e. whether they are business or leisure customers
- Seasonality of the flight, i.e. whether the travel time is at a peak season or off-peak season
- Days in the week of the flight, i.e. whether the travel date is on a week day or weekend
- Fare conditions (e.g. cancellation flexibility)
- Competition from other airlines operating the same route.

[43] https://www.theadvocate.com.au/story/5512481/airlines-threaten-to-cut-flights-increase-prices-to-king-island/

Given these complexities in fare setting and the specifics of yield management models employed by different airlines which generally grants no access to any third party, this analysis does not attempt to predict and model the individual fares that could be charged for the Strahan-Hobart routes; instead, it has adopted a fare benchmarking approach to try to obtain an indication of what airfares have been charged on similar routes.

Two comparable routes have been identified based primarily on considerations of similar flight distance, as shown in Table 7. It can be observed that the Strahan-Hobart route's distance and fly time sit between Flinders Island–Launceston ($250 return) and King Island-Melbourne ($434 return).

Table 7: Comparable routes for fare benchmarking

Route	Airline	Distance	Fly time	Fare
Strahan – Hobart	-	197 km	48 minutes	-
King Island – Melbourne	Rex	255 km	55 minutes	$434 return
Flinders Island – Launceston	Sharp Airlines	174 km	45 minutes	$250 return
Flinders Island – Essendon	Sharp Airlines	375 km	73 minutes	$504 return

Source: Various websites. Fare estimated generated as of 6 June 2018 based on a return flight schedule of 22 June – 26 June 2018.

Driving cost between Strahan – Hobart has also been considered, as driving represents an alternative option to flying. Based on an estimated driving cost of $0.726 per km[44], the driving distance of 300km between Strahan and Hobart would incur a cost of $435 for a return trip.

Given the considerations of both comparable fare and driving cost, as well as some natural bias towards driving[45], a conservative estimate of $400 return ($200 per flight) has been modelled for the Strahan-Hobart route for the purpose of the analysis.

On the basis of the hypothetical timetable developed in Figure 25, assuming a load factor of 70% for every flight, total annual passenger number has been estimated to be approximately 3,000.

Applying the benchmarked/hypothetical fare per flight to the estimated total passenger number, it can be estimated that the RPT operator could generate **an annual revenue of approximately $600,000 on a Cessna 404 Titan.**

It is understood that this revenue would be further supplemented by an announced State Government subsidy of up to $300,000 for the 2-year trial. Assuming this subsidy would be allocated evenly across the 2-year trial period, **annual revenue that could be generated for the operator could be approximately $750,000 per annum**.

[44] RACQ, Private vehicle expenses 2017

[45] Consultations on the community's propensity to fly show that there are a number of disincentives for flying between Strahan and Hobart compared to driving, these include the distance and cost of ground transport from Hobart Airport to the City of Hobart or elsewhere in the immediate region, the potential for business meeting overruns or delays leading to missing the return flight, the risk of operational unserviceability leading to flight postponements and cancellations. And for passengers commuting from the Zeehan and Rosebery area, there is a reported tendency to continue driving to Hobart once they commence the driving trip.

Forecast cost

Forecast operator cost for running an RPT service has been estimated using a number of external airline cost calculators, including the Aircraft Cost Evaluator tool from Conklin & De Decker[46] and the Aircraft Cost Calculator tool[47]. On these bases, the unit operating cost assumed for Cessna 404 Titan has been[48]:

- $730 variable cost per hour
- $145,566 fixed cost per annum.

Variable cost per hour was applied to total estimated flying hours between Strahan and Hobart (48 minutes) to estimate total variable cost per flight ($584). Flying hours between Strahan and Hobart has been estimated from the Great Circle Mapper[49] portal.

The hypothetical weekly timetable developed in Figure 25 sums up to a total of 480 flights per year[50]. Applying this to the variable cost per flight ($584) provides a total variable cost of approximately $280,000 per annum.

Another variable cost component is understood to be the landing fee, which has been estimated to be $69[51] and $43[52] per landing for Hobart and Strahan Airport respectively.

Adding the fixed cost per annum to the total variable cost estimated above, it can be estimated that **total forecast cost for operator of a Cessna 404 Titan would be approximately $450,000 per annum**.

[46] https://site.conklindd.com/s/

[47] https://www.aircraftcostcalculator.com/

[48] The cost of operating a commercial aircraft can be broken down into variable costs and fixed costs. The variable costs that have been included in the unit operating cost estimate are: fuel (i.e. fuel, fuel additives), maintenance (i.e. maintenance-labour, maintenance-parts, engine restoration cost, propeller allowance, Auxiliary Power Unit maintenance allowance) and crew expense (i.e. away from home allowance). The fixed costs that have been included in the per annum estimates are: crew (i.e. crew wages and benefits), ownership (i.e. depreciation, insurance, leasing cost).

[49] https://www.greatcirclemapper.net/

[50] Estimate based on 12 flights per week during peak season and 4 flights per week during off-season.

[51] Hobart International Airport Pty Ltd Aeronautical Charges, on the basis of landing charge of $18/1000kg MTOW and a Cessna 404 Titan of 3810 MTOW kg.

[52] Avdata historical landing charge for Cessna 404 Titan.

Assessment of operational feasibility

The analysis above indicates that the RPT service operator could potentially generate an operating surplus of $300,000 per annum, running the Strahan-Hobart RPT service for 12 flights per week during peak-season, **if there is demand of 3,000 passengers per year**.

Table 8: Summary of RPT operator feasibility under Option 0

	2018	2019	2020	2021	2022	2023	2024	…	2037
Forecast operator revenue	$750,000	$750,000	$-	$-	$-	$-	$-	$-	$-
Forecast operator cost	$450,000	$450,000	$-	$-	$-	$-	$-	$-	$-
Potential operating surplus	$300,000	$300,000	$-	$-	$-	$-	$-	$-	$-

Source: Deloitte Access Economics

It is acknowledged that the 3,000 passengers required represents a major increase of passengers that access the West Coast via air, from the current 300 passengers that have been estimated and discussed in Chapter 4. Therefore, a break-even analysis has been undertaken to understand the sensitivities of the operating surplus to the passenger demand being realised. The analysis shows that **break-even could be achieved with passenger numbers above 1,500, with the same operating timetable, and including the government subsidy.**

Sensitivity analysis has also been performed on a scenario where forecast cost is 20% higher than has been modelled. The analysis shows that a passenger demand of 3,500 would be required to achieve the $300,000 per annum operating surplus and that passenger demand required for a break-even operation would be above 2,000.

5.4 Option 1

This section provides further detailed information on Option 1.

5.4.1 Description of Option 1

Option 1 represents a higher demand outlook for Strahan Airport. This is reflected in two activity categories – modest growth in general aviation activities and the continuation of Strahan-Hobart RPT trial beyond 2 years, but without government support. Each of these two elements is discussed below.

5.4.1.1 Modest growth on historical levels of general aviation activity

A growth rate of 2% on historical levels of activity of a general aviation nature has been incorporated by Option 1 to represent modest growth of Strahan Airport usage, driven by slightly higher general aviation demand.

5.4.1.2 Strahan-Hobart RPT continuation post-trial

Compared to the growth in general aviation activity, the continuation of Strahan-Hobart RPT trial beyond 2 years represents a more significant step change to the demand outlook assessed in Option 0.

It is acknowledged that there may be some existing charter flight passengers that would shift to an RPT option when the RPT option becomes available. However, it is understood that the charter service market generally services a customer segment with a different (higher) price point than RPT services, and different scheduling requirements (e.g. based around major cruise ship visitation in Hobart) therefore it has been assumed that the majority of RPT customers would be new customers from induced demand.

5.4.2 Evaluation of Option 1

Option 1 has been evaluated from three perspectives:

- Airport infrastructure requirements and the related costing estimates associated for Strahan Airport
- Financial implications for Strahan Airport
- Feasibility for operators to service the expected level of demand.

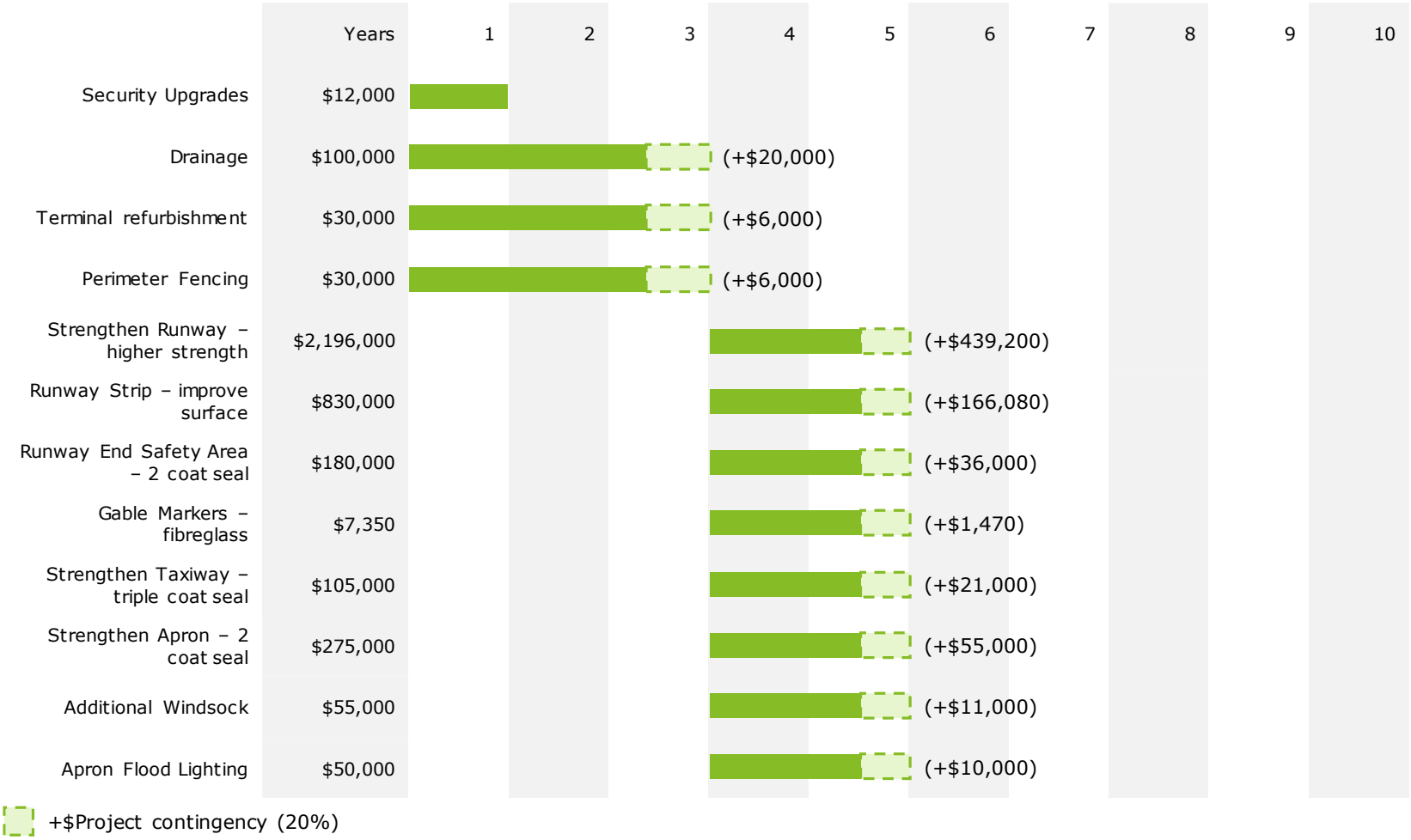
5.4.2.1 Assessment of infrastructure requirement

The requirement to service the Strahan-Hobart RPT route on a sustained regular basis would create higher requirement for airport infrastructure compared to Option 0 as traffic increases.

High-level engineering assessment has observed that Strahan Airport is not likely to be capable of meeting the fundamental requirements of Option 1 after three years in regard to its pavement strength. At the estimated level of operations, including RPT services, a pavement upgrade would be required at year four. Associated investment for taxiway and apron would also be required. The full list of assessed infrastructure requirement under Option 1 has been outlined in Figure 28.

Estimated total capital expenditure under Option 1 would be approximately $4.6 million, comprising $204,000 over the first three years and another approximate $4.4 million during years four and five.

Figure 28: Infrastructure costing under Option 1



Source: Deloitte Access Economics

5.4.2.3 Financial implications for Strahan Airport

The financial implications for Strahan Airport under Option 1 is determined by forecast revenue associated with Option 1 and corresponding forecast cost.

Forecast revenue

Under Option 1, Strahan Airport revenue can be expected from two channels:

- Modest growth of trend general aviation revenue
- Revenue from a sustained regular Strahan-Hobart RPT service.

A 2% per annum growth in general aviation activity has been estimated to contribute to the same proportional growth in estimated annual general aviation revenue **from a base of approximately $5,500 per annum.**

Annual revenue from a sustained regular Strahan-Hobart RPT service is expected to remain the same as Option 0, at **approximately $10,300 per annum**. The only difference between Option 0 is the continuation of this revenue beyond the 2 years of trial.

Forecast cost

Forecast costs for Option 1 comprises:

- Regular annual operating and maintenance expenditure
- Capital expenditure required to support the sustained RPT service beyond year 2.

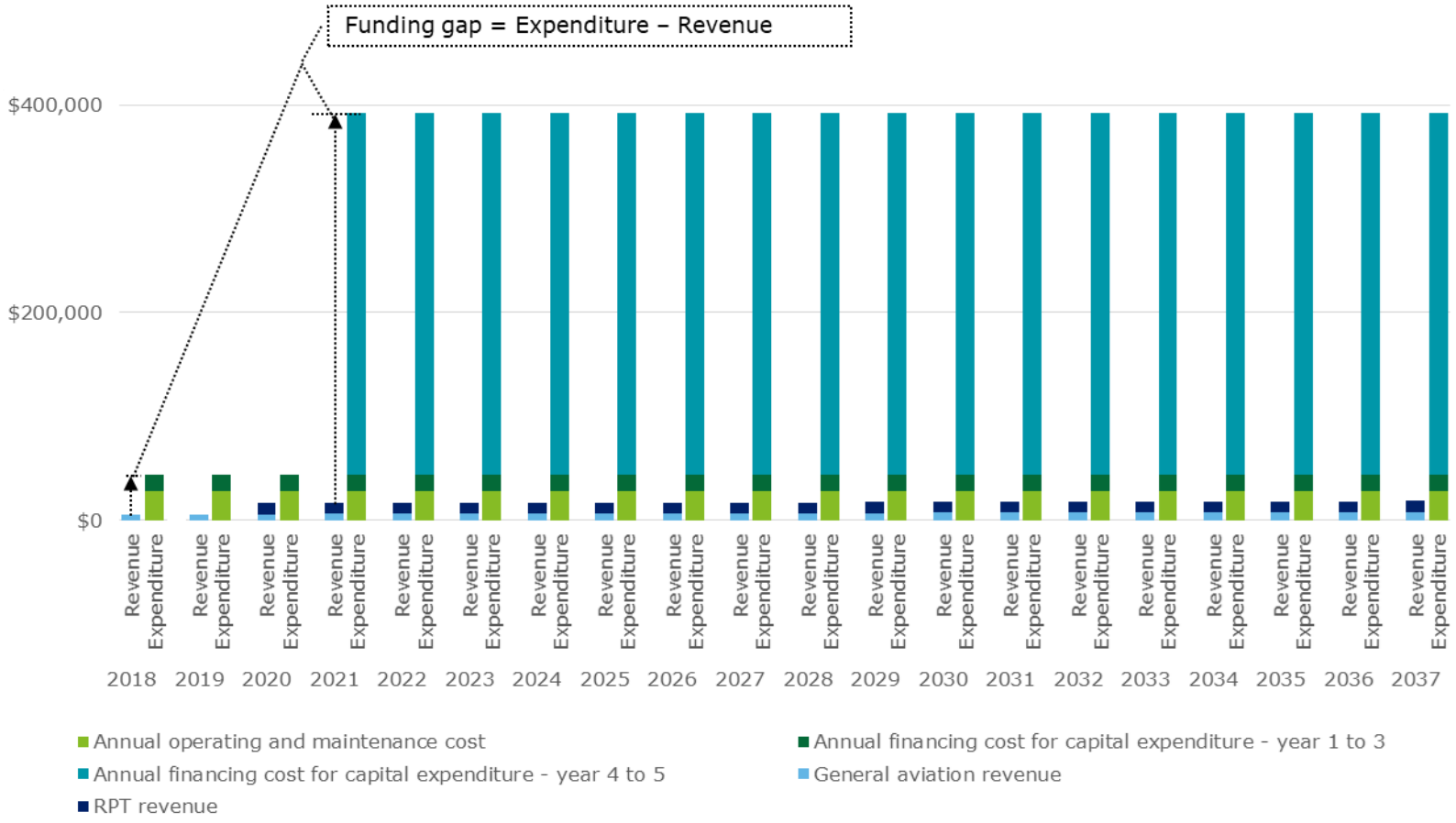
Regular annual operating and maintenance expenditure is expected to remain the same as Option 0, at **approximately $28,417 per annum**.

Capital expenditure forecasted under Option 1 has been established in Figure 28, at a total of approximately $4.6 million. The annual financing cost implication is reflected in Figure 29.

Assessment of operational feasibility

The net implications for Strahan Airport under Option 1 are shown in Figure 29. It can be observed that for the first three years, there is a forecast annual funding gap of approximately $40,000 between revenue and expenditure, except for year 2020 (of approximately $30,000), when RPT revenue from the 2-year trial is forecasted to add to the existing revenue collected from general aviation landings. The funding gap is expected to significantly increase to approximately $380,000 per annum from year 2021, as a range of major capital works are required to service a sustained RPT operation beyond the initial 2 years.

Figure 29: Summary of Option 1 financial implications to Strahan Airport, forecast revenue and forecast cost



Source: Deloitte Access Economics

The modelling result in Figure 29 shows that the airport operator (i.e. West Coast Council) is forecasted to incur a significant loss under Option 1 once the requirement for large capital works kicks in. This may trigger a case to look into other governance options for Strahan Airport going forward, such as (part-) ownership by TasPorts, other existing airport owners/operators or other tourism businesses, etc.

5.4.2.4 Operational feasibility for the operator

The operational feasibility for the operator to service the expected level of demand under Option 1 is determined by forecast total revenue and forecast total cost associated with the Strahan-Hobart RPT service.

Forecast revenue

Forecast operator revenue under Option 1 is expected to be lower than forecast revenue under Option 0 after year 2, by the amount of the government subsidy. It is understood that determined by the same operational parameters of Option 0 for the RPT service, **the RPT operator could generate an annual revenue of approximately $600,000 on a Cessna 404 Titan**.

Forecast cost

Total forecast cost for operator of a Cessna 404 Titan to operate the modelled level of service would be approximately $450,000 per annum, the same as that established in Option 0.

Assessment of operational feasibility

The analysis above indicates that without the government subsidy, the RPT service operator could potentially generate an operating surplus of $150,000 per annum, running the Strahan-Hobart RPT service for 12 flights per week during peak-season, if there is demand of 3,000 passengers per year.

Similar to Option 0, a break-even analysis has been undertaken to understand the sensitivities of the operating surplus to the passenger demand being realised. The analysis shows that **break-even could be achieved with passenger numbers above 2,200, with the same operating timetable**.

Sensitivity analysis has also been performed on a scenario where forecast cost is 20% higher than has been modelled. The analysis shows that a passenger demand of 4,300 would be required to achieve the $300,000 per annum operating surplus and that passenger demand required for a break-even operation would be above 2,700.

Figure 30: Summary of RPT operator feasibility under Option 1

	2018	2019	2020	2021	2022	2023	2024	…	2037
Forecast operator revenue	$750,000	$750,000	$600,000	$600,000	$600,000	$600,000	$600,000	$600,000	$600,000
Forecast operator cost	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000	$450,000
Potential operating surplus	$300,000	$300,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000

Source: Deloitte Access Economics

5.5 Option 2

This section provides further detailed information on Option 2.

5.5.1 Description of Option 2

Option 2 represents a more aspirational outlook for Strahan Airport and incorporates higher levels of demand which would support the introduction of larger aircraft and would require the airport to be upgraded to a Code 2B-compatible airport.

Higher demand would be reflected in both an increase in general aviation activity and a substantial increase in RPT demand triggering the deployment of larger aircraft at higher service frequency from year 6. Each of the two components are discussed below.

5.5.1.1 Increased general aviation activity

Option 2 incorporates further general aviation activity in addition to the 2% growth considered in Option 1. A 5% growth rate has been modelled to represent higher levels of activity.

Figure 31: Embraer 110 Bandeirante

Source:https://www.bing.com/images/search?q=Embraer+110+Bandeirante+phioto&id=4AFE8B914B1704E86F5C4739E34A6A0F1D283871&FORM=IQFRBA

5.5.1.2 Strahan-Hobart RPT on larger aircraft and at higher frequency from year 6

Option 2 incorporates the same Strahan-Hobart RPT demand as Option 1 for the first few years of operation (i.e. 12 flights per week during peak season, being serviced by Cessna Titan 404). Higher demand for RPT in later years has been represented by the introduction of larger aircraft (i.e. Embraer 110 Bandeirante with 15-21 passenger seats, unpressurised) that operates at a higher service frequency (i.e. 16 flights per week during peak season) from year 6 onwards. Other higher-capacity aircraft models (similar to Embraer 110 Bandeirante, but pressurised) for later years that can be considered but not modelled here include the 19 seat Fairchild Swearingen Metroliner and the 19 seat Beechcraft 1900 (B1900C &B1900D).

5.5.3 Evaluation of Option 2

Option 2 has been evaluated from three perspectives:

- Airport infrastructure requirements and the related costing estimates associated with requirement on Strahan Airport
- Financial implications for Strahan Airport
- Feasibility for operators to service the expected level of demand.

The findings for the assessment of each of the three elements are presented below.

5.5.3.1 Assessment of infrastructure requirement

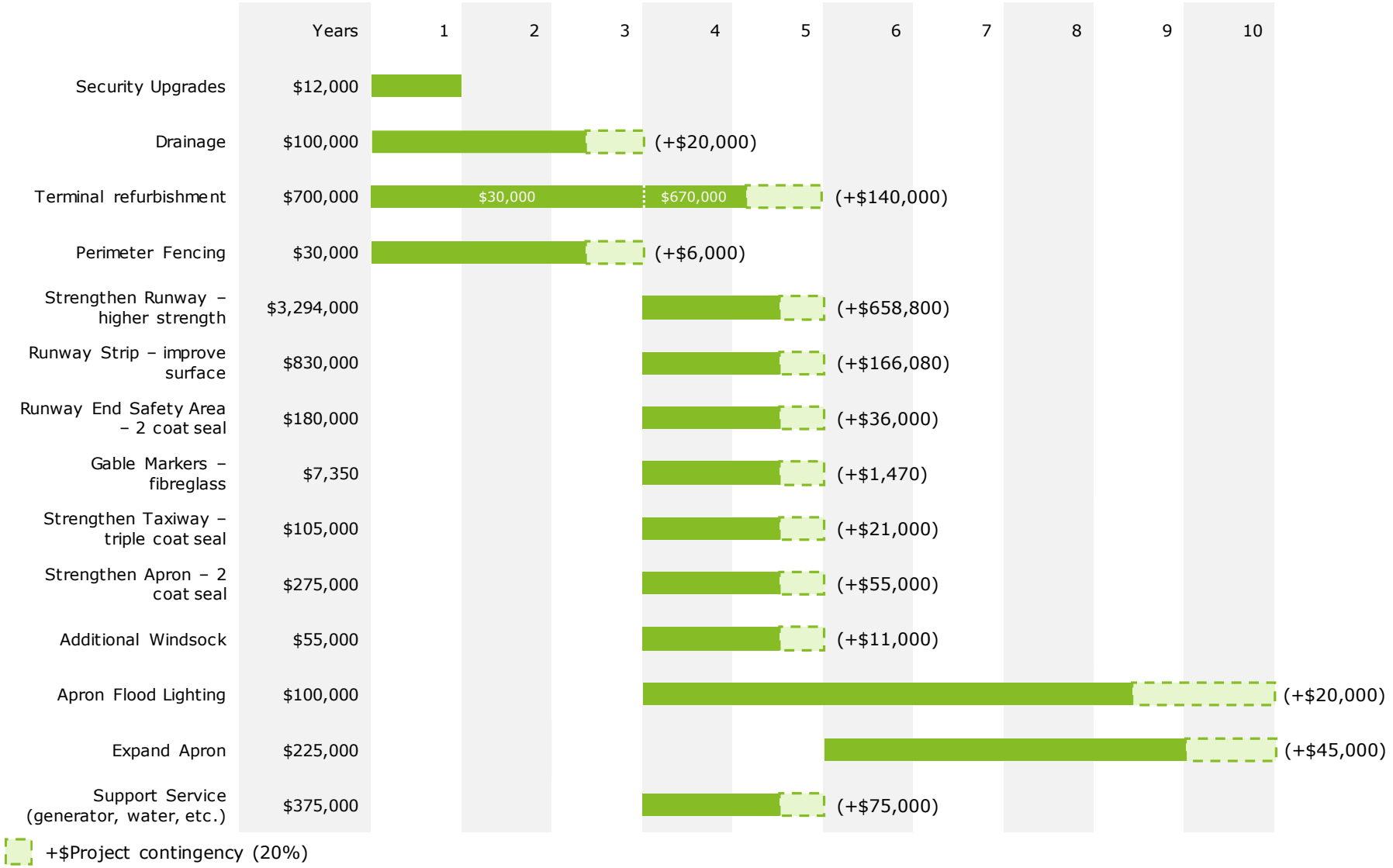
A decision to bring the airport up to a Code 2B-compatible airport would require further upgrades to that specified in Option 1 in order to accommodate larger aircraft, increased traffic and increased passenger volume. The additional upgrade is reflected in the following capex requirements:

- Further terminal refurbishment from year 4 to adequately service larger passenger numbers;
- Additional work to increase runway strength to cater for larger aircraft
- The incorporation of support services such as gas reticulation, standby power and reticulated water
- Apron expansion and the sealing of certain apron sections.

The full list of assessed infrastructure requirement under Option 2 has been outlined in Figure 32.

Estimated total capital expenditure under Option 2 would be approximately $7.3 million, comprising approximately $204,000 over the first three years, approximate $7.1 million during years four and five and another $330,000 in year 6 and beyond.

Figure 32: Infrastructure costing under Option 2



Source: Deloitte Access Economics

5.5.3.2 Financial implications for Strahan Airport

The financial implications for Strahan Airport under Option 2 is determined by forecast revenue associated with Option 2 and corresponding forecast cost.

Forecast revenue

Under Option 2, Strahan Airport revenue can be expected from two channels:

- Strong growth of general aviation revenue
- Revenue from a sustained regular Strahan-Hobart RPT service, with revenue further lifted from year 6 from larger aircraft operating at higher frequency.

A 5% per annum growth in general aviation activity has been estimated to contribute to the same proportional growth in estimated annual general aviation revenue **from a base of approximately $5,500 per annum**.

Initial annual revenue from the Strahan-Hobart RPT trial for the **first five years has been estimated to be approximately $10,300 per annum**; subsequent annual revenue from a more frequent Strahan-Hobart RPT service on larger aircraft is **expected to be approximately $33,488 per annum from year 6**, driven by a higher landing charge per landing and higher frequency of landing.

Forecast cost

Forecast costs for Option 2 also comprises two channels:

- Regular annual operating and maintenance expenditure
- Capital expenditure required to achieve a Code 2B-compatible airport.

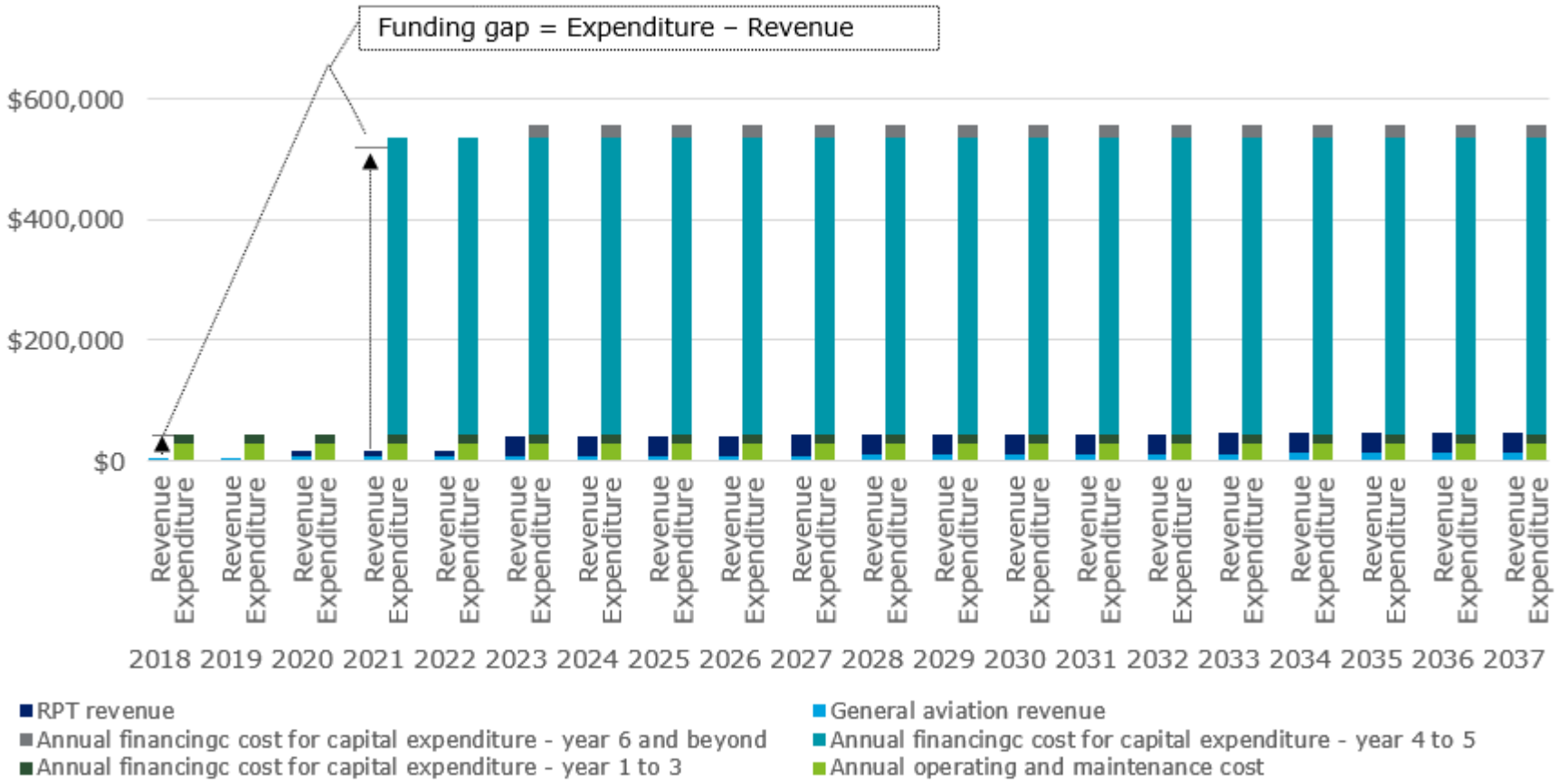
Regular annual operating and maintenance expenditure is expected to remain the same as Option 0 and Option 1, **at approximately $28,417 per annum.**

Capital expenditure forecasted under Option 2 has been established in Figure 33, at a total of approximately $7.3 million. The annual financing cost is reflected in Figure 33.

Net financial implications

The net implications for Strahan Airport under Option 2 is provided in Figure 33. It can be observed that for the first three years, there is a forecast annual funding gap of approximately $40,000 between revenue and expenditure, except for year 2020 (of approximately $30,000), when RPT revenue from the 2-year trial is forecasted to add to the existing revenue collected from general aviation landings. The funding gap is expected to significantly increase to approximately $520,000 per annum from year 2021, as a range of major capital works are required to service a sustained RPT operation beyond the initial 2 years.

Figure 33: Summary of Option 2 financial implications to Strahan Airport, forecast revenue and forecast cost



Source: Deloitte Access Economics

The modelling result in Figure 33 shows that the airport operator (i.e. West Coast Council) is forecasted to incur a significant loss under Option 2 once the requirement for large capital works kicks in. This may trigger a case to look into other governance options for Strahan Airport going forward, such as (part-) ownership by TasPorts, other existing airport owners/operators or other tourism businesses, etc.

5.5.3.3 Operational feasibility for operators

The operational feasibility for the operator to service the expected level of demand under Option 2 is determined by forecast total revenue and forecast total cost associated with operating the Strahan-Hobart RPT service.

Forecast revenue

Forecast operator revenue under Option 2 comprises 2 streams – revenue from operating a Cessna Titan 404 at a 12 flights peak frequency for year 1 to year 5 and revenue from operating an Embraer 110 Bandeirante at a 16 flights peak frequency from year 6 onwards.

It has been estimated that revenue associated with the first stream would be approximately $600,000 per annum, as has been established in Option 0 and 1 that revenue associated with the second stream would be approximately $1.1 per annum.

Forecast cost

Total forecast cost for the use of a Cessna 404 Titan to deliver the 12 flights peak frequency service would be approximately $450,000 per annum, as established in Option 0 and Option 1.

Total forecast cost for the use of an Embraer 110 Bandeirante to deliver the 16 flights peak frequency service would be approximately $0.9 million per annum. Key assumptions are listed as follows:

- $1,207 variable cost per hour
- $307,410 fixed cost per annum
- Hobart landing fee of $102.06 per landing
- Strahan Airport landing fee of $71.44[53] per landing.

Assessment of operational feasibility

For year 1 to 5, the analysis indicates that without the government subsidy, the RPT service operator could potentially generate an operating surplus of $150,000 per annum, running the Strahan-Hobart RPT service for 12 flights per week during peak-season, **if there is demand of 3,000 passengers per year**. **The break-even passenger number threshold has been estimated to be above 2,200**, holding the supply of services (i.e. operating timetable) constant.

For year 6 and onwards, the analysis indicates that the RPT service operator could potentially generate an operating surplus of $220,000 per annum, running the Strahan-Hobart RPT service for 16 flights per week during peak-season on a larger aircraft, **if there is demand of approximately 5,600 passengers per year**. **The break-even passenger number threshold has been estimated to be above 4,500**, holding the supply of services constant.

[53] Calculated on the basis of $12.60 per MTOW (measured in tons) min $26.25 for Avgas aircraft (as per charging schedule set out in Table 6) and an Embraer 110 Bandeirante of 5670 MTOW kg.

Table 9: Summary of RPT operator feasibility under Option 2

	2018	2019	2020	2021	2022	2023	2024	…	2037
Forecast operator revenue	$750,000	$750,000	$600,000	$600,000	$600,000	$1,129,000	$1,129,000	$1,129,000	$1,129,000
Forecast operator cost	$450,000	$450,000	$450,000	$450,000	$450,000	$910,000	$910,000	$910,000	$910,000
Potential operating surplus	$300,000	$300,000	$150,000	$150,000	$150,000	$220,000	$220,000	$220,000	$22O,000

Source: Deloitte Access Economics

5.6 Comparative assessment of options

In summary, key parameters and assessment results for each of the three options are outlined in Table 10 and Table 11.

Table 10: Summary of key parameters for the three options

Option 0	Option 1	Option 2

• Continuation of historical levels of general aviation activity into the future
• Establish Strahan-Hobart RPT 2 –year trial:
  ○ Frequency: 12 flights per week in the peak season
  ○ Anticipated commencement – end of 2018
  ○ Assumed aircraft type – Cessna 404 Titan (9 passenger seats)
	• Growth (2% p.a.) in historical levels of general aviation activity
	• Continue Strahan-Hobart RPT beyond 2 years post trial
		• Growth (5% p.a.) in historical levels of general aviation activity
		• Continue Strahan-Hobart RPT beyond 2 years post trial
		• Increased Strahan-Hobart RPT demand from year 6:
		  ○ Frequency: 16 flights per week in the peak season
		  ○ Anticipated commencement – 2023
		  ○ Assumed aircraft type – EMB 110 (15-19 passenger seats)

Source: Deloitte Access Economics

Table 11: Headline results for the feasibility assessment of RPT service under the three options

	Option 0	Option 1	Option 2
Estimated forecast airport revenue	General aviation - $5,500 per annum RPT revenue - $0 for year 1, $10,300 per annum for year 2	General aviation - 2% growth per annum, from a base of approximately $5,500 per annum RPT revenue - $0 for year 1, $10,300 per annum from year 2 onward	General aviation - 5% growth per annum, from a base of approximately $5,500 per annum RPT revenue - $0 for year 1, $10,300 per annum from year 2 to year 5, $33,488 per annum from year 6 onward
Estimated forecast airport costs	$96,000 over three years	$204,000 over three years $4.4M in years 4 to 5	$156,000 over three years $7.1M in years 4 to 5 $330,000 in years 6 and beyond
Feasibility of RPT service	Yes, if passenger demand is above approximately 1,500	Yes, if passenger demand is above approximately 2,200	Yes, if passenger demand is above approximately 2,200 for a Cessna Titan 404 operating 12 flights peak week Yes, if passenger demand is above approximately 4,500 for a EMB 110 operating 16 flights peak week

Source: Deloitte Access Economics

6 Non-aeronautical opportunities

Non-aeronautical revenue supplements aeronautical revenue airports receive and is an important diversification income stream for regional airports. According to a survey undertaken as part of a regional airport infrastructure study[54], the proportion of aeronautical revenue to total revenues is greater at RPT regional airports (74.3 per cent on average) than non-RPT regional airports (51.8 per cent on average).

It is understood that Strahan Airport currently does not receive non-aeronautical revenue.

Desktop research found that common non-aeronautical revenue streams for similar regional airports include:

- Revenue from leasing airport land, such as to car rental companies, and aircraft maintenance companies
- Revenue from advertising fees
- Revenue from parking fees.

Examples of non-aeronautical revenue from similar airports include Devonport Airport, which is reported to derive 20 per cent of its revenue from non-aeronautical charges, with approximately 20 tenants located at the airports, all of which are small businesses such as car hire companies.

Orange Airport in New South Wales is reported to be leasing land to the 20 tenants located at the airports as well. The tenants include a number of charter companies located at the airport as well as flight training schools, engineering companies and private owners of hanger space.

There is scope for Strahan Airport to investigate its non-aeronautical revenue potential, particularly as usage increases as a result of the RPT trial. However, any revenue is likely to be small relative to the funding gap between aeronautical revenue and costs.

[54] http://airports.asn.au/wp-content/uploads/2018/05/AAA-regional-airport-study-final-report-September-2016.pdf

7 Conclusions

A sustainable level of passenger demand is essential for the success of a RPT service. a hypothetical schedule of 12 flights per week in the peak season could generate an operating surplus (up to $300,000 per annum) for an RPT operator, if the **demand requirement of 3,000 passengers per year** is met.

Importantly, the 2-year trial will provide important insights into the level of demand for the service and offer a good opportunity to build up passenger demand and tap into latent demand.

Clearly, there are minimum passenger number requirements in order for any operator to enter and provide the specified service. This study indicates as follows:

- With the $150,000 per annum government subsidy, minimum passenger demand required is approximately 1,500 passengers per annum (see Option 0 in Table 12)
- Without the government subsidy, minimum passenger demand required is approximately 2,200 passengers per annum (see Option 1 in Table 12).

Table 12: Summary of Strahan-Hobart RPT feasibility assessment – minimum and maximum passenger demand for the three options

Options	RPT supply	Maximum demand (70% load factor assumed)	Minimum demand to meet operator feasibility
Option 0	12 flights peak frequency, Cessna Titan 404, with government subsidy of $150,000 per annum	3,000 passengers per annum	1,500 passengers per annum
Option 1	12 flights peak frequency, Cessna Titan 404	3,000 passengers per annum	2,200 passengers per annum
Option 2	Year 1- 5: 12 flights peak frequency, Cessna Titan 404	3,000 passengers per annum	2,200 passengers per annum
	Year 6 and beyond, 16 flights peak frequency, Embraer 110 Bandeirante.	5,600 passengers per annum.	4,500 passengers per annum

Source: Deloitte Access Economics

The demand analysis in Chapter 4 provided information on the likelihood/potential of the above demand requirement being realised by assessing key drivers of airport usage in the West Coast region, current usage of the airport and observing any potential changes in the pattern of future use.

Table 13: Summary of demand assessment for the Strahan-Hobart RPT service by key industries in the West Coast

Industry	Description of industry	Current usage of airport	Assessment of future use of the RPT service
Tourism	A total of approximately 96,000 visitors travelling from Hobart to Strahan each year[55]	Approximately 75 passengers per annum that fly to the West Coast from Hobart	1,500 passengers represent 1.6% of existing visitors to the West Coast from Hobart (2,200 represents 2.3%). Although this represents a step change from the current airport usage by tourists, it should not be unachievable given the relatively low proportion it represents amongst total tourists. However, the realisation of this is heavily dependent on the success of future initiatives to promote the region and the work of local operators to provide a quality and attractive tourism product.
Mining and resources	A total of +1,000 employees in the region	Limited usage apart from the occasional charter for management visits	Due to the largely local and 'drive-in-drive-out' workforce and the proximity of a number of mines to Burnie Airport which provides an alternative airport, the mining sector is unlikely to a substantial regular users of the airport. A number of companies have indicated potential to utilise the RPT service for management meetings on a once-a-week basis.
Aquaculture and commercial fishing	Established salmon and trout marine farming operations on the West Coast A total of 262 tonne of crayfish being produced on the West Coast	No usage of the airport as freight travels out of the region via road transport before they are air freighted to respective destinations	There has been no expressed intention for air freight from the West Coast by the salmonids industry, largely due to salmonids processing facilities being located outside of the region. There has been demonstrated interest for airfreight from the crayfish industry, but it is widely acknowledged that ground transport logistics supply chain investment would need to be a necessary precursor to this. Salmonids industry representatives have indicated potential to utilise the RPT service for management meetings on an occasional basis.

Source: Deloitte Access Economics

In summary, it appears that the introduction of the Strahan-Hobart RPT service could create further opportunities for tourism in the region by improving air access. It also would benefit the business community (e.g. mining and aquaculture) by providing easier connections to and from Hobart. In addition, stakeholder consultations found that Strahan Airport's role would extend beyond its potential to accommodate RPT services – the airport has been supporting a range of general aviation usage in the region which has been critical in providing essential services, including the RFDS operations.

The State Government's investment to fund the 2-year Strahan-Hobart trial has triggered requirements for airport infrastructure upgrades, estimated to cost $96,000 over three years (see Option 0). Should the trial become successful and the Strahan-Hobart RPT continue after 2 years (likely to be achieved if passenger demand can be sustained above 2,200), this would trigger the requirement for further investment, mostly around strengthening

[55] It has been recorded that a total of 165,800 domestic visitors stopped over on the West Coast in 2017 (refer to Figure 8), 58% of them are reported to have had Hobart as the previous stop.

the runway pavement. Total capital expenditure has been estimated to be approximately $4.6 million - $204,000 over the first three years and another approximate $4.4 million during years four and five.

If RPT passenger demand continues to build up and reaches a level of approximately 5,000 per annum, there would start to be a case for upgrading Strahan Airport to a Code 2B-compatible airport (see Option 2). Total capital expenditure under Option 2 has been estimated to be approximately $7.3 million - $204,000 over the first three years, approximate $7.1 million during years four and five and another $330,000 in year 6 and beyond.

Ultimately, the feasibility of an RPT service between Strahan and Hobart will be sustainable only if sufficient passenger demand is achieved. Fulfilling the potential of Strahan Airport therefore largely depends on the broader economic development of the region.

If appropriately marketed and priced, the trial Strahan-Hobart RPT service will provide a strong indication of the potential feasibility of a regular service and of itself could create further opportunities for tourism in the region. It would also benefit the business community (e.g. mining and aquaculture) by providing easier connections to and from Hobart. In addition, stakeholder consultations found that Strahan Airport's role extends beyond its potential to accommodate RPT services – the airport has been supporting a range of general aviation usage in the region which has been critical in providing essential services, including the RFDS operations.

The following recommendations regarding the future management and development of Strahan Airport are proffered:

1. **Keep the airport operational and prevent further asset deterioration**

Experience with other airports show that small airports that close rarely re-open again. A strong theme from the stakeholder consultations was that Strahan Airport is an important asset to the community. The role of the airport in the community comprises of:

- The **RFDS** provides vital healthcare access to relatively isolated parts of the West Coast
- Accessibility was also cited as an important component of **business confidence** as the region continues to grow economically. The convenience of being able to access the region by air rather than road through challenging terrain has been raised as an important enabler to future business development and investment. The availability of the airport for on-demand charter flight usage for management trips by mining and resources, aquaculture and civil government industries will continue to be an important signpost that the region is "open for business"
- The **recreational aviation community** from across Tasmania and interstate have an interest in being able to access Strahan Airport as a gateway to the West Coast
- The commitment of the State Government to supporting an **RPT trial** between Strahan and Hobart adds to the imperative for the requisite investment to be made at the airport to facilitate the successful completion of this trial.

Keeping the airport operational would involve undertaking the necessary minimum works to meet CASA standards and provide the necessary services and amenities for operators and visitor/tourists, as outlined in Option 0.

2. **Adopt a flexible approach to expanding airport infrastructure should high demand scenarios be realised**

There are feasible demand scenarios that would justify significant airport infrastructure investment. The analysis shows that there is some flexibility in the timing of the necessary capital expenditures. There would need to be firm evidence of increased demand in order to justify an expansion of the airport. The major piece of work required to sustain increased activity above the "business as usual" activity would be the strengthening of the runway pavement in the medium term.

3. Develop non-aeronautical revenue opportunities

There is scope/potential for the identification of non-aeronautical revenue raising activities. For example, Devonport derives around 20% of airport revenue from non-aeronautical opportunities such as leases, advertising and parking fees. As activity at the airport increases, there would be increased scope to explore these potential other revenue streams.

4. Explore broader options for airport governance model

There is opportunity for consideration of the broader institutional arrangements for the airport, for example, the ownership of the airport. Experience with other airports show that small regional airports often face closure because of the financial burden on small councils. Should the airport become a more complex operation that requires large investment of capital expenditure and extensive operational oversight, there may be a case to look into other governance options, such as (part-) ownership by TasPorts, other existing airport owners/operators or other tourism businesses, etc.

5. Consider airport rebranding

The West Coast is a recognised brand in the Tasmanian tourism context. There may be merit for Strahan Airport to leverage off and capitalise on the influence of the West Coast brand as a tourist destination by renaming Strahan Airport. Considerations could be given to names such as West Coast Airport. Similar measures (e.g. the renaming of: - Busselton Airport to Busselton-Margaret River Airport; Proserpine Airport to Whitsunday Coast Airport; Coolangatta Airport to Gold Coast Airport and Ballina Airport to Ballina Byron Bay Gateway Airport) adopted by a number of other airports are understood to have contributed to raising the profiles of relevant airports.

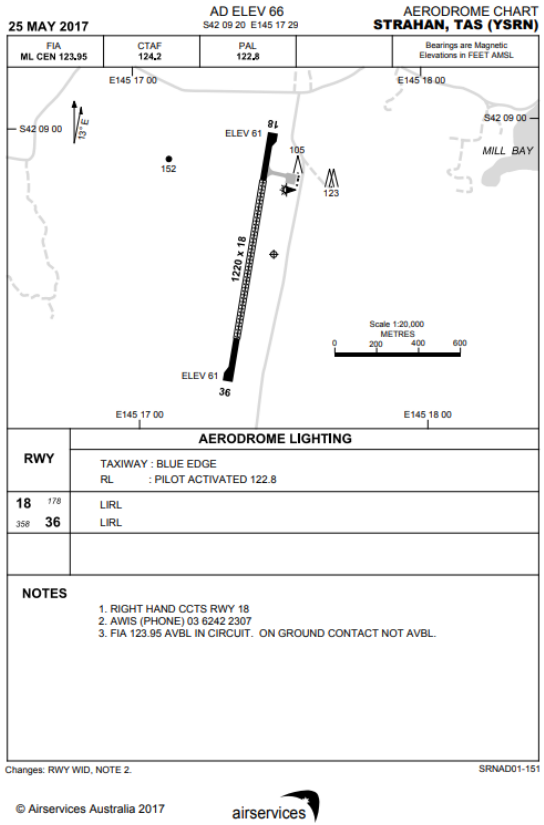
6. Realising the potential of Strahan Airport will not happen in isolation

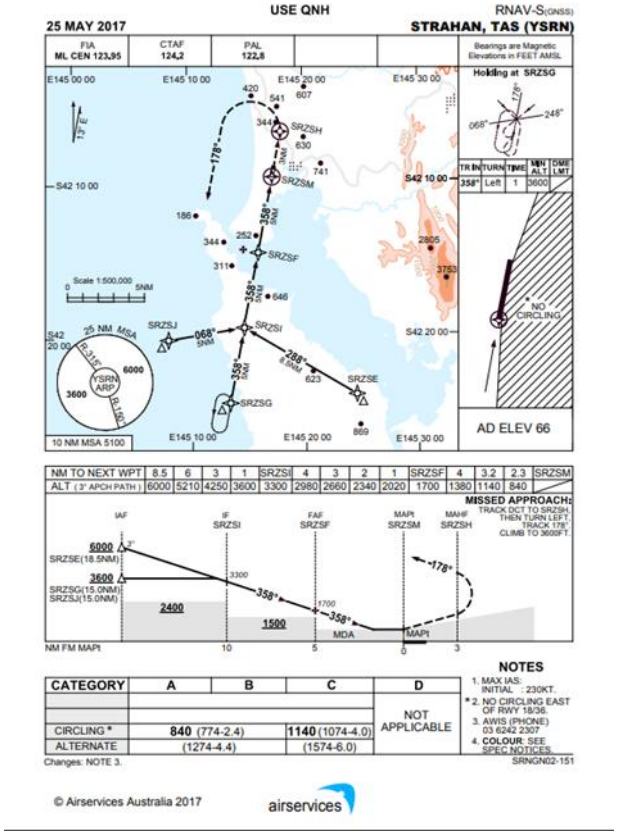
Airport developments are usually not a case of "if you build it, they will come". There are a number of co-dependent factors which must come together to realise the full potential of the Strahan Airport as an asset for the local region and its community, for the West Coast as well as the State. These include:

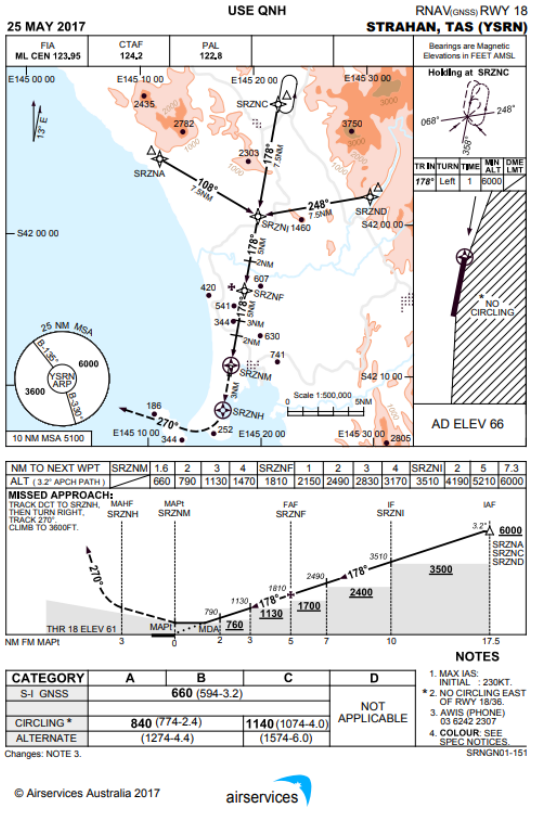
- A coordinated effort by the government agencies at all levels to support the implementation of the West Coast Branding Project and other new tourism initiatives and investments
- Initiatives from local tourism operators to work together and provide a high quality, competitive and unique tourism product in the region
- The resolution of constraints to airport access with the wider region, through taxis and passenger transport for tourism and business travel as well as facilities and equipment necessary to support successful air freight logistics.

Appendix A Aeronautical Information

B.1 Strahan Aerodrome Chart







B.4. Enroute supplement Australia (ERSA) Strahan Airport

STRAHAN **ELEV 66**

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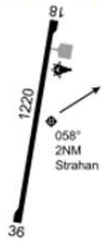

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AD OPR West Coast Council, PO Box 63, Queenstown, TAS, 7467. Email: propertyofficer@westcoast.tas.gov.au. ARO 0427 803 711: 03 6471 4718. Council PH 03 6471 4700.

REMARKS
1. ACFT ABV 5,700KG MTOW - not permitted without prior permission.
2. Rotary ACFT must taxi to designated parking at all times.
3. For all landing fee information visit West Coast Councils website.

PASSENGER FACILITIES
WC (AVBL by request)

METEOROLOGICAL INFORMATION PROVIDED
1. TAF CAT C, METAR/SPECI.
2. AWIS PH 03 6242 2307 - Report faults to BoM.

PHYSICAL CHARACTERISTICS
18/36 178 40a PCN 4 /F /D /450 (65PSI) Gravel. Central 18(60) sealed WID 18 RWS 90
RWY 18/36 transitional SFC infringed on E side up to 1.2M.

AERODROME AND APPROACH LIGHTING
RWY 18/36 LIRL PAL 122.8
RWY edge light spacing: 18/36: 89M.

OTHER LIGHTING
TWY LGT: Blue edge.

ATS COMMUNICATIONS FACILITIES
FIA MELBOURNE CENTRE 123.95 Circuit Area
(1) Pilot monitored

LOCAL TRAFFIC REGULATIONS
1. Right Hand Circuits RQ when OPR on RWY 18.
2. All OPS to be restricted to sealed surfaces EXC on APN.
3. Helicopter takeoff and landing to and FM RWY only and taxi to APN REQ.

CTAF 124.2

ADDITIONAL INFORMATION
1. Wildlife hazards exist.
2. Unsealed areas may be slippery when wet.

CHARTS RELATED TO THE AERODROME
1. WAC 3556.
2. Also refer to AIP Departure & Approach Procedures.

Information may be continued on the next page: PTO

STRAHAN

RWY	(CN)	TORA	TODA	ASDA	LDA
18	(1)	1220 (4003)	1280 (4199) (13.39%)	1220 (4003)	1220 (4003)
36	(1)	1220 (4003)	1280 (4199) (7.02%)	1220 (4003)	1220 (4003)

1. RWY 18/36 transitional SFC infringed on E side up to 1.2M.
2. RWY 36 - Transient OBST up to 12.4FT ABV and 131M N of RWS end is taken into account in the calculation of TODA GRAD and STODA.
Slope Level. RWY WID 18 RWS WID 90

SUPPLEMENTARY TAKEOFF DISTANCES

RWY18-	1130(3707)(1.6)	1157(3796)(1.9)	1176(3858)(2.2)	1191(3907)(2.5)	1218(3996)(3.3)
	1246(4088)(5.0)				
RWY36-	987(3238)(2.2)	1209(3966)(2.5)	1237(4058)(3.3)	1265(4150)(5.0)	

AEROPLANE CHARACTERISTICS							
AEROPLANE TYPE	REF CODE	ARFL (m)	Wing-span (m)	OMGWS (m)	Length (m)	MTOW (Kg)	TP (kPa)
DHC2 Beaver	1A	381	14.6	3.3	10.3	2490	240
Beechcraft :							
58 (Baron)	1A	401	11.5	3.1	9.1	2449	392
100	1A	628	14.0	4.0	12.2	5352	-
Cessna :							
172	1A	272	10.9	2.7	8.2	1066	-
206	1A	274	10.9	2.6	8.6	1639	-
310	1A	518	11.3	3.7	9.7	2359	414
404	1A	721	14.1	4.3	12.1	3810	490
Beechcraft 200	1B	592	16.6	5.6	13.3	5670	735
Cessna :							
208A (Caravan)	1B	296	15.9	3.7	11.5	3310	-
402C	1B	669	13.45	5.6	11.1	3107	490
441	1B	544	15.1	4.6	11.9	4468	665
DHC 6 Twin Otter	1B	695	19.8	4.1	15.8	5670	220
Dornier 228-200	1B	525	17.0	3.6	16.6	5700	-
DHC-7	1C	689	28.4	7.8	24.6	19505	620
DHC-5E	1D	290	29.3	10.2	24.1	22316	-
Lear Jet 28/29	2A	912	13.4	2.5	14.5	6804	793
Beechcraft 1900	2B	1098	16.6	5.8	17.6	7530	-
Embraer EMB 110	2B	1199	15.3	4.9	15.1	5670	586
ATR 42-200	2C	1010	24.6	4.9	22.7	16150	728
Cessna 550	2C	912	15.8	6.0	14.4	6033	700
DHC-8							
100	2C	948	25.9	8.5	22.3	15650	805
300	2C	1122	27.4	8.5	25.7	18642	805

Aerodrome Reference Code				
Code element 1		Code element 2		
Code number	Aeroplane reference field length	Code letter	Wing span	Outer main gear wheel span
1	Less than 800 m	A	Up to but not including 15 m	Up to but not including 4.5 m
2	800 m up to but not including 1200 m	B	15 m up to but not including 24 m	4.5 m up to but not including 6 m
3	1200 m up to but not including 1800 m	C	24 m up to but not including 36 m	6 m up to but not including 9 m
4	1800 m and over	D	36 m up to but not including 52 m	9 m up to but not including 14 m
		E	52 m up to but not including 65 m	9 m up to but not including 14 m
		F	65 m up to but not including 80 m	14 m up to but not including 16 m

Aerodrome reference code	Overall runway strip width
1 or 2	90 m
3 (where the runway width is 30 m)	150 m
3 or 4 (where the runway width is 45 m or more)	300 m

Appendix B Airport Usage Statistics

The following usage summary for Strahan Airport for Year 2017 provides information on the aircraft types, aircraft weights and the number of movements by month for that year.

Usage Summary for Strahan Airport (YSRN) 2017

Aircraft	Usages	Aircraft Description	MTOW Category	Month
7770	1		A-unknown	2017-01
VH-BTI	1	Piper PA-31	D-2000-2999	2017-01
VH-IOV	1	Cessna 208B	E-3000-5699	2017-01
VH-LNZ	1	Amateur LANCAIRLEGACY	C-1000-1999	2017-01
VH-LTQ	3	Hawker Beechcraft Corp B200C	F-5700-14999	2017-01
VH-NNE	1	Cessna 525B	F-5700-14999	2017-01
VH-ODI	1	Beech 200	E-3000-5699	2017-01
VH-PRJ	1	Cessna 172S	C-1000-1999	2017-01
VH-RSQ	1	Kawasaki BK117B-2	E-3000-5699	2017-01
VH-TSA	1	Cessna 182P	C-1000-1999	2017-01
VH-TZY	1	Piper PA-31-350	E-3000-5699	2017-01
VH-ULT	5	Eurocopter AS350B3	D-2000-2999	2017-01
*AM297	1		A-unknown	2017-02
19-7291	1	Jabiru J230	B-1-999	2017-02
24-5333	1	Fpna FoxbatA22	B-1-999	2017-02
24-5564	1	Alpi Pioneer300	B-1-999	2017-02
7929	1		A-unknown	2017-02
CT03	1		A-unknown	2017-02
CT05	1		A-unknown	2017-02
CT12	1		A-unknown	2017-02
N473XP	1	Progressive Aerodyne SearyLSX	B-1-999	2017-02
VH-AEU	1	Pilatus BN2B-26	D-2000-2999	2017-02
VH-BAC	1	Cessna 172S	C-1000-1999	2017-02
VH-BTD	1	Piper PA-31	D-2000-2999	2017-02
VH-BTI	1	Piper PA-31	D-2000-2999	2017-02
VH-CYF	1	Cessna 172S	C-1000-1999	2017-02
VH-DFO	2	Cessna 180G	C-1000-1999	2017-02
VH-DGQ	1	Cessna 182T	C-1000-1999	2017-02
VH-DLM	1	Cessna 180A	C-1000-1999	2017-02
VH-EHN	1	Beech 95-B55	D-2000-2999	2017-02
VH-IDL	1	Cessna 182Q	C-1000-1999	2017-02
VH-IFJ	1	Cessna 182T	C-1000-1999	2017-02
VH-IGB	1	Beech 95-B55	D-2000-2999	2017-02
VH-IGL	1	Piper PA-28R-200	C-1000-1999	2017-02
VH-ITK	1	Piper PA-28-161	C-1000-1999	2017-02
VH-JJP	1	Robinson R44II	C-1000-1999	2017-02
VH-JTK	1	Aerospatiale TB-20	C-1000-1999	2017-02
VH-KSR	1	Cessna 172P	C-1000-1999	2017-02
19-7291	1	Jabiru J230	B-1-999	2017-05
VH-BTD	1	Piper PA-31	D-2000-2999	2017-05
VH-LTQ	1	Hawker Beechcraft Corp B200C	F-5700-14999	2017-05
VH-ULT	1	Eurocopter AS350B3	D-2000-2999	2017-05
VH-ZAT	2	Eurocopter AS350B3	D-2000-2999	2017-05
VH-CCN	2	Cessna 404	E-3000-5699	2017-06
VH-UUI	1	Eurocopter AS350B3	D-2000-2999	2017-06
55-1059	1	Jabiru Jabiru55/3J	B-1-999	2017-07
VH-BTD	2	Piper PA-31	D-2000-2999	2017-07
VH-LTQ	1	Hawker Beechcraft Corp B200C	F-5700-14999	2017-07
VH-MYS	1	Cessna U206G	C-1000-1999	2017-07
24-5333	1	Fpna FoxbatA22	B-1-999	2017-08
VH-BTD	1	Piper PA-31	D-2000-2999	2017-08
VH-LOR	1	Cessna 172P	C-1000-1999	2017-08
VH-MYS	1	Cessna U206G	C-1000-1999	2017-08
5085	1		A-unknown	2017-09
VH-BTI	1	Piper PA-31	D-2000-2999	2017-09
VH-MVW	1	Hawker Beechcraft Corp B200	F-5700-14999	2017-09
VH-UUF	1	Eurocopter AS350B3	D-2000-2999	2017-09
24-7770	1	Aeroprakt A22LSFoxbat	B-1-999	2017-10
7770	1		A-unknown	2017-10
VH-BTI	5	Piper PA-31	D-2000-2999	2017-10
VH-CCN	1	Cessna 404	E-3000-5699	2017-10
VH-EMS	2	Kawasaki BK117B-2	E-3000-5699	2017-10
VH-SUV	1	McDonnell Douglas 369E	C-1000-1999	2017-10
VH-WZM	1	Cessna 404	E-3000-5699	2017-10
VH-LTQ	2	Hawker Beechcraft Corp B200C	F-5700-14999	2017-02
VH-MEU	1	Maule M-5-235C	C-1000-1999	2017-02
VH-MMU	1	Piper PA-28R-201T	C-1000-1999	2017-02
VH-MTL	1	Victa AIRTOURER115	B-1-999	2017-02
VH-OBL	1	Pilatus BN2A-20	D-2000-2999	2017-02
VH-OKY	1	Piper PA-28-181	C-1000-1999	2017-02
VH-PGX	1	Amateur RV-10	C-1000-1999	2017-02
VH-RTP	1	Pilatus BN2A-26	D-2000-2999	2017-02
VH-SUV	1	McDonnell Douglas 369E	C-1000-1999	2017-02
VH-TSR	1	Cessna 172S	C-1000-1999	2017-02
VH-TZY	1	Piper PA-31-350	E-3000-5699	2017-02
VH-ULT	2	Eurocopter AS350B3	D-2000-2999	2017-02
VH-VAP	1	Amateur VANSRV-9A	B-1-999	2017-02
VH-WFD	1	Cirrus Design SR22	C-1000-1999	2017-02
VH-WZM	2	Cessna 404	E-3000-5699	2017-02
*POL73	1		A-unknown	2017-03
N429LP	1	Beech 95-C55	D-2000-2999	2017-03
VH-BTD	1	Piper PA-31	D-2000-2999	2017-03
VH-BTI	3	Piper PA-31	D-2000-2999	2017-03
VH-HAM	2	Cessna 208	E-3000-5699	2017-03
VH-ISS	1	Beech B200	E-3000-5699	2017-03
VH-JJP	3	Robinson R44II	C-1000-1999	2017-03
VH-LCD	1	Cessna U206G	C-1000-1999	2017-03
VH-LNZ	1	Amateur LANCAIRLEGACY	C-1000-1999	2017-03
VH-LOR	2	Cessna 172P	C-1000-1999	2017-03
VH-LTQ	2	Hawker Beechcraft Corp B200C	F-5700-14999	2017-03
VH-MVW	1	Hawker Beechcraft Corp B200	F-5700-14999	2017-03
VH-NNE	1	Cessna 525B	F-5700-14999	2017-03
VH-PRJ	1	Cessna 172S	C-1000-1999	2017-03
VH-TGK	1	Amateur CANADIANHOMEROTORSINCSAFARI	B-1-999	2017-03
VH-WWW	1	Aerospatiale TB-10	C-1000-1999	2017-03
VH-WZM	1	Cessna 404	E-3000-5699	2017-03
VH-ZKK	1	Aerospatiale AS355F1	D-2000-2999	2017-03
VH-BTD	1	Piper PA-31	D-2000-2999	2017-04
VH-BTI	1	Piper PA-31	D-2000-2999	2017-04
VH-IGL	1	Piper PA-28R-200	C-1000-1999	2017-04
VH-LTQ	1	Hawker Beechcraft Corp B200C	F-5700-14999	2017-04
VH-SRJ	1	Cessna 210L	C-1000-1999	2017-04
VH-VJD	1	Dornier DO228-202K	F-5700-14999	2017-04
VH-YJA	1	Aero Commander 680-FL	E-3000-5699	2017-04
*POL72	1		A-unknown	2017-05
55-1059	2	Jabiru Jabiru55/3J	B-1-999	2017-11
VH-AVG	1	Cessna 152	B-1-999	2017-11
VH-BTI	7	Piper PA-31	D-2000-2999	2017-11
VH-EPZ	2	McDonnell Douglas 500N	C-1000-1999	2017-11
VH-IBI	1	Piper PA-31-350	E-3000-5699	2017-11
VH-MSZ	2	Beechcraft B200C	E-3000-5699	2017-11
VH-PIU	1	Pilatus PC-12/47E	E-3000-5699	2017-11
VH-XVH	1	Amateur VANSRV-9A	B-1-999	2017-11
VH-ZUM	1	Piper PA-31-350	E-3000-5699	2017-11
*FBIRD741	1		A-unknown	2017-12
*POL72	1		A-unknown	2017-12
24-8433	1	Topaz KR-030	B-1-999	2017-12
VH-BTD	1	Piper PA-31	D-2000-2999	2017-12
VH-BTI	1	Piper PA-31	D-2000-2999	2017-12
VH-CCN	1	Cessna 404	E-3000-5699	2017-12
VH-FHJ	1	Piper PA-31	D-2000-2999	2017-12
VH-HSM	1	Cessna R172K	C-1000-1999	2017-12
VH-IGL	1	Piper PA-28R-200	C-1000-1999	2017-12
VH-LTQ	2	Hawker Beechcraft Corp B200C	F-5700-14999	2017-12
VH-NJT	1	Aero Commander 685	E-3000-5699	2017-12
VH-PRJ	1	Cessna 172S	C-1000-1999	2017-12
VH-RSQ	1	Kawasaki BK117B-2	E-3000-5699	2017-12
VH-SMW	1	Beech 58	D-2000-2999	2017-12
VH-TJV	1	Ted Smith PA-60-600(AEROSTAR600)	D-2000-2999	2017-12
	Total 164			

		Client:		WCC			
		Project:		Strahan Airport Feasibility Study			
		Number:		v1			
		Cost Plan:		Option 1			
Item No	**Item Name**	**Qty**	**Unit**	**Rate**	**Total**		**Comments**
	AIRSIDE						
A1	Runway	75,375	m^2	$325	$24,496,875		
A2	Runway Strip	168,750	m^2	$25	$4,218,750		
A3	RESA	16,200	m^2	$50	$810,000		2 Coat seal
A4	Gable Markers	30	ea	$245	$7,350		Fibreglass
A5	Taxiway	28,440	m^2	$200	$5,688,000		Triple Coat seal
A6	Apron - High Strength	13,260	m^2	$325	$4,309,500		Triple Coat seal
A7	Apron - Low Strength	-	m^2	$100	$0		2 Coat seal
A8	AGL - Runway & Taxiway	-	ea	$975,000	$0		Medium intensity
A9	Apron Flood Lighting	2	ea	$50,000	$100,000		Triple lamp heads
A10	PAPI & Flight Test	2	ea	$42,500	$85,000		Includes $15K for flight test
A11	IWI	2	ea	$55,000	$110,000		
A12	Drainage	3%	Of sealed area		$1,161,394		Piped under taxiway
A13	Perimeter Road - 4 m wide	-	m^2	$30	$0		Graded gravel
A14	Perimeter Fencing	4,900	m	$100	$490,000		1.8 m triple strand barb (cranked top)
	Sub Total				**$41,476,869**		
	LANDSIDE						
L1	Terminal building	1,172	sm	$3,500	$4,102,000		Remote means high costs
L2	Car Park	1,184	m^2	$75	$88,800		2 Coat seal
L3	Terminal frontage roadway	137	m^2	$75	$10,238		2 Coat seal
L4	Access road & loop	3,740	m^2	$75	$280,500		2 Coat seal
	Sub Total				**$4,481,538**		
	SUPPORT SERVICES						
S1	Stand-by generator	2	ea	$100,000	$200,000		Cross linked for AGL back-up
S2	Generator rooms	2	ea	$50,000	$100,000		Demountable
S3	Water	1	ea	$75,000	$75,000		20,000 litre storage tanks
S4	Sewerage	1	ea	$100,000	$100,000		Package treatment plant
S5	Communications	1	ea	$50,000	$50,000		
	Sub Total				**$525,000**		
	Infrastructure Sub Total				**$46,483,406**		
	CONSULTANT						
C1	Project Management	2.50%			$1,162,085		
C2	Cost Planner	0.75%			$348,626		
C3	Design	4.00%			$1,859,336		
C4	Manuals and Certification	1	ea	$200,000	$200,000		
C5	Environmental	1.50%			$697,251		
C6	Heritage and Cultural	1.00%			$464,834		
C7	Planning	1.50%			$697,251		
C8	Site feature survey	1	ea	$100,000	$100,000		
C9	Site geotechnical investigation	1	ea	$75,000	$75,000		
	Sub Total				**$5,604,383**		
	Project Sub Total				**$52,087,789**		
	Contractors Prelims and margin	10.00%			$5,208,779		
	Project Contingency	20.00%			$10,417,557.89		
	Project Budget				**$67,714,126**		
	Exclusions:	1	Site acquisition costs				
		2	Legal and permit fess				
		3	Bulk site earth works				
		4	Cost of fill or soil removal from site				
		5	Site is assumed to be relatively flat				
		6	Connection to existing services				
		7	Ground Based Navigation Aid				

		Client:		WCC			
		Project:		Strahan Airport Feasibility Study			
		Number:		v1			
		Cost Plan:		Option 2			
Item No	**Item Name**	**Qty**	**Unit**	**Rate**	**Total**		**Comments**
	AIRSIDE						
A1	Runway	86,625	m^2	$325	$28,153,125		
A2	Runway Strip	206,250	m^2	$25	$5,156,250		
A3	RESA	43,200	m^2	$50	$2,160,000		2 Coat seal
A4	Gable Markers	40	ea	$245	$9,800		Fibreglass
A5	Taxiway	29,556	m^2	$200	$5,911,200		Triple Coat seal
A6	Apron - High Strength	25,506	m^2	$325	$8,289,450		Triple Coat seal
A7	Apron - Low Strength	-	m^2	$100	$0		2 Coat seal
A8	AGL - Runway & Taxiway	1	ea	$975,000	$975,000		Medium intensity
A9	Apron Flood Lighting	3	ea	$50,000	$150,000		Triple lamp heads
A10	PAPI & Flight Test	2	ea	$42,500	$85,000		Includes $15K for flight test
A11	IWI	2	ea	$55,000	$110,000		
A12	Drainage	3%	Of sealed area		$1,425,301		Piped under taxiway
A13	Perimeter Road - 4 m wide	-	m^2	$30	$0		Graded gravel
A14	Perimeter Fencing	6,000	m	$100	$600,000		1.8 m triple strand barb (cranked top)
	Sub Total				**$53,025,126**		
	LANDSIDE						
L1	Terminal building (Stage 1 & 2)	3,607	sm	$3,500	$12,624,500		Remote means high costs
L2	Car Park	1,683	m^2	$75	$126,225		2 Coat seal
L3	Terminal frontage roadway	210	m^2	$75	$15,750		2 Coat seal
L4	Access road & loop	3,940	m^2	$75	$295,500		2 Coat seal
	Sub Total				**$13,061,975**		
	SUPPORT SERVICES						
S1	Stand-by generator	2	ea	$100,000	$200,000		Cross linked for AGL back-up
S2	Generator rooms	2	ea	$50,000	$100,000		Demountable
S3	Water	1	ea	$75,000	$75,000		20,000 litre storage tanks
S4	Sewerage	1	ea	$100,000	$100,000		Package treatment plant
S5	Communications	1	ea	$50,000	$50,000		
	Sub Total				**$525,000**		
	Infrastructure Sub Total				**$66,612,101**		
	CONSULTANT						
C1	Project Management	2.50%			$1,665,303		
C2	Cost Planner	0.75%			$499,591		
C3	Design	4.00%			$2,664,484		
C4	Manuals and Certification	1	ea	$200,000	$200,000		
C5	Environmental	1.50%			$999,182		
C6	Heritage and Cultural	1.00%			$666,121		
C7	Planning	1.50%			$999,182		
C8	Site feature survey	1	ea	$100,000	$100,000		
C9	Site geotechnical investigation	1	ea	$75,000	$75,000		
	Sub Total				**$7,868,861**		
	Project Sub Total				**$74,480,962**		
	Contractors Prelims and margin	10.00%			$7,448,096		
	Project Contingency	20.00%			$14,896,192.42		
	Project Budget				**$96,825,251**		
	Exclusions:	1	Site acquisition costs				
		2	Legal and permit fess				
		3	Bulk site earth works				
		4	Cost of fill or soil removal from site				
		5	Site is assumed to be relatively flat				
		6	Connection to existing services				
		7	Ground Based Navigation Aid				

		Client:		WCC			
		Project:		Strahan Airport Feasibility Study			
		Number:		v1			
		Cost Plan:		Option 3			
Item No	**Item Name**	**Qty**	**Unit**	**Rate**	**Total**		**Comments**
	AIRSIDE						
A1	Runway	96,750	m^2	$325	$31,443,750		
A2	Runway Strip	240,000	m^2	$25	$6,000,000		
A3	RESA	43,200	m^2	$50	$2,160,000		2 Coat seal
A4	Gable Markers	45	ea	$245	$11,025		Fibreglass
A5	Taxiway	28,440	m^2	$200	$5,688,000		Triple Coat seal
A6	Apron - High Strength	34,944	m^2	$325	$11,356,800		Triple Coat seal
A7	Apron - Low Strength	-	m^2	$100	$0		2 Coat seal
A8	AGL - Runway & Taxiway	1	ea	$975,000	$975,000		Medium intensity
A9	Apron Flood Lighting	3	ea	$50,000	$150,000		Triple lamp heads
A10	PAPI & Flight Test	2	ea	$42,500	$85,000		Includes $15K for flight test
A11	IWI	3	ea	$55,000	$165,000		
A12	Drainage	3%	Of sealed area		$1,634,657		Piped under taxiway
A13	Perimeter Road - 4 m wide	-	m^2	$30	$0		Graded gravel
A14	Perimeter Fencing	6,600	m	$100	$660,000		1.8 m triple strand barb (cranked top)
	Sub Total				**$60,329,232**		
	LANDSIDE						
L1	Terminal building (Stage 2)	6,909	sm	$3,500	$24,181,500		Remote means high costs
L2	Car Park	2,777	m^2	$75	$208,275		2 Coat seal
L3	Terminal frontage roadway	350	m^2	$75	$26,250		2 Coat seal
L4	Access road & loop	4,140	m^2	$75	$310,500		2 Coat seal
	Sub Total				**$24,726,525**		
	SUPPORT SERVICES						
S1	Stand-by generator	2	ea	$100,000	$200,000		Cross linked for AGL back-up
S2	Generator rooms	2	ea	$50,000	$100,000		Demountable
S3	Water	1	ea	$75,000	$75,000		20,000 litre storage tanks
S4	Sewerage	1	ea	$100,000	$100,000		Package treatment plant
S5	Communications	1	ea	$50,000	$50,000		
	Sub Total				**$525,000**		
	Infrastructure Sub Total				**$85,580,757**		
	CONSULTANT						
C1	Project Management	2.50%			$2,139,519		
C2	Cost Planner	0.75%			$641,856		
C3	Design	4.00%			$3,423,230		
C4	Manuals and Certification	1	ea	$200,000	$200,000		
C5	Environmental	1.50%			$1,283,711		
C6	Heritage and Cultural	1.00%			$855,808		
C7	Planning	1.50%			$1,283,711		
C8	Site feature survey	1	ea	$100,000	$100,000		
C9	Site geotechnical investigation	1	ea	$75,000	$75,000		
	Sub Total				**$10,002,835**		
	Project Sub Total				**$95,583,592**		
	Contractors Prelims and margin	10.00%			$9,558,359		
	Project Contingency	20.00%			$19,116,718.32		
	Project Budget				**$124,258,669**		
	Exclusions:	1	Site acquisition costs				
		2	Legal and permit fess				
		3	Bulk site earth works				
		4	Cost of fill or soil removal from site				
		5	Site is assumed to be relatively flat				
		6	Connection to existing services				
		7	Ground Based Navigation Aid				

Limitation of our work

General use restriction

This report is prepared solely for the use of West Coast Council. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of undertake a feasibility study into the further development of the Strahan Airport into a potential visitor and freight gateway to the Region. You should not refer to or use our name or the advice for any other purpose.

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