

Orkney Inter-Island Transport Study



North Ronaldsay Public Engagement Meeting
Tuesday 28th June 2016 – 0830-1030
Community Centre Hall, North Ronaldsay



Orkney Inter-Island Transport Study

Welcome to the **North Ronaldsay Public Engagement Meeting** for the Orkney Inter-Island Transport Study (OIITS).

The Orkney inter-island transport network, which consists of a combination of ferry and air services, connects 13 islands with Orkney mainland. These lifeline connections support the economies of Orkney's island communities as well as providing personal accessibility to employment opportunities and access to key services such as education, health and leisure opportunities.

The inter-island transport network has been supported in both capital and revenue terms by the Council over many years. Whilst this remains the case, ageing assets, escalating costs and a reduction in the funding available to local authorities has led to a need to consider the future of the inter-island transport network at the strategic level. To this end, the Council commissioned the Orkney Inter-Island Transport Study (OIITS), with a view to developing and appraising options for the future of the inter-island transport services.

The purpose of this exercise is to determine the **appropriate level of service for each island / island group** and the **funding implications** of this. This will provide the Council with an evidence base to inform discussions with Scottish Government. To this end, the study team, led by Peter Brett Associates LLP, has developed, appraised & costed a set of capital (e.g. vessels, harbours, fixed links, airfields and aircraft (where appropriate)) and revenue (i.e. additional sailings and / or flights) options. These options are based on identified transport problems within each island, which we have had initial confirmation of from each local Community Council.

Following the submission of the final report in August 2016, a subset of these options will be taken forward for further development and appraisal. **This is your chance to have your say on the options** – please speak to the team, provide your feedback and fill up the brief exit questionnaire which we have provided.



What are we presenting today?

- The following boards show:
 - How an island's level of service is determined
 - Some facts about the current service (e.g. vessels, timetable, hours on mainland etc)
 - The transport problems identified for the island
 - The objectives for future island transport provision
 - The options for infrastructure & crewing we have considered and whether they should be taken forward for further consideration
- At this stage, we are **not** recommending a 'preferred option' for each island
- We are seeking your feedback on the options put forward, which will help inform the further refinement of options



How have we determined what level of service is needed by the community?

There are two elements used to inform this process:

- Transport Scotland's Routes & Services Methodology (RSM)
 - Provides an initial 'model' ferry service depending on a range of inputs
 - In the context of North Ronaldsay, this also includes air services – acknowledges that air is the 'lifeline' mode for the island
 - The RSM is one of a number of inputs used to inform the appraisal
- An appraisal based on the Scottish Transport Appraisal Guidance (STAG) and Business Case Guidance
 - provides a much more detailed analysis based on the local context and circumstances
- The study is joint-funded by Orkney Islands Council, Transport Scotland, the Highlands & Islands Transport Partnership and Highlands & Islands Enterprise
 - All stakeholders have had an input into the development of the study, ensuring consistency with other Scottish ferry-related studies



Routes and Service Methodology

As part of the Scottish Ferries Review, Transport Scotland developed a 'Routes & Services Methodology' (RSM), which is designed to produce a consistent approach to ferry service transport provision across Scotland. The RSM can be extended to air for North Ronaldsay.

The RSM is a six-step, evidence-based process which:

- Identifies the current level of service to an island
- Establishes a 'model' level of service for an island in terms of the:
 - number of sailing / flight days
 - number of connections per day
 - the length of the operating day
- Develops and appraises options to address any gaps between the 'current' and 'model' service provision

The RSM does not imply an immediate or indeed any commitment to scale-up to the 'model' level of service, but is a tool which is taken into account in the analysis, and potentially an outcome worked towards over time.



North Ronaldsay – RSM Findings

- The RSM findings for North Ronaldsay are as follows:

	Sailing / Flight Days	Sailings / Flights Per Day	Operating Day
Current Service	7 Days	2-3 p/d on weekdays	Around 9 hours on weekdays
Model Service	7 Days	1-2 connections per day Mon-Sat	No specified length of operating day
<i>RSM Outcome</i>	<i>Acceptable</i>	<i>Acceptable</i>	<i>Acceptable</i>

- North Ronaldsay has 7 day connections year round – however, there is only one flight (with no meaningful time on mainland) on a Sunday during winter & refit timetables
- The number of connections per day and the length of the operating day are both broadly appropriate by the RSM measure.



Current Ferry Service



Vessel Issues: Ageing vessels; experiencing capacity issues on some ONI routes; reduced winter passenger certification

Access for Disabled: Disabled access to the ferry and passenger lounge is challenging

Accommodation Issues: Passenger accommodation below the water line

Current Vessels

MV Earl Sigurd & MV Earl Thorfinn

Vessel Age

27 / 26 years

Scheduled Replacement Date

Required immediately – 2017-2022

Carrying Capacity

22 cars

100 tonnes

Overnight Location

Generally Kirkwall

Ship-Shore interface:

Linkspan (Kirkwall) & Lo-Lo (North Ronaldsay)



Current Air Service



Aircraft Issues: Low carrying capacity;
limited to operation during hours of daylight

Access for Disabled: It can be challenging
for people with mobility difficulties to access
the aircraft

Current Aircraft

2 * Britten-Normen Islander

Aircraft Age

28 & 30 years old

Carrying Capacity

8-9 passengers and limited
freight

Airfield Features

Licensed

Runway lighting



North Ronaldsay - Current Summer Service – departures by day of week



* Timings vary week to week, depending on route taken by vessel and current / weather conditions



North Ronaldsay - Current Winter Service – departures by day of week



* Timings vary week to week, depending on route taken by vessel and current / weather conditions



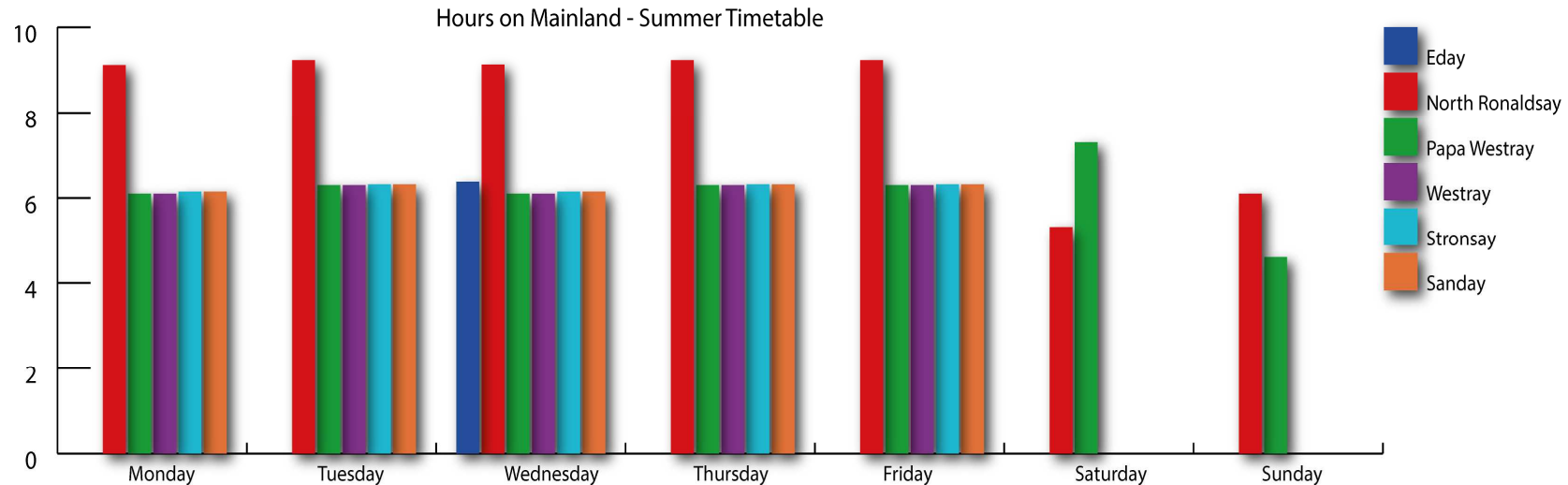
North Ronaldsay - Current Refit Service – departures by day of week



* Timings vary week to week, depending on route taken by vessel and current / weather conditions



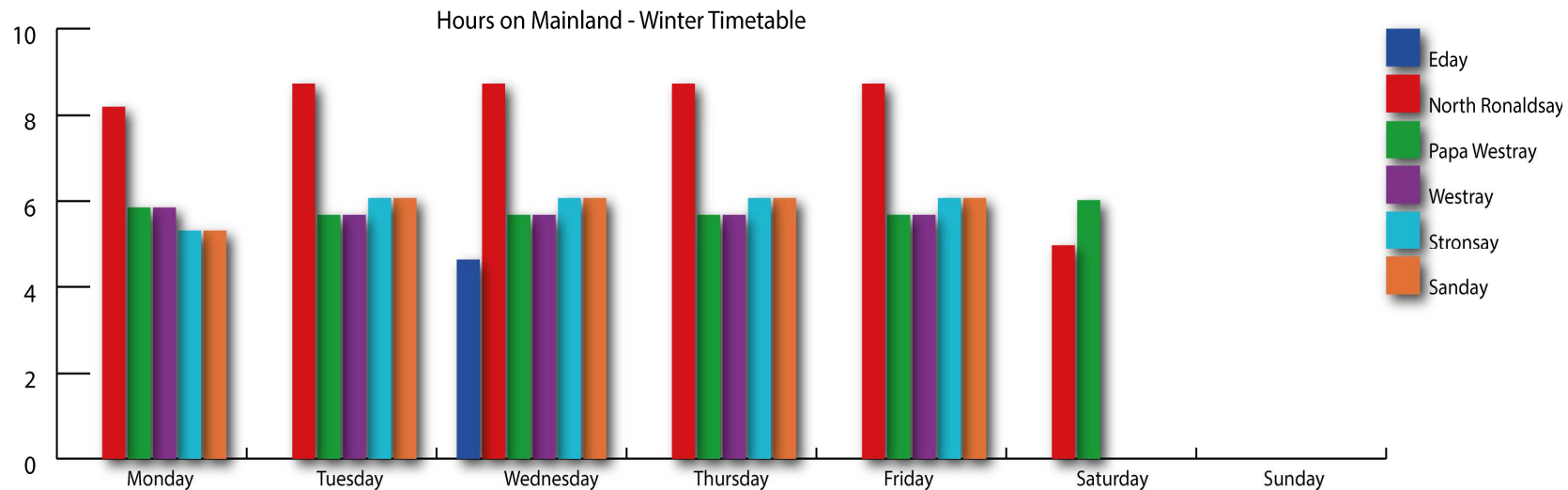
Daily Time in Orkney Mainland – Outer North Isles – Air - Summer



- Only hours ashore by air are reported for North Ronaldsay – ferry alone does not provide meaningful time on Orkney mainland
- The air service provides North Ronaldsay residents with the opportunity for a working day on Orkney mainland
- Weekend hours ashore are less but higher than for the majority of other ONI islands



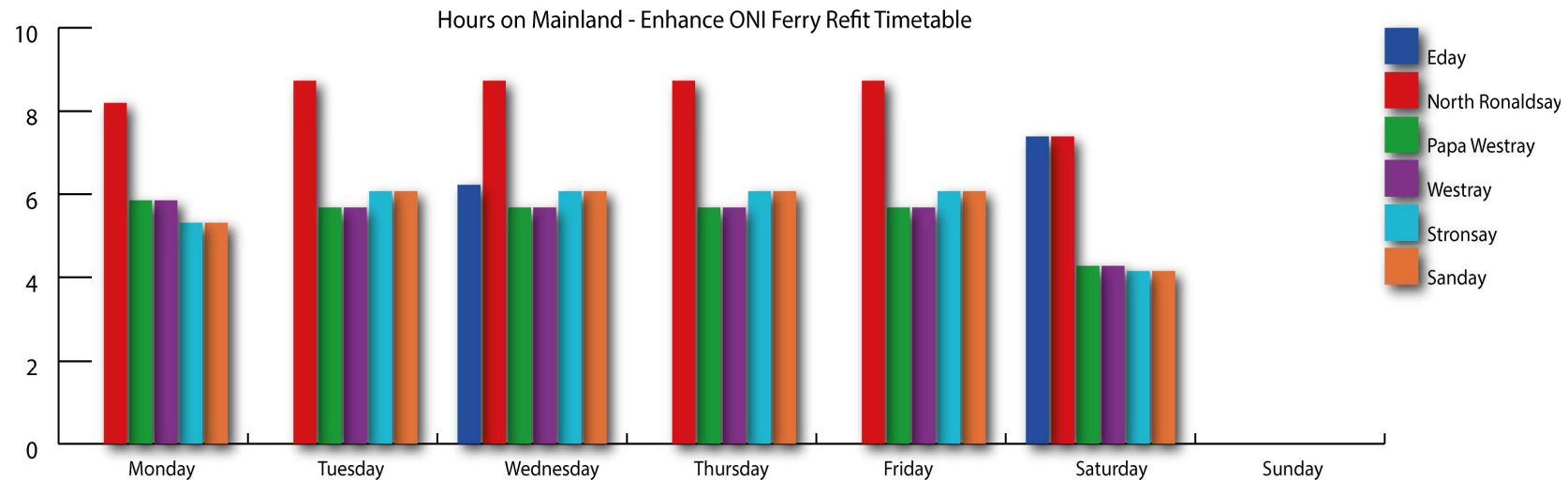
Daily Time in Orkney Mainland – Outer North Isles – Air - Winter



- Even during winter, the air service provides North Ronaldsay residents with the opportunity for a working day on Orkney mainland
- However, the reliability issues surrounding operating into North Ronaldsay at night (using the runway lighting) means that a significant number of flights are brought forward to 1400 or 1600
- The one connection on a Sunday does not allow for a day return to Orkney mainland



Daily Time in Orkney Mainland – Outer North Isles – Air - Refit



- The refit timetable is very similar to the winter timetable
- The main difference is that North Ronaldsay residents benefit from extended time ashore on a Saturday (although the morning inbound flight is indirect)



Problems, Objectives & Options



North Ronaldsay Transport Problems

	Service Characteristics	Rating	Why is this a problem or not?
1	Overall Journey Time to Kirkwall	✓	Whilst the direct ferry service from North Ronaldsay to Kirkwall takes around 160 minutes, the air service is defined as the lifeline mode. The direct flight time is 18 minutes and indirect flight time 25 minutes (although most flights are direct). There is a half hourly bus from Kirkwall airport, with a journey time of around 10-15 minutes.
2	First sailing / flight	✓	The first flight from North Ronaldsay generally departs at 0758 in summer and winter (0823 on a winter Monday), facilitating a working day on Orkney mainland.
3	Last sailing / flight	✗	The last departure in summer is 17:30, providing a near full day in the mainland. The last departure from Kirkwall in the winter is 17:00, which is facilitated by the runway lighting on North Ronaldsay. However, our research suggests that in 2014-15, 42% of the 17:00 flights to North Ronaldsay were brought forward to 16:00 or 14:00 as a result of anticipated visibility issues at North Ronaldsay, a situation which worsened in 2015/16. ¹ This can lead to significant disruption and uncertainty for those working on or visiting the mainland and vice versa.
4	Time on mainland	✓	Shown on previous consultation boards.
5	Time in Kirkwall	✓	See point 4 – the hours in Kirkwall are very similar to the time on the mainland, although the interchange and time on the bus has to be taken into account.
6	Time on island	✓	Shown on previous consultation boards.
7	Frequency / Sailings per day / Timetable gaps	✗	North Ronaldsay has the highest frequency air service of any Scottish island. However, the ferry only operates twice a week in summer and once a week in winter (although Orkney Ferries supplement the winter service with a chartered air freight service once per week, which transports perishables, chilled & frozen food and other emergency supplies and additional flights are chartered if sailings are disrupted). Furthermore, the highly constrained ferry berth in the island means that, in winter in particular, it can be several weeks between ferry calls. Whilst personal accessibility is maintained by the air service, the supply chain of the island can be negatively affected. A further issue is that the timetables have to align with the tides so sailings do not depart / arrive at the same time every day / week.
8	Capacity	✗	The air service is limited to eight passengers which, in the absence of a reliable ferry service, places a hard constraint on the number of people who can travel to and from the island at any given time. However, it should be noted that the population of North Ronaldsay is low, and the 8-9 seats on the plane generally meet the island's needs at present. Whilst the majority of North Ronaldsay's flights are direct, a handful are shared (via Eday or Papa Westray), which can impose a further limitation on capacity. <i>Ad hoc</i> flights are operated to support special events in North Ronaldsay.
9	Reliability (weather / mechanical)	✗✗	The ferry service is unreliable due to weather – the berth is exposed to swell and is tidally constrained, leading to sustained service outages, particularly during the winter months. The air service, which is the lifeline mode, is generally very reliable and can operate in most weather conditions (fog being the main problem). However, the last rotation of the day during winter is frequently brought forward to 14:00 or 16:00 as visibility restrictions prevent night landings.
10	Comfort	✗	The ferry is lightly used by passengers so the facilities are broadly appropriate for the length of the crossing, if somewhat dated. The plane is also broadly appropriate given the short flight times, although the RSM survey picked up various complaints about the aircraft being cold during the winter months.
11	Physical access	✗✗✗	Physical access to transport services is a problem in North Ronaldsay, particularly in light of the ageing population. Access to the ferry for the disabled can be challenging, whilst feedback from the NHS suggests an air passenger is only permitted on the plane if they can self-evacuate the aircraft.
12	Integration with PT (local bus)	✓	The ferry travels into the heart of Kirkwall, whilst there is a relatively frequent bus service to and from Kirkwall Airport.
13	Integration with PT (strategic)	✗✗	North Ronaldsay residents cannot connect with the first NorthLink or Pentland Ferries services (although they can get the 11:50 departure from St Margaret's Hope and the 11:00 NorthLink service from Stromness, which operates during the peak timetable). Residents also cannot catch the first flights to Aberdeen or Edinburgh, although they can make the first flights to Glasgow and Sumburgh. The first Inverness flight could possibly be connected with on Tuesday through Friday, although the timing is tight. They can however access the late night NorthLink sailings to Aberdeen and Lerwick on the days which this service operates via Kirkwall. The last flight to North Ronaldsay is generally before the last inbound flights and ferries to Orkney from the Scottish mainland and Shetland. Current strategic transport connectivity makes it difficult to undertake a day return to the Scottish mainland, leading to costly overnight stays.
14	Crossing / flight time	✓	See point 1.
15	Onboard facilities	✗	The air service is appropriate to the journey length. Facilities on the ferry are dated but adequate and appropriate to a lifeline service, although of a lesser standard than found in other parts of Scotland.
16	Weekday / weekend service variation	✗✗	There is no day return to North Ronaldsay on a winter or Refit Sunday. The Sunday flight from North Ronaldsay also calls at Sanday and Stronsay on request, so capacity on this flight is likely to be a problem.
17	Landside infrastructure issues	✗✗✗	The ferry berth at North Ronaldsay is challenging to operate to and from. The berth is exposed, tidally constrained and the pier is marginally too short for the ONI vessels. North Ronaldsay is also a Lo-Lo port, which can make carrying anything other than passengers or small pieces of freight problematic. The constrained nature of this port means that the island can go extended periods without a ferry call. North Ronaldsay is the only airfield in the ONI network with precision runway lighting but this has been of only limited effectiveness in supporting flying during the hours of darkness due to visibility constraints.
18	Landside human resources	✗✗✗	Orkney Islands Council has successfully managed Rescue & Fire Fighting Services at its airfields but this will always be an ongoing challenge, particularly with an ageing population in North Ronaldsay. The ageing population also presents a challenge in terms of sustaining the ferry service. The difficult berthing conditions mean that able-bodied and fit linesmen are required to secure the vessel, which is likely to become an increasingly challenging requirement in the future.

¹ In 2015, the flight was brought forward to 1600 between 26/10/15 – 10/11/15 and 19/01/16 – 14/02/16 and to 1400 between 11/11/15 and 18/01/16.

Study Objectives

In the light of the problems identified across the Orkney Islands, the following objectives have been defined as the basis for the options appraisal:

- **Transport Planning Objective 1:** The capacity of the services should not act as a constraint to regular and essential personal, vehicular and freight travel between the island and Orkney mainland.
- **Transport Planning Objective 2:** Where an island does not have a 'commutable' combined ferry or air / drive / public transport / walk time to a main employment centre, the scheduled connections should permit at least a half day (e.g. 4 hours) in Kirkwall or Stromness 7-days a week, all year round.
- **Transport Planning Objective 3:** The scheduled time between connections should be minimised to increase flexibility for passengers and freight by maximising the number of island connections across the operating day.
- **Transport Planning Objective 4:** The level of connectivity provided should minimise the variation within and between weekdays, evenings, Saturdays and Sundays.
- **Transport Planning Objective 5:** Where practicable and realistic, islanders should be provided with links to strategic onward connections without the need for an overnight stay on Orkney mainland.



Outer North Isles – Appraisal of Options (1)

The appraisal of options for the Outer North Isles is complex, involving capital & revenue options across six islands and two modes of transport (three if fixed links are included). In carrying out the study, a number of assumptions were made:

- The lifeline mode of transport for **North Ronaldsay & Papa Westray** is air. The ferry meets the supply chain and other occasional travel needs.
- The lifeline mode of transport for **Eday, Sanday, Stronsay and Westray** is ferry. The air service meets a public service need and provides a handful of ‘fast’ connections to Orkney mainland (but with a very low capacity)

It is also assumed that the future service will work towards at least the RSM-specified minimum level of service of 3-5 connections per weekday, and an assumed two connections on a Sunday. This would consist of:

- A minimum of three return flights for **North Ronaldsay & Papa Westray**, with 1-2 ferry connections per week
- A minimum of three return ferry connections for **Eday, Sanday, Stronsay and Westray**, with supplementary daily air connections

The study used the above defined **minimum service levels** in the subsequent appraisal of options. The required levels of service can be delivered by:

- Capital options: Vessels (supported by harbour improvements); aircraft; airfield investment and fixed links between islands
- Revenue options: Additional ferry and air crew, allowing for a longer operating day



Outer North Isles – Appraisal of Options (2)

The appraisal was undertaken in three defined steps :

- **Step 1 – Appraisal of fixed links**
 - This step involved consideration of fixed links between Papa Westray & Westray and Westray & Eday
 - The outcome of the fixed links appraisal determines whether the air & ferry services need to meet the needs of six islands (as at present), five islands (Westray linked to Papa Westray **or** Westray linked to Eday) or four islands (Westray linked to Papa Westray **and** Westray linked to Eday)
- **Step 2 – Appraisal of options for North Ronaldsay & Papa Westray**
 - This step involved consideration of the nature of future ferry services to North Ronaldsay & Papa Westray – this a key question in determining the required vessel and crew mix across the network.
 - The main question is whether North Ronaldsay and Papa Westray should be converted to Ro-Ro, or whether the Lo-Lo operation should continue (potentially with harbour improvements)
- **Step 3 – Appraisal of ferry & air capital options:**
 - Having defined the shape of the network, these options consider the future air & ferry mix, as well as ‘enabling options’ which would support an enhanced service, such as harbour improvements, airfield and aircraft improvements, additional aircraft etc



Outer North Isles – Fixed Link Options

The following **fixed link options** have been identified for the Outer North Isles

- Option CO1: Construct a fixed link between Papa Westray & Westray
 - Various fixed link options considered
 - Ferry service between Papa Westray – Pierowall & Papa Westray – Kirkwall would be discontinued
 - The air service would operate as currently
- Option CO2: Construct a fixed link between Westray & Eday
 - Various fixed link options considered
 - Ferry service between Westray & Kirkwall would be discontinued
 - Eday ferry terminal would be relocated to the west of the island
 - If this option was progressed in addition to Option CO1, the ferry service between Papa Westray – Pierowall & Papa Westray – Kirkwall would be discontinued
 - The air service would operate as currently



Rationale for Selection / Rejection – ONI Fixed Links

Option	Take Forward (✓) or Reject (✗)	Rationale for Selection / Rejection
Option CO1: Construct a fixed link between Papa Westray & Westray	✗	These options are rejected from further consideration given the very high costs and the scope of the work involved. In addition, the technical and funding uncertainty, as well as the elapsed time before this option could be realised, means that it will not be considered further in the appraisal.
Option CO2: Construct a fixed link between Westray & Eday	✗	This elapsed time would mean that if taken forward, this option would not be in place until the tail end of the study period, meaning that an interim solution would be required. Should a nationally funded programme of fixed links emerge in future, the proposal could be revisited at this stage.



Outer North Isles – North Ronaldsay & Papa Westray

The following options have been identified for North Ronaldsay & Papa Westray:

- Option CO3: Convert North Ronaldsay to a Ro-Ro port
 - Two potential options – one which would permit overnight berthing and another which would not
- Option CO4: Convert Papa Westray to a Ro-Ro port
 - Two potential options – one which would permit overnight berthing and another which would not



Rationale for Selection / Rejection – North Ronaldsay & Papa Westray Ro-Ro

Option	Take Forward (✓) or Reject (✗)	Rationale for Selection / Rejection
Option CO3: Convert North Ronaldsay to a Ro-Ro port	✗	<p>The personal travel markets in North Ronaldsay & Papa Westray are predominantly and generally adequately delivered by the air service. Whilst the provision of Ro-Ro facilities could, particularly with a breakwater, enhance the reliability of the service (and the number of connections if additional revenue funding was provided), the cost and impacts of delivering the necessary improvements significantly outweighs the benefits.</p> <p>Modest harbour improvements could be made to improve the safety and reliability of berthing at both ports.</p> <p>Additional air services would be a more cost efficient way of delivering improved connectivity to both islands.</p>
Option CO4: Convert Papa Westray to a Ro-Ro port	✗	



Outer North Isles – Ferry Capital & Revenue Options

- Ro-Ro / Lo-Lo Options
 - Option CO5a (Do Minimum): Replace the current fleet with three vessels
 - Option CO5b: Supplement Option CO5a with a freight vessel
 - Option CO6a: Replace the current fleet with four vessels
 - Option CO6b: Supplement Option CO6 with a freight vessel
 - Option CO7: Convert the Papa Westray – Pierowall route to Ro-Ro
- Ro-Ro / Lo-Lo Harbours Options
 - Option CO8a: Develop an overnight berth at Eday
 - Option CO8b: Develop an overnight berth at Westray
 - Option CO9: Develop a new harbour in the west of Stronsay
- Passenger Only Vessel Options
 - Option CO10: Replace the MV *Golden Mariana* with a like-for-like passenger only vessel (mutually exclusive with Option CO7)
 - Option CO11: Operate a passenger only service between Eday and Sanday
- The capital options can be supplemented by increases in crewing increments, with 50% additional crew allowing an operating day of up to 16-18 hours on any given vessel



Rationale for Selection / Rejection – Ferry Capital Options (1)

Option	Take Forward (✓) or Reject (✗)	Rationale for Selection / Rejection
Option CO5a: Replace the current fleet with three vessels	✗	A three vessel solution could not meet the needs of the ONI communities in terms of frequency, length of operating day or capacity. The situation would be worsened during refit timetable
Option CO5b: Supplement option CO5a with a freighter	✓	A four vessel solution, coupled with potentially extended operating days would provide a future-proofed solution for the ONI. This basic conclusion would apply regardless of other potential changes on the network such as new overnight berths, harbour relocations, ro-ro conversions etc. The issue is the appropriate vessel and crewing mix.
Option CO6a: Replace the current fleet with four vessels	✓	Option CO5b would provide a cheaper fourth vessel, but with more limited functionality which may be sufficient depending on further analysis.
Option CO6b: Supplement option CO6a with a freighter	✗	A four vessel solution could meet the frequency, length of operating day & capacity needs of the ONI. A five vessel solution would be disproportionate.
Option CO7: Convert Papa Westray – Pierowall to Ro-Ro	✓	The provision of a Ro-Ro connection would give rise to economic and accessibility benefits for Papa Westray, and to some extent Westray. The impact of this option on the three / four vessel solution options outlined above has to be considered. This option should not be linked to any reduction in air services to / from Papa Westray.

- Note – a two vessel solution has been ruled out as it could not possibly meet the frequency, connectivity & capacity needs of the isles



Rationale for Selection / Rejection - Ferry Capital Options (2)

Option	Take Forward (✓) or Reject (✗)	Rationale for Selection / Rejection
Option CO8a: Develop an overnight berth at Eday	✓	The provision of new overnight berths in Eday and / or Westray would enhance the flexibility of the service and allow for a better matching of supply and demand. This option should be considered as part of any vessel replacement programme.
Option CO8b: Develop an overnight berth at Westray	✓	
Option CO9: Develop a new harbour in the west of Stronsay	✓	This option would offer a small to moderate saving in total ferry operating hours over the week. These hours could be redeployed to provide more connections in the network over the week.
Option CO10: Replace the MV <i>Golden Mariana</i> with a like-for-like passenger only vessels	✓	This option is retained as the Do Minimum for the Papa Westray – Pierowall route. It should be noted that if Option CO7 (convert Papa Westray – Pierowall to Ro-Ro) is pursued, this option would be rejected from further consideration by default.
CO11: Operate a passenger only service between Eday & Sanday	✗	This option is rejected from further consideration as it is a relatively high cost option for the number of people that it would serve. A link between Sanday and Eday could more meaningfully and affordably be offered by an enhanced air service.



Outer North Isles – Air Capital Options

- The BN2 Islander remains the most appropriate aircraft in the medium-term.
- Option CO12 (Do Minimum): Maintain & continue with the current BN2 Islanders over the strategy period / until life expiry
- Option CO13: Supplement the current aircraft with an additional BN2 Islander
 - This option would permit an enhanced timetable, allowing a minimum of three rotations per day for North Ronaldsay & Papa Westray and at least two rotations per day for all other islands
- Option CO14: Install lighting on all island airstrips
- Option CO15: Install Global Navigation Satellite System (GNSS) on the current BN2 Islanders
 - The implementation of GNSS on the current aircraft could assist in extending the operating day of the current service by allowing instrument rather than visual approaches



Rationale for Selection / Rejection – Air Capital Options

Option	Take Forward (✓) or Reject (✗)	Rationale for Selection / Rejection
Option CO12 – Maintain and continue with the current BN2 Islanders over the strategy period / until life expiry	✓	This option has been retained for further consideration as the Do Minimum. The current air service generally meets the needs of the islands well. However, the capacity constraints, generally associated with public service delivery, do suggest that continuing with this option will not maximise the potential benefits of the air service or contribute towards the study objectives.
Option CO13 – Supplement the current aircraft with an additional BN2 Islander	✓	<p>This option should be taken forward as it would address the majority of the current capacity issues with the air service and permit frequency enhancements / fewer indirect connections.</p> <p>Far greater flexibility would be provided and the service could be developed to meet specific peaks with relative ease, for example the additional rotations ‘shadowing’ current rotations which are used for education purposes.</p>
Option CO14 – Install lighting on all island airstrips	✗	The experience of runway lighting in Orkney coupled with the restrictions applied to the service in night Visual Flight Rules mean that this option is excluded from further consideration.
Option CO15 – Install GNSS on the current BN2 Islanders	✗	GNSS presents a significant opportunity to extend the operating day. However, it should be noted that the operator has concerns about safety and implementability in the Orkney environment, which would need to be addressed in advance of progressing this option.



What to do Next?

- Thank you for taking the time to read through the above material – we would be grateful if you could now complete a short questionnaire in relation to the options presented
- Please follow this link to access the questionnaire:

https://www.surveymonkey.co.uk/r/OIITS-Outer_And_North_Isles

