Location Options Appraisal – Highlands & Islands Airports Limited

Final Report for

Highlands and Islands Airports Limited
Puirt-adhair na Gàidhealtachd is nan Eilean Earranta

July 2018
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Disclaimer: EKOS, acting as the lead contractor has prepared an initial scoping study to inform HIAL's decision-making to consider the preferred option in principle for locating the proposed Centralised Surveillance and Remote Tower Centre.

The recommendations identified are based on the robust criteria that was agreed in advance with HIAL to review each shortlisted location and has been informed by a desk based review and wider consultation.

Assumptions and caveats that have informed the assessment have been highlighted and where appropriate, we have advised on the source of the assumptions/caveats and when caution should be adopted when interpreting the data. This includes instances where external consultation has informed the assessment – please note that no individuals have been identified within the report.

Where data has been supplied by HIAL or collected/reported by third parties, this has been checked whenever possible; however EKOS cannot guarantee the accuracy of such data and does not take responsibility for estimates in so far as they are based on such data.

Redactions: A limited amount of information has been amended to allow publication of this report, with some of the presentation data being shown in an aggregated form, and/or redacted where appropriate. This is because the information in the original report is considered exempt from publication. Where data has been aggregated or amended it is indicated in the text. Each amendment has a number showing the classification of redaction, and an explanation of these classifications can be found in **Appendix C** of this report.

Addendum: Please note that additional data has been included at the following sections:

Section 3.3.3: Staff Recruitment, Retention, and Turnover.

Table 3.2 and 3.3 have been updated to reflect further detailed data becoming available with regards to staff recruitment. Table 3.4 has been updated to include a note and provide further clarity on what specific data is being reported against, and what has been excluded.

Section 5.1: Summary of travel times between Airport locations.

Table 5.3 has been updated:

- travel time between Kirkwall and Dundee Airport;
- travel time between Wick John O'Groats and Sumburgh Airport; and
- travel time between Dundee and Sumburgh Airport.


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Contents

1. Introduction

This research study has been prepared by EKOS Ltd on behalf of Highlands & Islands Airports Limited (HIAL) to undertake an external and objective review to consider the preferred option in principle for locating the proposed Centralised Surveillance and Remote Tower Centre.

EKOS, acting as the lead supplier were supported by Ironside Farrar who provided technical, engineering, and environmental specialist consultancy support.

1.1 Study Objectives

The over-arching study objective was to identify a preferred location in principle for development of a Centralised Surveillance and Remote Tower Centre. Specifically the research has:

- provided objective criteria against which the potential locations have been measured;
- engaged with key local stakeholders to ensure they have an opportunity to feed into and inform the research;
- applied objective criteria and undertake initial location appraisals; and
- provided outline recommendations on the preferred location in principle based on the individual site appraisals.

1.2 Study Method

The study approach is summarised below.

Desk based review:

We used a range of desk based sources both publicly available and subscription based to inform the assessment:

- wider location data – demographics, transport, housing, socio-economic profile, property:
    - Business Register and Employment Survey
    - Annual Business Survey
    - Office for National Statistics
    - Scottish Government Statistics
    - Scottish Annual Business Statistics
    - Co-Star property database
    - Transport statistics, from providers
    - Web based searches; and
- technical, operational and environmental data:
    - Coal Authority (mineral stability)
    - British Geological Survey (BGS) (ground conditions)
    - Scottish Natural Heritage (SNH) (environmental designations)
    - Scottish Water (water and drainage installation details)
    - Scottish and Southern Energy (SSE) (electrical power installation details)
    - Scottish Power (SPEN) (electrical power installation details)
    - LineSearch (various utility records, gas pipelines, oil pipelines, telecoms)
    - BT (telecom records)
    - Scottish Environment Protection Agency (SEPA) (flood mapping)
    - HIAL (various on-site records/information).

Consultation:

We adopted a mix method approach to consultation that included workshops, telephone consultations and an online survey. A summary of consultees is provided below:

- online survey with Air Traffic Control (ATC) staff who will be directly affected by the development of a new Centralised Surveillance and Remote Tower Centre;
- workshop with HIAL Senior Management Team to present the emerging research findings and discuss options;
- airport managers across all of the affected airports;
- Enterprise Agencies:
    - Scottish Enterprise
    - Highlands and Islands Enterprise;
- Local Authorities (Dundee, Highland, Orkney Islands, Outer Hebrides); and
- transport bodies.

A copy of those that participated in the research is provided in **Appendix A**.

EKOS would like to express their thanks to the organisations and individuals that contributed to the location options scoping study.

1.3 Reporting Structure

The report contains the following sections:

Section 2: Research Background.

Section 3: HIAL Employment and Future Implications.

Section 4: HIAL Staff and Stakeholder Feedback.

Section 5: Wider Area Profiles.

Section 6: Technical, Operational and Environmental Feasibility.

Section 7: Economic Impacts.

Section 8: Preferred Location and Next Steps.

2. Research Background

This section provides a brief summary of the background to the research, the wider context, the approach to assessing location options, and the caveats and assumptions that underpin the research.

2.1 HIAL's New Strategy

In 2017, HIAL commissioned HELIOS to undertake a technical scoping study to assess the options for Air Navigation Service (ANS) provision at the 11 airports operated by HIAL. The study was used to help develop HIAL's ATM Strategy 2030[1] and the options scoping was informed by a number of both internal and external 'drivers for change' including:

- maintaining lifeline services to remote communities: ensuring that airports remain open and that air navigation services are provided is fundamental to HIAL's mission to create social benefit and economic prosperity by building Scotland's regional airport network of the future;
- continually improving safety: HIAL must meet minimum safety standards but also must strive to continuously improve safety margins;
- complying with regulation: upcoming regulatory changes from the European Aviation Safety Agency (EASA) will require HIAL to introduce controlled airspace at several airports. The timescale and extent of this controlled airspace is not yet known, however this is estimated to be within the next five to ten years;
- remaining financially sustainable: HIAL is expected to reduce its reliance on subsidies and to operate more as a commercial business where revenues as a percentage of total income increase over time; and
- optimising ANS: HIAL must also continue to modernise to be able to support the changing requirements of airspace users, including support for new technical and operational concepts that benefit aircraft, such as the implementation of more direct (time and fuel saving) routes.

[1] A copy of the Strategy can be found here.

The HELIOS study identified the **Centralised Surveillance and Remote Tower Centre** as the preferred option in principle, which comprised the following elements:

- introduction of controlled airspace;
- replacement of standalone Procedural Air Traffic Services with a single Centralised Surveillance Service;
- introduction of Remote Towers Service at 7 airports (with capacity to include further airports); and
- introduction of an Air Traffic Management Centre (ATMC).

The Strategy also identified that implementing the preferred option in principle would be subject to several 'constraints to change', and we have used these constraints as the basis for developing the criteria on which to assess the shortlisted location options.

The constraints to change identified in the ATM Strategy 2030 are:

- addressing the impact on staff: centralising operations from the current airports to a centralised location, will involve significant personal change for ATC staff;
- proving technical and operational feasibility: remote towers can present significant technical challenges specific to the HIAL environments, most obviously the availability of viable communications and power infrastructure;
- achieving stakeholder acceptability: the changes being examined may need to be subject to a level of public scrutiny;
- ability to handle the scale of change: the ability to handle a large-scale change will rely on significant resources and experience. HIAL may therefore be constrained in what is realistically achievable, or at least in how quickly it is achieved.

There are two significant implications for ATC staff under this option:

1. staff may need to upskill and undertake additional training to ensure they achieve the required rating to work within an approach surveillance environment.

2. some staff will need to relocate to a central surveillance centre as their main base of operations.

2.2 Approach to Assessment

In order to ensure a robust and transparent appraisal process, a location assessment framework was designed for gathering and presenting data and information for each of the shortlisted locations.

As highlighted above, the criteria were informed by the 'constraints to change' identified in the HELIOS technical scoping document. The criteria upon which each of the shortlisted locations has been assessed are presented below.

Location Options Appraisal Criteria

1. The impact on staff and implications for retention and recruitment.
2. Staff and stakeholder feedback.
3. The wider location.
4. Technical, operational, and environmental feasibility.
5. Economic impacts.

2.3 Assumptions and Caveats

This study has been prepared as an initial scoping study and as such has been informed by a number of assumptions and caveats. These are considered below and will be subject to future updating and refinement.

1. Short-listed locations options

In order to minimise disruption to staff and services the shortlisted location options have been restricted to the seven HIAL operated ATC airports – either on-site or in close proximity to the airport.

The short-listed locations/sites are: Benbecula; Dundee; Inverness; Kirkwall; Stornoway; Sumburgh; and Wick, see **Figure 2.2** below.

Figure 2.2: Shortlisted Location Options

2. Staffing within the new centre

Based on discussions with HIAL we have identified the number of employees who would be impacted by the new centralised system, see **Table 2.1.**

Based on the high level scoping undertaken by HELIOS, it is estimated that there will be a slight increase in the number of Air Traffic Controllers (ATCOs) – an uplift from 54.5 to 60 ATCOs, although forecast efficiency savings will be implemented over the medium to longer term. We have assumed that the number of students and trainees would remain broadly the same to backfill existing vacancies or act as a contingency.

Table 2.1: Current Employment and Estimated Future Employment

	Air Traffic Controller	Air Traffic Services Assistant	Air Traffic Services Operational Assistant	Student/ Trainee ATCOs	Total	% of total	% of ATCOs
Current Employment Levels, 2018							
Benbecula	6	0	0	0	6	7%	11%
Dundee	7	2	0	0	9	10%	13%
Inverness	16	9	0	1	26	30%	29%
Kirkwall	5.5	1	4	1	11.5	14%	10%
Stornoway	6	0	4	2	12	14%	11%
Sumburgh	9	0	4.5	2	15.5	18%	16%
Wick John O'Groats	5	0	0	1	6	7%	9%
Total employment, 2018	**54.5**	**12**	**12.5**	**6**	**86**		
Estimated employment under the Centralised Surveillance and Remote Tower Centre option							
Total	**60**	**-**	**15**	**6**	**81**		

Source: HIAL

Notes on Table 2.1

1. *Employment data accurate as of June 2018 and the % figures subject to rounding.*
2. *Employment data presented as Full Time Equivalent (FTE) posts, 1 Part Time post = 0.5 FTEs.*
3. *Flight Information Service Officers (FISOs) have not been included within the assessment as there would be no operational requirement for these jobs to be relocated to a central base.*
4. *The estimated number of ATSOAs required within the new surveillance centre (as identified in the HELIOS report) is based on 3 per shift over 4 shifts per day.*

3. HIAL staff recruitment, retention and turnover review period

Where available the research has used the most recent HIAL data and looked at historical performance over a number of years to assess trends. Please note that due to changes in how HIAL gather and report details on staff turnover, data is only available for the period; 2015/16 - 2017/18.

4. Land and building footprint

The capital development of a new Surveillance and Remote Tower Centre will likely be a new build development – this could potentially be within an underutilised site at the airport or a location off the airport, or a redevelopment project.

We have provided an outline of what the new centre is likely to include, summarised below:

- operations room capable of facilitating up to seven controller-working positions (covering the seven HIAL airports), a contingency position and a watch manager's position, and including provision of flexible space to increase capacity by adding a further three to four controller positions over time;
- air traffic engineering equipment room and a separate power supply room;
- training facility including a classroom for up to 10 students;
- simulator room for up to four simulator positions;
- pseudo pilots room for up to four pilots positions;
- briefing/debriefing room;
- library and archives;
- instructors office for up to four instructors;
- management function – suite of offices; and
- staff rooms including rest room, locker room, gym, storeroom, toilets and showers and three bedrooms for winter operations contingency.

Based on the new Air Traffic Management Centre currently under construction at Arlanda Airport, Sweden we have assumed the new centre would be c. 20,000 sq ft over two stories. The site/floorplate requirements are estimated as:

- new build – land requirement estimated as a minimum of one acre; and
- office redevelopment – floorplates of 20,000 sq ft.

5. Wider Area Profiles

Section 5 presents a summary of socio-economic data for each of the short-listed locations and where appropriate (and relevant data is available) this has considered performance over recent years. Due to changes within the reporting of official datasets i.e. frequency, scope, and geographic aggregation, there are some small variations within the timescales assessed. In addition, please note that some data is considered as 'live' and as such no historical data is available.

The area profiles are not intended to act as a detailed baseline or provide Labour Market Information (LMI) but provide a 'snapshot' of each local area to enable its suitability and 'attractiveness' as a location to be assessed.

6. Timescales for project delivery

The initial timescales identified in the HELIOS Technical Scoping Study were outlined as 10 - 15 years for the new service to be rolled out across the seven ATC airports. However, as the technology becomes proven (it is currently being rolled out across Sweden, Norway, and Germany) the timescales for implementation will likely be reduced.

Therefore, the timescales for delivering the new centralised system and phasing are estimated at 8 to 10 years.

7. Technology considerations

The Civil Aviation Authority (CAA) has responsibility for regulating all UK airports to ensure they comply with relevant international and UK safety standards. The proposals for a Centralised Surveillance and Remote Tower Centre (including the availability of communications, power, utilities, security, and resilience, etc) will therefore be subject to CAA regulatory approval.

As a specific site has not been identified at this stage we are unable to undertake a detailed technical assessment.

Nonetheless, in order to provide further intelligence we have undertaken a high level review of capacity at each airport and provided a qualitative review of potential capital expenditure implications against the following indicators; geology and ground conditions, environmental setting, access, power, telecoms, foul drainage, surface water drainage, and gas supply.

8. Relocation costs

The package associated with relocation will need to be developed by the appointed programme team (currently in recruitment) and discussed with the trade unions representing the affected staff - Prospect and Unite.

In addition to this, any package that enhanced the already available relocation package offered by HIAL would also need to be discussed with Scottish Government Pay Policy Unit and may require sign off and approval by Scottish Government HR Remuneration Group.

As the relocation package is still to be agreed we have therefore not included the relocation costs within the assessment.

9. Spatial disaggregation

The wider location profiles and high-level of modelling economic impacts has been based on the wider 'Travel To Work Areas' (TTWA) of HIAL staff. This is generally within a one hour drive time, however, for the ease of exposition, in some instances we have used the wider local authority area.

Appendix B contains maps of the geographic areas covered within the location profiles.

10. Feedback from HIAL employees and stakeholders

The feedback from HIAL employees and stakeholders has been aggregated to ensure anonymity and compliance with Data Protection legislation – the key themes and issues have been presented within the report.

3. HIAL Employment

This section reviews the HIAL staff who will be directly impacted by the implementation of the Centralised Surveillance and Remote Tower Centre, and in particular considers:

- historical trend data on staff recruitment, retention and turnover; and
- current ATC staffing levels and implications under the preferred option in principle.

3.1 Current Staffing

In total there are 86 positions that will likely be impacted by the proposed Centralised Surveillance and Remote Tower Centre. A summary of the current staffing structure is presented in **Table 3.1**.

Table 3.1: Current Staffing – Impacted Roles

	Air Traffic Controller	Air Traffic Services Assistant	Air Traffic Services Operational Assistant	Student/ Trainee ATCOs	Total	% of total	% of ATCOs
Current Employment Levels, 2018							
Benbecula	6	0	0	0	6	7%	11%
Dundee	7	2	0	0	9	10%	13%
Inverness	16	9	0	1	26	30%	29%
Kirkwall	5.5	1	4	1	11.5	14%	10%
Stornoway	6	0	4	2	12	14%	11%
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Total employment, 2018	**54.5**	**12**	**12.5**	**6**	**86**		
Estimated employment under the Centralised Surveillance and Remote Tower Centre option							
Total	**60**	**-**	**15**	**6**	**81**		

Source: HIAL
Note: See **Table 2.1** notes for further detail

In terms of the current geographic breakdown and spread of staff who will be affected, Inverness is the largest location with 30% of all ATC employees likely to be impacted. With their remote location and more limited flight movements, Wick John O'Groats and Benbecula are the smallest airports.

In the main, the staff who will be impacted live within a one-hour drive time of their home airport, although we would note that there are a couple of exceptions where staff commute longer distances.

During the project implementation and subsequent operating period there is likely to be a small uplift (five or six ATCO positions) in employment numbers, however, over the longer term efficiency savings may lead to a reduction in total staff.

It should also be noted that HIAL are currently recruiting a Programme Director and Project Team to support the implementation of the preferred option – these staff have not been considered as part of this scoping research.

3.2 Training and Upskilling

As highlighted above, one of the major implications for ATC staff under the preferred option in principle is the likely need to retrain and upskill, which is considered further below.

The new surveillance centre may require all ATCOs to have a relevant industry rating and validation to operate the surveillance technology under the proposed Centralised Surveillance and Remote Tower Centre option – Approach Surveillance Control (APS) rating. This will be subject to future detailed analysis to establish the most efficient use of resources, including the configuration of the operations room and the associated rostering.

Inverness Airport is the only airport operated by HIAL that provides an approach radar service and therefore all ATCO's currently working within Inverness have an APS validation[2].

[2] HIAL contracts NATS to provide an Approach Radar Service for Sumburgh Airport, which has Class D controlled airspace, from the NATS centre at Aberdeen.

In contrast, the majority of ATCOs based at the other six airports have either an Approach Control Procedural (APP) and/or Aerodrome Control Instrument (ADI) validation and would require to undertake further training to obtain an APS validation.

Currently there is only one UK CAA approved provider of APP rating training in the UK, Global ATS based in Cheltenham. Based on discussions within HIAL we have estimated the training requirements for ATCOs:

- ATCOs with an APP or ADI rating would be required to retrain/upskill to obtain a relevant APS rating/validation. The time and costs per employee for this are estimated as: 10 - 12 week course at a total cost of £22,000 – £25,000 (inclusive of residential fees and expenses);
- ATCOs with an APS rating would be required to undergo conversion training to ensure their validation was suitable to operate the new surveillance technology under the proposed Centralised Surveillance and Remote Tower Centre option. The time is estimated as: 2 week course which will likely be delivered in-house; and
- Ab-initio student (new student to full APS rating) - the time and costs for this initial phase of training are estimated as: 28 week course at a total cost of £56,000+ (inclusive of residential fees and expenses). Students who successfully achieve ADI and APS rating at the end of college training would then have to complete between six to nine months unit training in order to obtain validations.

ATCOs need to undertake significant and intense levels of training to obtain relevant ratings and validation, it is therefore reasonable to assume that there may be some level of attrition with regards to existing staff successfully completing the training and gaining the relevant rating/validation to operate within the approach surveillance control environment. Based on discussions with HIAL, the proportion of ATCOs obtaining the required rating and becoming validated is estimated at:

- ATCOs with an ADI/APP rating successfully validating on APS: 70% to 75%;
- ATCOs with an APS rating successfully upskilling and becoming validated: 90 to 95%; and
- Ab-initio students successfully validating on ADI/APP: 80% (based on trend performance data).

3.3 Staff Recruitment, Retention, and Turnover

Data provided by HIAL on staff recruitment is presented below in **Table 3.2**.

Table 3.2: ATCO and Ab-initio ATCO Recruitment, 2012/13 – 2018/19 (Data has been redacted (1)

	No. positions available – advertised externally		Inter-unit transfer	No. of positions recruited		In Training		No. of positions that validated	
	ATCO	Ab Initio ATCO	ATCO	ATCO	Ab Initio ATCO	ATCO	Ab Initio ATCO	ATCO	Ab Initio ATCO
Benbecula									
Dundee									
Inverness									
Kirkwall									
Stornoway									
Sumburgh									
Wick									
Contingency cover									
Total	**34**	**19**	**7**	**33**	**17**	**2**	**6**	**20**	**8**

Source: HIAL

Notes on Table 3.2

1. *Data covers the period 1st April 2012 to 31st May 2018.*
2. *'contingency cover'* – One ab-initio recruited as contingency but left the company after college
3. *'In training' considered as those at college or undertaking unit training*

Table 3.3: ATCO and Ab-initio ATCO Recruitment, 2012/13 – 2018/19 (FURTHER ANALYSIS)

	Positions validated as % of those recruited			Positions validated as % of those being sought		
	ATCO	Ab Initio ATCO	**Total**	ATCO	Ab Initio ATCO	**Total**
Benbecula	-	100%	**100%**	-	100%	**100%**
Dundee	100%	-	**100%**	100%	-	**100%**
Inverness	82%	-	**82%**	82%	-	**82%**
Kirkwall	50%	100%	**60%**	29%	50%	**33%**
Stornoway	17%	67%	**33%**	14%	50%	**27%**
Sumburgh	100%	50%	**83%**	67%	50%	**63%**
Wick John O'Groats	50%	100%	**67%**	33%	100%	**50%**
Contingency cover	-	-	**-**	-	-	**-**
Total	65%	73%	**67%**	51%	62%	**54%**

Source: HIAL

Notes on Table 3.3

1. *the % above exclude those ATCO's and Ab Initio ATCO's that are currently in training – either at college or completing unit training*
2. *the* 'Positions validated as % of those being sought' *includes positions that were both externally advertised and internal transfers*

As the data above suggests and alongside wider feedback from the sector, there is a shortage of suitably skilled and qualified ATC staff within the UK and across Europe more generally.

Through both their internal and external recruitment drives HIAL have experienced challenges with the quality/suitability of applications and candidates, with a notable proportion not possessing the minimum requirements.

Table 3.2 shows that across the company HIAL have recruited for a combined total of 50 ATCO and Ab-initio ATCO positions (out of a total 60 positions where a candidate was sought either through external or internal channels (83% success rate) .This ranges from 60% at Kirkwall to 100% in Benbecula, Dundee and Inverness.

However, when we dig beneath the data to look at those ATCOs/Ab-initio ATCOs that complete the training and subsequently become validated (see **Table 3.3**), the success rate drops notably.

If we consider the "success" of HIAL's recruitment over the five to six year period as the proportion of candidates that become validated, set against the number of positions that were being sought (advertised externally and internal transfers), just over half (54%) have successfully validated.

Employment levels at Benbecula and Dundee have been stable and have had relatively modest recruitment requirements (one Ab-initio ATCO at Benbecula and two ATCOs, and one Ab-initio ATCO at Dundee, respectively) and these positons were successfully filled (100% success rate across both locations).

As the fastest growing airport, Inverness has had a requirement to recruit 13 ATCOs, with nine of the positions being successfully filled and two are still in training (82% success rate).

A big challenge for the islands and more remote locations is the quality of the applications and candidates. Stornoway, Kirkwall and Wick John O'Groats have all faced notable challenges with recruitment – the success rate for filling a vacant ATCO position with the candidate then becoming validated ranges from just 27% in Stornoway, to 50% in Wick John O'Groats.

While there is intensive competition to retain and recruit skilled and suitably qualified ATCOs across the sector, HIAL have also experienced notable challenges in recruiting for vacant positions. These staffing challenges are highlighted as a key driver for the strategic closures, reduced services or extension refusals across HIAL operated airports, see **Table 3.4**.

Table 3.4: Number of Strategic Closures, Reduced Services or Extension Refusals as a Result of ATS Resource Related Issues

Airport	Number of strategic closures, reduced services or extension refusals as a result of ATS resource related issues				
	2013	**2014**	**2015**	**2016**	**2017**
Benbecula					
Dundee					
Inverness					
Kirkwall	12	8	1	4	
Stornoway	147	175	37	46	28
Sumburgh	0	2	1	0	
Wick John O'Groats	22	9	72	19	40

Source: HIAL Data, table extracted from the HELIOS, Air Traffic Management 2030 Strategy: Scoping Study

Notes on Table 3.3

Note 1: Benbecula - no extension refusals recorded.

Note 2: Dundee - no strategic closures, no withdrawal of services and extension refusals due to ATS availability are rare (perhaps 1 or 2).

Note 3: Inverness - Airport closures have been rare from 2013 (approximately 3 closures on a tactical basis with no operational impact). Radar closures on the other hand (tactical with reversion to APP) occur approximately ten times per year due mainly to short notice staff sickness or, in the case of 2014 due to staff shortages at Stornoway that required Inverness to provide support and in turn resulted in 3 radar closures. Radar opening hours were also impacted by the introduction of a night shift in 2010 to cover mail flights out of hours

Table 3.5 considers staff turnover levels over the past few years.

Table 3.5: Staff Turnover Levels, 2015/16 – 2017/18

	2015/16	2016/17	2017/18
	Annual staff turnover	Annual staff turnover	Annual staff turnover
Benbecula	0%	0%	0%
Dundee	0%	0%	22%
Inverness	0%	3%	0%
Kirkwall	0%	0%	22%
Stornoway	8%	8%	9%
Sumburgh	0%	8%	6%
Wick	13%	17%	14%
Total	**2.4%**	**4.4%**	**9.1%**

Source: HIAL

Notes on Table 3.5:

1. *Redacted (1)*
2. *Staff turnover is measured against the following positions: ATCO, Trainee ATCO, Student ATCO, ATSOA, ATSA*
3. *Annual staff turnover considered as the number of leavers set against the average number of staff employed in that year*

While the absolute numbers are relatively small, there has been an increasing annual staff turnover rate, 2.4% in 2015/16 to 9.1% in 2017/18 – representing a three-year average staff turnover rate of 5.3%. In comparison, the average staff turnover rate for other Air Navigation Service Provider (ANSPs) is 3.24%[3]

Further detail on the positon/role of leavers is presented below:

Redacted (1)

Feedback suggests that location does play a role in HIAL's ability to attract and retain suitably skilled and experienced staff, nonetheless it is not the only driver for this. For example, it was noted that there is a worldwide demand for ATC staff and as a result this is artificially driving up salary levels amongst other service providers who are offering remuneration and reward package that HIAL is often unable to compete with.

[3] A summary of the Global ANS Performance Report can be found here.

In addition, the size of some airports and deployment of technology is another factor that potentially limits the opportunity for career progression. The technology and systems being utilised at Benbecula, Dundee, Kirkwall, Stornoway, Sumburgh, and Wick John O'Groats is non-surveillance, procedural approach (APP) and this limits the opportunity for career progression. APP is no longer viewed as the primary method for controlling air traffic and as such it is becoming increasingly difficult to both source rated APP controllers and APP training for non-rated controllers.

3.4 Key Challenges for HIAL

Based on the initial scoping, there are three key staffing challenges that HIAL will need to address in implementing the new Centralised Surveillance and Remote Tower Centre option.

1. Retaining a core staff.
2. Attracting new qualified ATCOs.
3. Pipeline of new staff – attracting new people (including young people) into the sector and creating a training legacy.

As highlighted above, the project implementation period is estimated at eight to 10 years and during this period there will likely be a level of staff turnover or 'churn' within HIAL. This includes those retiring, those that are not able or willing to retrain/upskill, those that are not able or willing to relocate to a new central base, and those that leave the organisation.

If we assume a pro rata annual staff turnover rate as the baseline for 2015/16 – 2017/18 (average annual staff turnover of 5.3%), this indicates an estimated potential loss of 30 to 40 staff over a 10 year implementation period. It should be noted that this estimate does not include those staff that are not able or willing to retrain/upskill or to relocate to a new central base and therefore likely understates the impact upon staffing.

It is therefore crucial that the location option appraisal supports HIAL to retain a core staff and also to recruit new staff who have the required skills, qualifications and rating/validation to operate within an approach surveillance control environment.

Further, the recruitment challenges point to HIAL adopting a longer term strategic approach to development and recruitment – whether through the Ab-initio route (where they have had previous success) or by creating some form of 'HIAL qualification' in partnership with a Higher/Further Education institution or a specialist training provider.

The UHI Inverness Campus currently offers a BSc Honours in Air Traffic Management. However, this is targeted at validated ATCOs who hold an EU340 compliant ATCO license with a minimum of two ratings. There is therefore potential demand/opportunity to create some form of Apprenticeship scheme or training to help attract and develop a pipeline of new talent into the sector.

4. HIAL Staff and Stakeholder Feedback

This section provides a summary of the consultation programme that was undertaken between April and June 2018 and includes:

- analysis of the feedback provided by the staff likely to be affected through the initial scoping consultation exercise[4]; and
- analysis of the feedback provided by stakeholders.

4.1 HIAL Staff

A crucial element of the study was to engage with staff who will be affected by the Centralised Surveillance and Remote Tower Centre option. An online survey was issued to ATCs, ATSAs and ATSOAs in April 2018. A total of 42 responses were received, representing a response rate of 53%.

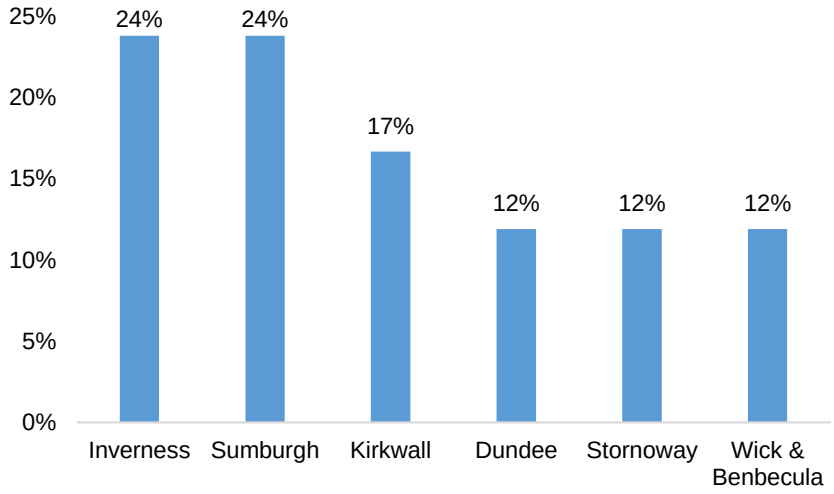
It should be noted that the consultation was relatively high level and is the first stage in an ongoing engagement process. That being said, it has been a useful exercise to inform the initial location scoping.

Respondent Profile

The respondent profile is broadly representative of the geographic base of staff that will be affected, with Inverness having the greatest proportion of staff and Benbecula and Wick John O'Groats the smaller airports.

[4] Please note that some data within this section has been aggregated or redacted as it is considered 'disclosive' and exempt from publication.

Figure 4.1: Location of Respondents



N=42

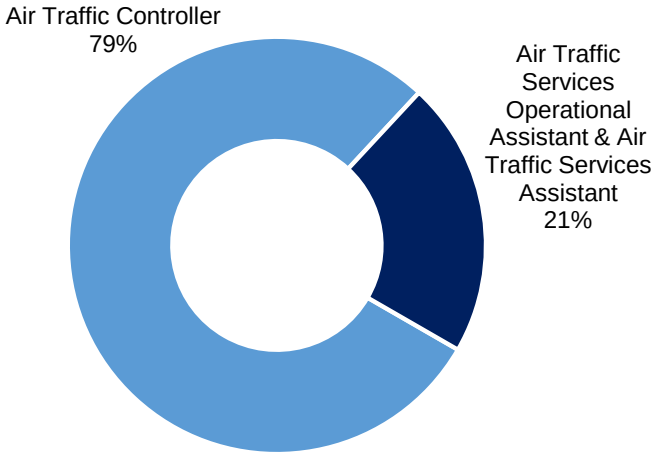
Note: Redacted (1)

Exactly half of respondents moved to the area to take up their current jobs with HIAL, with half living in the area already. This is potentially indicative of the challenges HIAL face in recruiting skilled and experienced ATC staff (i.e. a reliance on 'in-migration' to the region).

Of those who relocated to their current location, 10 respondents (48%) are from within a location in the H&I and the remaining 11 (52%) come from outwith the region.

Anecdotally, as half of the affected staff are from the local area this potentially presents additional challenges for relocating staff with many having longstanding ties and connections to the local area.

Figure 4.2: Occupation of Respondents



N=42

Note: Redacted (1)

Four out of every five respondents (79%) are ATCOs or SATCOs. This is an over-representation of ATCOs which make-up 69% of all affected HIAL employees).

Table 4.1 below reports the number of responses by age band, which is weighted towards those aged over 35 – unsurprising given the senior role of ATCOs and is broadly reflective of the age profile across HIAL.

Table 4.1: Age of Respondents by Workplace

Age band	18-34	35-44	45-64
No. of respondents	10	13	18

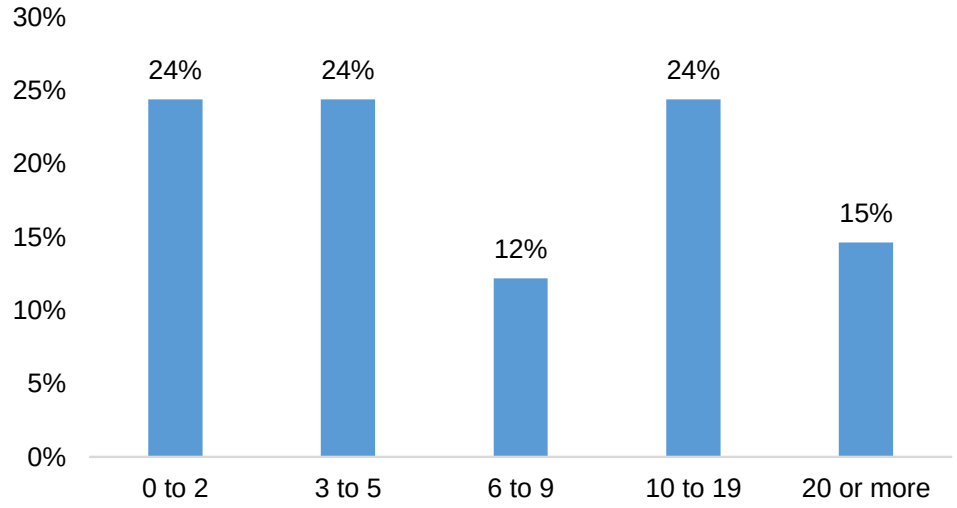
N=41
Note: Redacted (1)

Residential Status

Nearly all respondents (90%) reported that they own their houses, either with a mortgage or outright.

Just over half the respondents (51%) have lived at their current addresses for 6 years or more, with 40% residing there for 10+ years, see **Figure 4.3**.

Figure 4.3: Years at Address



N=39

Spouse/Partner and Children

The majority of respondents are married and/or living with their partner (88%), with nearly all spouses/partners working full time or part time.

This will likely have an influence on relocation decisions as it would be reasonable to expect that spouses/partners would look to continue within the labour market in some capacity should they be required to relocate.

Partners work in a variety of sectors, although with a clustering in the public sector (a major sector of employment in all seven areas, but particularly the more fragile/remote communities and transport, the sector in which all respondents are employed).

Table 4.2: Sector of Employment of Partner/Spouse

Sector of employment	%
Education, health & public sector	42%
Transport and storage	19%
Professional services, business, communications & finance	19%
Other, including construction and primary industries	19%
Total	**100%**

N=31
Note: Redacted (1)

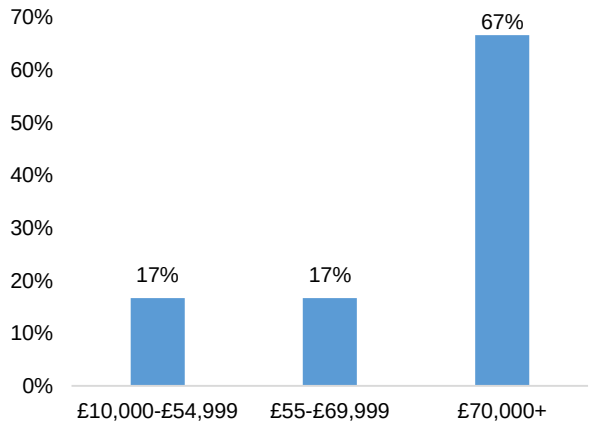
Just under two-fifths (39%) reported that they had children (under 16) who attend local schools.

Household Income

Figure 4.4 shows the breakdown of respondents' salaries and their total household income.

Figure 4.4a: HIAL Salary

Figure 4.4b: Total Household Income



N= 33 / 30. Note 1: It is unclear from the data received whether respondents provided data regarding their salaries or their salaries + additional allowances e.g. overtime and shift working
Note: Redacted (1)

The income data shows that around two-thirds of the respondents receive an income of £40,000+ and that the HIAL salaries represent a notable proportion of household income.

Qualifications

Respondents were asked for their highest level of existing qualification, with 38% qualified to Higher/National 5 level and 35% to undergraduate or postgraduate degree level.

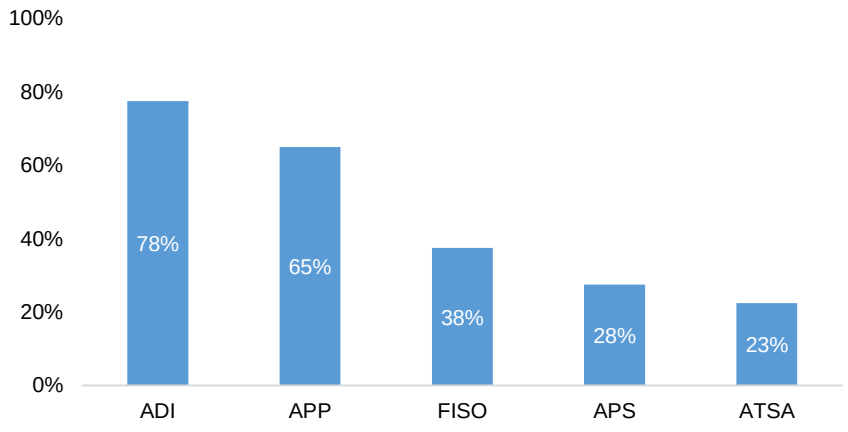
Table 4.3: Qualifications

Level of qualification	%
Higher grade/National 5 or equivalent	38%
HNC/HND or SVQ or equivalent	27%
Degree or postgraduate degree	35%
Total	**100%**

N=37
Note: Redacted (1)

For industry level qualifications, 78% hold an ADI rating and two-thirds have an APP rating.

Figure 4.5: Industry Qualifications



N=40

Project Implementation

Following on from the HELIOS research, as highlighted in **Section 2.1** there are two significant implications for ATC staff as a result of implementing the Centralised Surveillance and Remote Tower Centre option.

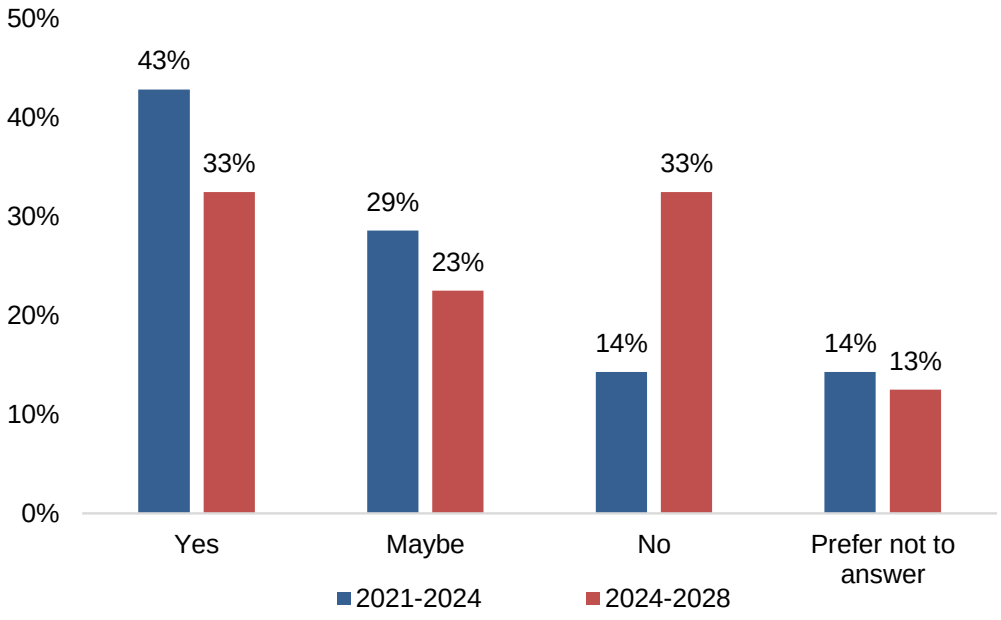
1) Upskilling and retraining – staff with an ADI/APP rating may be required to gain accredited APS rating, while those with an APS rating will undertake conversion training.

2. Relocation to a centralised location (either permanently, temporarily or on a commuting basis).

Respondents were asked if they would be interested/willing to retrain and develop their skills base to acquire additional ratings and validation that would allow them to continue their current role with HIAL and work within a new Surveillance Centre. As the phasing for the implementation has not been agreed, respondents were asked to consider their responses over two timescales; 2021 - 2024 and 2024 - 2028.

A majority of respondents indicated that they would “yes” or would “maybe” be willing to retrain over the short term, 2021 - 2024 (71%). This dropped to 55% over the longer timeframe, influenced by those within the older age brackets (aged 45+) i.e. those within this age bracket were less likely to indicate a willingness to retrain.

Figure 4.6: Willingness to Retrain



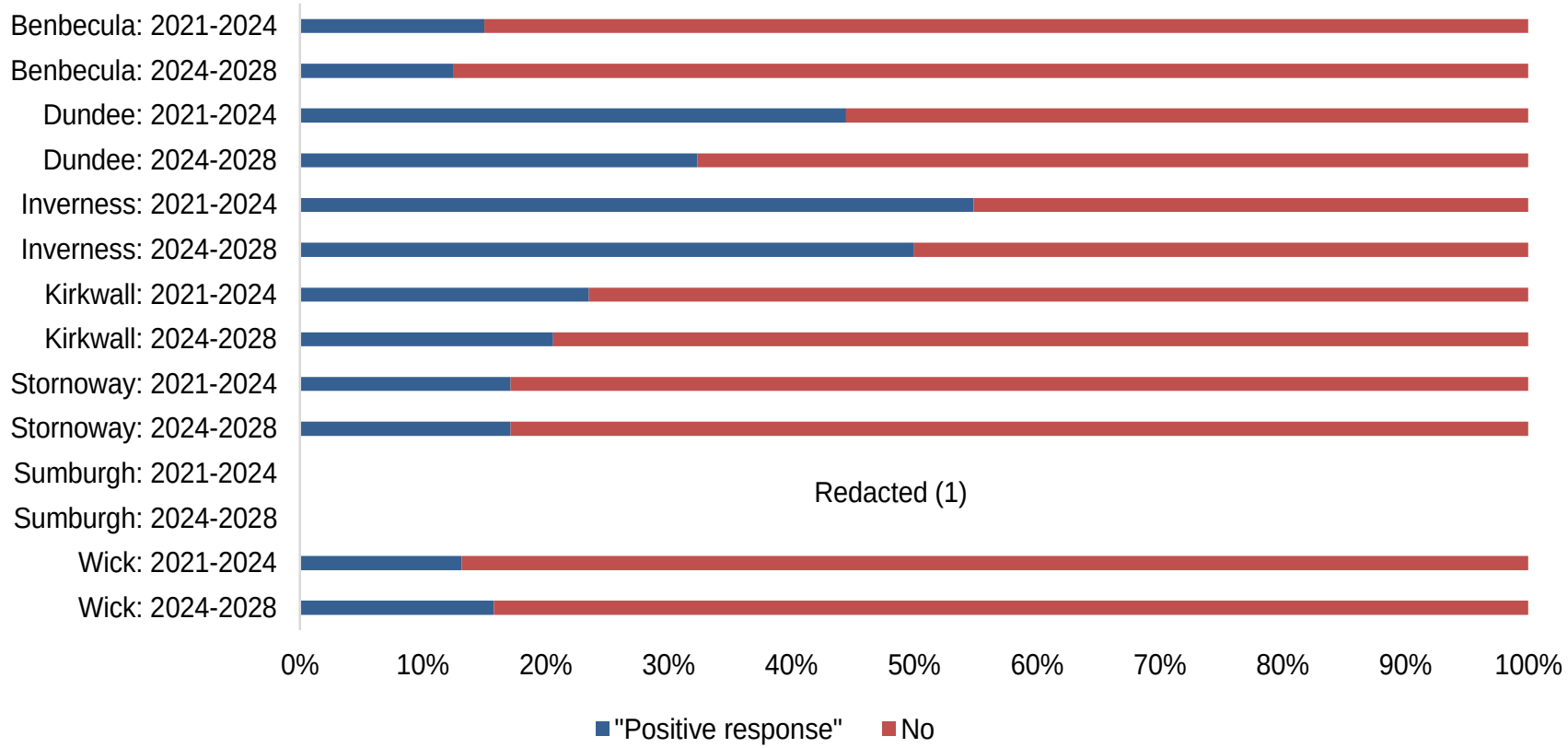
N= 42 / 40

In order to get a clearer sense on the viability of the shortlisted options, respondents were asked to identify which of the other six airports they would be willing to/or would consider relocating to, again considered over two time periods. The results are presented below in **Figure 4.7**, which shows the proportion with a "positive response" to each location.[5]

Note on data: Respondents were not able to select their current locations, which is reflected in the different number of responses (N) against each location.

[5] Positive response considered as those indicating that they would "yes", or would "maybe" consider relocating.

Figure 4.7: Willingness to Relocate by Location



Benbecula: 2021-2024, N=40; Benbecula: 2024-2028, N=40; Dundee: 2021-2024, N=36; Dundee: 2024-2028, N=34; Inverness: 2021-2024, N=31; Inverness: 2024-2028, N=30; Kirkwall: 2021-2024, N=34; Kirkwall: 2024-2028, N=34; Stornoway: 2021-2024 N=35; Stornoway: 2024-2028; N=35, Sumburgh: 2021-2024, N=30; Sumburgh: 2024-2028, N=30; Wick: 2021-2024, N=38; Wick: 2024-2028, N=38

Note: Redacted (1) where the absolute number of respondents was less than five then this data has been redacted.

As highlighted above, the online survey is the first stage in an ongoing process of staff engagement and therefore we would caveat the responses by highlighting that respondent's raised numerous issues that will influence their decision-making, including:

- family situations and wider considerations (e.g. if they have a house with a mortgage, children finishing school, caring for a relative, etc);
- timescales for relocation; and
- financial and support packages offered to relocate.

As to be expected there is a broad mix of responses, nonetheless, the initial scoping exercise has provided some insight into which locations might be more feasible and where there may be greater challenges and constraints for relocating staff.

Table 4.4 provides a summary of the locations where respondents indicated a "positive" response.

Table 4.4: Willingness to Relocate by Location – "positive responses"

Location + timescale	"Positive response"	No
Benbecula: 2021-2024	15%	85%
Benbecula: 2024-2028	13%	88%
Dundee: 2021-2024	44%	56%
Dundee: 2024-2028	32%	68%
Inverness: 2021-2024	55%	45%
Inverness: 2024-2028	50%	50%
Kirkwall: 2021-2024	24%	76%
Kirkwall: 2024-2028	21%	79%
Stornoway: 2021-2024	17%	83%
Stornoway: 2024-2028	17%	83%
Sumburgh: 2021-2024	Redacted (1)	
Sumburgh: 2024-2028	Redacted (1)	
Wick: 2021-2024	13%	87%
Wick: 2024-2028	16%	84%

Note: Redacted (1) where the absolute number of respondents was less than five then this data has been redacted.

The feedback identifies that Inverness received a “positive” response from 55% over the 2021 - 2024 timescale and 50% over the longer term (2014 - 2028). Dundee also received a higher proportion of positive responses over the shorter term with 44% responding “yes” or “maybe”.

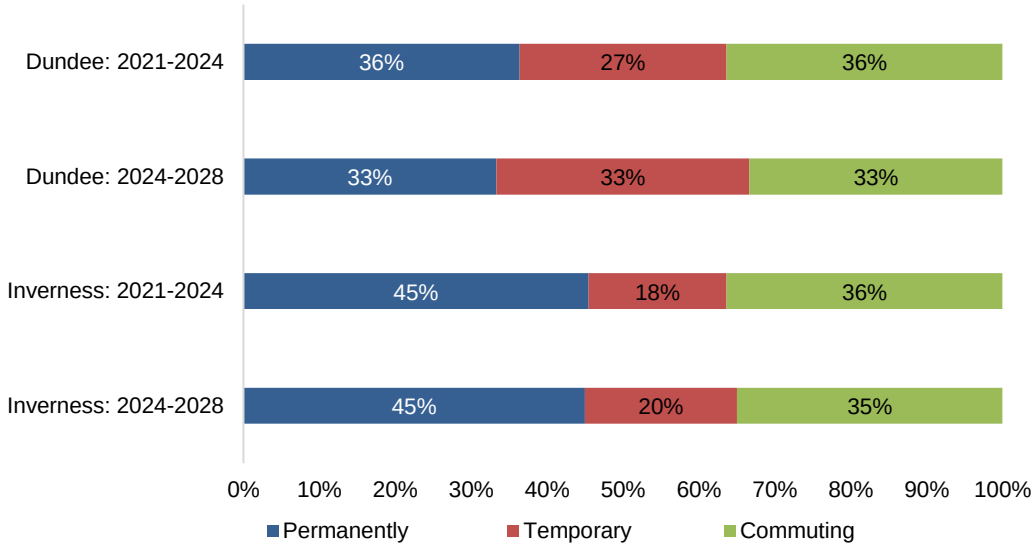
Over 80% of the sample indicated that they would be unwilling/unable to relocate to Benbecula, Stornoway, Sumburgh, and Wick John O’Groats over both the short and longer term timescales.

Respondents were given the opportunity to provide some further detail to their responses, as to be expected this was varied, however, the key themes and messages include:

- remoteness of some locations was a notable factor in respondents indicating they would be unwilling to relocate;
- moving from an island or remote location to the mainland cities – the cost of equivalent housing could be a challenge;
- availability of employment opportunities in the local labour market for spouses/partners is a factor that will influence decision-making;
- relocation on a temporary or commuting basis could be feasible, however, the cost of transport and accommodation may be prohibitive – also the distance from family and friends (wider support network); and
- some respondents would be unwilling to relocate to any location outwith their home airport for a variety of personal reasons.

Respondents were then asked on what basis they would consider relocating, see **Figure 4.8** below which provides feedback for the two locations that received the greatest proportion of “positive responses” - Dundee and Inverness.

Figure 4.8: Basis on Which Respondents Would Relocate



Dundee: 2021-2024, N=22; Dundee: 2024-2028, N=18; Inverness: 2021-2024, N=22; Inverness: 2024-2028, N=20

Note: Redacted (1) where the absolute number of respondents was less than five then this data has been redacted.

Some key points to note include:

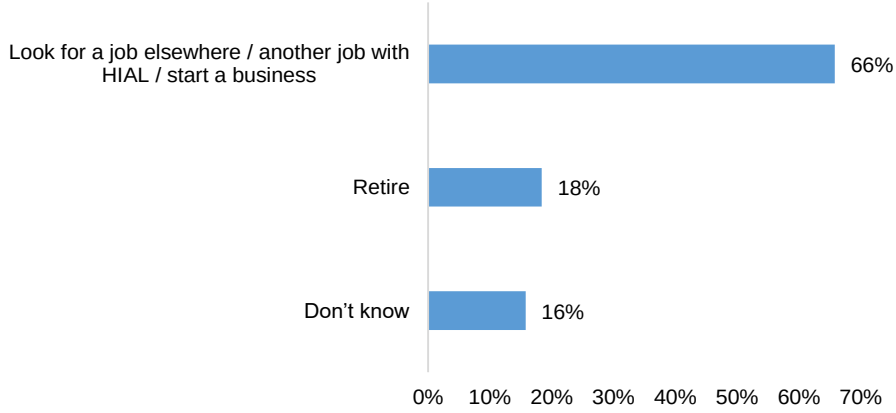
- as the location option that received the highest proportion of "positive" responses, two out of five respondents (41% - 42%) indicated that they would consider relocating to Inverness on a permanent basis, and one-third would prefer to commute (over both the short and longer term timescale);
- the responses for Dundee were broadly split equally with one-third indicating their preference to relocate on a permanent, temporary or commuting basis, respectively; and
- while the data for Benbecula, Kirkwall, Stornoway, Sumburgh and Wick has been redacted, the majority indicated that they would only consider relocating on a commuting basis.

The potential to implement a shift pattern that would enable commuting opportunities for staff is still at an early stage, however, based on responses there would appear to be potential demand for this. **Section 5** provides details on the accessibility and transport connections for each location.

Alternative to Relocation

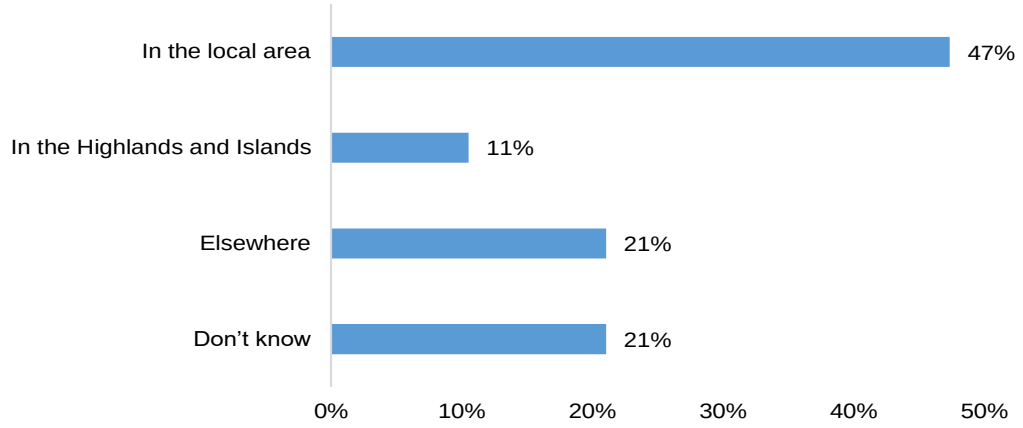
All respondents were asked what they would be most likely to do if they would not consider relocating. Two thirds reported that they would look to stay active in the labour market (look for another job with HIAL, look for a job elsewhere, or start their own business) and around one in five would consider retiring, see **Figure 4.9**.

Figure 4.9: Alternative to Relocation



N= 38
Note: Redacted (1)

Figure 4.10: Anticipated Location if Not Relocating



N= 38

Just under half (47%) expect this to take place in or around their current location. The responses indicate a desire to stay situated within the local area (if not relocating), and therefore potentially the need for some form of forward planning and collaboration between the Enterprise Agencies and Local Authorities to support those employees who do not wish to relocate.

4.2 Stakeholder Feedback

Through the research we engaged with a range of stakeholders including Enterprise Agencies, Local Authorities, transport bodies, and airport managers to gather their input and feedback. A summary of the organisations that contributed is presented in **Appendix A**.

Note on stakeholder responses:

- stakeholders appreciated the opportunity to engage and input at this stage of the locations scoping and would like to remain engaged in the process where appropriate; and
- the stakeholders were given the opportunity to comment on the criteria being utilised to assess the location options and were broadly in agreement with the approach taken – in particular they highlighted that the criteria needs to be objective and the results transparent.

A summary of the main points and themes emerging is presented below:

- across stakeholders there was a general recognition that maintaining services and lifeline connections to and between the islands is a priority for HIAL operations;
- HIAL has a responsibility for the future sustainability of air service provision but in adopting this new strategic approach there is potential for conflict between stakeholders. HIAL's approach has been to prioritise service delivery while other stakeholders have a remit/agenda that has an economic and community development focus. In the short term at least the two are not always mutually compatible through the implementation of the preferred Centralised Surveillance and Remote Tower Centre option (i.e. through relocating well-paid jobs);
- following publication of the HELIOS report in 2017 there remains a general concern over the scale and scope of the potential negative impacts within the local communities through the relocation of well-paid and high skilled jobs, particularly within the more rural and 'fragile' communities. The impacts will be greater than just the loss of jobs (both direct and through spouses/partners relocating) and could have an impact on wider service provision.

In addition, these fluctuations in the labour market will disproportionately impact upon the more rural locations – Benbecula and Wick;

- while not directly related to this research study, stakeholders felt that the previous study did not give due consideration to the potential negative wider social and economic impacts and that it should have been a key criteria in selecting the preferred option in principle. To this extent, stakeholders reported that they were interested to review the high level economic impact assessment (presented in **Section 6**) and keen that it was included as part of the location options appraisal;
- it was highlighted that there are a number of 'known unknowns' with regards to project implementation, this includes; the digital connectivity, power, telecoms, resilience requirements (i.e. CAA regulations and implications for the project), the timescales and phasing, and the relocation/support package offered to staff.

  This therefore presents challenges to assessing options, for example, one of the shortlisted locations may not currently have adequate housing provision to accommodate relocated employees and their family, however, this could be addressed if the project is phased over eight to 10 years;
- there was a general recognition that most locations could 'likely' accommodate the relocation but there would be additional challenges with others – these challenges were not viewed as insurmountable, but would require greater levels of planning and co-ordination between relevant bodies.
- it was recognised that despite any relocation or wider support package offered by HIAL there is likely to be some level of staff turnover and churn, this includes those retiring (both statutory and early retirement), and those that are not willing to relocate;
- it was identified that "lifestyle" is a major factor in where employees are based/located and there will be challenges with relocating employees that have long standing ties and connections to the local area;
- while location is likely a factor in attracting 'good quality staff' – HIAL as an organisation operate just below 'optimum' levels and location is not the only factor and points to the world-wide competition for staff as a key driver for staffing and recruitment challenges;

- the Ab initio route ‘grow your own’ is seen as popular and been successful for HIAL in recruiting – this should continue in some form to address future staffing requirements and look to develop an Apprenticeship training course or similar to develop a pipeline of talent; and
- if HIAL were able to provide an opportunity for staff to commute (i.e. if shift patterns would allow it), this could help ‘sell’ the preferred location.

5. Wider Area Profiles

This section provides a socio-economic 'snapshot' of the wider shortlisted locations based on a review of secondary data sources and input from stakeholders, please see **Appendix B** for a map of each area covered.

Benbecula

Benbecula Airport is located within the Outer Hebrides on the island of Benbecula between North and South Uist.

The airport provides aerodrome control + approach procedural control services, with one commercial operator (Loganair) providing daily direct flights to Stornoway and Glasgow. In addition, PDG Helicopters provides a private charter service to St Kilda from the airport.

Connectivity

Road: the Airport is accessed off the B892 – a dual track road which connects Benbecula Airport (and the nearest settlement, Balivanich) with North Uist and South Uist. The airport is served by a bus service that operates daily between destinations in North and South Uist.

Rail: there are no rail connections in Benbecula nor the Outer Hebrides more generally. The closest railway station is at Kyle of Lochalsh, accessed via the Lochmaddy to Uig ferry and the Isle of Skye, providing a service to Inverness.

Air: Benbecula Airport offers direct flights to Stornoway and Glasgow – two flights to both destinations daily (both services operated by Loganair). PDG Helicopters also provide a charter service from Benbecula. The Air Discount Scheme is in place at the Airport (although this does not apply to business travel).

Ferries: the nearest ferry terminals are located at:

- Lochmaddy in North Uist (connected to the mainland via Uig, Skye). The ferry departs twice daily on Monday, Wednesday, and Friday, and once daily on Tuesday, Thursday, Saturday, and Sunday;
- Lochboisdale in South Uist (connected to the mainland via Mallaig). The ferry departs once daily; and
- Berneray (connected to North Uist via causeway) to Leverburgh (Isle of Harris). The ferry makes three or four return trips each day, taking one hour.

Demographics

	Population (2016)	%	Change since 2011
0-15	771	16%	-7%
16-64	2,777	59%	-9%
65+	1,131	24%	+16%
Total	**4,679**	**100%**	**-4%**

Benbecula experienced the steepest fall in total population between 2011 and 2016 of any location (-4%). This was driven by declines in the number of children and those of working age, while the 65+ population increased steeply.

Benbecula: socio-economic profile

Housing

With an average of 21 sales per year, there is little movement in the housing market. House prices are lower than all other locations, averaging at £103,000 in 2015 - 17. A search reveals there are currently c. 15 houses for sale and just two properties being advertised for private rent.

2,700 houses

£103k
average selling price (2015-17)

The housing land allocation for the area is around 130 units – this figure is an estimate and takes into account that many houses in the Outer Hebrides are built on sites outwith official land allocations. Locating in Benbecula would likely require significant investment in new housing and/or alternative accommodation arrangements, as the housing market does not have sufficient capacity as it currently stands (and this is unlikely to change).

Education

There are two primary schools in South Uist, one in North Uist and one in Benbecula. The secondary school for all three islands is located in Benbecula. All schools currently have capacity to cope with an increase in students.

	Number of schools	Total roll	Capacity	Schools at over 90% capacity
Primary schools	4	354	58%	0
Secondary schools	1	251	40%	0

The only provider of **Further Education** within the Outer Hebrides is the University of Highlands & Islands (UHI) Lews Castle College. The main college is located in Stornoway with smaller learning centres in Benbecula, North Uist and Barra. The college offers access to a wide range of courses from access through to degree, postgraduate and doctorate level. The college specialises in Gaelic, music, renewable energy, health, rural development, art and computing.

2.1%
Claimant Count (average 2015-18)

Economic Profile

There are around 1,950 jobs in the area, a decrease of -2% from 2011. Employment is dominated by the public sector and tourism. Benbecula is the only of the seven locations to have experienced a decrease in employment over this period.

As with the other island areas, the official unemployment rate is low and there is little slack within the labour market, with only 10 jobs advertised on Universal Jobmatch, although many job opportunities are likely seasonal and related to the tourism sector, where recruitment through more informal channels is common.

Property

Plans are being advanced for a new **Aerospace Enterprise Park** at the former MOD site at West Camp, Benbecula, to complement proposals for a satellite launching facility. The Park would support innovation/research, start-up and skills development activity, with QinetiQ and the University of Strathclyde as key partners. This has been highlighted by the Comhairle as an appropriate site for the centralised facility, as part of the refurbishment of existing highly serviced site, with favourable ground conditions and existing roads and hard standings, etc. The ATM centre would also be able to benefit from other facilities proposed within the wider Enterprise Park including conferencing, accommodation, café and gym.

Benbecula

Future Outlook

The MOD Hebrides missile testing range is a large local employer and while there has recently been some reductions in staffing at the Benbecula site, the site's operators, QinetiQ made substantial investment in its systems in 2016 and its overall status is secure until at least 2028. Additionally, the Comhairle are advancing proposals for the UK's first **vertical launch spaceport** at Scolpaig, North Uist, alongside the Enterprise Park by the airport. Scolpaig is specifically highlighted in the UK Government's Industrial Strategy.

Forecasts for job growth across the council area are fairly low. However, promoting economic development and reversing the demographic challenge is a priority for the Scottish Government, with the recent passing of the Islands Bill requiring a new National Islands Plan to be developed.

Summary

Employment at Benbecula Airport has been stable for a number of years and there have been no issues with regards to recruiting or retaining staff.

In terms of the operational staff that would be impacted, Benbecula has the second smallest number of staff – 6. The majority of staff may be required to undertake additional training to gain a relevant APS rating/validation.

Initial scoping and feedback suggests that Benbecula is not considered as an area that staff from other airports would consider moving to – with a "positive response" of 15% for 2021 - 2024 and 13% for 2024 - 2028. All of those who provided a positive response would consider either commuting or moving on a temporary basis, rather than permanently moving.

In comparison with the other locations, Benbecula is perhaps the most geographically isolated and is served by relatively limited transport connections. If HIAL are able to provide flexible working shifts to enable employees to commute, then the relative remoteness of Benbecula will provide additional logistical challenges e.g. ferries are prone to disruption during the winter months.

In terms of availability of housing, there is very little housing for sale or rent within the wider area – this may prove a significant barrier for relocation and would likely require a significant collaborative project between public sector partners and housebuilders to address these challenges.

In terms of opportunities within the wider labour market, the unemployment rate has been consistently low and there is little slack in the labour market. This indicates a lack of employment opportunities within the catchment area – given the high proportion of spouses/partners that are currently in employment this is a further challenge.

Emerging policy on "island proofing" and protecting fragile communities would provide strong strategic fit. However, it is the most outlying of all locations and initial feedback suggests that recruitment and retention of staff would be a serious challenge. Nonetheless, QinetiQ have successfully operated from Benbecula and Uist for over 40 years, currently employing over 100 highly qualified, technical staff.

Dundee

Dundee is Scotland's fourth largest city and located to the northern eastern edge of the (broadly defined) Central Belt. The HIAL-operated Dundee Airport is around 1.5 miles west of the city centre, located on the north bank of the River Tay.

The airport provides aerodrome control and approach procedural control services, with one commercial operator (Loganair) providing two daily direct flights to London Stansted during the week, and one on Sundays. Tayside Aviation (flight training providers) are based at the airport.

It is important to note that there are space constraints at the airport and a decision to locate in Dundee would mean finding an appropriate location elsewhere in the city.

Connectivity

Road: Dual carriageways run in to Dundee from all directions, providing connections to the west (Perth, where it connects with the M90 to Edinburgh), east (Angus), north (Aberdeen) and the south (via the Tay Road Bridge, to Fife).

Rail: Dundee railway station is located in the city centre and provides frequent connections with Glasgow, Edinburgh, Aberdeen and Inverness (via Perth). The station is also served by the Caledonian Sleeper, providing a direct overnight service to London.

Air: Dundee Airport has two flights on weekdays to and from London, as well as one on Sunday. There is a strategic aspiration to increase direct flights to Dundee, which ATM improvements (regardless of location) will help facilitate.

Demographics

	Population (2016)	%	Change since 2011
0-15	23,849	16%	+1%
16-64	98,454	66%	0%
65+	25,967	18%	+5%
Total	148,270	100%	1%

Dundee's population has grown slightly over the last five years and much like Scotland, Dundee's population is ageing, albeit at a slower rate than the other areas. Alongside Inverness, it was the only location to not experience a decline in its children and working age population.

Housing

The city of Dundee averaged 2,200 housing sales per year 2015-17, averaging at £140k. A search reveals there are currently c. 340 houses for sale and 400 being advertised for private rent, indicative of its high student/transient population.

£140k
average selling price (2015-17)

74,200 houses

The housing land allocation for the area is 4,500 units on 'effective sites'. Dundee is within commuting distance of a much wider area, including much of Perth and Kinross and Angus. It would be reasonable to judge that the housing market in the area would have sufficient capacity if chosen as the location of the centralised ATMC facility.

Dundee: socio-economic profile

Education

There are 35 primary and 8 secondary schools in the Dundee City Council area. Although some schools are at, or close to reaching their full capacity, the number of schools in the city makes this less of a challenge.

	Number of schools	Total roll	Capacity	Schools at over 90% capacity
Primary schools	35	10,607	78%	15
Secondary schools	8	13,596	78%	2

Dundee is home to two universities. The University of Dundee is one of the UK's leading universities, internationally recognised for its expertise across a range of disciplines including science, medicine, engineering and art. Abertay University is small university specialising in the creative industries, computer science and business.

Dundee and Angus College is the main local provider of Further Education, with a wide range of courses offered.

A key project of the Tay Cities Deal is to create an **International Aviation Academy** at Dundee Airport, which it is anticipated will provide education and training opportunities in key aviation skills areas, including ATC, professional pilot, airport operations, engineering and cabin crew. Nearby Perth College UHI currently provides aircraft engineering courses from a facility at Perth Airport. The Academy could be a good fit with the centralised ATMC facility and support future recruitment.

3.5%
Claimant Count (average 2015-18)

Economic Profile

There are around 78,000 jobs in the city, growth of 5% from 2011. Key employment sectors include health, retail and education.

The official unemployment rate in Dundee is the highest of the seven areas considered. There are currently around 200 jobs advertised on Universal Jobmatch in the city, with a range of opportunities.

Future Outlook

The **Tay Cities Deal** is currently seeking to agree Heads of Terms with the UK and Scottish Governments. The Deal includes a number of projects aimed at driving economic growth in the region and closing its productivity, wage and employment gap with the rest of Scotland. Of relevance, the Deal includes a proposition to develop an International Aviation Academy which could offer an opportunity for HIAL to align future training provision.

Modest employment growth (+1%) is forecast in Dundee over the next decade, driven by growth in health and social care and tourism.

The long-term regeneration of Dundee Waterfront is currently ongoing with new hotels, retail and offices, as well as the flagship V&A museum project (opening September 2018). The Scottish Government have also announced that Scotland's new social security agency is to be headquartered in Dundee, with around 700 jobs.

Dundee

Property

Dundee Airport is constrained for space and a decision to locate there will mean finding another site in the city. A limited quantity of office space is currently available. New Grade A offices are planned for Dundee Waterfront, where there are also a number of development plots, as detailed at https://www.dundeewaterfront.com/zones

Summary

Employment has been stable at Dundee, with no recruitment issues.

In terms of the operational staff that would be impacted by the development of a new surveillance centre, Dundee has the third lowest after Wick and Benbecula, with 9 – the majority of which would require to retrain to gain an APS rating/validation.

Initial scoping and feedback suggests that Dundee 'ranks second' in terms of how willing staff would be relocate, with a "positive response" of 43% for 2021 - 2024 and 31% for 2024 - 2028. Among those who indicated they would be willing to relocate their position to Dundee, around one third would be willing to do so permanently, one third by commuting, and a quarter on a temporary basis.

In comparison with all other locations, Dundee is well connected to the Central Belt, which may aid recruitment of ATCs from further afield. However, the city has poor transport connections with HIAL's other bases, which is important to consider given the sizeable proportion reporting that would potentially relocate on the basis that they could commute there.

There would likely be no issues with availability of housing in Dundee (for sale and rent), with a large housing market in the city and wider Tayside region.

In terms of opportunities within the wider labour market, Dundee has historically had higher unemployment and lower GVA per head than the national average. However, the city is undergoing substantial public and private investment – as the location of hundreds of new public sector jobs and various projects under the proposed Tay Cities Deal – which is anticipated to provide a step change in the local economy.

In particular, the development of an Aviation Skills Academy (through the Tay Cities Deal) could present opportunities for HIAL to develop a bespoke training and recruitment programme.

Inverness

Inverness Airport is located around 9 miles drive east of Inverness.

The airport provides radar-based surveillance, approach surveillance control, aerodrome control and approach procedural control services. It has the largest base of HIAL ATC staff, with radar-based surveillance ratings. It is served by five year-round commercial operators (Loganair, BA, EasyJet FlyBe and KLM), and some seasonal tourist flights. It also operates as a Search and Rescue helicopter and Air Ambulance base

Connectivity

Road: the Airport is accessed via a B road, just off the main A96 route between Inverness and Moray and Aberdeen. The airport is served by bus services that operate throughout the day to Inverness and Nairn. The main road between Inverness and Perth, the A9, is currently undergoing a major dualling project, due to be completed by 2025.

Rail: the airport is close to the Aberdeen to Inverness railway line, with a new railway halt approved in 2018. This is expected to be operational by 2019. There are currently services every one to two hours on this line. Inverness has railway connections with Wick, Kyle of Lochalsh and the Central Belt.

Air: Inverness Airport offers direct flights to other HIAL operated airports at Benbecula, Stornoway, Kirkwall and Sumburgh, UK cities including, Belfast, London (3 airports), Manchester and Bristol. There are seasonal charter flights to tourist destinations and inbound from countries who visit the Highlands and regular international flights to Dublin, Bergen and Amsterdam.

Demographics

	Population (2016)	%	Change since 2011
0-15	14,900	18%	1%
16-64	52,942	64%	0%
65+	15,085	18%	14%
Total	82,927	100%	2%

Inverness's population has grown substantially in recent decades. The area's population grew slightly between 2011 and 2016, driven by an increase in those over 65. Alongside Dundee, it was the only area to not see a decline in its children and working age population over this period.

Housing

Inverness had around 1,650 housing sales per year 2015-17, averaging at £183,000, the highest average house price of the 7 areas. A search reveals there are currently c. 300 houses for sale and 40 being advertised for private rent. Inverness has had a large volume of new build housing as the city expands outwards.

38,900 houses

£183k
average selling price (2015-17)

The housing land allocation for the area is fairly high at 7,400 units to 2031/32. The number of houses in the area would likely be able to accommodate expected levels of in-migration. However, housing is significantly more expensive than other locations, particularly the Outer Hebrides/Wick.

Inverness: socio-economic profile

Education

There are 27 primary and 6 secondary schools in Inverness, Nairn and the surrounding countryside. Inverness's schools are under more pressure than the other areas, likely a result of the city's growing population and gradual expansion (which has seen investment in new schools).

	Number of schools	Total roll	Capacity	Schools at over 90% capacity
Primary schools	27	6,275	92%	13
Secondary schools	6	5,073	84%	2

Inverness College UHI is the main provider of **Further and Higher Education** in the area. This provides a wide range of courses, with research specialisms in health, environment, marine science, history and archaeology, Gaelic and Nordic Studies. The College moved to a new state of the art campus in the east of Inverness in 2015, alongside a business/enterprise park, including the headquarters of HIE.

2.0%
Claimant Count (average 2015-18)

Economic Profile

There are around 51,500 jobs in Inverness and Nairn, growth of 9% from 2011. Key employment sectors include health, retail and accommodation and food services.

The official unemployment rate in Inverness has fluctuated, currently at around 3%, higher than the island areas but lower than Dundee and Wick. There are currently around 280 jobs advertised on Universal Jobmatch in the area across a range of opportunities.

Future Outlook

The £315m **Inverness and Highland City-Region Deal** aims to position the region as one of digital opportunity, with a specific focus on business development and innovation, promoting air transport links, road infrastructure upgrades, digital connectivity, and housebuilding. Business Plans for each project proposition are being progressed.

Employment growth is forecast across the region over the next decade. Based on past trends, it would be reasonable to assume that Inverness will drive a large portion of this growth. The city continues to expand, with 3,000 homes proposed as part of the Inverness East development, and 1,500 at Stratton. Both are located on the same side of the city as the airport.

Property

We have identified one existing 15,500 sq. ft. building that is currently being marketed for lease in Inverness: the John Dewar Building in Inverness Business Park. This is located to the east of the city, adjacent to the A9. There are a number of development plots in this area, which has benefitted from largescale investment in the form of Inverness Campus.

Additionally, Inverness Airport Business Park is master planned and planning approved site with 110 hectares of development plots in close proximity to the airport.

Inverness

Summary

Inverness Airport is the largest base of ATM staff with just under one-third of the total. There have been no issues with regards recruitment, with all eight ATCO positions filled. Unlike other HIAL operated airports, Inverness operates an approach radar service.

In terms of the operational staff that would be impacted by the development of a new surveillance centre, Inverness has the highest number, 26.

Initial scoping and feedback identifies that Inverness ranks highest in terms of how willing staff would be relocate, with a “positive response” of 53% for 2021 - 2024 and 48% for 2024 - 2028. Among those who indicated they would be willing to relocate their position to Inverness, just over 40% would be willing to do so permanently over both timeframes. One third reported they would be willing to work in Inverness on the basis of commuting.

Inverness is centrally located in relation to the other HIAL airports, and has direct flights to Sumburgh, Kirkwall, Stornoway and Benbecula, and rail and road connections with Dundee and Wick.

There would likely be few issues with availability of housing in Inverness, with a large and expanding housing market. However, house prices are notably higher than the other areas considered.

In terms of the wider labour market, Inverness has a range of opportunities at all levels. The city has a higher proportion of people who are educated to degree or equivalent level than the Scottish average. The development of the new Inverness Campus is an illustration of the commitment of the public sector to encouraging business and the development of a highly skilled workforce in the city, while City Deal projects across the region are anticipated to generate 1,000 jobs.

Kirkwall

Kirkwall Airport is located around 3 miles drive east of Kirkwall, the largest town within the Orkney Islands and located centrally on Orkney Mainland.

The airport provides aerodrome control and approach procedural control services. It is served by one commercial operator (Loganair), with flights to Glasgow, Edinburgh, Aberdeen, Inverness, Manchester (summer season – introduced in 2018), Shetland and inter-island flights. There is one international flight to Bergen, operating during the summer.

Connectivity

Road: the Airport is accessed via the A960 that runs to Kirkwall. A bus service operated by Stagecoach meets the early morning and late evening flights, with a shuttle service throughout the rest of the day.

Rail: there are no rail services on Orkney. There are stations in Thurso (connecting to Inverness) and Aberdeen (connecting to Glasgow, Edinburgh, Inverness and Dundee) – the location of ferries running to Orkney.

Air: Kirkwall Airport offers direct flights to other HIAL operated airports at Sumburgh and Inverness, as well as Glasgow, Edinburgh, Manchester, Inverness, Aberdeen and seasonally to Bergen, Norway. The Air Discount Scheme is in place at the Airport (although this does not apply to business travel).

Ferries: the nearest ferry terminals are located at:

- Kirkwall: the Northlink Ferries service between Aberdeen and Lerwick calls at Kirkwall, four times a week on the summer timetable and twice a week in winter. This takes six hours from either location.
- Stromness: Northlink Ferries service to Scrabster, near Thurso, taking 1.5 hrs, with 2-3 sailings per day.
- St Margaret's Hope: one hour crossing from Gill's Bay in Caithness, operated by Pentland Ferries, with three services a day.

There are also inter-island services operated by Orkney Islands Council. The rollout of Road Equivalent Tariff to NorthLink ferries, which will reduces fares for passengers and cars, is imminent.

Demographics

	Population (2016)	%	Change since 2011
0-15	3,516	16%	-2%
16-64	13,367	61%	-1%
65+	4,967	23%	+16%
Total	21,850	100%	+2%

The data indicates that Orkney faces a demographic challenge, with a growing and ageing population. The availability of employment opportunities is a key consideration in reversing this trend i.e. are there enough opportunities to sustain and retain the population.

Kirkwall: socio-economic profile

Housing

Orkney has averaged 333 housing sales per year 2015-17, averaging at £142,000, the third highest average after Inverness and Shetland. A search reveals there are currently c. 40 houses for sale and 5 being advertised for private rent.

11,100 houses

£142k
average selling price (2015-17)

The housing land allocation for the area has 850 units as the 'effective supply' figure, i.e. allocated in the last local development plan but where development has not commenced. However, like the other island areas, a large amount of development in Orkney will be on unallocated sites.

Education

There are 8 primary and 2 secondary schools on Orkney Mainland (or connected to Mainland by causeway). There is adequate capacity to cope with an increase in pupils.

	Number of schools	Total roll	Capacity	Schools at over 90% capacity
Primary schools	8	1,052	74%	1
Secondary schools	2	1,071	69%	0

Orkney College UHI is the main provider of **Further and Higher Education** in the area and based in Kirkwall. This provides a wide range of courses, with research specialisms in agronomy, northern studies and archaeology, and a centre for construction skills.

0.8%
Claimant Count (average 2015-18)

Economic Profile

There are around 11,000 jobs in Orkney, an increase of 10% from 2011. Key employment sectors include health, retail and construction, renewable energy, with agriculture and fishing also important. Key assets include the European Marine Energy Centre.

Like the other island areas, official unemployment in Orkney is extremely low. There are currently around 36 jobs advertised on Universal Jobmatch in the area. However, tourism is a large employment sector and many jobs are likely advertised through more informal channels.

Future Outlook

The three island authorities (Orkney, Eilean Siar and Shetland) have put forward proposals for an **Islands Deal** that would boost economic activity, mitigate the demographic challenge through encouraging inward migration, provide 100% digital connectivity, and develop high capacity interconnections between the islands and the National Grid in order to support the renewables sector. This may emerge from the recently passed Islands Bill, which requires the creation of a new National Islands Plan.

Orkney has a strategic focus on growing its renewables sector, with £5m of public money currently being invested in redeveloping the former Stromness Academy building into a hub for the islands' world-leading marine renewables, energy and low carbon sector. Tourism also continues to grow, particularly from cruise ships, with 175,000+ visitors each year to the islands.

Kirkwall

Property

There are no existing office properties in Orkney of the footprint necessary for the ATMC. However, Orkney has a large volume of marketable/effective employment land, at 166 hectares, and an appropriate site would likely be able to be found.

Summary

There have been some difficulties with staff recruitment at Kirkwall Airport - 29% success rate for positions that were advertised with the successful candidate becoming validated.

In terms of the operational staff that would be impacted by the development of a new surveillance centre, Kirkwall has the third highest number, 12.

Initial scoping and feedback suggests that Kirkwall is not a location that staff from other airports would consider relocating to, with a “positive response” of 23% for 2021 - 2024 and 20% for 2024 - 2028 (in both instances, largely comprised of “maybe”). Among those who indicated they would be willing to relocate their position to Kirkwall, the largest proportion said they would consider opportunities to commute.

Kirkwall Airport has direct flights to Sumburgh and Inverness, as well as other destinations. It has a relatively short travel time to Wick. Travel to the Western Isles and Dundee is less direct. There would, however, be some logistical challenges to maintaining a shift pattern at Kirkwall, with ferries prone to disruption during the winter months.

The availability of housing may be an issue in Orkney, with around 360 sales across the local authority area in 2017 – there is also little in the way of speculative activity coming to the market. House prices are roughly in the middle of the seven areas considered.

Wider employment opportunities are likely to be include the public sector and tourism.

Emerging policy on “island proofing” and protecting fragile communities would provide strong strategic fit, albeit recognising that recruitment would likely be more difficult.

Stornoway

Stornoway Airport is located within the Outer Hebrides (Comhairle nan Eilean Siar) on the island of Lewis and is located a short distance from the town of Stornoway.

The airport provides aerodrome control and approach procedural control services, with two commercial operators (Loganair and Eastern Airways) providing flights to Inverness, Benbecula, Glasgow, Edinburgh, Aberdeen and Manchester (summer season – introduced in 2018). It also operates as a Search and Rescue helicopter base.

Connectivity

Road: the Airport is accessed via the A866 that runs to Stornoway. There is a regular bus service between the airport and the town centre.

Rail: there are no rail services in the Outer Hebrides.

Air: Stornoway Airport offers direct flights to other HIAL airports at Benbecula and Inverness, as well as Glasgow, Edinburgh, Aberdeen and Manchester. The Air Discount Scheme is in place at the Airport (although this does not apply to business travel).

Ferries: the nearest ferry terminals are located at:

- Stornoway: CalMac run two sailings each day from Stornoway to Ullapool, taking 2 hrs 30 mins;
- Tarbert: CalMac service from Tarbert, Isle of Harris to Uig, Skye. Three sailings a day taking 1 hr 40 mins; and
- Leverburgh: crossing from the Isle of Harris to Berneray, linking to Uist and Benbecula. The ferry makes three or four return trips each day, taking one hour.

All routes are subject to the Road Equivalent Tariff.

Demographics

	Population (2016)	%	Change since 2011
0-15	3,080	16%	-7%
16-64	11,458	60%	-5%
65+	4,638	24%	+10%
Total	19,176	100%	-2%

Like the other island areas, the population of Lewis faces demographic challenges – the resident population is ageing, with 10% growth in the over 65 population in just five years, set against declines in children and those of a working age. Reversing this trend is a strategic focus for the local authority and its partner agencies.

Stornoway: socio-economic profile

Housing

Lewis averaged just over 200 housing sales per year between 2015 and 2017, averaging at £111,000, considerably lower than all other areas aside from Benbecula and Wick. A search reveals there are currently c. 80 houses for sale and 10 being advertised for private rent.

11,100 houses

£111k
average selling price (2015-17)

The housing land allocation for Lewis has 1,300 units, including an estimate of development on unallocated sites. The vast majority of this allocation is in and around Stornoway, with 1,200 of the total.

Education

There are 14 primary and one secondary schools on the Isle of Lewis. The secondary school in Stornoway is close to capacity.

	Number of schools	Total roll	Capacity	Schools at over 90% capacity
Primary schools	14	1,331	67%	0
Secondary schools	1	1,052	96%	1

Lews Castle College UHI provides further and higher education from its base in Stornoway. The college specialises in Gaelic, music, renewable energy, health, rural development, art and computing.

1.9%
Claimant Count (average 2015-18)

Economic Profile

There are around 8,050 jobs on Lewis, an increase of +3% from 2011. Key employment sectors include health, public administration and defence, and retail.

Like the other island areas, official unemployment on Lewis is low and is not prone to much fluctuation. There are currently around 30 jobs advertised on Universal Jobmatch in the area. However, tourism is a large employment sector and many jobs are likely advertised through more informal channels.

Future Outlook

The three island authorities (Orkney, Eilean Siar and Shetland) have put forward proposals for an **Islands Deal** that would boost economic activity, mitigate the demographic challenge through encouraging inward migration, provide 100% digital connectivity, and develop high capacity interconnections between the islands and the National Grid in order to support the renewables sector. This may emerge from the recently passed Islands Bill, which requires the creation of a new National Islands Plan.

Lewis is the location of a major fabrication yard at Arnish Point. The site has seen a reduction in staff recently although after a Government-brokered change of ownership, is hopeful of securing new work.

Tourism also continues to be an important sector, with around 220,000 visitors a year to the Outer Hebrides, spending £65m (2017 Island Visitor Survey).

Stornoway

Property

We have not identified any appropriate existing office accommodation on the Isle of Lewis. Across the Outer Hebrides, the Comhairle has identified 30 hectares of effective/marketable employment land and there is HIAL owned land available adjacent to the Airport.

Summary

There have been notable difficulties with staff recruitment at Stornoway Airport, with the airport struggling to reach its full complement of ATC staff and experiencing a high level of turnover. 22% success rate for positions that were advertised with a successful candidate becoming validated.

In terms of the operational staff that would be impacted by the development of a new surveillance centre, Stornoway has 12.

Initial scoping and feedback suggests that Stornoway is not a location that staff from other airports would consider relocating to, with a “positive response” of 17% for both 2021 - 2024 and 2024 - 2028 (in both instances, entirely comprised of “maybes”). Among those who indicated that they would maybe be willing to relocate their position to Stornoway, the largest proportion said they would consider opportunities to commute.

Stornoway Airport has direct flights to Benbecula and Inverness. Beyond that, however, its connectivity with other HIAL airports is fairly limited and would generally require changing flights at either Inverness or Glasgow. Ferries are prone to disruption during the winter months.

Housing costs on Lewis tend to be cheaper than the other locations, and there is a fairly high number of houses on the market. Stornoway also has a high future housing allocation within the LDP.

Wider employment opportunities are likely to be fairly limited, with jobs in the public sector and tourism.

Emerging policy on “island proofing” and protecting fragile communities would provide strong strategic fit, albeit recognising that recruitment would likely be more difficult.

Sumburgh

Sumburgh Airport is the main airport serving the Shetland Isles. It is located at the far south of Shetland Mainland, around 25 miles south of the main town, Lerwick, which is also the location of the terminal for the Aberdeen and Kirkwall ferry.

The airport provides radar-based surveillance (via NATS in Aberdeen) and aerodrome control and approach procedural control services, with one commercial operator (Loganair) providing flights to Inverness, Kirkwall, Glasgow, Edinburgh, Aberdeen and Manchester (summer season – introduced in 2018. There is also one international flight during the summer to Bergen. It is also operates as a Search and Rescue Helicopter base and operates as a helicopter terminal for the offshore Oil and Gas sector.

Connectivity

Road: the Airport is accessed via the A970, which runs north to south through Shetland Mainland. There is a regular airport bus service that takes passengers to Lerwick in around 40 minutes.

Rail: there are no rail services in Shetland. Abellio Scotrail services run to Aberdeen from Inverness, Dundee, Glasgow and Edinburgh, from where the overnight ferry to Lerwick departs.

Air: Sumburgh Airport offers direct flights to other HIAL airports at Kirkwall and Inverness, as well as Glasgow, Edinburgh, Aberdeen and Manchester, and a seasonal connection to Bergen, Norway. Inter-Shetland flights use Tingwall Airport, nearer Lerwick. Scatsta Airport, which does not have commercial passenger flights, is to the north of Shetland Mainland and used as a staging post to offshore platforms by the energy industry. The Air Discount Scheme is in place at the Airport (although this does not apply to business travel).

Ferries: the NorthLink ferry service to Shetland runs each night to/from Aberdeen, calling at Kirkwall en route 3 or 4 nights a week. There are also various inter-island ferries, which are operated by Shetland Islands Council.

The rollout of Road Equivalent Tariff to NorthLink routes, which will reduces fares for passengers is and cars, is imminent.

Demographics

	Population (2016)	%	Change since 2011
0-15	4,233	18%	-5%
16-64	14,564	63%	-3%
65+	4,403	19%	+16%
Total	**23,200**	**100%**	**0%**

Like the other island areas, Shetland is facing a serious demographic challenge, with a rapidly ageing population and declines in its 0-15 and working age population. Overcoming this is a strategic focus for the local authority and its partner agencies.

Sumburgh: socio-economic profile

Housing

Shetland averaged 260 housing sales per year 2015-17, averaging at £156,000, the second highest price after Inverness. A search reveals there are currently c. 24 houses for sale and 5 being advertised for private rent. This low figure, combined with fairly high average selling price, indicates the housing supply is under some pressure.

11,150 houses

£156k
average selling price (2015-17)

Shetland Islands Council have identified 128.5 hectares of land with development potential that is available, which they estimate could provide for around 1,450 housing units.

Education

There are 16 primary and 4 secondary schools in Shetland Mainland (excluding the northern part of Brae). There are no capacity constraints.

	Number of schools	Total roll	Capacity	Schools at over 90% capacity
Primary schools	16	1,513	59%	2
Secondary schools	4	1,265	64%	0

Shetland College UHI provides further and higher education from its base in Lerwick. The college offers degree level courses in business, computing, archaeology and history, literature and culture, and houses UHI's Centre for Rural Creativity.

0.8%
Claimant Count (average 2015-18)

Economic Profile

There are around 14,000 jobs in Shetland, in line with the 2011 figure. Key employment sectors include health, construction, transport and retail. Fisheries, tourism and energy are all important employers.

Like the other island areas, official unemployment in Shetland is extremely low and does not see much fluctuation. There are currently just 5 jobs advertised on Universal Jobmatch in the area, indicating little slack in the labour market. However, many jobs are likely advertised through more informal channels or through oil industry networks.

Future Outlook

The three island authorities (Orkney, Eilean Siar and Shetland) have put forward proposals for an **Islands Deal** that would boost economic activity, mitigate the demographic challenge through encouraging inward migration, provide 100% digital connectivity, and develop high capacity interconnections between the islands and the National Grid in order to support the renewables sector. This may emerge from the recently passed Islands Bill, which requires the creation of a new National Islands Plan.

New oilfields are being developed to the west of Shetland, and the Sullom Voe terminal remains strategically important for the UK energy industry. Tourism continues to grow, with 73,000+ visitors last year, an increase of 13% from 2013. In particular, the number of cruise ship visitors to Lerwick has increased rapidly in recent years.

Sumburgh

Property

There are no existing office properties in Shetland of the footprint necessary for the ATMC. However, there is a large volume of marketable/effective employment land supply, at 117 hectares, although much of this will be related to energy developments e.g. the Sullom Voe terminal.

Summary

There have been some turnover of staff at Sumburgh over the last few years and generally fewer recruitment issues compared to other locations.

In terms of the operational staff that would be impacted by the development of a new surveillance centre, Sumburgh has the second highest number after Inverness, with 15.5 FTEs.

Initial scoping and feedback suggests that Sumburgh is not a location that staff from other airports would consider relocating to. The airport received the lowest “positive response” of any location for both 2021 - 2024 and 2024 – 2028 (redacted (1)).

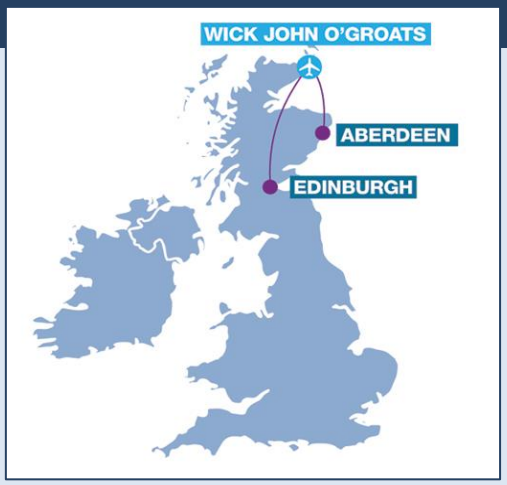
Sumburgh Airport has direct flights to Kirkwall and Inverness. Beyond that, however, its connectivity with other HIAL airports is fairly limited and would generally require changing flights at either Inverness or Glasgow. Ferries are prone to disruption during the winter months.

Housing costs in Shetland are notably higher than Orkney, the Outer Hebrides and Wick, in part due to the historic role of the energy industry. The housing market appears to be under more demand than other areas, with limited stock and higher prices.

Wider employment opportunities are likely to be in the public sector and tourism, while fisheries/aquaculture and energy remain important to the local economy.

Emerging policy on “island proofing” and protecting fragile communities would provide strong strategic fit. However, it is the most outlying of all locations and initial feedback suggests that recruitment and retention of staff would be a serious challenge.

Wick John O'Groats



Wick John O'Groats Airport is the UK's most northerly mainland airport and serves the Caithness region. The airport is located directly at the northern periphery of Wick.

The airport provides aerodrome control and approach procedural control services, with two commercial operators. Loganair provide flights to Edinburgh, and Eastern Airways operate a regular service to Aberdeen.

Connectivity

Road: the Airport is accessed via the A99, which runs north from Wick to John O'Groats. Stagecoach bus services provide connections to Wick and Thurso, and onward connections to Inverness.

Rail: Wick railway station, 1.5 miles from the airport, has four trains a day leaving for Inverness, taking around 4 hrs 15 mins. Thurso is reached in 30 minutes.

Air: Loganair provide flights to Edinburgh, and Eastern Airways operate services to Aberdeen. The Air Discount Scheme is in place at the Airport (although this does not apply to business travel).

Ferries: the nearest ferry terminals are located at:

- Scrabster, near Thurso: Northlink Ferries service to Stromness, Orkney, taking 1.5 hrs, with 2-3 sailings per day.
- Gill's Bay, near John O'Groats: one hour crossing to the south of Orkney Mainland, operated by Pentland Ferries, with three services a day.

The rollout of Road Equivalent Tariff to NorthLink ferries, which will reduces fares for passengers and cars, is imminent.

Demographics

	Population (2016)	%	Change since 2011
0-15	1,862	18%	-3%
16-64	6,290	60%	-8%
65+	2,270	22%	+14%
Total	10,422	100%	-3%

As with the island areas, Wick is facing a serious demographic challenge, with a rapidly ageing population and declines in its 0-15 and working age population.

Wick John O'Groats: socio-economic profile

Housing

Wick has averaged 119 sales per year 2015-17, averaging at £121,000, the lowest aside from the Outer Hebrides locations. A search reveals there are currently c. 90 houses for sale and 40 being advertised for private rent, a high number for its size.

5,471 houses

£112k
average selling price (2015-17)

The available housing land supply for Wick and East Caithness is 728 units up to 2031/32.

Education

There is one high school in Wick, a new state-of-the-art campus, which has eight feeder schools in the town and surrounding area. Capacity constraints are evident at one primary school although not elsewhere.

	Number of schools	Total roll	Capacity	Schools at over 90% capacity
Primary schools	8	967	86%	1
Secondary schools	1	679	72%	0

North Highland College UHI is based in Thurso and provides further and higher education. The college offers courses in care, construction, engineering and science, among other fields. The Thurso campus is home to the Engineering, Technology and Energy Centre, offering practical training, and the Centre for Energy and the Environment, with research and conference facilities.

2.5%
Claimant Count (average, 2015-18)

Economic Profile

There are around 4,500 jobs in Wick and North East Caithness, in line with the figure from 2011. Key employment sectors include health, retail and construction.

The official unemployment rate has averaged 2.5% over the last three years, higher than Inverness but lower than Dundee. There are currently just 5 jobs advertised on Universal Jobmatch in the area, indicating a lack of slack in the labour market.

Future Outlook

The Dounreay power station has been a major employer in Caithness and, particularly with its large number of high skilled and high wage jobs, important to the economic wellbeing of the community. While decommissioning will continue for some time, there is an ongoing rundown in employment at the site.

Wick is strategically placed to support the developing offshore renewables industry in the Moray Firth, Pentland Firth and Orkney Waters, and is set to be the site of a new £15m **Operations and Maintenance Base** supporting the Beatrice Offshore Windfarm.

The Caithness and North Sutherland Regeneration Partnership, a public/private partnership, brings together all major agencies and large private-sector partners to take a holistic view of economic development. The local Developing the Young Workforce group is very active in working with schools and employers to build work experience and other employment/training opportunities.

Wick John O'Groats

Property

Wick Industrial Estate is located close to Wick John O'Groat's Airport. The business development site, which was developed by the Highland Council, comprises a mixture of businesses and organisations, with 0.5 hectare site currently being marketed. Also close to the airport, on the A99, is Wick Business Park. A number of business development sites, from 0.25 hectares, are currently being marketed at this site.

Summary

Wick John O'Groats has experienced some difficulty with recruitment - 33% success rate for positions that were advertised with a successful candidate becoming validated and a staff turnover level higher than most other HIAL locations.

In terms of the operational staff that would be impacted by the development of a new surveillance centre, Wick John O'Groats has the lowest number, with five.

Initial scoping and feedback suggests that Wick John'O Groats is not a location that staff from other airports would consider relocating to, with a "positive response" of 13% for 2021 - 2024 and 15% for 2024 - 2028 (largely comprised of "maybe"). Among those who indicated they would maybe be willing to relocate their position to Wick John O'Groats, the largest proportion said they would do so by commuting.

Wick John O'Groat's Airport has direct rail links to Inverness, and is located fairly close to Orkney ferries. Beyond that, however, its connectivity with other HIAL airports is limited.

Housing costs in Wick are relatively low and there is an adequate supply of housing that could potentially support an incoming population.

Wider employment opportunities are likely to be fairly limited, with little in terms of available opportunities, although major investment is taking place locally in the renewables sector.

Recruitment and retention of staff to Wick may be difficult, with initial feedback finding few indicating a willingness to relocate.

5.1 Summary

A summary of the key connectivity and wider location profile data is presented below in **Table 5.1** to **5.4**.

Table 5.1 shows the estimated driving time between each location, including taking car ferries where applicable.

Table 5.1: Travel Times between Locations - Driving/Ferries

	Benbecula	Dundee	Inverness	Kirkwall	Stornoway	Sumburgh	Wick John O'Groats
Benbecula		8 hrs (1 ferry)	6 hrs (1 ferry)	10 hrs (2 ferries)	4 hrs (1 ferry)	20 hrs (2 ferries)	7.5 hrs (1 ferry)
Dundee	8 hrs (1 ferry)		3 hrs	7 hrs (1 ferry)	7.5 hrs (1 ferry)	15.5 hrs (1 ferry)	5 hrs
Inverness	6 hrs (1 ferry)	3 hrs		5 hrs (1 ferry)	5 hrs (1 ferry)	17 hrs (1 ferry)	2.5 hrs
Kirkwall	10 hrs (2 ferries)	7 hrs (1 ferry)	5 hrs (1 ferry)		9 hrs (2 ferries)	10 hrs (1 ferry)	2.5 hrs (1 ferry)
Stornoway	4 hrs (1 ferry)	7.5 hrs (1 ferry)	5 hrs (1 ferry)	9 hrs (2 ferries)		19 hrs (2 ferries	6.5 hrs (1 ferry)
Sumburgh	20 hrs (2 ferries)	15.5 hrs (1 ferry)	17 hrs (1 ferry)	10 hrs (1 ferry)	19 hrs (2 ferries)		12 hrs (2 ferries)
Wick JOG	7.5 hrs (1 ferry)	5 hrs	2.5 hrs	2.5 hrs (1 ferry)	6.5 hrs (1 ferry)	12 hrs (2 ferries)	

Table 5.2: Ferry Disruptions and Cancellations

Route	Number of sailings	Cancellations	Arrived on time (operated sailings)
Berneray to Leverburgh, Harris	2,252	10%	97%
Uig, Skye to Tarbert, Harris & Lochmaddy, North Uist	2,188	5%	89%
Ullapool to Stornoway, Lewis	2,010	2%	91%
NorthLink Shetland & Orkney routes	2,933	2%	88%

Source: Most recent data available used: CalMac (April 2017 to March 2018) & Serco NorthLink (July 2016 to June 2017)

Table 5.3 shows the travel time by public transport, including flights, rail and buses, using the fastest or most obvious route for a passenger travelling between each location, identified using the Google Maps travel planner, Loganair and Scotrail websites. The table does not identify all the potential routes and is designed to be indicative of travel times and modes of transport.

All times are approximate, particularly as potential sites for the ATMC at each location have not been identified at this stage. It should be noted that check-in times for ferries and air travel have not been factored in to the travel times shown. Web searches were undertaken in May 2018, and reflect timetables/routes available at that time.

Table 5.3: Travel Times between Locations – Public Transport (bus and train) and Flights

	Benbecula	Dundee	Inverness	Kirkwall	Stornoway	Sumburgh	Wick John O'Groats
Benbecula		4 hrs (flight from Glasgow)	1.5 hours (2 flights via Stornoway)	3 hrs (flight via Glasgow)	30 mins (flight)	3 hrs (flight via Glasgow)	2.5 hrs bus (2 flights via Inverness and Stornoway) – 1.5 hrs
Dundee	4 hrs (flight from Glasgow)		3 hrs (rail)	3 hrs (flight via Edinburgh)	2.5 hrs (train) via Inverness (1 flight, 45 mins)	3 hrs (flight via Aberdeen)	7 hrs (via Inverness)
Inverness	1.5 hours (2 flights via Stornoway))	3 hrs (rail)		45 mins (flight)	45 mins (flight)	1.75 hrs (flight)	3 hrs (bus) / 4.5 hrs (rail)
Kirkwall	3 hrs (flight via Glasgow)	3 hrs (flight via Edinburgh)	45 mins (flight)		2 hrs (flight via Inverness)	40 mins (flight)	3 hrs (ferry/buses)
Stornoway	30 mins (flight)	2.5 hrs (train) via Inverness (1 flight, 45 mins)	45 mins (flight)	2 hrs (flight via Inverness)		3 hrs (flight via Inverness)	2.5 hrs bus (flight via Inverness, 45 mins)
Sumburgh	3 hrs (flight via Glasgow)	3 hrs (flight via Aberdeen)	1.75 hrs (flight)	40 mins (flight)	3 hrs (flight via Inverness)		5 hours (flight via Inverness)
Wick John O'Groats	2.5 hrs bus (2 flights via Inverness and Stornoway) – 1.5 hrs	7 hrs (via Inverness)	3 hrs (bus) / 4.5 hrs (rail)	3 hrs (ferry/buses)	2.5 hrs bus (flight via Inverness, 45 mins)	5 hours (flight via Inverness)	

Table 5.4: Wider Area Profiles – Summary Data

	Benbecula	Dundee	Inverness	Kirkwall	Stornoway	Sumburgh	Wick John O'Groats
Population							
Population (2016)	4,700	149,000	82,900	21,900	19,200	23,200	10,400
Aged 0-15	16%	16%	18%	16%	16%	18%	18%
Aged 16-64	59%	66%	64%	61%	60%	63%	60%
Aged 65+	24%	18%	18%	23%	24%	19%	22%
Change in population 2011-2016	-4%	+1%	+2%	+2%	-2%	0%	-3%
Schools							
Primary - % at capacity (2016)	58%	78%	92%	74%	67%	59%	86%
Secondary - % at capacity (2016)	40%	78%	84%	69%	96%	64%	72%
Number of primaries at 90%+ capacity (2016)	0 of 4	15 of 35	13 of 27	1 of 8	0 of 14	2 of 16	1 of 8
Number of secondaries at 90%+ capacity (2016)	0 of 1	2 of 8	2 of 6	0 of 2	1 of 1	0 of 4	0 of 1
Housing							
Total number of houses (2016)	2,708	74,222	38,872	11,102	10,027	11,149	5,471
Annual sales (average, 2015-17)	21	2,189	1,647	333	203	260	119
Average sale price (2015-17)	£103,000	£140,000	183,000	£142,000	£111,000	£156,000	£112,000
Properties advertised for sale (2018)	15	340	307	42	78	24	91
Properties advertised for private let	2	400	40	5	10	5	40
LDP housing allocation - units (2017)	130	4,500	7,410	850	1,300	1,447	728

Table 5.4: Wider Area Profiles – Summary Data (continued)

	Benbecula	Dundee	Inverness	Kirkwall	Stornoway	Sumburgh	Wick John O'Groats
Employment							
Total employment in area (2016)	1,950	78,000	51,500	11,000	8,050	14,000	4,500
Change in jobs 2011-2016	-2%	+5%	+9%	+10%	+3%	0%	0%
Top three employment sectors (2016)	Health	Health	Health	Health	Health	Health	Health
	Accommodation & food services	Retail	Retail	Retail	Public admin. & defence	Construction	Retail
	Education	Education	Accommodation & food services	Construction	Retail	Transport/retail	Construction
Claimant count (April 2018)	60	4,130	1,750	110	195	130	300
% of residents aged 16-64 on claimant count (average, 2015-2018)	2.1%	3.5%	2.0%	0.8%	1.9%	0.8%	2.5%
Jobs advertised on Universal Jobmatch (DWP site)	10	196	276	36	30	33	5
Jobs advertised on MyJobScotland (public sector)	7	46	41	59	15	23	1
Jobs advertised on totaljobs.com (20 mile radius)	4	469*	330*	45	8	12	15

Sources: National Records of Scotland, Scottish Schools Online, Scottish Government, S1 Homes/Zoopla, Local Authority LDPs, Business Register and Employment Survey, Office for National Statistics, Claimant Count/DWP

Notes on Table 5.4

1. **Some of the jobs advertised are agency/self-employed positions i.e. sales jobs working on commission, etc and across the three job sites we have reviewed there will be duplication of advertisements i.e. the number of positions should not be summed to provide a total.*

Summary of the Wider Location Profiles

The key messages from the review of the wider area profiles is provided below:

- as to be expected, the mainland locations are more accessible and provide opportunities for accessing different modes of transport. In a HIAL context, Inverness is the most central location and offers numerous modes of connectivity both to HIAL operated locations and further afield. Dundee (to a lesser extent) is also relatively well served by transport connections to the other locations;
- feedback from staff (identified through the survey) suggests that should shift patterns allow for it, commuting could be a potential option which would mean that affected staff would not have to relocate their main residence to a new location on a permanent basis. The connectivity data presented above identifies that certain locations could offer a viable opportunity for commuting. However, this will be dependent on a number of factors, including:
    - journey times
    - costs (the majority of island locations have the RET and Air Discount Scheme in place which could reduce costs, although this will not cover commuting where HIAL are contributing to the costs)
    - frequency and reliability of services – both flights and ferries between the mainland and islands are susceptible to disruption and cancellations, particularly within the winter months;
- availability of school provision – this is viewed as generally fine across all locations although possible challenges in Stornoway and Inverness where schools are approaching full capacity;
- housing market:
    - the data suggests that there is very little slack in the rental market across all areas except for Dundee – a high transient student population has meant that the housing market offers greater flexibility. It should be noted that the assessment does not reflect more informal channels for renting accommodation that are likely to be used in more remote areas, or second home ownership

  - houses for sale – Dundee and Inverness offer greater choice and availability in terms of type, tenure, size, etc
  - the Local Development Plans indicate the sites (and their associated capacity) that have been zoned for residential use. They show that, in locations where there is an under provision of residential units to accommodate a large in-migrating population that additional capacity could be created through the development of new residential units. However, the LDP does not provide any details on the commercial viability or feasibility of these sites i.e. not all land that is zoned or housing supply will be 'commercially viable' and may require a level of public intervention. This also presents a number of logistical challenges and risks with regards to co-ordinating future development activity
  - house prices are generally cheaper on the islands and remote locations, but would note that this does not take account of the 'cost of living' considerations within the islands. Inverness is most expensive for housing (average house price of £183,000, 50%+ compared to more remote locations) and could present a challenge to access equivalent housing. For comparison, average house prices in Scotland is £177,000 (2017);

- as is quite typical of some rural areas, levels of unemployment and those actively seeking work is quite low, although we would note that Wick has an average claimant count rate higher than the island locations and more in line with the Scottish average;
- low unemployment and claimant count is generally indicative of both higher employment levels (greater % of population in work) and also less slack in the labour market i.e. less employment opportunities – both in absolute terms and per head of population. As highlighted above, 94% of HIAL staff surveyed indicated that their partners/spouses are currently in employment and the availability of opportunities in the labour market will be a factor in relocation – there are therefore greater constraints within some locations where opportunities are more limited;

- while the jobs advertised on Universal Jobmatch is by no means a definitive list (it is a Government site that those registered and claiming unemployment related benefits can search for employment opportunities), it is indicative of the scale and type of employment opportunities that are available within the local area – a review of other job/recruitment sites has identified broadly similar numbers across the locations.

  We recognise that the 'official data' will likely undercount opportunities within rural areas particularly for seasonal employment, nonetheless, again the data points to potential challenges for relocation and the viability of some locations;

- only Dundee, Inverness and Orkney have experienced employment growth in recent years – this is potentially indicative that there are more employment opportunities across these locations; and

- across all locations, the public sector and 'tourism related' – retail and accommodation/food beverage provision are big employers. We would also note that each location also has a few key strategic sectors e.g. Wick and Kirkwall/Orkney – offshore renewables, Shetland – energy, etc.

6. Technical, Operational and Environmental Feasibility

A high level review of the technical, operational, and environmental feasibility of the locations was undertaken to assess whether there are any underlying environmental or wider infrastructure constraints and challenges for development.

This has included a desk based review of:

- Coal Authority (mineral stability);
- British Geological Survey (BGS) (ground conditions);
- Scottish Natural Heritage (SNH) (environmental designations;
- Scottish Water (water and drainage installation details);
- Scottish and Southern Energy (SSE) (electrical power installation details);
- Scottish Power (SPEN) (electrical power installation details);
- LineSearch (various utility records, gas pipelines, oil pipelines, telecoms);
- BT (telecom records);
- Scottish Environment Protection Agency (SEPA) (flood mapping); and
- HIAL (various on-site records/information).

This is summarised below in **Table 6.1.** Further detail can be obtained by contacting HIAL direct.

Table 6.1: Technical, Operational and Environmental Feasibility – Summary Table

	Geology & Ground Conditions	Flood Risk	Mineral Stability	Environmental Setting	Access		Power	Telecoms						Foul Drainage	Surface Water Drainage	Gas Supply
					Road	Train		Speed (MB)	Fibre	1GB Feasibility	Copper - ADSL	Microwave	Providers	Diversity Available			
Benbecula	Sand soils overlying Lewisian Gneiss	Flooding is present in a 200-year event from coastal water in close proximity to existing buildings.	No issues	No adjacent statutory designations	Directly from the B892	No rail	11kV network including a 400kVA sub station	-	-	-	-	-	BT	✓	Foul Drainage connected into existing M.O.D. System	Outfalls to local burns and to the North Atlantic Ocean.	No Gas shown on service returns
Dundee	Silts & clays overlying siltstone, mudstone and sandstones	Coastal and surface water flood risk exists for substantial areas of the airport and access/egress from new development will require to be provided free from flood risk.	No issues	Inner Tay Estuary SSSI, SPA, SAC and Ramsar to immediate south	Directly from the A85 - Riverside Road	Invergowrie - 2.7km Dundee - 3.6km	11kV & low voltage networks including a 315kVA sub station	20	✓	✓	✓		BT Virgin Media SSE	✓	A waste water pumping station exists onsite and two septic tanks.	Outfalls to the River Tay.	250mm ST Intermediate and 250mm PEmedium pressure Scotia Gas Network pipelines exist within Riverside Avenue to the north of the site. Two gas tanks exist within the site boundary.
Inverness	Sands, Silts, Clays and gravels overlying sandstone.	No flood risk from the coast, some surface water flooding potential.	No issues	Moray Firth SAC to immediate north	Directly from the B9039 to the north and the A96 to the south	Inverness - 14.6km	11kV & 33kV networks including a 315kVA sub station & Dalcross Primary Substation	50	✓	✓	✓		Vodafone BT	✓	An existing pumping station pumps the foul along a rising main to a Package treatment plant to the west of Old Military Road and outfalls to the Moray Firth.	Outfalls to burn to the east of the site.	No gas supply in the locality. High pressure gas present to the south of the A96.
Kirkwall	Till and peat overlying siltstone, mudstone and sandstones	No flood risk in or around terminal buildings.	No issues	No adjacent statutory designations	Directly from the A960	No rail	11kV & low voltage networks including a 315kVA sub station	20	✓	✓	✓	✓	BT Vodafone	✓	Septic Tank for drainage from Air Traffic Control	Outfall to the North of the site into the North Sea	No Gas shown on service returns
Stornoway	Alluvium overlying sedimentary conglomerates	Coastal flood risk exists across part of the airport terminal building and associated facilities areas.	No issues	SSSI adjoins airport on north side	Directly from theA866 - Rathad A Bhraigh.	No rail	11kV network including a 100kVA sub station	20	✓	✓	✓	✓	BT	✓	Foul Drainage connected into existing Mealabost Waste Water Treatment Works to the south of the site.	Outfalls to local burns and to the Inner Seas of the West Coast of Scotland.	No Gas shown on service returns

Sumburgh	Sand soils overlying sandstone and argillaceous rock.	No coastal flood risk exists within the airport perimeter.	No issues	SSSI to north and east, SPA to south and east. Ancient monument and areas of archeological interest present.	Directly from the A970	No rail	11kV & low voltage networks including a 880kVA sub station	20	✓	✓	✓	✓	BT Vodafone	✓	Onsite Bypass separator, outfalls to North Atlantic Sea.	Surface water is treated through interceptors onsite and part of the network is pumped to an outfall to the east of the site.	No Gas shown on service returns
Wick John O'Groats	Till overlying siltstone, mudstone and sandstones	No flood risk in or around terminal buildings.	No issues	No adjacent statutory designations	Directly from the A99 - North	Wick - 1.5km	11kV & low voltage networks including a 500kVA sub station	20	✓	✓	✓	✓	BT Vodafone	✓	Onsite Klargester separator, pumping station and rising main. Part of the foul drainage is connected from MH2 to Existing Sewer. Wick Waste Water Treatment Works is approximately 3km to the South East of the site	Onsite Cellular storage tanks, Hydro brake restricting flows to 5l/s and outfalls to local watercourse.	125mm PE Low pressure gas man shown on the A99 to the south west of the site.

We have provided a high level estimate for the capital expenditure requirements for the central ATMC at the short listed locations, see **Table 6.2** – this is based on the data provided above in **Table 6.1**, the RICS BCIS Regional Indices for Scotland, and applying an Optimism Bias based on risk/uncertainty at each location.

Please note that this is a notional assessment and is being used to compare the locations and identify the scale of any potential variations or uplift within the capital expenditure profile – this should therefore be borne in mind when reviewing the data.

Table 6.2: Capital Expenditure Estimates for ATMC

Location	Capital Expenditure Assumptions
All locations	The capital expenditure estimates are based on a high specification two storey Headquarters of 20,000 square feet @ £235 per sq ft. The cost estimates presented exclude building fit-out for ATMC, land costs, VAT and legal costs. Utility capacities are assumed to be present.
Benbecula	Cost estimates are based on the following assumptions: • + 20% Western Isles Index; • + telecoms and utilities upgrade, notional budget of £150,000; and • + 40% Optimism Bias. Capital expenditure estimate = £8,106,000.
Dundee	Cost estimates are based on the following assumptions: • + 10% allowance for abnormal foundations; • + telecoms and utilities upgrade, notional budget of £100,000; and • + 30% Optimism Bias. Capital expenditure estimate = £6,851,000.
Inverness	Cost estimates are based on the following assumptions: • + telecoms and utilities upgrade, notional budget of £100,000; and • + 30% Optimism Bias. Capital expenditure estimate = £6,240,000.
Kirkwall	Cost estimates are based on the following assumptions: • + 10% Orkney Islands Index; • + telecoms and utilities upgrade, notional budget of £100,000; and • + 40% Optimism Bias. Capital expenditure estimate = £8,101,800.
Stornoway	Cost estimates are based on the following assumptions: • + 20% Western Isles Index; • + telecoms and utilities upgrade, notional budget of £100,000; and • + 35% Optimism Bias. Capital expenditure estimate = £8,106,000.

Sumburgh	Cost estimates are based on the following assumptions: • + 23% Shetland Islands Index; • + telecoms and utilities upgrade, notional budget of £150,000; and • + 35% Optimism Bias. Capital expenditure estimate = £7,939,350.
Wick John O'Groats	Cost estimates are based on the following assumptions: • + 35% remote location index Index; • + telecoms and utilities upgrade, notional budget of £100,000; and • + 40% Optimism Bias. Capital expenditure estimate = £9,023,000.

Based on the high level scoping which considered a range of technical and environmental criteria and utilising benchmark cost data to estimate the capital expenditure, Inverness and Dundee Airports represents the lowest risk and more viable locations for situating the centralised ATMC.

Outwith Benbecula (where we are unable to source information on available telecoms) there are no underlying conditions or infrastructure constraints that would prevent the other locations operating as the preferred option in principle – there are however, greater levels of risk and capital expenditure associated with these locations.

On agreement of a preferred location option, a specific site will need to be identified and further detailed investigations will be required – the Civil Aviation Authority has ultimate responsibility for approving the Surveillance Centre and Remote Towers, including the availability of communications, power, utilities, security, and resilience, etc.

7. Economic Impacts

This section presents a high level assessment of the potential economic benefits and dis-benefits on the local economy from the implementation of the Centralised Surveillance and Remote Tower Centre option.

7.1 Caveats, Assumptions and Technical Note

While the assessment is robust and has been undertaken based on HM Treasury Green Book guidance, there are a number of caveats and assumptions that have informed the assessment which should be borne in mind when interpreting the data.

The key assumptions and caveats are considered below as well as further description of the technical terminology:

- the economic impacts are measured as the Full Time Equivalent (FTE) jobs and salaries/wages of those staff directly affected by the implementation of the Centralised Surveillance and Remote Tower Centre option – identified as 86 staff (Air Traffic Controller (54.5), Air Traffic Services Assistant (12), and Air Traffic Services Operational Assistant (12.5) and students/trainees (7);
- the gross impacts can be considered as the absolute change brought about through the implementation the preferred option in principle and are based on data provided by HIAL on current staffing levels (as of June 2018) and financial remuneration for the latest financial year 2017/18 (wages, allowances, overtime);
- economic appraisal usually includes the assessment of Gross Value Added (GVA)[6], however, as HIAL is a publicly subsidised organisation (i.e. non-profit-making) this has been discounted from the assessment to avoid confusion;
- the economic impacts are measured at the TTWA or local authority level as identified in **Section 5** (Area Profiles) and report against the gross direct and net direct + induced effects;

[6] See here for a useful definition

- we do not have access to sufficiently robust data that would allow measurement of the wider economic impacts, for example, partners and spouses who are currently in employment potentially relocating away from the local area – this has been discounted from the assessment;
- net impacts - the gross impacts do not represent the true extent of the likely impact on the economy. Account needs to be taken of some other factors in order to arrive at more comprehensive estimates. Also, these adjustment are likely to vary depending on the spatial area of interest. The approach is to make adjustments to the gross impacts, to reflect:
    - leakage, the proportion of gross impacts that might accrue outside of the target spatial area of interest – this has been informed by data provided by HIAL on the residence of affected staff. The net impacts have been assessed based on the local authority area.
    - displacement, effects due to increased market competition; and
    - multiplier effects, comprising:
        - supplier linkage multipliers (indirect), the benefits to suppliers through the performance of final beneficiaries
        - income multipliers (induced), the benefits generated by the increased consumption expenditures of those employed through direct or supplier linkage effects.

  The income multiplier effects (or induced effects) have been estimated using the Scottish Government Input-Output tables and applying a weighting to reflect the local economy. This is based on HIE's approach to measuring economic impact from their interventions and is consistent with HM Treasury 'Green Book'.

  Please note that as the supply chain spend is (for the most part) undertaken at a group level and the supplier linkages are not dependent on the geographic base of HIAL staff, we have discounted the supplier linkage multiplier effects (or indirect multiplier effects) – at a group level the economic activity (employment) is being redeployed, not decreased.

7.2 Economic Impacts

Table 7.1 presents the annual gross and net impact of HIAL's operations across the seven shortlisted locations. In addition, by extension this also estimates the potential dis-benefits to the local economy from relocating jobs to a centralised location.

Table 7.1: Estimated Economic Impact of HIAL Activity – Impacted ATC Staff

	Employment				Gross impacts		Net impacts		Scale of impact	
	Air Traffic Controller	Air Traffic Services Assistant	Air Traffic Services Operational Assistant	Students/ Trainees	FTE jobs	Annual salaries	FTE jobs	Annual salaries	% of total jobs	% of total salaries
Benbecula	6	0	0	0	6	£300,000	8	£400,000	0.31%	1.53%
Dundee	7	2	0	0	9	£500,000	9	£500,000	0.01%	0.05%
Inverness	16	9	0	1	26	£1,400,000	33	£1,600,000	0.05%	0.24%
Kirkwall	5.5	1	4	1	11.5	£600,000	15	£600,000	0.11%	0.52%
Stornoway	6	0	4	2	12	£600,000	16	£600,000	0.15%	0.66%
Sumburgh	9	0	4.5	2	15.5	£700,000	20	£800,000	0.11%	0.27%
Wick John O'Groats	5	0	0	0	6	£300,000	6	£300,000	0.13%	0.67%
HIAL employment in 2018	**54.5**	**12**	**12.5**	**7**	**86**	**£4,500,000**	**107**	**£4,700,000**		

The HIAL activities being measured through this assessment generate a reasonably high cumulative economic effect – 86 FTE jobs and £4.5 million per annum in gross salaries/wages. If we consider the wider income multiplier effects at the local level this rises to 107 FTE jobs and £4.7 million per annum. While this activity is spread across a fairly broad geographic base, it is nonetheless a notable impact.

As is to be expected, HIAL's activities have a greater impact across the more rural and remote areas, representing a larger share of both jobs and, in particular, the salary base. This reflects the comparatively higher value and wages of ATCO jobs in comparison to the wider labour market (as highlighted within the local area profiles in **Section 5**), 'tourism related' employment comprises a notable share of the employment base – a sector that is characterised by higher levels of part time working and lower wages/salaries.

The table also highlights the potential negative effects on local/regional economies should staff relocate to a central location. Please note that this only considers the impact of relocating the directly affected jobs and does not consider:

- the potential for commuting i.e. the 'workplace count' gross effects are lost but the associated income multiplier spend effects are retained in the local area; and
- the wider economic and social impact of partners/spouses and children relocating.

The data shows the proportion (%) of the wider employment and salary base that the affected HIAL positions represent. This ranges from Dundee at the lower end of the scale (0.01% / 0.05% of the jobs and salaries/wages base, respectively) to Benbecula (0.31% / 1.53% of the jobs and salaries/wages base, respectively).

That being said, it is important to look beyond just the data and absolute numbers presented above. The relocation of jobs from some of the more remote and rural locations will likely have a disproportionally negative effect within both the local economy and wider community.

This has to be considered alongside the wider challenges facing these locations in terms of the local economy's ability to withstand 'shocks'. For example, Benbecula has experienced a decline within its employment base (-2%), whilst Stornoway and Sumburgh have remained static in recent years.

There is also de-population and out-migration of skilled workers from island and remote communities. With some of these locations having a declining and ageing population this will put further stress on the sustainability of the local economy and communities that it supports.

Both these challenges – supporting fragile economies and reversing de-population through retaining and attracting talent are key strategic priorities for the Highlands and Islands.

Table 7.2 below presents the estimated uplift in economic activity within each location – this is on the basis that all jobs are relocated and assuming the same caveats and assumptions as applied to **Table 7.1**, above.

The relocation of HIAL activities has the potential to create new direct and induced economic activity. In particular we would note that the more remote location of Benbecula would see an uplift of +3.69% in jobs and a significant impact on the wages/salaries base of +22.34%. In addition, Wick John O'Groats could also benefit notably from the relocation uplift, estimated at +1.60% and +9.14% within the employment and salaries/wages base, respectively.

This is not to say that the estimated uplift effects are insignificant across the other locations, but given the comparatively smaller economies within the remote areas it is unsurprising that an uplift of this scale would have a notable wider effect.

Table 7.2: Potential Uplift in Activity Onsite – ATC Staff

	Employment				Gross impacts		Net impacts		Scale of impact	
	Air Traffic Controller	Air Traffic Services Assistant	Air Traffic Services Operational Assistant	Students/ Trainees	FTE jobs	Annual salaries	FTE jobs	Annual salaries	% uplift in jobs	% uplift in salaries
Benbecula	54	0	12	6	72	£4,100,000	95	£4,700,000	3.69%	22.34%
Dundee	53	0	10	6	69	£4,000,000	71	£3,600,000	0.09%	0.44%
Inverness	44	0	3	5	52	£3,200,000	66	£3,400,000	0.10%	0.59%
Kirkwall	54.5	0	7	5	66.5	£4,000,000	80	£4,200,000	0.60%	3.96%
Stornoway	54	0	8	4	66	£4,000,000	87	£4,600,000	0.82%	5.23%
Sumburgh	51	0	7.5	4	62.5	£3,800,000	82	£4,300,000	0.45%	1.71%
Wick John O'Groats	55	0	12	5	72	£4,200,000	76	£3,800,000	1.60%	9.14%

8. Preferred Location and Next Steps

This final section presents the case and evidence base for the preferred location in principle and provides an outline of further scoping and investigations required to support HIAL's implementation and change management programme.

8.1 Preferred Location in Principle

At this stage it is worth highlighting that in terms of 'feasibility', in principle HIAL could locate the central ATMC at a number of the shortlisted locations with all having strengths and advantages as a location. Indeed we would note that there are large employers that have previously, and are currently operating from these wider locations, however these have tended to be more 'location specific' i.e. the local area offers some form of physical or environmental competitive advantage, or access to infrastructure (e.g. port facilities).

Nonetheless, based on the initial scoping, some of the locations carry substantial risks and challenges for implementation, and it is the balance of these strengths, challenges and risks that have informed the options appraisal.

Based on the evidence presented in the report there are two shortlisted options that emerge as providing HIAL with the greatest opportunity for successful implementation of the Centralised Surveillance and Remote Tower Centre option: Inverness and Dundee.

The two options have been taken forward for further analysis and review, see below.

The implementation and delivery of the Centralised Surveillance and Remote Tower Centre option is a significant undertaking in and of itself. Estimated at c. £30m and eight to 10 years to implement, it is the largest and most complex project that HIAL has ever undertaken. Within this, one of the key challenges is around the retention, attraction and recruitment of qualified and experienced staff, described as:

- retaining a core staff;
- attracting new qualified ATCOs with relevant ratings/validations; and
- developing a pipeline of new talent - attracting new people (including young people) into the sector and creating a training legacy.

With that in mind the preferred location option has to present HIAL with the:

- most effective proposition to address these emerging staffing challenges;
- lowest risk both in terms of deliverability/implementation and costs (capital and revenue); and
- opportunity to make the greatest contribution to delivering against its strategic objectives and priorities – to provide and operate safe, secure and efficient airports.

The scoping study has therefore identified **Inverness** as the preferred location option in principle. The case for Inverness operating as the preferred location for delivery of the Centralised Surveillance and Remote Tower Centre option can be summarised as:

- supporting HIAL to retain a core staff and support future recruitment programmes;
- minimising disruption and ensuring continuity of service;
- providing a well-connected location with appropriate levels of education and housing infrastructure, and labour market opportunities to support in-migration; and
- offering the most cost-effective and lowest risk option from a technical, operational and environmental feasibility perspective.

This is considered further below.

Addressing Staffing Challenges

Retaining a Core Staff

Inverness currently acts as the largest operational site across the HIAL airport network with 26 ATC staff, just under one-third of the total staff that will be affected. Therefore, in terms of minimising disruption and ensuring continuity of service, Inverness is the most attractive option.

In addition, we would note that all ATCO staff at Inverness Airport already have a relevant APS rating to operate within a surveillance control environment.

While staff based at Inverness with an APS rating would have to undertake conversion training to obtain the relevant validation, this is less costly, compared to other ATCOs with an APP/ADI rating which was estimated at £22,000 - £25,000 per employee. In addition, feedback suggests that the proportion that will successfully validate is likely to be higher (estimated at 90% – 95%).

The survey of HIAL employees identified that over the short term (2021 - 2024), **53% would consider relocating to Inverness** and over the longer term (2024 - 2028) this was 48%. In comparison, some of the other shortlisted options had 80%+ of the respondents reporting that they would be unwilling/unable to relocate.

While the survey represents the first stage in an ongoing process of dialogue and engagement, Inverness emerged as the clear "preferred" option – albeit this is still subject to various dependencies and caveats regarding family situations, relocation support, timescales, etc.

Attracting New Qualified ATCOs with Relevant Ratings/Validations

We would caveat this section by highlighting that HIAL operate in a very competitive market for qualified staff and therefore the 'offer', including salaries and allowances has to be positioned appropriately to attract new staff from within a competitive labour market.

We have considered HIAL's recruitment programmes and the wider area profiles to inform the appraisal.

Recruitment

HIAL will face recruitment challenges over the next 10 years and will likely experience a level of staff loss driven by 'natural wastage' including staff retiring, leaving the company, and those that are unable/unwilling to relocate.

This is estimated as at least 30 - 40 staff, based on historical staff turnover rates. We would highlight that this figure likely underrepresents the wider challenges, as it does not count those that will be directly affected through relocation.

Inverness Airport has successfully recruited for nine ATCO positions since 2012/13 (82% success rate, minus those currently in training).

In comparison the recruitment success rate across HIAL is only 54% for ATCOs becoming validated (as a proportion of those positions being sought) and less than one third in some locations.

Feedback suggests that the suitability of candidates applying for positions within Inverness has been strong, and has had by far the highest proportion of applications that are taken forward to interview. In addition, the proportion of candidates that are recruited who then become successfully validated is 82% at Inverness, compared with 67% across all locations (note that Benbecula and Dundee have proportionately greater success rates, 100% but based on a lower number of positions).

Wider Area Profile

Inverness has good transport connections and was identified as the most 'accessible' of the shortlisted options. In particular it offers a range of direct connections to the islands and remote areas, and to the central belt (with direct flights and drive times to Edinburgh and Glasgow of c. three hours – potentially access to a larger labour pool). The accessibility and transport connections could (should shift patterns allow) offer the potential for commuting.

As a city, albeit a relatively small city with a population of c. 60,000, Inverness has a good offering to support in-migration, including:

- adequate school provision to support the predicted levels of in-migration,
- a growing economy with further opportunities for longer term strategic growth through the Inverness and Highland City-Region Deal – this could generate further opportunities within the labour market which was identified as an important factor in relocating (majority of spouses and partners are currently in work); and
- Inverness is the location for the main UHI campus which offers a range of vocational, undergraduate and postgraduate provision, including a BSc Honours in Air Traffic Management.

The main potential challenge with regards Inverness is the current availability and mix of housing provision.

While the housing market is relatively buoyant with 1,600 sales in 2017, there are c. 7,500 new residential units allocated within the LDP, and there are residential developments ongoing or proposed. For example, Tornagrain outside Inverness Airport has proposals for a new community of 5,000 units, with phase one currently underway.

That being said, as highlighted above, Inverness is the most expensive location in terms of average house prices, c. 4% - 5% higher than the Scottish average and 50%+ higher than some other shortlisted locations. This could prove to be challenging for relocated staff to access comparative housing within their budget.

In terms of addressing these challenges, the Inverness and Highlands City-Region Deal is developing a project proposition for the development of affordable housing with £5m already committed to the project.

The project (partnership with public sector, housing associations and house builders) is targeting the development of 6,000 new units over 20 years, 1,800 of which will be 'affordable'. The project includes the creation of a recyclable loan fund to invest in key residential sites and Highland Council will participate in the National Housing Trust initiative to create more new homes, targeted specifically at young people and available at a mid-market rent.

We would also note that historically, there is little slack in the rental market (at the time of review there were only 40 properties advertised for private rent, representing 0.1% of the total housing stock) and there is a lack of student accommodation – the UHI Campus is the only provider of student accommodation with c. 150 units.

Addressing issues within the housing market across the wider city-region is therefore a key consideration for implementation.

Developing a Pipeline of New Staff and Creating a Training Legacy

At this stage there is no information on the potential scale, scope and nature of any training programme, so it is therefore difficult to draw any strong conclusions.

We have therefore considered the region's infrastructure assets which includes the main UHI campus building. Currently UHI delivers a BSc Honours in Air Traffic Management via the Inverness Campus, however, feedback suggests that there is potential demand for developing some form of vocational or Apprenticeship training scheme.

It is recommended that HIAL, in partnership with a training provider such as UHI, undertake some initial scoping work to assess the demand and opportunity in greater detail.

Technical, Operational and Environmental Feasibility

While the preferred option will be subject to further investigation (and certification of the operations from the CAA), the high level review identified that Inverness Airport (alongside Dundee) represents the lowest risk and most viable location for situating the centralised ATMC.

The other shortlisted locations, whilst still technically feasible, identified additional risks and logistical challenges in terms of availability of telecoms, utilities and wider infrastructure, and ground conditions, all of which have the potential to increase the capital cost base of the project.

On agreement on a preferred location option in principle, a specific site will need to be identified and further detailed investigations will be required – the CAA has responsibility for approving the Centralised Surveillance and Remote Tower Centre. This includes the availability of communications, power, utilities, security, and resilience, etc.

Dis-benefits and 'Missed Opportunity'

The potential dis-benefits from the implementation of the Centralised Surveillance and Remote Tower Centre option in the main relate to the relocation of well paid jobs out of local economies/communities. These dis-benefits have the potential to have a deeper and longer term impact over and above what the raw data can show (see **Section 6** - **Table 6.1**).

Nonetheless, HIAL will still continue to operate from these locations and support a range of direct employment opportunities. To provide some wider context we have provided a summary of the number of employees based at the other six shortlisted locations (minus the positions that are likely to be relocated);

- Benbecula - 30;
- Dundee - 49;
- Kirkwall - 47;
- Stornoway - 48;

- Sumburgh - 78.5; and
- Wick John O'Groats - 29.

In identifying the preferred option, it is important that we also reflect on what could be considered as a 'missed opportunity' to support regeneration and economic growth within remote and island communities. As highlighted in **Section 6**, the relocation of a large number of jobs has the potential to generate a significant positive effect on the local/regional economy. This impact would be amplified within the remote areas and island communities and could be considered as having a 'transformational effect'.

Utilising the project as a mechanism to deliver local economic growth and regeneration is an opportunity worth consideration, however, the potential benefits need to be weighed against the wider risks and challenges.

Based on the evidence presented, the remote and island locations would generate additional challenges and risks (to a project that is already very complex and carries significant risk) such as:

- 74% - 90% of the surveyed staff reported that they would not consider relocating to Benbecula, Kirkwall, Stornoway, Sumburgh, or Wick over the short term – similar proportions reported over the longer term;
- recruitment challenges within remote locations and the islands – the proportion of ATCO vacancies that have been successfully filled and the candidate has validated has varied but overall is low – Benbecula (1 position successfully filled/validated), Sumburgh (63%), Wick (50%), Kirkwall (33%), and Stornoway (27%). Feedback suggests that the location has played some part in the quality of applications and suitability of candidates;
- provision of adequate housing and labour market opportunities that would support the estimated levels of in-migration – while the implementation will be phased, addressing these challenges would require co-ordination between the public and private sectors – across some locations this is unlikely to be feasible; and
- additional technical challenges and inflated construction costs associated with remote locations which could result in an increasing cost base for the project.

It is with this in mind that Wick John O'Groats and the island locations have been discounted – in comparison with the preferred location, Inverness, the risks and logistical challenges have the very real potential to negatively impact upon HIAL's ability to both implement the Centralised Surveillance and Remote Tower Centre option and deliver against its core activities.

Contribution to Strategic Goals

In addition to addressing the challenges that are likely to arise through the implementation of the Centralised Surveillance and Remote Tower Centre option, the appraisal must also consider what location best supports HIAL in delivering against its strategic objectives and priorities.

As stated within the HIAL Strategic Plan (2009 – 2019)[7], first and foremost HIAL's key mission is to provide and operate safe, secure and efficient airports, and through the delivery of services it is able to contribute to the Scottish Government's Strategic Objectives:

- Wealthier and Fairer – our airports provide access to air transport connections which support sustainable economic growth and social inclusion;
- Healthier – our airports facilitate access to healthcare services for more remote communities;
- Safer and Stronger – air links enhance the attractiveness of the communities we serve as places in which to live, work and invest;
- Smarter – air links provide access to education, employment, skills and resources which contribute to the socio-economic viability of more remote communities; and
- Greener – reducing the environmental impact of providing airports through resource efficiency contributes towards a Greener Scotland.

HIAL's focus is and will continue to be on service delivery. The airports it operates and the connections it provides are a crucial part of the transport network, and act as both an enabler and direct contributor to the economic prosperity and the sustainability of communities, particularly in remote regions and the islands.

[7] A copy of the strategy is available here.

From an organisational perspective, maintaining a high value air service is the primary goal and it is therefore vital that the preferred location enables HIAL to deliver its core activities and services, in order to deliver against its wider strategic goals.

Inverness therefore presents the most compelling case and preferred option to support HIAL's continued delivery of its core activities.

8.2 Further Investigations and Actions

This report has presented the initial location scoping and has identified the preferred option in principle as Inverness. In order for HIAL to progress with the implementation of the project there are a number of further investigations and actions (specific to the location) that should be progressed, these can be summarised as:

- further engagement and consultation with staff/employees (and Union representatives) that are likely to be impacted through the project;
- further engagement and consultation with stakeholders to discuss the implementation and agree approaches/interventions to minimise and mitigate against the dis-benefits;
- engage with the CAA and other relevant bodies to gain the relevant regulatory approvals;
- investigate potentially viable sites for situating the ATMC and undertake further scoping works, including the availability of power and telecoms infrastructure;
- appointment of a Programme management team;
- engage with potential suppliers and develop a project brief and specification to take to the market as part of the competitive tendering process; and
- appointment of professional design team to lead on specific project elements.

Appendix A: Consultations

The organisations that participated in the consultation process are provided below in **Table A1**. We received input from over 20 stakeholders and 42 HIAL staff via the online survey. EKOS would like to extend their thanks to the organisations and individuals that provided input to the research.

Table A1: Stakeholder Consultations

Organisation
Highlands and Islands Airport Limited – Senior Management Team, Airport managers, ATCOs and other staff directly affect through the proposals
Highlands and Islands Enterprise – central unit and regional teams
Scottish Enterprise
Comhairle nan Eilean Siar
Dundee City Council
Highland Council
Orkney Islands Council
HITRANS
TACTRANS

Note: EKOS contacted all relevant local authorities and Transport Bodies to participate in the study.

Appendix B: Wider Area Mapping

The maps below show the 'wider areas' used within the profiles at **Section 5**. For Dundee, Kirkwall and Sumburgh, the entire local authority area in which each airport is based was used.

Figure B.1: Benbecula Wider Area

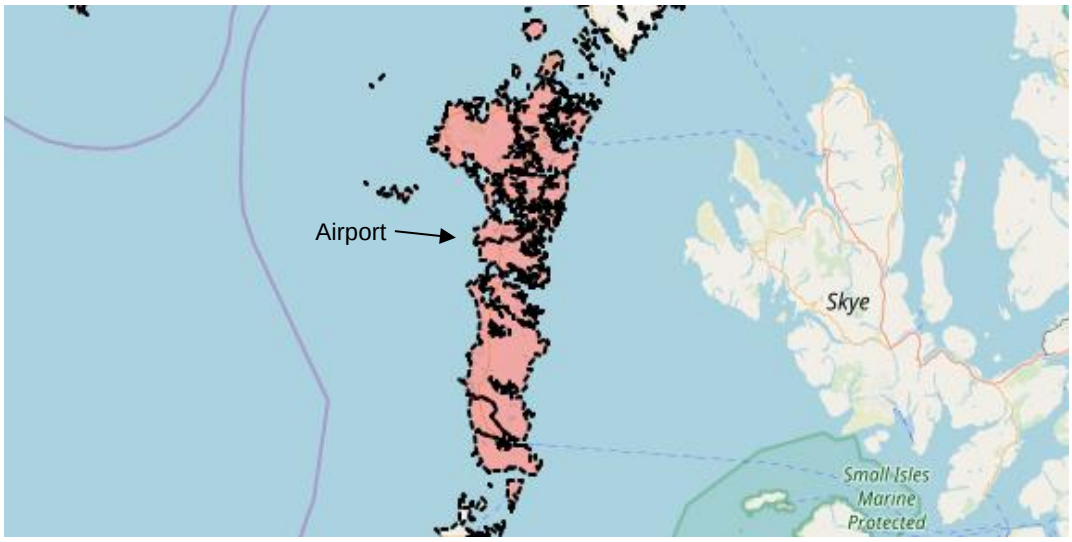


Figure B.2: Dundee Wider Area

Figure B.3: Inverness Wider Area

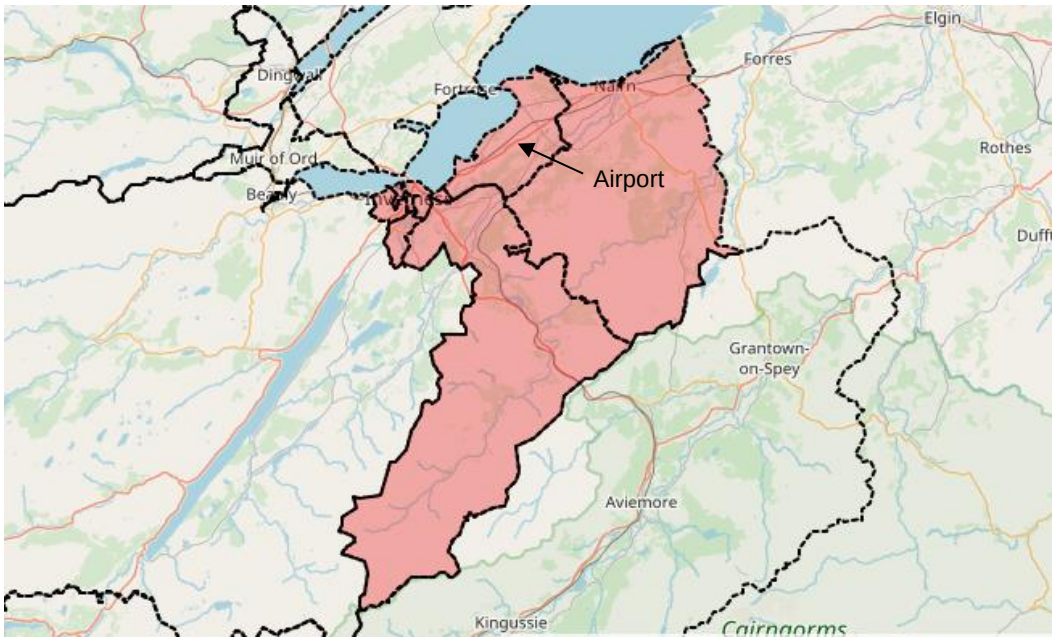


Figure B.4: Kirkwall Wider Area

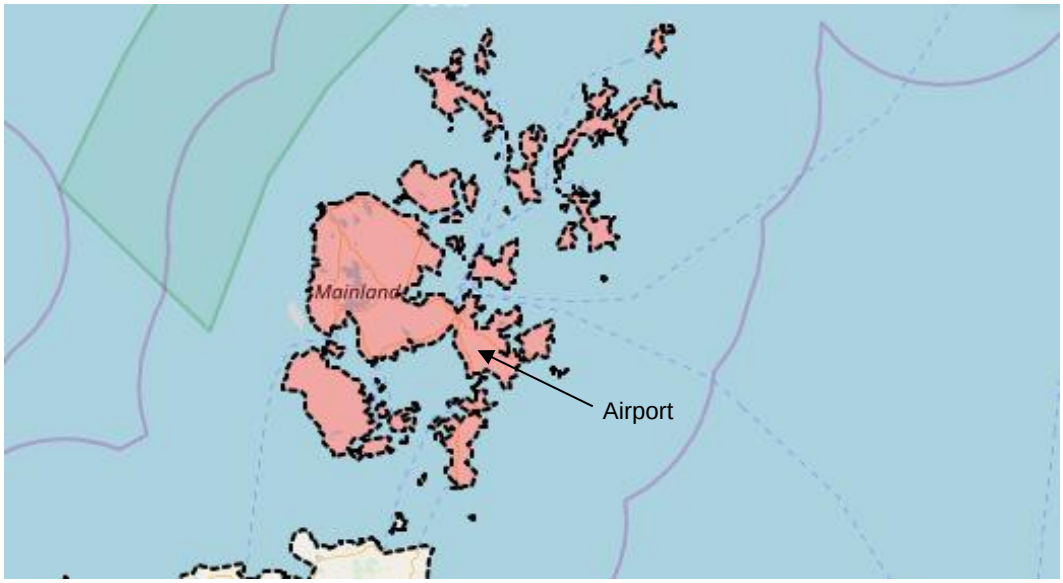


Figure B.5: Stornoway Wider Area

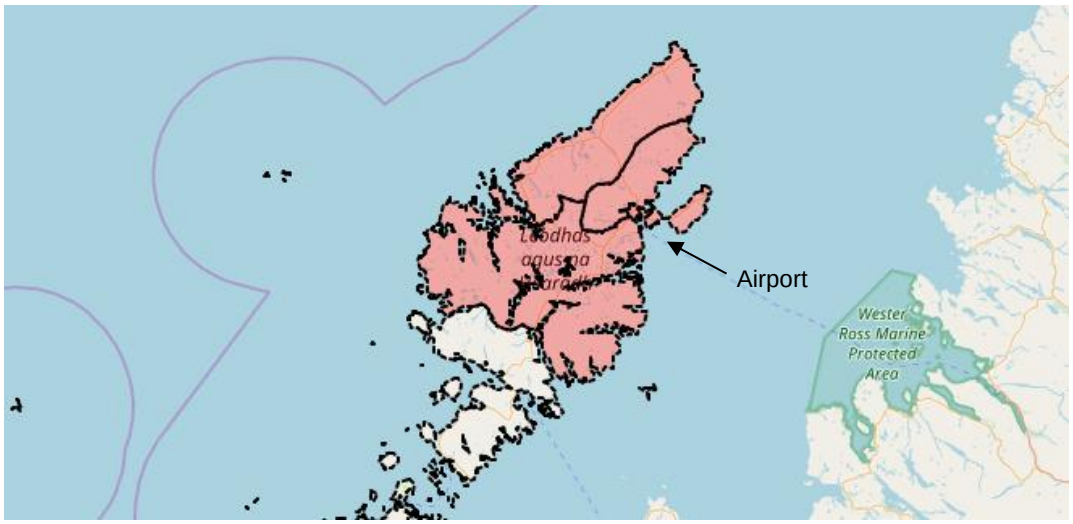


Figure B.6: Sumburgh Wider Area

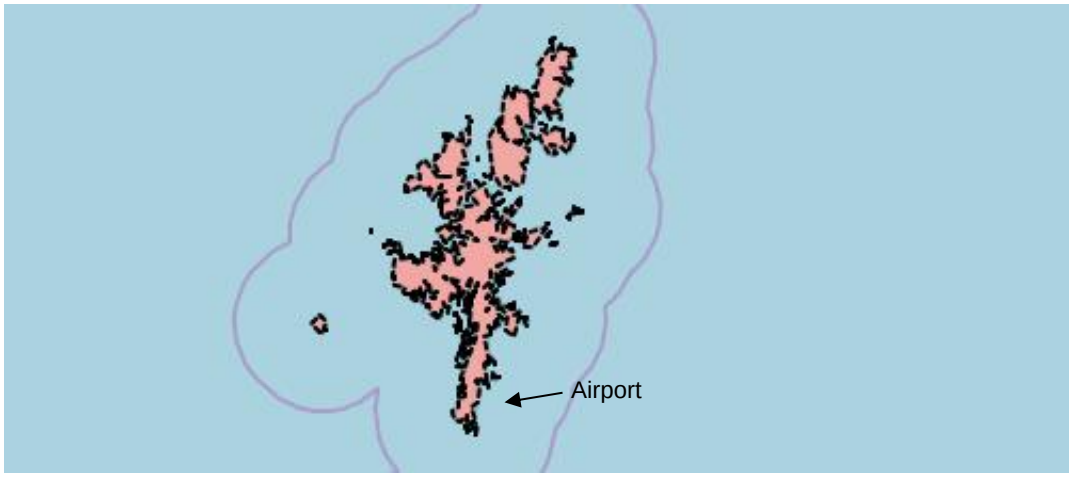
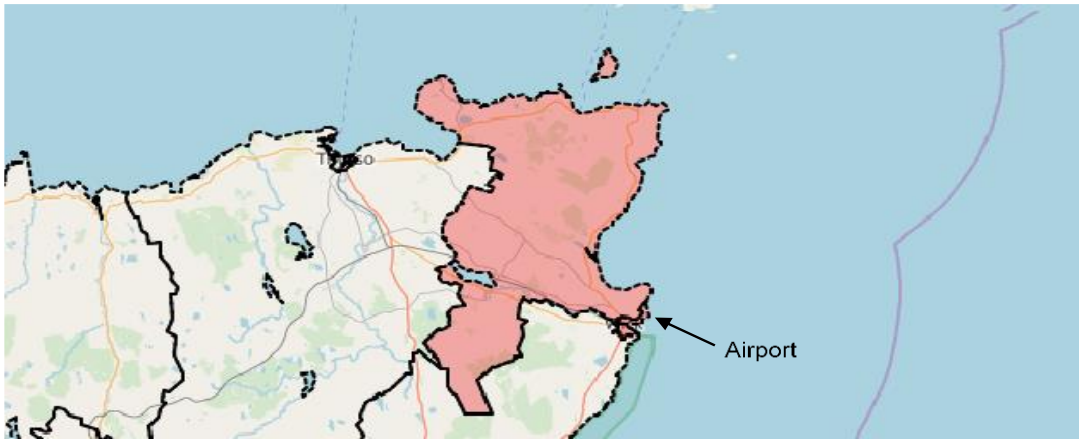


Figure B.7: Wick Wider Area



Appendix C: Redactions for Publication

Table C1 provides further detail on the classification of data that has been aggregated or redacted within the report.

Table C1: Classification of Redactions

Classification	Explanation
1	Information has been aggregated or removed where it is considered personal information and to publish that information may breach one or more of the data protection principles. The types of information that have been redacted include: • names; • personal contact details; • personal opinions that are related to personal circumstances; and • information that may allow the deduction of personal information relating to people (for the HIAL staff survey the minimum threshold for reporting was five responses).
2	Information has been removed where publication may prejudice the effective conduct of public affairs. Examples are information that may substantially inhibit the free and frank exchange of views for the purposes of deliberation, and information that, if published, may prevent HIAL from effectively managing future change or transition.
3	Information has been removed where publication may substantially prejudice either HIAL's or another third party's commercial interests
4	Information has been removed where publication may endanger HIAL's ability to appropriately manage and maintain health and safety matters.