



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

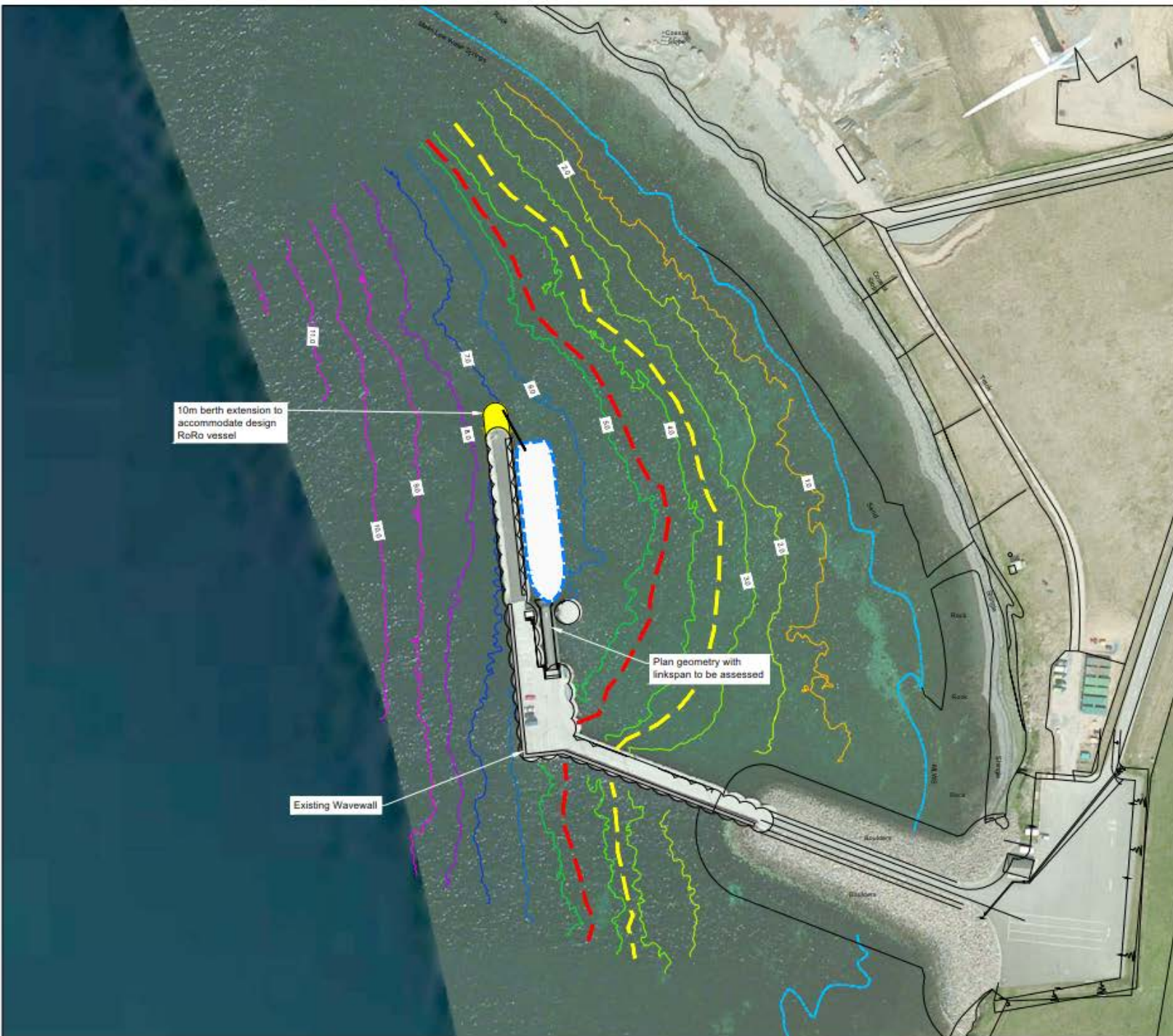


Summary of main outcomes

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 **Sanday** 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)



Orkney ONI OBC Option Development Sanday (Loth) - Linkspan for Design RoRo Vessel

Current Vessels

- 3 ONI RoRo Vessels; MV Earl Sigurd, MV Earl Thorfinn and MV Varagen

Potential Future Vessel (Shown)

- Design RoRo Vessel, 14.3m beam and 3.7m draught, maintaining capacity of current fleet

Potential Solution (Shown)

- Extend berth by 10m to accommodate Design RoRo vessel noting navigation / vessel manoeuvring space limits length of extension

Notes

- Current on the outer berth up to 5kn.
- Exposed from the west.
- Vessel surges on the berth.
- Berthing manoeuvres not consistent.
- When tide permits vessels occasionally turn shoreward of the linkspan.
- Available water area at LAT and MLWS shown for potential future Design RoRo vessel, with 1m UKC.

- 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 August 2015
All levels are to Chart Datum





Summary – Timetable

The below provides an **illustrative indication** of the timetable which could be provided ‘from’ Sanday 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	FERRY	FERRY PLANE	FERRY PLANE		
Tuesday		PLANE FERRY	FERRY x2 PLANE		
Wednesday	FERRY	FERRY	FERRY		
Thursday		FERRY PLANE	FERRY x2 PLANE		
Friday	FERRY PLANE		FERRY PLANE	FERRY	
Saturday		FERRY PLANE		FERRY	FERRY
Sunday		FERRY		FERRY PLANE	

REFIT	05:00 – 09:00	09:00 – 13:00	13:00 – 17:00	17:00 – 21:00	21:00 – 00:00
Monday		FERRY PLANE	PLANE	FERRY	
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Wednesday	FERRY	FERRY PLANE	PLANE	FERRY	
Thursday		PLANE FERRY	FERRY		
Friday		FERRY PLANE	PLANE	FERRY	
Saturday		FERRY PLANE		FERRY	
Sunday			PLANE	FERRY	



Summary – Connections

- The table below shows the **change in weekly 1-way connections to / from Sanday** based on the illustrative timetable presented on the previous board
- It should be noted that this timetable is **illustrative only** 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	29	20	9	11	13
	Preferred Timetable	40	37	3	24	0
Refit	Current Timetable	30	5	25	11	13
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The story so far...

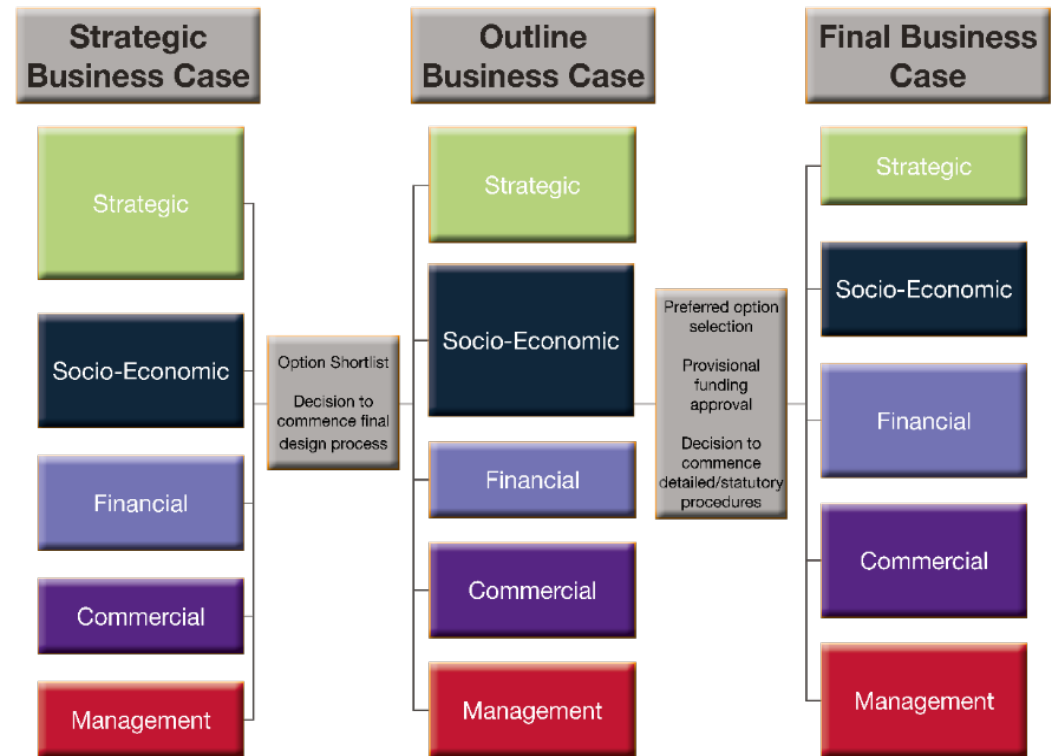
The story so far...

- In autumn 2015, Orkney Islands Council, in partnership with HITRANS, Highlands & Islands Enterprise and Transport Scotland commissioned the Orkney 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 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 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



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:
<https://forms.office.com/r/a2mcWJkdLy>
 - 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 OIITS@stantec.com



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.*

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**



Capacity Utilisation



Vehicle Deck Capacity Utilisation

- In order to inform the future vessel specification, a detailed review of vessel **vehicle deck** capacity utilisation was undertaken
 - Passenger capacity is rarely an issue
- This work was undertaken prior to the announcement of fares reductions, but the emerging solution has been designed to account for potential growth
- Analysis confirms that, on occasions, **vehicle-deck capacity can be a problem** on the ONI routes:
 - **17%** of sailings on the Eday-Sanday-Stronsay route combination demonstrate a vehicle deck load factor >90% (i.e. the sailing is effectively full to capacity)
 - Equivalent figure for Westray is **15%**
 - Deadweight capacity is also a problem, but less frequently than vehicle deck capacity (except on the Westray route)
- There are **three recurring themes** where load factors are high:
 - Sailing is **indirect**, calling at two or three islands on a single rotation from Kirkwall
 - Sailing is **operated by MV *Earl Sigurd* or MV *Earl Thorfinn***
 - The timetable for that day only provides **two island calls**, thus clustering demand onto a particular sailing in each direction
 - Each of **these problems will be addressed in a 4-vessel solution**



Vehicle Deck Capacity Utilisation – Eday-Stronsay-Sanday, 2017-18

Analysis has been undertaken to identify those sailings having less than 10% free deck space available or are over capacity on the Eday / Stronsay / Sanday routes

The key points to note are:

- **331** sailings recorded a load factor greater than 90%, which accounts for **10%** of all sailings during 2017/18
- Immediate capacity constrained sailings are:
 - The **15:20:00 Kirkwall – Sanday** Winter & **16:40:00 Kirkwall – Sanday** in Summer
 - The **16:00:00 Kirkwall – Eday** sailing across all three timetables
 - The **17:00:00 Eday – Kirkwall** sailing during the summer and winter timetables



Weight Capacity – Stronsay – Sanday – Eday 2017/18

- Analysis of tonnage carried was also undertaken to identify any weight-based capacity issues
- **The key points to note are:**
 - **66** sailings were recorded where deadweight capacity acted as a constraint, which accounts for **2%** of all sailings during 2017/18
 - **52%** of these sailings occurred during the refit timetable
 - The **16:40:00 Kirkwall > Sanday** service experiences weight constraints during the summer months
 - Most occurrences of weight constrained services are during the refit timetable, specifically the **15:40:00 Kirkwall > Stronsay > Sanday**

Time	Eday to Kirkwall	Eday to Sanday	Eday to Stronsay	Kirkwall to Eday	Kirkwall to Sanday	Kirkwall to Stronsay	Sanday to Kirkwall
1135	Summer: 1 Winter: 0 Refit: 0						
1205							Summer: 1 Winter: 0 Refit: 0
1500				Summer: 1 Winter: 1 Refit: 0	Summer: 1 Winter: 0 Refit: 0	Summer: 0 Winter: 1 Refit: 0	
1520				Summer: 1 Winter: 1 Refit: 0	Summer: 3 Winter: 1 Refit: 0		
1540				Summer: 0 Winter: 0 Refit: 3	Summer: 0 Winter: 0 Refit: 4	Summer: 0 Winter: 0 Refit: 4	
1600				Summer: 0 Winter: 0 Refit: 2	Summer: 0 Winter: 0 Refit: 3	Summer: 1 Winter: 0 Refit: 3	
1640				Summer: 5 Winter: 0 Refit: 0	Summer: 7 Winter: 1 Refit: 0		
1710	Summer: 0 Winter: 0 Refit: 2	Summer: 0 Winter: 0 Refit: 2	Summer: 0 Winter: 0 Refit: 2				
1730	Summer: 1 Winter: 0 Refit: 3	Summer: 0 Winter: 0 Refit: 3	Summer: 2 Winter: 0 Refit: 3				
1805		Summer: 2 Winter: 0 Refit: 0					
1815							Summer: 0 Winter: 1 Refit: 0
Total	7	7	7	14	20	9	2

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 Sanday

Note that the data were largely collected in 2019





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
- 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



Supply-Chain

- **Sanday**

- On-island haulier with flexible fleet of vehicles
- Island community shop has its own van that is used for the collection of supplies – level of self-haulage generally higher than neighbouring Stronsay

- **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

- **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

- **Westray**

- Haulage arrangements in Westray are similar to mainstream haulage arrangements in other islands of a comparable size, Barra for example
- Single haulier who 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

- **Papa Westray and North Ronaldsay**

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

Service Delivery – Sanday

- **Education**

- Sanday has a Junior High, but S5-S6 pupils travel into Kirkwall
- Pupils travel into Kirkwall on the Sunday evening ferry and then back on the Friday afternoon ferry
- This leads to a truncated weekend where children are only at home from Friday evening until Sunday evening
- There is also significant layover time in Kirkwall on the Friday – school finishes at 12:20 and the ferry does not depart until 16:40
- Itinerant teachers travel on the air service – this means that the first flight of the day to Sanday / Stronsay and the last departure from the islands have anywhere between 2-5 teachers onboard

- **Health**

- Sanday has on-island GP cover and community nurses, so the ferry and air services are not used for daily transport
- One GP is resident on-island and two live outwith Sanday, travelling in by ferry / air
- Medical supplies, samples etc move on the ferry as part of the general island supply-chain

- **Waste Management**

- ONI ferry service moves all waste and recycle from the ONI to

Orkney mainland for processing and / or onward transportation

- Weekly (Monday) ‘black bag’ collection – contracted service with waste moving as part of the general supply-chain (so may move on a different day to which it is collected)

- **Veterinary Services**

- Use of both ferry and air services for visits to the isles. Ferry timetable can act as a constraint, as can capacity on the air service
- Animals also brought into Kirkwall by ferry for appointments

- **Banking**

- Royal Bank of Scotland branch on Sanday – opened on Thursday only
- Banker flies in on first flight and returns to Kirkwall on the last flight

- **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.

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



Personal Travel – Sanday Residents

- **Travel frequency and Mode:**

- **38%** of residents travel to Orkney mainland 2-3 times per month
- **16%** travel at least weekly to Orkney mainland
- **32%** travel once a month
- **58%** of respondents always use the ferry service to make their journey to Orkney mainland during the summer, while **37%** use both the ferry and air services
- During the winter and refit periods, the percentage of those travelling by ferry only reduces by **13%** and **18%** respectively, as users switch to using a combination of ferry and air services
- In the previous 12-month period, **46%** of respondents had not visited another ONI island

- **Main Journey Purpose:**

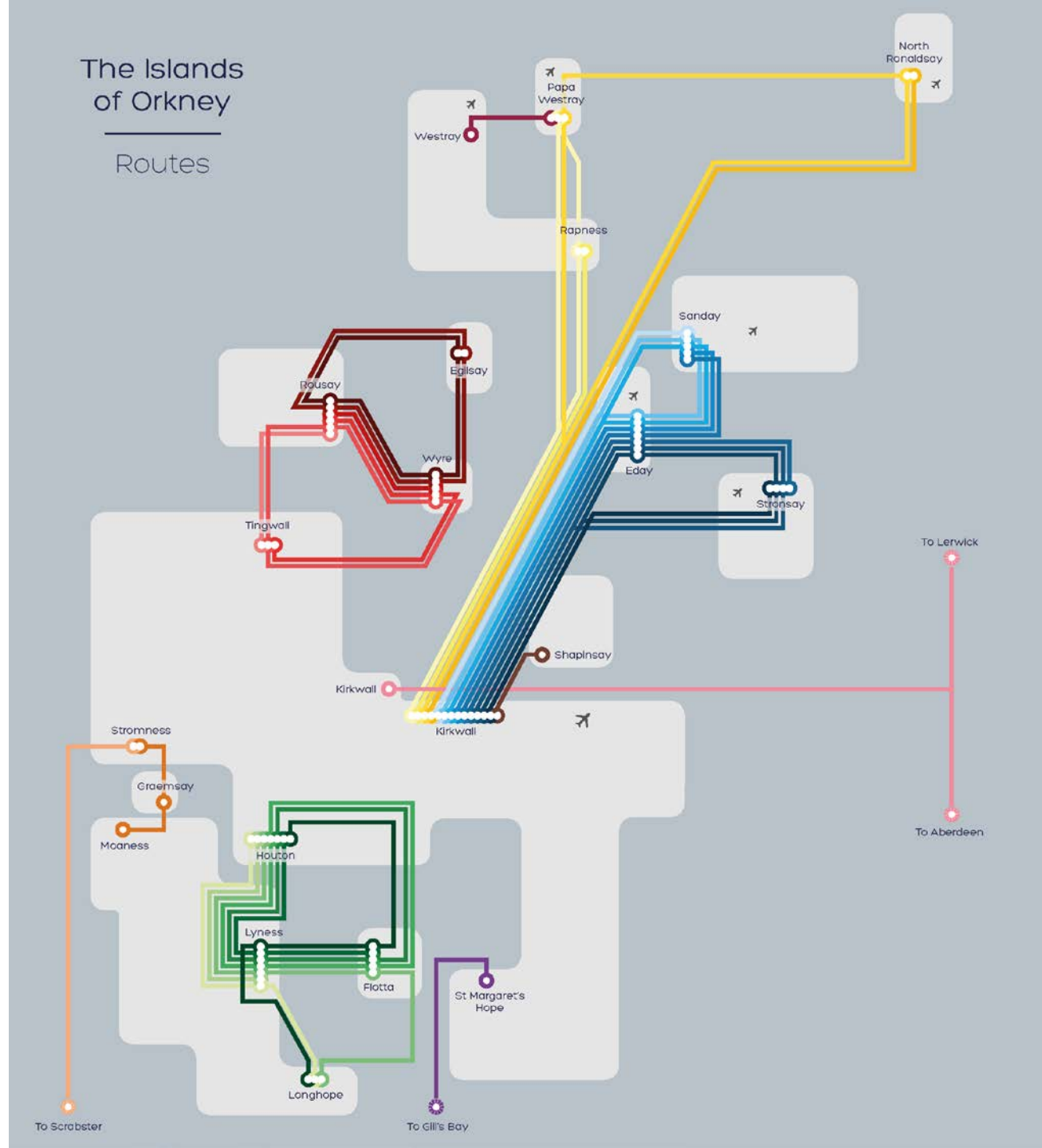
- **18%** of respondents mainly travel for **shopping**, followed by **attending health appointments (17%)** and **visiting friends & relatives at 13%**

- **Current and future connections:**

- **29%** of respondents believe that the current air and ferry connections are sufficient for their family's day-to-day needs now and in the future
- **35%** of respondents felt that the current air and ferry connections are **insufficient** to ensure the long-term sustainability of Sanday
- Overall, **92%** of people agreed that improved connectivity between Sanday and Orkney mainland would make Sanday a more attractive place to live and bring up families in the future



Illustrative Timetables - ONI Network Plan



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' Sanday Timetable

The below provides an **illustrative indication** of the timetable which could be provided 'from' Sanday 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
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Saturday		FERRY PLANE		FERRY	
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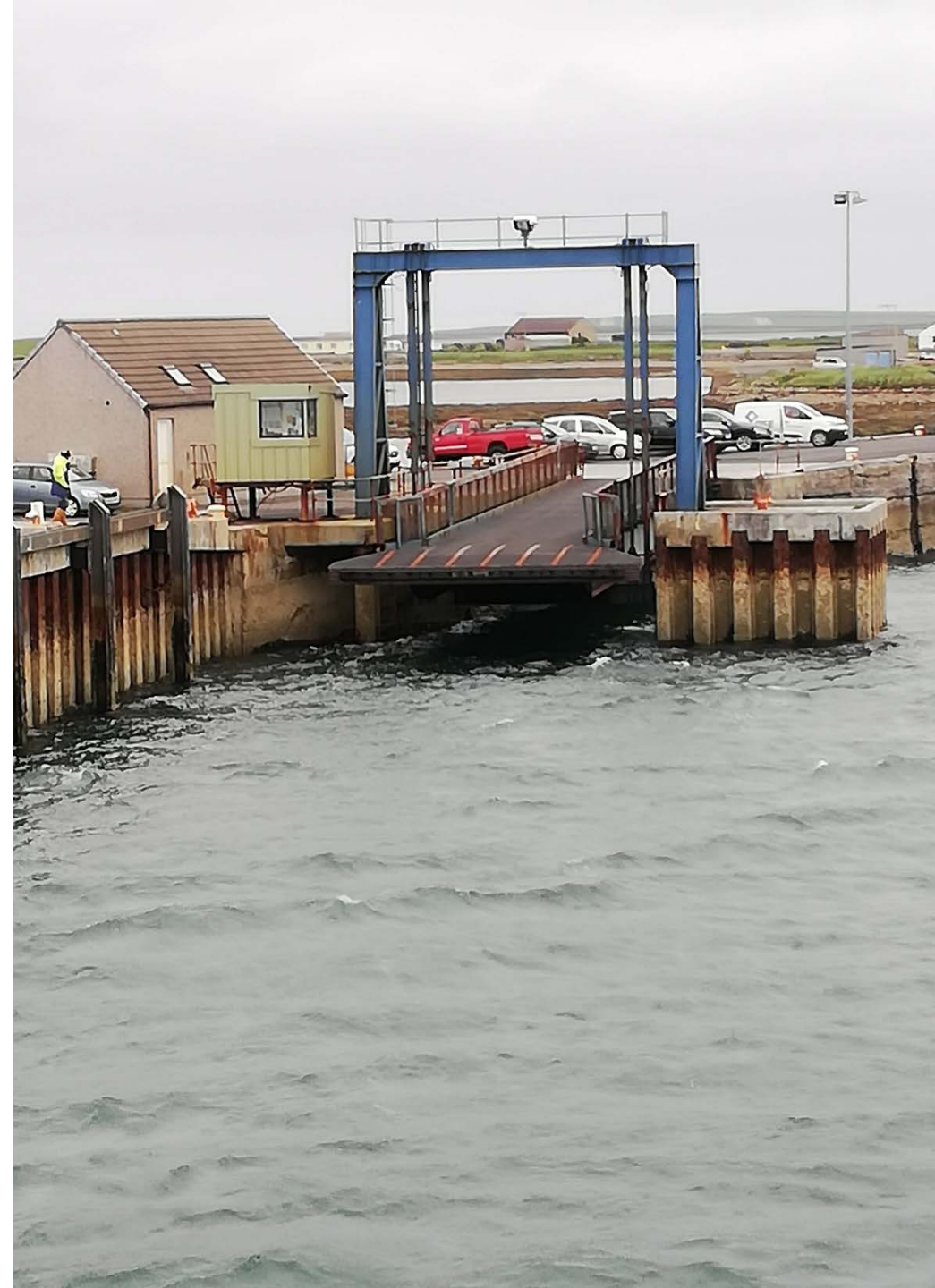
Benefits of Preferred Timetable Option

- The benefits of the preferred timetable solution for Sanday are:
 - Broadly delivers the **minimum Routes & Services Methodology outcome**
 - Provides a **half-day and full-day in Kirkwall** Monday to Saturday
 - Facilitates a **Sunday day-return** to Kirkwall
 - Provides for **later evening sailings on a Friday and Saturday**
- 3rd aircraft would eliminate most of the multi-leg journeys, creating a **largely point-to-point air network**.
- 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 **illustrative only** 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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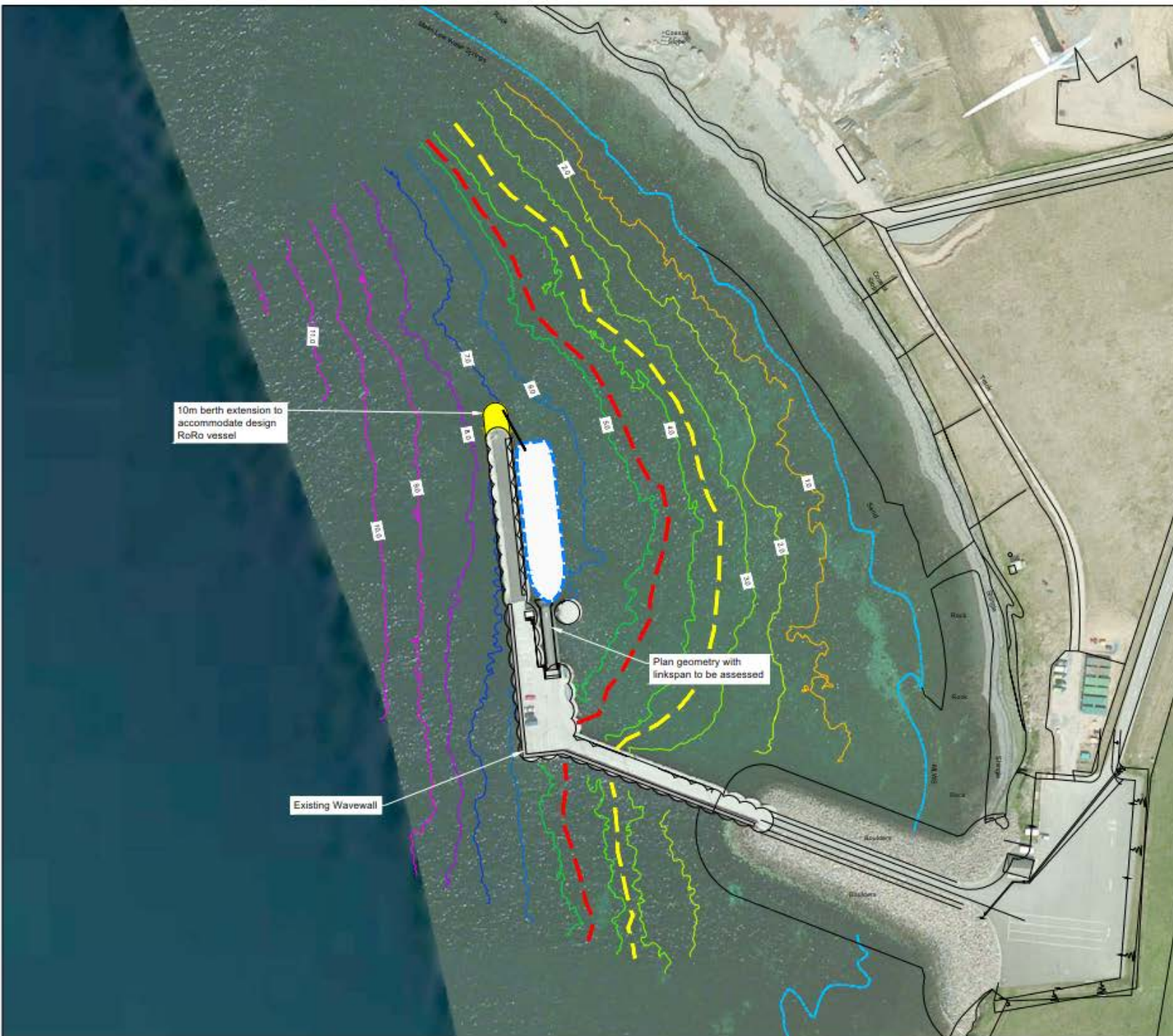


Vessel and Infrastructure Specification



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 **Sanday** is shown on the next board



Orkney ONI OBC Option Development Sanday (Loth) - Linkspan for Design RoRo Vessel

Current Vessels

- 3 ONI RoRo Vessels; MV Earl Sigurd, MV Earl Thorfinn and MV Varagen

Potential Future Vessel (Shown)

- Design RoRo Vessel, 14.3m beam and 3.7m draught, maintaining capacity of current fleet

Potential Solution (Shown)

- Extend berth by 10m to accommodate Design RoRo vessel noting navigation / vessel manoeuvring space limits length of extension

Notes

- Current on the outer berth up to 5kn.
- Exposed from the west.
- Vessel surges on the berth.
- Berthing manoeuvres not consistent.
- When tide permits vessels occasionally turn shoreward of the linkspan.
- Available water area at LAT and MLWS shown for potential future Design RoRo vessel, with 1m UKC.

- 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 August 2015
All levels are to Chart Datum





Cost to Government

Landside Infrastructure Works	Capital Expenditure 2021 (£m)
<i>Sanday</i>	<i>£1.6</i>
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 response to output specification) and could vary widely depending on procurement and market conditions
 - Purchase of sister ships will provide bulk buying 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 increase from **£4.4m** to **£6.0m**



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 OIITS@stantec.com

Thank you for taking the time to read this material

