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Orkney Inter-Island Transport Study – Outer North Isles Outline Business Case Phase 1

Papa Westray Public
Exhibition

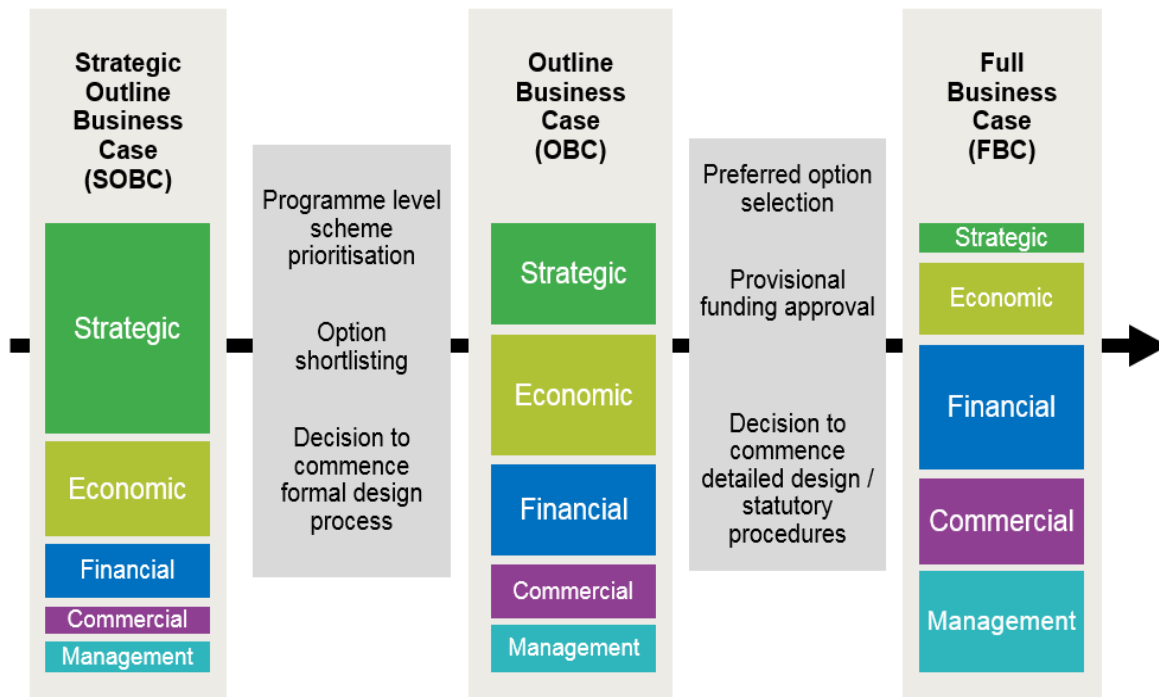
24th June 2019

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 & 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 stage
- The SBC concluded that the immediate priorities to progress to **Outline Business Case (OBC)** were:
 - additional **revenue funding** to operate more services
 - capital investment in **new vessels and supporting infrastructure** for the Outer North Isles

Making the case for investment...

- 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 business case and finalises the funding, procurement and delivery mechanisms



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 the MV *Golden Mariana*) if the year-round level of service offered is to be in line with 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 September 2018 and consists of two phases:
 - **Phase 1 (September 2018 – August 2019)**
 - answers a set of infrastructure questions which will define the future shape of the ONI network
 - **Phase 2 (August 2019 – end 2019 / early 2020)**
 - will determine the preferred vessel mix, the case for a third aircraft and timetables / service levels which could be derived from this

What are we presenting today – Phase 1?

- ‘Phase 1’ of the OBC defines the network which will be served by the four new vessels:
 - Is this a **six or five island** solution (i.e. if Papa Westray’s link is converted to a Ro-Ro service to Westray)?
 - Should **Stronsay ferry terminal** be relocated to the west of the island?
 - Are **crane-based vessels** required or should a different solution be adopted for North Ronaldsay (and potentially Papa Westray)?
 - What are the costs and technical solutions for developing year-round **overnight berths at Eday and Westray**?

Option Development & Costing

- **Option Development**

- **‘Indicative Outer North Isles design vessel’** was required for the purpose of developing terminal drawings and costings:
 - A design for a double-ended 31 car (based on today’s size of car) ferry certified to operate in the ONI waters was provided by a naval architect
 - It is 65m length overall and provides a common baseline against which to compare the relative costs of different options

- **Option Costing**

- Costing of options undertaken in ‘Phase 1’ provide sufficient detail to make a decision on the major infrastructure questions
- Any options progressed will be subject to further development in ‘Phase 2’ of the OBC

North Ronaldsay & Papa Westray

North Ronaldsay – The Case for Change

- **Exposed berth**
 - Poor reliability – island can go several weeks without a sailing in winter, disrupting the supply-chain
 - Vessel moves vertically and horizontally whilst on berth, making crane-based operations challenging
- **Ship-based crane operation**
 - Impacts on future ONI Ro-Pax design (1 or 2 vessels would require a crane) or bespoke freighter required
 - Restrictions on weight / size of goods moved
 - Perception of potential medium-term safety & regulatory concerns on more exposed berths
- **Tidally constrained berth**
 - Requires an envelope of hours to be allocated in timetable – affects network efficiency and steaming hours available to other islands
- **Long turn-around times**
 - Lo-Lo (Lift on–Lift off) is one of the factors requiring the long time-slot in the timetable for North Ronaldsay runs
 - Tightens the windows in which the service can operate
- **Fresh products brought in by air**
 - Requirement for bespoke freight flights
- North Ronaldsay also has an aspiration to grow its tourism market, which is challenging at present given the dependence on capacity-constrained aircraft

Papa Westray – The Case for Change

- **Exposed berth**

- Whilst not as exposed or tidally constrained as North Ronaldsay, the current berth does impact on reliability

- **Ship-based crane operation**

- Impacts on future ONI Ro-Pax design (1-2 vessels would require a crane) or bespoke freighter required
- Restrictions on weight / size of goods moved
- Perception of potential medium-term safety & regulatory concerns

- **Long turnaround times for Lo-Lo**

The Future of Lo-Lo

- The SBC **ruled out** converting North Ronaldsay and Papa Westray (Kirkwall service) to Ro-Ro, largely on cost grounds but also because the air service carries 95% of passengers and the technical challenges of building at such exposed sites.

However, In further developing the SBC:

- Continued Lo-Lo operation would have **implications for the size, design and cost of any new ferries**, thus impacting on the service to the other islands
- There is **no precedent** for a life-expired Lo-Lo service to be replaced on a like-for-like basis
- There has been a **long-term programme of conversion of Lo-Lo to Ro-Ro** in Scotland (and in Orkney)
- Even in islands of **low population (e.g. the Small Isles)**, significant investment has been made to convert the service to Ro-Ro **for improved handling of freight**
- **Perceived** risk that health & safety or other regulatory changes could narrow the operational window in which crane operations can take place
- **Lo-Lo is no longer considered a viable option and is excluded from further consideration**

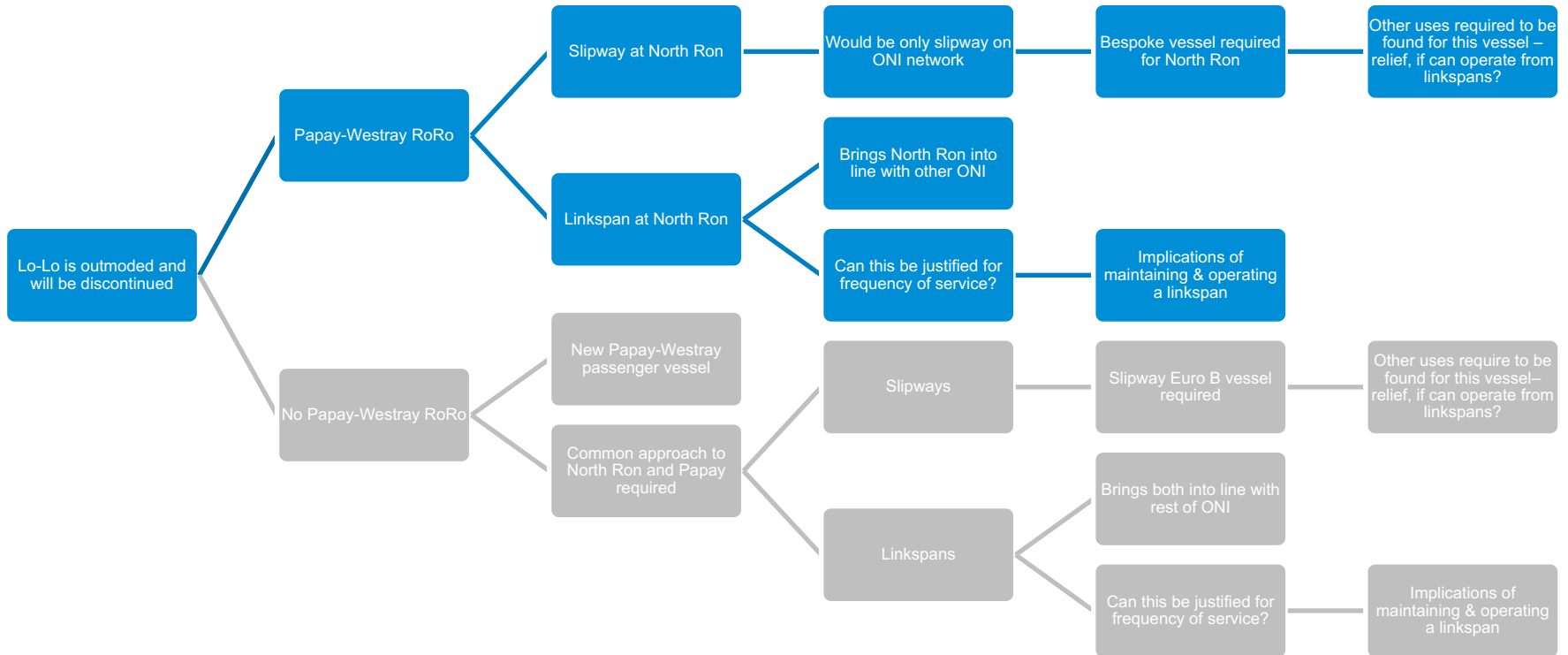
Key Questions

The services to Papa Westray and North Ronaldsay are linked at the moment.

Having **ruled out the use of Lo-Lo** for Papa Westray and North Ronaldsay, key question is:

- Should the Ro-Ro service to Papa Westray be:
 - Via a new Papa Westray to Westray Ro-Ro service creating a land-bridge via Westray (Rapness) to Kirkwall
 - a direct link to Kirkwall from Moclett with the retention of a passenger service to Westray
- This decision will have an impact on the service at North Ronaldsay
- The 'decision tree' on the next slides sets out how this decision is fundamental to the nature of the service at both islands

Key Decision Tree



- Blue boxes show the decision path if Papa Westray – Westray Ro-Ro **is** progressed
- Grey boxes show the decision path if Papa Westray – Westray Ro-Ro **is not** progressed

Advantages of Papa Westray – Westray Ro-Ro (relative to current position)

- **Year round all-day Ro-Ro connectivity to Westray** – service could be timed to tie in with Westray – Kirkwall services
- **Daily supply chain** for Papa Westray
 - Reliable connection for fresh goods onto the island each day
- Likelihood of **improved service reliability** to Kirkwall
- Improved / safer goods handling
- Improved **social and cultural links** between the two islands
- Service could be **nearly hourly** across a ‘single crew’ operating day
- Transformative **vehicular access** to Papa Westray for residents & visitors
 - could be restricted for visitors through a permit system as per Iona & the Small Isles
- **Job opportunities** in operating the up-scaled service, although likely based in Westray
- Reduced harbour works required at Moclett when compared to a Kirkwall service
- Current Papa **Westray Lo-Lo time released back into the wider ONI timetable**, providing connectivity benefits for other islands
- **Reduced pressure on air service** capacity between Papa Westray and Westray

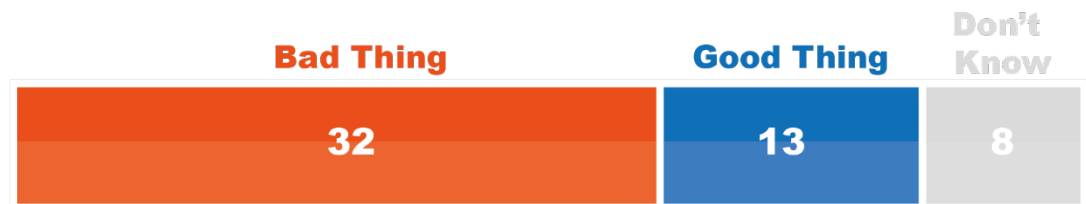
Disadvantages of Papa Westray – Westray Ro-Ro (relative to current position)

- Change in **island supply chain arrangements to vehicle based with associated costs** – major concern of community
- **Capital costs** associated with new slipways at Pierowall and Moclett
- **New vessel required**, plus relief
- **Increased pressure on Westray – Kirkwall ferry**, particularly the afternoon departure (generally 16:20) from Kirkwall
- Concerns about a potential '**double fare**' for journeys to / from Papa Westray to Kirkwall
- Perception of **threat of long-term reduction in air services** (although there are no proposals to this effect)
 - Options to **enhance the ONI air service** will be explored in Phase 2 of the work
- Lo-Lo calls cease, so there is **no direct ferry connection to Kirkwall**
- Community expressed concern about **potential loss of services and threat to local businesses** on Papa Westray
- **Environmental consequences** of slipway works

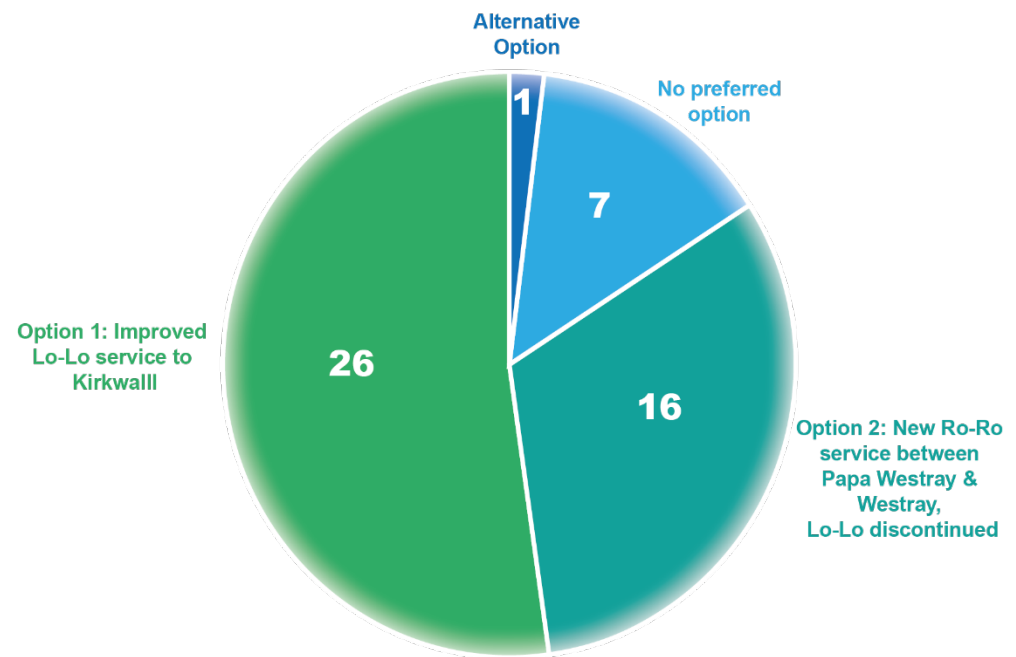
- Several of the **disadvantages were raised by the community** through the engagement programme. However, a number of **these issues are either perceived (e.g. a reduction in the air service) or could be worked around, following precedent elsewhere in Scotland (e.g. freight handling arrangements and a potential 'double fare')**

What was the view of the Papa Westray Community?

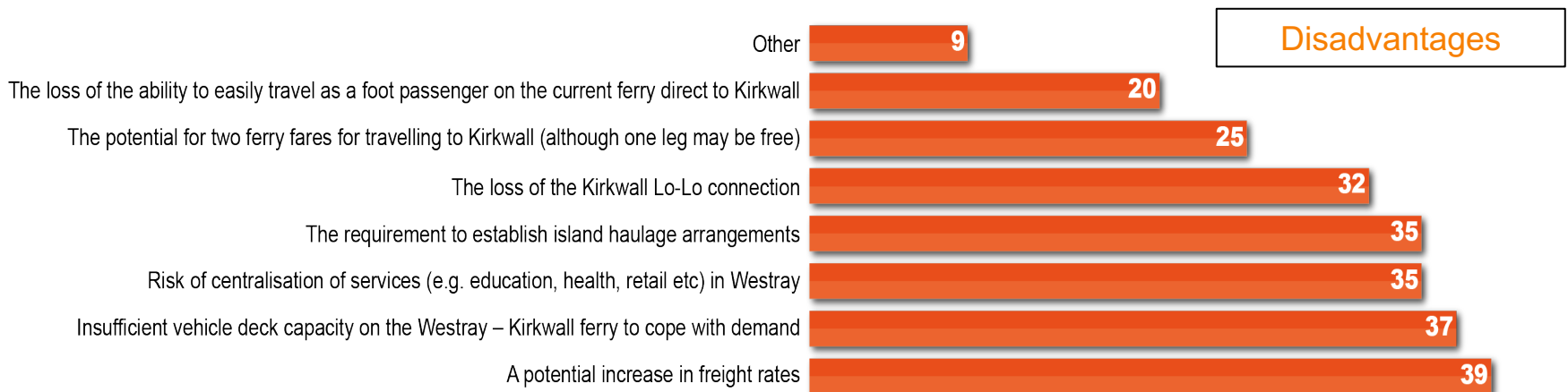
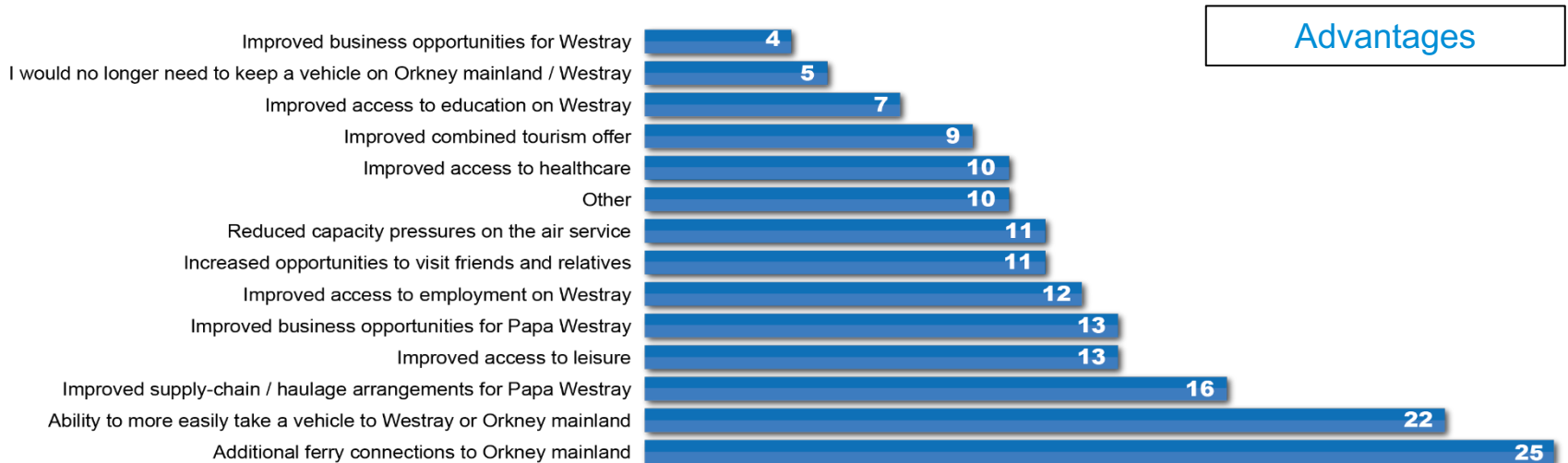
Do you think that a Ro-Ro service to Westray and the discontinuation of the current Kirkwall service would be a good or a bad thing for the future of Papa Westray?



On balance, do you have a preferred option for Papa Westray's future ferry service?



What **advantages** and **disadvantages** do Papa Westray residents see in a Ro-Ro service to Westray?



Harbour Infrastructure Options

- Infrastructure option development and costing for a Papa Westray – Westray Ro-Ro service is based on a **vessel of around 30 metres** length overall
 - Such a vessel is likely to be of a landing craft style, although other options are available
 - The exact vessel size and specification would remain to be determined
- A single option has been developed at Papa Westray with a slipway to the north-west of the current Moclett pier
- There are three potential options for a slipway at Pierowall
 - If this option is taken forward, consultation would be required with the Westray community on the location of the slipway, as it may affect the operation of Pierowall harbour

Papa Westray–Westray Ro-Ro: Moclett Harbour Works



Orkney ONI OBC Option Development Papa Westray (Moclett) Option E

Current Vessels

- 2 ONI LoLo Vessels; MV Earl Sigurd & MV Earl Thorfinn
- MV Golden Mariana

Potential Future Vessel (Shown)

- 30m slipway vessel, 10m beam and 1.8m draught

Potential Solution - Option E (Shown)

- New slipway to accommodate 30m vessel
- Independent wave screens to provide shelter
- For use with Westray (Pierowall) - Options A, B or C
- Improved access for Golden Mariana required (indicative arrangement shown)

Notes

- Exposed from the southwest.
- Bow of the current vessel overhangs pier.
- Berth currently tidally restricted.
- Available water area at LAT and MLWS shown for potential future 30m slipway vessel, with 0.5m UKC.

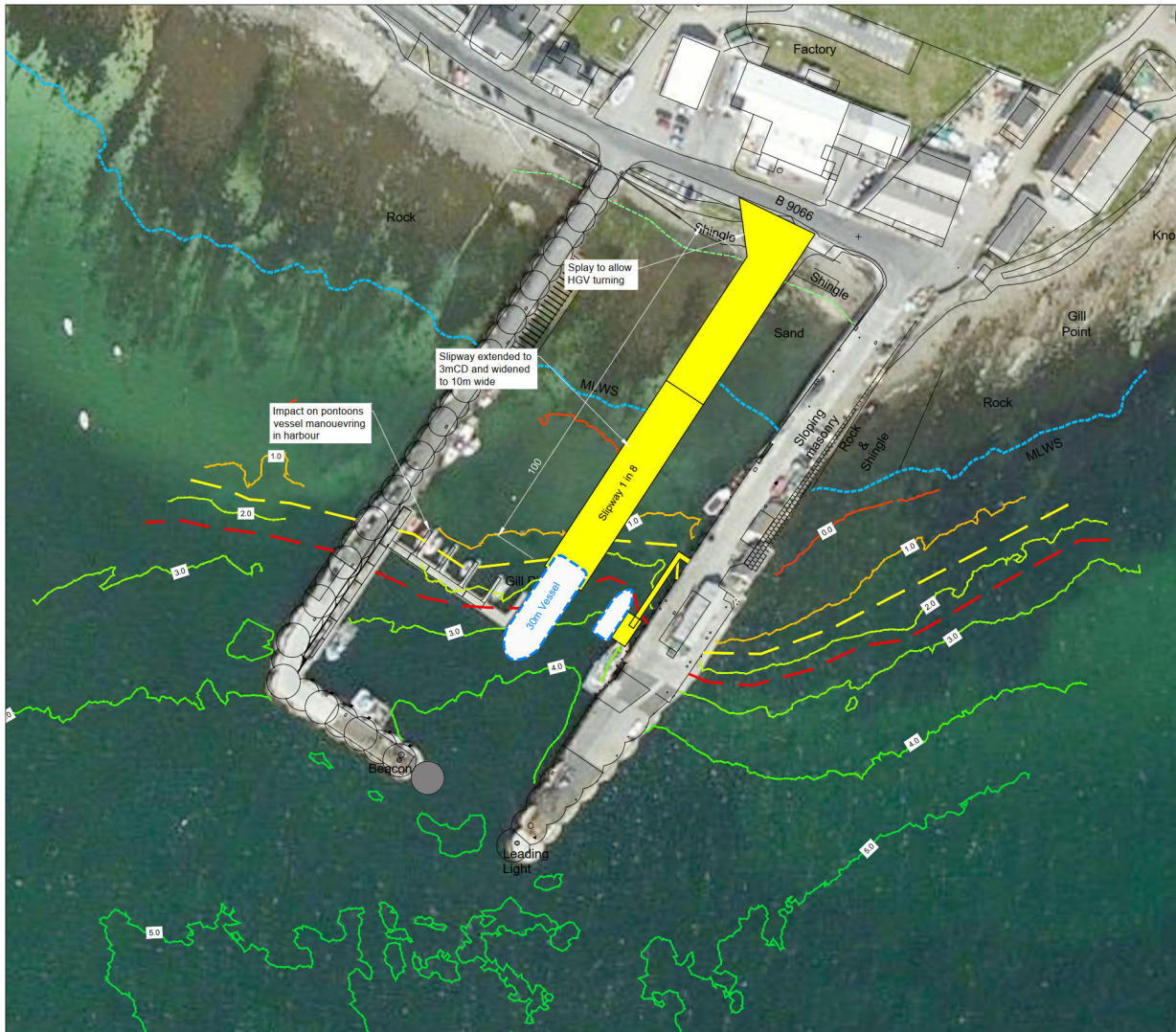
— Extent of available water area at MLWS for 30m Vessel

- - - Extent of available water area at LAT for 30m Vessel

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



Papa Westray–Westray Ro-Ro: Pierowall Harbour Works (1)



Orkney ONI OBC Option Development Westray (Pierowall) Option A

Current Vessel

- MV Golden Mariana

Potential Future Vessel (Shown)

- 30m Slipway Vessel, 10m beam and 1.8m draught

Potential Solution - Option A (Shown)

- New Slipway within basin
- Vessel to berth within basin
- Relocation of pontoons may be required
- For use with Papa Westray - Option E
- Improved access for Golden Mariana required (indicative arrangement shown)

Notes

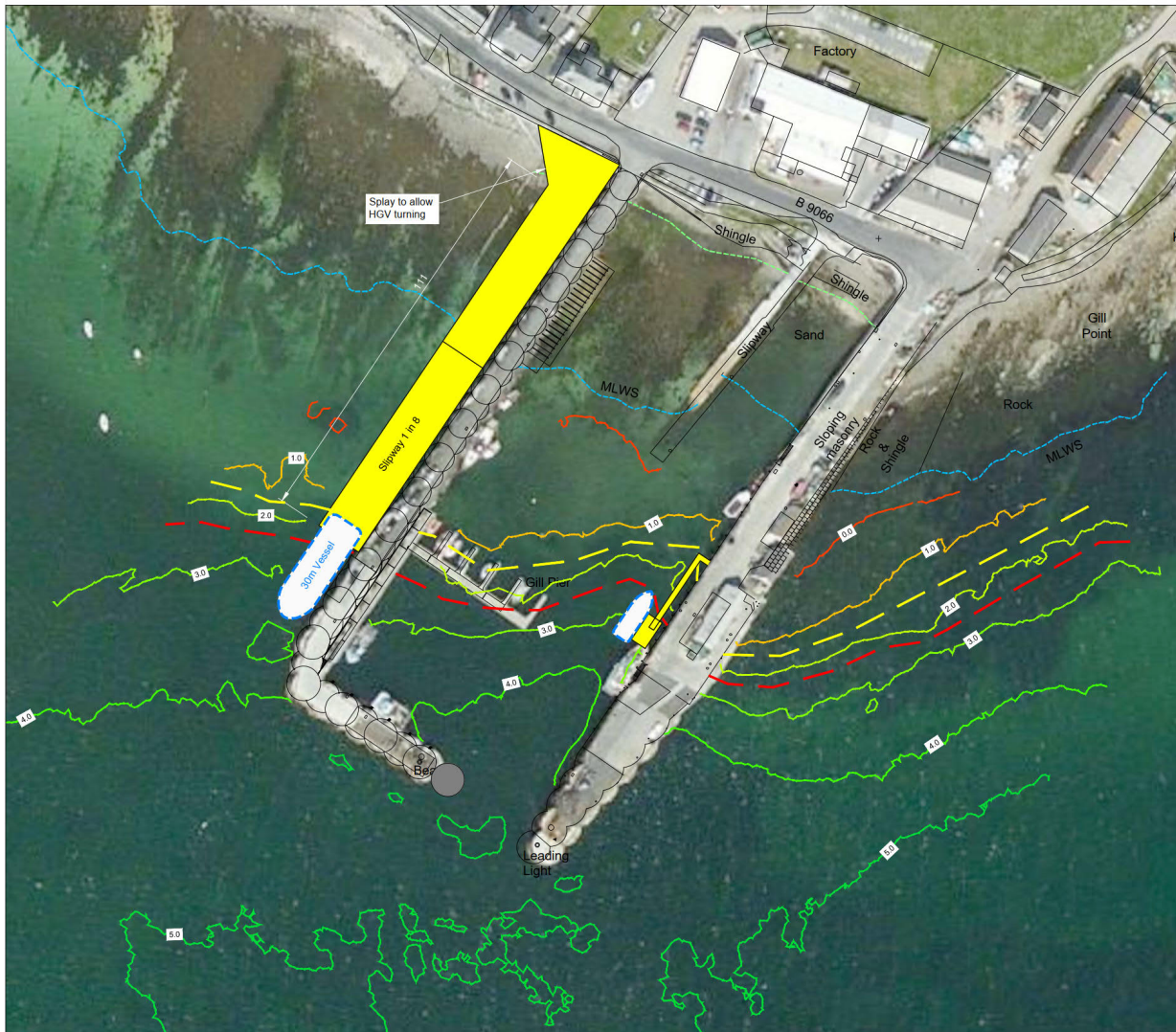
- Conditions from southwest known to affect vessels berthing within basin.
- Existing slipway used for landing small vessels.
- Available water area at LAT and MLWS shown for potential future 30m slipway vessel, with 0.5m UKC.

- Extent of available water area at MLWS for 30m Vessel
- Extent of available water area at LAT for 30m Vessel

Note: Bathymetric Survey 2015
All levels are to Chart Datum



Papa Westray–Westray Ro-Ro: Pierowall Harbour Works (2)



Orkney ONI OBC Option Development Westray (Pierowall) Option B

Current Vessel

- MV Golden Mariana

Potential Future Vessel (Shown)

- 30m Slipway Vessel, 10m beam and 1.8m draught

Potential Solution - Option B (Shown)

- Slipway to the outer west face of the basin
- Vessel to berth within basin
- Reclamation of a small area of land to the west of the existing pier could be considered for parking/marshalling
- For use with Papa Westray - Option E
- Improved access for Golden Mariana required (indicative arrangement shown)

Notes

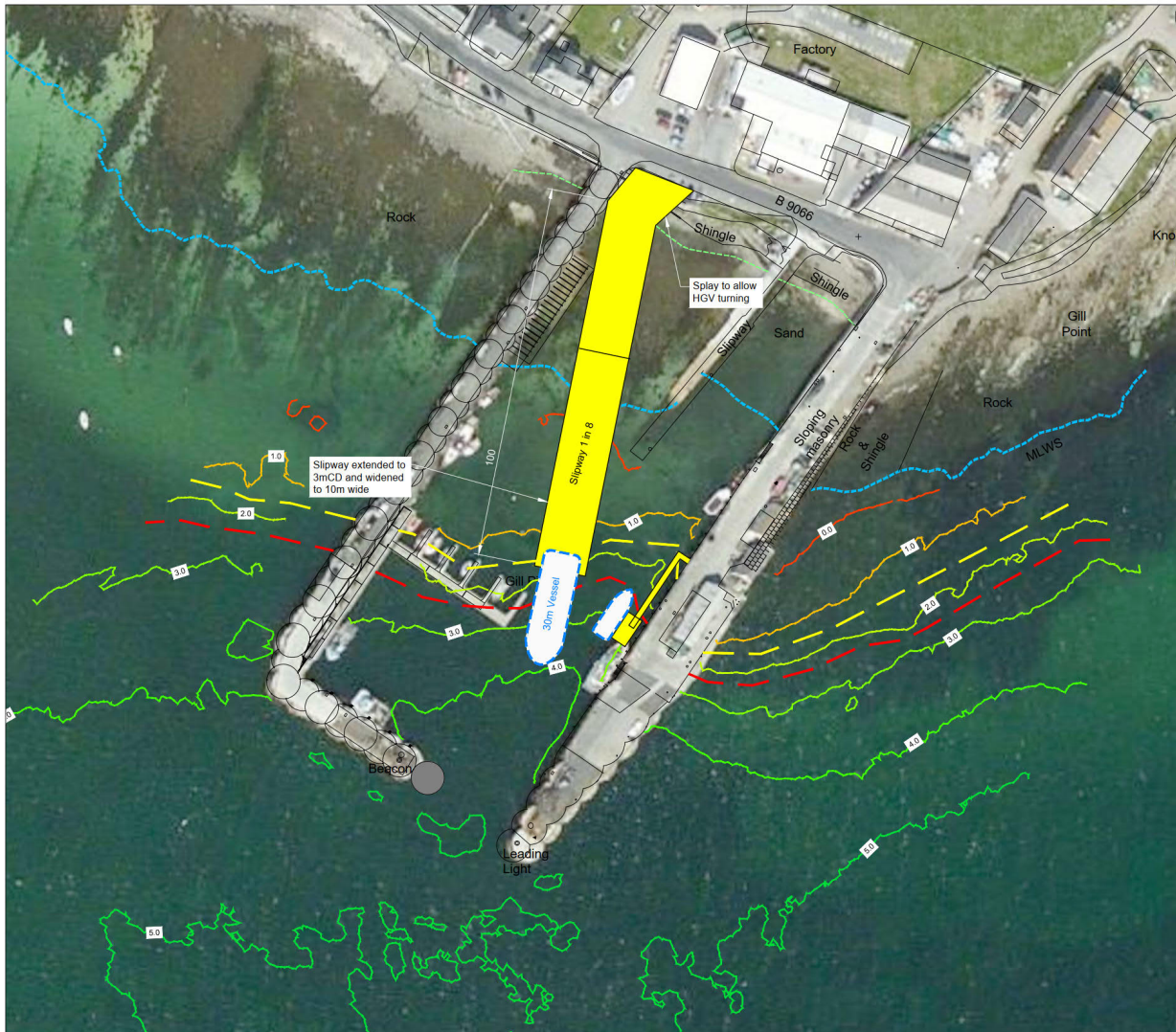
- Conditions from southwest known to affect vessels berthing within basin.
- Existing slipway used for landing small vessels.
- Available water area at LAT and MLWS shown for potential future 30m slipway vessel, with 0.5m UKC.

- Extent of available water area at MLWS for 30m Vessel
- Extent of available water area at LAT for 30m Vessel

Note: Bathymetric Survey 2015
All levels are to Chart Datum



Papa Westray–Westray Ro-Ro: Pierowall Harbour Works (3)



Orkney ONI OBC Option Development Westray (Pierowall) Option C

Current Vessel

- MV Golden Mariana

Potential Future Vessel (Shown)

- 30m Slipway Vessel, 10m beam and 1.8m draught

Potential Solution - Option C (Shown)

- New slipway within basin
- Demolish existing slipway
- Vessel to berth within basin
- Relocation of pontoons may be required
- For use with Papa Westray - Option E
- Improved access for Golden Mariana required (indicative arrangement shown)

Notes

- Conditions from southwest known to affect vessels berthing within basin.
- Existing slipway used for landing small vessels.
- Available water area at LAT and MLWS shown for potential future 30m slipway vessel, with 0.5m UKC.

— Extent of available water area at MLWS for 30m Vessel

— Extent of available water area at LAT for 30m Vessel

Note: Bathymetric Survey 2015
All levels are to Chart Datum



Papa Westray-Westray Ro-Ro Costs

	Cost (£m)	Cost including Optimism Bias (£m)
Papa Westray slipway for 30m vessel	£5.7	£8.1
Pierowall slipway for 30m vessel (All 3 options)	£3.3	£4.8
Vessel	£1.5-£3.0	N/A
TOTAL	£10.5-£12.0	£14.4-£15.9

- Total infrastructure & vessel costs for a Papa Westray – Westray Ro-Ro service would therefore be in the region of **£10.5m-£12.0m** (or **£14.4m-£15.9m** when ‘*optimism bias*’ is included for appraisal purposes)
- There would be an increase in net operating cost of around **£275k per annum**, although dependent on vessel size and certification
- Having considered the option of a Papa Westray to Westray RoRo, the next slides consider a **Papa Westray (Moclett) to Kirkwall RoRo service**

Advantages & Disadvantages of Papa Westray – Kirkwall Ro-Ro (relative to current position)

• Advantages

- Likelihood of **improved service reliability** to Kirkwall
- Improved / safer goods handling and future-proofing against any regulator change
- **Faster turnaround** times at Papa Westray
- **Improved vehicular access** to Papa Westray for residents & visitors
- No Ro-Ro related harbour works required at Pierowall

• Disadvantages

- Potential change in **island supply-chain** arrangements / costs if vehicle based
 - This is possible but **less likely with this option**, as the 'status quo' could be maintained (i.e. a forklift option)
- Likely **continuation of an infrequent service**
- **Capital costs** associated with developing a Ro-Ro berth at Moclett
- Potential **threat to local retail businesses** due to improved vehicular access to Kirkwall (e.g. making a weekly trip to Tesco for shopping)

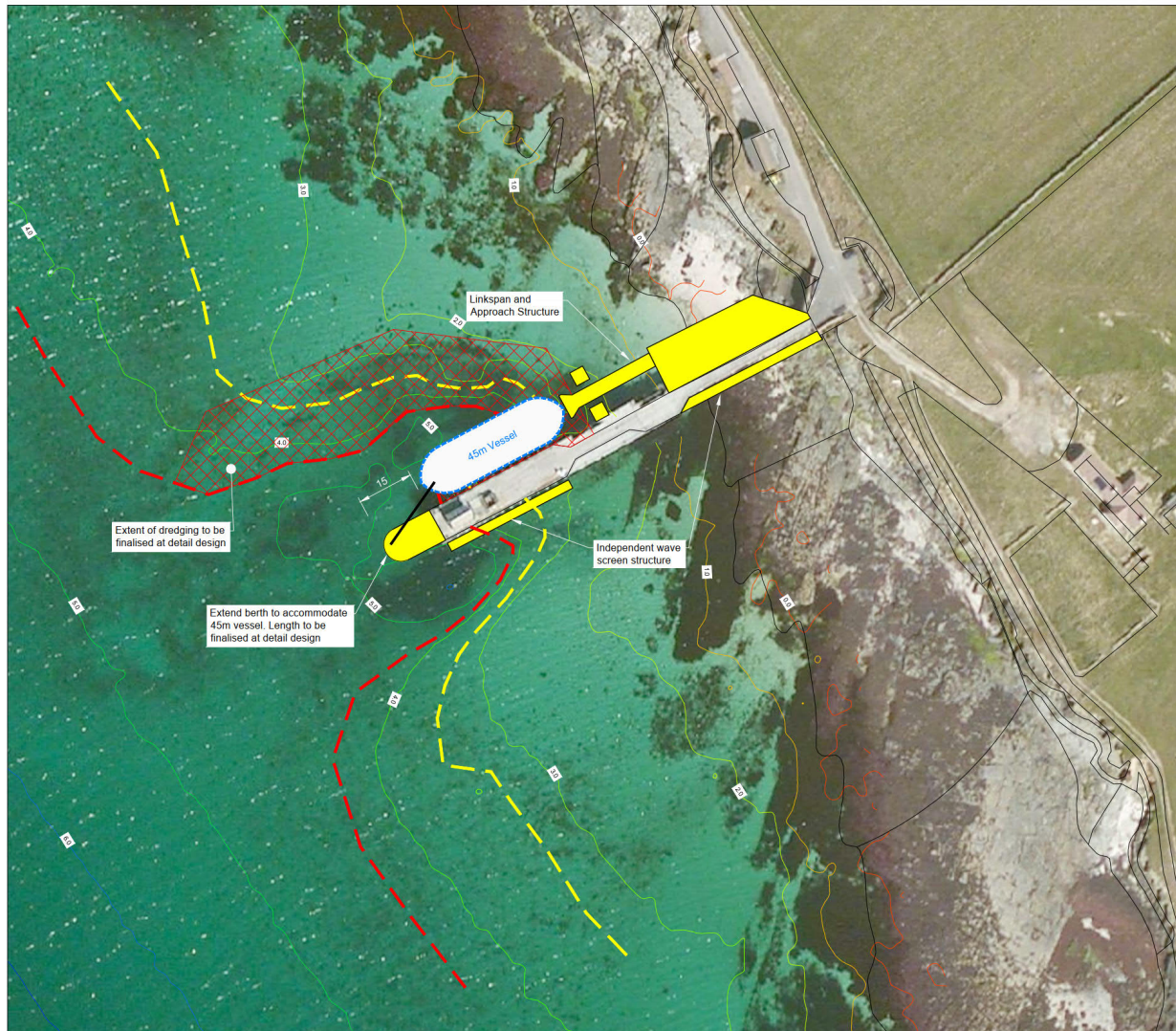
What are the options for Ro-Ro at North Ronaldsay & Papa Westray (Kirkwall connections)?

- A range of potential vessel types and sizes have been considered and reduced to three vessel scenarios
- **Vessel Scenario 1**
 - Berth to accommodate **Ro-Ro vessel of equivalent length overall (45m LOA) to the Earls**
 - May offer a lower vehicle / cargo carrying capacity than at present
- **Vessel Scenario 2**
 - Berth to accommodate a circa **50m LOA slipway vessel** such as the MV *Lochnevis* (49m LOA), which can operate off tidally constrained slipways & linkspans (although this is operationally sub-optimal)
 - Slipway configuration would offer lower capital & maintenance costs than linkspans
 - Lower vehicle / cargo carrying capacity than at present

Vessel Scenario 3

- Berth to accommodate a circa **65m LOA linkspan vessel** (which is the current 'design vessel' for the ONI network)
- This would offer a broadly equivalent carrying capacity to the MV *Varagen* and would provide a consistent fleet & infrastructure across the ONI
- This can be considered the '**North Ronaldsay & Papa Westray max**' option

Vessel Scenario 1 – Papa Westray



Orkney ONI OBC Option Development Papa Westray (Moclett) Option C - Linkspan (Min)

Current Vessels

- 2 ONI LoLo Vessels; MV Earl Sigurd & MV Earl Thorfinn
- MV Golden Mariana

Potential Future Vessel (Shown)

- 45m RoRo vessel, 13.4m beam and 3.2m draught
- Double ended vessel should help with manoeuvrability

Potential Solution - Option C (Shown)

- Extend berth by 15m to accommodate 45m vessel
- New linkspan and approach structure
- Independent wave screens to provide shelter
- For use with North Ronaldsay - Option C

Notes

- Exposed from the southwest.
- Bow of the current vessel overhangs pier.
- Currently berth tidally restricted.
- Available water area at LAT and MLWS for potential future 45m RoRo vessel shown, with 1m UKC
- Approximate dredge area shown to allow non tidally restricted berth for potential 45m RoRo vessel

- Yellow dashed line: Extent of available water area at MLWS for 45m Vessel
- Red dashed line: Extent of available water area at LAT for 45m Vessel

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



Vessel Scenario 2 – Papa Westray



Orkney ONI OBC Option Development Papa Westray (Moclett) Option B - RoRo Slipway

Current Vessels

- 2 ONI LoLo Vessels; MV Earl Sigurd & MV Earl Thorfinn
- MV Golden Mariana

Potential Future Vessel (Shown)

- 50m slipway vessel, 11.4m beam and 2.7m draught

Potential Solution - Option B (Shown)

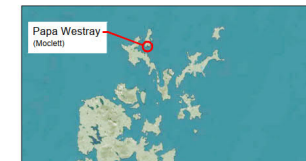
- Extend berth by 20m to accommodate 50m slipway vessel
- New slipway
- Independent wave screens to provide shelter
- For use with North Ronaldsay - Option B

Notes

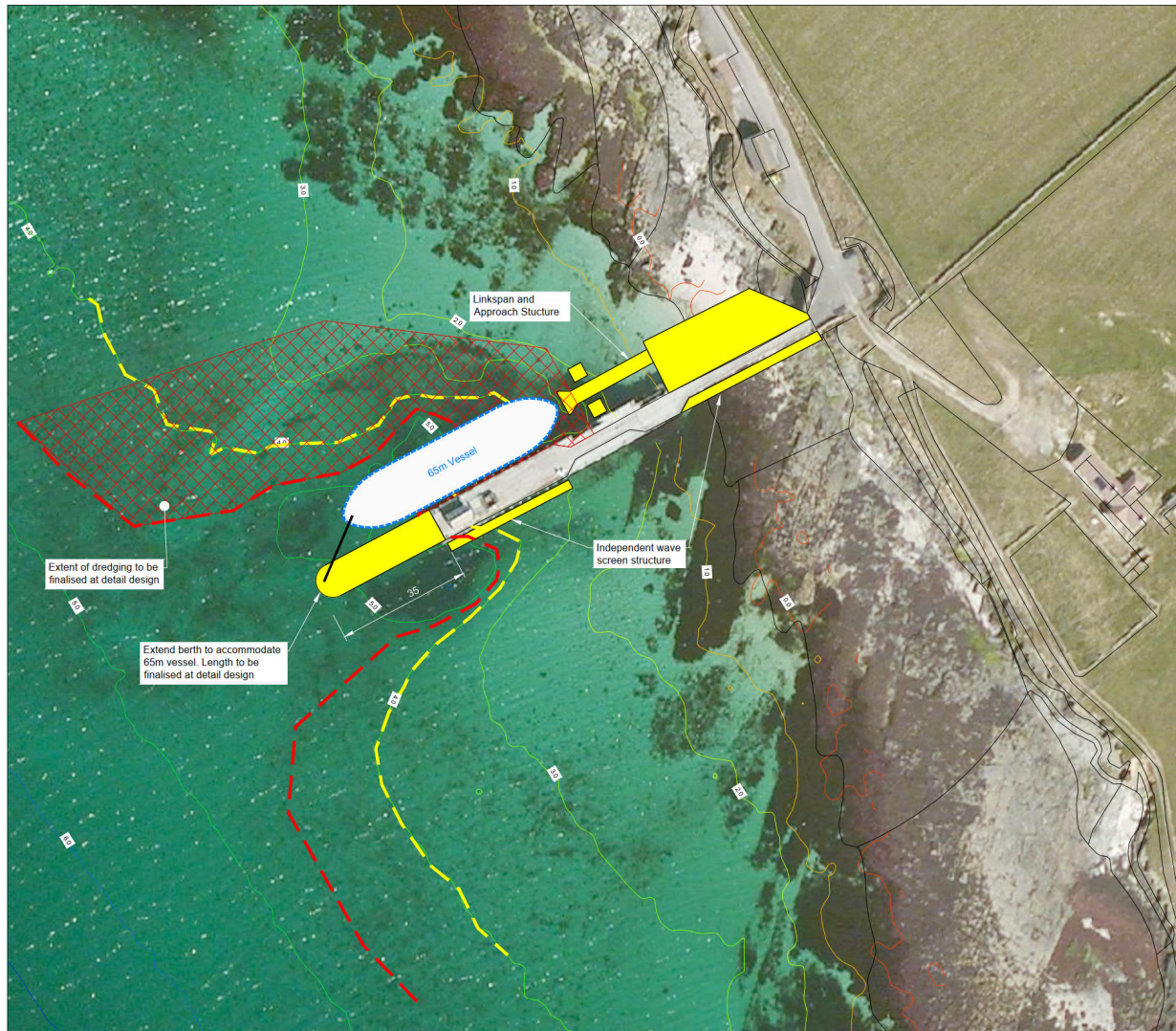
- Exposed from the southwest.
- Bow of the current vessel overhangs pier.
- Berth current tidally restricted.
- Available water area at LAT and MLWS shown for potential future 50m slipway vessel, with 0.5m UKC.

- Extent of available water area at MLWS for 50m Vessel
- Extent of available water area at LAT for 50m Vessel

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



Vessel Scenario 3 – Papa Westray



Orkney ONI OBC Option Development Papa Westray (Moclett) Option D - Linkspan (Max)

Current Vessels

- 2 ONI LoLo Vessels; MV Earl Sigurd & MV Earl Thorfinn
- MV Golden Mariana

Potential Future Vessel (Shown)

- 65m RoRo Vessel, 14.3m beam and 3.7m draught
- Double ended vessel should help with manoeuvrability

Potential Solution - Option D (Shown)

- Extend berth by 35m
- New linkspan and approach structure
- Independent wave screens to provide shelter
- For use with North Ronaldsay Option D, Sanday, Eday, Stronsay, and Westray (Rapness) options

Notes

- Exposed from the southwest.
- Bow of the current vessel overhangs pier.
- Berth tidally restricted.
- Available water area at LAT and MLWS shown for potential future 65m RoRo vessel, with 1m UKC
- Approximate dredge area shown to allow non tidally restricted berth for potential 65m RoRo vessel

- Extent of available water area at MLWS for 65m Vessel
- Extent of available water area at LAT for 65m Vessel

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



North Ronaldsay & Papa Westray Infrastructure Costs

	Cost (£m)	Cost including Optimism Bias (£m)
North Ronaldsay		
Vessel Scenario 1 – 45m Linkspan	£12.5	£18.0
Vessel Scenario 2 – 50m Slipway	£9.9	£14.2
Vessel Scenario 3 – 65m Linkspan	£14.1	£20.3
Papa Westray		
Vessel Scenario 1 – 45m Linkspan	£10.7	£15.4
Vessel Scenario 2 – 50m Slipway	£7.6	£10.9
Vessel Scenario 3 – 65m Linkspan	£12.5	£18.0
Totals		
Vessel Scenario 1 – 45m Linkspans	£23.2	£33.4
Vessel Scenario 2 – 50m Slipways	£17.5	£25.1
Vessel Scenario 3 – 65m Linkspans	£26.6	£38.3

- Breakwater at North Ronaldsay considered to improve shelter, but anticipated that it would cost in excess of £10m - ruled out on value for money grounds
- Vessel Scenario 1 would represent a **13% saving** on the 'max' option
- Vessel Scenario 2 would represent a **34% saving** on the 'max' option

Papa Westray – Preferred Option

- Approximate cost of a **Papa Westray – Westray Ro-Ro** service is:
 - **£9m** for harbour **infrastructure**
 - **£1.5m-£3m** for an appropriate **vessel**, making a total of:
 - **£10.5m-£12m** (excluding optimism bias), plus...
 - a net increase in **operating costs** of around **£0.275m** per annum
- The approximate cost range for infrastructure for a **Papa Westray – Kirkwall Ro-Ro** is:
 - **£7.6m-£12.5m** (excluding optimism bias), with no additional vessel or operating costs
- There is little difference in *infrastructure costs* between the two options, but the Papa Westray–Westray Ro-Ro would require a long-term commitment to funding the revenue costs of the scaled-up service, which makes it more expensive over a long period
- The decision finely balanced, but on the grounds that the Papa Westray – Westray Ro-Ro would be more expensive in the long-term and does not appear to enjoy majority local support, this option is **ruled out**
- The preferred option for **Papa Westray is therefore a Kirkwall Ro-Ro service**

Papa Westray & North Ronaldsay – Preferred Option

- To maximise operational efficiency, a **common solution is required for Papa Westray and North Ronaldsay**. Combined infrastructure costs (excluding optimism bias) for the vessel scenarios are as follows:
 - Vessel Scenario 1: 45m linkspan = £23.2m
 - Vessel Scenario 2: 50m slipway = £17.5m
 - Vessel Scenario 3: 65m linkspan= £26.0m
- **65m linkspan Ro-Pax ferry**
 - This would provide complete consistency of vessels and infrastructure across the planned ONI network. However, the current North Ronaldsay & Papa Westray services are predominantly supply-chain links only, with 1-2 calls per week
 - From a value for money perspective, the scale of investment associated with this option is therefore disproportionate
- **50m Slipway Ro-Pax ferry**
 - Whilst lower cost, this would limit vessel deployment flexibility and in many cases would require operating a slipway-design vessel from linkspans
 - It is unlikely that there would be a refit vessel capable of operating from a slipway available for North Ronaldsay and Papa Westray
 - Vessel design and construction costs could also be higher as the design would deviate from the other proposed ONI vessels
- A more appropriate option is to operate the service using a **45m linkspan Ro-Pax ferry**
 - This vessel would be of sufficient size for North Ronaldsay & Papa Westray and could operate lower volume sailings across the network on times / days when not serving these two islands
 - This solution depends on adequate refit cover from either (a) the retention of one of the *Earls* in the short-term (reverting to Lo-Lo during this time); (b) the deployment of MV *Thorsvoe* in freight mode; or (c) chartering of a multi-cat type vessel
 - **The current preferred option for Papa Westray and North Ronaldsay is a Kirkwall-based Ro-Ro service using a 45m vessel operating from linkspans, with an estimated capital cost of £23.2m (excluding optimism bias), although further consideration is being to the slipway option.**
 - If a suitable relief vessel could not be found, the solution would either be to build two of the new ONI vessels to 45m LOA or scale up North Ronaldsay and Papa Westray to accommodate the 65m vessel

Stronsay Harbour

Overview

- Stronsay ferry terminal is located in the main settlement of Whitehall in the north of the island
- During the conversion of the ONI network to Ro-Ro in the 1980s, proposals for relocating Stronsay ferry terminal to the west of the island were considered but not implemented
- The retention of Whitehall as Stronsay's ferry terminal has created a number of challenges
 - The steaming time to Stronsay from Kirkwall, Eday and Sanday is longer than would be the case if the terminal was located in the west of the island
 - The berth at Whitehall is exposed to wind and wave motion from the north
 - The passage to / from the berth is exposed to easterly and south-easterly winds in Sanday Sound and the channel at Papa Stronsay
 - The channel also requires regular dredging to maintain adequate under-keel clearance
- A review of the location of Stronsay Harbour is therefore a key 'network definition' task in the OBC

Benefits & Costs

	Cost (£m)	Cost including Optimism Bias (£m)
Retain terminal in Whitehall	£2.7	£3.8
New harbour in lee of Linga Holm	£27.1	£39.0

- Cost of a new harbour would significantly outweigh the marginal costs associated with improving the current harbour
- Relocating the ferry terminal would generate monetised travel time savings – known as Transport Economic Efficiency (TEE) benefits
 - However, given the low travel volumes, these benefits only amount to around **£1.9m** over 60 years
 - The equivalent cost value for appraisal would be **£23.9m**
 - This equates to a benefit to cost ratio of **0.1**
 - There would also be broader social and economic benefits to the island
- Based on the current vessel & crewing mix, approximately **415 hours** would be released back into the timetable, or **8 hours** per week
 - The same boat does not generally call at Stronsay twice on the same day, limiting the saving on any ‘single vessel day’
 - On certain days, this could potentially permit additional rotations to be operated

Preferred Option

- Whilst there would be benefits for the Stronsay community, as well as those living on and travelling to Eday & Sanday, the cost of relocating the ferry terminal from Whitehall to the west of the island would significantly outweigh the quantifiable and broader benefits which could be gained
- There are no precedents of relocating a function Ro-Ro ferry terminal in Scotland, unless the infrastructure is life expired
- Highly unlikely that external funding for such an option would be obtained and this option is therefore **ruled out** as a core option at this stage
 - It will however be retained as a 'sensitivity test' within the wider network planning process
- Relocation of the harbour should also be considered as a **long-term option** when substantial expenditure is required at the current facility in Whitehall
- It should also be noted that
 - The proposed four vessel solution for the ONI would reduce the impact of the longer steaming times to Stronsay through a reduction in indirect connections (and at least maintaining the current summer timetable during refit)
 - New vessels would be more powerful and potentially faster, reducing crossing times

Eday & Westray Overnight Berths

Overview

- The ability to berth overnight in the isles facilitates a timetable which offers a mix of the first connection being to the island or from the island. Of the Outer North Isles harbours:
 - Only **Sanday & Stronsay** offer operational year-round overnight sheltered berths
 - Overnighting in **Westray** is possible during the summer months and in calm conditions only
 - The pier at **Eday** is exposed and vessels cannot overnight there at any time. Also no power on the berth
- The flexibility to overnight in the isles is currently limited – due to crew accommodation being below the waterline – each vessel is only permitted to lie in the islands a **maximum of two nights per week**
- Longstanding ambition in both Eday & Westray for the development of year-round overnight berths
 - In ‘Phase 1’ of this study, a preferred option is not selected – the costs & benefits of these options are worked up at this stage to assist in:
 - Consideration of vessel specification in ‘Phase 2’ (and in particular whether the vessels should have an accommodation block)
 - Developing and testing potential timetable combinations for the ONI

Overnight Berth Option Costs

	Cost (£m)	Cost including Optimism Bias (£m)
Eday overnight berth	£2.8	£4.0
- With optional 10m further extension	£3.6	£5.1
Westray overnight berth	£2.0	£3.0
- <i>With optional 30m dog-leg extension</i>	£4.3	£6.2

- Note the optional extensions at both ports would likely be required to provide a reliable overnight berth
 - With the shorter extensions only, overnight berthing would be possible but may require diversion to Kirkwall when the weather forecast is poor

Preferred Option

- At this stage, a preferred option is not required as it does not fundamentally shape the network
- The key questions & issues which arise are:
 - Do these options represent value for money?
 - If the preferred revenue option for the ONI was progressed – i.e. extending the service to a 16-18 hour day, the case for both overnight berths may be diminished to some extent
 - If taken forward, this implies:
 - Vessels with onboard accommodation (which will make them larger for a given carrying capacity and more expensive to build)
 - Crew would spend more nights away from home which may require discussions / negotiations with the relevant trade unions
- However, there are significant benefits in terms of resident and business travel to / from both islands
- Options in relation to overnight berths will be considered as part of the vessel and timetable development process in 'Phase 2' of this study

Summary & Next Steps

Summary

- The recommended preferred options from ‘**Phase 1**’ of the ONI OBC are as follows:
 - Papa Westray is served by a new Ro-Ro service operating between Moclett and Kirkwall, initially at least on the current timetable
 - A Papa Westray to Westray Ro-Ro service is not taken forward
 - New ferry berths are constructed at North Ronaldsay and Papa Westray to accommodate a small Ro-Pax ferry (circa 45m) operating from linkspans
 - The harbour in Stronsay remains in Whitehall in the medium term
 - The options for overnight berths in Westray and Eday are taken forward for further consideration in Phase 2 of the OBC

Phase 2: Autumn 2019 – Spring 2020

- Phase 2 will:
 - Develop the capacity and connectivity requirements (air & ferry) of all six islands
 - This will be done on the basis of (i) the current length of ferry crew day and (ii) an extended crew day, which could be provided if additional revenue funding is secured
 - Establish the appropriate vessel mix and required capacity
 - Further develop the infrastructure requirements at all ONI harbours to reflect the emerging preferred vessel solution
 - Consider the requirement for a third aircraft and, if progressed, how it should best be used
 - Develop a set of outline illustrative timetables
 - Further develop capital and operating costs
 - Establish the preferred ONI Network Plan
 - Engage with all affected communities on the outcome

What to do next

- The boards you have just read provide some areas you may wish to discuss but we would be happy to hear any views that you have
- Please also take the time to fill out a short questionnaire on the options

<https://www.surveymonkey.co.uk/r/PapaWestrayOutlineBusinessCaseFeedback>

Thank you for taking the time to read this material