HITRANS

BROADFORD AIRPORT SKYE

BACKGROUND NOTE FOR MEETING WITH CIVIL AVIATION AUTHORITY

Introduction

1. HITRANS is the Statutory Transport Partnership for the Highlands and Islands established by the Transport Scotland Act 2005. One of the primary duties of the Partnership is to prepare a Regional Transport Strategy. This Strategy must include the development and improvement of transport provision, having regard to the future needs of the region to enhance social and economic well being. The Strategy was submitted to the Minister in March 2007 and awaits his determination.

2. Surface transport from Skye to Central Scotland is 7.5 hours by rail from Kyle; 6.5 hours by bus from Portree; and 5.5 hours by car from Portree. Skye is the only part of the region with significant population (12,000 residents) which has such lengthy travel times without an alternative faster air service. Therefore, in response to the need to improve journey times and enhance the economy of Skye, the Regional Transport Strategy includes the aspiration for air services from Skye to Glasgow or Edinburgh. The Proposed Delivery Plan which accompanies the Strategy identifies the development of Skye airport in the medium term 2013-2017.

3. The HITRANS air network proposals were prepared in 2002 as part of the campaign to reduce air fares on the flights serving the region. These proposals included a Skye to Edinburgh air service because the market testing had revealed potential for a twice daily rotation of a 30 seat aircraft. The proposals were presented to the CAA for information at a meeting in Gatwick in 2002.

4. Over the past 4 years HITRANS, in partnership with Highland Council and HIE, has completed a series of research studies to provide background information for the inclusion of Skye air services in the Regional Transport Strategy.

Market Demand

5. The market potential and economic benefit studies mentioned above were completed in 2003/4. The report on the Region's Expanded Air Services Network by Aviation and Travel Consultancy forecast that annual passenger numbers on a Skye to Edinburgh service would be 17,000 at 2001 figures. Growth was projected at 1.5% per annum so that the forecast for 2008 would be 18,700. These forecasts were reviewed in 2004 by Steer Davies Gleave who concluded that estimated annual demand for a Skye to Central Scotland service would range between 18,500 and 27,750 passengers with the mid range being 23,000. A twice daily rotation by a Saab 340 (33 seats) for a 6 day weekly service would provide 41,200 seats. Twice daily by a Twin Otter (18 seats) would provide 22,500 seats and forecast demand would justify three daily rotations with this smaller type of aircraft. These two aircraft have been selected because they are in use on the network at present and are expected to continue.

Airport Location

Figure 1 Location of Ashaig Airstrip, near Broadford, Isle of Skye

6. A Skye airport siting study was commissioned by HIE in 2005. This was a desk top study by Mott MacDonald which identified potential runway sites on Skye. The aim was to identify locations capable of accommodating a Code 3 runway with at least 1,300 metres take-off length and with an instrument approach. The sifting process resulted in a short list of four potential sites plus the current site at Ashaig near Broadford. The study confirmed that the Broadford site (see Figure 1), owned and operated by Highland Council, is the only practicable location in terms of physical capacity and aviation landing, take off and approach.

Environmental Impacts

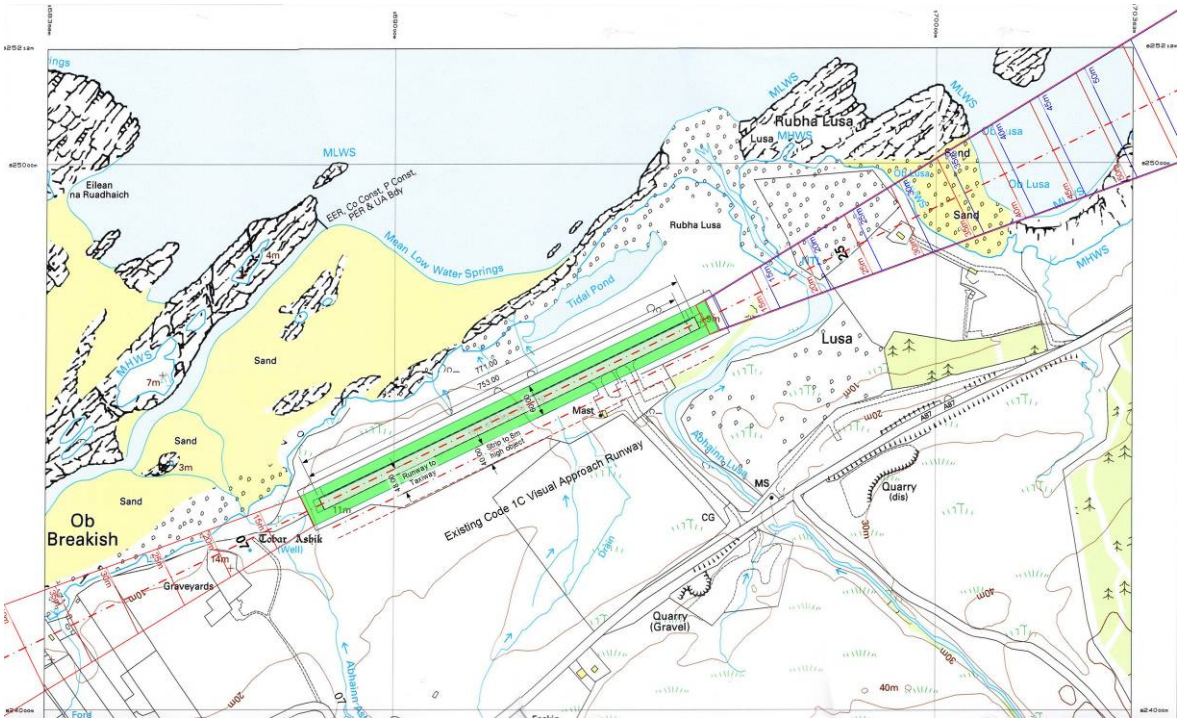
7. Environmental baseline date and impact assessment at the Broadford airport site was completed in 2005 by Halcrow. The coastline to the north of the airport is a site of special scientific interest because of the presence of fossil coral beds and inter-tidal feeding and roosting areas for waders and wildfowl. The Abhainn Lusa watercourse to the east of the airport is an important habitat for otter. To the west of the airport there is an ancient burial ground and current graveyard at Tobar Ashik. The flight path to the west crosses the crofting community of Breakish where noise could be an issue. We have concluded that that the overall impacts on these environmental features can be satisfactorily mitigated under options 1, 2 and 4 below, but not option 3.

Development Options at Broadford

8. In order to deliver the proposals in the Strategy further work was commissioned in 2007 from Mott MacDonald to identify the detailed development options and costings for operating a scheduled service from Broadford. In total, ten options were considered, along with the obstacle environment and potential arrival and departure routes. The following are the principal options that emerged from that study.

Option 1 - Do Minimum

Figure 2 Existing 771 Code 1 Ashaig Airstrip



9. The existing airstrip at Broadford has a 771m x 23m surfaced runway with a 60m wide runway strip (see Figure 2). Figures 6.1 to 6.5 show the condition of the existing airstrip in February 2006. This facility together with its approach and take

off climb surfaces class it as a Code 1 visual approach runway. It has been used by the BN Islander of the Air Ambulance Service and would be suitable for operations by the Twin Otter. It would require resurfacing of the runway; lighting improvements; terminal building and car parking. However the lack of a precision approach would not be acceptable to a commercial operator. Therefore it is not possible to develop the scheduled commercial services proposed for Skye in the Regional Transport Strategy with the current runway.

Figure 3 View to Southwest (Runway 25 Departure)

10. In Figure 3, the highest hills to the right are Beinn na Caillich (732m) and Beinn Dearg Bheag (582m). However, because they are closer, the critical obstacles are Ben Suardal (281m) on the left and the ridge, Bealach a' Ghlinne (circa 160m) extending to its right. A 4% missed approach surface is required to clear Ben Suardal when landing on Runway 25 in this direction. A 3.3 degree glideslope is required for the Cat 1 precision approach obstacle assessment surface to clear the Bealach a' Ghlinne ridge and the side slopes of Ben Suardal in the reverse direction to Runway 07. This is shown in paragraph 17

Figure 4 Existing Apron Area

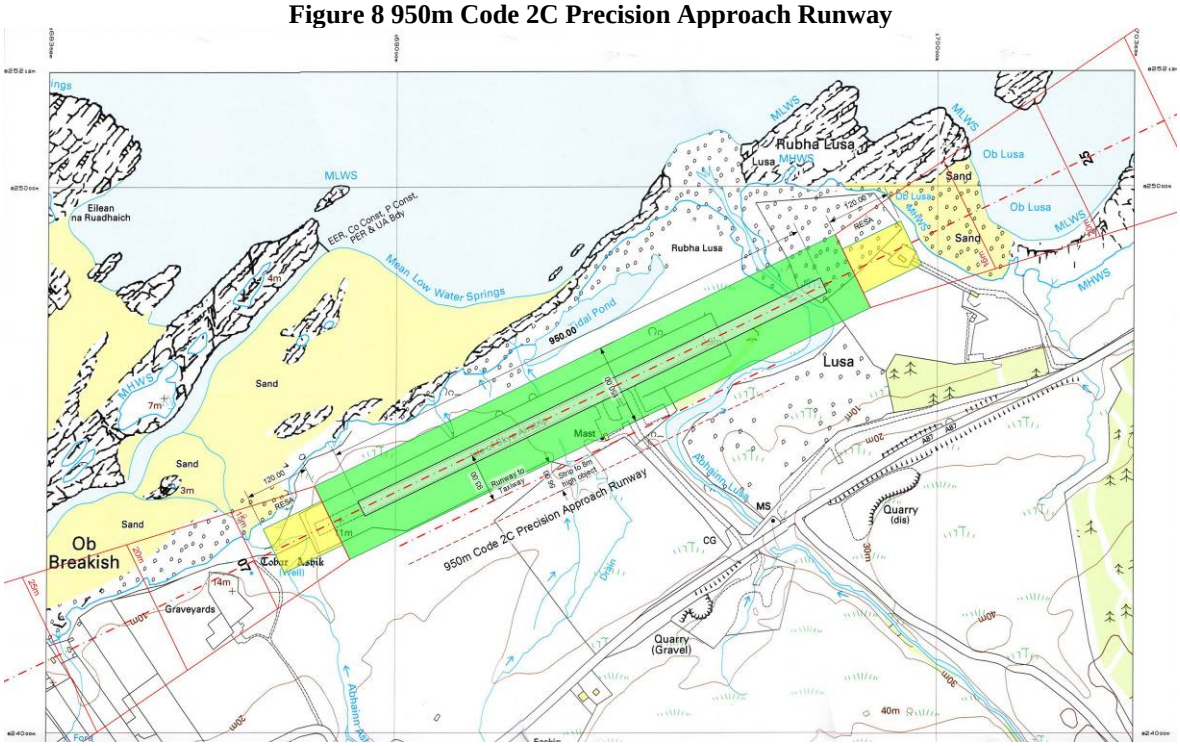
Figure 5 Runway 25 APAPI

Figure 6 Runway Surface

Figure 7 Panoramic of site from A87

Option 2 - 950m Precision Approach Runway

Figure 8 950m Code 2C Precision Approach Runway

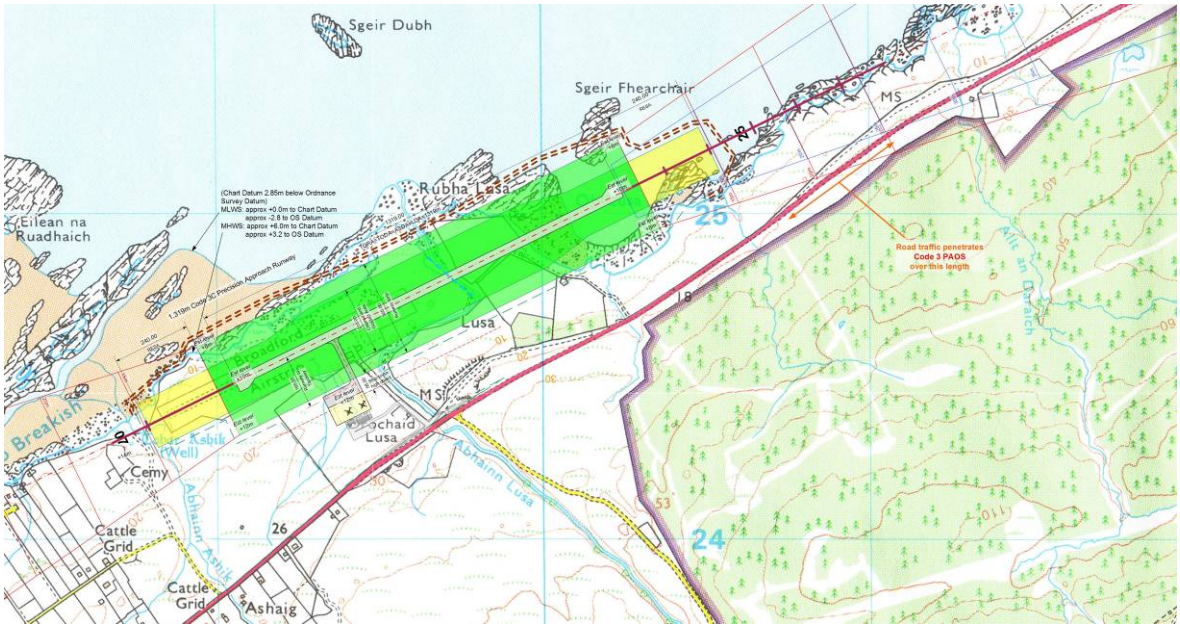


11. The next option provides a longer runway within the limits of the graveyard to the west and the high water mark of the coastline in OB Lusa Bay to the east. It requires the culverting of the Abhainn Lusa watercourse which will need to be designed to accommodate otter movements, and demolition of Lusa Cottage. This gives a runway with a total surfaced length of 950m by 30m wide (see Figure 8). The runway strip is 150m wide and there are two runway end safety areas 120m by 90m in extent.

12. This option would be suitable for commercial scheduled operations by the Twin Otter, but not the Saab 340, nor most other regional types. This option would require a new runway on the existing runway's alignment; cleared and leveled runway strip and runway end safety areas; approach lighting and ILS; a new apron and terminal areas and an improved junction with the A87 trunk road. It could provide the first phase of development at Broadford to allow the introduction of the new service using the Twin Otter.

Option 3 - 1319m Precision Approach Runway

Figure 9 1319m Code 3C Precision Approach Runway

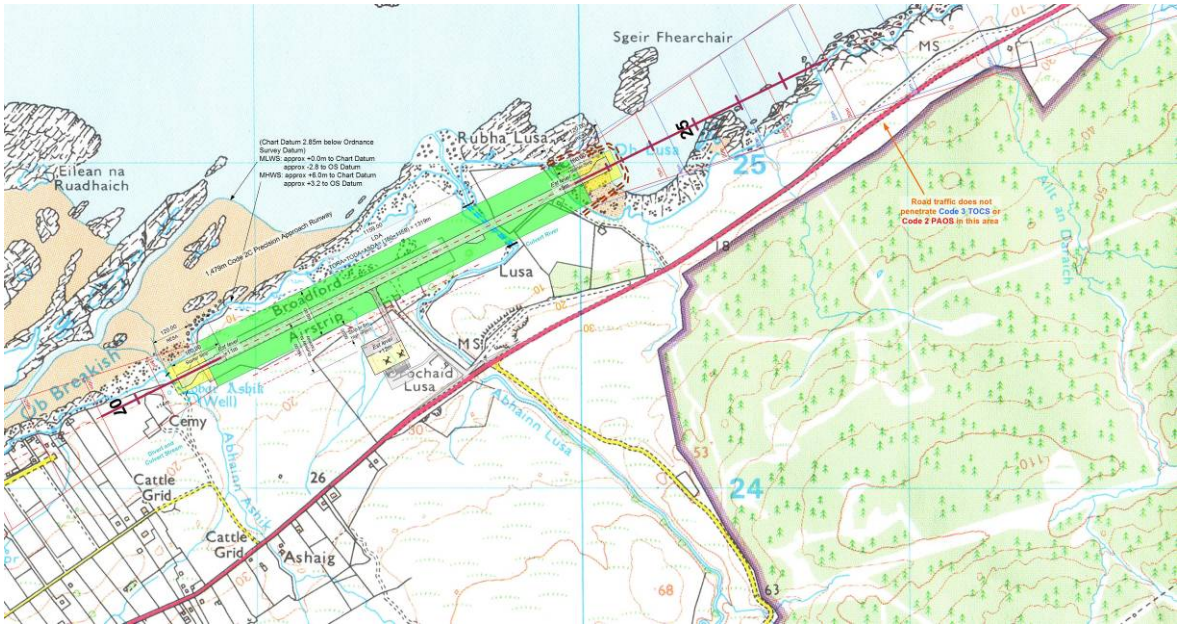


13. In order to accommodate the Saab 340 a runway with a take-off run of at least 1300 metres is required. This option is designed to provide for precision approaches to Code 3 standards. The runway is 1319m x 30m with a 300m wide runway strip (see Figure). The runway end safety areas are 240m x 150m in extent. At a point about 500m east of the Runway 25 threshold, road vehicles on the main A87 road would penetrate the precision approach obstacle limitation surface.

14. This option would require the reclamation of land for the runway platform and safety areas to the west across OB Lusa Bay, and rock armouring of the whole runway strip along its northern and eastern edges These works would be in addition to the other infrastructure described for the previous option. The environmental impact of the reclamation is substantial and it may not be possible to mitigate impact on otters caused by the substantial length of culverting of the Abhainn Lusa; on the fossil coral reef; and on the bird roosting and feeding area.

Option 4 – 1479m Precision Approach Runway

Figure 10 1479m Code 2C Precision Approach Runway

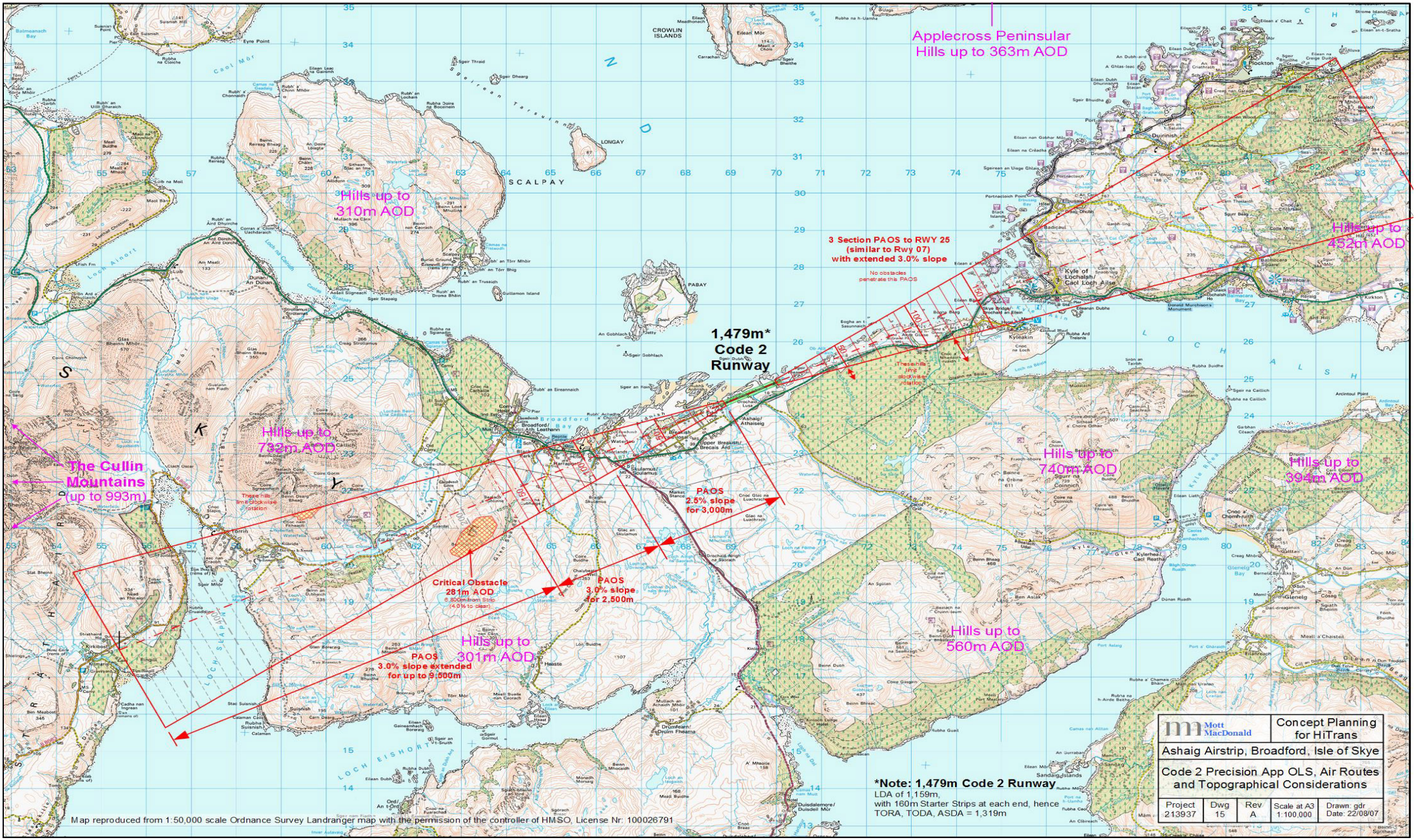


15. Because of the environmental concerns raised by Option 3, a further option has been developed with a significantly reduced runway platform footprint. It provides a total runway length of 1479m by incorporating two starter strips of 160m at each end and runway end safety areas of 120m x 90m (see figure 10). Although the total paved length in longer than Option 3, the take-off run and accelerate and stop distances both remain as 1319m in both directions and the landing distance available is reduced to 1159m. This would still be suitable for Saab 340 and similar operations.

16. The runway strip is 150m wide. Figure shows the approach and obstacle surfaces for this runway, which are free of penetrations. It will require some land reclamation and rock armouring in Ob Lusa Bay. However, it will not affect the fossil coral reef, nor the bird feeding and roosting areas, and the Abhainn Lusa culvert length will be acceptable for otters. The runway complies with the requirements of CAP 168 for a Code 2C precision approach landing runway, and a Code 3C take-off runway, but it does not meet the CAP 168 Code 3 requirements for landing.

17. Figure 1 shows the precision approach obstacle limitation surfaces. The third section of that on the approach to Runway 07 has to be raised. There is a modest penetration by Ben Suardal. Consequently, an increase in the glideslope angle is warranted. Figure 2 shows that the obstacle assessment surface defined in ICAO doc 8168 (PANS-OPS) for a 3.3 degree glideslope Cat 1 approach would not be penetrated. A 4% missed approach would be required for approaches to Runway 25 to pass over Ben Suardal. This applies to any of the precision approach options.

Figure 1 Standard Precision Approach Obstacle Limitation Surfaces



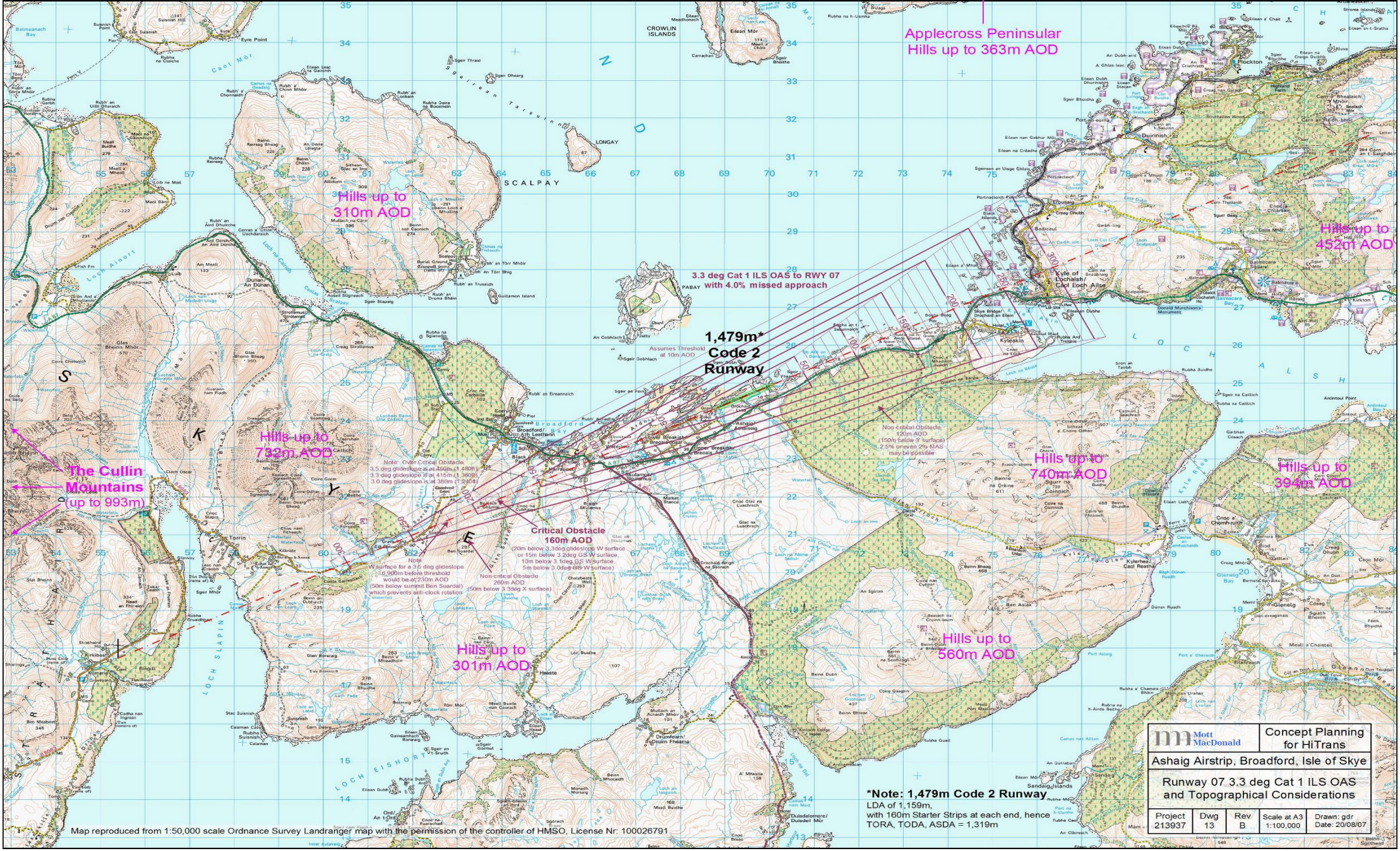


Figure 2 Standard Precision Approach Obstacle Limitation Surfaces

Cost Estimates

18. Cost estimates have been prepared by Mott MacDonald for Options 2, 3 and 4 above. The do minimum option has not been costed because it will not provide for commercial scheduled services. These estimates include construction costs for the civil engineering and infrastructures works for the 3 options, and a 20% allowance for risk and optimism bias.

Option 2	£11 million
Option 3	£48 million
Option 4	£24 million

Although no detailed Scottish Transport Appraisal Guidelines options appraisal has been carried out it is considered unlikely that Option 3 will produce a positive benefit to cost ratio, and therefore it is unlikely that this option could be realised.

Howard Brindley
HITRANS Co-ordinator
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