

Stantec

Orkney Inter-Island Transport Study Outer North Isles Outline Business Case - North Ronaldsay Public Engagement





Summary of main outcomes

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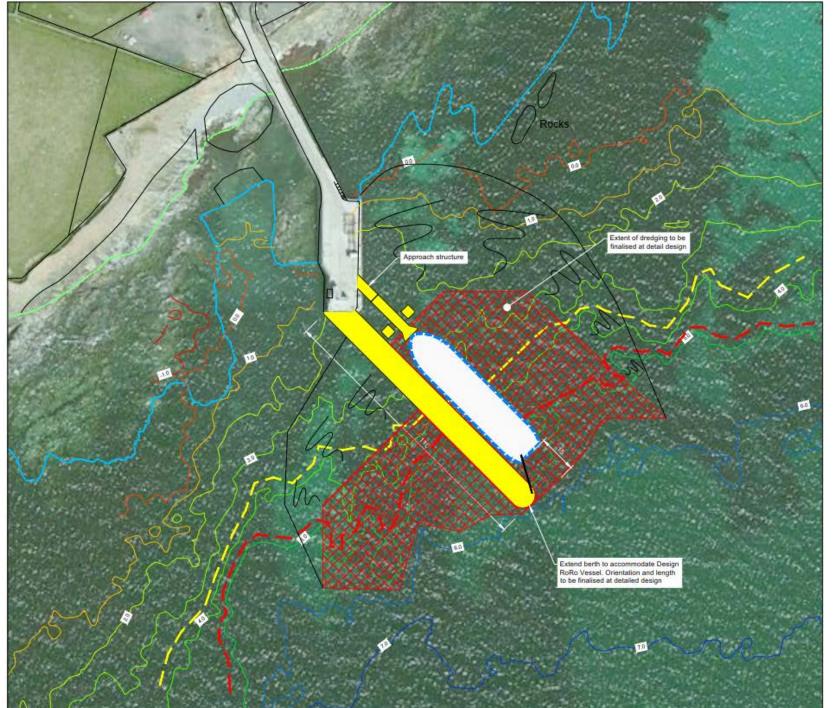
Summary – Vessel and Landside Infrastructure

The final vessel specification will not be defined until the Final Business Case / design stage. However, the working assumptions are as follows:

- **4** * circa 30-car Ro-Pax linkspan vessels which would provide interchangeability across the Outer North Isles (ONI) fleet
 - This would be expected to largely accommodate current and forecast future car-based demand
- For the infrastructure, we have assumed a maximum 65m length overall vessel (LOA) to allow for future-proofing and uncertainty in the final design of the vessel

- This is the maximum length of vessel which can be accommodated at current ONI ports without major infrastructure investment
- A drawing of the proposed landside infrastructure for **North Ronaldsay** is shown on the next board
- Proposed vessel speed is **12 knots**
- Freight capacity 150T minimum. The vessels would have capacity for handling abnormal vehicle loads
- Anticipated that the vessels will use a greener fuel, although the exact fuel type would be decided through liaison with vessel designer(s) / shipyard(s)

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Orkney ONI OBC Option Development North Ronaldsay (Nouster) Option D - Linkspan for Design RoRo Vessel

Current Vessels

· 2 ONI LoLo Vessels; MV Earl Sigurd & MV Earl Thorfinn

Potential Future Vessel (Shown)

Design RoRo Vessel, 14.3m beam and 3.7m draught

Potential Solution - Option D (Shown)

- Extend berth by 110m
- New linkspan
- For use with Papa Westray Option D, Sanday, Eday, Stronsay and Westray (Rapness) options.
- Capital dredge to 5.7mCD to give maintained depth of 4.7mCD
- · Assume 1 in 12 slope for long-term stability of bed material

Notes

- Currently berth tidally restricted.
- · Berth very exposed from southwest to northeast.
- Available water area at LAT and MLWS shown for potential future Design RoRo vessel, with 1m UKC
- Approximate area shown to allow non tidally restricted berth for potential Design RoRo vessel
 - Extent of available water area at MLWS for Design RoRo Vessel Extent of available water area at LAT for
 - Design RoRo Vessel

Note: Bathymetric Survey January 2010 All levels are to Chart Datum





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Summary – Timetable

The below provides an **illustrative indication** of the timetable which could be provided 'from' North Ronaldsay by the preferred option. Actual timetables would be defined through consultation with communities

SUMMER / WINTER	05:00 - 09:00	09:00 - 13:00	13:00 – 17:00	17:00 – 21:00	21:00 - 00:00
Monday	PLANE	PLANE		PLANE	
Tuesday	PLANE	FERRY PLANE		PLANE	
Wednesday	PLANE		PLANE		
Thursday	PLANE	FERRY	PLANE	PLANE	
Friday	PLANE		PLANE	PLANE	
Saturday		FERRY PLANE	PLANE x3		
Sunday		PLANE		PLANE	

REFIT	05:00 - 09:00	09:00 - 13:00	13:00 - 17:00	17:00 - 21:00	21:00 - 00:00
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Wednesday	PLANE		PLANE		
Thursday	PLANE		PLANE x2		
Friday		FERRY PLANE	PLANE x2		
Saturday		PLANE	PLANE		
Sunday			PLANE		

Summary – Connections

- The table below shows the change in weekly 1-way connections to / from North Ronaldsay based on the illustrative timetable presented on the previous board
- It should be noted that this timetable is <u>illustrative only</u> and based on common assumptions across the network - it is understood that island residents may wish to retain some indirect connections (particularly air services) and this would be discussed with communities through the timetable consultation process

		Total 1-way Weekly Sailings	Total Number of 1-way Direct Sailings	Total Number of 1-way Indirect Sailings	Total Number of 1- way Direct Flights	Total Number of 1- way Indirect Flights
Summer	Current Timetable	4	3	1	28	10
Summer	Preferred Timetable	6	3	3	40	0
Dofit	Current Timetable	2	2	0	27	5
Refit	Preferred Timetable	4	3	0	32	0



The story so far...

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The story so far...

- In autumn 2015, Orkney Islands Council, in partnership with HITRANS, Highlands & Islands Enterprise and Transport Scotland Orkney commissioned the Inter-Island Transport Study (OIITS)
 - The study made the case for additional capital and revenue funding for Orkney's internal transport network, recognising that both service levels and the replacement of capital assets lagged equivalent areas of Scotland
- The initial phase of OIITS ran from September \bullet 2015 to October 2016 and developed the Strategic Business Case (SBC), which:
 - Developed the 'case for change' for investment in inter-island transport infrastructure and services across the Orkney Islands

- Developed and appraised a range of options to meet the identified transport needs of each island and shortlisted a number of these options for further consideration at Outline Business Case, the next step in the process
- The SBC concluded that the immediate priorities ۲ to progress to Outline Business Case (OBC) were:
 - Additional revenue funding to operate more services
 - The outputs of this work fed into the recent announcement of additional funding and fares reductions for Orkney Ferries' services
 - Capital investment in new vessels and supporting infrastructure for the Outer North Isles

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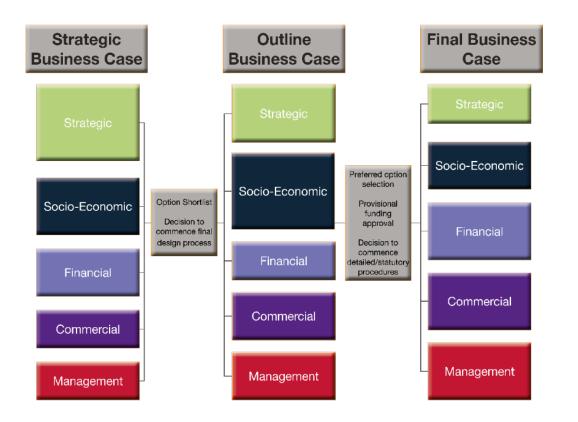
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Transport Scotland Business Case Guidance

- Securing investment in transport infrastructure in Scotland requires a 'business case' to be made in three stages:
 - Strategic Business Case (SBC): Develops and considers a range of options to meet an identified set of transport needs
 - Outline Business Case (OBC): Determines a preferred option and outlines the means by which it should be funded, procured and delivered
 - Final Business Case (FBC): Undertaken at the point of procurement refines the business case and finalises the funding, procurement and delivery mechanisms
- This OBC work only covers the Strategic and Socio-Economic Cases, but provides a preferred option to be taken forward



Outer North Isles Capital Outline Business Case

- The SBC concluded the following for the Outer North Isles network:
 - There is a requirement for four new vessels (plus a replacement for MV Golden Mariana – now delivered) if the year-round level of service offered is to be in line with the lower end of the Transport Scotland 'Routes and Services Methodology' (RSM) – this may be either:
 - 4 Ro-Pax (roll-on / roll-off passenger vessels); or
 - 3 Ro-Pax vessels and 1 freighter (which would carry freight and cars but would be limited in terms of passenger numbers)

- The ONI Capital OBC was commissioned in late 2018 and consists of two phases:
 - Phase 1 (September 2018 September 2019)
 - Answered a set of infrastructure questions which define the future shape of the ONI network
 - Phase 2 (October 2019 January 2021)
 - Determines the preferred vessel mix, the case for a third aircraft and timetables / service levels which could be derived from this
 - Recommended preferred option package presented to Members in January 2021
 - Following budget negotiations with Scottish Government for Financial Year 2021/22 and Scottish Parliament elections, the proposed solution is now being presented to communities for comment

What are we presenting today?

- Phase 2 of the OBC, which sets out a preferred option for the ONI air and ferry services
- In setting out the steps taken to arrive at this preferred option, these exhibition boards:
 - Recap on the outcomes of the Year 1 work
 - Provide evidence on **ferry vehicle deck utilisation** (i.e. how full is the car deck?)
 - Summarise the functioning of the **island supply-chain**, approach to **service delivery** and **personal travel** (as of 2019)
 - Establish the **preferred timetable option**

- Detail the vessel and infrastructure specification required to deliver this
- Summarise the **cost to government**
- Detail **next steps**
- A **feedback form** can be found here: <u>https://forms.office.com/r/a2mcWJkdLy</u>
 - The feedback gathered will be used to review and refine the preferred option as necessary
 - Any questions or comments for the study team can also be sent to <u>OIITS@stantec.com</u>

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Recap of Year 1 Outcomes



What are we trying to achieve?

- The following study objectives were set in the SBC and agreed with communities:
 - **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 2b:** 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.

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Outer North Isles – Year 1 Outcomes

- ONI Year 1 (2019) OBC focused on answering a set of 'network definition' questions:
 - Future infrastructure solutions for North
 Ronaldsay and Papa Westray
 - Whether **Stronsay ferry terminal** should be relocated to the west coast of the island
 - Whether overnight berths should be developed at Eday and Westray
- Outcomes of Year 1 work presented to:
 - North Ronaldsay, Papa Westray and Stronsay communities in summer 2019 (public exhibitions were held as the bigger potential infrastructure changes related to these islands)
 - Eday, Sanday and Westray Community Transport Representatives (19th June 2019)

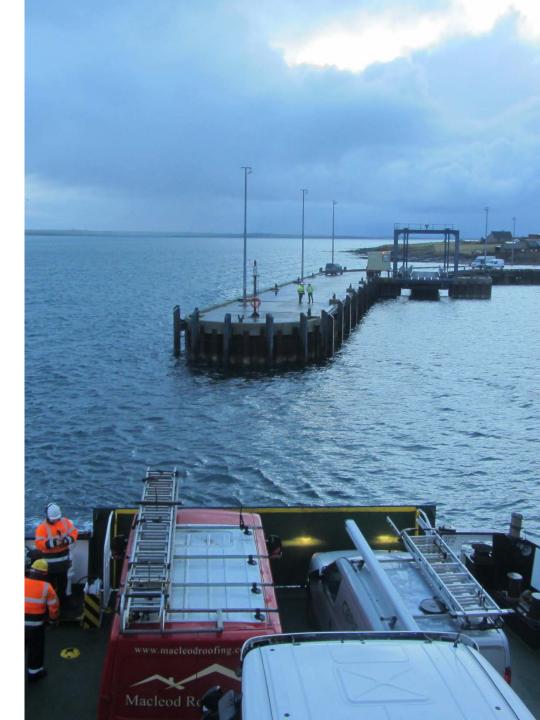
- Preferred options from Year 1:
 - Papa Westray served by a new Ro-Ro service to Kirkwall, at least on the current timetable and which could be gradually expanded
 - New Papa Westray Westray passenger only vessel (MV Nordic Star)
 - Berth at North Ronaldsay converted to Ro-Ro
 - Stronsay ferry terminal retained in Whitehall in short-term
 - Longer-term option to relocate terminal at point of life expiry retained
 - Overnight berths should not be developed at Eday and Westray
 - Early morning and later evening departures facilitated by Kirkwall-based vessels operating a longer-day

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Supply-Chain, Services and Personal Travel

This section profiles the supply-chain, services and personal travel characteristics of the six islands, with a focus on North Ronaldsay

Note that the data were largely collected in <u>2019</u>



Why are the services used?

- To inform the ONI preferred option, a research programme was carried out to understand the use of the ferry and air services.
- Supply-chain
 - Depth interviews with hauliers and the ONI distribution centre at Hatston 2018

- Service delivery (e.g. education, health, veterinary services, banking etc)
 - Depth interviews with service providers 2019
- Personal travel
 - Stakeholder consultation (e.g. businesses, island transport providers) - 2019
 - ONI resident survey large sample size, as shown in the table below 2019

	No. of Responses	Population at 2011 Census	Response as % of Total Population
Eday	33	160	21%
North Ronaldsay	17	72	24%
Papa Westray	54	90	60%
Sanday	131	494	27%
Stronsay	147	353	42%
Westray	168	588	29%

Supply-Chain

- Overall, the ONI freight market is marginal and requires workarounds to deliver a satisfactory level of service to customers
 - Current ferry timetables to some extent reflect this requirement
- Livestock exports account for a significant proportion of the overall freight traffic – heavy concentration in September and October
- All 'less than full load' goods being moved to Eday, Sanday, Stronsay and Westray are consolidated at the ONI hub in Hatston Industrial Estate
- Orkney Ferries effectively acts as the haulier for North Ronaldsay and Papa Westray, loading and conveying goods deposited at the quayside in Kirkwall
- Island hauliers have developed operating systems within the constraints imposed by the low demand and the current assets and timetables
 - There is a focus on **minimising the vehicle-deck footprint** of freight, meaning that loads are often very heavy relative to the length of the vehicle, and thus amplify the deadweight capacity issues on the vessels



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Supply-Chain

Papa Westray and North Ronaldsay

- Lo-Lo freight service Orkney Ferries acts as the *de facto* haulier

 goods deposited at Kirkwall quayside, loaded onto ferry over the linkspan and craned off in North Ronaldsay and Papa Westray
- Small / loose freight moved between Westray and Papa Westray on passenger only vessel
- Air service plays a role in delivery of consumables to islands, particularly during refit

Eday

- Served by the Stronsay haulier, Jim Holland Haulage, primarily using a trans-shipment model, with goods dropped off at a container at the foot of the pier and picked up by the island Co-op van.
 - Eday Stronsay service therefore a key link in the **current** timetable
- Anticipated to be growth in the export of liquid hydrogen in the years ahead, which may present a timetabling and capacity challenge given its 'dangerous goods' categorisation

• Stronsay

- On-island haulier with flexible fleet of vehicles
- Outwith general consumables, the main movements are related to the livestock sector i.e. outbound movement of livestock and inbound movement of feed, hay etc
- Sanday
 - Similar to Stronsay, albeit the haulier serves that island only
 - Island community shop has its own van that is used for the collection of supplies – level of self-haulage generally higher than Stronsay
- Westray
 - Haulage arrangements in Westray are similar to mainstream haulage arrangements in other islands of a comparable size, Barra for example
 - Single haulier which uses conventional commercial vehicles and comparatively high-levels of self haulage, reflecting higher overall volumes in Westray
 - Westray market overall is the largest of the ONI, with a range of products being moved from the island including livestock, bakery products and aquaculture amongst others

Service Delivery – North Ronaldsay

Education

- In 2019, one child from North Ronaldsay travelled into Kirkwall Grammar School
- The pupil travels into Kirkwall on the Monday morning air service and back on the Friday afternoon air service
- As the aircraft stops in Eday to pick-up school children, the children from both North Ronaldsay and Eday are late to school on a Monday morning
- The primary school on North Ronaldsay is currently mothballed so there are, at present, no issues with itinerant teachers using air service capacity
- Health
 - North Ronaldsay has two nurse practitioners, both of whom are resident on the island
 - The island is visited by a mainland GP on a Tuesday using the air service
 - Time critical medical items, such as blood samples, can also move on the air service
- Waste Management
 - ONI ferry service moves all waste and recyclate from the ONI to

Orkney mainland for processing and / or onward transportation

- Weekly 'black bag' connection, with waste consolidated into containers on the quayside and then craned onto the vessel
- Veterinary Services
 - Use of air service for two-monthly visit to North Ronaldsay.
- Banking
 - Mainly delivered through the 'Payzone' facility at the island Post Office
 - A Royal Bank of Scotland employee also visits North Ronaldsay once a month
- Utilities
 - Regular utilities related traffic will generally travel in own-company vehicles and will be absorbed within the wider car carryings data for the ferry network.
 - However, it is important to acknowledge that the frequency, reliability and crane-based operation of the North Ronaldsay ferry makes this challenging to manage

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Personal Travel – Resident Survey, ONI-wide

- Use of the ONI air and ferry service is relatively infrequent:
 - Half of residents typically make **1-3 journeys per month**
 - More frequent trip making is observed on islands with fewer services or industries such as Eday
 - Nonetheless, almost all island residents make at least a handful of trips to Orkney mainland each year, highlighting the importance of Kirkwall as the main service centre for the isles
- Use of ferry typically because residents want to take a car or are conveying goods, luggage or animals which cannot be taken on the plane. Securing a booking on the air service is an issue in the larger population islands
- Outwith North Ronaldsay / Papa Westray, no dominant reason for residents choosing to use the air service - main reasons clustered around time sensitive trips where the journey time, arrival time into Kirkwall or connection with an onward flight or ferry to the Scottish mainland are of importance
- ONI services are used for a wide variety of purposes,

dominated by **personal business and leisure activities**. Whilst shopping, health, business travel and visiting friends and relatives are the main reasons for travelling, any single trip is likely to combine multiple activities

- ONI residents are broadly satisfied overall with secondary schooling arrangements, but a common concern is children having to travel into Kirkwall for school on a Sunday afternoon (truncated weekend)
- Around 75% of respondents do not consider the current services as sufficient for their family's day-to-day needs now and in the future
- The common factor across islands is that the number of **vessels**, **aircraft and human resource are too few** to deliver a level of service comparable with national benchmarks
- There is an overwhelming desire (90% of respondents answered in favour) for improved connectivity to Orkney mainland amongst island communities

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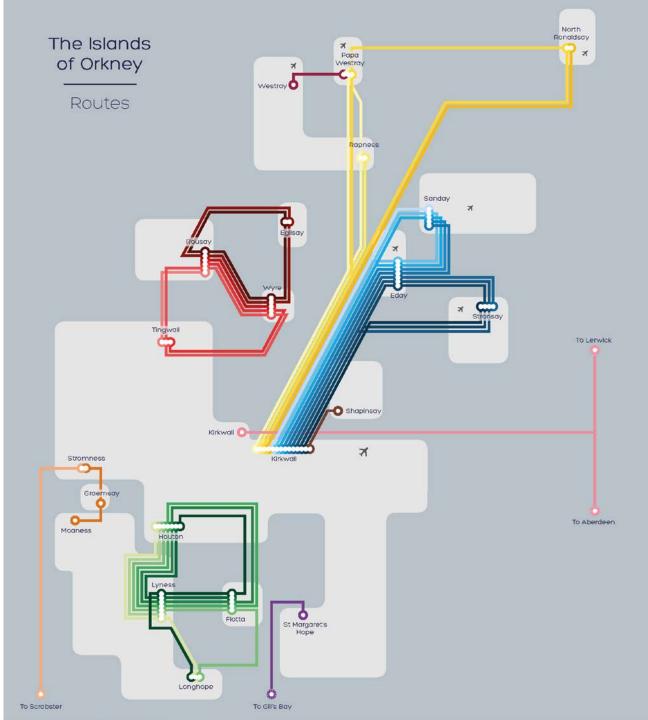
Personal Travel – North Ronaldsay Residents

• Travel frequency and Mode:

- 94% of residents travel to Orkney mainland at least monthly
- 44% travel at least weekly to Orkney mainland
- 53% of respondents always use the air service to make their journey to Orkney mainland during the summer, while 35% use both the ferry and air services
- During the winter and refit periods, the percentage of those travelling exclusively by air increases by 12% to 65%, as users switch to using the air services more as ferry connectivity reduces
- In the previous 12-month period, 47% of respondents had not visited another ONI island

- Main Journey Purpose:
 - 33% of respondents mainly travel for shopping, followed by travel for business (27%) and attending health visits at 13%
- Current and future connections:
 - Only 20% of respondents believe that the current air and ferry connections are sufficient for their family's day-today needs now and in the future
 - 62% of respondents felt that the current air and ferry connections are not sufficient to ensure the long-term sustainability of North Ronaldsay
 - Overall, 83% of people agreed that improved connectivity between North Ronaldsay and Orkney mainland would make North Ronaldsay a more attractive place to live and bring up families in the future

Illustrative Timetables – ONI Network Plan



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Community Aspirations

- Through desk-based research, the resident survey and consultation, the following community timetable aspirations were identified:
- Limited appetite for daily '9 'til 5' commuting although the ability to work on mainland a handful of days a week considered beneficial (likely to be an even more prominent position post-COVID)
- Regular and reliable access to Orkney mainland for services
 - Equality issue several island residents highlighted that they are paying Council Tax for services which they cannot regularly access, particularly at weekends
- No significant aspiration for scaling-up of service beyond 3 * return sailings per day – morning, 'middle' and evening ferry

- Later last departure on a Friday and Saturday (19:30-20:00)
- Early Monday arrival into Kirkwall education, non-daily commuting and marts
- Early afternoon departure from Kirkwall on Friday for school children travelling home
- Improved connectivity with 'middle' Pentland
 Ferries / seasonal NorthLink southbound sailings
- Scaling up of North Ronaldsay and Papa Westray to minimum 3-sailings per week
- Reduced multi-leg air services

Timetable Principles

- The community aspirations were used to develop a set of timetable principles, which are set out below
 - Note that there are conflicts within them and not all can be satisfied – a detailed timetabling exercise would need to be undertaken as the solution progresses

Timetable principles

- Ability to offer a consistent summer and winter timetable
- **Refit timetable** offering same number of connections as **current summer timetable**
- Eday, Sanday, Stronsay and Westray
 - 3 return connections per day Monday Saturday
 - 2 return connections per day Sunday
 - Early Monday arrival, although potential long-

term requirement for a second Kirkwall linkspan

- Friday and Saturday evening connections
- Sunday morning and early evening connection for children travelling to Kirkwall Grammar School
- **Timetable built around direct connections**, but incorporates Eday–Stronsay freight link as a key requirement in the current timetable
 - Some additional indirect connections on Papa
 Westray and North Ronaldsay days
- Papa Westray and North Ronaldsay
 - 2-3 days per week service
- Air service
 - Focus 3rd aircraft on reducing multi-leg journeys
 - Improved resilience

Preferred Timetable Option

A working timetable had to be developed within the constraints imposed by infrastructure, vessels and crewing hours. Several options were considered and the following identified as the preferred timetable option:

Option 2: Single crew, combination of 'standard' (i.e. no break except in the middle of the day) and split-shift days

- Standard timetable as follows:
 - Monday: 'standard day' with early start e.g. 05:00-17:00
 - Tuesday Thursday: 'standard day' e.g. 06:00-18:00
 - Friday & Saturday: split-shift e.g. 06:00-13:30 break 18:00-22:00
 - Sunday: Two rotations e.g. 09:00-13:00 break 17:00-21:00
 - On North Ronaldsay and Papa Westray days, the timetable for these islands would be largely structured as at present

Indicative 'from' North Ronaldsay Timetable

The below provides an **illustrative indication** of the timetable which could be provided 'from' North Ronaldsay by the preferred option. Actual timetables would be defined through consultation with communities

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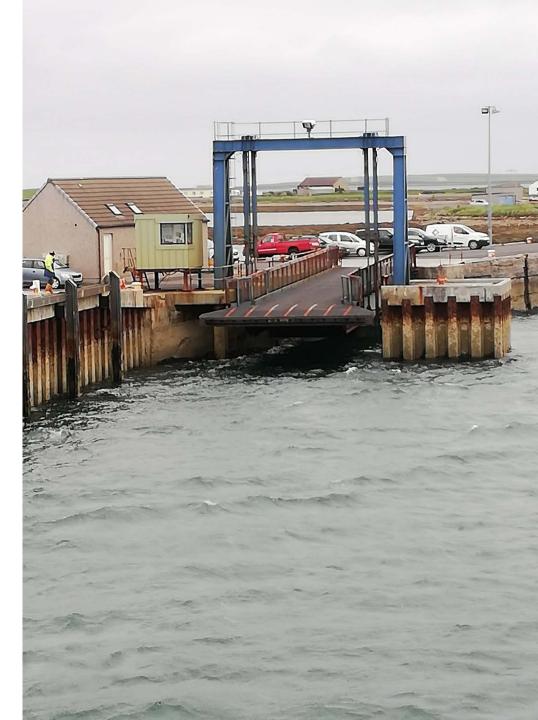
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Benefits of Preferred Timetable Option

- The benefits of the preferred timetable solution for North Ronaldsay are:
 - Broadly delivers the minimum Routes & Services Methodology outcome
 - Provides three return ferry connections per week from Kirkwall
 - Adoption of Ro-Ro would increase reliability of service and reduce turnaround times
 - 3rd aircraft could be used to provide **direct air connections to North Ronaldsay**
 - There is considerable scope to flex this model in response to the annual timetable consultation process
 - The table below shows the **change in weekly 1-way connections** based on the illustrative timetable presented on the previous board
 - It should be noted that this timetable is <u>illustrative only</u> and based on common assumptions across the network - it is understood that island residents may wish to retain some indirect connections (particularly air services) and this would be discussed with communities through the timetable consultation process

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Vessel and Infrastructure Specification



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Vessel and Infrastructure Specification

- Options presented are based on 4 * circa 30 Passenger Car Unit Ro-Pax linkspan vessels which would provide interchangeability across the ONI fleet
 - This would be expected to largely accommodate current and forecast future car-based demand
- Vessel design is not confirmed until Final Business Case stage. However, for the infrastructure, we have assumed a maximum
 65m length overall vessel (LOA) to allow for future-proofing and uncertainty in the final design of the vessel.
 - This is the maximum length of vessel which can be accommodated at current ONI ports without major infrastructure investment
- Proposed vessel speed is **12 knots**
- Freight capacity 150T minimum. The

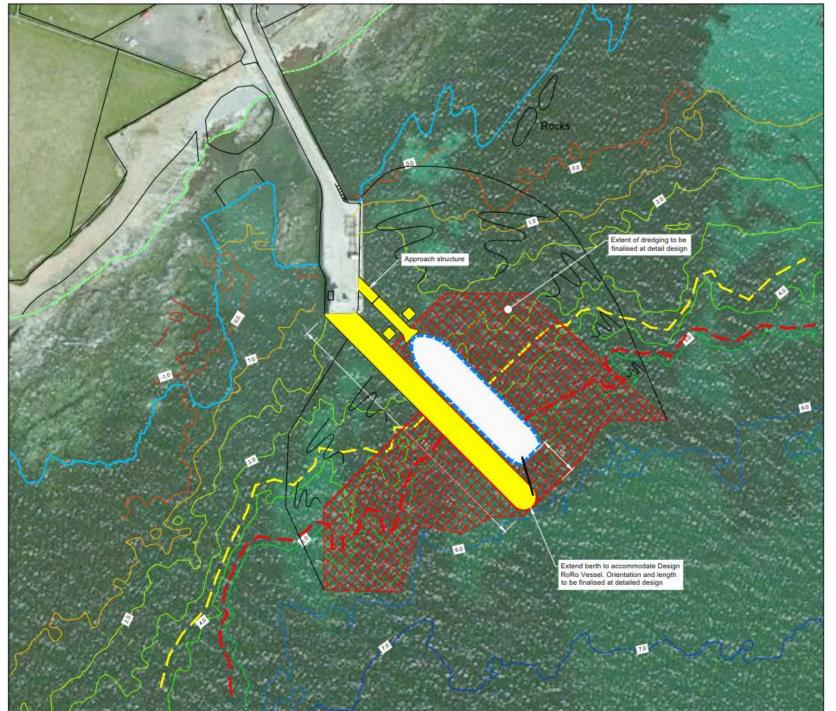
vessels would have capacity for handling abnormal vehicle loads

- Anticipated that the vessels will use a greener fuel, although the exact fuel type would be through liaison with vessel designer(s) / shipyard(s)
- The initial focus would be on the most vulnerable part of the network first – North Ronaldsay and Papa Westray
 - Removing the reliance on Lo-Lo would allow a full Ro-Ro timetable to be developed
- A drawing of the proposed landside infrastructure solution for North Ronaldsay is shown on the next board

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Orkney ONI OBC **Option Development** North Ronaldsay (Nouster) **Option D - Linkspan for Design** RoRo Vessel

Current Vessels

· 2 ONI LoLo Vessels; MV Earl Sigurd & MV Earl Thorfinn

Potential Future Vessel (Shown)

Design RoRo Vessel, 14.3m beam and 3.7m draught

Potential Solution - Option D (Shown)

- Extend berth by 110m
- New linkspan
- · For use with Papa Westray Option D, Sanday, Eday, Stronsay and Westray (Rapness) options.
- Capital dredge to 5.7mCD to give maintained depth of 4.7mCD
- · Assume 1 in 12 slope for long-term stability of bed material

Notes

- · Currently berth tidally restricted.
- · Berth very exposed from southwest to northeast.
- · Available water area at LAT and MLWS shown for potential future Design RoRo vessel, with 1m UKC
- · Approximate area shown to allow non tidally restricted berth for potential Design RoRo vessel
 - Extent of available water area at MLWS for Design RoRo Vessel Extent of available water area at LAT for
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Cost to Government

Landside Infrastructure Works	Capital Expenditure 2021 (£m)		
Sanday	£1.6		
Eday	£4.3		
Stronsay (Whitehall)	£4.9		
Westray (Rapness)	£4.1		
Papa Westray	£17.9		
North Ronaldsay	£17.4		
Total	£50.2		

- **Vessel build costs** are subject to design (in ulletresponse to output specification) and could vary widely depending on procurement and market conditions
 - Purchase of sister ships will provide bulk buying ۲ economies

- Operating costs can be expected to increase from around £5.8m to £8.0m per annum
- The annual operating deficit could be expected to ulletincrease from £4.4m to £6.0m

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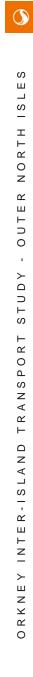
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Next Steps



Next Steps

- Following the community engagement process, the Stantec, Mott MacDonald and OIC team will incorporate the findings and finalise the OBC report in late Summer 2021
- The OBC will report will be submitted to Scottish Government as part of the Council 'ask' for funding
- As discussions progress, the Commercial, Financial and Management Cases will be developed setting out how the preferred option will be funded, procured, delivered and managed
- If / when a position in principle can be reached on how the vessels and infrastructure will be

funded, **detailed design** of both the vessels and infrastructure would commence.

 The completion of the Final Business Case would be undertaken at the point of procurement, updating the OBC to reflect final costs, procurement approach etc

What to do next

- The boards you have just read provide some areas you may wish to feed back on, but we would be happy to hear any views that you have
- As a reminder, the feedback form can be found here:

https://forms.office.com/r/a2mcWJkdLy

Any questions or comments for the study team can also be sent to <u>OIITS@stantec.com</u>

Thank you for taking the time to read this material

