Aberdeen International Airport

Aberdeen International Airport (AIAL)

Airspace Change Proposal

Consultation Document

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Foreword

For the last 90 years, Aberdeen International Airport has played a pivotal role in the social and economic development of the North-East of Scotland. We are continually improving the airport – investing and modernising in a responsible and sustainable way to deliver better service to our passengers and strengthen relationships with our communities.

An industry-wide drive led by the regulator, the Civil Aviation Authority (CAA), to create airspace infrastructure fit for the 21st century is now underway. This national Airspace Change Programme aims to deliver the vision of the Government's Airspace Modernisation Strategy to deliver quicker, quieter, and cleaner journeys and more capacity for the benefit of those who use and are affected by UK airspace.

A key element of the strategy is to introduce modern satellite-based navigation, called Performance Based Navigation (PBN), by the end of the decade. For Aberdeen International Airport, this means offering modern PBN arrival procedures for resilience alongside our current arrival procedures. It also means reviewing our airspace structures to ensure we are using the minimum volume of airspace necessary.

We are committed to working with our industry, passengers, and neighbours throughout this process. At earlier stages of the airspace change process we have led workshops to gain views on our design principles and options and are now undertaking this consultation to gather as much feedback as possible to ensure everyone's views are given consideration.

It is important to emphasise that this proposed change applies to a very small percentage of Aberdeen's arriving aircraft and the vast majority of aircraft will continue to arrive as they do today. The proposal does not involve any changes to departures or the helicopter route structure as to do so was determined to have a negative impact on the airport's ability to operate as it does today.

This document outlines in detail what we are proposing and how you can take part in the consultation.

For a summary of our proposals please see our Consultation Summary Document on our online Citizen Space Consultation website.

Following this consultation, we will collate, review, and respond to feedback before developing the final Airspace Change Proposal and then submitting this to the CAA for formal approval.

Thank you in advance for your consideration of our proposals and we look forward to hearing from you before the consultation period ends on Sunday 21 July 2024 (2359hrs).

1

Introduction

1 Introduction

1.1 Background

1.1.1

The UK's airspace is some of the busiest in the world. In 2017, the Department for Transport (DfT) notified aviation stakeholders that, as demand for aviation is forecast to continue growing, delays and environmental impacts are expected to increase if the UK's airspace is not upgraded to introduce additional capacity. In response, the Civil Aviation Authority (CAA) was tasked with developing the UK's Airspace Modernisation Strategy (AMS) which was first published in December 2018. The vision of the Airspace Modernisation Strategy is to deliver quicker, quieter, and cleaner journeys and create more capacity for the benefit of those who use and are affected by UK airspace.

1.1.2

The overall programme of changes required to implement the AMS is considered one of the most significant airspace and air traffic management (ATM) developments ever undertaken. Some of the most important changes described in the AMS concern the widespread adoption of satellite-based navigation technology, known as Performance Based Navigation (PBN).

1.1.3

Aberdeen International Airport (referred to as 'Aberdeen Airport' or 'we' throughout this document) is undertaking an Airspace Change Proposal (ACP) to provide resilience to its operation and to support the widespread introduction of new routes based on Performance Based Navigation (PBN). The airspace change will also take the opportunity to review existing controlled airspace boundaries and classifications.

1.1.4

This ACP will enable Aberdeen Airport to meet the UK's Airspace Modernisation Strategy (AMS), which sets out the initiatives which the aviation industry, in particular airports, should progress to modernise the UK's airspace structure and route network.

1.2 Consultation overview

1.2.1

Aberdeen Airport is consulting on two changes to the airspace surrounding the airport. As part of this consultation, we are asking for your feedback on the following two proposals:

1. The introduction of modern satellite-based arrival procedures[1] which would be used by a very small percentage of arrivals for resilience and training purposes; and

2. The release of a section of the Controlled Airspace (CAS), which is not routinely used by the aircraft arriving or departing from Aberdeen Airport, for the benefit of other airspace users.

[1] *Required Navigation Performance (RNP 1) Approaches*

Key information about the arrival proposal:

The purpose of the change is to improve resilience and offer modernised arrivals at Aberdeen Airport.

The new procedures will operate alongside our existing arrival procedures to Aberdeen Airport. They are expected to be used when existing navigation aids are unavailable, or if airlines would like to undertake training.

For the purposes of the appraisals, we have optimistically estimated these new PBN arrivals would be operated by only 5% of Aberdeen arrivals.

Based on historic information about existing navigation aid availability, and usage for training at other airports, this is likely to be an overestimate and usage would be lower at around 1%.

Based on the more realistic 1% estimate and Aberdeen's future movement forecast, this would mean less than 1 helicopter flight per day and 1 fixed wing flight per day on average would fly the PBN arrivals.

Based on the 5% estimate this would mean less than 1 helicopter flight per day and around 4 fixed wing aircraft a day on average would fly the PBN arrivals.

The majority of aircraft will continue to arrive as they do today.

The proposed change applies to a very small percentage of Aberdeen's arriving aircraft, we anticipate more than 95% of arrivals will continue to arrive as they do today.

This proposal does not involve any changes to departing aircraft, or the helicopter route structure.[2]

The introduction of PBN departures would reduce the flexibility and adaptability needed to integrate helicopter and fixed wing operations which could negatively impact capacity, noise and carbon emissions.

This proposal does not change capacity at Aberdeen

The introduction of PBN arrivals for resilience and training will not alter the number of aircraft arriving and departing from Aberdeen Airport.

Key facts about the Controlled Airspace proposal:

It would release 27.8nm^3 of CAS

This benefits other airspace users including General Aviation and Unmanned Aerial Systems (drone) operators.

Releasing the CAS will not impact aircraft arriving or departing from Aberdeen Airport

There are some small impacts to some of Aberdeen Airport's existing arrival procedures

The **Full Options Appraisal** contains detailed information on the small adjustments required to Aberdeen Airport's Direct arrival procedures.

Why is Aberdeen Airport not modernising departures, or making fundamental changes to the airspace?

1.2.2

Aberdeen Airport has a highly complex operation which requires integration of a high number of helicopters alongside fixed wing aircraft. As a result, the operation requires a highly flexible and adaptable environment. This is achieved through tactical vectoring to optimise capacity and enable departures in quick succession.

1.2.3

PBN departure and arrival procedures create a more systemised, fixed route structure, and, in the case of Aberdeen Airport, these would not be able to replicate the existing operational flexibility. This would likely have an impact to capacity at peak times and potentially a negative impact on noise, carbon emissions and controlled airspace. Accordingly, the scope of the airspace change looks to improve resilience at Aberdeen Airport, whilst maintaining the operational flexibility needed.

1.3 This consultation

1.3.1

The consultation will run from Monday 29 April to Sunday 21 July 2024.

1.3.2

This document is our main consultation document which provides details of the background to this ACP and the proposed changes. Other consultation materials have been created, including a **summary document**, a **Frequently Asked Questions (FAQ) document**, and a more technical **Full Options Appraisal document**. All documents are published on the Citizen Space Consultation website and this website is also where consultees are able to respond to the consultation.

1.3.3

This Consultation Document aims to explain the proposed changes in a way that those not familiar with aviation terminology can understand. To assist with this, we have produced a **Glossary and Terminology Document** which we recommend having open whilst reading this consultation material.

1.3.4

This Consultation Document is broken down into six main sections:

Section 1: Introduction

Introduces the background to this ACP and the work undertaken to date.

Section 2: This consultation

Provides an overview of the consultation, including details of the materials and how you can feedback your comments.

Section 3: What happens today (The 'do nothing' scenario)

Explains how aircraft arrive at Aberdeen Airport within the baseline. This is important to understand before looking at the proposed changes.

Section 4: The proposed PBN arrival option and its benefits and impacts

This section details the proposed PBN arrival option for consultation. It describes the changes proposed and any benefits or impacts associated with those changes. Section 4 is supported by the **Full Options Appraisal** which includes detailed technical information on the proposed option.

Section 5: The proposed CAS option for consultation and its benefits and impacts

This section describes the current Controlled Airspace (CAS) and the proposed change. It then outlines the benefits and impacts associated with the change.

Section 6: What happens next?

This part provides a recap of how to respond to the consultation and describes the next stages in the airspace change process.

1.4 Airspace Change Process

1.4.1

Since January 2018 any changes to airspace are required to follow the CAA's CAP1616 regulatory guidance. CAP1616 outlines a 7-stage process for changing airspace design including community engagement requirements.

1.4.2

The first 2 stages of this ACP were carried out between November 2019-December 2022 and are based on the regulations in the fourth edition of CAP1616. In November 2023 the CAA published the fifth edition of CAP1616 and in December 2023 the CAA confirmed that Aberdeen should continue to follow the CAP 1616 Version 4 process requirements for Stage 3. Once this ACP passes the Stage 3 Gateway, and is approved to proceed to the next stage, it will then need to follow the process requirements as set out in CAP 1616 Version 5.

1.4.3

As such, this consultation material, and all our Stage 3 documentation will be based on the guidance provided in **version 4 of CAP1616**.

1.4.4

The airspace change process should be open and transparent. Stakeholders should be engaged by the change sponsor throughout the airspace change process and will have the opportunity to submit feedback in relation to the development of the Airspace Change Proposal.

1.4.5

The CAA monitors the progress of an Airspace Change Proposal against the requirements of the airspace change process at key defined points, called gateways. At each gateway, the CAA will assess whether the relevant airspace change process requirements have been met. The gateways are there to determine whether the CAP1616 process has been followed up to that point, and whether to approve progress to the next stage.

1.4.6

The diagram opposite shows the timeline for Aberdeen Airport's airspace change. All previous submissions as part of the airspace change process can be found on the **Civil Aviation Authority (CAA) website here** and these are also summarised in the next section of this document.

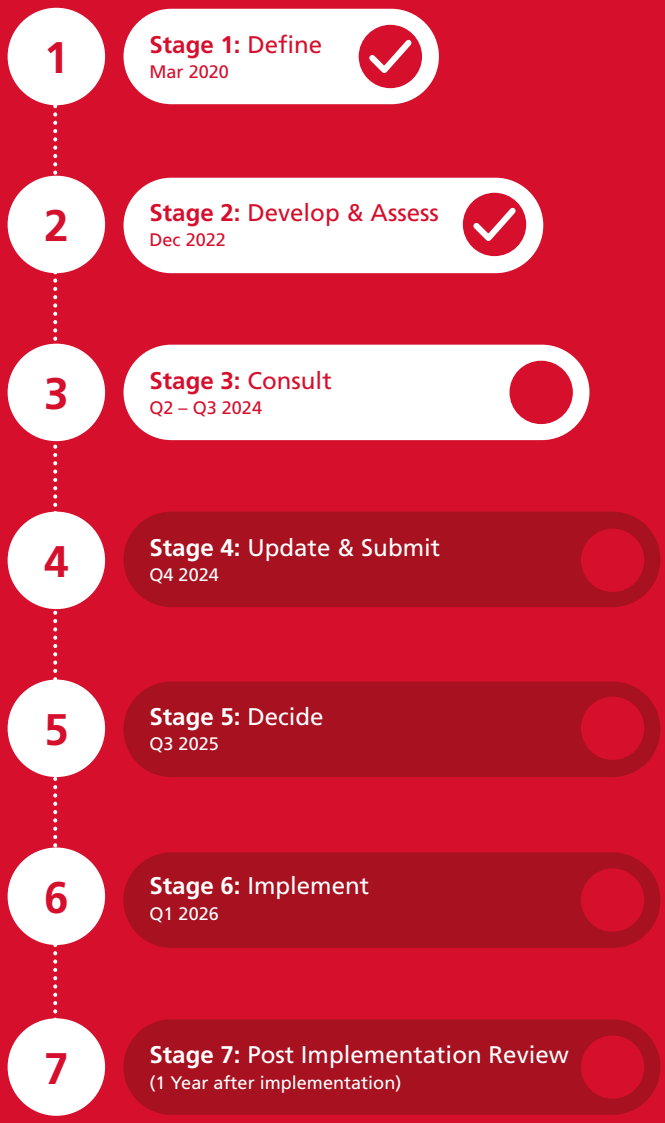


Figure 1: Aberdeen Airport ACP timeline

1.5 Summary of earlier work

1.5.1

Stage 1 of the 7-stage airspace change process required Aberdeen Airport to develop a **Statement of Need** for the proposal and participate in an assessment meeting with the CAA.

1.5.2

Stage 1 then required the airport to develop a set of Design Principles, which provide the criteria which airspace design options should meet and are used to assess the options in the later stages of the CAP1616 process.

1.5.3

Design Principles must be developed with stakeholders and Aberdeen Airport developed these with representatives from the Aviation Industry, NATMAC (National Air Traffic Management Advisory Committee), General Aviation (GA) and other airspace users, the Ministry of Defence, local councils, and representatives of Areas of Outstanding Natural Beauty, through a series of engagement sessions.

1.5.4

The final list of design principles is shown in the table opposite. The principles are numbered for ease of reference. Design Principle 1 (DP1), regarding the safety of all affected airspace users takes top priority, over all other principles. DP2 is the second highest priority for the ACP. DP3-10 are not organised into a priority order.

1.5.5

Our **Stage 1B submission document** has further information about how our design principles were developed and the stakeholder groups involved in the engagement.

1.5.6

Stage 2 is split into two parts: Stage 2A and Stage 2B. In Stage 2A we developed our comprehensive list of options, which aimed to address the Statement of Need and Design Principles from Stage 1.

Aberdeen Airport Design Principle	
DP1	The airspace design and its operation must be as safe or safer than today for all airspace users that are affected by the airspace change.
DP2	Subject to the overriding design principle of maintaining a high standard of safety, the highest priority principle of this airspace change that cannot be discounted is that it accords with the CAA's published Airspace Modernisation Strategy (CAP1711) and any current or future plans associated with it.
DP3	Design options should minimise the change to tracks overs the ground of aircraft arriving and departing from Aberdeen.
DP4	Design options should investigate the feasibility of steeper approaches for PBN arrivals to reduce the noise footprint of Aberdeen Airport's operation.
DP5	Arrival route options should enable aircraft to descent continuously and should not inhibit departures from climbing continuously. If bother cannot be achieved, there should be preference to the most environmentally beneficial option.
DP6	Options should not increase and should aim to reduce the emissions footprint of aircraft operating at Aberdeen by reviewing existing controlled airspace boundaries and usage of flight paths in the NERL network.
DP7	Design the appropriate volume for controlled airspace (CAS) to safely support commercial air transport and release controlled airspace when is not required.
DP8	Controlled airspace options should ensure there is safe and efficient access for other types of operations, and should explore measures, including classification and flexible use of airspace, where possible and appropriate, to improve access and decrease airspace segregation.
DP9	Options shall not reduce and where possible enhance the air traffic movement capacity of Aberdeen Airport.
DP10	Ensure the Aberdeen operation is resilient to the withdrawal or failure of navigation aids and systems.

Table 1: Design Principle

1.5.7

We shared those options with the stakeholder representatives we engaged with in Stage 1, to ensure they were satisfied that our options aligned with the design principles. We then carried out a Design Principle Evaluation, where we qualitatively assessed all options developed against our Design Principles. We then moved onto Stage 2B. Further details of our Stage 2A process and work can be found **here**.

1.5.8

At Stage 2B we carried out our **Initial Options Appraisal (IOA)**, which is the first of 3 appraisals which must be carried out during this process. The IOA involves a mainly qualitative appraisal of the options which proceeded from Stage 2A.

1.5.9

The IOA describes and assesses the baseline, 'do nothing', scenario and then compares this against the proposed airspace change options, to identify the potential positive benefits and negative impacts.

1.5.10

The 'do nothing' scenario takes information about how aircraft arrive at Aberdeen Airport today and describes the scenario immediately before implementation.

1.5.11

The 'do nothing' scenario and the options were assessed against a number of categories required by CAP1616 and at the end of the IOA, based on the information we learned from the assessment, we have the options that we intended to take forward to Stage 3.

1.5.12

Post Stage 2, in September 2023 Aberdeen Airport was approved by the CAA to withdraw from the UK Airspace Change Masterplan. Aberdeen Airport was originally part of the wider UK airspace change programme which involved coordination between different airport sponsors who shared interdependencies within the airspace. As the proposal has progressed, it became clear that due to the geographical position of Aberdeen Airport, there were no interdependencies between our proposed changes and those of the other programme participants. Aberdeen Airport remains part of the National Airspace Change Programme, but withdrawal from the Masterplan means we are able to progress independently of the wider changes being proposed by other airports across Scotland and the UK.

1.5.13

In October 2023, we also updated our Statement of Need to reflect changes following the UK's withdrawal from the European Union and changes to the plans to rationalise some ground-based navigation aids. The latest Statement of Need can be found **here**.

1.6 Where we are now

1.6.1

We are now in Stage 3, where we have carried out our second appraisal on the remaining options, called the Full Options Appraisal (FOA), and have planned and prepared for this consultation by producing a Consultation Strategy and this consultation material. All these documents are available on the **Citizen Space Consultation website**.

1.6.2

The FOA describes the evolution of the options[3] following Stage 2, as they undergo detailed design development ahead of the FOA. It then builds upon the IOA by undertaking, where possible, quantitative appraisal of each option which has proceeded from Stage 2B. As per the IOA, the 'do nothing' and the options are assessed against a number of categories required by CAP1616 and at the end of the FOA, based on the information we have learned from the assessment, we identify the options which form the basis of this consultation. The Full Options Appraisal document is published **here**.

1.6.3

For the FOA, we had 3 options to assess for PBN arrivals. This was a smaller number of options than in Stage 2 of the ACP as we merged the Curved Approach options with the T-Bar options, rather than have them as separate entities. This was because the curved approaches use a type of PBN capability called RF (Radius to Fix) however, not all airlines are able to fly these curved approaches. These options were therefore combined with the T-Bars when creating the Stage 3 options, to ensure a solution suitable for the majority of airlines and operations.

1.6.4

Overall, the differences between the three PBN arrival options were so negligible in terms of noise, fuel burn and CO_2e emissions that, when balanced against the outcome of the safety assessment, which showed increased level of complication and increased safety risk for two of the options, it was considered appropriate to discontinue these options at this stage and only progress the vectors to RNP approach option as our preferred option for consultation.

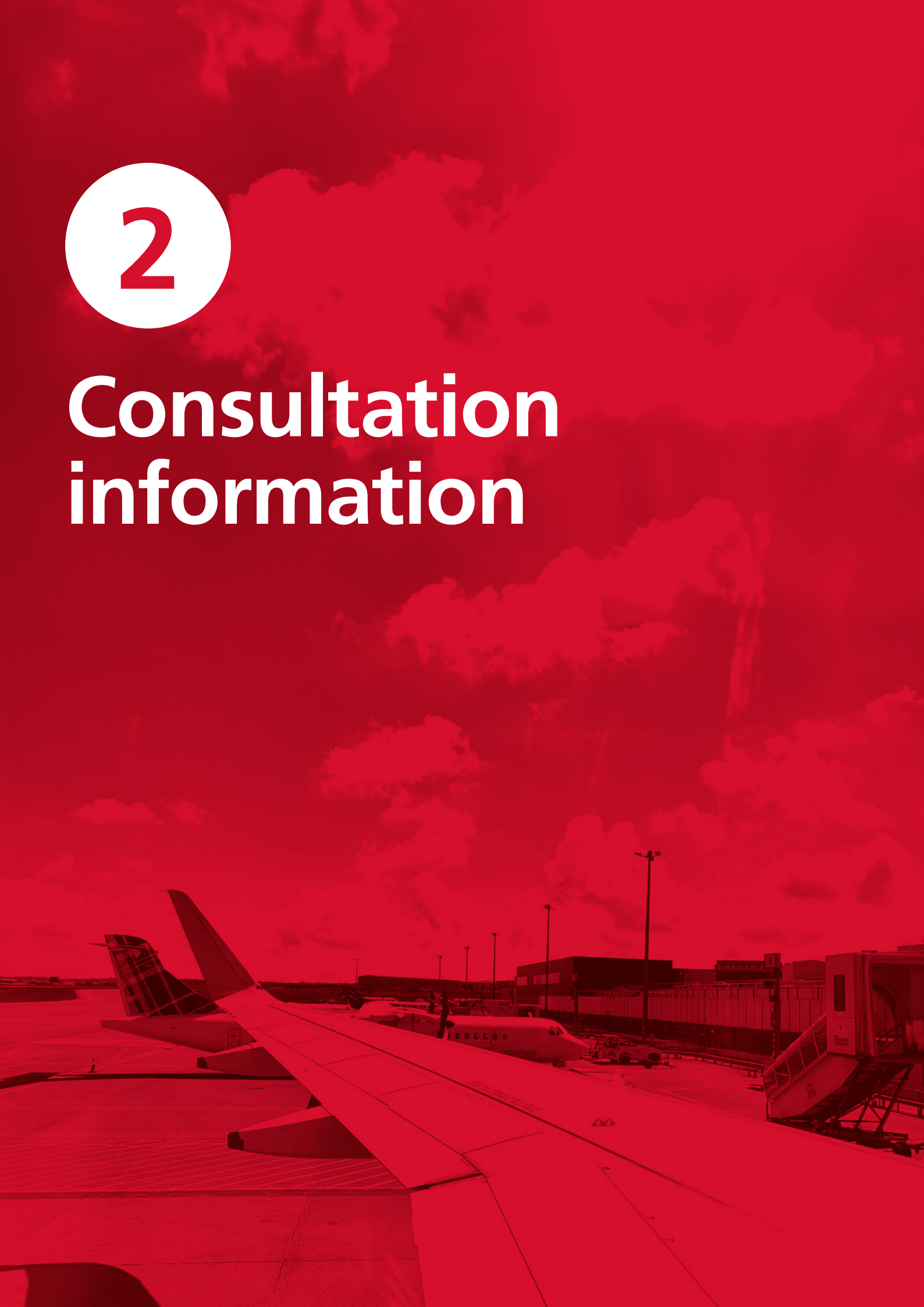
1.6.5

As part of the preparation for consultation, a Consultation Strategy has been developed outlining our approach to consultation and how Aberdeen Airport intends to engage stakeholders and communities. The Consultation Strategy was one of the key documents provided to the CAA as part of the consult/engage gateway. The Consultation Strategy can be viewed **here**.

[3] *Full options Appraisal Paras 3.2.5 – 3.2.11*

2

Consultation information



2 Consultation information

2.1 Who are we consulting?

2.1.1

Due to the limited scope of the proposal, this Consultation has been appropriately scaled to ensure the process is proportionate and reasonable. It will focus on the key stakeholders who are impacted by the change. These are airlines, General Aviation, and communities within a specific targeted geographical area which was highlighted within the FOA.

2.2 Consultation materials

2.2.1

A suite of tiered consultation materials, presenting information at various technical levels, has been created to aid stakeholders in understanding the context of this consultation and the scale of the proposed changes.

2.2.2

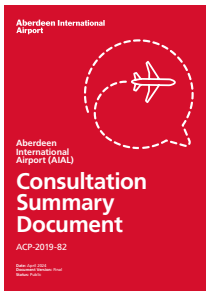
Aberdeen Airport will also continue to engage with stakeholders who were contacted as part of Stages 1 and 2 of the CAP1616 process.

2.2.3

Our Consultation Strategy includes more information about how we have identified the consultation audience and our approach to tailoring the consultation material.

2.2.4

For more information about the airspace change process and the consultation requirements, please see CAP1616 here.



Consultation Summary Document

A short, easy to understand outline of the consultation, with diagrams.

Main Consultation Document (this document)

A more detailed overview of the proposals including the background of the ACP and a summary of the outcomes of the Full Options Appraisal.

Full Options Appraisal (FOA)

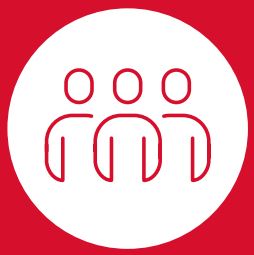
A document which describes in full technical detail the options and the positive benefits and negative impacts of the proposals compared against the 'do nothing' pre-implementation baseline.

Frequently Asked Questions (FAQ) Document

A Frequently Asked Questions (FAQ) document will be updated as the consultation progresses, with any frequent questions that may arise either during the consultation events, or in consultation responses.

2.3
Consultation events

If you are looking to find out more information about our Consultation, we will be holding a number of events including one in-person event and four webinars.



In person drop in
Tuesday 21 May 2024 between 2pm-8pm

Community Consultees Webinar
Tuesday 14 May 2024 at 6pm

Aviation Industry Webinar
Monday 3 June 2024 at 1pm

General Aviation Webinar
Thursday 13 June 2024 at 6pm

Open to all
Friday 21 June 2024 at 4pm

2.3.2

At these events, the consultation material will be presented, and attendees will have the opportunity to ask questions.

2.3.3

The in-person event is open to all and will be a drop-in session on **Tuesday 21 May 2024 between 2pm-8pm at the Aberdeen Science Centre, 179 Constitution Street, Aberdeen, AB24 5TU.**

2.3.4

The information presented at all the webinars will be the same and each webinar is scheduled for 1 hour 30 minutes, however we have sessions focused for different audiences:

Webinar	Audience	Details
Webinar 1	Community consultees	Tuesday 14 May 2024 at 6pm
Webinar 2	Aviation/industry consultees	Monday 3 June 2024 at 1pm
Webinar 3	General Aviation consultees	Thursday 13 June 2024 at 6pm
Webinar 4	Open to all	Friday 21 June 2024 at 4pm

2.3.5

All webinars will be available for any person to join, and all joining information will be available on our **Citizen Space Consultation website.**

2.4
Further questions

If you have any further questions, please contact us using the below contact details. Please note that all responses to the consultation must be submitted via the Citizen Space Portal (see below for more information).

airspace@aiairport.com

0800 298 7040

2.5
How to respond to the Consultation

2.5.1

The consultation runs for 12 weeks from Monday 29 April to Sunday 21 July 2024 (23:59hrs).

2.5.2

All responses to the consultation should be submitted online via the CAA's Citizen Space Portal. This is available at **https://consultations.airspacechange.co.uk/aberdeen-airport/airspace**

2.5.3

If you need hard copy materials, you can contact the team either by email airspace@aiairport.com or call 0800 298 7040 and we will send you an information pack and feedback form by post, with a postage-paid envelope so that you can return your completed form to us. A copy of the feedback form is also available at Appendix B of this document.

2.5.4

All responses to the Consultation, including those received in hard copy form, will be published on the CAA's Citizen Space Portal. If you wish for your response to be published anonymously, there is an option to redact your personal details, and these will only be seen by Aberdeen Airport and the CAA.

2.6
Analysis of your feedback

2.6.1

The Consultation closes Sunday 21 July 2024 (23:59hrs). Aberdeen Airport will then collate, review, and categorise the consultation responses. Responses will be categorised into those which present information that may lead to a change in the design and those that would not.

2.6.2

We will then produce a Consultation Response document that will summarise the consultation, the responses we received and our response.

2.7
Reversion Statement

2.7.1

CAP1616 requires sponsors to be clear with stakeholders the extent to which the proposed airspace change once implemented is reversible if it does not meet the objectives it is designed to achieve as part of the post implementation review at Stage 7.

2.7.2

As this ACP looks to introduce PBN approaches for resilience alongside the existing conventional procedures, it is possible for this change to be reversed if required and the new PBN procedures withdrawn from operation.

3

What happens today?

3 What happens today?

3.1 Runways

3.1.1

To describe how some of the arrivals to Aberdeen Airport might change, it is important that we describe how aircraft arrive without these proposed changes. In CAP1616 this is referred to as the baseline.

3.1.2

Aberdeen Airport is located to the north west of Aberdeen city centre. The following image shows the airport location on a map overlaid with population density information. The areas of densest population are shown in red[4]:

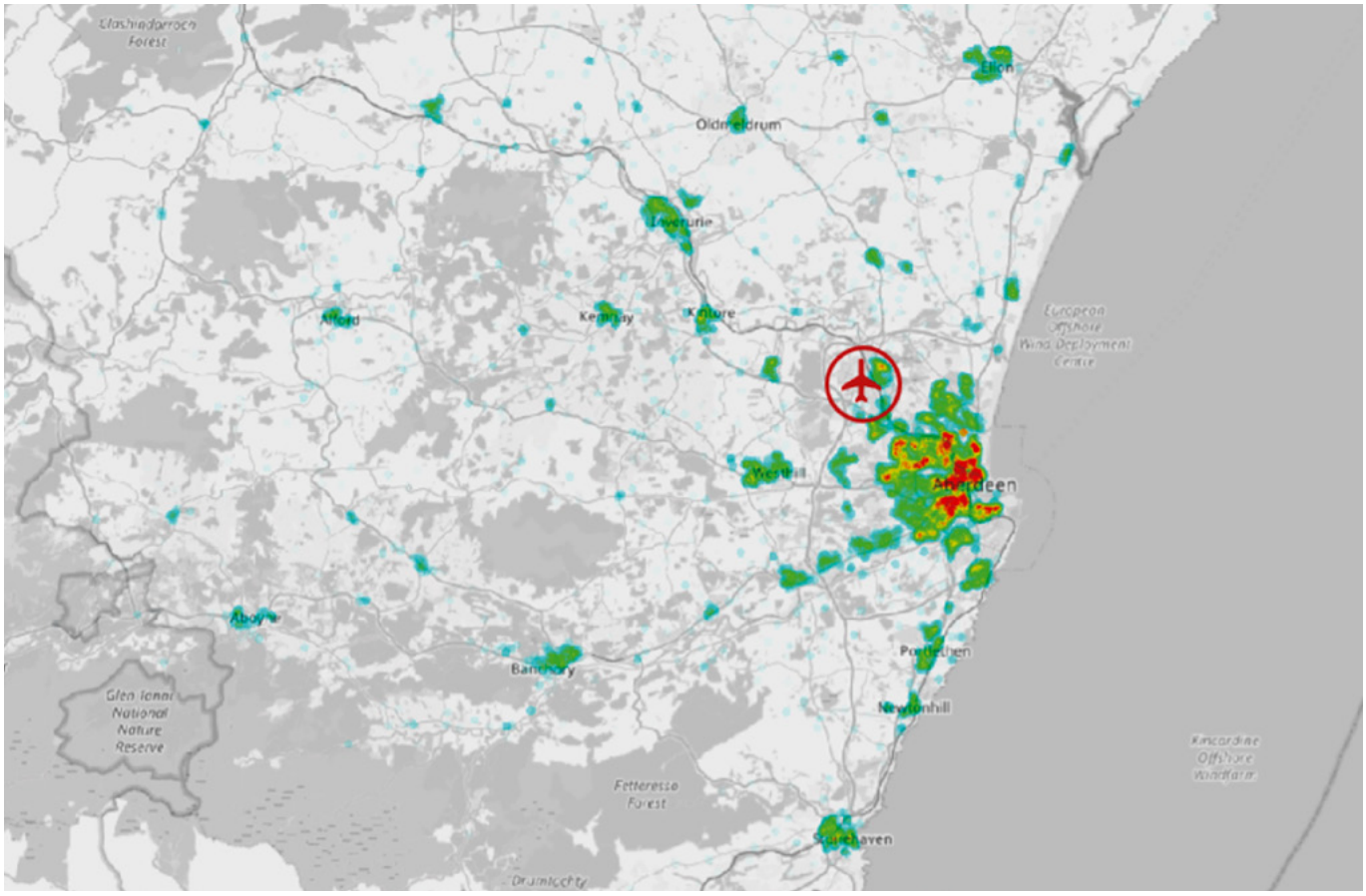


Figure 2: Population density map

3.1.3

Aberdeen Airport has one main runway for all fixed wing arrivals and some helicopter arrivals which, depending on the direction of operations, is either called runway 16 or runway 34. This is shown in the image below.

3.1.4

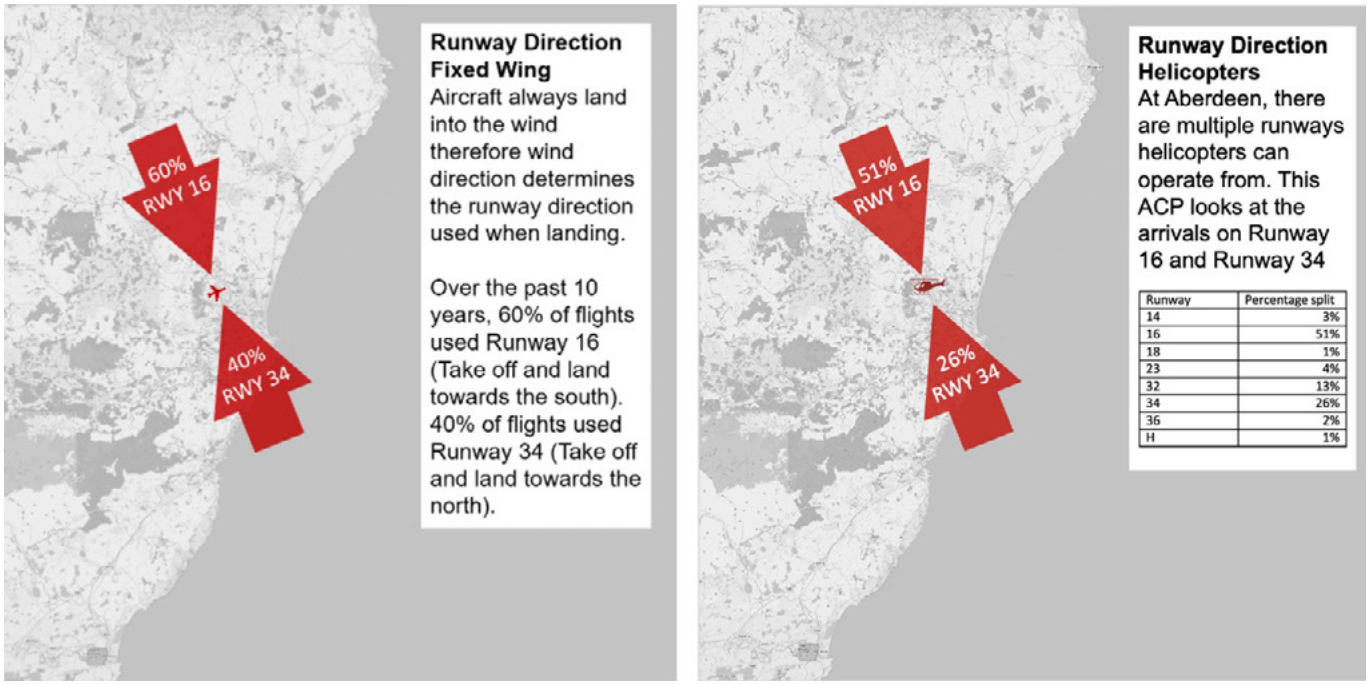
The direction of operations is dependent on the direction of the wind. For safety and performance reasons, aircraft take-off and land into the wind. Therefore, the wind direction is the key reason for deciding which runway is used for landing.

[4] *2023 population data supplied by CACI Ltd*

Figure 3: Runway directions at Aberdeen Airport

3.1.5

On average across the last 10 years, runway 34 was in operation 40% of the time and runway 16 was in operation 60% of the time.[5]



Runway	Percentage split
14	3%
16	51%
18	1%
23	4%
32	13%
34	26%
36	2%
H	1%

Figure 4: Runway usage at Aberdeen Airport

[5]*Information taken from Full Options Appraisal Figure 10*

3.2
Arrivals

3.2.1

Currently, there are no defined flight paths routinely used by Air Traffic Control (ATC) for arriving aircraft, until aircraft are established on final approach.

3.2.2

To achieve an optimised delivery of aircraft onto the runway, the air traffic controllers responsible for the arriving aircraft are given an area of airspace in which they keep the aircraft under their control inside.

3.2.3

Within this airspace the air traffic controller will vector the aircraft. Vectoring is when a control instruction in the form of a direction (heading based on a compass bearing) is given to the pilot by Air Traffic Control. There will also be an associated height instruction to climb or descend.

3.2.4

This vectoring creates dispersion across the airspace. This can be seen in the images below which show the typical swathes of arrivals. These images are taken from the Full Options Appraisal Figures 11 and 12.

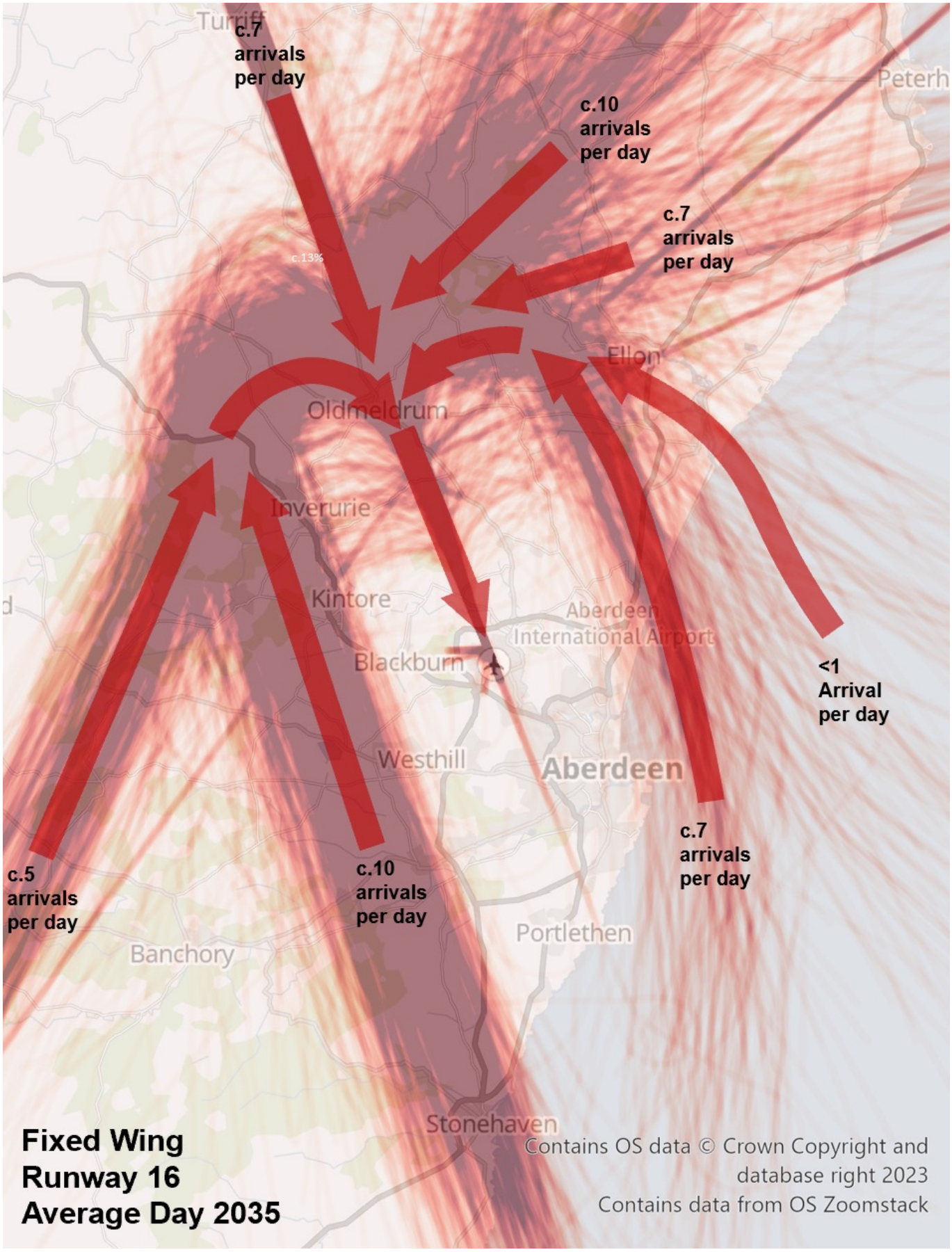


Figure 5: Baseline "Do-Nothing" for Fixed Wing arrivals Runway 16.
Note: No departure tracks are shown as they are not within scope of the ACP.

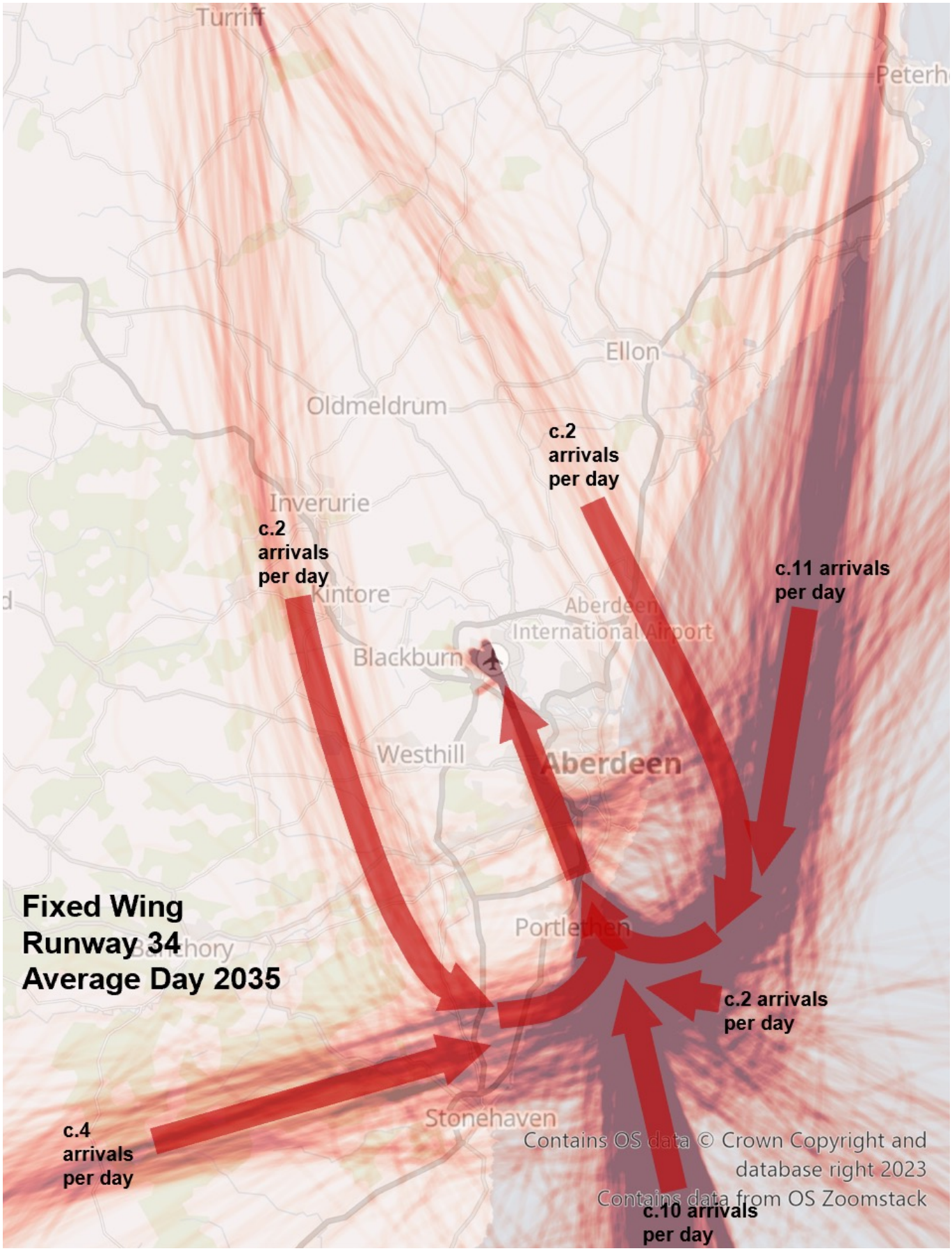


Figure 6: Baseline "Do-Nothing" for Fixed Wing arrivals Runway 34.
Note: No departure tracks are shown as they are not within scope of the ACP.

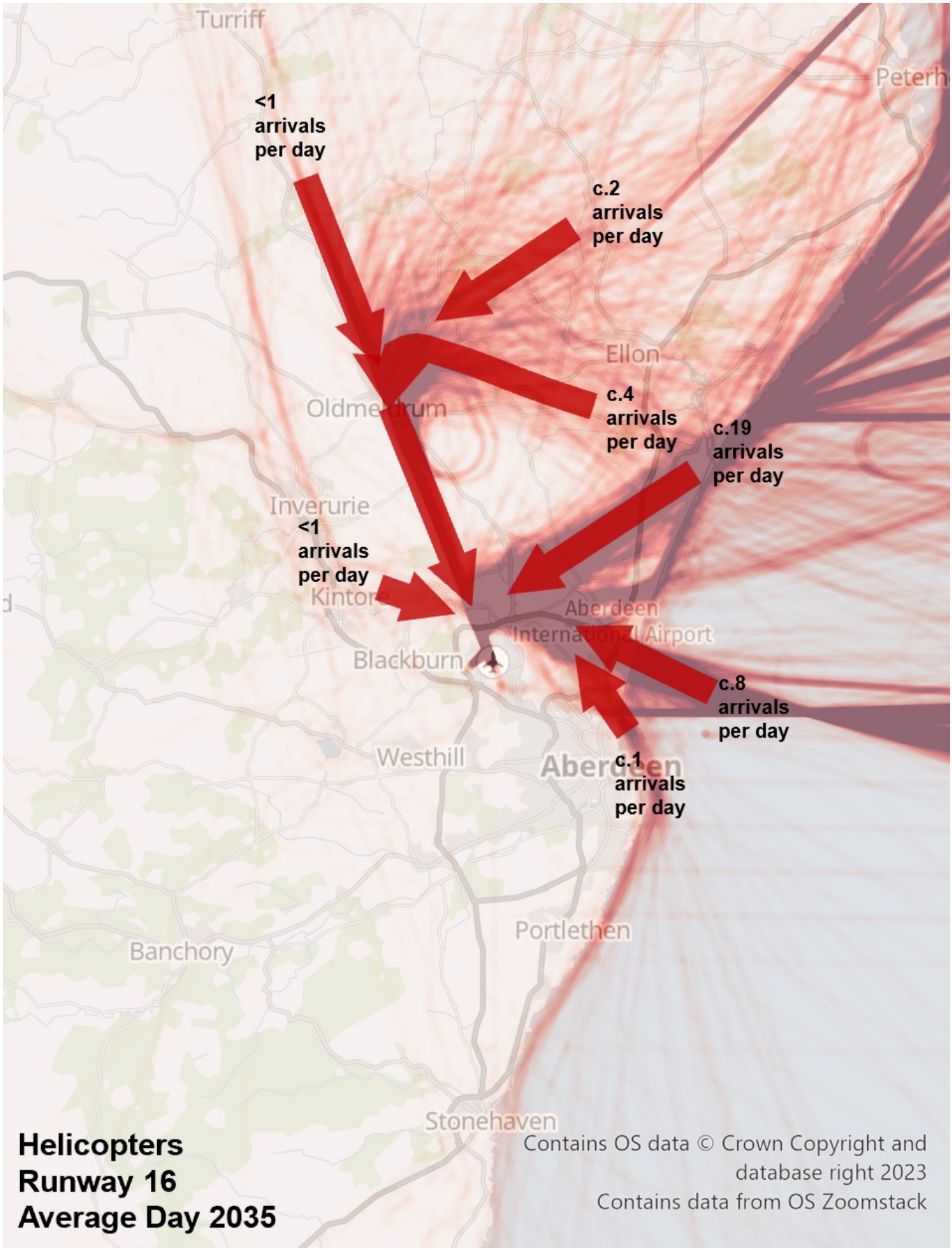


Figure 7: Baseline "Do-Nothing" for Helicopter arrivals Runway 16.

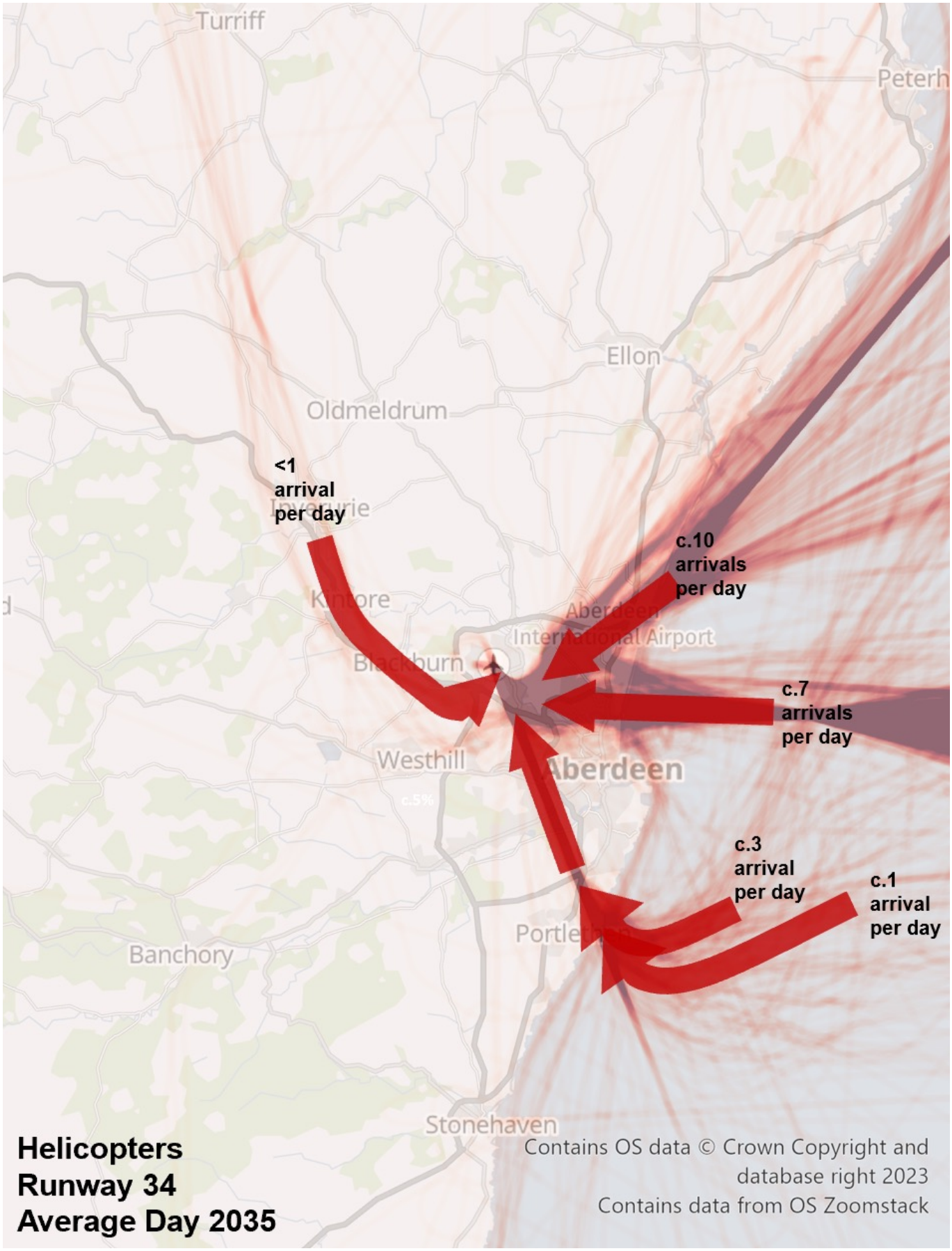


Figure 8: Baseline "Do-Nothing" for Helicopter arrivals Runway 34.

3.3
ILS Approaches

3.3.1

Once the aircraft is lined up with the runway and on final descent (final approach), it will typically follow a system of radio beams to land safely. This is known as the Instrument Landing System (ILS).

3.3.2

There is one beam aligned with the centreline of each runway (northern and southern) to ensure aircraft are guided accurately to the runway when they come into land.

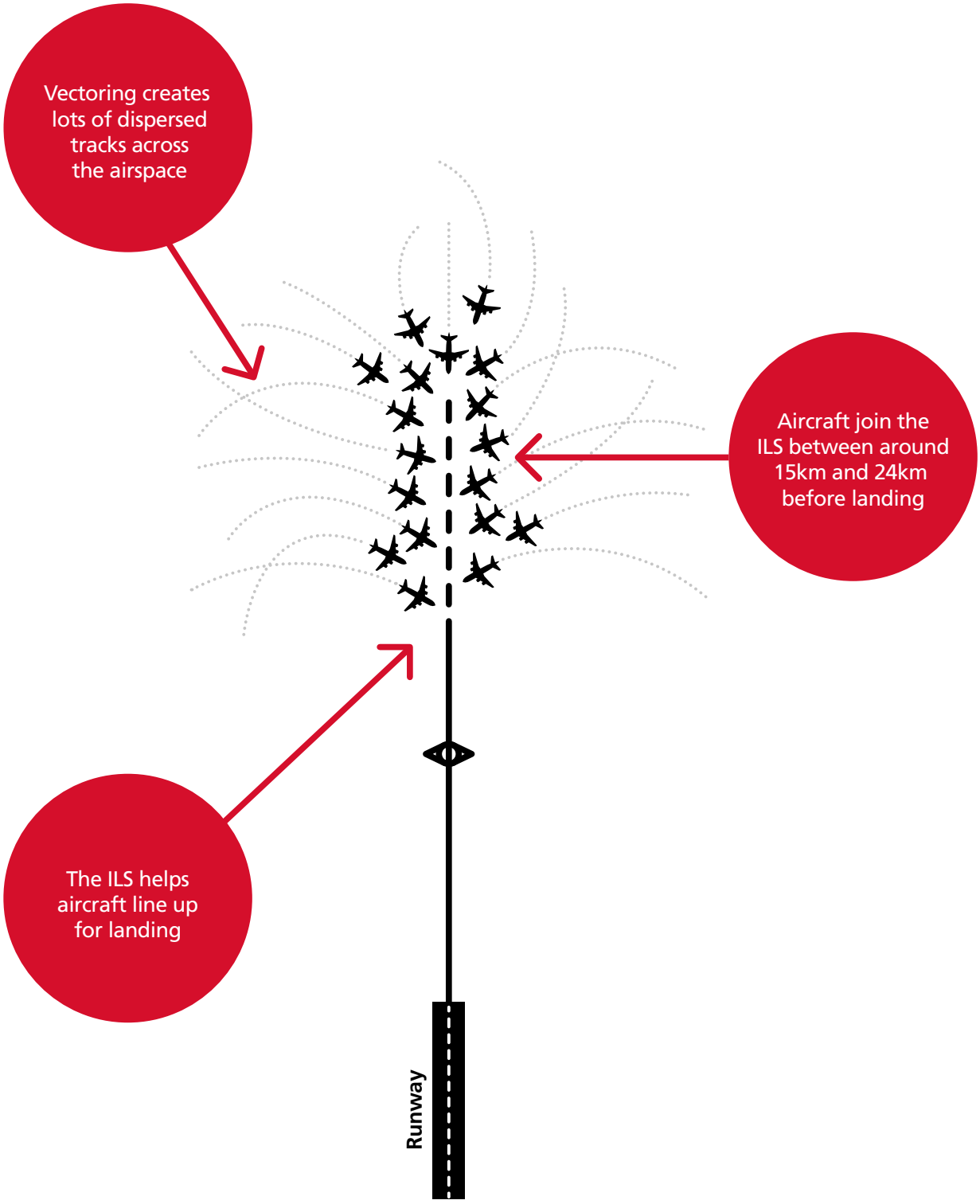


Figure 9: Diagram of ILS arrivals at Aberdeen Airport

3.4 Other approaches

3.4.1

Aberdeen Airport also has a type of conventional approach called a VOR/DME approach for runway 16 and runway 34, and an NDB/DME approach for runway 34. These approaches rely on ground-based navigation aids. They are typically used when the ILS is out of service.

3.4.2

In the baseline 'do nothing', the vast majority of aircraft either fly an ILS approach, or land visually without the use of a navigation aid.

3.5 Holds

3.5.1

Aircraft are sometimes put into holds or 'holding patterns/ stacks' whilst they are waiting to land. Holds are typically used when there is bad weather, at the request of the pilot, or if there are multiple aircraft waiting to land and ATC need to delay an aircraft whilst another is landing.

3.5.2

Aberdeen Airport has holds available at 3 locations. These holds have specific patterns in which the aircraft must fly and altitudes (heights) that the aircraft must not fly below.

3.5.3

This airspace change does not propose to make any changes to the holding procedures at Aberdeen Airport.

3.6 Missed approach

3.6.1

Missed approaches occur when it is judged that an approach cannot be continued to a safe landing. Aircraft may undertake a missed approach when the weather or visibility make it difficult to land, or when the aircraft is not correctly stabilised and aligned with the runway. Sometimes missed approaches also occur if the runway is temporarily blocked, or it is unsafe to land. In the event of a missed approach, aircraft fly a defined procedure.

3.7 Movement numbers

3.7.1

A movement is **either** an aircraft landing at the airport or an aircraft departing.

3.7.2

CAP1616 requires airspace change sponsors to provide the forecast number of movements for the year of implementation and 10 years following implementation. This information is then used to inform the appraisal of the options against the 'do nothing' pre-implementation baseline. The following table shows Aberdeen Airport's 10-year forecast which is informed by actual flight data for 2022 and the airport's long term business plan.

Year	2026	2035
Total arrivals	42,916	43,831
Average arrivals per day (Open 365 days)	118	120
Fixed wing (c.60%)	69	72
Helicopters (c.40%)	48	48
Average arrivals per day runway 16 (c.60%)	70	72
Fixed wing (c.60%)	41	43
Helicopters (c.40%)	29	29
Average arrivals per day runway 34 (c.40%)	47	48
Fixed wing (c.60%)	28	29
Helicopters (c.40%)	19	19

Table 3: Forecast Movement numbers 2026 & 2035

3.7.3

Hold usage:
Around 1% of Aberdeen Airport's arrivals use the holds. That equates to less than one flight per day on average holding across the year.

3.7.4

Missed approaches:
Around 1.7% of fixed wing arrivals fly a missed approach. That equates to just over one a day on average across the year.

3.7.5

ILS outages:
The proposed PBN procedures would mainly be used in the event of an ILS outage at Aberdeen Airport. Historic data shows in the last 5 years, there has been 1 unplanned ILS outage which lasted for 6 hours. In addition to this, the ILS is taken out of service for planned maintenance for around 5 hours per month, and up to 14 hours on a 6 monthly basis (however it is important to note that these often occur at night, or in periods when there are very few aircraft arriving at Aberdeen Airport).

3.8
Fleet mix

3.8.1

The aircraft operating out of an airport are sometimes called a fleet. The fleet mix of aircraft which operate at Aberdeen Airport is expected to see increases in the number of A320 and B737-700, which are twin engine jet aircraft, and Dash 8 and Saab 340, which are twin engine turboprop aircraft and a similar size fixed wing aircraft. There is expected to be decreased use of Embraer's and ATR-42.

4

PBN arrivals option we are seeking feedback on

4 PBN arrivals option we are seeking feedback on

4.1.1

The following section provides details of the PBN arrivals option that forms part of this ACP. Within the Full Options Appraisal, this is referred to as the Vectors to RNP Approaches option. For those stakeholders only interested in Controlled Airspace (CAS), please click here to go to the CAS section of this document.

4.2 Expected PBN route usage

4.2.1

The PBN arrival procedures proposed as part of this ACP are intended to be operated alongside the existing approaches at Aberdeen Airport and **we expect the vast majority (95%+) of arrivals will continue to be vectored to the ILS as they are today.**

4.2.2

There are two main uses for the PBN arrival procedures; **resilience** to cover if there is a fault or maintenance on the ILS, or some pilots may elect to use the procedures for **training purposes** even with a serviceable ILS.

Resilience

Based on a 24hr period of ILS outages in one year (an overestimate based on historic data) there would be:

c.10 helicopter flights and c.78 fixed wing flights using the PBN procedures **per year**.

This equates to c.0.05% of yearly helicopter arrivals and c.0.3% of yearly fixed wing arrivals.

Training

It may be possible for some operators to use the RNP approaches for training although we expect usage to be low.

For the purposes of the FOA, we have assessed this using an optimistic 5% of arriving aircraft flying the approaches, however based on usage at other airports, we expect this to be far lower (c.1%).

4.2.3

Overall, we expect approximately 1-5% of arrivals into Aberdeen Airport could elect to fly the PBN arrivals. However, from experience at other airports, PBN approach uptake is likely to be closer to the lower end of this assumption, given that the ILS will remain available.

4.2.4

For the appraisal of the options, we have used an optimistic estimate of 5% of arrivals using the PBN procedures. That means we expect at least 95% of arriving aircraft to continue to arrive as they do today.

4.2.5

Based on a more realistic 1% estimate and Aberdeen Airport's future movement forecast, this would mean less than 1 helicopter flight per day and 1 fixed wing flight per day on average would fly the PBN arrivals.

4.2.6

Based the 5% estimate this would mean less than 1 helicopter flight per day and around 4 fixed wing aircraft a day on average would fly the PBN arrivals.

4.2.7

The following sections describes the option and provides more information about the expected usage of the proposed procedures.

Why can't all arrivals use the new PBN procedures?

4.2.8

The PBN procedures create a more systemised fixed route structure, and, in the case of Aberdeen Airport, these would not be able to replicate the existing operational flexibility needed to accommodate all arriving traffic.

4.2.9

In addition to this, the Instrument Landing System (ILS) approach will remain available for pilots at Aberdeen Airport. The ILS is a more accurate approach, which enables it to be used in the worst weather conditions; and this means that many pilots will prefer to use this approach to land at the airport, where it is available.

4.3
Our proposed option: PBN Arrivals (Vectors to RNP approaches)

4.3.1

This option would continue to see arrivals vectored before final approach as they are today. The only difference would be, whereas with the ILS the arrivals have flexibility in where they join final approach from 8nm and beyond, the PBN arrivals would be vectored to join final approach at a satellite-based waypoint.

4.3.2

The waypoint on the PBN arrivals option has been positioned so that any aircraft flying the PBN arrival procedures are within the existing vectored arrival swathes. This means that the 1-5% of aircraft using the PBN arrivals will overfly areas overflown by arrivals today.

4.3.3

Owing to this and the very small number of aircraft expected to use these procedures, it is not anticipated that there will be material change for communities as a result of this option.

4.3.4

Once aircraft turn onto final approach (when they are aligned with the runway), they will fly the same final approach track as today.

4.3.5

The diagrams below show the expected number of aircraft that may use the PBN arrivals on an average day; although it is important to note that these numbers are based on an optimistic 5% estimate and usage is likely to be lower. The vast majority of aircraft will continue to arrive as they do today.

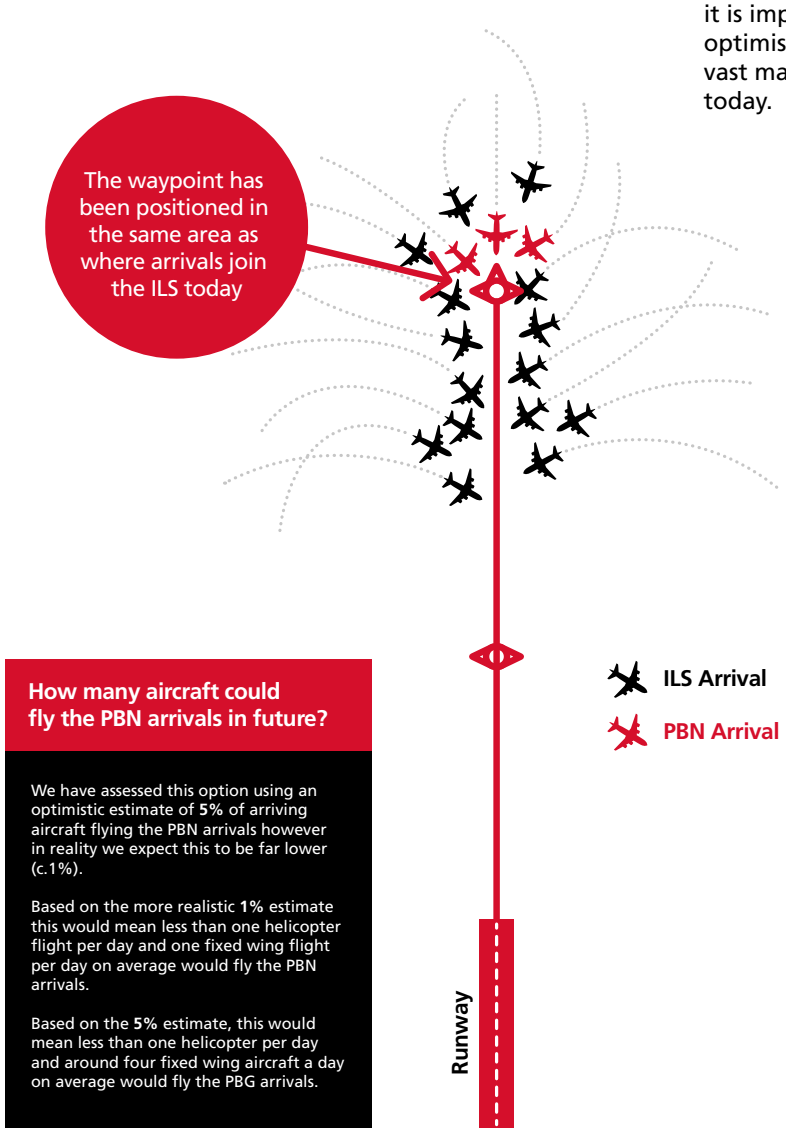


Figure 9: Diagram of ILS arrivals at Aberdeen Airport

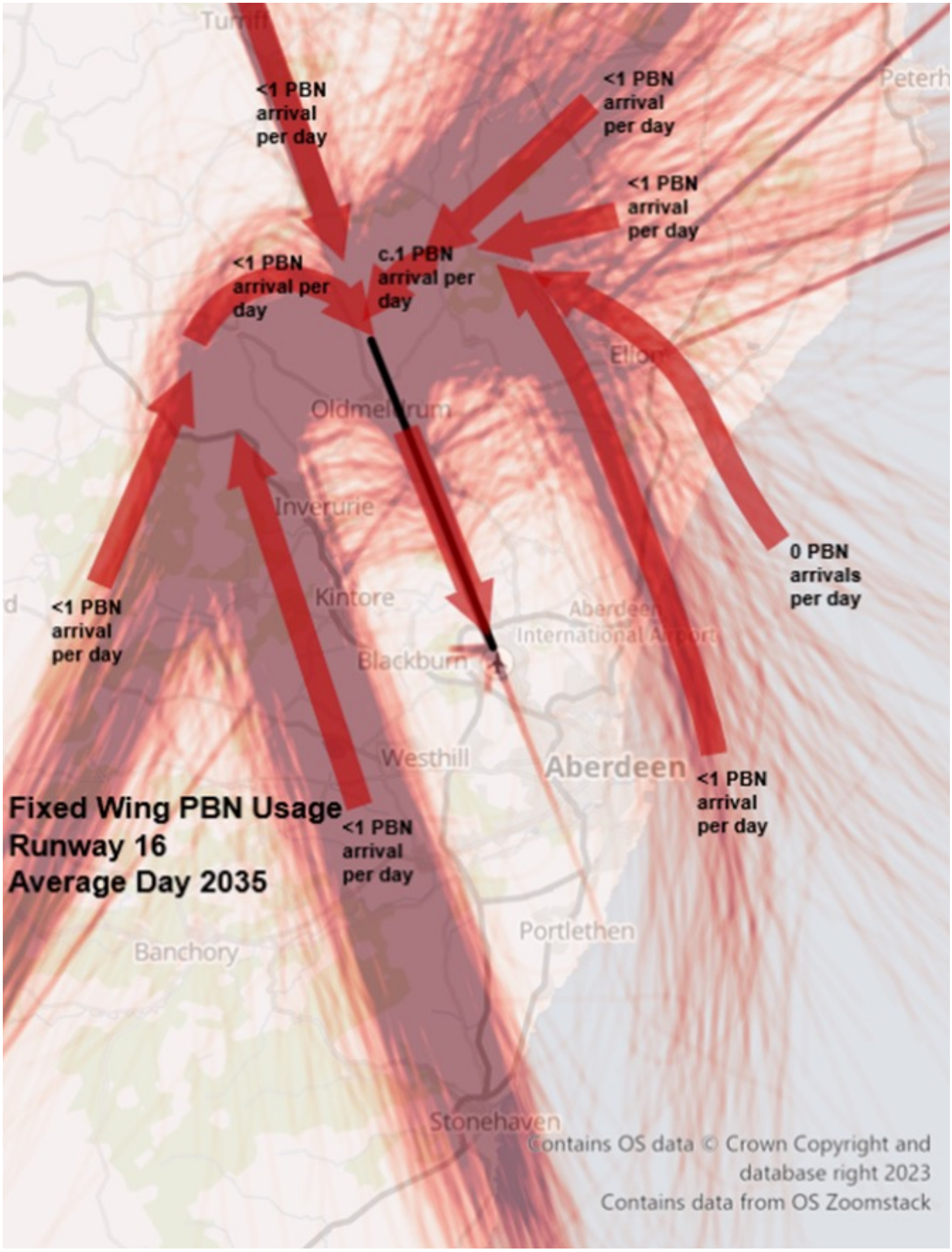


Figure 12: Expected use of PBN fixed wing arrivals on an average day (Runway 16).
Note this is based on an optimistic 5% estimate and usage is expected to be lower.

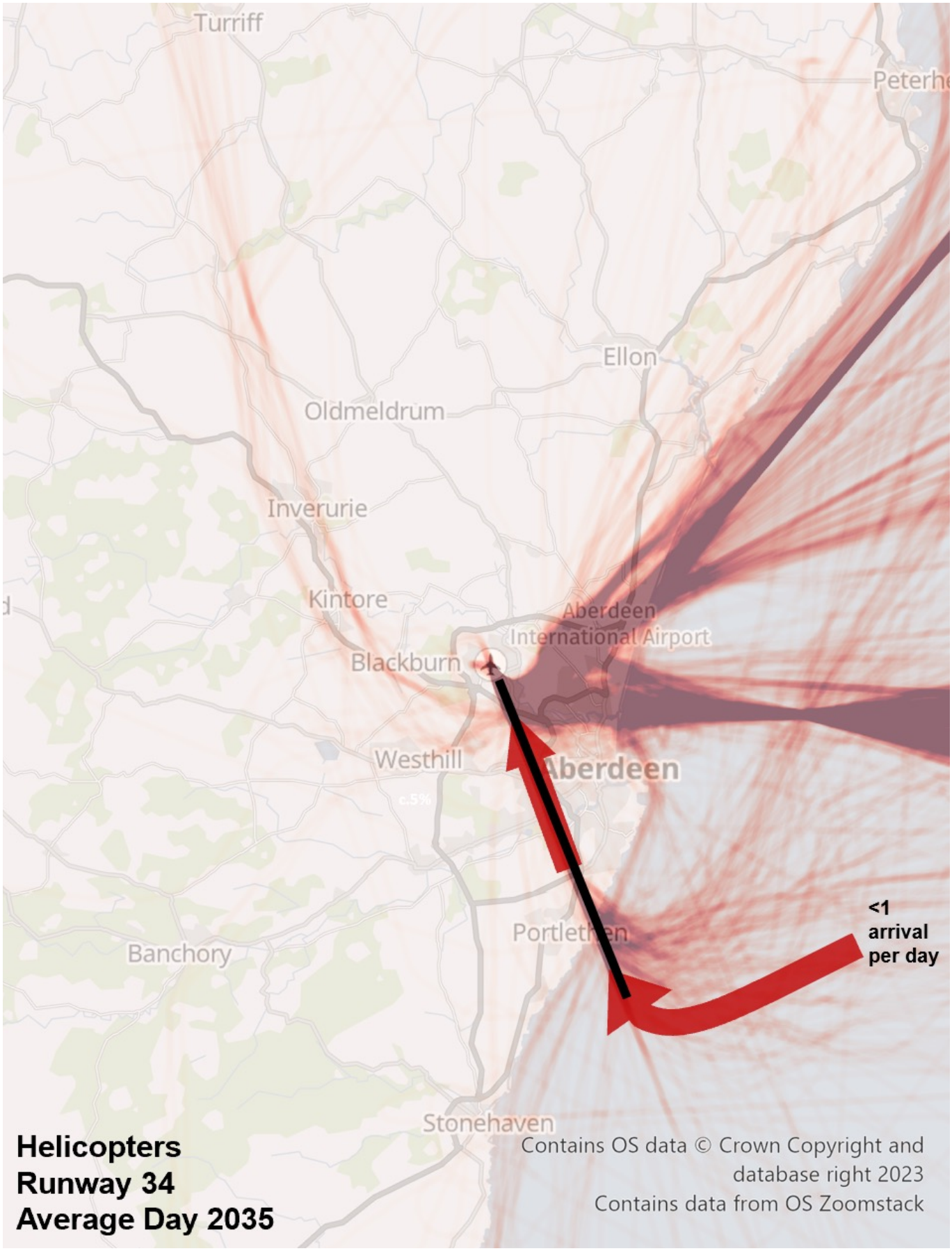


Figure 13: Expected use of PBN Helicopter arrivals on an average day (Runway 34).
Note this is based on an optimistic 5% estimate and usage is expected to be lower.

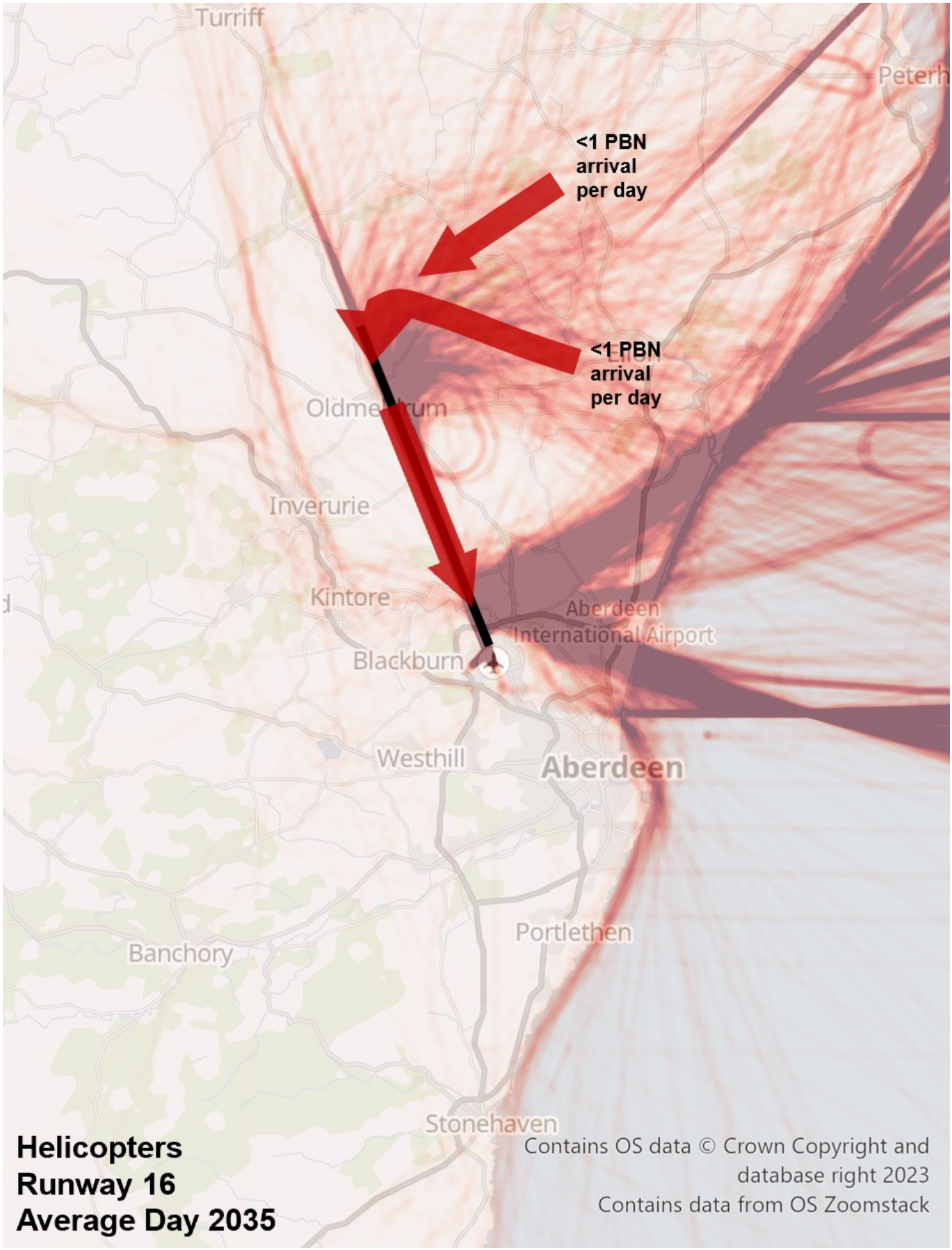


Figure 14: Expected use of PBN Helicopter arrivals on an average day (Runway 16).
Note this is based on an optimistic 5% estimate and usage is expected to be lower.

4.3.6

The following diagram shows the location of the missed approach for the procedure; however, it is important to note that these are expected to be flown very infrequently.

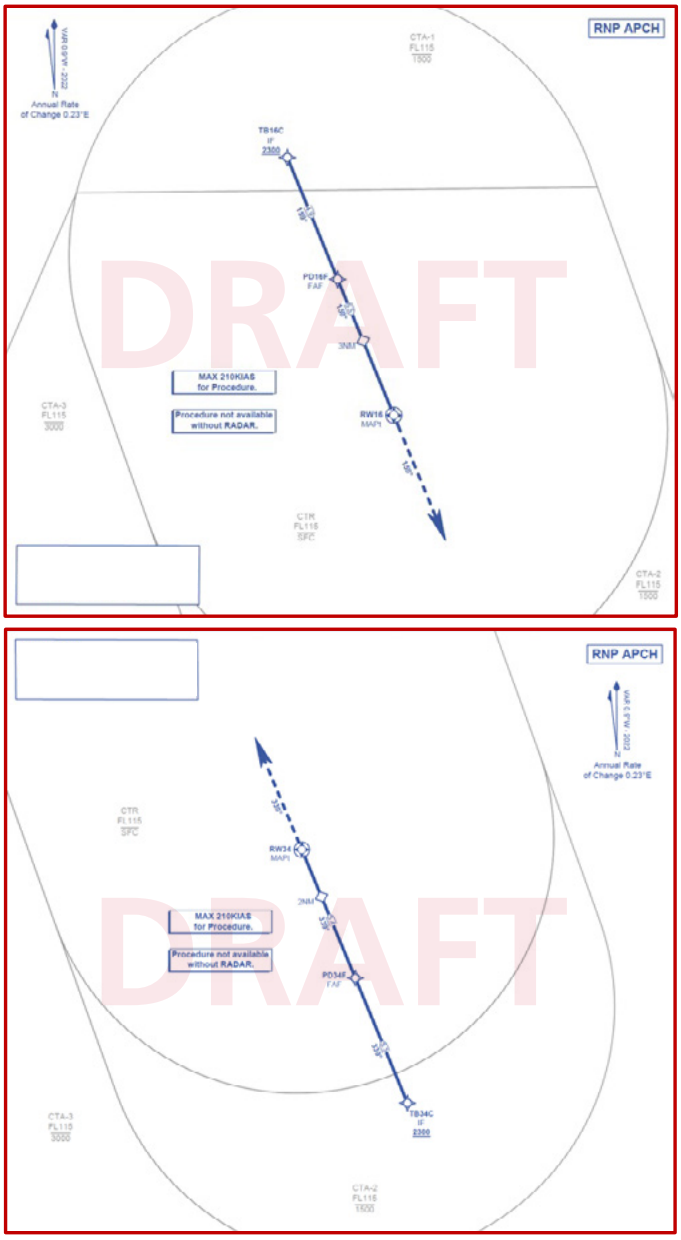


Figure 15: Vectors to Final Approach: Draft Indicative Chart Information, with Missed Approach.

4.3.7

Technical information about this option, including draft indicative charts, is contained in the **Full Options Appraisal**.

Missed Approaches

4.3.8

As stated in paragraph 3.6.1 a missed approach occurs when it is judged that an approach cannot be continued to a safe landing, this may be due to the weather or visibility make it difficult to land, or when the aircraft is not correctly stabilised and aligned with the runway. Sometimes missed approaches also occur if the runway is temporarily blocked, or it is unsafe to land. In the event of a missed approach, aircraft fly a defined procedure.

4.3.9

Aberdeen Airport is not proposing to change the missed approaches for aircraft who use the new arrivals procedures, they are a replication of today's existing procedures. Therefore, we are not requesting feedback from stakeholders. However, if industry stakeholders which to provide comment, they can do so in the free text sections of the consultation response on the **Citizen Space Consultation website**.

4.4
Benefits and impacts of our proposed option (Full Options Appraisal summary)

4.4.1

As part of the Full Options Appraisal, we have carried out a detailed assessment of the benefits and impacts of the PBN arrivals against the 'do nothing' pre-implementation baseline.

4.4.2

The table below provides a very high-level summary of the outcomes of the Full Options Appraisal which compares each option against the baseline. If you have an interest in a particular category, click on the category link to see further information about how the options have been assessed and how they perform (this information is also contained within Appendix A of this document).

Category (linked to further information)	PBN arrivals
Noise	No material impacts to noise. The FOA analysis has shown some very small changes within the noise metrics; however, these are not expected to lead to any material changes for communities.
Tranquillity	No material changes or impacts to tranquillity expected.
Biodiversity	No impacts to biodiversity expected.
Emissions / CO_2 / Fuel Burn	The fuel burn and CO_2 analysis has shown that this option could have some very small negative impacts if it was operated on a regular basis by c.5% of arrivals instead of the ILS, however it would have positive benefits in the event that the ILS was unavailable. Overall, when considering likely use of the procedures, it is considered to not have any significant or material benefits or impacts to fuel burn or CO_2.
Air Quality	There is no anticipated change or impact to air quality.
Capacity / Resilience	Resilience would be improved. This ACP does not change the number of aircraft arriving and departure (known as the airport capacity) at Aberdeen Airport. The introduction of PBN approaches does however reduce ATC workload in the event of the ILS being unavailable which may reduce delays and diversions.
General Aviation	The PBN arrivals proposed are not expected to impact General Aviation and are contained within existing CAS. Both options are compatible with Controlled Airspace Option 1.
Safety	The PBN arrivals are expected to improve safety performance in the event of an ILS outage, through reduced ATC workload and the introduction of more modern arrival procedures.
Airspace Modernisation	Introduces modern satellite-based arrivals at Aberdeen, which is one of the objectives of the Airspace Modernisation Strategy.

Table 4: High level summary of FOA outcomes

4.4.3

As part of the Full Options Appraisal, we are required to generate monetised costs and benefits for the airspace change options where possible to do so.

4.4.4

Within the FOA, the following categories have been monetised: Noise, CO_2, Fuel costs, Infrastructure costs, Operational costs, and Deployment costs. The noise and CO_2 assessments are based on CAP1616 requirements and Government calculations.

4.4.5

A 'Net Present Value' (NPV) for each option is then generated using calculations as required by CAP1616. The NPV for the PBN arrivals option is a cost of -£140,802 however this has been generated assuming 5% of arrivals would fly the PBN arrivals. For more information, please see the Full Options Appraisal.

4.5 Our preferred option

4.5.1

Aberdeen Airport's preferred option is to implement the PBN arrivals. This option meets our Statement of Need by offering Aberdeen Airport improved resilience and introducing modern PBN approaches whilst having only very small, immaterial changes to noise, fuel burn and CO_2.

4.6 Your feedback

4.6.1

We are seeking your feedback on the PBN arrivals proposal as well as the Controlled Airspace proposal explained in the next section of this document. To provide your feedback, please go to our **Citizen Space Consultation website**.

5

Controlled Airspace option we are seeking feedback on

5 Controlled Airspace option we are seeking feedback on

5.1.1

The following section provides details of the Controlled Airspace proposals as part of this ACP. For those stakeholders only interested in the PBN arrivals, please click here to go to the 'What happens next' section.

5.2 Existing Controlled Airspace

5.2.1

Aberdeen Airport is contained within Controlled Airspace (CAS). Controlled Airspace is airspace of defined dimensions within which air traffic control services are provided.

5.2.2

The level of control varies depending on the classification of the CAS. Aberdeen Airport has a Control Zone (CTR) around the airport which is Class D. This extends from ground level or surface up to Flight Level (FL) 115.

5.2.3

For aircraft to operate inside Class D airspace, they must have a clearance from ATC and all ATC instructions are mandatory.

5.2.4

Aberdeen Airport also has additional airspace around the central CTR to offer additional protection to the aircraft flying in and out of the airport. These are Control Areas and are known as:

- CTA1, which has vertical limits of 1500ft to FL115,
- CTA2, which has vertical limits of 1500ft to FL115, and;
- CTA3, which has vertical limits from 3000ft to FL115.

5.2.5

They are all classified as Class D airspace.

5.2.6

A chart with Aberdeen Airport's existing CAS is promulgated as part of the eAIP (AD 2 EGPD Aberdeen / Dyce section 2.24, Class D Airspace Chart). The existing airspace is also shown in Figure 16 on the next page of this document.

5.3
Proposed change to Controlled Airspace (CAS) (CAS Option 1)

5.3.1

Aberdeen Airport has undertaken detailed analysis of the current usage of Controlled Airspace and also held discussions with ATC to establish if there were any areas of the existing Controlled Airspace that were being underused.

5.3.2

Following the analysis of surveillance data, which shows where most of the Aberdeen Airport's inbound and outbound aircraft fly, a portion of CTA-3 was identified as being underutilised.

5.3.3

The map highlights the southwest corner of CTA-3 in red, which is the part proposed to change.

The proposal would see that highlighted area of CTA-3 increased from a base of 3000ft to a base of 4500ft which would result in the area being re-named as CTA-4 4500ft – FL115.

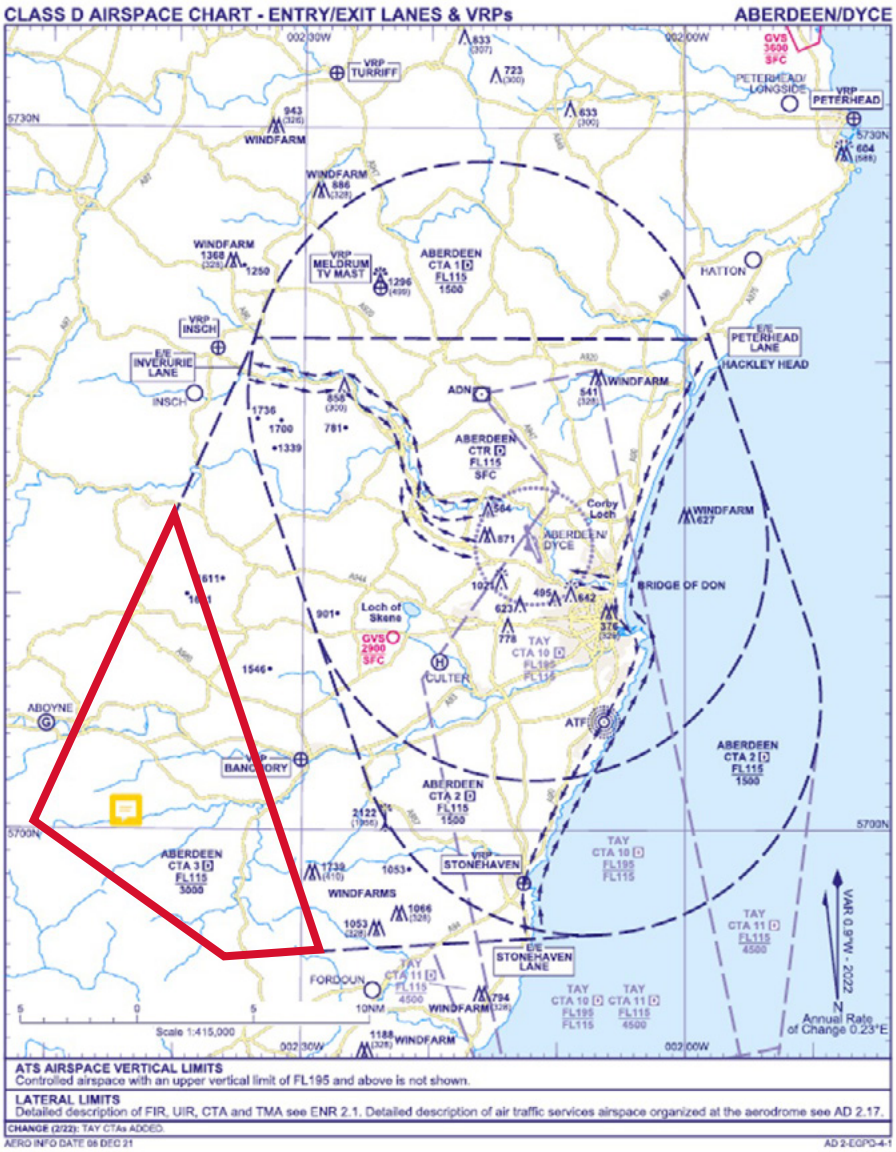


Figure 16: Aberdeen Airport's existing Class D Airspace Chart overlaid with proposed volume to be released

5.4
Benefits and impacts of CAS Option 1 (Full Options Appraisal summary)

5.4.1

The following table summarises the benefits and impacts of the CAS option compared to the 'do nothing' baseline. For full details, please see the Full Options Appraisal.

Category	CAS Option 1
Noise	No material changes to tracks over the ground, aircraft profiles, and subsequently noise, from Aberdeen Airport's operation, are expected as a result of implementing this option. Analysis of flight data has shown there were not any fixed wing or rotary wing departures from Aberdeen Airport which used the airspace proposed to be released. For arrivals, very occasionally there is an aircraft within this volume; however, as this is so infrequent (less than 2 aircraft a week on average), it would not impact quantified noise metrics which look at an average day. Furthermore, this very small number of aircraft would be higher in future, and therefore would present a very small but immaterial noise benefit.
Tranquillity	No material changes.
Biodiversity	No impact.
Air Quality	There is no anticipated change or impact to air quality.
Emissions / CO_2 / Fuel Burn	No material changes to tracks over the ground, aircraft profiles, and subsequently fuel burn and greenhouse gas emissions, from Aberdeen Airport's operation, are expected as a result of implementing this option. The option may offer some fuel burn benefits to GA transiting the airspace.
Capacity / Resilience	No change to capacity or resilience
Geneal Aviation	CAS Option 1 would result in the release of 27.8nm3 of class D controlled airspace within Aberdeen Airport's CTA 3. The increase in base of this section of the CTA-3 would enable improved soaring profiled for flights to/from Deeside Gliding Club at Aboyne. In addition to this, it would enable GA transiting the airspace to remain outside of controlled airspace at a higher altitude than today, improving access to the area.
Safety	There are some minor amendments required to Aberdeen Airport's existing direct arrival procedures. No adverse impact on safety has been identified. More details of these are included in the Full Options Appraisal.
Costs	There is a small cost for Aberdeen Airport and Air Traffic Control to implement and deploy the change.

Table 5: Summary of CAS Full Options Appraisal

5.5
Our preferred option

5.5.1

Aberdeen Airport's preferred option is to implement CAS Option 1. The FOA found that there were benefits to General Aviation from the release of the portion of CAS and these outweighed the small amount of IFP design work and cost involved to undertake the change.

5.6
Your feedback

5.6.1

We are seeking your feedback on the proposal to release this portion of Controlled Airspace as well as the PBN arrivals explained in the previous section of this document. To provide your feedback, please go to our **Citizen Space Consultation website.**

6

Responding to our consultation and what happens next?

6 Responding to our consultation and what happens next?

6.1.1

Thank you for your consideration of our proposals. If you have any questions, please contact us via **airspace@aiairport.com** or 0800 298 7040.

6.1.2

To respond to the consultation, visit our consultation page at: **https://consultations.airspacechange.co.uk/aberdeen-airport/airspace**

6.1.3

If you need hard copy materials, you can contact the team using the details below and we will send you an information pack and feedback form by post, with a postage-paid envelope so that you can return your completed form to us. A copy of the feedback form is also available at Appendix B of this document.

6.1.4

Email us at **airspace@aiairport.com** or call the team on 0800 298 7040.

6.1.5

All responses to the consultation, including those received in hard copy form, will be published on the Citizen Space Consultation Website. If you wish for your response to be published anonymously, there is an option to redact your personal details, and these will only be seen by Aberdeen Airport and the Civil Aviation Authority.

6.1.6

The Consultation closes on Sunday 21 July 2024 (23:59hrs). Aberdeen Airport will then collate, review, and categorise the consultation responses. Responses will be categorised into that which may lead to a change in the design and those that would not.

6.1.7

We will then produce a Consultation Response document which summarises the consultation and our response to issues raised.

6.1.8

The CAA will review our consultation document and it will then be published on the CAA Portal and our ACP will move into Stage 4.

6.2
The next stages of the CAP1616 process

6.2.1

At Stage 4 we will review how the option(s) could be amended in light of consultation responses and carry out the 3rd appraisal, the Final Options Appraisal.

6.2.2

We will then submit our Airspace Change Proposal to the CAA and upload the final submission to the CAA Portal.

6.2.3

As part of Stage 5, the CAA will then make a decision on the ACP.

6.2.4

Subject to CAA decision, the ACP would then move onto Stage 6 implementation. A year after implementation, a Stage 7 post implementation review is undertaken to ensure the ACP is meeting the objectives.

Appendix A: Full Options Appraisal summary (PBN arrival options)

The sections below summarises the Full Options Appraisal. For further information, we would recommend reading the Full Options Appraisal document published on the CAA's Airspace Change Portal: **https://airspacechange.caa.co.uk/PublicProposalArea?pID=198**.

Noise

How do we assess noise?

The noise assessment is based around the CAP1616 primary and secondary noise metrics. CAP1616 (B54) explains, "When considering noise impacts, the CAA will weigh the outcomes from 'primary' metrics over 'secondary' metrics. Primary metrics will be those that are used to quantify significant noise impacts, such as WebTAG outputs. Secondary metrics will be those that are not being used to determine significant impacts but which are still able to convey noise effects, such as N65 contours and Lmax levels. While not a noise metric, overflight contours will be a secondary metric for the purposes of decision-making."

Primary noise metrics: TAG

TAG (**https://www.gov.uk/guidance/transport-analysisguidance-webtag**) is the Department for Transport's suite of guidance on how to assess the expected impacts of transport policy proposals and projects. The Government's TAG workbooks can be used to monetise certain aspects of the noise impact. The data from L_{Aeq},16hr (daytime noise) and L_{Aeq},8hr (night-time noise) contours form the input into TAG.

Primary noise metrics: L_{Aeq} contours

L_{Aeq} contours, are the equivalent sound level of aircraft noise in dBA. This is based on the daily average movements that take place in the 16-hour period (07:00-23:00 local time) or 8-hour period (23:00-07:00) during the 92-day period 16 June to 15 September inclusive. This metric is the measure of noise exposure adopted by Government for the purposes of considering adverse effects from aircraft noise. It forms the basis of the Government's policies in relation to aircraft noise.

L_{Aeq} contours L_{Aeq}, 16hr and L_{Aeq}, 8hr contours have been generated for the baseline and for each option. These have been used to calculate the population numbers within the contour and the area of the contour.

Secondary noise metrics: Noise events above 65dB and 60 dB LAmax (N65 and N60)

N60 and N65 are noise metrics which respectively describe the number (N) of aircraft noise events above a noise level of 60dB LAmax in the night-time period and 65dB LAmax for the daytime period. These are event-based metrics, which can be used to better understand the number of noise events that occur and their location.

N65 and N60 contours have been generated for the baseline and for each option. These have been used to calculate the population numbers within the contour and the area of the contour.

Secondary noise metrics: Overflight contours

Overflight contours are generated using the CAA's 48.5 degree definition of overflight as outlined in CAP1498, this means 'an aircraft in flight passing an observer at an elevation angle of 48.5° from the ground at an altitude below 7000ft'. Although overflight contours are not considered a noise metric, they do enable calculation of the number of times a location may be considered to be overflown. This is an event-based metric, which can be used to better understand the number of noise events that occur and their location.

Overflight contours have been generated for the baseline and for each option using the CAA's 48.5 degree definition of overflight as outline in CAP1498.

How did the PBN arrivals perform in terms of noise?

95%+ of traffic would continue to fly as they do in the baseline (as they do today). The implementation of PBN arrivals is not expected to impact flight paths from aircraft departing from Aberdeen. When operating the PBN arrivals, aircraft will be vectored towards a fixed waypoint rather than the ILS localiser (where there is a broader area of dispersion around joining the final approach).

For aircraft flying the PBN arrival option, joining at a fixed waypoint may lead to a very small redistribution of noise however analysis has shown the average tracks of arriving aircraft align very closely with the position of the waypoint and, also given the small number of aircraft expected to fly the PBN arrival procedure, any change is anticipated to be so small it would not be material.

This is reflected in the primary noise data which shows no changes in the L_{Aeq} contour data between the PBN arrivals and the baseline, with the exception of two very marginal differences in the L_{Aeq},16hr outcomes. This marginal difference is due to the small increase in concentration around the waypoint for RWY16 arrivals and is negligible in terms of the potential for adverse noise effects.

The secondary N60 metric shows no changes in contour data and the N65 metrics suggests very marginal differences which are not anticipated to be material.

Finally the overflight data, which is generated between 0-7000ft, shows marginal differences in the lower frequency 5 and 10 per day contours which result in improvements to the number of people overflown compared to the baseline. It is important to note however that these improvements are based on an optimistic 5% of arriving aircraft flying the PBN procedures.

Overall, it is concluded that this option is not expected to result in any significant or material positive benefits or negative impacts to noise.

Click here to go back to the assessment overview.

Tranquillity

How do we assess tranquillity?

Assessment of tranquillity looks at whether an option would have any positive benefits or negative impacts to noise over National Parks, National Scenic Areas (NSA), Designated Quiet Areas (DQA) or Candidate Quiet Areas (CQA). In addition to this we also look at benefits and impacts to country parks, regional parks, gardens and designated landscapes. To appraise this, we use the same noise metrics as outlined in the noise section above.

How did the PBN arrivals perform in terms of tranquillity?

There are no National Parks or National Scenic Areas (NSAs) within the scope of the proposed changes. The closest national park, the Cairngorms, is overflown at altitudes above 7000ft. This has been verified using the Scottish Government's catalogue of spatial data.

There are no changes in the number or area of DQA, CQA, country parks, regional parks, gardens and designated landscapes within the L_{Aeq}, N65 and N60 contours. Within the 5 flights per day contour, overflight data shows very small changes to the area of already overflown designated gardens and landscapes however no new areas are overflown.

Overall, the Full Options Appraisal concluded that there are no material differences in noise levels and therefore there are no material impacts to tranquillity as a result of implementing PBN arrivals.

Click here to go back to the assessment overview

Biodiversity

How do we assess biodiversity?

Airspace change sponsors are required to undertake a Habitats Regulations Assessment (HRA) screening assessment of European Sites potentially affected by the Airspace Change Masterplan. This is outlined in CAP2527. The assessment involves looking at any sites which are within 18km of the aerodrome, where aircraft are typically below 3000ft, and assessing whether the change has the potential to impact these. There is more information about this within our Full Options Appraisal.

How did the PBN arrivals perform in terms of biodiversity?

The HRA screening assessment identified one site which is overflown below 3000ft which is the River Dee Special Area of Conservation (SAC). However, this overflight occurs when aircraft are on final approach (when they are lined up with the runway) and given this means there will be no change to lateral tracks, or in the frequency of aircraft flying an approach, there will be no impact to biodiversity.

Click here to go back to the assessment overview

Emissions / CO_2 / Fuel burn

How do we assess greenhouse gas emissions and fuel burn?

The fuel burn and greenhouse gas (carbon emissions) assessment compared the future track length and aircraft descent profiles of the PBN arrivals compared to the baseline 'do nothing' scenario. This involves lots of complex computer modelling. More information around the methodology can be found in the Full Options Appraisal.

In addition to this, we also looked at the fuel burn and CO2 emissions when aircraft fly the existing procedures available when the ILS is out of service, and then we compared this against the fuel burn and carbon emissions generated from the PBN arrivals option.

How did the PBN arrivals perform in terms of emission and fuel burn?

The main fuel burn and carbon emissions data generated was based on 5% of aircraft flying the PBN arrivals and, in this scenario, the fuel burn and carbon emissions data shows a very small negative impact to annualised fuel use and carbon emissions (less than 0.1% increase in total emissions between the do something and baseline scenarios). However, as already noted, 5% usage is considered an optimistic estimate and therefore any negative impacts are likely to be even smaller than stated in the data.

The PBN arrival procedures are most likely to be flown in a resilience scenario when the ILS is unavailable and in this case, the option offers fuel burn and carbon emission improvements compared to the VOR/DME approach which is used today.

Overall, the FOA concluded that there would not be any material changes to fuel burn and carbon emissions as a result of implementing the PBN arrivals option.

Click here to go back to the assessment overview

Air quality

How do we assess air quality?

CAP1616 requires us to look at whether an option has the potential to create a change which would result in pollutants breaching legal limits. The CAA deems that this is only likely to become a possibility where:

- there is likely to a change in aviation emissions (by volume or location) below 1,000 feet, and
- the location of the emissions is within or adjacent to an identified AQMA.

The air quality assessment therefore looks at whether the PBN arrivals have the potential to change the lateral tracks of flight paths below 1000ft, or if they would result in a change in the number of aircraft arriving at the airport and hence the volume of flights.

How did the PBN arrivals perform in terms of air quality?

The PBN arrivals are not expected to impact air quality; there will be no changes to lateral tracks below 1,000ft and this ACP will not change the number of aircraft arriving at Aberdeen Airport.

Click here to go back to the assessment overview

Capacity / Resilience

How do we assess capacity?

An airport's capacity is based around the number of aircraft which can arrive and depart at the airport.

The introduction of PBN arrivals at Aberdeen Airport was prompted by the requirement to meet the Airspace Modernisation Strategy and they also provide resilience in the event of an ILS outage. The ACP does not seek to increase the number of aircraft arriving or departing from the airport. The capacity assessment is therefore a qualitative assessment.

How did the PBN arrivals perform in terms of capacity?

The PBN arrivals will not change capacity at Aberdeen Airport. This means there will not be an increase or decrease in the number of aircraft arriving and departing the airport as a result of this ACP.

PBN arrivals offer an approach into the airport which, in the event of an ILS outage, would reduce ATC workload and so there may be some small capacity improvements in this particular circumstance. Historic data suggests unplanned ILS outages are very rare (one unplanned event lasting 6 hours in the last 5 years) and therefore these improvements are very small.

How do we assess resilience?

As noted in the capacity assessment section above, historic data suggests unplanned ILS outages are very rare (one unplanned event lasting 6 hours in the last 5 years). Planned maintenance is coordinated around quiet times of day to minimise impacts. The resilience assessment is therefore a qualitative assessment as it would not be proportionate to attempt to quantify a resilience benefit for such a small average outage per year.

How did the PBN arrivals perform in terms of resilience?

PBN arrivals offer improved resilience in the event of ILS outage which may lead to reduced delays and diversions. The introduction of modern satellite-based approaches also reduces Aberdeen Airport's dependencies on conventional VORs, a type of ground-based navigation aid.

Click here to go back to the assessment overview

General Aviation

The following section outlines how the PBN arrival options have been assessed in terms of impacts to General Aviation. This ACP also proposes to release a portion of Controlled Airspace (CAS). Information around this is contained within the CAS section of this consultation document.

How do we assess impacts to General Aviation?

A qualitative assessment of the PBN arrivals has been undertaken which considers whether each option has the potential to require more/less controlled airspace (CAS) and/or impact General Aviation. We have also assessed whether the PBN arrivals have the potential to impact the existing helicopter routes.

How did the PBN arrivals perform in terms of General Aviation?

The PBN arrivals are contained within Aberdeen Airport's existing airspace and are not expected to impact General Aviation stakeholders outside of CAS. They are also not expected to impact existing helicopter routes.

The introduction of PBN arrivals would be compatible with the proposed change to CAS (CAS Option 1) which would result in a reduction in the volume of Aberdeen Airport's CAS.

Click here to go back to the assessment overview

Safety

How do we assess safety?

Air Traffic Controllers (ATC) and airspace experts undertake detailed safety assessments to understand whether there are any positive benefits or negative impacts compared to the baseline 'do nothing' scenario. The safety assessment also looks at the design of the arrival procedure, and whether the specification of PBN used offers any safety advantages compared to the baseline 'do nothing' scenario.

How did the PBN arrivals perform in terms of safety?

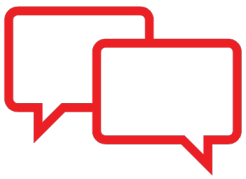
The PBN arrivals are expected to be as safe as what happens today. This is because they are very similar to what happens today and have been designed to be operated in line with the existing Air Traffic Control procedures and charts. Implementing PBN arrivals would offer some ATC workload benefits in the event the ILS is unavailable and furthermore, in this circumstance, safety would be improved as it would remove reliance on the existing Non-Precision Approaches (NPA).

Click here to go back to the assessment overview

Appendix B: Feedback form

Appendix B: Feedback form

How to have your say



Our consultation on the introduction of satellite-based arrival procedures and to release a section of Controlled Airspace runs for **12 weeks from 29 April to 21 July 2024**.

To respond to this consultation, please use our Citizen Space Consultation Website
https://consultations.airspacechange.co.uk/aberdeen-airport/airspace

If you are unable to respond online, please use the form below to answer the questions and return it to: Aberdeen Airport Consultation, C/O Cavendish Consulting, 1 West Regent Street, Glasgow, G2 1RW

Written responses must be received by 2359hrs on Wednesday 24 July 2024.

We recommend reviewing the Consultation Summary Document and Consultation materials which are available on the Citizen Space webpage before completing this form. If you require hard copies of these documents, please email airspace@aiairport.com, or phone 0800 298 7040. Alternatively, you can write to the above address.

All responses will be transcribed and uploaded onto the Citizen Space Consultation website.

Please select below if you would prefer that your response is published anonymously. This means your personal details (name, postcode, email) will be redacted and only be seen by Aberdeen Airport and the CAA.

☐ YES – Publish my response with my details

☐ NO – Publish my response anonymously

Name: .....

Email address: .....

Postcode: .....

Responding as individual or organisation? .....

Name of organisation (if relevant): .....

Appendix B: Feedback form

What is your interest in this Airspace Change Proposal? (Please tick one)

- ☐ Local resident
- ☐ Local authority/council
- ☐ AONB representative
- ☐ Airspace user – General Aviation
- ☐ Other
- ☐ Airspace user – Commercial/business aviation
- ☐ Airspace user – Helicopter operations
- ☐ Airspace user - Other (e.g. NATMAC member)
- ☐ Other industry (e.g. ATC)

Further details (if required) .....

This consultation is split into two main sections. **You can give feedback on one or both sections.**

1. The introduction of modern satellite-based arrival procedures which would be used by a very small percentage of arrivals for resilience and training purposes.
2. The release of a section of the Controlled Airspace (CAS), which is not used by the aircraft arriving or departing from Aberdeen Airport, for the benefit of other airspace users.

We recognise that not all stakeholders are interested in both parts of this consultation, therefore, if you are only interested in the proposed changes to Controlled Airspace, please go straight to Question 3 on page 4 of this document.

Appendix B: Feedback form

PBN arrivals

The proposed introduction of modern satellite-based arrival procedures which would be used by a very small percentage of arrivals for resilience and training purposes

1. What are your thoughts on the proposal to introduce PBN arrivals?

2. Do you have any further comments you would like to share about the proposed introduction of PBN arrivals at Aberdeen Airport?

Appendix B: Feedback form

Release of a section of Controlled Airspace

The release of a section of the Controlled Airspace (CAS), which is not used by the aircraft arriving or departing from Aberdeen Airport, for the benefit of other airspace users.

3. Are you an airspace user? (Please tick one)

- ☐ Yes (please go to Question 4)
- ☐ No (please go to Question 8)

If you are not interested in the proposed changes to the controlled airspace, please go to page 6

4. As an airspace user, how satisfied are you with the proposed change? (Please tick one)

- ☐ Satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Dissatisfied

5. Can you provide details on why you feel that way?

6. As an airspace user, in particular for GA (General Aviation) pilots, can you think of any visual features that could better define the boundary?

7. Thinking specifically of Controlled Airspace, do you have any further comments?

Please now go to page 6

Appendix B: Feedback form

Release of a section of Controlled Airspace

The release of a section of the Controlled Airspace (CAS), which is not used by the aircraft arriving or departing from Aberdeen Airport, for the benefit of other airspace users.

8. As a non-airspace user, do you support this proposal?

- ☐ Yes
- ☐ No
- ☐ Unsure

9. Please explain why (if required).

10. Thinking specifically of Controlled Airspace, do you have any further comments?

Appendix B: Feedback form

Final thoughts

11. Do you have any further feedback on this Airspace Change Proposal?

Thank you for taking the time to share your views. Please return your written response to:

Aberdeen Airport Consultation, C/O Cavendish Consulting, 1 West Regent Street, Glasgow, G2 1RW