

The Highland Council
Skye and Raasay Committee

3 October 2016

Agenda Item	8.
Report No	SR/20/16

Skye Air Services Business Case 2016

Report by Director of Development and Infrastructure

Summary

The purpose of this report is to present the Final Draft Executive Summary of the Skye Air Services Business Case 2016 Report, to seek Committee's views on the findings and to advise that it is intended to present a future report to the Planning Development and Infrastructure Committee.

1 Background

- 1.1 The report has been commissioned through HITRANS (Regional Transport Partnership) as a collaborative study involving Highland Council and Highlands & Islands Enterprise (HIE).
- 1.2 A short presentation will be made to the Committee.
- 1.3 This piece of work follows on from a number of earlier activities including:
 - socio-economic study;
 - dialogue and meeting with the Civil Aviation Authority (CAA);
 - dialogue with Highlands & Islands Airports Ltd (HIAL) relating to airfield technical and operational aspects; and
 - airfield maintenance inspection of the Broadford Airstrip.
- 1.4 The Skye Air Services Business Case Report considers two options for a 771 metre (Code 1C) non-instrument approach airport model using Islander (BN-2B-26) and Twin Otter (DHC-6-300) aircraft.

2 Notable aspects influencing the business case

- 2.1 It is essential to highlight two significant aspects that influence the potential model for the airport and therefore the overall business case for reintroducing scheduled air services to Skye.
- 2.2 The first relates to the development of Global Navigation Satellite System (GNSS) technology which should enable Instrument Approach Procedures (IAP) to be adopted at Skye. IAPs using GNSS will require risk assessment based arguments to be presented to the CAA for their consideration/approval. CAP1122 'Application of Instrument Approach Procedures to Aerodromes without an Instrument Runway and/or Approach Control' was published by the CAA in May 2014. It provides a process for doing this and based on examples established at other airports it is considered reasonable to assume that

agreement can be gained to adopt this pragmatic/risk based approach at Skye. The costs, therefore, of re-opening Broadford Airstrip, are reduced compared to previous options.

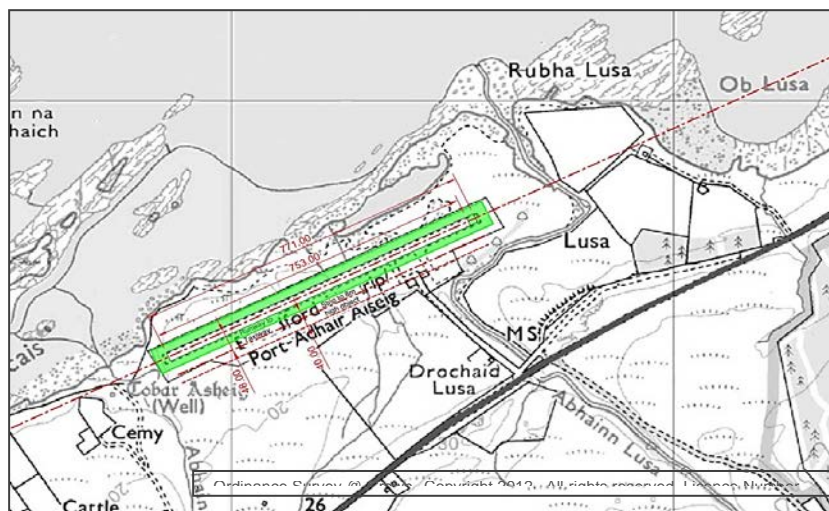
2.3 The second significant aspect concerns new/additional information relating to a broad assessment of the wider socio-economic benefits. This includes four benefit categories: journey time savings; overnight stay savings; Gross Value Added (GVA) impacts; and increased inbound tourist spend. These show an increase in the potential economic benefits of re-opening the airport.

3 Key Findings

3.1 A copy of the Final Draft Report has been issued to Transport Scotland for their review and comment. It is expected that the Final Report will be published once any comments have been received and considered. There is a potential risk that the Benefit Cost Ratio (BCR) values may have to be reviewed.

3.2 The report focuses on two potential options. The key difference between them is the size of the terminal and aprons needed to accommodate the different sized aircraft (Islander and Twin Otter).

Option	Runway	Aircraft
A1	771m Code 1C Non-instrument Approach	aircraft capacity of 9-seats - traffic forecast, PSO subsidy and landing fee data based on the Islander (BN-2B-26) operating services to Glasgow
A2	771m Code 1C Non-instrument Approach	aircraft capacity of 19-seats - traffic forecast, PSO subsidy and landing fee data based on the Twin Otter (DHC-6-300) operating services to Glasgow



3.3 The Final Draft Executive Summary is attached at **Appendix 1**. There are comprehensive figures, over a 30 year period, for Costs: Airport Capital Expenditure, Airport Operational Expenditure and Maintenance, Airline Subsidies and Airport Revenue and Benefits: Travel Time Savings, Overnight Stay Savings, GVA Impacts and Tourism Benefits. The following table presents the data for the two options:

Costs/Benefits over 30 Years				
	Costs		Benefits	
A1	Capex	£3.3m to £4.0m	Journey Time Savings	£8.8m to £12.9m
	Opex	£12.6m to £15.2m	Overnight Stay Savings	£1.9m to £2.7m
	Airline Subsidies	£15.4m	GVA impact	£23.6m
	Airport Revenue	£4.6m	Tourism benefits	£2.6m to £3.8m
	Total	£26.7m to £30.1m	Total	£36.8m to £43.0m
A2	Capex	£4.1m to £5.0m	Journey Time Savings	£10.8m to £15.6m
	Opex	£13.1m to £15.9m	Overnight Stay Savings	£2.2m to £3.2m
	Airline Subsidies	£7.4m	GVA impact	£23.6m
	Airport Revenue	£5.2m	Tourism benefits	£3.1m to £4.4m
		Total	£19.4m to £23.1m	Total

3.4 The following table shows the range of BCR values for the two benefit assessments that have been undertaken. It should be noted that all of the wider benefit BCR values for both options exceed a value of 1.3. Option A2 shows a better BCR range for the more limited benefit evaluation ranging between 0.64 and 0.89, and for the wider benefits of 1.87 to 2.21.

Option	BCR Range Travel and Overnight Stay	BCR Range Wider Benefits
A1	0.38 to 0.55	1.30 to 1.52
A2	0.64 to 0.89	1.87 to 2.21

4 Maintenance Inspection Situation at Broadford Airstrip

4.1 The findings of the maintenance inspection have provided clarification on the scale of works necessary to upgrade the infrastructure for the two options.

4.2 In addition the survey has identified a series of works necessary to safeguard the integrity of the infrastructure and also to address Foreign Object Debris (FOD) risk. The recommended works have an estimated value of £7000. The findings of the maintenance inspection have been shared with Community Services with a view to prepare a suitable programme of works.

5 Summary

- 5.1 The Skye Air Services Business Case Report considers two options for a 771 metre (Code 1C) non-instrument approach airport model using Islander (BN-2B-26) and Twin Otter (DHC-6-300) aircraft.
- 5.2 The wider benefit BCR values for both options exceed a value of 1.3. Option A2 presents the better BCR values for the more limited benefits (travel time and overnight stay savings).
- 5.3 Once the feedback from Transport Scotland has been received the report can be finalised for publication. The full final report, along with options for how the project can be moved forward, will be presented to a future meeting of the Planning Development & Infrastructure Committee (PDI). It is anticipated that dialogue with Hitrans and HIE will continue with a view to engage with Transport Scotland and HIAL.

6 Implications

- 6.1 **Resource**
Community Services will prepare a programme of works for the short term maintenance works.
- 6.2 **Legal**
No implications at this stage
- 6.3 **Equalities**
Provision of air services for Skye and the surrounding area will help to address:
- the need for access to specialist and emergency health services
 - the fragile area status
- 6.4 **Climate Change/Carbon Clever**
Reducing vehicle journeys will be positive.
The level of additional flights to Skye will be an insignificant proportion of the overall number of flights in Scotland.
- 6.5 **Risk**
This project is unaffordable for Highland Council alone. Without Scottish Government intervention there is a substantial risk for the re-introduction of scheduled flights to Skye.
- 6.6 **Gaelic**
The cultural aspect of the area has been recognised as part of the socio-economic benefit. Part of the new upgraded airport could include Gaelic promotion material. Bilingual signs already exist at the aerodrome.
- 6.7 **Rural**
The response to the socio-economic study indicated a substantial desire for flights to Skye with wider benefits to Lochalsh and Wester Ross.

Recommendation

Committee is invited to:

- note the contents of the Final Draft Skye Air Services Business Case 2016 Executive Summary Report (**appendix 1**);
- provide comments on the report findings and support the case for the re-introduction of scheduled air services to Broadford Airstrip; and
- note that a further report will be presented to the PDI Committee in due course.

Designation: Director of Development & Infrastructure

Date: 16 September 2016

Author: Richard Gerring Transport Planning Manager

Background Papers: Held by the author

Skye Air Services Business Case –
2016
Final Draft Issue
31st August 2016



Limitations of Report

In accordance with the terms of reference set out in our agreement with HITRANS, this report documents our findings in relation to the business case update of operating air services at Broadford Airfield, Skye.

This report takes into account the particular requirements of HITRANS, Highland Council and HIE. It was prepared solely for the purpose of providing supporting data to HITRANS, Highland Council and HIE in assessing the feasibility of operating air services to Skye and should not be relied on for any other purposes.

This report is not intended for, and should not be relied on, by any third party and no responsibility is undertaken to any third party.

Executive Summary

Introduction

- This report assesses the business case for developing air services to Skye using the Skye Airport Services Feasibility Study undertaken in 2013 by Arup and RDC as the bases and incorporating additional newly available data. It builds on the early feasibility work, incorporates impacts of navigation technology advances since the last study and develops BCRs for a range of the most promising infrastructure and operational options.
- The main changes incorporated into this study include:
 - Updating the passenger forecasts using new data from the 2013 CAA survey, more up-to-date demand data from comparator HIAL airports and updated regional economic data.
 - A review of CAP1122 'Application of Instrument Approach Procedures to Aerodromes without an Instrument Runway and/or Approach Control', issued by the CAA in May 2014.
 - Development of further variations of the previous infrastructure options, such that they can support the requirements of RNAV approaches.
 - Update of the CAPEX estimates for the various infrastructure options based on RNAV requirements.
 - Updating the CAPEX and airport OPEX estimates using a 2016 cost baseline and benchmarking with works done at other airports where appropriate.
 - Updating the airline commercial analysis and PSO support requirements, including assessing some additional aircraft types.
 - Updating the wider economic benefits analysis based on the recent work carried out by Ekosgen (Economic and Social Benefits of Proposed Air Services at Skye Airport for Highlands and Islands Enterprise, January 2016).



Infrastructure Review

- The airfield infrastructure review undertaken in this study supports the advice previously given to HITRANS, HIE and the Highland Council that the use of GNSS (Global Navigation Satellite System) technology is likely to be highly appropriate to support new scheduled air services to Broadford Aerodrome and could enable Instrument Approach Procedures (IAP) to be adopted.
- The development of IAPs using GNSS will require risk assessment based arguments to be presented to the CAA and their approval sought. The publication of CAP1122 'Application of Instrument Approach Procedures to Aerodromes without an Instrument Runway and/or Approach Control' by the CAA in May 2014 provides a process for doing this and based on precedents' established at other airports it is considered reasonable to assume that agreement can be gained to adopt this approach at Skye.

Executive Summary

- If this is the case, it is likely that the airstrip could be used in its current configuration and approach procedures developed which might achieve a cloud base minima of approximately 500-600ft. It is considered that this will be suitable to allow an experienced operator to run commercially reliable services.
- Investment would be needed in support facilities, such as terminal facilities, aprons, road access and car parking, and the airfield lighting would need upgrading to allow night-time operations.
- This current study focuses on two variants of the 2013 Study Option A and assess the updated costs and benefits of each. The two variants, referred to as Option A.1 and A.2, are based on the existing 771m runway and facilities to support 9-seater and 19-seater aircraft respectively. Key difference are in the size of the terminal and aprons needed to accommodate the different sized aircraft.
- Option A.1 represents the minimum capital investment needed to the existing airfield to accommodate 9-seater (or with CAA approval a 13 seat) aircraft with RNAV and is estimated to be approximately £3.1m to £4.0m.
- Option A.2 represents the minimum capital investment needed to the existing airfield to accommodate 19-seater aircraft with RNAV and is estimated to be approximately £4.1m to £5.0m.
- The study has also reviewed the other options investigated in the 2013 study and considered if there are other more viable options. This review concluded that 2013 Study Options and the two variants of Option A covered the range of options that were most suitable for consideration at Broadford.
- The costs of Options B, C and D from the 2013 Study have been updated and range from £6.1 to £19.1m in 2016 prices. The differences in the transport-user benefits delivered for these options and the Options A.2 variant is minimal as each of them can support air services which can accommodate the projected passenger demand for a service to Glasgow. For this reason, the Client Steering Group has concluded that Options B-D are not currently affordable and do not deliver sufficient additional benefits to warrant continued investigation at this stage.

Traffic Forecast Update

- Updated forecast analysis estimates that the current unconstrained demand for air services from Skye to Glasgow is of the order of 23,800 passengers per annum. This compares to 21,500 passengers per annum estimated in the 2013 Study.
- Twin Otters, Trislanders and Dornier 228, each having a seat capacity of around 19 seats, and the Cessna Grand Caravan has a capacity of 13 passengers in its maximum seat configuration. Each can operate within the 750m length restrictions of the current airstrip, without significant restrictions to payload.
- The Cessna Grand Caravan is a singled engine aircraft and current European legislation does not allow the use of singled engine aircraft for scheduled services at night or in conditions of poor visibility. This legislation is being reviewed and there are indications that this restriction will be relaxed but no change in policy has yet been announced.
- The Let 410 also has a seat capacity of 19 but payload restrictions would mean it could only carry 8-9 passengers on a service to Glasgow using the existing 750m airstrip.

Executive Summary

- Taking into consideration the likely achievable average aircraft load factors, bottom up estimates indicate that traffic forecasts for a 12x weekly service on a 19-seat aircraft to/from Glasgow would be approximately 15,100 passengers per annum.
- Equivalent forecasts for a 21x weekly service on a 9-seat aircraft to/from Glasgow would be approximately 12,700 passengers per annum
- Irrespective of the aircraft size, demand hits its peak in the summer months and a dedicated aircraft may be able to operate additional frequencies and accommodate more passengers during the summer season.
- There is no evidence of substantial willingness to over-pay above the break even fares derived from the airline cost analysis. Therefore there is unlikely to be high potential for 'upside' for airline revenues, limiting the attractiveness for them to invest without a PSO¹ being in place to protect them contractually.
- Whilst PSO is likely to be the preferred model for operators, it's not the only option. Marketing support or some form of risk share may be acceptable to airlines; or the ability to access or apply to some form of centralised funding to support new routes, such as the Regional Air Connectivity Fund. However, the risk of these shorter term funding solutions is that they may not achieve the connectivity objectives, service levels or route frequency guarantees that come with PSO designation.

Commercial Model

- Based on the commercial analysis of airline costs the required break even one-way fare (including 10% profit margin) ranges from £125-£160 for Glasgow services.
- Fares even at the lower end of this range are considered to be slightly higher than the level that passengers might be willing to pay based on benchmark comparisons and the 2013 user survey feedback.
- On this basis, operation of unsubsidised services are likely, at best, to be only marginally viable. It is more likely that assistance, both financially and in terms of marketing and other support, would be needed to attract airlines to establish and maintain regular scheduled air services to Skye.
- Aircraft availability is likely to be an important issue. Operators seek to operate as few different types of aircraft as possible to simplify availability of spares and crew training. There are relatively few operators that have the appropriate equipment for serving Skye Broadford. The potential return (profit) is unlikely to be large enough/attractive enough to warrant obtaining new equipment and therefore the number of potential operators will be limited.

1. PSO – Public Service Obligation. An arrangement where the cost of providing specific air services are subsidised

Executive Summary

Benefit-Cost Analysis

- A range of Benefit / Cost ratio scenarios has been tested for each of Options A.1 and A.2, based on the data derived in the report.
- Option A.1 has terminal and other facilities sized for an aircraft capacity of 9-seats (or with CAA approval a 13 seat) and therefore traffic forecast, PSO subsidy and landing fee data based on the Islander operating 21x weekly services to Glasgow has been used to derive the BCRs for this option.
- Option A.2 can accommodate aircraft up to 19-seats. The BCR assessment for this option has been based on Twin Otter (DHC-6-300) which is considered the aircraft most operators would choose to use on a Skye-Glasgow service.
- All costs and benefits expressed as a Net Present Value (NPV) use a 3.5% discount rate to 2016 prices with a 30 year evaluation period from start of services assumed to be in 2018. Construction costs are assumed to be incurred in 2017.
- Airline subsidies are based on the range of estimates for Islander and Twin Otter series 300 services to Glasgow and cover requirements to support airline operating costs including airport charges.
- Four categories of benefits have been quantified; journey time savings, overnight stay savings, GVA impacts and increased inbound tourist spend. These four benefits have been used to derive a range of BCRs scenarios, which use Base, Upper and Lower estimates for various cost and benefit elements.
- Two sets of BCR scenarios are presented on the following tables, one including only journey time and overnight stay time benefits and a second set which include all four benefit categories.
- The GVA impact as a result of direct employment, support services/functions and supply chain activity have been estimated to create 31 additional FTE's and GVA benefits of £1.3m annually. This is assumed to be the same for both Options A.1 and A.2 as it is considered likely that the same staffing levels would be required to manage and operate the airport in both configurations.
- Tourism benefits, also derived in Section 4.4, are based on the estimate of stimulated visitor spend which is additional for Scotland as a whole. This is only a proportion of the total stimulated visitor spend within Skye and Lochalsh as discussed in the economic appraisal section of the report.

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Benefit-Cost Analysis Option A.1

- Option A.1 has terminal and other facilities sized for an aircraft capacity of 9-seats and therefore traffic forecast, PSO subsidy and landing fee data based on the Islander operating 21x weekly services to Glasgow has been used to derive the BCRs for this option.

Costs	NPV (Discount rate of 3.5% to 2016 over 30 years)		
	Base	Lower	Upper
Airport CAPEX	(£3.6m)	(£3.3m)	(£4.0m)
Airport OPEX and Maintenance	(£13.8m)	(£12.6m)	(£15.2m)
Airline subsidies	(£15.4m)	As Base	As Base
Airport Revenue	£4.6m	As Base	As Base
Total	(£28.3m)	(£26.7m)	(£30.1m)

Benefits	NPV (Discount rate of 3.5% to 2016 over 30 years)		
	Base	Lower	Upper
Journey time savings benefits	£10.8m	£8.8m	£12.9m
Overnight time savings benefits	£2.3m	£1.9m	£2.7m
GVA impact	£23.6	As Base	As Base
Tourism benefits	£3.2m	£2.6m	£3.8m
Total	£39.9m	£36.8m	£43.0m

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Benefit Cost Analysis – Option A.1

Option A.1 Scenarios	Assumptions	BCR Time Saving Benefits only ¹	BCR All Benefits ²
Base	All costs and benefits based on BASE values in tables on previous page.	0.46	1.41
1 - Low CAPEX & O&M	As for Base Scenario but with lower values for CAPEX and O&M cost	0.49	1.49
2 - High CAPEX & O&M	As for Base Scenario but with upper values for CAPEX and O&M cost	0.44	1.33
3 - Low Economic Benefits	As for Base Scenario but with lower values for time saving and tourism benefits.	0.38	1.30
4 - High Economic Benefits	As for Base Scenario but with upper values for time saving and tourism benefits.	0.55	1.52

¹ Includes only Journey Time Saving and Overnight Stay Savings tabulated on previous page

² Includes all four categories of benefit tabulated on the table on previous page

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Benefit-Cost Analysis Option A.2

- Option A.2 has terminal and other facilities sized for an aircraft capacity of 19-seats and therefore traffic forecast, PSO subsidy and landing fee data based on the Twin Otter operating 12x weekly services to Glasgow has been used to derive the BCRs for this option.

Costs	NPV (Discount rate of 3.5% to 2016 over 30 years)		
	Base	Lower	Upper
Airport CAPEX	(£4.6m)	(£4.1m)	(£5.0m)
Airport OPEX and Maintenance	(£14.4m)	(£13.1m)	(£15.9m)
Airline subsidies	(£7.4m)	As Base	As Base
Airport Revenue	£5.2m	As Base	As Base
Total	(£21.2m)	(£19.4m)	(£23.1m)

Benefits	NPV (Discount rate of 3.5% to 2016 over 30 years)		
	Base	Lower	Upper
Journey time savings benefits	£13.2m	£10.8m	£15.6m
Overnight time savings benefits	£2.7m	£2.2m	£3.2m
GVA impact	£23.6	As Base	As Base
Tourism benefits	£3.7m	£3.1m	£4.4m
Total	£43.2m	£39.7m	£46.8m

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Benefit Cost Analysis – Option A.2

Option A.2 Scenarios	Assumptions	BCR Time Saving Benefits only ¹	BCR All Benefits ²
Base	All costs and benefits based on BASE values in tables on previous page.	0.75	2.04
1 - Low CAPEX & O&M	As for Base Scenario but with lower values for CAPEX and O&M cost	0.82	1.87
2 - High CAPEX & O&M	As for Base Scenario but with upper values for CAPEX and O&M cost	0.69	1.87
3 - Low Economic Benefits	As for Base Scenario but with lower values for time saving and tourism benefits.	0.61	1.88
4 - High Economic Benefits	As for Base Scenario but with upper values for time saving and tourism benefits.	0.89	2.21

¹ Includes only Journey Time Saving and Overnight Stay Savings tabulated on previous page

² Includes all four categories of benefit tabulated on the table on previous page