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Shetland Inter-Island Transport Study – Fair Isle Outline Business Case

On behalf of **ZetTrans**



Project Ref: 40238 | Date: May 2021

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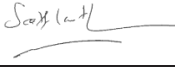

Document Control Sheet

Project Name: Shetland Inter-Island Transport Study – Fair Isle Outline Business Case

Project Ref: 40238

Report Title: Outline Business Case

Date: 18th May 2021

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For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
vFINAL	18/05/2021	Final report	SC	SL / MR	SL /MR

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Executive Summary

Shetland Islands Council (the Council) funds lifeline¹ transport connections to nine islands across the archipelago. These connections are delivered through a combination of air and ferry services which have been supported in both capital and revenue terms by the Council over many years. The majority of ferry services are operated directly by the Council, with the exception of the Foula ferry route, the operation of which is contracted to ZetTrans, the Regional Transport Partnership for the Shetland Islands. Air Services are also provided by ZetTrans. ZetTrans has a statutory funding agreement with Shetland Islands Council, who are obliged to fund any financial deficit. These services all represent a net-cost to the Council.

In 2014, Shetland Islands Council, through the 'Our Islands Our Future' initiative, began a dialogue with the Scottish Government on establishing some principles for the 'Fair Funding' of Shetland's inter-island transport services and infrastructure. The basis of these discussions was that the financial burden upon the Council in providing inter-island transport was disproportionate.

Scottish Government accepted in principle that a Fair Funding position needed to be established and, to inform that, Shetland Islands Council and ZetTrans agreed to undertake studies, now in the form of business cases, to establish and appraise the service and infrastructure requirements for inter-island transport over a 30-year planning horizon.

In September 2015, the Council commissioned the Shetland Inter-Island Transport Study (SIITS), with a view to developing and appraising options for the future of the inter-island transport services. The output of the study was the development of a Strategic Business Case (SBC), which established the 'case for change' and identified a set of capital and revenue options which, if delivered, would in-part or in-full address the identified transport problems.

In parallel to the SBC, the Council, together with the Highlands and Islands Transport Partnership (HITRANS), Highlands & Islands Enterprise (HIE), Orkney Islands Council and ZetTrans established a Fair Funding Group with Transport Scotland intended to explore the wider question of roles and responsibilities, and in accordance with a nationally recognised approach and references in terms of other lifeline services. An early output from this group was the agreement of additional Scottish Government funding which contributed towards partially and then latterly fully offsetting the deficit revenue funding. However, there is no commitment beyond this period for further capital or revenue funding.

The Strategic Business Case (SBC) was completed in Autumn 2016, and set out a range of capital and revenue options for all nine islands connected to the Shetland mainland by the air and ferry services, together with a timeline for progressing specific elements of the SBC to Outline Business Case (OBC) stage. One of the priorities emerging from the SBC was the development of an OBC for a new vessel and supporting infrastructure for Fair Isle. To this end, ZetTrans commissioned Stantec, Mott MacDonald and ProVersa Ltd to develop the *Fair Isle Outline Business Case*.

A corresponding OBC report considering the future of the Fair Isle (and wider Shetland) air services was commissioned in late 2017, completed by Stantec in mid-2018 and approved by Members in June 2019. The Air OBC report can be found at <https://www.shetland.gov.uk/transport/siits.asp>, with the key outcomes restated in the context of this report.

¹ As defined on page 53, paragraph 8 of the Scottish Ferries Plan 2013-22.

Strategic Case

The Strategic Case can be summarised as:

- The current vessel is over **30-years old** and does not meet current accessibility standards. It has a maximum of five-years remaining service life with some expenditure.
- The service is **unreliable** and there are consequences of this in terms of:
 - **Supply-chain** – e.g. import of fresh produce, export of goods etc.
 - **Service provision** – e.g. providing health care and facilitating access to secondary school.
 - **Personal travel** – e.g. missed appointments and limited opportunities on the mainland for Fair Isle residents.
 - **Visitors and tourists** to Fair Isle, both in terms of the choice to visit the island and travel disruption *en-route* or on the return journey.
- In the 2019 Fair Isle household survey, 2/3 of respondents indicated that **aspects of the ferry service prevents more frequent travel to the mainland**– more than half of respondents cited comfort, crossing time and the **absence of Ro-Ro** as key barriers to travelling more by ferry
- The current crane-based operation:
 - poses a potential medium-term **regulatory risk** to the continuation of the service;
 - places **limits on the weight / type of goods** carried; and
 - affects **vessel turnaround** times.
- There is a local **desire for improvements** as evidenced in the household survey
 - 85% did not think the current air and ferry connections to the mainland are sufficient for their family's day-to-day needs, now and in future.
 - 2/3 thought that connections were not sufficient for tourism – 3/4 wanted to see tourism develop further.
 - 1/4 felt current connections were not sufficient to ensure long-term sustainability of Fair Isle.
 - 80% felt that better connections would make Fair Isle more attractive for in-migrants.

Socio-Economic Case

The preferred option for the replacement of the Fair Isle ferry is **Option 1 – Replace the MV *Good Shepherd IV* with a bespoke Ro-Ro vessel**. A summary of the key particulars is provided below.

Strategic Approach

The preferred option is to progress with a bespoke solution for Fair Isle with the retention of an island-based vessel and crew. To de-risk the adoption of an island-based option, contingency and long-term crewing arrangements must be developed between the Council and the Fair Isle community to ensure a clear succession plan for crewing the vessel.

Vessel

The preferred option for Fair Isle is a larger, faster monohull vessel built to modern standards. This new vessel is to be coded as a 'Workboat', limiting the number of passengers to 12. The vessel design will be focused on providing improved passenger comfort and seakeeping, therefore improved reliability.

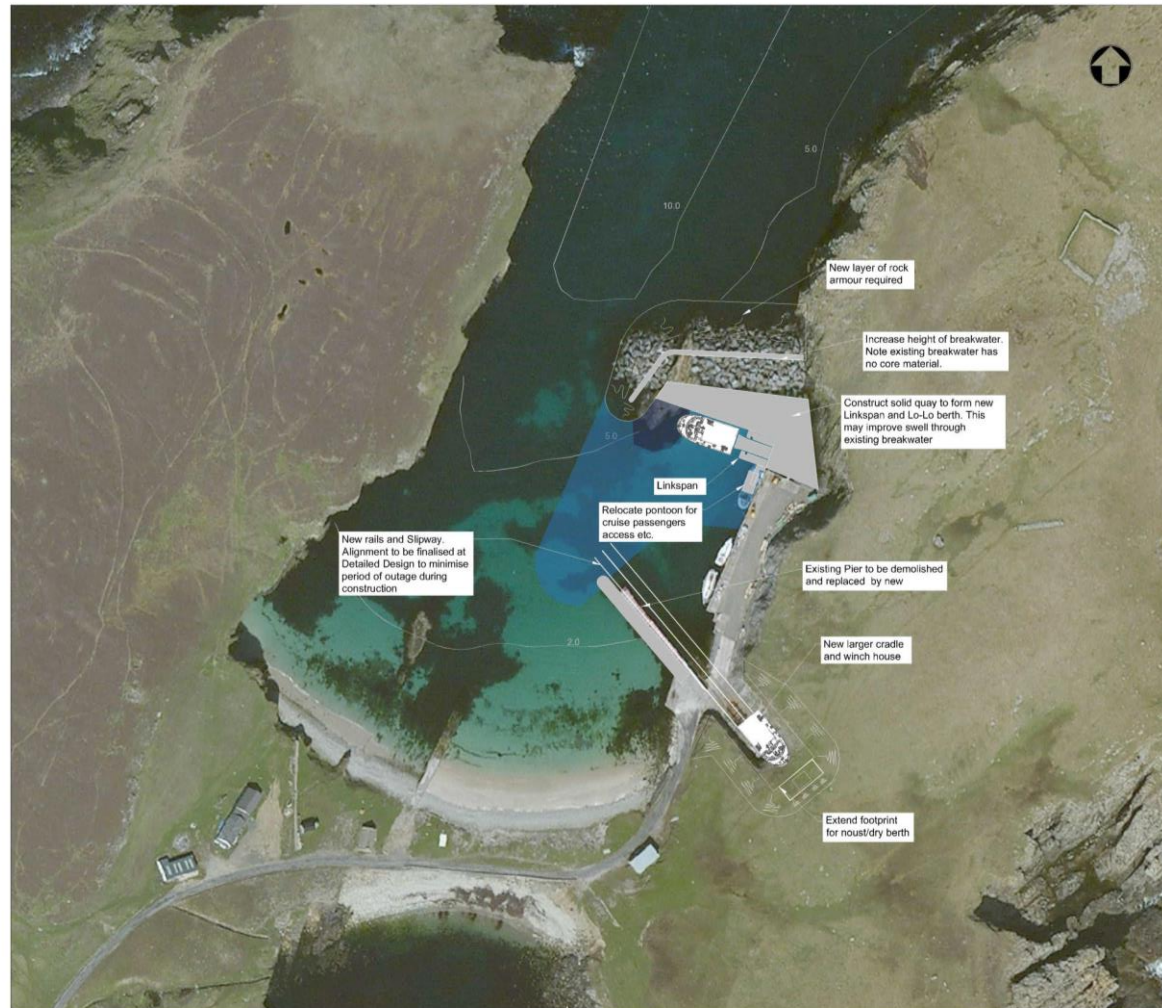
Whilst a preferred vessel is not specified in the business case process, it is necessary at this stage to provide a high-level design vessel as the basis for scoping out the associated infrastructure works. The Norwegian designed and built MD240 is an appropriate high-level design vessel for this stage of the OBC. This vessel is not normally configured as linkspan compatible but the shipyard has confirmed that such a configuration is possible. The vessel normally comes with two cranes - the intention would be to retain one crane for loading goods into the hold and building in flexibility of operation during any periods of linkspan maintenance etc.

Ship-to-Shore Interface

The preferred option is to provide a linkspan at both Fair Isle and Grutness. It is anticipated that there will be two small 'Type A' linkspan decks available for use at Fair Isle and Grutness as a result of the Council's planned refurbishment project for 13 linkspan decks across the wider Shetland network.

Fair Isle Linkspan and Supporting Infrastructure

The General Arrangement drawing below shows the proposed marine infrastructure work at Fair Isle:



Shetland OBC Options Development Fair Isle Ro-Ro Linkspan

- All levels are to Chart Datum
- Bathymetric information sourced from Beckett Rankine drawing no. 1537-01-201
- Tide Levels:
 - MHWS = 2.2m
 - MLWS = 0.6m
- LAT has been taken as Chart Datum
- Assumed vessel MD240 or similar with:
 - LOA = 23.08m
 - Beam = 11.20m
 - Service Draught = 2.8m
- Dredge level allows for 1m UKC

- Rock dredging to -4.0mCD
- Maintenance dredging to -4.0mCD



Location Plan



Fair Isle – Preferred Infrastructure Option

As can be seen from the above figure, it is proposed that the linkspan will be constructed to the north of the existing solid quay, in an east-west orientation. An extension to the north and west of the existing solid quay will provide the vehicular approach to the linkspan and Ro-Ro berth, ensuring appropriate space for vehicle manoeuvring. Due to the proximity of the linkspan to the existing breakwater and the lack of core material within it, the new solid quay structure may further improve conditions on the linkspan berth.

In ensuring the operational safety of a linkspan / vessel interface, there is a requirement to ensure suitable wave climate on the linkspan berth. At Fair Isle, it is anticipated that the height of the existing breakwater will require to be increased and an additional layer of rock armour provided on the north face to improve shelter at the new linkspan berth. Wave modelling will be undertaken at the detailed design stage to confirm suitability of the wave climate.

Dredging will be required to reduce the level of the rock outcrop located within the existing breakwater. This will allow for 1m under keel clearance for the design vessel.

Grutness Linkspan and Supporting Infrastructure

The General Arrangement drawing below shows the proposed marine infrastructure work at Grutness:



Shetland OBC Options Development Grutness Ro-Ro Linkspan

- All levels are to Chart Datum
- Bathymetric information sourced from Shetland Islands Council drawing no. SM-6-1-100
- Tide Levels:
 - MHWS = 1.8m
 - MLWS = 0.4m
- LAT has been taken as Chart Datum
- Assumed vessel MD240 or similar with:
 - LOA = 23.96m
 - Beam = 11.20m
 - Service Draught = 2.8m
- Dredge level allows for 1m UKC, bed understood to be soft material therefore bed overdredged to minimise need for maintenance dredging

Dredging to -4.0mCD



Location Plan



Grutness – Preferred Infrastructure Option

At Grutness, it is proposed that the linkspan will be constructed to the south-east of the existing berth. An extension to the north-west of the existing solid quay and rock armour protection to the north will improve shelter on the linkspan berth. It is anticipated that general repairs and refurbishment will be required to the existing solid quay. Dredging will be required along the existing and extended solid quay to provide 1m under keel clearance for the design vessel.

As for Fair Isle, wave modelling will be required at detailed design stage to optimise the berth length and configurations.

Overnight Berth

The preferred option is to upgrade the current overnight berthing arrangement at Fair Isle for the design vessel. The noust will be extended and will be accompanied by the provision of a new winch, winch house and cradle. The alignment of the finger pier, slipway and rails will be confirmed at detailed design stage to minimise the period of outage during construction.

Appraisal of Options

The preferred option was subject to a validation check against the Transport Planning Objectives and STAG criteria and was found to be the most advantageous in this respect. The principal benefits of the preferred option are:

- A faster vessel with a modern hull form will offer reduced crossing times, whilst the adoption of Ro-Ro would also reduce turnaround times in port. The combined benefit of these two factors is that a sailing could be operated within a shorter weather window than at present, potentially allowing more sailings to run to timetable, more sailings to be operated overall and for an increase in the number of timetabled connections by 1-2 per week.
- It is also anticipated that a new vessel built to modern standards would enhance passenger comfort and seakeeping and improve service reliability.
- The proposed new vessel will have a greater carrying capacity, thus reducing the number of capacity constrained sailings, a key issue given the infrequency of the current service.
- The adoption of Ro-Ro will remove the significant restrictions imposed by weight-limited, crane-based cargo handling. A new Ro-Ro vessel will be able to carry heavier loads, including plant, thus reducing the cost and inconvenience of chartering vessels for what would be routine shipments elsewhere in Scotland. This will strengthen the Fair Isle supply-chain and enhance the productivity of the Fair Isle economy.
- A Ro-Ro vessel will also address the significant physical accessibility barriers associated with the current vessel through allowing passengers step-free access over the linkspan.

Financial Case

The capital costs in undiscounted Q1 2021 prices of the preferred option, **rounded** to the nearest half-million Pounds, are as follows:

Preferred Option – Undiscounted capital cost, Q1 2021 prices, rounded to nearest £500k

	Capital Cost
Fair Isle, North Haven	£13,500,000
Grutness	£5,000,000
New Vessel	£6,000,000
Total	£24,500,000

The combined 30-year maintenance cost for Fair Isle and Grutness is **£1.35m** in undiscounted Q1 2021 prices.

A variety of funding sources are being considered to deliver this project.

Commercial Case

Vessel

Given the multitude of requirements for any future vessel, **the preferred vessel specification option is for the Council to develop an output specification and seek a concept design from the market based on this.** The output specification will have to be carefully designed in partnership with the Council's Marine Services team, the current crew and the community. The following table provides an indicative and high-level specification for information purposes:

Vessel Output Specification

Characteristic	Minimum Specification
Classification	Workboat – maximum 24m length overall / 12 passengers
Overnight location	Fair Isle, in an enlarged noust with new winch, winch-house, cradle and slipway all designed to suit the selected vessel.
Hull form	Monohull
Ship-shore interface	Council Type A Linkspan, but retention of at least one crane with a suitable lifting capacity to facilitate occasional Lo-Lo operations
Speed	To be specified as faster than GSIV – final design speed to be confirmed in SBC
Beam	11.2 metres (approx.)
Draught	2.8 metres (service) - a deeper draft would imply significant dredging.
Fuel type	Given the limited electrical supply on Fair Isle, electric propulsion may be challenging to achieve. It is further anticipated that fuel bunkering will take place on Shetland Mainland. It is anticipated that green propulsion options will be explored during vessel design and an appropriate solution selected, reflecting the Council's policy to reduce the carbon emissions of its ferry fleet.

Landside Infrastructure

The table below summarises the preferred contracting approach to delivering the infrastructure works at North Haven and Grutness:

Summary of the Council's preferred procurement strategy

	North Haven	Grutness
Type of Contract	Traditional, with some design & construct elements (winch and cradle etc).	Traditional
Single or Multiple Contracts	1 No. contract	1 No. contract
Open or Restricted	Restricted (shortlist established before tender documents issued)	Restricted (shortlist established before tender documents issued)
Lump Sum or Remeasurable	Lump Sum	Lump Sum
Fixed Price or Target Price	Fixed Price	Fixed Price
Form of Contract	ECC Option A (NEC4)	ECC Option A (NEC4)

Management Case

Programme

The table below shows the key milestones for the project.

Key Project Milestones

Milestone	Commencement Date	Notes
Terminal Infrastructure Milestones		
Infrastructure design services award date - <i>Outline Design and GI Design</i>	11/06/2021	Award of outline design and GI design should be progressed as soon as possible to ensure consents are in place to have GI on site in Q2 2022.
Award ground investigation contract	26/11/2021	Contract award date linked to obtaining required consents for ground investigation works
Infrastructure design services award date - detailed design	21/03/2022	
Award North Haven construction contract	30/06/2023	
Award Grutness construction contract	24/02/2023	
Completion of noust, slipway, winch and cradle	11/10/2024	From April 2024 slipway facilities will not be available at North Haven, meaning that the vessel is likely to be based elsewhere. After October 2024 the widened noust, new winch and slipway should be available allowing the new vessel to be based on Fair Isle full-time.
Completion of construction	11/10/2024	
Vessel Infrastructure Milestones		
Vessel design services – award naval architect	08/10/2021	
Appoint Shipyard	09/09/2022	
New Vessel Enters Service	13/09/2024	

The durations that have been allowed in the programme are based on experience of marine construction projects of a similar scale, required procurement periods and likely durations for obtaining consents from statutory authorities based upon their advertised response periods for licence applications.

Project Management Framework

The table below summarises the organisations and individuals which will fill each role in the project team:

Roles & Responsibilities

Role	Individual / Organisation
Project Board	Representatives of external funding partners, Chair of ZetTrans, the Council Chief Executive, selected Heads of Service and relevant Officers
Council Project Manager	Council Officer(s); and/or fixed-term appointment; and/or consultant
Client's Designers (Vessel and Infrastructure)	External appointments through competitive tender
Vessel Project Manager & Contract Supervisor	External appointment through competitive tender
Port Infrastructure Project Manager & Contract Supervisor	External appointment through competitive tender

Role	Individual / Organisation
Financial advisers	Shetland Islands Council Finance, with external advice procured where required
Legal advisers	Shetland Islands Council Legal, with external advice procured where required
Vessel contractor	To be determined through competitive tender
Fair Isle contractor	To be determined through competitive tender
Grutness contractor	To be determined through competitive tender

Benefits Realisation

A 'benefits realisation framework' has been developed and confirms that the preferred option makes the most significant contribution towards the four study 'aims' agreed at SBC stage, namely:

- The inter-island transport network should **support and promote inclusive economic growth**.
- The inter-island transport network should support improved **access to opportunities and services** on mainland Shetland, including employment, health, education and personal services.
- The inter-island transport network should **promote population retention**, a balanced island demographic and capacity within the local community.
- The inter-island transport network should support **enhanced productivity and economic connectivity** within the Shetland Islands.

1 Introduction

1.1 Overview

- 1.1.1 Shetland Islands Council (the Council) funds lifeline² transport connections to nine islands across the archipelago. These connections are delivered through a combination of air and ferry services which have been supported in both capital and revenue terms by the Council over many years. The majority of ferry services are operated directly by the Council, with the exception of the Foula ferry route, the operation of which is contracted to ZetTrans, the Regional Transport Partnership for the Shetland Islands. Air Services are also provided by ZetTrans. ZetTrans has a statutory funding agreement with Shetland Islands Council, who are obliged to fund any financial deficit. These services all represent a net-cost to the Council.
- 1.1.2 In 2014, Shetland Islands Council, through the 'Our Islands Our Future' initiative, began a dialogue with the Scottish Government on establishing some principles for the 'Fair Funding' of Shetland's inter-island transport services and infrastructure. The basis of these discussions was that the financial burden upon the Council in providing inter-island transport was disproportionate.
- 1.1.3 Scottish Government accepted in principle that a Fair Funding position needed to be established and, to inform that, Shetland Islands Council and ZetTrans agreed to undertake studies, now in the form of business cases, to establish and appraise the service and infrastructure requirements for inter-island transport over a 30-year planning horizon.
- 1.1.4 In September 2015, the Council commissioned the Shetland Inter-Island Transport Study (SIITS), with a view to developing and appraising options for the future of the inter-island transport services. The output of the study was the development of a Strategic Business Case (SBC), which established the 'case for change' and identified a set of capital and revenue options which, if delivered, would in-part or in-full address the identified transport problems.
- 1.1.5 In parallel to the SBC, the Council, together with the Highlands and Islands Transport Partnership (HITRANS), Highlands & Islands Enterprise (HIE), Orkney Islands Council and ZetTrans established a Fair Funding Group with Transport Scotland intended to explore the wider question of roles and responsibilities, and in accordance with a nationally recognised approach and references in terms of other lifeline services. An early output from this group was the agreement of additional Scottish Government funding which contributed towards partially and then latterly fully offsetting the deficit revenue funding. However, there is no commitment beyond this period for further capital or revenue funding.
- 1.1.6 The Strategic Business Case (SBC) was completed in Autumn 2016, and set out a range of capital and revenue options for all nine islands connected to the Shetland mainland by the air and ferry services, together with a timeline for progressing specific elements of the SBC to Outline Business Case (OBC) stage. One of the priorities emerging from the SBC was the development of an OBC for a new vessel and supporting infrastructure for Fair Isle. To this end, ZetTrans commissioned Stantec, Mott MacDonald and ProVersa Ltd to develop the *Fair Isle Outline Business Case*.
- 1.1.7 A corresponding OBC report considering the future of the Fair Isle (and wider Shetland) air services was commissioned in late 2017, completed by Stantec in mid-2018 and approved by Members in June 2019. The Air OBC report can be found at <https://www.shetland.gov.uk/transport/siits.asp>, with the key outcomes restated in the context of this report.

² As defined on page 53, paragraph 8 of the Scottish Ferries Plan 2013-22.

1.2 Business Case Context

- 1.2.1 This section sets out the approach taken to the development of the business case and specific considerations in relation to business case preparation in this context.

Transport Scotland Business Case Guidance

- 1.2.2 As funding dialogue has been ongoing with the Scottish Government, the OBC has been undertaken in accordance with the *Guidance on the Development of Business Cases* (Transport Scotland, 2016). This guidance is based on the H.M. Treasury *Green Book* and is almost identical to the Department for Transport guidance, *The Transport Business Cases*. The guidance sets out three main stages which need to be completed in developing a compliant business case:
- Stage 1 - Scoping: Strategic Business Case (SBC) – analyses a variety of options which tackle the problems, issues and objectives identified;
 - *The SBC was completed and signed off in Autumn 2016 (see below).*
 - Stage 2 – Planning: Outline Business Case (OBC) – identifies the Preferred Option(s) and establishes how that option(s) should be funded, managed and delivered; and
 - Stage 3 – Procurement: Final Business Case (FBC) – undertaken during procurement phase.
- 1.2.3 Within each ‘stage’ of the business case, there are five ‘cases’, which provide a structured approach to detailing each component of the overall proposition. These are as follows:
- **Strategic Case:** Defines the case for change / rationale for intervention and identifies a shortlist of options which could deliver the project-specific and wider policy objectives.
 - **(Socio)³ Economic Case:** Assesses the options to determine their value for money in terms of economic, social and environmental benefits and costs.
 - **Financial Case:** The financial case involves undertaking a full financial appraisal of the preferred option, based on resource accounting and budgeting principles, including information on funding, budgeting over the life of the project and scheme cash flow.
 - **Commercial Case:** The commercial case provides evidence on the commercial viability of a proposal and the procurement strategy that will be used to engage the market.
 - **Management Case:** Details the project management plans, outlining the framework for managing risk, benefits realisation and post-project evaluation.
- 1.2.4 The focus on each ‘case’ varies by stage of the business case – this is highlighted in the figure below, with the size of the box showing the emphasis placed on that component of the business case at each stage of the process.

³ The Economic Case is referred to as the Socio-Economic Case by Transport Scotland. This subtlety reflects a desire to more fully reflect wider social and economic factors alongside the traditional estimation of value for money determined by a benefit-cost ratio and net present value.

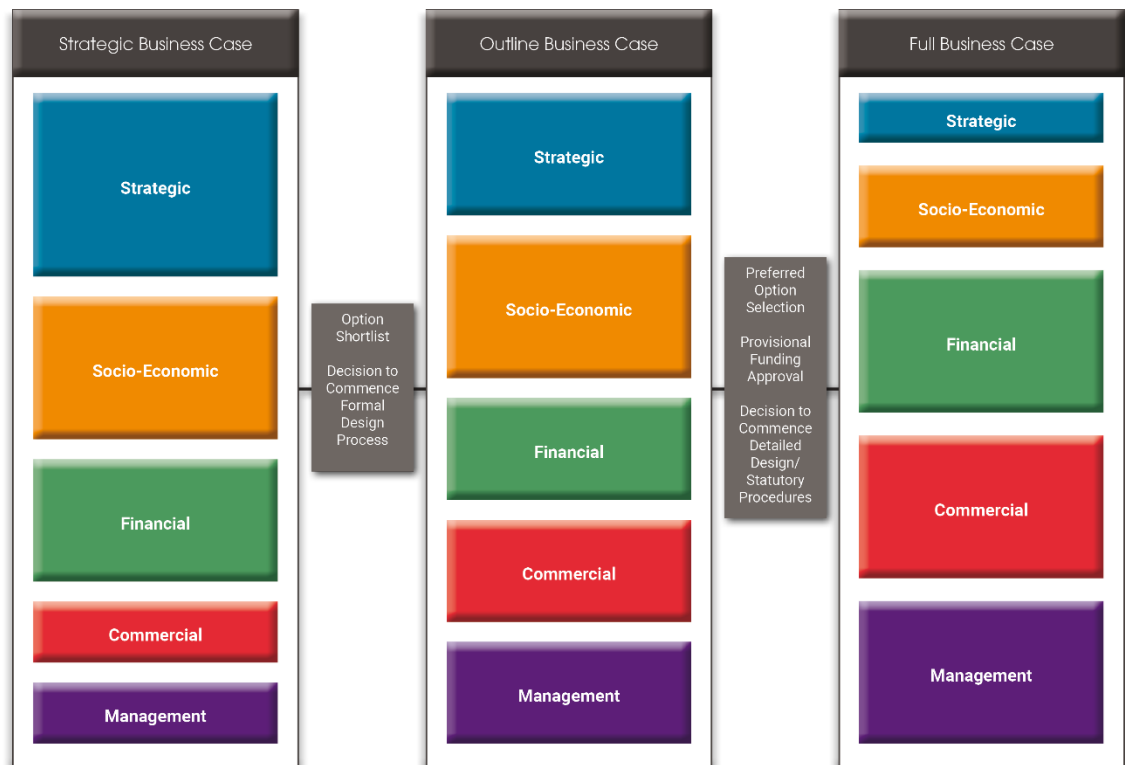


Figure 1.1: Business Case Stages

The Outline Business Case

- 1.2.5 The **Strategic** and **Socio-Economic Cases** of the OBC were completed and signed-off in December 2019. However, as discussions with the Scottish Government around funding and delivery models were ongoing at that time, the decision was taken to delay the completion of the **Commercial, Financial and Management Cases** to avoid any risk of abortive work. These Cases were therefore developed in Q1 2021.
- 1.2.6 In finalising this OBC, the Council and project team reviewed the findings of the Strategic and Socio-Economic cases to ensure that they remained current, and we are satisfied that this is the case. All costs in the Socio-Economic Case have been updated to 2021 prices, but these cases remain otherwise unchanged.

SBC Reporting – The Story to Date

- 1.2.7 The SBC was developed between September 2015 and October 2016. It took the form of a Scottish Transport Appraisal Guidance (STAG) based appraisal, developing and appraising options for the nine island communities served by the inter-island transport network.
- 1.2.8 Given the varied nature of the study area, it was essential to undertake a systematic baselining exercise to establish the specifics of each community and the problems and opportunities associated with their current transport connections to the Shetland mainland. There were two parallel streams to this baselining exercise – the first component of this was a review of the **services** from the perspective of the **public**. This included:
- **Market analysis:** a review of carryings, utilisation and reliability for the ferry and air services, so far as data were available.

- **Consultation:** engagement with the island transport representatives and public sector stakeholders.
- **Timetables & services:** a review of timetables, connectivity, public transport integration and fares.
- **Socio-economic baselining & future planning horizon:** analysis of the socio-economic position of each island, key industries and future expectations. This review also set out the national, regional and local policy context in relation to island transport provision.

1.2.9 The second component of the baselining was a review of the **services** from the perspective of **Shetland Islands Council** and **ZetTrans**. This included:

- **Vessels & operations:** a review of the current fleet and the operational practices (e.g. crewing, overnight berth locations etc.) associated with the current operation.
- **Harbours:** assessment of the capability of the current harbours and, where information was available, the condition and life expectancy of the assets.
- **Air assets and operations:** a review of the current inter-island air service considering aircraft, airfields, service levels, operational practices and potential opportunities in relation to new aircraft and navigational aids.
- **Finance:** a review of the historic and current funding and financial position of the inter-island air and ferry services.
- **Fixed links:** a summary of fixed link studies undertaken to date.

1.2.10 This exercise provided the basis for systematically identifying and recording the transport problems and opportunities which any subsequent intervention should be seeking to resolve / realise. A 'logic map' was also developed setting out the potential 'outcomes' and 'impacts' of investing in the inter-island transport network. This logic map, combined with the analysis of problems and opportunities, will be further developed in this OBC and will form the basis of any *ex post* evaluation of the outcomes and impacts associated with any intervention (i.e. assessing the extent of benefits realisation).

1.2.11 A long-list of **capital** and **revenue** options was developed at both the network and island level for both air and ferry services. These options were then appraised against the SIITS Transport Planning Objectives and the STAG criteria. The outcomes of the SBC were presented to and agreed with the communities, and feedback was sought on both local aspirations and the potential benefits of different options. The SBC baselining and appraisal reports can be found at <https://www.shetland.gov.uk/transport/siits.asp>. In the interests of brevity, this report does not include detailed background information - reference should be made to the above papers if such information is required.

Scope of OBC Socio-Economic Case

1.2.12 It is important to note at the outset that a business case in the context of small island communities differs from that which would typically be associated with for example, a road or rail scheme in mainland Scotland, particularly in relation to the Socio-Economic Case.

1.2.13 The Socio-Economic Case typically involves revisiting the assessment against the STAG criteria undertaken in the SBC and, where practical, monetising the social welfare benefits and comparing them to the cost to government to establish a benefit-cost ratio. However, the conventional means of monetising benefits (e.g. journey time savings, agglomeration, reduced accidents, land value uplift etc) does not always easily transfer to island related studies, since the objectives of any scheme are not generally focused on issues like travel time savings or reducing accidents.

1.2.14 The focus here is instead very much on access to services and social inclusion, and in particular the extent to which transport connections define the economy, supply-chain, service provision etc in a given island. This is particularly the case in Fair Isle, where many key services are located off-island. Analysis of benefits is therefore more qualitative, setting out how an

intervention could address one or more transport problems which in turn are impacting on the life and / or economy of an island. This is entirely consistent with the approach taken for Transport Scotland business cases in this context. Given the above, the STAG-based analysis undertaken at SBC is cross-referenced rather than repeated in this study.

- 1.2.15 The principal development of the SBC within the Socio-Economic Case at OBC stage is the refinement of options to arrive at a 'preferred option'. At the conclusion of the SBC stage, three broadly defined options were retained for further consideration. Each of these options implied a fundamentally different set of outcomes in terms of where the vessel is based and crewed from, the infrastructure requirements and the nature of service offered. The OBC Socio-Economic Case develops these options and, based on evidence obtained through desk-based analysis, surveys and stakeholder engagement, arrives at a preferred option.

1.3 Study Scope

- 1.3.1 This OBC report is structure as follows:

- Chapter 2 reviews the SBC to ensure that the conclusions remain current (i.e. it confirms the **Strategic Case**).
- Chapters 3-7 details the **Socio-Economic Case**:
 - Chapter 3 details the key aspects of the service from the operator perspective.
 - Chapters 4-6 set out current service delivery, carryings and reliability and then explore how the ferry service supports the Fair Isle economy.
 - Chapter 7 further develops the technical aspects and cost of the options emerging from the SBC, working towards a preferred option.
- Chapters 8-10 detail the **Financial, Commercial and Management Cases**.

- 1.3.2 The outputs of this study provide the basis for moving towards detailed design and the Final Business Case (FBC) and subsequent implementation / procurement.

2 Review of the Strategic Business Case

2.1 Overview

- 2.1.1 The first step in developing this OBC, and the purpose of this chapter, is to review and where appropriate update the SBC, taking account of any changes which have occurred since the submission of the said report.

Scope of Review

- 2.1.2 The scope of this review is as follows:

- Review the **Transport Planning Objectives** set in the SBC process, mapping these against the 'Critical Success Factors' defined for the ferry service by ZetTrans / the Council post-SBC sign-off to assess strategic fit.
- Review the **capital investment timeframe** set in the SBC.
- Revisit the **options emerging from the SBC** to determine whether they continue to remain appropriate.
- Consideration of the **interaction between air and ferry services**.
- Set out any changes in the **wider environment** since the SBC was published, which may have an impact on the study.

2.2 Study Objectives

- 2.2.1 An important requirement in the development of the OBC is ensuring that the outcomes align with the corporate objectives of the Council whilst at the same time following the processes outlined in the Scottish Transport Appraisal Guidance (STAG) and the Transport Scotland *Business Case Guidance*. This is important because:

- On the one hand, the infrastructure and ferry services are currently funded by the Council, and thus the preferred option package emerging from the OBC must align with Council aspirations and available funding; and
- On the other hand, there is a longer-term aspiration to secure central government funding support for ferry services as part of the ongoing discussions surrounding 'Fair Funding'. The approach taken therefore must, as a minimum, align with the approach and processes set out within Transport Scotland guidance documents.

- 2.2.2 The purpose of this section is therefore to map the Council 'Critical Success Factors' against the SBC and OBC processes, with a view to ensuring that the appraisal framework maps across to the Council's in-house requirements.

Transport Planning Objectives

- 2.2.3 The Transport Planning Objectives (TPOs) established in the SBC / STAG were systematically developed to reflect the transport problems and opportunities associated with the inter-island transport services. The problems and opportunities were in turn rooted in a wide-ranging baselining exercise. In developing this section, we have reviewed the evidence developed at SBC stage to confirm whether the TPOs remain relevant.

- 2.2.4 The TPOs relevant to Fair Isle are set out below. For each objective, a restatement of the main transport problems and opportunities is provided:

- **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 Shetland mainland.

- *This objective is relevant to Fair Isle because the current vessel and supporting infrastructure imposes a capacity cap on passenger numbers, the total weight and volume of goods that can be carried and the weight of any single item which can be craned on and off of the vessel.*
 - **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 connections provided should permit at least a half day (e.g. 4 hours) in Lerwick 7 days a week all year round.
 - *Many key services for Fair Isle residents are located on Shetland mainland, and thus the ability to make day return trip to and from Lerwick is important for island residents.*
 - **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.
 - *A frequent and reliable service is essential in facilitating personal and business travel to and from the island whilst also maintaining the supply-chain. Fair Isle’s transport connections are, and always will be, heavily weather affected but future capital investment should be focused on improving the operational window to the greatest extent possible, maximising the number of connections across the week.*
 - **Transport Planning Objective 4:** The level of connectivity provided should minimise the variation between weekdays, evenings, Saturdays and Sundays.
 - *With the exception of a summer Saturday, Fair Isle has no weekend connections. This limits the weekend market and also means that when a resident travels off-island on a Friday, they cannot return until the Monday morning.*
 - **Transport Planning Objective 5:** Where practicable, islanders should be provided with links to strategic onward connections without the need for an overnight stay on Shetland mainland.
 - *Whilst it is accepted that seamless connections between inter-island and onward connections will always be challenging for Fair Isle, improved ferry frequency and reliability could assist in supporting this objective, reducing time spent off-island and the expense associated with it.*
- 2.2.5 Our review of the TPOs set at the SBC stage confirms that they continue to reflect the transport problems and opportunities faced by the island. Whilst the level of investment and logistical implications of fully delivering all aspects highlighted by the TPOs likely remains prohibitive, the outcomes expressed by them reflect a reasonable set of aspirations for the community.

Council Critical Success Factors

- 2.2.6 The Critical Success Factors for the inter-island ferry service developed by the Council are as follows:
- Support the financial objectives of the Council’s long and medium-term financial plans in developing the best value option for a sustainable air and ferry service taking into account value for money (VfM), affordability and wider social and economic issues and benefits.
 - Ensuring compliance with legislative obligations including health and safety.
 - Deliver good quality and resilient transport services that people and businesses need.
 - Support good employment opportunities and secure benefits to the local economy.
 - Support social inclusion by maximising access to social, health and learning opportunities.
 - Maximise use of critical transport assets and infrastructure.
 - Reduce the environmental impact of Services particularly reducing carbon emissions.
 - Reduce recurring maintenance costs and whole life costs.
 - Reduce the need for future capital investment.

- Manage the risks we face and avoid high risk activities.

Mapping the Critical Success Factors to the SBC and OBC

2.2.7 The table below maps the Council Critical Success Factors to the STAG / SBC and the forthcoming OBC:

Table 2.1: Mapping Critical Success Factors to the SBC and OBC

Critical Success Factor	SBC	OBC
Support the financial objectives of the Council's long and medium-term financial plans in developing the best value option for a sustainable air & ferry service taking into account value for money, affordability and wider social and economic issues and benefits.	<ul style="list-style-type: none"> - STAG Cost to government & affordability criteria ensure financial sustainability / VfM. - TPOs and STAG criteria address social & economic issues & benefits. 	<ul style="list-style-type: none"> - Commercial, Financial and Management Cases address financial sustainability / VfM issues in their entirety. - Socio-Economic Case addresses social & economic issues & benefits.
Ensuring compliance with legislative obligations including health & safety.	<ul style="list-style-type: none"> - Assessment against STAG Safety criterion. - Statutory requirements that any option will be required to deliver. 	<ul style="list-style-type: none"> - Statutory requirements that any option will be required to deliver.
Deliver good quality and resilient transport services that people and businesses need.	<ul style="list-style-type: none"> - Captured in the wide-ranging TPOs - STAG Economy, Integration & Accessibility & Social Inclusion criteria cover these issues. 	<ul style="list-style-type: none"> - OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case.
Support good employment opportunities and secure benefits to the local economy.	<ul style="list-style-type: none"> - TPOs 1, 2a, 3 & 4 - STAG Economy and Accessibility & Social Inclusion criteria cover these issues. 	<ul style="list-style-type: none"> - OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case.
Support social inclusion by maximising access to social, health and learning opportunities.	<ul style="list-style-type: none"> - TPOs 2a/2b, 3, 4 & 5 - STAG Accessibility & Social Inclusion criteria cover these issues. 	<ul style="list-style-type: none"> - OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case.
Maximise use of critical transport assets and infrastructure.	<ul style="list-style-type: none"> - TPOs tied to Routes & Services Methodology service levels. - STAG Cost to Government & Affordability criteria consider costs associated with additional use of assets. 	<ul style="list-style-type: none"> - OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case. - The Financial Case will provide a full financial appraisal of all options.
Reduce the environmental impact of services, particularly reducing carbon emissions.	<ul style="list-style-type: none"> - STAG Environment criterion directly addresses carbon emissions as well as a range of other environmental criteria. 	<ul style="list-style-type: none"> - OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case.
Reduce recurring maintenance and whole life costs.	<ul style="list-style-type: none"> - STAG Cost to Government & Affordability criteria consider all costs / affordability associated with operating the service. 	<ul style="list-style-type: none"> - OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case. - The Financial Case will provide a full financial appraisal of all options.
Reduce the need for future capital investment.	<ul style="list-style-type: none"> - SBC considered capital investment options for the vessels and ferry terminal infrastructure shortlisting options which performed well 	<ul style="list-style-type: none"> - OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case.- The Financial Case will

Critical Success Factor	SBC	OBC
	<p>against the TPOs and STAG criteria.</p> <p>- STAG Cost to Government & Affordability criteria consider all costs / affordability associated with capital replacement.</p>	<p>provide a full financial appraisal of all options.</p> <p>- Commercial Case will cover the procurement & funding strategy where appropriate.</p>
Manage the risks we face and avoid high risk activities.	<p>- STAG Risk & Uncertainty criterion covers the risk profile of all options and identifies the primary uncertainties.</p>	<p>- OBC confirms Strategic Case and further develops evidence of outcomes / impacts through the Socio-Economic Case.</p> <p>- Management Case will set out the framework for managing risk.</p>

2.2.8 The above table clearly demonstrates that the STAG compliant appraisal undertaken in the SBC and the impending 'Five Case' assessment which will be undertaken in the OBC clearly aligns with, and indeed further develops, the Council Critical Success Factors. We would therefore suggest that there is no requirement to amend or further develop the TPOs or change the approach to the appraisal.

2.3 Capital Investment Timeframe

2.3.1 The current Fair Isle vessel, the MV *Good Shepherd IV* is based on a fishing trawler design and is ageing, having entered service on the Fair Isle route in 1986. Sailings are slow, uncomfortable, and weather restricted, such that maintaining a regular timetable is unachievable. The vessel operates on a Lo-Lo basis (Lift-on, Lift-off) with a cargo capacity of around 55 tonnes and is rated for a maximum of 12 passengers. In April 2021, the Council published a review of the current life expectancy of the MV *Good Shepherd IV* – this document is included in **Appendix A** and indicates a **life expectancy of approximately five years**, with some expenditure. The replacement of the vessel therefore represents the critical path for this project.

2.3.2 Although the current shoreside infrastructure appears in serviceable condition (notwithstanding the slipway cradle and winch, where the main frame is corroded at the base), any departure from the existing vessel form will require harbour works at both Fair Isle and Grutness (if that mainland port is retained). It is anticipated the harbour works would be designed and procured alongside the design and procurement process for a new vessel.

2.3.3 The Management Case – which is set out in Chapter 10 – incorporates a detailed programme for the Fair Isle project.

2.4 Capital Options Emerging from the SBC

2.4.1 As previously noted, the SBC was covering nine islands and the options developed were therefore relatively high-level. There were **six** ferry capital options listed in the SBC, of which **three** were shortlisted for further development, as follows:

- **Option CO1a:** Replace the MV *Good Shepherd IV* with a like-for-like vessel.
- **Option CO1b:** Replace the MV *Good Shepherd IV* with a like-for-like, but materially faster, vessel.
- **Option CO2:** Replace the MV *Good Shepherd IV* with a bespoke Ro-Ro vessel.
 - *Shortlisted for further development in SBC*
- **Option CO3:** Replace the MV *Good Shepherd IV* with a Lo-Lo freighter shared with Foula.
- **Option CO4:** Replace the MV *Good Shepherd IV* with a passenger vessel and a Lo-Lo freighter shared with Foula.

- *Shortlisted for further development in SBC*
- **Option CO5:** Bespoke mainland-based Lo-Lo ferry service.
- *Shortlisted for further development in SBC*

2.4.2 The primary outcome of this OBC will be a preferred capital option. In the context of a more focused study, it is therefore beneficial to revisit all of the above options, whether included or excluded at SBC, to ensure that the shortlist of options to be developed at OBC remains appropriate.

Review of SBC Options

2.4.3 The fundamental choice posed in the SBC in relation to the Fair Isle ferry service is whether the island should:

- continue to be served solely by an island-based vessel;
- be served solely by a mainland-based vessel; or
- a combination of the two (i.e. a passenger only island-based vessel supplemented by an itinerant freighter).

2.4.4 During the OBC process, the understanding, contribution and acceptability of the capital options has moved on from those presented in the SBC, which are now considered outdated. The following comments present the updated position, with **Option CO1b** modified to align with current views:

Option CO1a: Replace the MV Good Shepherd IV with a like-for-like vessel

- This option would keep the vessel based in, and crewed from, Fair Isle.
- This option would provide a replacement vessel within the small workboat classification (<24m Length Overall (LOA)) and would be broadly compatible with current crew capability (subject to training to meet new regulations). However, the design and performance of the current vessel is obsolete and replacement with a like-for-like vessel would offer a poor-quality outcome.
- This option would require modest harbour works to refurbish / replace the cradle, winch, and slipway at Fair Isle.
- Option CO1b below would be preferable and thus Option CO1a remains excluded from further consideration.

Option CO1b: Replace the MV Good Shepherd IV with a like-for-like, but materially faster, vessel

- This option would keep the vessel based in, and crewed from, Fair Isle.
- It would also provide a replacement vessel within the small workboat classification (<24m LOA) and be compatible with current crew capability (subject to training to meet new regulations). The design and performance of the replacement vessel would not strictly be like-for-like as per Option CO1a, but would benefit from modern design, engine and hull efficiency.
- It is likely that the replacement vessel would have a different geometry than the current vessel (greater displacement, length, beam, and deeper drafted) and a different hull form and propulsion system.
- Assuming a like-for-like operation, this option would require harbour works to refurbish / replace the cradle, winch, and slipway, including onshore civil engineering work to enlarge the noust formed in the cliff.
- Dredging at Fair Isle and Grutness would also likely be required to accommodate a deeper drafted vessel without tidal constraints.

- Due to spatial constraints at both harbours, there are logistical challenges to undertaking the new harbour works whilst maintaining the service.
- The estimated cost of replacement in the SBC appears low and does not include the necessary harbour works.

Option CO2: Replace the MV Good Shepherd IV with a bespoke Ro-Ro vessel

- This option would keep the vessel based in, and crewed from, Fair Isle.
- The SBC recommended the introduction of a catamaran on this route based on information and views available at that time. However, as the OBC offers a more detailed consideration of options, the choice between a monohull and catamaran will be more fully explored.
- A new slipway (or small linkspan) would be needed at both Fair Isle and Grutness along with an extended aligning structure at Grutness and modest dredging.
- Assuming it is necessary to bring the vessel ashore to overnight in poor weather at Fair Isle (this will be reviewed as part of this study), this option would require harbour works to refurbish / replace the cradle, winch, and slipway including onshore civil engineering work to increase the size of the noust formed in the cliff.
- Dredging at Fair Isle and Grutness would also likely be required to accommodate a deeper drafted vessel without tidal constraints.
- Due to spatial constraints at both harbours, there are logistical challenges to undertaking the new harbour works whilst maintaining the service.
- The estimated cost of this option presented in the SBC appears low.

Option CO3: Replace the MV Good Shepherd IV with a Lo-Lo freighter shared with Foula

- This option was rejected at SBC stage because it would be highly detrimental to both the Fair Isle and Foula communities. In addition, designing a vessel which is inter-operable between the two islands would be challenging without significant harbour works.
- No additional evidence has emerged which suggests that this option should be considered, and it thus remains excluded from further consideration in the OBC.

Option CO4: Replace the MV Good Shepherd IV with a passenger vessel and a Lo-Lo freighter shared with Foula

- This option was retained at SBC stage as it was considered that an on-island passenger vessel could mitigate the effects of delivering freight through a non-island based vessel. Whilst this would be unpopular with the community, it presented an opportunity for potentially deploying a larger freight vessel capable of carrying much higher loads than MV *Good Shepherd IV* (Fair Isle) and MV *New Advance* (Foula).
- However, carryings and survey work undertaken early in the OBC process clearly demonstrated that the primary function of the Fair Isle ferry is facilitating the island supply-chain. **This option would not meet this need and is thus excluded from further consideration at the outset of this OBC.**

Option CO5: Bespoke mainland-based Lo-Lo ferry service

- This option would involve relocating the ferry service to Shetland mainland. The vessel would lie overnight at Grutness (with harbour works) or Lerwick and would require a mainland-based crew.
- The SBC acknowledged that this option would be highly unpopular locally, but it was retained as it provided an opportunity to address a number of the infrastructure constraints and operational challenges associated with the Fair Isle service.

2.4.5 From our review of the options considered in the SBC, the following are recommended to be taken forward for further consideration as part of the OBC:

- **Option CO1b (hereafter referred to as Do Minimum):** Replace the MV *Good Shepherd IV* with a like-for-like, but materially faster, vessel.
- **Option CO2 (hereafter referred to as Option 1):** Replace the MV *Good Shepherd IV* with a bespoke Ro-Ro vessel.
- **Option CO5 (hereafter referred to as Option 2):** Bespoke mainland-based Lo-Lo ferry service.

SBC Revenue Options and Revenue OBC

2.4.6 In order to work towards delivering the TPOs, the SBC recommended a phased increase in the number of ferry connections to and from Fair Isle each week. This recommendation was progressed into a Revenue OBC, which is running parallel to this study.

2.4.7 Whilst it is acknowledged that the level of service which can be offered to Fair Isle will always be, to some degree, limited by the infrastructure, geography and human resource, it was evidenced in the SBC that the current connections do not fully meet the year-round travel and supply-chain needs of the island. The ferry-related revenue option considered in the Revenue OBC therefore is:

- **Potential Service Enhancement FI1:** Increase the service frequency of the current Fair Isle ferry.
 - This potential service enhancement would involve increasing the ferry service frequency to two rotations per week in winter and 3-4 weekly rotations in the summer, essentially almost doubling the current number of sailings.

2.4.8 The emerging Revenue OBC conclusions suggest that the above potential service enhancement would be of benefit to Fair Isle. However, given the challenges around the delivery of the current timetable, the Revenue OBC concludes that it cannot be delivered until new tonnage is introduced onto the route and its performance with regards to maintaining the timetable is established.

2.4.9 Whilst this OBC is solely focused on a capital solution for Fair Isle, the solution must reflect the aspiration of the community for additional connections, as expressed through the Revenue OBC (i.e. it should, as far as possible, provide infrastructure which facilitates a more frequent and reliable service).

2.5 Interaction between Air and Ferry Services

2.5.1 This OBC is solely focused on identifying the most appropriate capital solution for the Fair Isle ferry service. However, in developing this solution, it is important to place the ferry service within the overall context of travel to and from Fair Isle.

2.5.2 Whilst the air and ferry services are both essential in meeting the overall transport needs of Fair Isle, the data suggests that they serve two different markets. The air service is the dominant mode for passenger travel (resident and visitor), as is shown in the chart below, which compares passenger carryings across both modes:

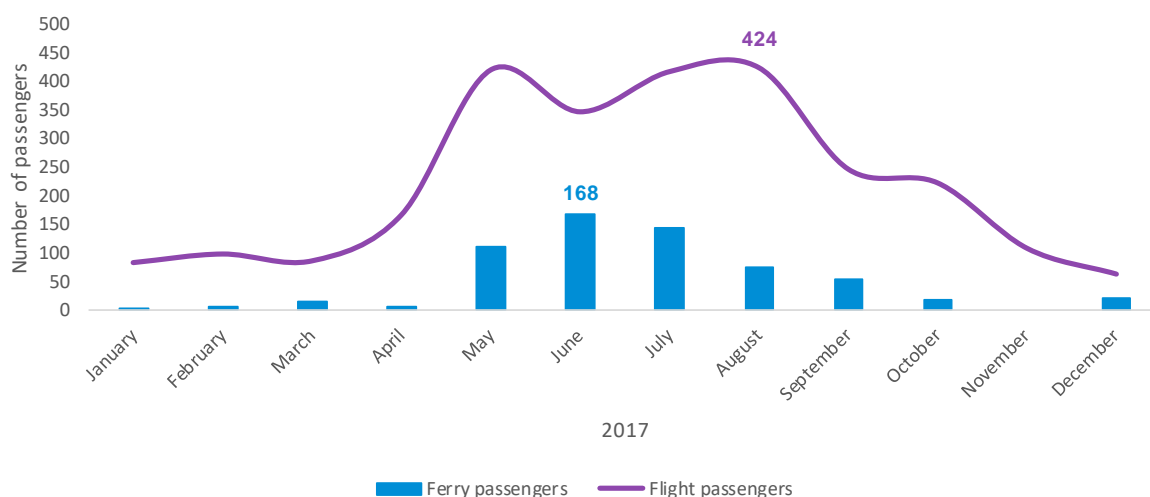


Figure 2.1: 2017 Ferry vs Air Passengers

- 2.5.3 The 2018 Fair Isle household survey (conducted as part of this OBC) found that, unsurprisingly, the primary reasons for travelling by air were shorter journey times, improved access to Lerwick, better passenger comfort and a higher frequency service. The ferry only tends to be used when the air service is disrupted, full or the user has significant amounts of luggage / goods to move (it is also on the 'bucket list' of some visitors to the island).
- 2.5.4 Whilst air is dominant in terms of passenger travel, the ferry forms the main supply-chain link to the island, carrying everything from food and plant and machinery to livestock and waste from the island. Given the length and exposure of the crossing, the ferry will in all likelihood never be the main mode of passenger travel. Nonetheless, the household survey did identify a limited appetite amongst Fair Isle residents to travel more by ferry if their concerns around reliability, journey time and frequency could be addressed to some degree.
- 2.5.5 The above evidence helps to provide something of an initial 'output specification' for any future ferry – i.e. a vessel that improves the supply-chain efficiency of the island whilst also offering a more reliable, frequent and faster crossing.

2.6 Changes in the Wider Environment

- 2.6.1 This section considers changes in the wider environment which may have implications for the SBC outcomes and thus the delivery of the OBC.

Fair Isle Bird Observatory

- 2.6.2 The Fair Isle Bird Observatory (FIBO) tragically burned down in March 2019. FIBO was the main provider of accommodation on the island and also a significant source of income and employment.
- 2.6.3 There are proposals to rebuild the Observatory but the necessary funding has not yet been raised. In all likelihood, any new ferry would come too late to assist with the transportation of people and materials. However, it would support the operation of any new build through ideally offering a higher freight capacity and more frequent passenger connection for those visiting the island.

Air OBC

- 2.6.4 The primary change in the wider environment since the production of the SBC is the completion of the Air OBC in August 2018 (and signed off by full Council in June 2019). The Air OBC considered the level of service which should be provided to Fair Isle, Foula, Papa Stour,

Skerries and Unst and developed outline timetables. It is also considered the most appropriate future mainland airfield.

Fair Isle Connectivity / Timetable

- 2.6.5 The primary recommendation emerging from the Air OBC was to retrench the air service to serve Fair Isle and Foula only. The options developed within that OBC broadly focused on improving weekday connectivity, which is arguably more important than weekend connectivity from a resident perspective in terms of accessing key services.
- 2.6.6 Two options were shortlisted for further consideration (Options 1 & 3):

Option 1

- The introduction of a total of **five rotations per day from Tingwall or Sumburgh, with alternating days of 3 rotations & 2 rotations for each island**. This would provide for 15 rotations per week to Fair Isle, an increase of three per week. It is recommended that this timetable is operated for the summer or peak summer timetable, providing island residents want this level of service and can provide the necessary airfield resourcing. The illustrative timetable is shown below:

Option 3

- [illegible]

- 32

- The timetables presented above set out the **maximum** service which can be delivered. Engagement with the Fair Isle and Foula communities would be required to determine whether they would want this level of service and whether it can be accommodated within available island resources. If not, a scaled back version of Option 1 and / or 3 could be delivered, potentially with *ad hoc* / banked flights being offered where a scheduled rotation is not flown.

2.6.7 It is our understanding that the Council plans to implement these changes in the near-term. Given the largely separate markets served by air and ferry (see Section 2.5), this change in the level of service is only likely to have a peripheral impact on the ferry service (although there may be a logistical challenge to be overcome in terms of providing fire cover for additional flights at the airport alongside the operation of the ferry).

2.7 Conclusion

2.7.1 This chapter has confirmed that the findings of the SBC remain largely appropriate but that further option development and appraisal is necessary to arrive at a deliverable preferred option, which is the required output of the OBC. This is particularly the case in terms of type and overnight location of the Fair Isle ferry.

3 Socio-Economic Case - Review of Current Service

3.1 Overview

- 3.1.1 This chapter briefly profiles the current assets and operational practices in the delivery of the Fair Isle service, providing context for the subsequent option development process.

3.2 Vessel

Vessel Characteristics and Passenger Accessibility

- 3.2.1 The Fair Isle service is operated by the MV *Good Shepherd IV*, which:
- is over 30-years old, having entered service on the Fair Isle run in 1986;
 - is an 18-metre vessel with a hull form broadly similar to that of a traditional fishing vessel;
 - operates under the workboat code, limiting passenger numbers to 12; and
 - delivers cargo operations on a Lo-Lo basis, with a vessel mounted crane being used to handle cargo. She can carry cargo in a below deck hold and on the weather deck.
- 3.2.2 As noted in the previous chapter, the primary mode of travel to / from Fair Isle for both visitors and residents is the air service, with the ferry predominantly fulfilling the supply-chain needs of the island. Nonetheless, the ferry is used by passengers when: (i) the air service is fully booked or disrupted; or (ii) there is a requirement to take equipment / goods which cannot be carried on the air service.
- 3.2.3 Whilst the MV *Good Shepherd IV* has served Fair Isle well over the years, the vessel is now approaching life expiry and in need of immediate replacement. As well as being slow, uncomfortable and capacity constrained in terms of cargo carrying capability, she falls well short of modern design standards.
- 3.2.4 A key issue is passenger accessibility. For those with a mobility impairment, the vessel is boarded / alighted through the passenger being placed in an open-top crate and craned onto the vessel, as is shown in the image below:



Figure 3.1: Access to MV *Good Shepherd IV* for the Mobility Impaired

- 3.2.5 Once onboard the vessel, assistance is required from the crew to move the passenger from the weatherdeck into the passenger lounge, as there is a large sill to negotiate.
- 3.2.6 Even for those able to board the vessel independently, access is challenging, particularly given the demographics of the island population, which is skewed towards the older age categories. Passengers board at the level of the wheelhouse and either have to: (i) descend an external ladder to the weatherdeck and then access the lounge over the aforementioned sill; or (ii) descend by ladder through a narrow internal hatch to the passenger lounge. These access arrangements are shown in the photographs below:



Figure 3.2: Access to the Passenger Lounge on MV *Good Shepherd IV*

- 3.2.7 Clearly, the above access arrangements are challenging both for the island population and visitors, whilst also being significantly outwith the regulations which would be applied to a newer vessel.
- 3.2.8 The service relies on the MV *Good Shepherd IV* and her Fair Isle crew as there is no relief vessel and she is the only vessel operating on this route. When the vessel cannot sail, service resilience is typically provided through scheduling additional flights. The Skerries ferry MV *Filla* will on occasions be chartered to operate a run to the island when a piece of cargo needs moved which cannot be accommodated on the MV *Good Shepherd IV*.

Vessel Characteristics

- 3.2.9 The MV *Good Shepherd IV* is a monohull vessel with a single engine and single screw and is categorised as a small workboat under the Maritime and Coastguard Agency (MCA) Workboat Code⁴ as it predominantly provides a freight service with limited passenger capability. Its general dimensions and properties are summarised in the table below.

Table 3.1: General Parameters of the MV *Good Shepherd IV*

Parameter	Value
Displacement	125 tonnes (approx.)

⁴ MCA (2018) The Workboat Code, Edition 2, The safety of small Workboats and Pilot Boats – a Code of Practice, 31 December 2018

Parameter	Value
Length (O.A)	18.30 m
Beam	5.80 m
Depth (moulded)	3.05 m
Draught (laden)	2.70 m
Draught (light)	No data
Passenger Capacity	12 No.
Cargo Capacity	54 tonnes
Propulsion	Single engine, single screw

- 3.2.10 Sailings are slow and uncomfortable, with few passenger amenities, and are highly weather restricted such that keeping a regular timetable is difficult. These factors can deter all but the hardiest of passengers from using the ferry service and subsequently places pressure on the Fair Isle air service, which has finite capacity (with the aircraft limited to eight passengers).
- 3.2.11 Furthermore, as there is no back-up engine, if propulsion fails during the crossing, it is necessary to rescue the vessel and tow her ashore.
- 3.2.12 The MV *Good Shepherd IV* overnights in the harbour at North Haven, Fair Isle. In fair weather during the summer, she berths alongside the quay and during winter, or in inclement weather / sea state, is brought ashore using a cradle and slipway.

Key Point: The MV *Good Shepherd IV* is largely life expired and falls well below modern accessibility standards.

3.3 Operational Practice

Vessel Base

- 3.3.1 The MV *Good Shepherd IV* overnights on Fair Isle and is crewed from the island.

Timetable

- 3.3.2 The figure below shows the current Fair Isle summer timetable (air services are overlaid for context):

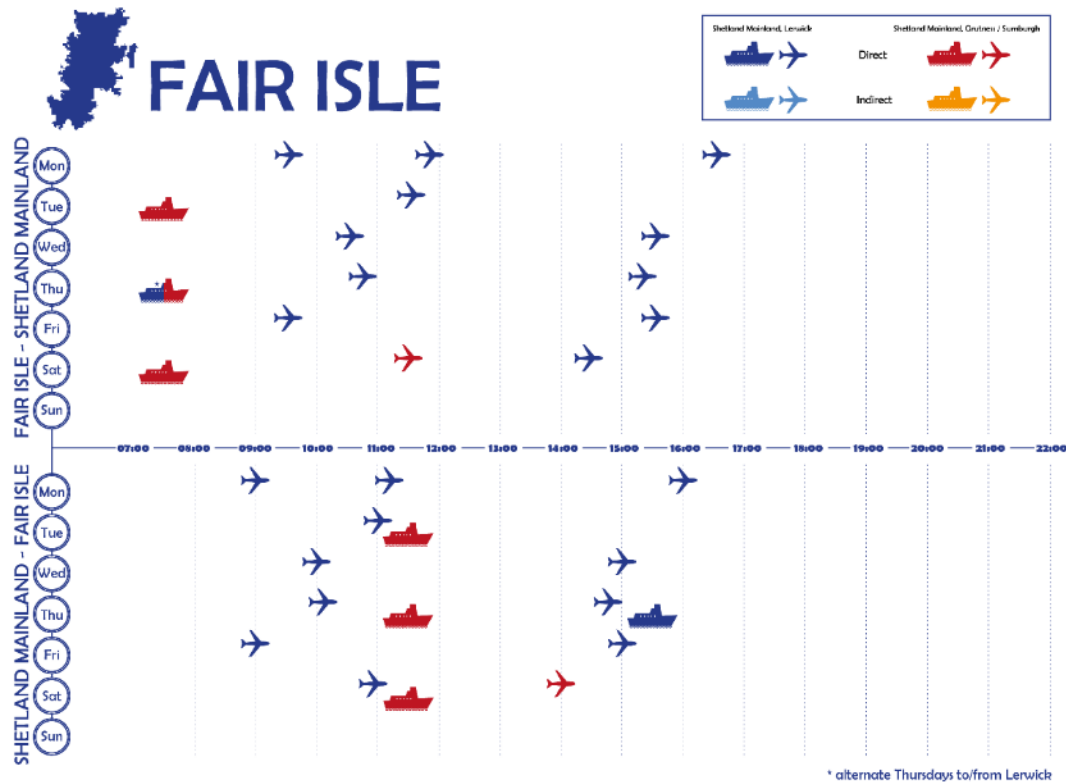


Figure 3.3: Fair Isle Summer Timetable

- 3.3.3 There are three rotations from Fair Isle per week in the 'peak' summer timetable, which in 2019 (pre-COVID-19) operated between 6th May and 6th October. The Thursday sailing is to Grutness or Lerwick on alternate weeks. The winter timetable consists of a single rotation per week, which is on a Tuesday.
- 3.3.4 Whilst the above is the published timetable for the route, the crossing is one of the most weather dependent in Europe, particularly given its operation by an 18-metre LOA vessel. Therefore, the route is frequently not operated to timetable (this is explored in more detail in Chapter 4).
- 3.3.5 Where the timetable cannot be maintained, the crew will seek to identify a practical 'weather window' during which they can get the vessel into the water, load cargo, sail to Grutness, discharge / load cargo, sail back to Fair Isle and pull the vessel back out of the water. The return sailing time is 5h 20m, plus time required for vessel positioning and cargo handling at both ends of the crossing. A reasonable length of weather window is therefore required and thus the flexibility of an on-island crew is essential in maximising the number of sailings that can be operated across the year.
- 3.3.6 As the berth at Grutness is exposed to weather from the north through to the east, the decision on whether to sail is based on forecasts as well as the sea state at the berth in Grutness. This is ascertained through a telephone call to a local resident at Grutness, who will provide feedback on conditions at the berth. Whilst a rudimentary measure, it has proven to be effective over many years. However, in the delivery of a modern ferry service, alternative measures should be investigated. Indeed, it is understood that the Council Ferries Engineering Team is currently exploring internet-based CCTV options which would allow the Master of MV *Good Shepherd IV* to view the sea state directly prior to departure.

Key Point: Whilst there is a published timetable for the Fair Isle ferry service, the conditions en-route and at both berths preclude regularly operating to that timetable. The timetable is worked around weather windows, with an on-island crew providing the essential flexibility required to be able to do this.

Cargo Handling

- 3.3.7 The MV *Good Shepherd IV* is a Lo-Lo vessel and thus the handling of any cargo which cannot be moved by hand is by use of the vessel-mounted crane, which has a lifting capacity of 1.5 tonnes when lifting goods / cargo from the quayside (and a radius of approximately 5m).
- 3.3.8 The use of a crane adds a further challenge in terms of reliability – even if the passage can be made, conditions alongside have to be conducive to crane-based operations, particularly when moving heavy items which can cause the vessel to lean, affecting its stability. It should be noted that conditions on the berth at Grutness can cause the vessel to surge along the berth, with impact on craneage operations. To mitigate this motion, the Master keeps the power on the vessel, straining against the mooring lines.
- 3.3.9 The vessel has a hold under the main deck and larger items can be carried on the weather-deck. Total deadweight capacity is 54 tonnes, which deck logs suggest is often insufficient (more details on capacity related issues are included in Chapter 4). For context, the photograph below shows a full load of sheep – 152 in total – being moved on the vessel deck.



Figure 3.4: Full load of sheep being moved on MV *Good Shepherd IV*

Key Point: The overall carrying capacity of the MV *Good Shepherd IV*, together with a significant weight limitation on her onboard crane, imposes a major constraint on the Fair Isle supply-chain.

3.4 Crewing

- 3.4.1 As previously noted, the requirement for the Fair Isle service to work around weather windows means that significant flexibility is required in the operation of the service and the crew is therefore island-based. The crew contract is to operate three days per week in summer and one day per week in winter, which provides for an average 31.5 hour week plus flexible leave. It should be noted this is an average hours contract, i.e. the crew are not employed to work on specific days, rather they sail when conditions permit.
- 3.4.2 As a workboat, the MV *Good Shepherd IV* can sail with a minimum crew of 2, a Master and an Engineer. However, given the cargo handling requirements of the service and the need to attend to passenger needs on the long crossing, the vessel generally sails with a crew of 4 (minimum). Whilst at sea, the Master controls the vessel, the Engineer looks after the engines etc. and the two deckhands look after the passengers (who are often unwell due to the nature of the crossing and the motion of the vessel). When handling cargo at the berth, the Master oversees operations / keeps the power on the vessel, the Engineer operates the crane, one deckhand handles cargo ashore and the other handles cargo in the hold or on the weather-deck.
- 3.4.3 The workboat classification also means that the minimum required certification for the Master is a Boatmaster Licence. There is one retired relief Master on Fair Isle who meets this criterion in addition to the regular Master. The other crew members only require basic qualifications such as sea survival, radio operations and vessel familiarisation / induction training.
- 3.4.4 Table 3.2 below provides a summary of the current crew complement for the MV *Good Shepherd IV*. The table includes rank, qualifications and anticipated retirement age for both the main and relief crew. It should be noted that there are seven crew (six permanent and a Relief Master who is retired) in total, with some members of the crew able to 'act up' to fill different roles on the vessel.

Table 3.2: MV *Good Shepherd IV* - Current Crewing Arrangements & Qualifications

Role		Main	Relief
Master	Qualification(s) held	Workboat Master <200GT for up to 250 miles from shore	STCW Vessels less than 500GT with a geographic restriction
	Anticipated year of retirement (based on retirement at 65)	2032	2022
Engineer	Qualification(s) held	Time served engineer meets requirements through 'Grandfather Rights'	MCA AEC 30 course and Engine specific training and Oral exam for MEOL
	Anticipated year of retirement	2027	2032
Mate	Qualification(s) held	Main Mate has enough Merchant Sea Time to progress to further qualifications. Able Seaman (AB) Short range radio ECDIS cert Sea Survival, Fire Fighting Advanced fire-fighting, ENG 1Medical	Sea Survival, Fire Fighting and a Medical Certificate

Role		Main	Relief
		First Aid	
	Anticipated year of retirement	2031	2032
Deckhand	Qualification(s) held	Sea Survival, Fire Fighting and a Medical Certificate	Induction Training Fire fighting Sea survival
	Anticipated year of retirement	Deckhand 1: 2032	Deckhand 2: 2032 Deckhand 3: 2063

- 3.4.5** With the exception of the Relief Master, the majority of the crew have around a decade until the assumed retirement age of 65. Continued provision of the service from Fair Isle appears relatively sustainable in the short to medium-term, notwithstanding the requirement for a Relief Master. However, there will be a significant sustainability challenge in the early 2030s, at which point two thirds of the six permanent crew are due to retire. This issue will be considered carefully when appraising options.

Key Point: The current crewing arrangements for the Fair Isle service are well-established and there is a sufficient number of crew available to maintain the viability of the service. However, if the decision is ultimately taken to base any new vessel on the island, a crew continuity and succession planning exercise will be required

3.5 Current Infrastructure

- 3.5.1 This final section provides an overview of the current landside infrastructure at both Fair Isle and Grutness, considering both characteristics and conditions.

Characteristics and Conditions

Fair Isle

- 3.5.2 The Fair Isle ferry berth is located within the harbour at North Haven⁵ on the north-east of the island. The natural harbour also provides berths for other users and is typically busy with visiting pleasure craft during the summer months. The harbour is sheltered from the east and west by high rocky cliffs, and notionally sheltered from the south by an isthmus (narrow strip of land between Fair Isle and Bu Ness), and to the north by a rock armoured breakwater. However, northerly conditions cause significant wave motion at the berth and therefore the noust is used to house the vessel overnight.
- 3.5.3 Harbour facilities include:
- 60m long berthage with 3.60m water depth at MLWS⁶;
 - 14m wide general cargo apron and storage building behind;
 - single track access road with limited space for parking/marshalling;
 - finger pier aligning structure, slipway (1:10 nominal slope), cradle, noust and winch-house; and
 - toilets, shower, fresh water, and waste disposal at facilities behind the pier.

⁵ Grid reference 59 32' N 01 36' W and Admiralty Chart 3299

⁶ The draft of the MV Good Shepherd IV is 2.7m, indicating that vertical motion from swells >1.0m risk the vessel contacting the bed



Figure 3.5: View south onto the harbour facilities at Fair Isle

Source: <https://www.shetland.org/plan/areas/fair-isle>

3.5.4 The tidal data for North Haven are shown in the table below:

Table 3.3: Tidal data for North Haven (estimated)

Tidal State	Mean High Water Spring (MHWS)	Mean High Water Neap (MHWN)	Mean Low Water Neap (MLWN)	Mean Low Water Spring (MLWS)
Water level	+2.2m CD	+1.7m CD	+1.0m CD	+0.6m CD

Source: <https://www.shetland.gov.uk/ports/smallports/fairisle.asp>

3.5.5 The current condition of the harbour infrastructure is not generally known and current topographical, bathymetric, or condition survey data are not available. From record drawings, the slipway was built in the early 1980s and the solid quay is a more recent addition, built in the early 1990s. The finger pier aligning structure pre-dates both of these phases of development and appears on OS maps from 1973⁷. The structures have therefore experienced varying lengths of exposure to marine conditions ranging from 30 years to 50+ years.

3.5.6 An annotated image of North Haven is shown the graphic below:

⁷ <https://www.old-maps.co.uk>



Figure 3.6: North Haven Harbour Infrastructure

Source: Ordnance Survey © Crown copyright 2019. All rights reserved. Licence number 100026791

- 3.5.7 The finger pier aligning structure is a concrete suspended deck on discrete steel vertical bearing piles, with raking piles at the outer end of the pier. It is fronted on the slipway face with vertical timber fender piles. The steel and concrete elements show signs of deterioration and a degree of remedial work will be needed to extend the useful life of these harbour structures.
- 3.5.8 The vessel is brought ashore using a steel cradle that rides on the slipway rails and is drawn up and down by an onshore winch. A 2017 survey⁸ of the cradle frame reported that it was in a fair condition with a degree of corrosion. However, splice plates were noted as being damaged and the moving elements, such as pins, bushes, and wheels, were recorded as being in a poor / defective condition suffering from heavy wear, resulting in excessive play and shuddering during operation. The survey report includes recommended remedial works to extend the life of the asset and includes extensive cleaning, arresting corrosion, repainting, restoring the splice plates, and replacing all of the moving parts. In 2018, the wheels on the cradle were replaced. In 2019, the slipway rails were surveyed and repaired, along with repairs to the cradle and replacement of components in the winch gear box.
- 3.5.9 The slipway is formed at a slope of 1:10 using parallel steel rails at a gauge of 3.5m supported on separate concrete beams at roughly 6.0m centres for a length of 60m from its toe and then on to a concrete ramp. The slipway rails extend into the noust for a length of approximately 30m. The noust (shown in the image below) is 10m wide and is formed in the cliff behind the quay. It contains the winch-house and shelters the slipped vessel when she is brought ashore.

⁸ Malakoff (2017) Fair Isle Condition Report, 25 August 2017



Figure 3.7: MV *Good Shepherd IV* within noust at Fair Isle

- 3.5.10 Topographical feature and bathymetric surveys along with a detailed visual condition inspection and assessment of the existing infrastructure are recommended to ascertain the extent of any additional necessary remedial works and provide greater confidence of the developed options. These are recommended at detailed design stage, which is prior to FBC stage.

Grutness

- 3.5.11 Grutness ferry terminal is located at Sumburgh Head on the southern tip of the Shetland Mainland, opposite Sumburgh Airport⁹. The harbour is generally sheltered from the south and west by land and open to the north and east. The harbour is very exposed from the east through to the north-east.

- 3.5.12 Harbour facilities include:

- 30m long berthage;
- 2.1m water depth shown on Admiralty Chart - however it is known that the berth has been dredged to remove the tidal restriction, although it is not known when or to what extent the berth was dredged;
- single track access road with limited space for parking / marshalling and a bus pickup;
- heated waiting room (portacabin), stores block, toilet block and waste disposal skips; and
- Quayside storage unit with refrigerated compartment.

⁹ Grid reference 59 52' N 01 17' W and Admiralty Chart 3283



Figure 3.8: View from solid quay onto the harbour facilities at Grutness

Source: MML Site Photos

3.5.13 The tidal data for Grutness is provided in the Table below:

Table 3.4: Tidal data for Grutness (estimated)

Tidal State	Mean High Water Spring (MHWS)	Mean High Water Neap (MHWN)	Mean Low Water Neap (MLWN)	Mean Low Water Spring (MLWS)
Water level	+1.8m CD	+1.4m CD	+0.8m CD	+0.4m CD

Source: <https://www.shetland.gov.uk>

3.5.14 The current condition of the harbour infrastructure below the waterline is not generally known and record drawings, topographical or up to date bathymetric survey data are not available. A bathymetric survey was undertaken in March 2012 and an extract is included in the figure below.

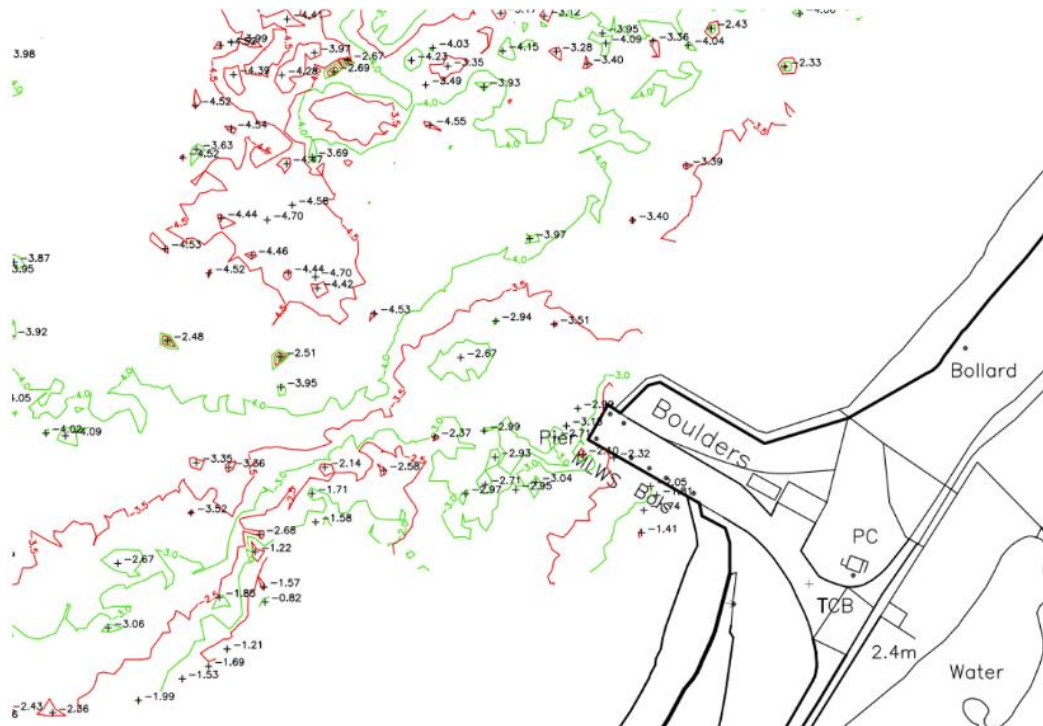


Figure 3.9: Bathymetric Survey of Grutness Pier (levels in metres relative to Ordnance Datum)

Source: Shetland Islands Council (2012) Hydrographic Survey, Grutness Voe, Drawing SM-6-1-100, September 2012

- 3.5.15 This survey suggests that the advertised 2.1m water depth is available only over the outer half of the berth and that water depth rapidly diminishes toward land as the beach emerges. However, it is understood the berth has been dredged using a long-reach excavator, removing the tidal restriction.

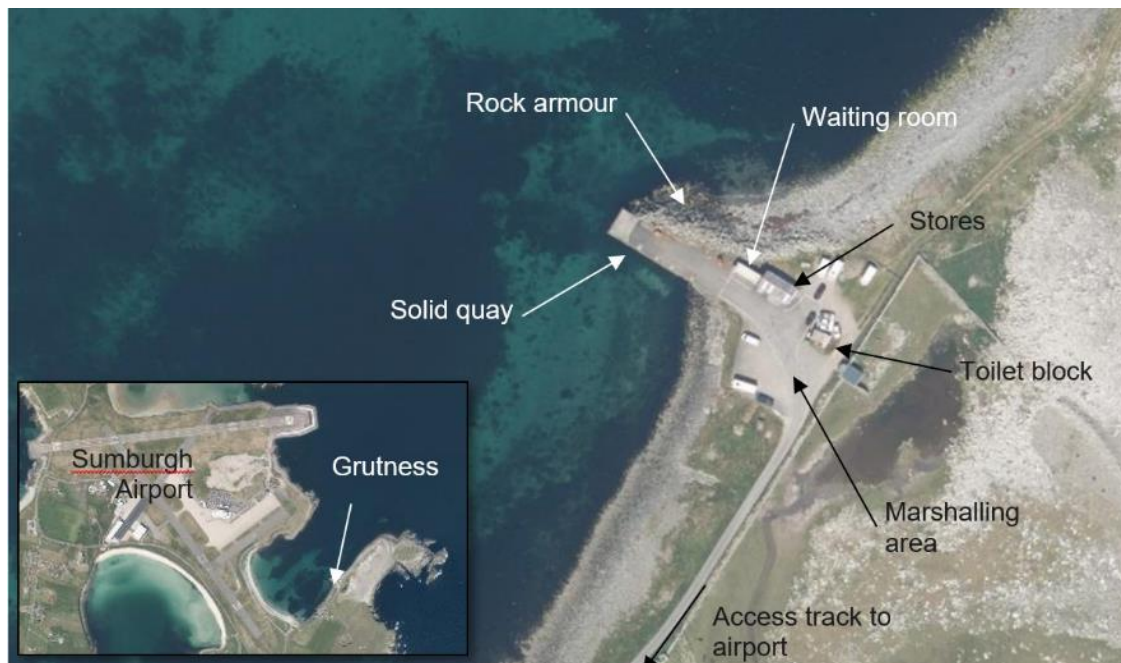


Figure 3.10: Grutness Harbour Infrastructure

Source: Ordnance Survey © Crown copyright 2019. All rights reserved. Licence number 100026791

- 3.5.16 Like the finger pier at Fair Isle, the solid quay structure appears on OS maps from 1973¹⁰. There is also an earlier pier further to the south present from around 1900. The solid quay is constructed from concrete crib-lock units with a stone fill and is possibly capped with concrete with a flexible surfacing. Its south-western side provides the berth frontage and is faced with vertical rubber extruded section 'D-fenders'. The north-eastern side is faced with a rock armour revetment which extends around 1.0m above the deck level and provides nominal protection from wave attack. However, due to the short length of the quay, the rock revetment is not considered a very effective protection to the berth, which is vulnerable to swell and reflected refracted waves causing the vessel to surge on the berth. Waves break over the revetment and also wash over the end of the pier during moderate easterlies.
- 3.5.17 The solid quay structure has experienced 46 years of exposure to maritime conditions. The concrete elements show signs of deterioration and a degree of remedial work should be considered to extend the useful life of the harbour structures. A topographical feature survey that ties into the bathymetric data along with a detailed visual condition inspection and assessment are recommended prior to FBC stage to ascertain the extent of any remedial works and provide greater confidence of the preferred options.

Key Point: The landside infrastructure at both Fair Isle and Grutness is ageing would require upgrade and replacement to accommodate any new vessel, particularly given that any such vessel is likely to be longer, broader and heavier.

3.6 Next Steps

Having profiled the infrastructure and operation of the service from the Council perspective, the next three chapters consider the service from the public perspective. They explore the connectivity of the island, economy & society of Fair Isle and how the ferry service supports this; and the structure of the island supply-chain.

¹⁰ <https://www.old-maps.co.uk>

4 Socio-Economic Case - Connectivity and Carrying

4.1 Overview

- 4.1.1 This chapter profiles the connectivity and carryings of Fair Isle's existing transport connections. The review is informed by vessel log books provided by the Council, alongside operator returns from Airtask. Although the period of availability of the data varies depending on the service, in the main the focus is geared towards the ferry service, although comparisons are drawn between the ferry service and air-based service for 2017, where possible, as it is important to set the overall connectivity of the island in context.

4.2 Supply side – what level of connectivity is provided by the current service?

Number of Sailings over Time

- 4.2.1 The chart below shows the number of one-way sailings to / from mainland Shetland over the period 2010 to 2018. Over this nine-year period, 1,703 sailings were completed, with the median number of yearly sailings being 184. It can be seen that there has been a gradual downward trend in the number of sailings per annum, potentially reflecting changes in weather patterns, the increasing age of the vessel and / or changes in demand.

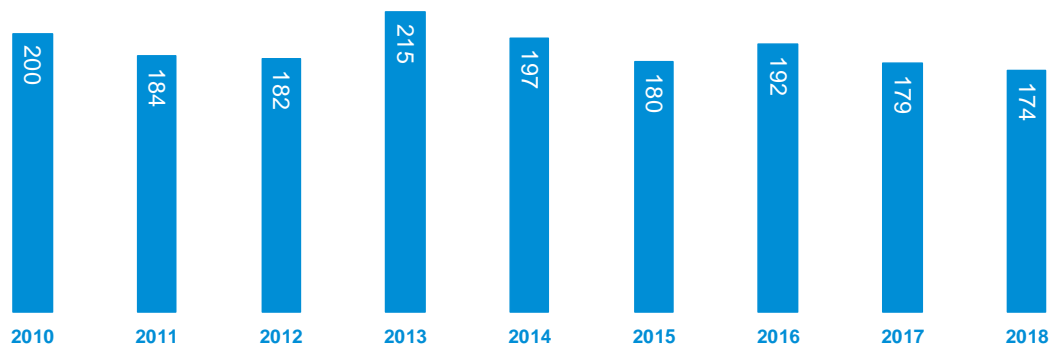


Figure 4.1: Number of completed sailings (2010 - 2018)

- 4.2.2 In more detail, the largest number of sailings are recorded in the summer months, when the number of timetabled sailings increases to three per week (Tuesday, Thursday, Saturday), and weather conditions permit more sailings to be operated. July is the peak sailing month in terms of sailings completed.

Breakdown of 2018 Scheduled Sailings

- 4.2.3 The published timetable for Fair Isle in 2018 implied a total of 97 return trips from Fair Isle, or 194 one-way trips.
- 4.2.4 The figure below sets out the status of each individual sailing as follows:
- Operating to timetabled schedule;
 - Sailing brought forward ('early');
 - Sailing delayed ('late');
 - Sailing cancelled; and

- Unscheduled additional sailing ('extra').

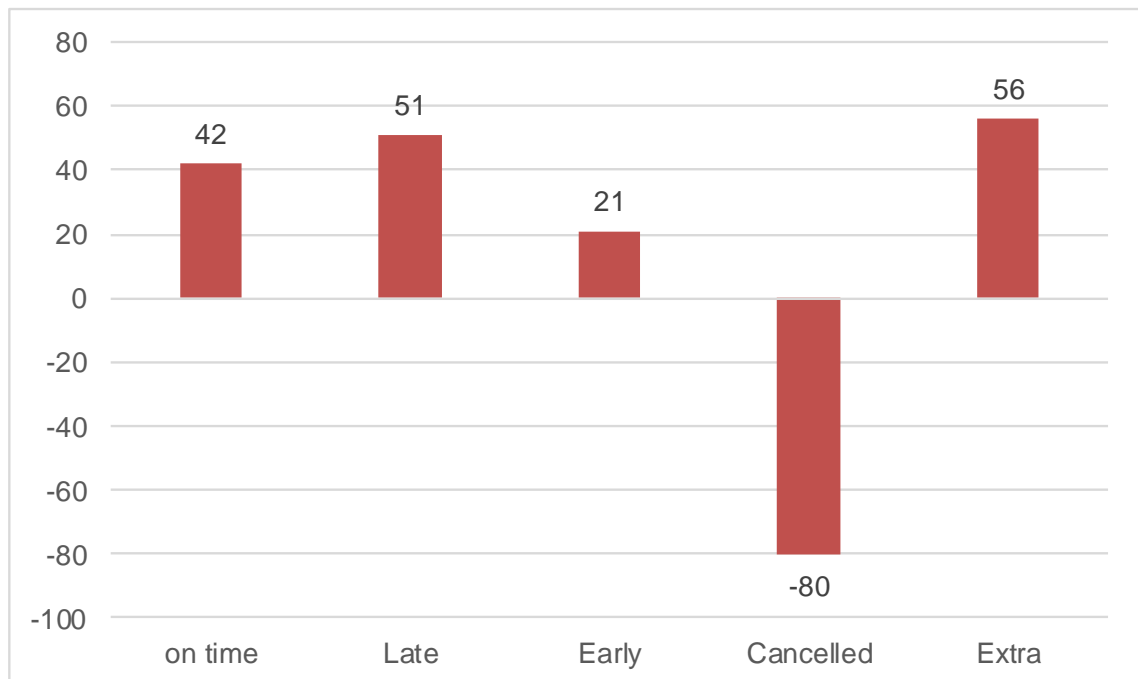


Figure 4.2: Fair Isle Ferry Sailing Status, 2018¹¹

4.2.5 It can therefore be seen that, in broad terms:

- 22% of sailings operated to timetable;
- 37% of sailings operated on the scheduled day but not at the scheduled times;
- 41% of sailings were cancelled on the scheduled day – these sailings then took place on alternative days; and
- There were 170 completed sailings against a scheduled 194 across the year.

4.2.6 The key point here therefore is that only 42 out of 194 scheduled sailings operated to timetable, due primarily to weather. It can also be seen that the number of 'cancelled' sailings is greater than the number of 'extra' sailings, indicating that the overall level of connectivity implied by the timetable is not being met.

4.2.7 These figures also illustrate that the service is currently operated with a high degree of flexibility, taking advantage of weather windows to maintain connectivity to the mainland.

2018 Sailings Calendar

4.2.8 The nature of the service means that there can be periods of several days without a ferry connection. The calendar below shows the status of each scheduled and completed sailing across the year for 2018:

¹¹ Scheduled service during the refit period are classed as 'cancelled' for the purposes of this analysis

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Figure 4.3: 2018 Fair Isle Sailings Calendar

4.2.9 This calendar confirms the pattern of services across the year. In winter, when the timetable reduces to one crossing per week, this level of connectivity is generally maintained by operating the service flexibly, taking advantage of weather windows.

Combined Air and Ferry Connectivity (2017)

4.2.10 In order to understand the full picture of Fair Isle's connectivity, the air service and ferry service have to be considered together. The figure below illustrates the number of days within each month in 2017 (the last full year for which we had flight data) where **island residents could make a return connection to mainland Shetland¹²** via:

- ferry only – to and from mainland Shetland using the ferry only;
- flight only – to and from mainland Shetland using flights only; and
- choice – to and from mainland Shetland using a choice of flight or ferry.

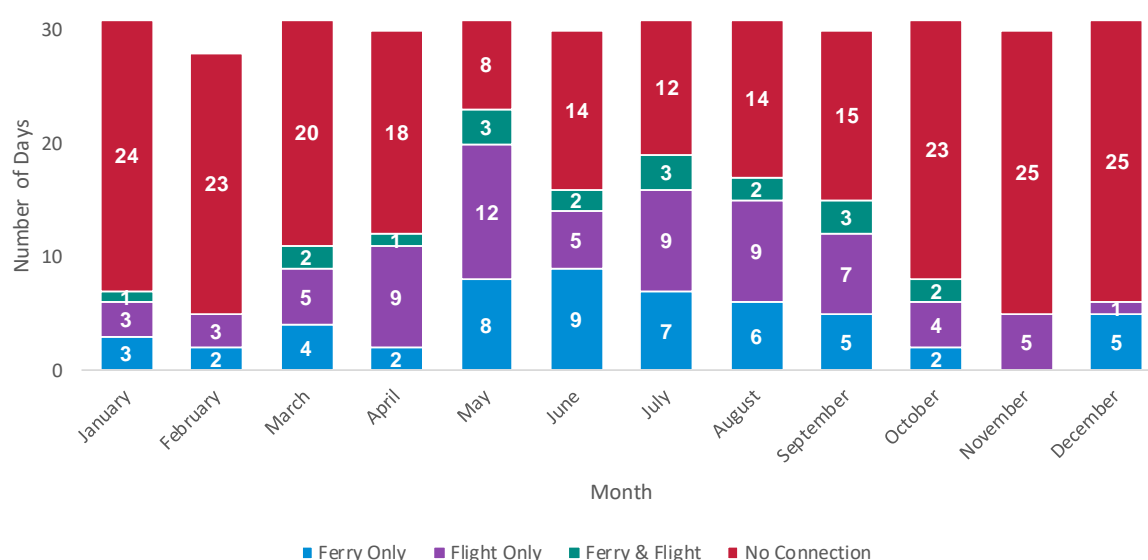


Figure 4.4: Level of Connectivity by month (2017)

4.2.11 The most significant point to draw from the above chart is the number of days across the year, where no connection can be made to or from Fair Isle from mainland Shetland. In total, 61% of days have no connectivity options available. Across the year, there were 53 days where connectivity was reliant on ferry-based connections only, 72 days which were flight connection reliant, 18 days which were reliant on a combination of the two services and finally 221 days with no connectivity.

Key Point: Fair Isle had no transport connections on 221 days in 2017. This is a particular issue in winter, where there were only a total of 23-days with connections across the months of January, February, November and December

4.2.12 Using the above analysis and options available to island residents during this period, time available on the mainland by both modes was calculated for each month investigating the minimum, average and maximum amount of time on the mainland without the need for an overnight stay.

¹² Note that this analysis excludes days when there is a single Mainland – Fair Isle – Mainland



Figure 4.5: Time available on mainland Shetland, 2017

4.2.13 From the chart, the following observations can be drawn:

- As expected, the maximum available time can be found during the summer months and in particular in September which had a maximum value of just over 8 hours available time on the mainland.
- October, November and December provided the least amount of time available on the mainland, with the lowest being just 53 minutes in October.
- Generally, there is little difference in the average available time in any month across the year, with a close correlation for 11 out of the 12 months.

Key Point: The current mix of connections provides very limited time on Shetland mainland to carry out personal business.

4.3 Demand side – what is carried on the ferry?

Passengers

- 4.3.1 It has been noted previously that the MV *Good Shepherd IV* is restricted to 12 passengers (excluding crew) as it operates under the Workboat Code. The key issue here therefore is whether this represents a constraint for Fair Isle residents or visitors to Fair Isle.
- 4.3.2 The figure below shows the annual passenger carryings on the ferry between 2010 and 2018.

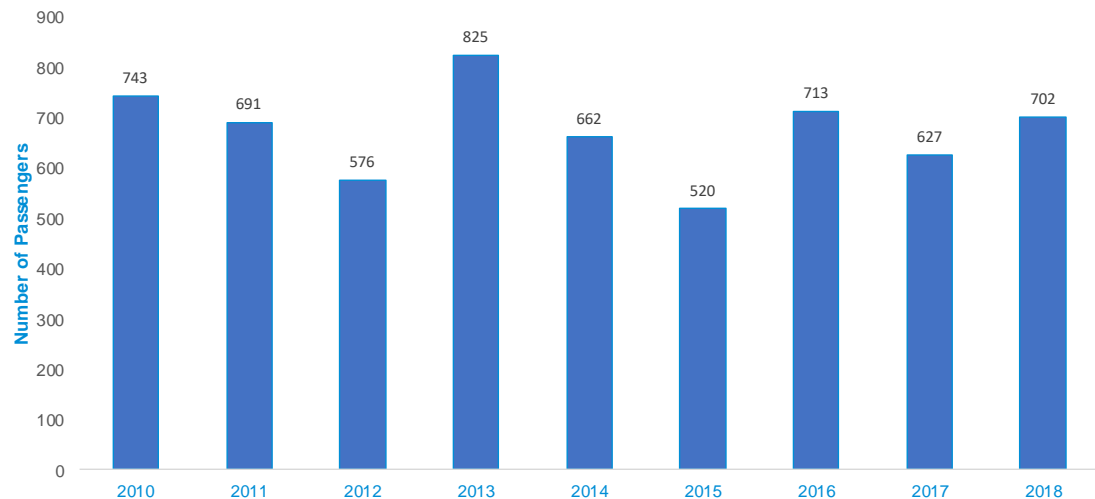


Figure 4.6: Passenger Carrying (2010-2018)

- 4.3.3 Over the period 2016-18, the ferry service carried around 700 passengers per annum. In contrast, in 2017 the Fair Isle air service carried 2,800 passengers. In 2017, the air service therefore accounted for 82% of passenger travel between Fair Isle and the mainland, confirming the ferry service's primary role as providing the island's supply chain.
- 4.3.4 Corresponding with the increased number of sailings provided during the summer months, most passengers are recorded travelling during June and July, with far lower numbers recorded during the winter months, again aligning with the number of sailings completed. In 2018, slightly over 30% of all passengers carried on this route were recorded in July, an increase of 7% over the previous year, when June was the most popular month of travel.
- 4.3.5 The average passengers per sailing was 2.85 in 2018, with a peak in July 2018 of 8.48 people per sailing.
- 4.3.6 The chart below shows the number of sailings in 2018 that carried specific numbers of passengers. As can be seen, just over a fifth of sailings carried no passengers in 2018, with a further 76 sailings (48%) carrying equal to or less than 50% capacity.

Number of Sailings by Passenger Count

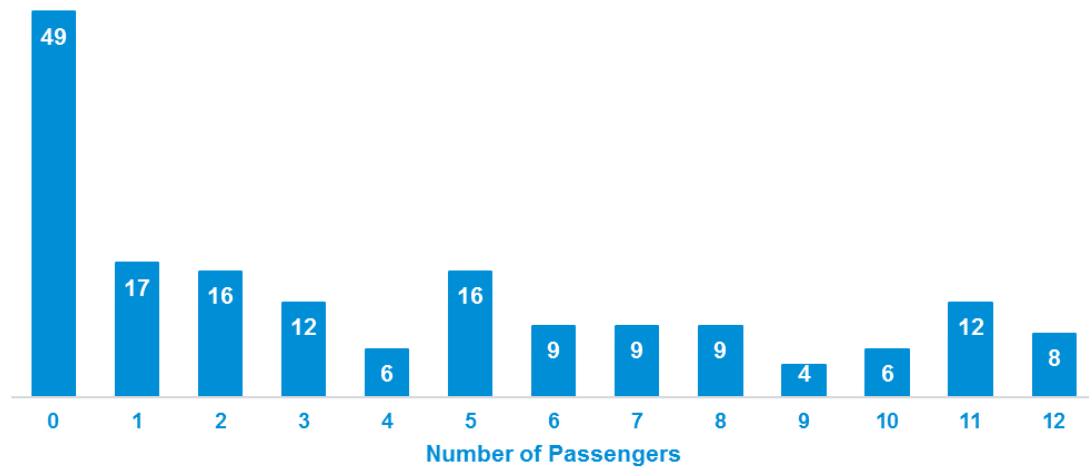


Figure 4.7: Number of Sailings by Passenger count (2018)

- 4.3.7 On only eight occasions did the vessel sail at maximum passenger capacity in 2018. This suggests that lack of passenger capacity is infrequently a problem.

Key Point: At present, there are rarely constraints in terms of passenger numbers on the ferry, highlighting its predominant role as meeting the needs of the Fair Isle supply-chain. The majority of passengers are also carried in the summer months when the service is more frequent and the weather allows more sailings to be undertaken.

Vehicles

- 4.3.8 As the MV *Good Shepherd IV* operates on a Lo-Lo basis (with a crane capacity of only 1.5 tonnes), the number of vehicles carried is very small. In 2018, of the 170 sailings operated, there were 40 sailings which carried one car and 9 sailings where two cars were carried.
- 4.3.9 Shetland Islands Council Ferries classifies non-car vehicular carryings by: 'non-commercial trailer', 'commercial vehicles including trailers', 'tankers including trailers', 'bus and coach' and 'plant'. Each of these is classified as 'small', medium' or 'large'. Across 2018, a total of 43 such items were carried, as follows:
- Non-commercial trailers: 23 (20 small and 3 medium)
 - Commercial vehicles including trailers: 2 (small)
 - Tankers, including trailers: 5 (small)
 - Plant: 13 (small).
- 4.3.10 Taking the car and non-car carryings together, of the 170 sailings, 52 carried one such item and 22 carried two. Only one sailing carried more than two 'vehicles' suggesting that this is essentially a cap on capacity. Under half of sailings involved a vehicle / trailer of some sort. The primary cargo carried is therefore non-vehicle based freight.

Freight

- 4.3.11 Deck logs are recorded for each sailing of the MV *Good Shepherd IV*. Cargo is carried through a combination of capacity in the hold and on the open deck. 'Capacity' is therefore a function of both physical storage space on the vessel and also weight carried. For some months, data

were provided which includes a notification from the Master as to whether the vessel was full or otherwise. A sample is shown below:

- January 2019: 5 of 6 sailings full, all 3 from Grutness
- February 2019: 5 of 10 sailings full, all 5 from Grutness
- March 2019: 7 of 8 sailings full, all 4 from Grutness
- April 2019: 7 of 8 sailings full, all 4 from Grutness
- May 2019: 17 of 28 sailings full
- June 2019: 7 of 22 sailings full
- July 2019: of 13 full of 26 full.

- 4.3.12 These data suggest that the capacity of the vessel is regularly an issue, especially in winter and on the 'inbound' route from Grutness to Fair Isle.

Key Point: Analysis of carryings data suggests that there is very rarely a passenger capacity constraint on the ferry. However, the evidence does suggest that the physical limitations of the vessel are constraining the movement of goods and vehicles, which has implications for both the supply-chain and economy of Fair Isle.

4.4 Conclusion

- 4.4.1 The analysis of carryings, utilisation and reliability in this chapter has highlighted the significant challenges in delivering ferry and wider transport services to Fair Isle. The length of the crossing, island and mainland infrastructure and prevailing weather dictate that both the air and ferry service will always require significant flexibility in delivery.
- 4.4.2 From the perspective of the ferry service, there are few occasions across the year when the service operates to timetable, with sailings operating early, late or on different days within available weather windows. When considering ferry capital options, this constraint will have to be accounted for – even with significant investment, the challenges in serving Fair Isle can only ever be reduced rather than fully addressed.
- 4.4.3 It is also important that any future vessel and supporting infrastructure provides sufficient capacity (hold space, deadweight and, if appropriate, crane capacity) to meet the supply-chain needs of Fair Isle.

5 Socio-Economic Case, Fair Isle - Economy & Society

5.1 Overview

- 5.1.1 In considering ferry-related investment in Fair Isle, it is important to consider the island economy and society which any future vessel may be serving. This chapter profiles the Fair Isle economy and the delivery of key services such as education and health, providing a context within which options can later be considered.
- 5.1.2 It should be noted that extensive profiling of Fair Isle was undertaken at the SBC stage. Rather than repeat that analysis, there are various cross-references within this chapter.

5.2 Socio-Economic Headlines

- 5.2.1 In developing the initial case for investment in the SBC, one of the early tasks undertaken was to baseline the economy of all nine islands in-scope, including Fair Isle. This section recaps on the key headlines, with the full baselining report available [here](#), whilst supplementary material is also drawn from the *Fair Isle Development Plan 2015 (FIDP)*.
- 5.2.2 It is important to bear in mind that developing a socio-economic profile of small islands using published data is highly challenging for two reasons:
- **Spatial definition:** the range of data available reduces as the level of spatial disaggregation increases. In addition, where spatially disaggregate data are produced, this is commonly at the datazone level. Whilst suitable for larger islands, in many cases (i.e. Fair Isle), a single datazone can cover one or more smaller islands as well as a section of the mainland. In these cases, data have to be presented at the Census Output Area level to isolate the island.
 - **Lag:** it can take several years for some secondary data to be gathered, compiled or estimated, especially at sub-local authority level, the Census being a good example of this. It therefore means that key data are often significantly dated.
- 5.2.3 Moreover:
- Economic output / productivity will be significantly understated as the data do not generally take account of family, voluntary and community work, which is integral in Fair Isle.
 - In a similar vein, many, if not all, island residents fulfil multiple jobs.
 - Communities of this nature are also generally very fragile and a single major change (e.g. the Bird Observatory burning down) can have a significant impact on the likes of employment, and population. As Output Area data are from 2011, a number of changes will have occurred in Fair Isle - we have attempted to account for this through using local datasets and consultation with key stakeholders in this and the following sections.

Key Headlines

- Fair Isle's population demonstrated relatively strong growth between 1981 and 2011, but the cumulative growth was offset between 2011 and 2018, with the population now understood to be in the region of 50-55. Fostering population growth is a key element of the island's Development Plan and addressing the transport issues facing Fair Isle is deemed to be an important element of this plan (see below).
- The Fair Isle population is also ageing. Addressing this issue and raising overall economic activity rates is essential to the future sustainability of the island. Moreover, the ageing population brings the issue of physical access to and from Fair Isle by both the ferry and air service more sharply into focus.

- The occupational structure of Fair Isle reflects the predominance of self-employment and cottage industries on the island, particularly in crofting and craft-related occupations.
- The cost of living on Fair Isle is high – research undertaken by HIE to establish the 'minimum income standard' for remote and rural Scotland highlighted that islands are, for a variety of reasons, generally higher cost locations than the Scottish mainland. This issue is significantly amplified in Fair Isle where a combination of a low population, infrequent & unreliable transport connections and low volumes all add to the already high cost of living. There is no empirical data showing wages at the Fair Isle level, but the economic base of the island suggests that they are likely to lag both the Shetland and Scotland averages.
- The Fair Isle population is highly qualified / skilled (measured in terms of formal qualifications), which is clearly beneficial in a community where each individual needs to have a wide array of talents. The high qualification levels hint at a pattern of in-migration amongst the more highly skilled cohorts.
- The loss of the Fair Isle Bird Observatory in March 2019 is a major setback for the island, as it provided the majority of the island's tourist accommodation and brought a significant number of visitors to the island each year. However, rebuilding is planned, and it is understood that a temporary solution is also being considered.
- Whilst Fair Isle is currently facing a number of challenges, it is both a resilient and cohesive community. The population is committed and highly skilled, and the island has global recognition and goodwill. Moreover, there have been a number of recent improvements, including the provision of 24-hour electricity.

Key Point: Fair Isle has a small and ageing population and faces a number of economic challenges, including the high cost of living on the island. The loss of FIBO in March 2019 is also a major short-term setback for the island. However, the Fair Isle community is highly skilled and resilient, whilst recent infrastructure improvements such as the introduction of 24-hour electricity have improved the infrastructure base of the island.

5.3 Housing

- 5.3.1 The majority of the land on Fair Isle is owned by the National Trust for Scotland (NTS), with any prospective residents having to apply to the Trust should they wish to move to the island. The 2011 Census recorded 26 households on the island.
- 5.3.2 The FIDP notes that the majority of Fair Isle is under crofting tenure – the island has 19 crofts, ranging from 4-20 hectares in size. The NTS owns the majority of the croft houses, although many residents have carried out extensive renovations to the houses and other croft outbuildings for which the Trust would have to recompense crofters on transfer to a new tenant. The current housing tenure rules safeguard the island against absentee owners, which is important for the long-term future of the island (i.e. the population and housing stock is too small for owners to live off-island and the community still to be viable).¹³ Moreover, the rents charged by the NTS are relatively small, which partly offsets the higher cost of living and working on the island.¹⁴
- 5.3.3 Outwith crofting properties, there are a small number of privately owned homes, two Council social-rented houses, a teacher's house and a house for NHS staff.¹⁵
- 5.3.4 Whilst the property mix on the island promotes continued crofting and provides housing for key occupations, it is not without its challenges:
- The FIDP notes that the NTS was previously highly active in renovating crofts and also undertook a regular programme of capital works on the islands. However, as with many organisations, a reduction in funding and increasing costs has reduced the level of

¹³ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 12.

¹⁴ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 15.

¹⁵ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 13.

investment – there are understood to be several properties on the island in a poor state of repair, including one which cannot be let. This is seen as a barrier to growth given the otherwise limited housing stock on Fair Isle.¹⁶

- There is also considered to be a shortage of linked housing for key workers, whilst there is also a concern that the allocation of social housing by the Council can be done in such a way that it does not take account of the specific needs of Fair Isle.¹⁷
- The cost of getting construction materials to the island is a challenge. The weight limitation on the MV *Good Shepherd IV*'s crane as well as limited deck space means that she cannot always be used for bringing in larger pieces of kit. This compounds the already challenging lack of local building skills, which will add delays and cost to any newbuilds or maintenance.¹⁸

- 5.3.5 A survey of the Fair Isle diaspora undertaken as a part of the FIDP suggested that there is interest in moving back to the island. However, the availability of housing is a frequently cited as a challenge in this respect. Whilst new ferry infrastructure would not address this problem in its entirety, it would make it easier, more reliable and less expensive to move goods on and off the island.

Key Point: The ownership of Fair Isle by the NTS conveys many benefits in terms of tenureship rules but the limited size of the housing stock and the funding challenges faced by the NTS in recent years is constraining the growth of the island. Furthermore, the limitations of the ferry service in bringing building materials to the island increases the cost of building and renovating properties.

5.4 Education

- 5.4.1 A major challenge for all small islands in Scotland is education provision, particularly when children reach secondary school age and leave an island to be schooled in a larger settlement. Whilst it is generally accepted amongst small island communities that children will board at an off-island secondary school, it is important that the transport connections facilitate children returning to the island for occasional weekends and holidays.

Education Provision

Nursery and Primary Education

- 5.4.2 There is a combined nursery and primary school on Fair Isle. Having a local primary school is often critical to the sustainability of an island. However, as with many small island primary schools, the roll at Fair Isle Primary has declined in line with the more general reduction in population. The Council Education Service noted that the census figures from September 2018 show that the combined nursery / school had four children in total enrolled - one in nursery, one in Primary 2 and two in Primary 5.
- 5.4.3 The school is staffed by a single teacher, with 'McCrone' cover¹⁹ provided by an off-island supply teacher who flies in for a week at a time. Whilst this is an effective means of maintaining the school and managing staff numbers, the transport connections need to reliably facilitate the incoming supply-teacher in travelling to and from the island.
- 5.4.4 In order to ensure that Fair Isle children benefit from the full range of curricular activities, the teaching staff and Council organise events for primary school children in Lerwick, sometimes

¹⁶ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 26.

¹⁷ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 24.

¹⁸ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 25.

¹⁹ McCrone cover is a proportion of a teacher's weekly hours which is allocated as non-class contact time. An alternative teacher will usually cover a class during this period.

for a week at a time. This brings together children from across the isles and gives them a chance to learn and socialise in a larger group setting.

Secondary Education

- 5.4.5 Fair Isle children undertake their secondary education on Shetland mainland at either Sandwick Junior High School or Anderson High School in Lerwick (predominantly the latter). The children live in hostel accommodation and return to the island every three weeks or so, using the air service to fly home on a Friday and back on a Monday morning. The accommodation building at Anderson High is new and there is a weekend flat attached that parents have use of to visit whenever they wish. There are currently two children attending secondary education on Shetland mainland.

Key Point: There is an on-island combined nursery and primary school in Fair Isle which has four pupils and one teacher. McCrone cover is provided by a mainland teacher for one week. In terms of secondary education, Fair Isle children generally board at Anderson High, returning every three weeks or so and during holiday periods.

Education and Transport

- 5.4.6 As noted above, with the exception of McCrone cover and occasional group trips to the mainland, primary education is almost wholly undertaken in Fair Isle. However, secondary education requires much more frequent travel by the children and to some extent their parents.
- 5.4.7 Fair Isle is almost unique in the UK in that the children are away from home for longer than the typical school week. One of the reasons for the current arrangement in Fair Isle is that the transport connections, and in particular their reliability, do not readily facilitate weekly travel to and from school. In other islands such as the Orkney Outer North Isles and the Small Isles, children tend to return home each weekend, in most cases getting back to the island on a Friday evening and returning on the Monday morning.
- 5.4.8 Consultation with the Council Education Service suggested that, whilst parents would perhaps prefer for their children to return to the island more frequently, there is a degree of acceptance that it is part of the way of life in Fair Isle. However, whilst this may be the case, a survey of the Fair Isle diaspora undertaken as part of the FIDP found that the need for children to leave the island at the age of 12 for extended periods is unattractive and acts as a deterrent from people returning to the island. Whilst recognising that this can provide some benefits in terms of expanding life experiences for young people, feedback provided indicates that effectively having their children leave home at the age of 12 is not a choice that most families would make.²⁰
- 5.4.9 The Fair Isle household survey undertaken as part of this OBC also sought views on how satisfied residents are with arrangements for schooling in Lerwick and the frequency of children's trips home. This question only applied to two respondents in the sample, and there was a split with one respondent noting that the arrangements worked well and the other that they would prefer their children to return home more often.
- 5.4.10 Overall, there appears a general acceptance that children leaving the island to attend secondary school for several weeks at a time is a fact of island life. However, there does appear to be at least some appetite for children to be able to return home more frequently, and the evidence does suggest schooling arrangements may be a deterrent in terms of attracting in-migrants to the island. Whilst the majority of school travel is by air, the proposed enhancements to the air service together with a more modern, reliable and frequent ferry may facilitate additional trips back to the island where this is desirable.

²⁰ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 28.

Key Point: There is at least some appetite for secondary school children to be able to return home more frequently, and the evidence does suggest schooling arrangements may be a deterrent in terms of attracting in-migrants to the island. Whilst the majority of school travel is by air, the proposed enhancements to the air service together with a more modern, reliable and frequent ferry may facilitate additional trips back to the island where this is desirable.

5.5 Health Care

Provision

- 5.5.1 This section sets out the current approach to health care provision on Fair Isle. It has been developed through a combination of desk-based research and consultation with NHS Shetland.

General Practice

- 5.5.2 Fair Isle does not have a resident doctor, with health care being provided by a resident district nurse. The island nurse is provided with a house and a small clinic area in which to work. Island residents are served by Levenwick Medical Practice, whose doctor visits the island every six weeks, weather permitting. Medical and allied health professionals (e.g. physiotherapists) provide a visiting service to the islands on a routine scheduled and *ad hoc* basis. A dentist visits the island once a year.

Emergencies

- 5.5.3 Where a person urgently has to attend hospital, H.M. Coastguard will scramble their helicopter from Sumburgh. The helicopter will generally fly to Tingwall airfield just to the west of Lerwick but where the casualty's life is at risk, the helicopter will land at Clickimin, immediately adjacent to the hospital. On very rare occasions, a decision may be taken to fly a patient directly to the Scottish mainland.

Ante-Natal Care

- 5.5.4 Ante-natal care is provided in the first instance either by the Levenwick Practice or Gilbert Bain Hospital in Lerwick, which will undertake scans and routine appointments. Appointments are scheduled on the day in which a flight is available, albeit the reliability issues around the air service means that a degree of flexibility is required.
- 5.5.5 In the later stages of the third trimester, a pregnant woman will travel off-island, staying close to the hospital in Lerwick – this will either be with relatives or they will enter the health care system at this point. As is common across Shetland, if the pregnancy is high risk, the patient will be transferred to Aberdeen.
- 5.5.6 NHS Shetland noted that, whilst this has never happened, accommodating a home birth request on Fair Isle would be challenging. Medical practitioners would need to stay on the island up to two weeks before the patient's due date which would present a resourcing and potentially an accommodation challenge.
- 5.5.7 Whilst there are effective means of delivering health care in Fair Isle, the Fair Isle Health Needs Assessment 2009 found that islanders have concerns about access to emergency care in treating potential life-threatening conditions such as an individual suffering a heart attack. The islanders are keen to explore different tele-communication / video-link methods and administrative solutions to alleviate concern about access to GP visits and medical advice, especially in poor weather. Residents were also concerned about limited social care services on Fair Isle, but were willing to explore alternatives to the current provision.²¹

²¹ Shetland South Community Profile (Shetland Islands Council, 2011), p. 29.

Health Care and Transport

- 5.5.8 Whilst the health care system on Fair Isle has been developed around the island's current transport connections, the evidence does suggest that the requirement to do this does introduce both additional cost and risk into the system.

Travel to Appointments

- 5.5.9 A key issue, particularly given lower than average incomes in Fair Isle, is the requirement to travel to Shetland mainland, and on occasions the Scottish mainland, for health appointments. As well as the cost of travel to and from the island, the low frequency and poor reliability of the service often means that at least one overnight stay is required (and at least two overnight stays for trips to the Scottish mainland). As well as the monetary cost of this, there is a loss of income from being off-island and a reduction in the productive capacity of the island whilst that person is away. A more frequent and reliable transport system would assist in addressing this issue.

Sustainability of the Delivery Model

- 5.5.10 The key challenge for NHS Shetland is sustaining the current health care delivery model for Fair Isle. Inherent within this challenge is the requirement first and foremost to meet the needs of island residents, but at the same time ensure that staff keep their skills current when dealing with relatively few patients.
- 5.5.11 An additional issue is supporting the resident district nurse, as they effectively work 24/7. When the nurse is on leave, the NHS will attempt to put a practitioner onto the island, but this can be difficult for numerous reasons. The practitioner will go for the weekend or week to cover the nurse's leave but the transport connections have to facilitate this. Although there are issues surrounding working time directives with the regular nurse, these are worsened with relief staff. Whilst the resident nurse can spend time when they have no appointments, they can do so at home and thus can balance rest and work commitments. In contrast, a relief nurse may be staying in a bed & breakfast, where the distinction between work and rest time is not as clear cut.
- 5.5.12 When the resident nurse is on leave and the NHS cannot find someone to cover, they will run a risk assessment of the community. If there are health issues among the community that need to be cared for regularly, alternative solutions will be considered. If there is no immediate and regular health care need, the island will sometimes have periods of time where there is no medical professional on the island.

Issues with providing a routine service

- 5.5.13 The limited transport connections present several challenges in providing the routine level of service which would be expected elsewhere in Shetland. As noted, external service providers will travel to the island at various intervals across the year. They will generally fly into Fair Isle on a 'double-flight' day so as to be able to make a short return trip to the island. However, this is weather dependent and visits can be cancelled or truncated if poor weather is forecast. If the visiting health professional cannot get off the island due to weather, this will have a knock-on impact on the mainland practice the following day. The NHS noted that a more frequent air service and an overall increase in the resilience of the Fair Isle transport network would be beneficial in this respect.
- 5.5.14 Prescriptions are issued by Levenwick Medical Practice and transported to the island on the MV *Good Shepherd IV*. Whilst a tried and tested approach, it can lead to a delay in prescriptions reaching the island when there is disruption to the service.²²
- 5.5.15 The ferry will also be used for getting staff to and from the island when flights are not operating. However, there have been occasions in the past where a medical practitioner has made it to

²² Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 15.

the island but has become stranded due to both the air and ferry service being suspended. NHS Shetland provided an example from summer 2018 where the nurse on Fair Isle was going to be away for an extended period of time, with several relief staff sent over to cover. One relief nurse ended up on the island four days longer than anticipated due to a combination of cancellations (air and ferry) and seat capacity on the flights.

- 5.5.16 NHS Shetland noted that, although a more frequent air service would be beneficial, it will always remain subject to weather related disruption. To this end, a more resilient, reliable and comfortable ferry service would support health service delivery to the island.

Key Point: Whilst current health care provision in Fair Isle is effectively worked around existing transport connections, a more reliable and resilient ferry service would support resident travel to / from appointments and the delivery of medical supplies to the island. Perhaps most importantly, it would support on-island service provision by NHS Shetland.

5.6 Tourism

- 5.6.1 Fair Isle has an established tourism industry and is a destination of global renown, famous both for FIBO and its knitwear. As well as attracting short and long-stay visits, the island is attracting an ever-increasing number of small cruise vessels, which tend to be at the high-value end of the market. As is common with small islands, data on tourism numbers is relatively limited – in order to develop an understanding of the tourism industry, we therefore carried out telephone consultations with Visit Scotland (Shetland) and FIBO.

Fair Isle Bird Observatory

- 5.6.2 As the name suggests, the tourism market in Fair Isle has been largely dominated by the bird watching community, who typically stay on-site for long periods (10 days or longer) in Spring and Autumn, the main migratory season. There was typically a peak of visitors in May and June; a drop-off in July and August; and then a second peak in September. However, since 2011, active promotional work has brought in a much wider range of tourists, and indeed it is now thought that general tourists now constitute the majority.
- 5.6.3 FIBO noted that, in 2018, the Observatory recorded record visitor numbers – it was generally full through the whole opening period (Spring to Autumn) with June and July being the busiest months. Bookings were suspended part way through the year.
- 5.6.4 The duration of stay tends to vary by market segment. The birdwatching community tend to stay for a minimum of seven nights, but generally 10-14 nights. The general tourist market visit Fair Isle as part of a wider trip to Shetland and / or Orkney, staying for only a few days at a time (although FIBO was actively encouraging longer duration stays on the island as shorter stays put pressure on those running the Observatory).

Travel to and from FIBO

- 5.6.5 It was noted during the consultation that the majority of visitors to FIBO fly to Fair Isle as it is quicker and more comfortable. However, if there is a shortage of capacity on the aircraft, visitors will on occasions spill over onto the ferry service. It was noted that, in 2018, the high volume of short stay visits put pressure on aircraft capacity and thus a higher number of visitors than normal used the ferry.
- 5.6.6 The reliability of the transport connections is a major issue for FIBO. The Observatory management are generally as flexible as possible. The FIBO management work closely with Airtask and the Fair Isle ferry crew to establish the likelihood of either service being operational and will advise customers if they should leave early or prepare for a longer stay on the island (and they also advise that customers build-in a one-day buffer either side of their connecting journeys). If a visitor arrives late due to delayed / cancelled transport, they will not be charged for the nights they have missed. Conversely, if a visitor has to remain on the island longer, they will be charged for each additional night. Deposits are refunded if the weather stops the service

and some customers will purchase insurance to cover delays. It was noted that one-night delays are fairly common, two-night delays possible but less frequent and anything beyond that unusual.

- 5.6.7 It was explained that regular visitors to Fair Isle are accustomed to the challenges of working around infrequent and unreliable connections. This can however lead to cancelled bookings, particularly for short-stay guests whose time on island is in any case limited. As evidence of this point, the figure below shows the net bed nights gained or lost at FIBO over the period 2013-2018 as a result of the arrangements outlined above.

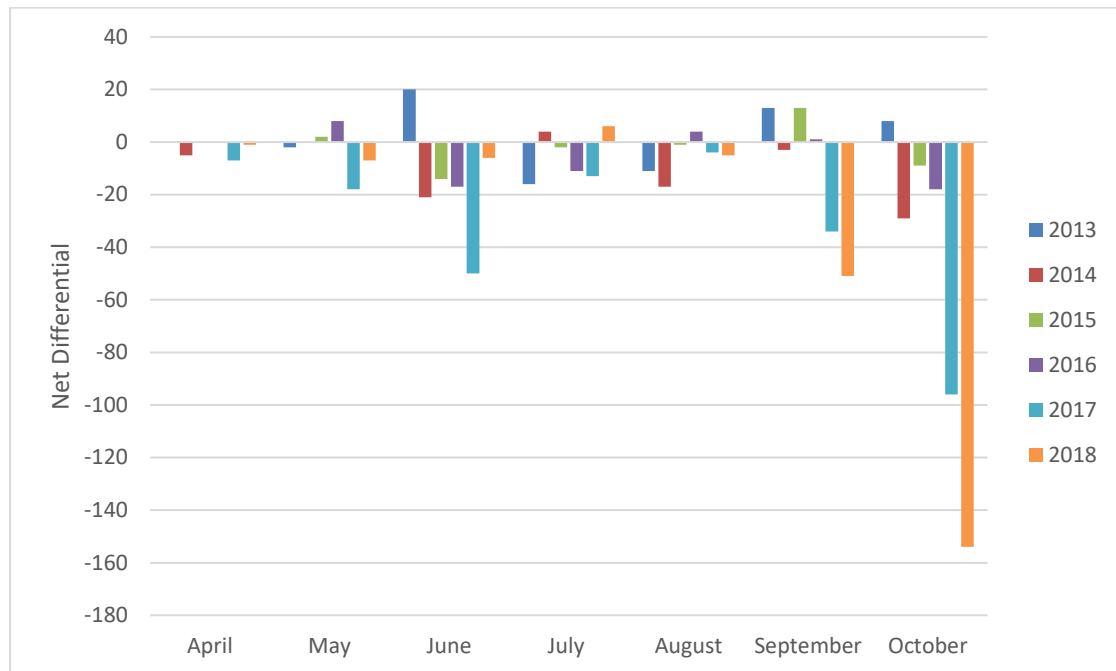


Figure 5.1: Net Bed Nights Gained / Lost at FIBO – 2013-2018

- 5.6.8 It can be seen from the above figure that, in general, more bed nights are lost (bars below the X-Axis) than gained. October is generally the peak month for lost bed nights, with 2017 and 2018 being particularly problematic in this respect. These lost bed nights represent a net loss to FIBO and in turn the Fair Isle community, a direct consequence of the reliability challenge around the transport system.

FIBO – Views on Transport Connections

- 5.6.9 Having developed an understanding of the FIBO business, we took the opportunity to explore their views on the current transport infrastructure and potential options for the future. The key points were as follows:

- It was highlighted that there is excellent coordination between the air and ferry operators, who make a significant effort to provide the island with the best service possible, both in terms of passenger and freight movements.
- One of the main reasons for closing FIBO from October onwards is due to the lack of predictability around the transport connections. As well as the movement of people, this can have an impact on the supply of fresh goods – the Observatory can store around 7-10 days' worth of perishable goods but any delay to receiving supplies beyond this would be challenging. Heating oil and diesel can also become pressured.
- The crane-lift weight on the ferry is problematic. For example, FIBO used to own a 7-seat people carrier, but this can no longer be moved off the island for servicing and repair. To address this, the Observatory had to purchase two smaller vehicles, which increases the

cost and staff requirement. There are also significant limitations in terms of moving heavy loads on and off of the island.

- The ferry has a limited passenger capacity, is uncomfortable and journey times are long. This makes it unattractive to most visitors and puts pressure on available seats on the air service. This issue is amplified in peak season, where visitors tend to book available capacity much further in advance, impacting on the ability of residents to travel.
- FIBO noted that there may be an appetite for Ro-Ro, which would be useful for getting vehicles and heavy items on and off of the island. It would also improve access for mobility impaired and / or elderly people. That said, it was noted that the island infrastructure would not support any significant uplift in tourist vehicles.
- The retention of the vessel on island is considered essential by FIBO. It permits maximum flexibility, with the additional benefit of a crew that are invested in the island and thus committed to operating the service as frequently as possible. FIBO provided several examples of how the Observatory and crew work closely together to meet the needs of visitors to the island.
- The reinstatement of the Orkney flight connections has been valuable to Fair Isle, allowing the Observatory to pick-up bookings they would not otherwise have secured. It has created a number of challenges in terms of managing changeover but overall increased volume and access to a different market is seen as positive.

Wider Tourism in Fair Isle

- 5.6.10 Whilst FIBO has historically been the main draw to the island, Fair Isle has a wider and growing tourism appeal. Visit Shetland noted, that despite the weather-related disruptions, the majority of tourists planning to visit the island are aware of these and accept that it is part and parcel of going to Fair Isle.
- 5.6.11 Outwith the Observatory, craft-related tourism focused on the knitwear industry has been increasing, whilst the island is a popular destination for photographers. A number of small and high-end cruise ships now visit the island – this is beneficial both in terms of the money passengers are willing to spend and the absence of the weight restrictions in taking goods off-island which apply when using the air service.
- 5.6.12 There is a desire to extend the 'season' for visitors and there has been some success at doing this so far. Wool Week, which is the end of September / early October, is a popular and successful festival which they are hoping to use as a means to extend the season.
- 5.6.13 The FIDP notes that there is considerable scope to develop tourism within Fair Isle, even within the scope of existing accommodation provision (which would include a new-build FIBO). It is however noted that this would be dependent on improvements to both air and ferry reliability and capacity. Proposals to grow the island's tourism industry include:
- the provision of improved trails and self-guided walks;
 - a seasonal café or similar at the South Light;
 - improved facilities at North Haven for yachts (which could potentially be a by-product of any ferry-related investment at North Haven); and
 - better promotion of existing facilities.²³

²³ Securing Fair Isle's Future: A Plan for Action (Fair Isle Community Association, 2015), p. 33.

Key Point: For an island of its size, Fair Isle has an established global and multi-faceted tourism industry. FIBO has long been the anchor point for the industry and its speedy rebuilding is clearly essential, but there are increasing opportunities in craft-based, yacht and cruise tourism. However, evidence from a range of sources highlights that the capacity and reliability of the island's transport connections are inhibiting growth at present.

5.7 Fair Isle Development Plan

- 5.7.1 Recognising the challenges facing the island, the Fair Isle Community Association (FICA) initiated work on a Community Development Plan for Fair Isle in summer 2014. The community-led plan was published on 7th April 2015 and provides a framework for the future economic development of the island. The FIDP is referenced throughout this report, but it is worth specifically drawing out transport related considerations in this section.

Vision

- 5.7.2 The overarching Vision for Fair Isle set out in the FIDP is as follows:

By 2020, Fair Isle will have a sustainable future with a growing, economically secure population with access to good quality affordable housing, reliable essential services that are fit for 21st century living and opportunities for employment. The community will have retained its strong cultural heritage and is dynamic, inclusive and outward looking. All that is special about the island's unique environment will be safeguarded and managed to the benefit of all.

- 5.7.3 Whilst the FIDP worked on a plan period of 2015-2020, it can be argued that the Vision remains relevant, even as the end of the Plan period has now passed.

Transport problems identified by FIDP

- 5.7.4 The FIDP identifies a set of problems and challenges facing the island, some of which are directly related to transport infrastructure and connectivity and some of which are an indirect consequence of it. These are set out below.

Direct Transport Problems and Challenges

- Both the air (passengers) and ferry (freight) are frequently at capacity, reducing the certainty of travel at short notice.
- Both modes of transport are also susceptible to significant weather-related disruption.
- The speed of the MV *Good Shepherd IV* and comfort on passage are considered a significant deterrent to use, increasing pressure on the capacity constrained and weather disrupted air service.
- The basing of the ferry in Fair Isle provides operational flexibility for the service and secure high-paid employment in the island. Moreover, it provides a team of multi-skilled individuals who support various other parts of the island economy, most notably providing operational and fire cover at the airfield. The community see retention of an on-island crew as an essential component of any future ferry solution.

Indirect Transport Problems and Challenges

- Population retention and growth and reducing the average age of the current population is a key objective of the community. However, engagement with current residents and a survey of the diaspora highlighted transport connectivity as a major challenge in attracting people to live in Fair Isle.

- There is a desire expressed in the Plan to retain a nurse in the island to improve care and health provision for an ageing population. The transport challenges surrounding this were explored at some length earlier in this chapter.
- There is a desire to make existing houses habitable and build more houses on the island. However, the physical capacity of the MV *Good Shepherd IV* (volume, weight and crane limitations) means that it can be difficult and expensive to move building materials to the island. This can compromise the affordability and viability of any development.
- There is also an aspiration to grow the already strong tourism market in the island (notwithstanding the short-term constraint imposed by the loss of FIBO). Whilst the current connections are effectively worked around, they impose a capacity constraint on the island at peak times and are also likely to act as a deterrence amongst less frequent travellers.

Key Point: Fair Isle's transport infrastructure and services impose a series of problems and challenges on the island, both directly in terms of travelling (e.g. reliability, capacity etc) and indirectly in terms of e.g. attracting and retaining population; service provision; the cost of building on island etc.

5.8 Household Survey

- 5.8.1 In order to collect the views of island residents on Fair Isle's transport connections and how these impact on their lives, a household survey was carried out in early 2019. Responses were received from 22 island households (likely to be around a half or more of the total households on the island). The key points emerging from the survey are summarised below:

Air Service

- The survey confirms the dominance of the air service as the main mode of personal travel. All survey respondents had made at least one trip by air in the past year, with three quarters making between 4-9 trips per annum. These trips were predominantly for visiting friends & relatives (29%); business / self-employed / employer's business (23%); long holiday (23%); and health visit (16%). In contrast, only two thirds of respondents had made a trip by ferry in the past year.
- 95% of respondents noted that they have experienced at least one occasion in the last 12-months where they have been unable to book on a flight. 81% responded that this had happened on more than one occasion (48%, 2-3 times; 19% 4-5 times; and 14%, 6-7 times). Monday and Friday flights in the summer months are the most pressed. Respondents typically book 3-4 weeks before travelling (36%); 1-2 weeks before travelling (32%); or 2-3 weeks before travelling (23%).
- All respondents have had at least one flight disrupted by weather in the past year. Where this has happened, around one third of trips were not made, although a majority were made on a different day or by ferry instead, highlighting a degree of interchange between modes.
- The principal reasons cited for using the air service rather than the ferry service are²⁴ shorter journey times (82%), easier access to Lerwick (68%), better overall journey times (59%), a more suitable timetable (59%). 36% noted that they did not like travelling on the MV *Good Shepherd IV*.
- Air service users were most dissatisfied with the ability to book onto their preferred flight and the reliability and punctuality of the services.
- 81% of respondents replied that aspects of the air service prevent them from travelling to Shetland mainland as often as they would like. Reliability (90%+) and capacity (80%) were by some margin the main preventative factors. In travelling less frequently than desired,

²⁴ Note – multiple responses were permitted on this question.

residents are predominantly missing out on²⁵ health appointments (50%) and visiting friends & relatives (45%).

Ferry Service

- As previously noted, one third of residents have not used the ferry in the past year. For those who have used the ferry, they tend to do so less frequently than the air service – 32% have used it 1-3 times and 23% used it 4-6 times. Journey purposes when using the ferry service are similar to air.
- The principal reason for using the ferry rather than taking the plane is disruption to the air service (50%) or inability to get a booking on the plane (23%), which further highlights the role of the ferry as secondary / fallback mode of passenger travel.
- The primary sources of dissatisfaction with the ferry service are crossing time (95%); comfort onboard (80%); onward transport connections from Grutness (74%); and arrangements for those with a disability (70%). These are issues that any future capital solution should seek to address. Two thirds of respondents note that aspects of the ferry service prevent them using it more frequently, with the above reasons again being cited as the primary factors deterring use.
- In travelling less frequently than desired, residents are predominantly missing out on²⁶ health appointments (36%) and visiting friends & relatives (32%).
- Of the 12 respondents which noted they would use the ferry service more often if the above concerns were addressed, a modest uplift in usage could be anticipated – 58% noted that they would make 1-3 additional return trips per month.
- 85% of respondents support a combination of Grutness and Lerwick calls for the ferry service.

General Views on Fair Isles Transport Connections

- 85% of respondents do not consider the island's air & ferry connections as sufficient for their family's day-to-day needs, now and in the future.
- 67% of respondents do not think that the current air & ferry connections to the mainland are sufficient for tourism in Fair Isle. This is a key finding as all respondents to the survey noted that they would like to see tourism develop further in the island.
- Whilst there is a belief that services need to be improved, 77% of respondents did note that the current air & ferry connections are sufficient to ensure the long-term sustainability of the community.
- 80% of respondents believe that improved connectivity between Fair Isle and Shetland mainland would make it a more attractive place for people to live and bring up families. This is a key finding given the aspirations of the FIDP.

5.9 Summary

- 5.9.1 This chapter has highlighted the centrality of transport infrastructure and services to all aspects of Fair Isle life and the island economy. Whilst the current service offered is realistically the best possible given constraints on assets and human resource, there is strong evidence that improvements are required to both infrastructure and connectivity. With respect to the ferry service, the evidence suggests that any capital solution should focus on providing a more reliable and faster vessel which can operate more frequently.

²⁵ Note – multiple responses were permitted on this question.

²⁶ Note – multiple responses were permitted on this question.

6 Socio-Economic Case - Supply-Chain

6.1 Overview

- 6.1.1 Having provided an overview of the main components of the Fair Isle ferry service in the previous sections, this chapter profiles how goods are moved to and from the island. The commentary and analysis were developed through consultation with the crew of the MV *Good Shepherd IV* (who effectively act as the island 'hauler') and suppliers to Fair Isle.
- 6.1.2 Whilst the ferry is the primary supply-chain link for Fair Isle, freight is moved by both sea and air. However, given the focus of this OBC on ferry infrastructure, the commentary in this chapter is primarily related to the ferry service.

6.2 Commodity Flows

- 6.2.1 This section sets out the main commodity flows to and from Fair Isle.

Commodity Flows to Fair Isle

Diesel and Fuel Oil

- 6.2.2 Diesel and fuel oil are critical imports for Fair Isle and can obviously only be delivered by ferry. Facilitating the movement of these goods is therefore essential. Both diesel and fuel oil are typically delivered in drums, fuel bowzers and increasingly in bundled 1 tonne bulk containers:
- The use of 45 gallon / 200 litre oil drums is the traditional method of delivery. These are filled on the pier by tanker from the oil supplier and are craned two at a time onboard. Increasing regulation around safety and spill protection suggests this method, which offers limited containment if product is spilled (as the pier is not a bunded space), will eventually be phased out. It is not clear whose responsibility this would be though as the drums are generally owned by the customer and not the ferry or oil company and drums are very cheap.
 - Bunded bulk containers are more often used for diesel - they offer spill protection and are configured to be handled as a pallet using a forklift truck.
 - Wheeled fuel bowzers are also used by some islanders – they can be towed to and from the vessel to their point of use.
- 6.2.3 Fair Isle receives a delivery of around 2,000 litres (10 drums) every 2-3 weeks. Whilst there will be a long-term need for these products, consumption has declined since the Fair Isle electricity scheme was completed. However, the electricity scheme in itself has a relatively high demand for diesel to supply back-up generators, whilst BT also has a mast on the island which uses diesel generator power.

Building Materials

- 6.2.4 Building materials are moved as and when required by island residents. The ability to move these products is dependent on their size and weight and the priority of other goods requiring shipment. Operationally, there is an understanding on the island that certain items must be prioritised - food and oil for example – and that while freight is 'booked', what is shipped is at the discretion of the crew. Due to the close community, there is a degree of understanding if building materials are left until the next sailing.
- 6.2.5 Building products include insulation sheeting, blocks, cement, sand, timber etc. Small item fixture and fittings that can be sourced online may be delivered by parcel post rather than Shetland wholesaler sourced.

- 6.2.6 Major projects that require larger machinery or bulkier / heavier items are often shipped on additionally organised sailings (e.g. through of the Skerries vessel MV *Filla*), although it is not uncommon to organise a special charter of alternative higher capacity vessels, charter vessels from Leask Marine in Orkney for example. The costs of these charters contribute to the overall high cost of projects on Fair Isle, a key issue where incomes are lower than average.

Animal Feed

- 6.2.7 Livestock feed is moved in 1-tonne bulk bags, which arrive at the quay by road trailer. Movements are as-and-when needed by island residents. Feed is not put into the quayside storage unit at Grutness as it tends to be shipped in larger quantities and is not suitable for outside storage on the quayside. It is usually booked onto a sailing, but there is dialogue between supplier and ferry operator to agree an exact shipping day, depending on weather and space available on the vessel.

Machinery and Vehicles

- 6.2.8 The ability to carry machinery and vehicles is limited by the 1.5t crane capacity of the MV *Good Shepherd IV* and what is considered safe to be shipped on deck given the vessel type and its inherent seakeeping ability.
- 6.2.9 During winter, just one car can be moved. When weather conditions are more certain in summer, two can be accommodated safely. Vehicles are limited to standard small cars - for example, many small modern hatchback cars are approaching the limitations of crane capacity. There is limited ability to install a higher capacity crane as heavier crane loads need to be considered within the stability and size of vessel limits. A larger crane would require a vessel of larger beam and different stability characteristics.

Skips

- 6.2.10 These bulky containers are used to hold and ship waste from Fair Isle to the heat and power plant in Lerwick. Once empty, they are shipped back to Fair Isle. Although not heavy, they are very bulky and domestic skips cannot be stacked. On fine days, they can be shipped as deck cargo but otherwise need to be transported in the vessel hold.
- 6.2.11 It is frequently the case that there is not enough space on the vessel to ship empty skips, which have to wait until there is space available.

Air Freight

- 6.2.12 Freight on the air service is understood to be about 450 tonnes per year, which includes passenger luggage as well as more general 'freight'.
- 6.2.13 Unaccompanied freight moving by air is primarily mail and parcels. This traffic has been growing in recent years with the growth in online shopping. Greater affluence and online connectivity has provided island residents with the ability to access a greater choice of goods than ever before. The choice of Royal Mail and Parcel Force as the delivery option also allows islanders to benefit from Royal Mail's Universal Service Obligation, thus avoiding surcharges applied by other operators.
- 6.2.14 A consequence of this shift in purchasing patterns is a reduction in goods supplied from retailers and wholesalers in Lerwick who would have previously moved as small freight on the ferry.

Key Point: The MV *Good Shepherd IV* largely meets the current supply chain needs of Fair Isle. However, she is very limited in terms of deadweight and crane capacity, which imposes a hard constraint on the quantity and size of goods which can be shipped. This can lead to delays in the delivery of products and higher costs where an alternative vessel needs to be chartered, adding to the already high cost of living in Fair Isle.

Commodity Flows from Fair Isle

- 6.2.15 As with most island communities, almost all consumables have to be imported, and thus the balance of inbound goods generally exceeds 'exports'.

Livestock - Sheep

- 6.2.16 Sheep farming is an important economic activity on Fair Isle. Very little livestock moves out of Fair Isle through the year, other than in September. This is consistent with the overall movement of livestock from Shetland. Fair Isle livestock is considered high quality and attracts good prices, so weather disruption can materially affect the return crofters can make if livestock misses the 'peak' sales and condition opportunities.
- 6.2.17 Livestock can only be shipped as deck cargo - the MV *Good Shepherd IV* can accommodate up to 170 sheep per sailing. They are usually shipped on dedicated sailings, in part due to the considerable mess livestock makes onboard (there are no waste traps aboard).
- 6.2.18 In 2018, there were six dedicated livestock sailings through September, timed where possible to meet auction mart sales. Livestock transits through Shetland and forms part of the aggregated livestock flow carried in bespoke livestock cassettes by NorthLink Ferries to Aberdeen and the mainland markets.
- 6.2.19 The shipping time from Fair Isle to Shetland is just within the regulated travel time restrictions for livestock transport. Animal welfare regulations have consistently tightened over the years and are expected to continue to do so. The use of similar bespoke cassettes as used on NorthLink would deliver welfare benefits to Fair Isle stock and thus, potentially higher market prices.

Key Point: A faster and more reliable ferry would improve the transit efficiency of livestock from Fair Isle, whilst also providing opportunities for additional connections either side of dedicated livestock sailings.

Waste and Scrap

- 6.2.20 Increased use of consumer goods packaging and an increasing trend in internet purchasing means the volume of domestic and commercial waste is growing. Waste is moved in skips, which are emptied in Shetland and returned for re-use. Most sailings typically have two full waste skips aboard, which consumes a significant amount of available capacity.

Returning Equipment

- 6.2.21 Freight moved in returnable containers includes fuel oil, diesel and parcel cages / returnable pallets. Empty containers for re-use are lightweight but are bulky to handle taking up vessel space. If there is no vessel space available, they are left on the quayside for a later sailing. This drives a need to have more container equipment in the supply-chain to ensure there is an empty container available on Shetland to refill and ship when needed, again adding to cost.

Key Point: The limited capacity of the *MV Good Shepherd IV* can lead to equipment being left on the quayside in Fair Isle. This reduces the efficiency and increases the cost of the island supply-chain.

6.3 Freight Handling

- 6.3.1 This section further explores how freight is physically stored, handled and moves on the Fair Isle ferry service.

Quayside

- 6.3.2 The pier at Fair Isle is considered spatially adequate to conduct Lo-Lo operations effectively. The size of goods handled is limited by the vessel crane capacity.
- 6.3.3 The pier at Grutness is more constrained. It has space for a single vehicle, making loading times relatively slow as the crew cannot pre-position freight or operate forklift trucks at the same time as a vehicle is loading. In Grutness it can take up to three hours to unload the vessel and reload. This turnaround time needs to be considered in the overall round trip sailing time, which can be important when the weather conditions provide a limited window of opportunity to make a return crossing.

Grutness Quayside Storage Hub

- 6.3.4 A Council-owned freight storage facility is provided on the quayside at Grutness – its dimensions are around 6 metres by 10 metres and it includes limited refrigerated facilities for perishable foodstuffs. The storage unit has capacity for about a week's worth of deliveries, fitting with the winter timetable sailing schedule. The store is always locked but suppliers are able to access the key when required.
- 6.3.5 The storage unit is used for almost all goods, including retail, coal, timber etc. Suppliers and couriers use this location as a delivery point for Fair Isle, dropping goods in here as part of their regular distribution routes for south Shetland. For larger loads that cannot be held in the storage unit, hauliers keep in contact with the ferry operator and coordinate the delivery of these loads to meet the ferry when she operates.
- 6.3.6 Perishables which are not frozen tend to be delivered direct to quay by the Shetland supplier. This involves regular dialogue between the Fair Isle shop and its suppliers to ensure everyone is aware of when the ferry will be sailing. Fresh bakery products generally come from a supplier in south Shetland.
- 6.3.7 Bread tends only to be delivered as a frozen product and delivered into the refrigeration unit. Historically, the reason the sailing is on a Tuesday related to the supply of bread baked on a Monday in Shetland and supplied to the quay on the Monday evening. Although this dependency no longer exists, the supply of this staple is the origin of the current timetable.
- 6.3.8 Supermarket staples are ordered by the Fair Isle shop from Lerwick wholesalers and suppliers. These goods are delivered on Monday evening to the storage unit for loading to the vessel on Tuesday. It has been found that the increasing dominance of large supermarkets on Shetland mainland has led to smaller suppliers finding it harder to manage a full service with reduced volumes. Delivery days to Grutness can be three per week, where it was previously more often. However, suppliers tend to be flexible, recognising the impact of weather on sailings and schedules.
- 6.3.9 Most of the goods delivered to the storage unit are on pallets or pallet-containers. This includes supermarket staples and parcels / couriered goods. Delivery companies moving goods around Shetland use pallets as efficient handling units, enabling loading / unloading and lifting by forklift truck. The Fair Isle storage unit is one delivery point for them, having potentially aggregated multiple goods / orders onto a single pallet earlier in the chain.

Vessel Capacity Limitations

- 6.3.10 The MV *Good Shepherd IV* was designed at a time before the common use of palletised freight. Therefore, when loading the vessel, there is often a need to break the pallet to stow freight onboard so that it is safe to ship. This approach is space-hungry, meaning a sailing can be 'full' even if it is under its deadweight limitation.
- 6.3.11 As an example of the above, during December 2018, the vessel shipped a load of animal feed that took the vessel to its capacity – there were 15 pallets in the hold, one pallet on the deck and a single vehicle. 15 pallets is about 62% of the capacity of a standard HGV trailer, but more than a rigid truck. The shipper was not able to maximise the efficiency of the freight movement from supplier to vessel because only a part-load filled the boat (and feed cannot be held outside on the quay for the next sailing). He would have moved more had the vessel been capable. The full cost of the road shipment is little different between a full and part load – the vehicle, time and driver resource needed is identical. This therefore increased the cost of delivery to Fair Isle.
- 6.3.12 As previously noted, the vessel's crane is limited to 1.5 tonnes, which limits the items which can be shipped. It particularly affects vehicles, agricultural machinery and plant, which are generally in excess of 1.5 tonnes as a single unit. This means that there is limited possibility for Fair Isle residents, crofters or businesses to benefit from vehicles and machinery common to those on Shetland mainland.
- 6.3.13 Shipment of these goods needs to be undertaken by another Council ferry or by a vessel on special charter. Even if machinery can be shipped in by special charter, there is often a need to get it back out of Fair Isle – this can take weeks of forward planning and can increase the cost of machinery rent.

Key Point: The hold, deck and crane capacity of MV *Good Shepherd IV* limits the volume and size of goods which can be moved to Fair Isle, increasing direct costs and impacting on the efficiency and productivity of the Fair Isle economy.

Service Reliability

- 6.3.14 As previously noted, the Fair Isle service operates to a published timetable, but weather and sea conditions mean that this often cannot be adhered to. There is a close community network which keeps in contact with the ferry operator and works around disruption. There is no specific mitigation, but the ferry is run at the earliest opportunity after weather disruption where there is a window to get to Shetland mainland and back. The use of the quayside storage unit at Grutness makes this possible, as does having close relationships with those suppliers who make direct deliveries to the vessel.

6.4 Project Traffic: 2018 SSE Power Project Case Study

- 6.4.1 The Fair Isle Electricity Project was completed in 2018 and provided the island with 24-hour power for the first time. The project was of a significant scale and involved the movement of people and large and small components onto the island. It therefore provides a useful and recent case study of the challenges of carrying out project work on Fair Isle.
- 6.4.2 The major supplier for the project was Scottish & Southern Energy (SSE) who needed to move five transformers, three wind turbines and equipment related to power generation, storage and distribution, including high-capacity batteries and power management systems.
- 6.4.3 By way of comparison, SSE was commissioned to install a similar project on the island of Canna during a similar period. Canna benefits from a Ro-Ro ferry service operated by CalMac Ferries Ltd using the MV *Lochnevis*. It therefore provides a useful comparator.
- 6.4.4 Much of the equipment and machinery needed for the power project was unable to be shipped on the MV *Good Shepherd IV* as it exceeded the lifting capability of the vessel crane. SSE

charted a higher capacity vessel from Leask Marine to carry the vehicles and equipment needed for installation. Equipment included machines typical of many construction projects; contractor vehicles, Hi-ab lifting vehicles and diggers. Where possible, contractors were able to fly to Fair Isle, but some vehicles were needed to carry installation tools and equipment that contractors would ordinarily have with them to be able to do the job.

- 6.4.5 The cost of special vessel charter made power installation on Fair Isle more expensive to deliver and created a planning dependency on the availability of chartered vessels. These dependencies also attracted cost as contractors had to price the risks of delays in getting their assets off Fair Isle and back into productive use elsewhere. A lessons learned document was produced after the project (although not provided for this report). It specifically identified the significant additional challenges of delivering the power project related to the existing vessel and cargo handling arrangements.
- 6.4.6 By contrast, the Canna project was delivered much more efficiently as machinery, tools and equipment could be driven onto the MV *Lochnevis*. Heavy components could be moved on trailers directly onto the vessel without additional handling.
- 6.4.7 From an ongoing resilience perspective, the project team needed to consider servicing and maintenance needs. Where there is relatively easy access to a location, key replacement items are generally held centrally and deployed in rapid response. On Fair Isle, the project team has chosen to hold some critical spares on the island in preference to reliance on securing a charter vessel at short notice to get parts there. There are obvious costs attached to holding local spares of equipment that cannot be deployed elsewhere and may become obsolete before ever needed. This has not been necessary on Canna.
- 6.4.8 Following the power project, Scottish Water is planning a project to upgrade the island's water supply. This will be a similarly engineering-led project requiring the movement of large equipment and supplies. The introduction of consistent power and improved water supply infrastructure is anticipated to support island life and encourage people to visit the island, another thread of the Development Plan. Further projects identified include the refurbishment of the two lighthouses on the island. With the current shipping arrangement based on restricted Lo-Lo capability, these projects will be comparatively more costly to deliver than projects on other islands and the mainland.

Key Point: The experience of the Fair Isle Electricity Project provides a useful case study of the challenges of delivering and maintaining a large infrastructure project on the island. The limitations of the current vessel in terms of capacity and Lo-Lo configuration made it more expensive and difficult to deliver the project than on comparable islands such as Canna. Unless resolved, these issues will impact on the cost and / or viability of future capital projects on the island.

6.5 Summary

- 6.5.1 This chapter has set out the functioning of the Fair Isle supply-chain, of which the current ferry service is the most integral component. The current arrangements can broadly be considered to work, at least for day-to-day needs. However, they build in inefficiency and cost and, in many cases, require the goodwill of the crew, island residents and businesses and suppliers to be effective. The current infrastructure also means that any project related work requires the charter of specialist vessels at significant cost to either the community (e.g. when rebuilding the Bird Observatory) or the public sector or commercial provider.
- 6.5.2 The position in Fair Isle is in stark contrast to the Small Isles, which have a similar population and range of challenges. The conversion of the former Lo-Lo routes to Ro-Ro in the early 2000s has dramatically improved the supply-chain arrangements of those islands, both in terms of the daily supply-chain and project related traffic.

7 Socio-Economic Case - Detailed Option Development

7.1 Overview

7.1.1 Having considered the economy, connectivity and supply-chain of Fair Isle, this chapter progresses the options emerging from SBC to a preferred option for Fair Isle.

7.1.2 To recap, after reviewing the SBC, the options emerging are as follows:

- **Do Minimum:** Replace the MV *Good Shepherd IV* with a like-for-like, but materially faster vessel.
- **Option 1:** Replace the MV *Good Shepherd IV* with a bespoke Ro-Ro vessel.
- **Option 2:** Bespoke mainland-based Lo-Lo ferry service.

7.1.3 Progressing the above shortlist to a preferred option requires resolution of the following questions:

- What **strategic approach** should be taken to future ferry service provision in Fair Isle?
 - What should the scale of the operation be?
 - Where should the crew and vessel be based?
- What is the most appropriate **vessel** option?
- Having defined the vessel, what is the most appropriate **ship-to-shore** interface?
- What are the options in relation to **overnight berthing**?

7.1.4 The remainder of this chapter takes each of these questions in turn, shaping the preferred option for Fair Isle. However, in advance of that, the 'case for change' is restated and the implications of a 'Do Nothing' summarised.

7.2 Case for Change

7.2.1 The 'case for change' can be summarised as:

- The current vessel is over 30-years old, having entered service on the Fair Isle run in 1986 and does not meet current accessibility standards. It has circa five-years of remaining service life, although some expenditure will be required to achieve this.
- The service is **unreliable** and there are consequences of this in terms of:
 - **Supply-chain** – e.g. import of fresh produce, export of goods etc.
 - **Service provision** – e.g. providing health care and facilitating access to secondary school.
 - **Personal travel** – e.g. missed appointments and limited opportunities on the mainland for Fair Isle residents.
 - **Visitors and tourists** to Fair Isle, both in terms of the choice to visit the island and travel disruption *en-route* or on the return journey.
- In the 2019 Fair Isle household survey, 2/3 of respondents indicated that **aspects of the ferry service prevent travel to the mainland more often** – more than half of respondents cited comfort, crossing time and the **absence of Ro-Ro** as key barriers to travelling more by ferry.
- The current crane-based operation:
 - poses a potential medium-term **regulatory risk** to the continuation of the service;

- places **limits on the weight / type of goods** carried; and
- affects **vessel turnaround** times.
- There is a local **desire for improvements** as evidenced in the household survey:
 - 85% did not think the current air and ferry connections to the mainland are sufficient for their family's day-to-day needs, now and in future.
 - 2/3 thought that connections were not sufficient for tourism – 3/4 wanted to see tourism develop further.
 - 1/4 felt current connections were not sufficient to ensure long-term sustainability of Fair Isle.
 - 80% felt that better connections would make Fair Isle more attractive for in-migrants.

7.3 Do Nothing

- 7.3.1 Whilst the STAG guidance does not explicitly recognise the need for a 'Do Nothing', consideration of this option is required in a business case.
- 7.3.2 In the context of Fair Isle, the 'Do Nothing' would involve continuation with the current vessel and infrastructure. Day-to-day maintenance would be undertaken but no major capital replacement work or refurbishment would be funded. The service would be discontinued at the point where the vessel or landside infrastructure required major capital investment. A charter vessel would be required to bring in freight on a Lo-Lo basis.
- 7.3.3 The 'Do Nothing' is clearly not a tenable option for Fair Isle. As has been highlighted in the previous chapter, the ferry service is integral to the island supply-chain and also acts as a secondary mode for passenger travel. The 'Do Nothing' is therefore not considered further in this business case.

7.4 Strategic Approach

- 7.4.1 The current Fair Isle infrastructure and service represents a bespoke solution reflecting the needs of the island. The vessel and crew are island-based and the infrastructure designed around that solution. The strategic question therefore is whether that situation should be perpetuated for the next 30 or so years or whether Fair Isle should be migrated to similar operational practices as the rest of Shetland.
- 7.4.2 The most effective way to show the two strategic approaches is via a 'decision tree', which highlights the implications of each choice for different aspects of the service. This is shown below, with the preferred option shown in green (and explained forthwith):

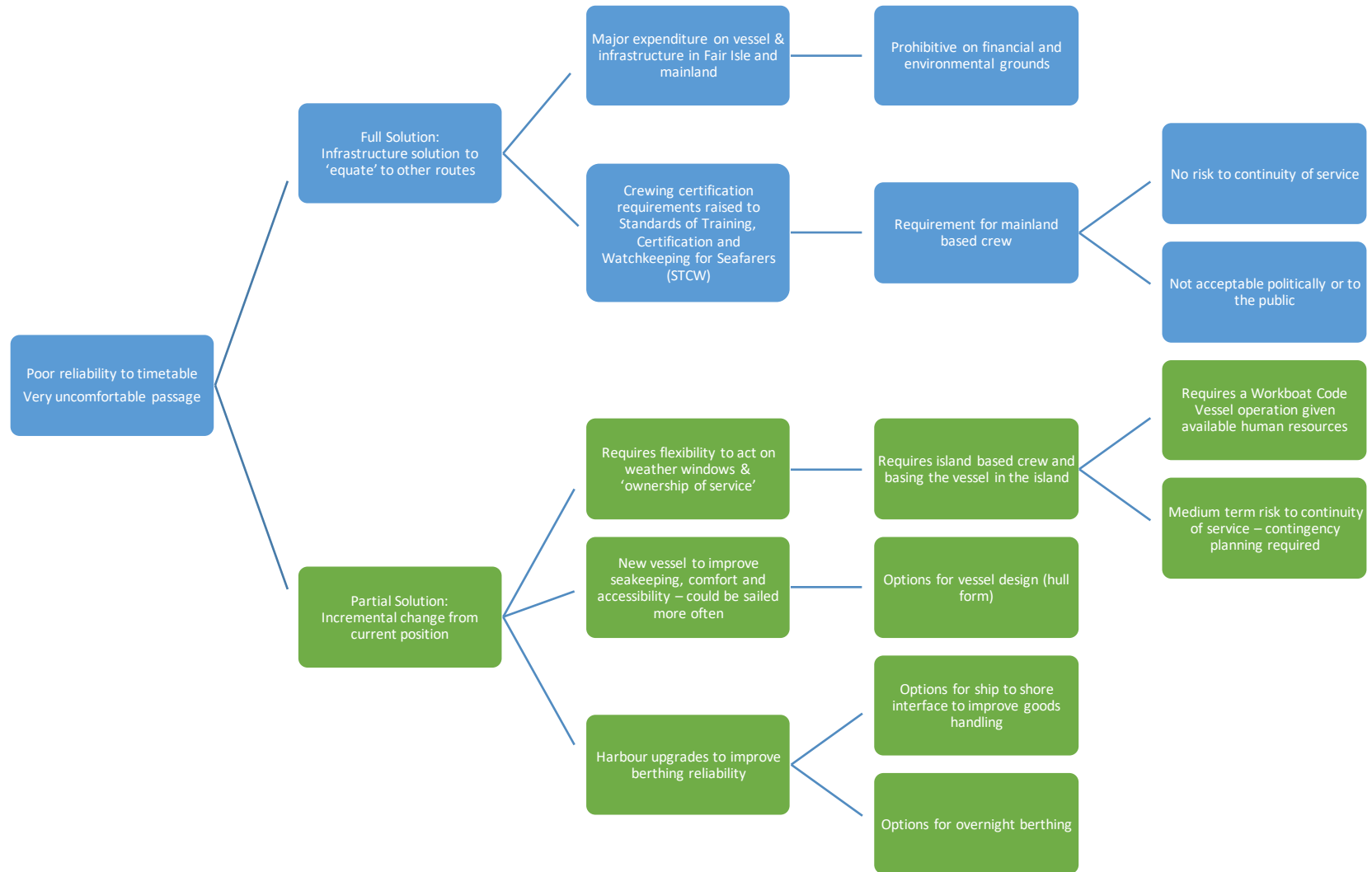


Figure 7.1: Fair Isle Strategic Approach – Preferred Approach

Full Solution

- 7.4.3 The so-called ‘full solution’ – equating the Fair Isle infrastructure and service to other routes in Shetland (with the exception of Foula) – would have a range of implications for both assets and human resource.

Infrastructure

- 7.4.4 The infrastructure requirements of the ‘full’ solution at Fair Isle would be broadly as follows:
- Purchase of a new vessel at least equivalent in size to the Skerries ferry MV *Filla* to ensure improved seakeeping and reliability. The MV *Filla* is 35 metres long and an estimate at SBC stage suggested that a new vessel of this type would cost circa £4.1m to build in a Polish yard. This cost has likely risen since then.
 - A vessel of this size and weight could not readily be taken out of the water at Fair Isle. There would therefore be a need for:
 - harbour upgrades at Fair Isle, including substantial new breakwaters, to provide sufficient shelter for the vessel to remain in the water overnight; **or**
 - a new overnight berth at Grutness, which again would require major investment to provide the necessary shelter in all weather; **or**
 - overnighing the vessel in Lerwick, significantly extending steaming times to Fair Isle and accruing commercial harbour charges from Lerwick Port Authority.
 - The landside infrastructure at both Fair Isle and Grutness would also need to be upgraded to include a linkspan, vehicle marshalling area and a terminal building, which would be both expensive and (particularly at Fair Isle) challenging to accommodate within the available space.
 - The impact of a larger vessel in North Haven should also be highlighted as it would occupy more quay space, impacting on use by visiting yachts in the summer. It should also be noted that vessels of the size of MV *Filla* can find manoeuvring in North Haven challenging when conditions are not favourable, which could further impact on service reliability.

Human Resource

- 7.4.5 As explained in Chapter 3, the MV *Good Shepherd IV* operates under the ‘workboat’ code, which means that the crew require a lower level of certification / qualification than they would if they were operating a vessel equivalent to the MV *Filla*. A key benefit of this from a Fair Isle perspective is that it more easily facilitates an island-based crew and thus offers both the ownership and flexibility associated with this.
- 7.4.6 If the decision was taken to scale the service up to a vessel beyond the workboat code, a much more onerous set of qualifications would be required by the crew – this is known as the Standards of Training, Certification and Watchkeeping (STCW) for seafarers. An advantage of this arrangement would be the removal of the 12-passenger limit associated with the workboat code mode of operation.
- 7.4.7 For the current Master of the MV *Good Shepherd IV*, this step-up in qualifications would require attendance for 3 months at the North Atlantic Fisheries College in Scalloway, followed by one year at sea on a qualifying vessel before sitting a Master’s Oral examination. This would represent a very significant commitment for the current Master, the implications of which include:
- There would be a requirement for the Master to leave Fair Isle for a minimum of 15-months, which is likely to be an unattractive prospect.
 - The current Relief Master is retired – he would either have to come out of retirement for the period the primary Master is away from the island (which he is unlikely to want to do) or another Master(s) would need to be put into the island on a temporary / agency basis (which would again be challenging to deliver).

- An additional relief Master would need to be arranged.
- The Master currently fulfils a range of other roles on the island, including providing support at the airfield. Cover would also have to be provided for these roles.

7.4.8 Given the steps required to obtain STCW certification, particularly the required sea time, it is highly unlikely that any such vessel could be crewed from Fair Isle. Even if there was an undertaking made by a group of island residents to obtain the necessary certification, it would need them to leave the island for a prolonged period, which would impact on other on-island activities, fire cover at the airfield for example. Recruitment would be an option, but there is a global shortage of appropriately qualified seafarers, whilst attracting such individuals to live on Fair Isle would also be an issue (the Council has tried and failed in the past). The increased certification requirements would also impact on succession planning and the long-term ability to crew the vessel from Fair Isle, introducing a risk to the long-term sustainability of an island-based vessel.

7.4.9 It is therefore highly likely that a 'full solution' would require a mainland-based vessel and crew. Whilst there is no technical reason that this could not be done, a contracted mainland crew would be unlikely to offer the level of flexibility that a Fair Isle crew can. Whilst a larger vessel would improve seakeeping and possibly reliability (taking account of vessel manoeuvring in North Haven), the crossing to Fair Isle will always be long and weather-exposed and there will remain a practical requirement to work around weather windows. It is therefore likely that the already poor connectivity of the island would further diminish. Such a solution would not be acceptable to the Fair Isle community given their concerns with the current arrangements.

Partial Solution

7.4.10 The 'partial' solution would maintain a bespoke solution for Fair Isle, representing a compromise between a higher infrastructure specification and the need of the island for flexibility.

7.4.11 This approach would commit to the long-term retention of the vessel and crew in Fair Isle, allowing for the continuation of current flexible operational practices, most notably responding to weather windows. Whilst the evidence suggests that the infrastructure is not fully meeting the connectivity needs of the island, it is anticipated that a new, modern and faster vessel and improved landside infrastructure would provide at least some opportunity to operate some additional sailings. Whilst this approach is the preferred option of the Fair Isle community, there are two challenges / constraints which have to be acknowledged if it is selected as the way forward:

- Any new vessel would operate under the workboat code, limiting the number of passengers to 12. This places a long-term constraint on the use of the ferry as a passenger service, albeit an increase in capacity could be achieved through greater frequency of sailing.
- There would be a joint requirement within the Council and the Fair Isle community to ensure a clear succession plan for crewing the vessel, as well as appropriate contingency measures in the event that some of the existing crew were e.g. long-term sick. An outcome where a smaller vessel was progressed to meet the needs of Fair Isle but could then not be crewed would be the worst of both worlds.

Preferred Option

7.4.12 The **preferred option is to progress the partial solution** (the green shaded boxes in the decision tree). The infrastructure works required to scale-up to a 'full' solution, together with the loss of flexibility for Fair Isle make this highly unattractive and of disproportionate cost.

7.4.13 The partial solution is much more closely tailored to the needs of Fair Isle and is proportionate to the transport problems and opportunities which have been identified. Whilst it is acknowledged that it places a constraint on passenger numbers, the nature of the connection to Fair Isle suggests that passenger numbers will always be limited in any case, particularly when considered in the context of the expanded air service recommended in the Air OBC.

Decision Point: For the reasons cited above, the preferred option is for the new Fair Isle vessel to be based on the island and operated under the workboat code. To this end, **Option 2 – bespoke mainland Lo-Lo ferry service – is excluded from further consideration.**

Crewing

- 7.4.14 To be coded as a workboat, any new vessel would be in the range of 150 gross tonnes (GT) – 500GT and less than 24m length overall. Current workboat legislation sets out the crewing and certification requirements. These requirements vary for vessels of less than 200GRT (those required for the MV *Good Shepherd IV*) and vessels over 200GRT (those which are anticipated to be required for any new vessel). It should be noted that there is emerging workboat legislation which would need to be adhered to for any new workboat compliant vessel operated on the Fair Isle route.
- 7.4.15 As the new vessel would undertake the same operation as the MV *Good Shepherd IV*, it is anticipated that the number of crew would remain the same. However, the new vessel would require the Engineer to possess a Marine Engineer Operating License (MEOL). This would entail a 30-hour course at the North Atlantic Fisheries College in Scalloway followed by an oral exam. It is understood that two of the current MV *Good Shepherd IV* crew have submitted funding applications to the Council to enable them to achieve the MEOL.
- 7.4.16 As explained in Chapter 3, six of the seven members of the current MV *Good Shepherd IV* crew are set to retire by 2032 or thereby. If a decision is taken to commit investment to retain the vessel on island, a long-term training and succession plan should be developed jointly by the community and the Council to de-risk the long-term sustainability of a Fair Isle based vessel. This would also align with the aspirations of the FIDP to up-skill the island population and create well-paid and secure jobs which could assist in retaining population or attracting new families to the island.

7.5 Vessels

- 7.5.1 As explained in Chapter 2, based on the information available at the time, the SBC concluded that a catamaran would be the most appropriate vessel for Fair Isle. However, in keeping with the business case guidance, critical decision points of this nature are more fully reviewed at OBC stage. Again, the most appropriate way to show the implications of prospective vessel choices is via a logic tree:

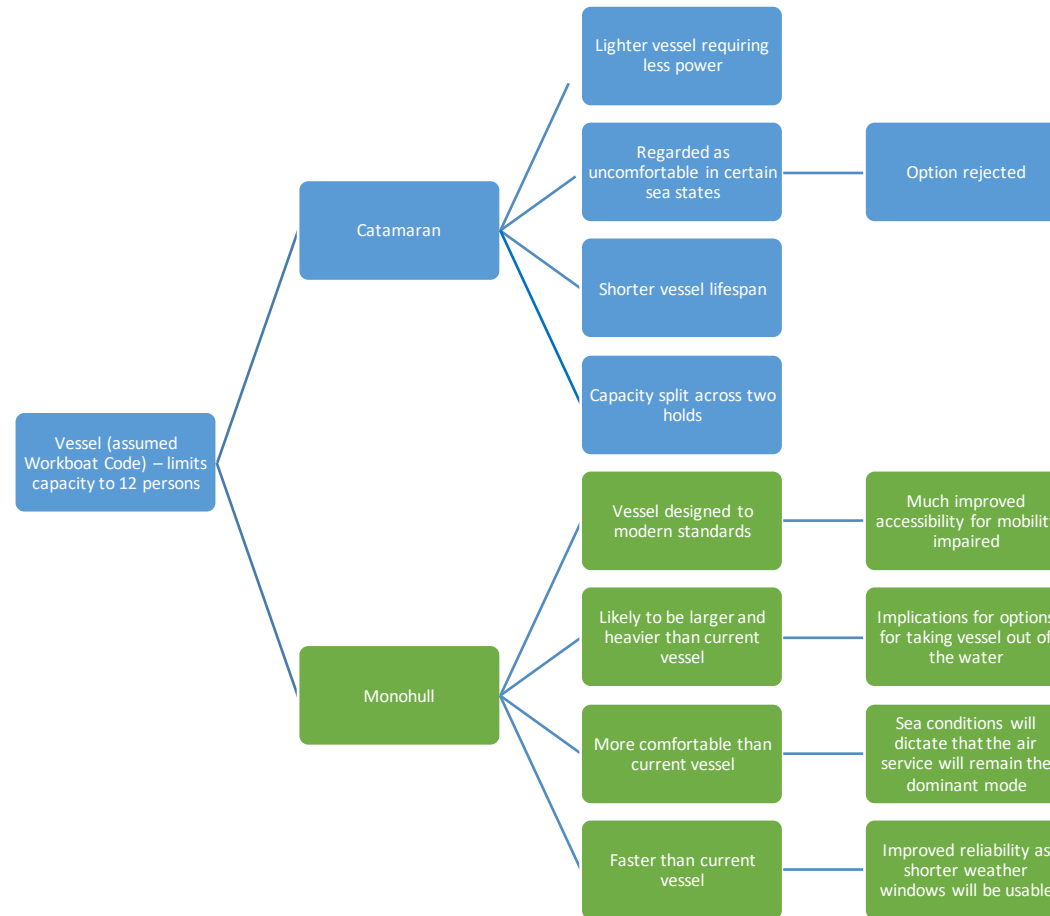


Figure 7.2: Fair Isle Vessel Options – Logic Tree

- 7.5.2 There are two main vessel choices for Fair Isle, a catamaran or a conventional monohull. Other hull forms such as a SWATH were considered at SBC stage and ruled out – a brief review at OBC suggests that this conclusion remains appropriate. This section therefore considers the comparative merits of a catamaran and a monohull.

Catamaran

- 7.5.3 A medium speed catamaran was identified as the preferred option at SBC stage because it was considered that it could make the best use of weather windows and would require less power when compared to a conventional monohull. However, on further consideration at OBC stage, a catamaran is excluded from further consideration because:

- The sea conditions between Fair Isle and Shetland mainland are such that it is considered unlikely that it could operate at its maximum speed much of the time, detracting from the benefit identified at SBC stage. It could also be uncomfortable for passengers and make the service less reliable overall.
- A catamaran would have a larger beam than an equivalent monohull of the same capacity, requiring more extensive landside work, particularly at Fair Isle where the vessel is taken out of the water (this point was acknowledged at SBC stage but, at that point, the option of basing the vessel on the mainland remained in-play).
- Catamarans are also generally of lighter construction (aluminium) and thus have a shorter service life than steel built monohull vessels. From a present value of costs perspective, a replacement catamaran may have to be planned for within the life of the appraisal, which would not be the case for a monohull.
- Whilst the hold capacity of a catamaran may be equal to or greater than a monohull, it would be split over two separate compartments, thus imposing size restrictions on the goods which can be carried, a key issue for Fair Isle currently.

Monohull

- 7.5.4 The **preferred option** for Fair Isle is therefore a new monohull vessel: The new vessel would be:

- A maximum of 24 metres length overall, so as to remain within the workboat code:
 - It is highly likely that any new vessel would be longer, beamier and heavier than the MV *Good Shepherd IV*, which will have implications for landside infrastructure.
- For these waters, the new vessel would need to have an appropriate bow form, bulbous bow and most likely a stern ramp. It is likely that the replacement vessel will have a different geometry than the current vessel (greater displacement, length, beam, and deeper drafted).
- Built to modern design standards, particularly in terms of facilitating step free access from the quayside to the passenger lounge(s).
- Faster, allowing the vessel to take greater advantage of weather windows (albeit acknowledging that the maximum speed will not be deliverable in all sea states).
- Offer greater flexibility in the sizing and handling of cargo due to the larger single hold.

- 7.5.5 The OBC does not typically establish the exact vessel to be used on the route. Whilst referenced in the Commercial Case of the OBC (which lays out procurement options), it is not further developed until the detailed design and Final Business Case stages, the point at which the project is moving towards procurement. The Commercial Case will generally set out the extent to which the buying party wishes to specify all elements of the vessel or provide an output-based specification against which shipyards can design and tender.

- 7.5.6 Whilst a preferred vessel is not specified, it is necessary at this stage of the OBC to provide a high level of design vessel as the basis for scoping out necessary infrastructure works. Shetland

Islands Council, together with the crew of MV *Good Shepherd IV*, has been exploring prospective vessels for the route. One option identified is a Norwegian designed and built vessel known as the MD240, a picture of which is shown below:



Figure 7.3: Proposed Design Vessel – MD240

- 7.5.7 The MD240 is an appropriate high-level design vessel for this stage of the OBC process. It has the following characteristics:

Table 7.1: Proposed Design Vessel – Key Particulars

Parameter	Value
Length Overall	23.98m
Beam	11.20m
Laden Draught	3.50m
Gross Tonnage	250 tonnes (approximate)
Approx. car carrying capacity	4

- 7.5.8 For the purposes of harbour general arrangement drawings, the MD240 is used as the design vessel.

Decision Point: The preferred vessel is a monohull less than 24m length overall. The vessel will be coded as a workboat.

7.6 Ship-to-Shore Interface

- 7.6.1 Having defined the strategic approach and preferred vessel type, the next consideration is the ship-to-shore interface. The options are again summarised in a decision tree.

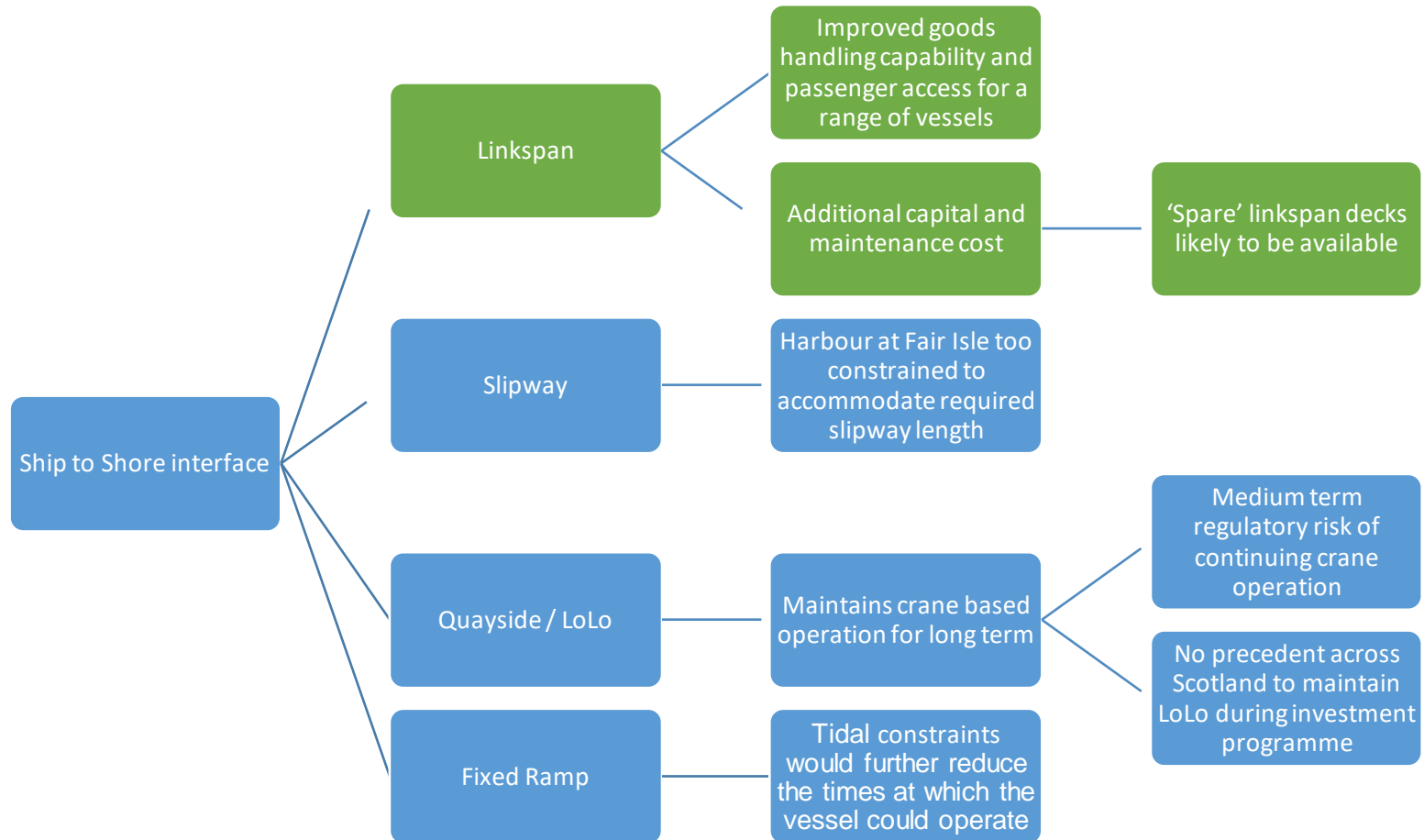


Figure 7.4: Fair Isle Ship-to-Shore Interface Options

Quayside Lo-Lo

- 7.6.2 A quayside Lo-Lo would represent a continuation of the current operational practice. Whilst this has been effective over many years, it is not without its limitations (as explained earlier in this report). These include the constraints imposed by the lifting capacity of a vessel-based crane, the safety parameters within which craning can be undertaken at an exposed berth and the impact on turnaround times.
- 7.6.3 It is important to note that there is no precedent anywhere in Scotland where life-expired lifeline Lo-Lo infrastructure has been replaced on a like-for-like basis. The most obvious comparator is that of the Small Isles, where a Ro-Ro conversion was undertaken for Canna, Eigg, Muck and Rhum in the early 2000s, replacing the previous Lo-Lo / flit-boat arrangement.
- 7.6.4 There is also a concern amongst communities still operating Lo-Lo services that, over time, increasingly onerous health and safety requirements (either as a result of evolution or a crane-based incident in Fair Isle or elsewhere) could restrict the windows within which crane-based operations could take place, for example lowering the thresholds for vessel motion or wind speed etc. It is important to note that there is no imminent threat in this respect, rather it is a potential longer-term risk which would need to be managed. If any such restrictions did emerge, these would further impact on the supply-chain, increasing the number of service outages.
- 7.6.5 The retention of Lo-Lo is the 'do minimum' for Fair Isle, but it would lock in the transport and supply-chain problems of the island for several decades to come and, for this reason, is excluded from further consideration. It should be noted that the primary purpose of moving to Ro-Ro is to facilitate the handling of goods – the intention is not to encourage regular car travel, and car-based tourism, and indeed a 'permit' system could be considered analogous to that operating for Iona and the Small Isles.

Decision Point: The restrictions posed by Lo-Lo operations on Fair Isle, together with the lack of precedent for replacing a life-expired Lo-Lo operation on a like-for-like basis, means that the **Do Minimum option – Replace the MV *Good Shepherd IV* with a like-for-like, but materially faster vessel - is eliminated from further consideration.**

By extension, the **preferred option is therefore Option 1 – Replace the MV *Good Shepherd IV* with a bespoke Ro-Ro vessel.** The subsequent analysis in this report is focused on that option.

Fixed Ramp

- 7.6.6 A 'fixed ramp' would accommodate a vessel's vehicle ramp over a restricted tidal window. Whilst this is an effective means of ship-to-shore interface for Ro-Ro vessels at some ports, the resulting tidal constraints would further reduce the times at which the vessel could operate at both Fair Isle and Grutness, creating a tidal timetable and impacting on flexibility with regard to weather windows i.e. weather windows would need to coincide with appropriate tidal windows, likely reducing service levels. This would be unacceptable to the community and would likely worsen the current level of service.
- 7.6.7 It is important that the solutions for Fair Isle and Grutness maintain the maximum level of flexibility for this route. Having the shoreside infrastructure place further restrictions on the service is unacceptable and, for this reason, **a fixed ramp solution is excluded from further consideration.**

Slipway

- 7.6.8 A slipway would provide a more flexible ship-to-shore interface option for Ro-Ro vessels, compared to a fixed ramp. Using the typical slipway gradient of 1 in 8, the slipway at Fair Isle would need to be approximately 80m in length.

- 7.6.9 The existing harbour infrastructure at Fair Isle is spatially constrained. Our research suggests that the construction of a slipway of the required length is not feasible within North Haven due to the aforementioned spatial constraints, the requirement for protection within the harbour provided by the breakwater and the available water depths within the harbour at Fair Isle. For these reasons, a slipway solution is **excluded from further consideration**.
- 7.6.10 The provision of a suitable slipway at Grutness would require significant lengthening of the existing quay structure and is also **excluded from further consideration**.

Linkspan

- 7.6.11 Introduction of Ro-Ro capabilities to the Fair Isle route would increase the resilience of the service and improve safety in terms of passenger access and goods handling. Operating from linkspans would allow the service to remain flexible as it would not be restricted by the tidal state, as would be the case with a fixed ramp.
- 7.6.12 The provision of a linkspan would significantly improve the Fair Isle supply-chain through simplifying goods handling and removing the current crane capacity restrictions. In particular, the use of linkspans would reduce vessel turnaround times, with reduced time taken to load / unload goods from the vessel (thus reducing the overall weather window required and potentially increasing reliability). Palletised goods could be dropped on the deck by the forklifts currently used to manoeuvre pallets for craning on and off of the vessel.
- 7.6.13 The introduction of a new vessel and linkspan interface would also provide a major improvement in terms of passenger access and egress allowing those with impaired mobility to board via the linkspan.
- 7.6.14 In terms of the operational safety of a linkspan / vessel interface, there is a requirement to ensure suitable wave climate on the linkspan berth at both Fair Isle and Grutness. Provision of improved shelter is included for both locations.
- 7.6.15 There will be additional capital and maintenance costs associated with the provision of linkspans for this route when compared to the other ship-to-shore interface options. However, it should be noted that the capital cost associated with the supply of 2No. new linkspan decks may be reduced due to the potential availability of 2No. decks from the current Council Linkspan Life Extension Project. It is therefore anticipated that there will be 2No. 'Type A' linkspan decks available for use at Fair Isle and Grutness as a result of these other works across Shetland.

Preferred Option

- 7.6.16 **The preferred option is to provide a linkspan interface at both Fair Isle and Grutness** (the green boxes in the logic tree) for the following reasons:
- The perpetuation of a Lo-Lo operation locks in the existing transport and supply-chain process and may be subject to increased regulation in the future, potentially compromising service flexibility and resilience.
 - The concept of Ro-Ro as a whole could be transformative for Fair Isle:
 - It would remove the crane-based weight restrictions associated with Lo-Lo operations.
 - Turnaround times would also be reduced, providing the ability to operate sailings within tighter weather windows (and potentially facilitating an increase in frequency).
 - Physical accessibility to the ferry would be significantly improved for passengers, a key issue given current access arrangements and the ageing population of the island.
 - A suitable slipway cannot be provided within North Haven and the loss of resilience and flexibility associated with a fixed ramp also rules out this option.
- 7.6.17 Implementation of a linkspan service would also improve the operational safety of the infrastructure provided at Fair Isle and Grutness. It will also be a step towards meeting the

connectivity needs of the island. Improved turnaround times associated with a Ro-Ro service along with continuation of current practice through responding to weather windows and a faster vessel will provide the potential for operation of an increased number of sailings.

- 7.6.18 Provision will also assist with delivery of the Council's Critical Success Factors including the provision of improved resilience of their transport service to Fair Isle and compliance with legislative obligations in terms of passenger accessibility.
- 7.6.19 Finally, it should be noted that a frequent concern of islands migrating from Lo-Lo to Ro-Ro is an increase in tourist / visitor cars to the island. In reality, the proposed size of the vessel and frequency of sailings means that this would be highly unlikely. However, it may nonetheless be appropriate to introduce a vehicle permit system along the lines of that used on Iona and the Small Isles, where only resident registered vehicles are permitted carriage on the ferry.

Decision Point: The preferred option is to provide a linkspan interface at both Fair Isle and Grutness.

7.7 Overnight Berth

- 7.7.1 Having defined the strategic approach, preferred vessel type and ship-to-shore interface, the final consideration is the overnight berthing options for the new vessel at Fair Isle. The options are again summarised in a decision tree.

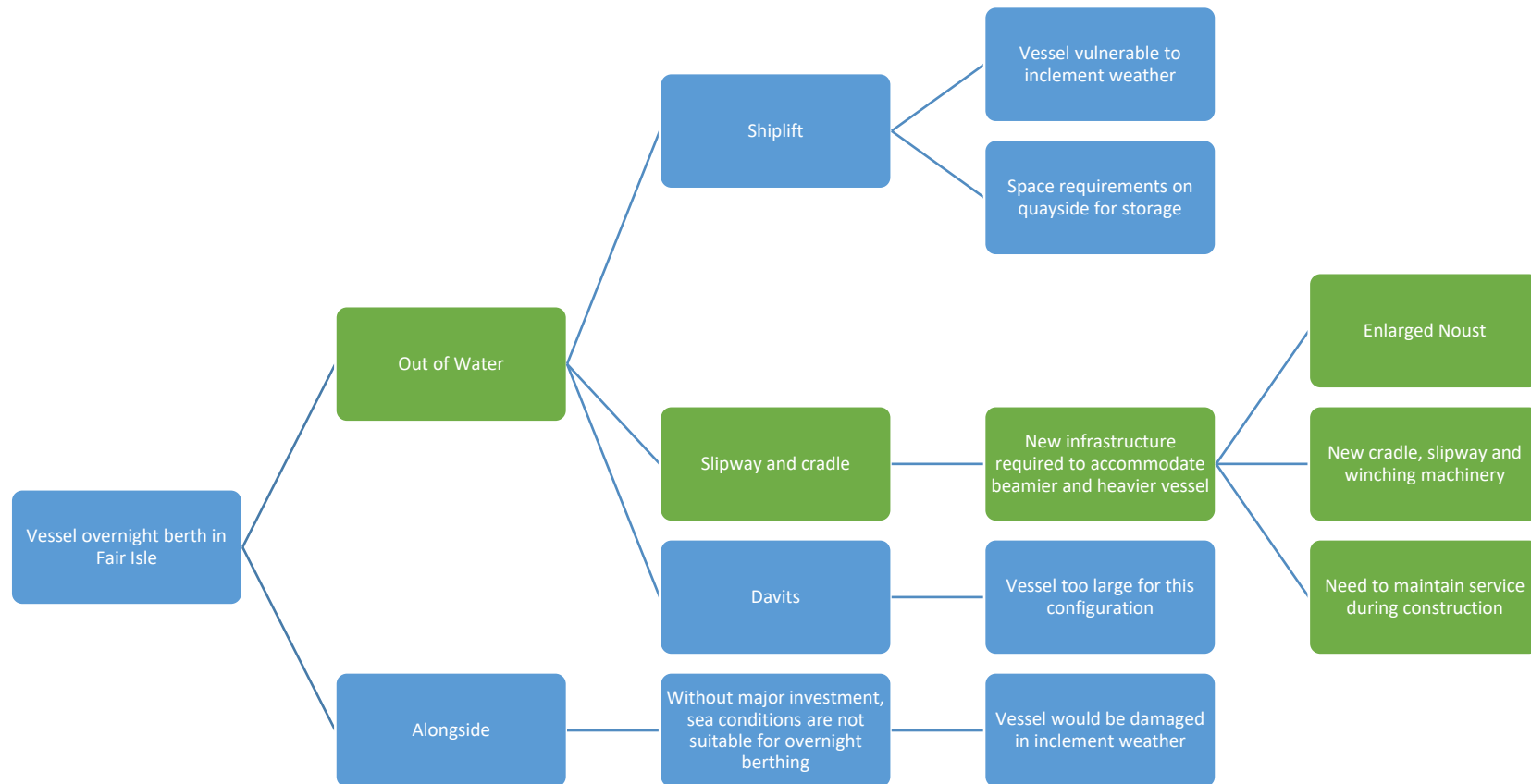


Figure 7.5: Fair Isle Overnight Berthing Options

Alongside

- 7.7.2 Currently, the MV *Good Shepherd IV* overnights at North Haven, Fair Isle. In fair weather during the summer, she berths alongside the quay and during winter, or on forecast of inclement weather / sea state, she is brought ashore using the cradle and slipway.
- 7.7.3 Without major investment to provide suitable shelter and berthing / mooring arrangements at Fair Isle, the conditions within the existing harbour are not suitable for reliable year-round overnight berthing. This is best shown in a photograph, where the waves can be seen overtopping the quayside (this can be compared to the photograph in calm conditions in Figure 3.5):



Figure 7.6: North Haven in inclement weather

- 7.7.4 The required investment to provide a secure, in-water, year-round overnight berth would likely include construction of an overlapping breakwater to the north-west of the approach to North Haven as well as significant improvements to the existing solid quay including an appropriate fendering system, quay furniture and dredging.
- 7.7.5 Without the investment indicated above, if any new vessel was to berth alongside the solid quay overnight or in inclement weather, both the vessel and marine infrastructure would sustain significant and potentially irreparable damage. For this reason, overnight berthing alongside the solid quay is excluded from further consideration and options for getting the vessel out of the water are discussed below.

Shiplift

- 7.7.6 An alternative option would be the use of a shiplift or boat hoist. A shiplift is often used in boatyards etc. to lift vessels out of the water and consists of two piers, one either side of a suspended deck. The deck is generally suspended by either pier mounted winches and wire ropes or hydraulic cylinders. The deck generally has rails on it and a suitable vessel cradle riding

on the rails. The deck complete with cradle is lowered into the water and the vessel manoeuvres into the cradle prior to the winches or cylinders lifting the suspended deck and vessel out of the water. Once out of the water, the cradle would be winched along rails to the noust.

- 7.7.7 The difficulty with this solution is: (i) The depth of water required to allow the vessel onto the cradle at all states of the tide pushing the shiplift out to a location similar to the end of the current finger pier (or a dredged pocket requiring maintenance dredging); (ii) generally, the suspended deck, and the rails on it, need to be level / horizontal leading to difficult gradient transitions to be accommodated by the cradle as it is winched. Further, such a system introduces added complexity and maintenance over the existing arrangements.
- 7.7.8 A boat hoist also requires finger piers extending out into deep enough water to allow the vessel to manoeuvre over slings suspended from the hoist. Once the vessel is positioned, the hoist raises the slings and lifts the vessel out of the water prior to travelling shoreward. Typically, these boat hoists need large areas to manoeuvre and can only accommodate shallow gradients. North Haven is already spatially constrained and could not accommodate this; in addition, the existing gradient into the noust would likely be too steep for such a boat lift. Furthermore, the vessel could not be left suspended in the hoist, it needs to be positioned into a cradle in a sheltered location, e.g. the noust. The boat hoist itself also needs to be parked in a sheltered location, adding to spatial requirements.
- 7.7.9 Such a system adds complexity and maintenance burden over the existing which cannot be justified.

Davits

- 7.7.10 Lifting davits or large cranes can be fixed to quay wall structures to raise and lower vessels from / into the water. However, the preferred vessel is too large for this configuration (the davits for the much smaller Foula ferry are believed to be amongst the largest in existence) and transfer to an enlarged noust would be technically difficult and would require a complex cradle and rail arrangement including some form of side transfer. For this reason, use of davits is excluded from further consideration.

Slipway and Cradle

- 7.7.11 The MV *Good Shepherd IV* is currently brought ashore using a steel cradle that rides on the slipway rails and is drawn up and down by an onshore winch. The slipway rails extend into a 'noust' which provides shelter to the vessel when it is out of the water. The noust is approximately 30m long, 10m wide and is formed in a cliff to the south-east of the existing harbour.
- 7.7.12 In order to accommodate the proposed new vessel, which will be longer, heavier and beamier than the MV *Good Shepherd IV*, the noust would require to be enlarged along with upgrade of the winch house and provision of a larger cradle. The existing finger pier would require to be demolished and replaced. The alignment of the slipway and rails would be confirmed at detailed design stage to minimise the period of outage during construction.

Preferred Option

- 7.7.13 The existing slipway and cradle arrangement work well for Fair Isle. In the absence of appropriate infrastructure to support berthing at the quayside, replacement of the current slipway and cradle arrangement is the preferred option for overnight berthing at Fair Isle.

Decision Point: Replacement of the current slipway and cradle arrangement is the preferred option for overnight berthing at Fair Isle.

7.8 Preferred Option – Summary

- 7.8.1 Through the analysis undertaken in this chapter, it has been determined that the preferred option for the replacement of the Fair Isle ferry is **Option 1 – Replace the MV *Good Shepherd* /V with a bespoke Ro-Ro vessel**. In reality, since the vessel is to be a Ro-Ro capable workboat, this is a hybrid of the Do Minimum workboat option and the bespoke Ro-Ro option. A summary of the key particulars is provided below.

Strategic Approach

- 7.8.2 The preferred option is to progress with a bespoke solution for Fair Isle with the **retention of an island-based vessel and crew**. To de-risk the adoption of an island-based option, contingency and long-term crewing arrangements must be developed between the Council and the Fair Isle community to ensure a clear succession plan for crewing the vessel.

Vessel

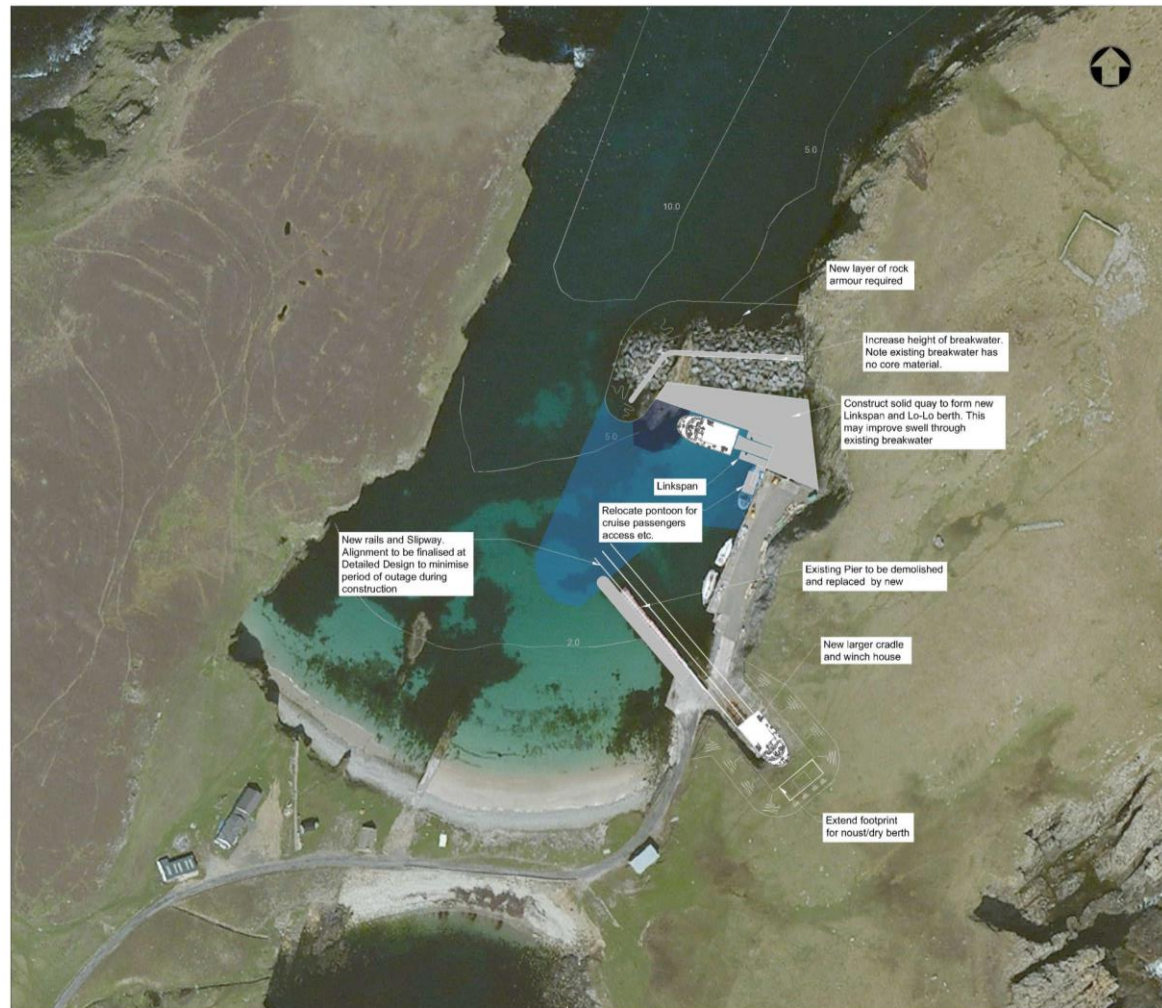
- 7.8.3 The preferred option for Fair Isle is a larger, faster monohull vessel built to modern standards. This new vessel is to be coded as a workboat, limiting the number of passengers to 12. The vessel design will be focused on providing improved passenger comfort and seakeeping, therefore improved reliability.
- 7.8.4 Whilst a preferred vessel is not specified in the business case process, it is necessary at this stage to provide a high-level design vessel as the basis for scoping out necessary infrastructure works. The Norwegian designed and built MD240 is an appropriate high-level design vessel for this stage of the OBC. This vessel is not normally configured as linkspan compatible but the shipyard has confirmed that such a configuration is possible. The vessel normally comes with two cranes - the intention would be to retain one crane for loading goods into the hold and building in flexibility of operation during any periods of linkspan maintenance etc.

Ship-to-Shore Interface

- 7.8.5 The preferred option is to provide a linkspan at both Fair Isle and Grutness. It is anticipated that there will be 2No. small 'Type A' linkspan decks available for use at Fair Isle and Grutness as a result of the Council's planned refurbishment project for 13No. linkspan decks across the wider Shetland network.

Fair Isle Linkspan and Supporting Infrastructure

- 7.8.6 The General Arrangement drawing below shows the proposed marine infrastructure work at Fair Isle.



Shetland OBC Options Development Fair Isle Ro-Ro Linkspan

- All levels are to Chart Datum
- Bathymetric information sourced from Beckett Rankine drawing no. 1537-01-201
- Tide Levels:
 - MHWs = 2.2m
 - MLWS = 0.6m
- LAT has been taken as Chart Datum
- Assumed vessel MD240 or similar with:
 - LOA = 23.98m
 - Beam = 11.20m
 - Service Draught = 2.8m
- Dredge level allows for 1m LKC

- Rock dredging to -4.0mCD
- Maintenance dredging to -4.0mCD



Location Plan



Figure 7.7: Fair Isle – Preferred Infrastructure Option

- 7.8.7 As can be seen from the above figure, it is proposed that the linkspan will be constructed to the north of the existing solid quay, in an east-west orientation. An extension to the north and west of the existing solid quay will provide the vehicular approach to the linkspan and Ro-Ro berth, ensuring appropriate space for vehicle manoeuvring. Due to the proximity of the linkspan to the existing breakwater and the lack of core material within it, the new solid quay structure may further improve conditions on the linkspan berth.
- 7.8.8 In ensuring the operational safety of a linkspan / vessel interface, there is a requirement to ensure suitable wave climate on the linkspan berth. At Fair Isle, it is anticipated that the height of the existing breakwater will require to be increased and an additional layer of rock armour provided on the north face to improve shelter at the new linkspan berth. Wave modelling will be undertaken at the detailed design stage to confirm suitability of the wave climate.
- 7.8.9 Dredging will be required to reduce the level of the rock outcrop located within the existing breakwater. This will allow for 1m under keel clearance for the design vessel.

Grutness Linkspan and Supporting Infrastructure

- 7.8.10 The General Arrangement drawing below shows the proposed marine infrastructure work at Grutness.



Shetland OBC Options Development Grutness Ro-Ro Linkspan

- All levels are to Chart Datum
- Bathymetric information sourced from Shetland Islands Council drawing no. SM-6-1-100
- Tide Levels:
 - MHWS = 1.8m
 - MLWS = 0.4m
- LAT has been taken as Chart Datum
- Assumed vessel MD240 or similar with:
 - LOA = 23.96m
 - Beam = 11.20m
 - Service Draught = 2.8m
- Dredge level allows for 1m UKC, bed understood to be soft material therefore bed overdredged to minimise need for maintenance dredging

Dredging to -4.0mCD



Location Plan



Figure 7.8: Grutness – Preferred Infrastructure Option

- 7.8.11 At Grutness, it is proposed that the linkspan will be constructed to the south-east of the existing berth. An extension to the north-west of the existing solid quay and rock armour protection to the north will improve shelter on the linkspan berth. It is anticipated that general repairs and refurbishment will be required to the existing solid quay.
- 7.8.12 Dredging will be required along the existing and extended solid quay to provide 1m under keel clearance for the design vessel.

Overnight Berth

- 7.8.13 The preferred option is to upgrade the current overnight berthing arrangement at Fair Isle for the design vessel.
- 7.8.14 The noust will be extended and will be accompanied by the provision of a new winch, winch house and cradle. The alignment of the finger pier, slipway and rails will be confirmed at detailed design stage to minimise the period of outage during construction.

7.9 Cost to Government

- 7.9.1 This chapter sets out the absolute and risk-adjusted cost to government for the preferred options for the vessel and associated infrastructure at Fair Isle and Grutness.
- 7.9.2 Cost to government refers to all costs incurred by the public sector as a whole, net of any revenues. All investment costs are presented in both absolute terms and with an adjustment for optimism bias. In addition, as almost all of the costs are up-front and only one option is being considered, costs are not presented as a discounted Present Value of Costs (PVC), rather in undiscounted Q1 2021 prices only.

Progressing the SBC Costs

- 7.9.3 As the SBC was covering nine islands, the approach to costing was high-level, based on a 'vessel typology' and fixed sums for specific pieces of infrastructure (e.g. linkspans). The primary focus of option development at OBC stage has been to refine the options and build-up site specific capital costs based on required infrastructure and quantities.

Optimism Bias

- 7.9.4 There is a demonstrated, systematic tendency for project appraisers to be overly optimistic – this is known as Optimism Bias (OB), where costs are often under-estimated and benefits over-estimated. In order to account for this in appraisal, the H.M. Treasury *Green Book*, and in this case the STAG Technical Database, provide a set of factors by which costs should be scaled-up at different stages of the business case.
- 7.9.5 Table 13.4 of the STAG Technical Database sets out the OB adjustments for different types of project. **Marine infrastructure** is not specifically listed but is assumed to be under the 'Roads' category for the purposes of this appraisal. OB is not typically applied to new **ferries** as there are generally costs for comparable vessels and, in theory, the business case and procurement process should allow cost risks to be transferred to shipyards.
- 7.9.6 The STAG Technical Database recommends the application of 44% OB at SBC stage, reducing to 15% at OBC stage as costs become clearer. However, in marine civil engineering, a package of work is required to obtain greater cost certainty, including ground investigations and wave modelling. These are significant undertakings and are not typically pursued until 'detailed design' stage, which precedes the Final Business Case. For this reason, **OB on marine infrastructure is retained at 44% in this OBC.**

Vessel

- 7.9.7 It is important to note at the outset that it is difficult to establish firm vessel costs at the OBC stage. Unlike landside infrastructure, where bottom-up costing based on quantities is used, the capital cost of a vessel is dependent on:
- how it is procured, and in particular the extent to which the design is specified (this is set-out at length in the Commercial Case); and
 - the position of the global shipbuilding market at that point in time.
- 7.9.8 The cost of a vessel only therefore begins to crystallise when the prospective buyer engages the market. A market testing exercise could take place at FBC stage, particularly if the Council selects a negotiation-based procurement procedure. It will be important at that stage to be continually updating and refining the costs.
- 7.9.9 The above said, market research suggests that a vessel broadly equivalent to the MD240 design vessel would cost in the region of Norwegian Krona (NOK) 57,000,000 (**£4.83m²⁷**), which will subsequently be used as the basis of the Financial Case. Note however that this is the standard price for this vessel and does not include for modifications to the design that would be required in the Fair Isle context, or for any cost savings associated with potential reductions in equipment and fit out specification.
- 7.9.10 To the above figure requires to be added £480k for vessel design. 15% contingency would also need to be added to the vessel design and capital costs, taking the overall vessel cost closer to **£6 million**.

Landside Infrastructure

- 7.9.11 Detailed bottom-up costs at undiscounted Q1 2021 prices are included for the purpose of this analysis, although it is important to note that the ultimate prices provided will depend on the position of the market when the contract is tendered. The prices shown below are inclusive of contingency applied at 15%. These costs are summarised in Table 7.2 below and reported in full in **Appendix B²⁸**:

Table 7.2: Fair Isle and Grutness Ferry Terminals Capital Cost (2021 prices)

	<i>Fair Isle</i>	<i>Grutness</i>
Pier Extension	£2,385,000	£2,445,000
Dredging	£345,000	£155,000
Linkspan	£475,000	£480,000
Breakwater	£460,000	£760,000
Small Pier at Slipway	£1,465,000	-
Slipway and Cradle	£3,640,000	-
Preliminaries	£1,755,000	£770,000
Remoteness	£1,315,000	-
Construction Works Total	£11,840,000	£4,610,000
Consultancy Fees and Consents (10% Construction Cost)	£1,184,000	£461,000
Ground Investigation	£517,500	£173,000

²⁷ Figure based on exchange rate of £1=11.8008 NOK, correct as of Tuesday 23rd March 2021.

²⁸ Note there are minor differences in the numbers presented in Table 7.2 and Appendix B associated with rounding. Contingency is also listed separately in Appendix B but is integral to the numbers in Table 7.2, which means individual item costs will vary between the two sources, but the overall total cost is the same.

	<i>Fair Isle</i>	<i>Grutness</i>
Total Cost	£13,541,500	£5,244,000

7.9.12 The Fair Isle costs include an allowance of circa £1.3m to reflect the challenges of delivering a major civil engineering project on a geographically remote island. These challenges include mobilisation, weather, transport to and from site, working around the avian migration season and securing accommodation for the workforce.

7.9.13 The total costs, **rounded** to the nearest half million Pounds and shown including and excluding Optimism Bias, are therefore:

Table 7.3: Preferred Option – Capital Cost, including Optimism Bias at 44% on landside infrastructure – round to the nearest £500k

	<i>Cost Excluding OB</i>	<i>Cost Including OB</i>
Fair Isle, North Haven	£13,500,000	£19,440,000
Grutness	£5,000,000	£7,200,000
New Vessel	£6,000,000	£6,000,000
Total	£24,500,000	£32,640,000

7.9.14 The risks surrounding costs and the Socio-Economic Case more generally are summarised in Appendix D, which covers the risks associated with all five cases.

7.10 Options Appraisal

7.10.1 In bringing the Socio-Economic Case of this OBC to a conclusion, this chapter revisits the appraisal of options undertaken in the SBC. As the study has arrived at a preferred option through a logic-based process of elimination, this element of the appraisal is largely a 'validation' exercise to ensure that the preferred option aligns with the TPOs, the STAG Criteria and is acceptable to the public.

Transport Planning Objectives

7.10.2 Table 7.4 reassesses the performance of each option against the TPOs. All options are compared against the present-day situation.

Table 7.4: Fair Isle Capital Options – Appraisal against Objectives

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
<i>TPO1: The capacity of the services should not act as a constraint to regular and essential personal, vehicular and freight travel between the island(s) and Shetland mainland.</i>	O	✓✓	✓
<i>TPO2b: Where an island does not have a 'commutable' combined ferry or air & drive / public transport / walk time to a main employment centre (e.g. 80 minutes), the connections provided should reliably permit a half day (e.g. 4 hours) in Lerwick, 7 days a week, all year round.</i>	O	✓	✗
<i>TPO3: The scheduled time between connections should be minimised to increase flexibility for</i>	✓	✓	✗

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
<i>passengers and freight by maximising the number of island connections across the operating day.</i>			
<i>TPO4: The level of connectivity provided should minimise the variation within and between weekdays, evenings, Saturdays and Sundays.</i>	O	O	O
<i>TPO5: Where practicable and realistic, islanders should be provided with links to strategic onward connections without the need for an overnight stay on Shetland mainland.</i>	O	O	O

7.10.3 The following bullets summarise the key information from the table above:

- The replacement of the MV *Good Shepherd IV* with a like-for-like Lo-Lo vessel (**Do Minimum**) would represent a continuation of the current day position, albeit the higher speed of the vessel may permit the service to work within tighter weather windows, thus increasing frequency.
- A Fair Isle based Ro-Ro (**Option 1**) would offer the most significant benefits in terms of the objectives. The primary benefit is the ability to convey wheeled freight, which would remove the dependence on a weight limited crane, thus offering a moderate capacity benefit. A modern and faster Ro-Ro vessel would also facilitate the operation of more connections through reducing both journey and turnaround times, allowing the service to operate within a tighter weather window.
- Finally, **Option 2** would offer a capacity benefit through removing the dependency on a weight limited crane. However, the loss of flexibility from having an island-based vessel would likely lead to a reduction in connections and would thus be highly negative for Fair Isle.

Key Point: An appraisal of the options against the TPOs suggest that the preferred option – a Fair Isle based Ro-Ro service – would contribute most significantly to the objectives. Combining this option with the proposed enhanced air services would significantly enhance the transport connectivity of Fair Isle

STAG Criteria

7.10.4 This section briefly revisits the appraisal of the options against the STAG criteria. In moving the appraisal beyond the SBC stage, the sub-criteria under each heading will be considered here.

Environment

Table 7.5: Fair Isle Capital Options – Environment Sub-Criteria

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
Noise & Vibration	x	xx	O
Global Air Quality	O	O	O
Local Air Quality	x	x	O
Water Quality, Drainage & Flood Defence	x	xx	O
Geology	O	O	O

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
Biodiversity & Habitats	✗	✗✗	○
Landscape	○	○	○
Visual Amenity	○	○	○
Agriculture & Soils	○	○	○
Cultural Heritage	○	○	○
Overall Assessment	✗	✗	○

7.10.5 The key points from the above table are as follows:

- **Option 2** is predominantly a vessel-based solution with minimal harbour works beyond replacing life-expired infrastructure. It is therefore neutral from an environmental perspective.
- The **Do Minimum** and **Option 1** would have short-term negative environmental impacts associated with widening the noust (which would require blasting) and, for the latter options, further developing the breakwater in North Haven. Overall, however, these impacts are likely to be short-term only and will be managed through the consenting process.

Safety

Table 7.6: Fair Isle Capital Options – Safety Sub-Criteria

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
Accidents	✓	✓✓✓	✓
Security	○	○	○
Overall Assessment	✓	✓✓✓	✓

7.10.6 The key points from the above table are as follows:

- The **Do Minimum** and **Option 2** would offer a minor benefit in terms of the accidents sub-criterion. A new vessel would be built to modern standards and designed to meet the needs of the Fair Isle route.
- However, from a safety perspective, the deployment of a Ro-Ro vessel (**Option 1**) would be transformative for Fair Isle. As well as meeting all modern standards, the vessel would address the risks associated with crane-based operation, both in terms of vessel stability and the movement of goods from a moving vessel onto the quayside. Moreover, the risks associated with passenger access would be addressed through allowing step-free access via the linkspan.

Economy

Table 7.7: Fair Isle Capital Options – Economy Sub-Criteria

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
Transport Economic Efficiency (TEE)	✓	✓✓	✗

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
Wider-Economic Impacts	O	✓	✗
Overall Assessment	✓	✓✓	✗

7.10.7 The definition of 'Economy' benefits in the STAG guidance is not entirely relevant in the context of Fair Isle. TEE benefits typically generated through journey time savings and, in the context of public transport, a higher frequency service which offers journey time benefits through reducing wait times. Wider-economic impacts only tend to be manifested in the largest schemes and reflect improvements in productivity and labour market impacts as a result of transport investment bringing places 'closer' together. The above table does identify TEE and WEI benefits for the options, but these have to be considered in the context of Fair Isle only. The key points of note are as follows

- TEE benefits in this context would be derived through a faster vessel offering shorter sailing times and a more reliable vessel facilitating the operation of additional connections. The **Do Minimum** would record a minor benefit but **Option 1** would record a larger benefit because the reduction in turnaround times would allow the service to operate within tighter weather windows, thus offering greater scope for increasing frequency.
- **Option 2** would record a minor negative in terms of the TEE sub-criterion. Whilst any new vessel would be faster, the withdrawal of the vessel from Fair Isle would significantly reduce operational flexibility and is likely to reduce the overall number of connections.
- The deployment of a Ro-Ro vessel (**Option 1**) would be beneficial for Fair Isle in terms of wider economic impacts. It would support the island supply-chain and facilitate greater use of the ferry by passengers travelling to and from Fair Isle. The opposite is true with a mainland-based vessel (**Option 2**), where the loss of flexibility would introduce additional uncertainty and also lead to the loss of critical island employment (which may in turn prompt out-migration from the island).

Integration

Table 7.8: Fair Isle Capital Options – Integration Sub-Criteria

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
Transport Integration	O	O	O
Transport & Land-Use Integration	O	✓	O
Policy Integration	✓	✓✓	✗
Overall Assessment	✓	✓✓	✗

7.10.8 The key points from the above table are as follows:

- Retaining any future vessel on-island (**Do Minimum and Option 1**) would record a positive in terms of policy integration. As well as supporting the Fair Isle Development Plan, an on-island vessel would support a wide range of other local and national objectives focused on sustaining and developing island communities. The Ro-Ro solution (**Option 1**) would record a moderate positive as it would provide a greater range of benefits for Fair Isle than the continuation of Lo-Lo. The withdrawal of the vessel from Fair Isle (**Option 2**) would be negative from a policy perspective, undermining the FIDP and threatening the sustainability of Fair Isle.

- A Ro-Ro solution (**Option 1**) would record a minor benefit in terms of transport and land-use integration. Fair Isle requires new housing and the refurbishment of existing crofts but the evidence suggests that the current vessel acts as a constraint in achieving this objective. A Ro-Ro vessel would address this challenge to some extent through allowing goods such as building materials to be driven onto the vessel rather than being craned on.

Accessibility and Social Inclusion

Table 7.9: Fair Isle Capital Options – Accessibility and Social Inclusion Sub-Criteria

	Do Minimum: Replace the MV <i>Good Shepherd IV</i> with a like-for-like, but materially faster vessel	Option 1: Replace the MV <i>Good Shepherd IV</i> with a bespoke Ro-Ro vessel	Option 2: Replace the MV <i>Good Shepherd IV</i> with a bespoke mainland based Lo-Lo service
Community Accessibility	O	O	O
Comparative Accessibility	✓	✓✓✓	✓
Overall Assessment	✓	✓✓✓	✓

- 7.10.9 In terms of accessibility, any new vessel would be built to modern design standards and thus access arrangements would be improved when compared to the MV *Good Shepherd IV*. However, a Ro-Ro vessel (**Option 1**) would be transformative in this respect, offering step free access to the vessel via the linkspan. This is a key issue given the ageing population on Fair Isle.

Key Point: A review of the options against the STAG criteria highlights that the preferred option – replacing the MV *Good Shepherd IV* with a Ro-Ro vessel – performs most favourably against the STAG criteria.

Public Acceptability

- 7.10.10 In order to gauge public opinion of the options developed, a public exhibition was held in Fair Isle on 29th May 2019. The study process and options, together with our recommendation on the preferred option, was presented on display boards. Members of the public were invited to view the material, discuss the options with the team and complete a short feedback form. Some 40 Fair Isle residents attended the consultation (almost the entire adult population of the island), of which 24 completed the feedback form.
- 7.10.11 Respondents to the feedback form were specifically asked whether they agreed with the preferred option. There was universal agreement with the proposed preferred option – of particular importance to residents are the proposals to: retain the vessel on-island; improve access to the vessel through boarding via the linkspan; and offer a faster and thus potentially more reliable crossing. There was a desire to ensure that vehicle access to the island by non-residents is controlled.

7.11 Summary

- 7.11.1 The Strategic and Socio-Economic Cases have confirmed the requirement for investment in a new vessel and supporting marine infrastructure for Fair Isle. The preferred option package can be summarised as follows:
- Procurement of a new and faster monohull Ro-Ro ferry, which will operate under the Workboat classification (i.e. less 24m length overall and a maximum of 12 passengers). The vessel will overnight in, and be crewed from, Fair Isle.
 - The provision of crew training on the new vessel and joint development of a long-term crew Succession Plan by the Fair Isle community and the Council.
 - Upgrading of the slipway and cradle and widening of the noust at Fair Isle, so as to provide a secure overnight berth for the ferry.

- Construction of a new solid quay to form a linkspan berth at Fair Isle. This will be accompanied by increasing the height of the current breakwater.
- At Grutness, an extended solid pier structure and installation of a linkspan.

7.11.2 The preferred option will cost £24.5m in undiscounted Q1 2021 prices, or £32.6m after the inclusion of 44% optimism bias.

8 Financial Case

8.1 Overview

8.1.1 The Financial Case involves undertaking a full financial appraisal of the preferred option, including information on funding and budgeting over the life of the project.

8.1.2 It is important to note that:

- 'Cost' in the Financial Case is focused on monetary expenditure rather than being used as a basis for testing value for money as in the Socio-Economic Case. To this end, the costs presented exclude optimism bias (which is used to test value for money in the event of cost increases).
- The Financial Case typically compares expenditure and income, to identify any surplus / deficit, drawing out the required level of public support. However, in the context of capital investment for the Fair Isle route, fares income is negligible – it makes a small contribution to operating costs and no contribution to capital. The focus in this chapter is therefore on cost only.
- Procurement models for both the vessel and landside infrastructure are considered in the Commercial Case. For simplicity in the Financial Case at this stage, it is assumed that all funding is met from up-front public sector funding.

8.2 Funding Assumptions

8.2.1 Since its inception, the SIITS process has been and indeed remains predicated upon making the case to the Scottish Government and / or UK Government for additional capital funding for new infrastructure. Over the duration of the project to date, funding, procurement and delivery considerations have to some extent been considered offline through the Fair Funding Group. However, to complete the OBC, a preferred approach has to be identified in terms of the funding, procurement, delivery and management of the assets.

8.2.2 There are a wide range of options for funding, procuring, delivering and managing new vessels and supporting infrastructure. These options are summarised in **Appendix C**, which sets out the different potential methods of delivery and the pros and cons associated with each. The challenge in the context of this commission is that the preferred option has a political dynamic and there is thus uncertainty over whether any Scottish and / or UK Government inputs (either financial or in-kind) will be committed within the lifetime of this commission, or indeed at all.

8.2.3 The implications of this are as follows:

- The baseline position is a continuation of the current operation, whereby Shetland Islands Council and ZetTrans are responsible for all aspects of the service. This will be the *de facto* solution if alternative funding sources are not available.
- There is a clear risk that, if the preferred option is predicated on additional Scottish and / or UK Government funding, the business case could ultimately be nugatory if that funding is not forthcoming.

8.2.4 It was therefore agreed at the Inception Meeting to work on the basis of the current delivery model but highlighting where external funding should be sought and what the implications of this would be. Any change to the funding position will be reconciled at FBC as is common on other ferry and marine infrastructure business cases across Scotland.

8.3 Capital Costs

8.3.1 To recap on the Socio-Economic Case, the capital costs of preferred option, **rounded** to the nearest half-million Pounds are as follows:

Table 8.1: Preferred Option – Capital Cost, Q1 2021 Price, rounded to nearest £500k

	Capital Cost
Fair Isle, North Haven	£13,500,000
Grutness	£5,000,000
New Vessel	£6,000,000
Total	£24,500,000

Detailed Design

- 8.3.2 Whilst the landside infrastructure costs presented in the OBC are appropriate for this stage of the business case, preliminary and detailed design will have to be undertaken ahead of the FBC and procurement process. These steps are covered in the 'Consultancy Fees and Consents' line of Table 7.2 and Appendix B and are summarised below.

Preliminary Design

- 8.3.3 The preliminary design will involve further developing the general arrangement drawings and costings from those presented in the OBC, particularly in the context of the emerging vessel specification.
- 8.3.4 To develop the OBC design through preliminary design, further topographic, bathymetric and sub-bottom profiling should be procured for both the Grutness and North Haven (Fair Isle) sites. A detailed visual condition inspection and assessment of the existing infrastructure is recommended to be undertaken to ascertain the extent of any additional necessary remedial works or potential savings which may be identified.
- 8.3.5 On receipt of survey information, layouts can be further developed and long sections generated. Working with the naval architect adjustments to vessel and / or terminal infrastructure could be discussed and agreed to ensure fit.
- 8.3.6 The preliminary design will also include any mitigation measures required emerging from engagement with the statutory consent bodies. These could impact on:
- the spatial layout of the design;
 - the form of construction or construction methods; and
 - the timing of construction.

Consents

Initial engagement with statutory stakeholders has been undertaken as part of this OBC and it appears the consenting process for Fair Isle will be challenging. Initial feedback indicates a relatively onerous consenting process even for the ground investigation contract, in order to avoid disturbance of seabirds. In parallel with the preliminary design, further engagement with statutory stakeholders, in relation to consents, will be undertaken, which will allow any mitigation measures to be developed and implemented before undertaking exploratory ground investigations, allowing them to be focussed. This will mitigate delays to the critical path which would occur should rework of layouts be required at a later stage. The consenting requirements are set out in the Commercial Case.

Ground Investigations

- 8.3.7 Having further developed the design and applied for / received the necessary consents, the next step is to design, tender and supervise the necessary ground investigations (GI) at Fair Isle and Grutness. The reports resulting from the GI works are then used to inform the final design.

Final Design

- 8.3.8 Once the results of the GI are available, these can be incorporated within the final design, material and workmanship specifications completed and fully costed.
- 8.3.9 As part of the detailed design, a Construction Tender Package will be developed.
- 8.3.10 As part of the final design programme, tender procedures and a mobilisation plan will be set out.

Capital Spend Profile

- 8.3.11 The table below sets out the anticipated capital spend profile – it is based on the programme set out in the Management Case later in this report and will be subject to review as that programme evolves. Note that the figures in the table are **unrounded** and thus marginally differ from those presented in Table 8.1.

Table 8.2: Capital spend profile (£ million) by financial year

Description	FY21/22	FY22/23	FY23/24	FY24/25	FY25/26	Total
Vessel						
Vessel	-	£1.20	£2.90	£0.70	-	£4.8m
Naval Architecture Consultancy	£0.12	£0.12	£0.18	£0.06	-	£0.48
Vessel Contingency (15%)	£0.02	£0.20	£0.46	£0.11	-	£0.79
Ferry terminal infrastructure						
Fair Isle ferry terminal	-	-	£1.69	£8.61	-	£10.30
Grutness ferry terminal	-	-	£3.51	£0.50	-	£4.01
Ground Investigation and Surveys	£0.02	£0.60	-	-	-	£0.62
Civil Engineering Consultancy	£0.19	£0.42	£0.42	£0.38	£0.02	£1.42
Infrastructure Contingency (15%)	£0.03	£0.15	£0.84	£1.43	-	£2.45
Total	£0.38	£2.69	£10.00	£11.79	£0.02	£24.88

- 8.3.12 As can be seen from the table above, the vessel costs will be spread across FY2021-22 to FY2024-25, with the majority of vessel costs being in FY2023-24 when the vessel is programmed to be constructed in the shipyard. The spend prior to this will predominantly be on vessel design and procurement activities.
- 8.3.13 With regards to the terminal infrastructure, the largest upfront cost will be in FY2022-23 which will encompass GI at both sites, circa £0.45m for Fair Isle and £0.15m at Grutness (excluding contingency). The forecast amount for civil engineering consultancy in this financial year will cover; supervision of the GI, detailed design for both sites and construction procurement activities to allow construction to commence at both sites from FY2023-24. For FY2023-24 and FY2024-25, forecast civil engineering consultancy costs will be relatively similar with the end of construction in FY2024-25. There will be a small amount of cost in FY2025-26 which will encompass closing out the construction projects at the end of their defect correction period and administration associated with collating site health and safety files.
- 8.3.14 It can be seen from Table 8.2 that capital spend on Fair Isle terminal infrastructure construction will be over two financial years, FY2023-24 and FY2024-25. The first financial year will encompass the noust and preliminary items. The spend in the second financial year (FY2024-

25) will cover works associated with the winch, slipway, cradle, pier, breakwater, new quay and linkspan.

8.3.15 At Grutness, capital spend on construction of infrastructure will be over two financial years FY2023-24 and FY2024-25. Works in the first financial year will be for the first season of construction, which will include the extension of the pier and breakwater, and the spend in FY2024-25 is for the works associated for the conversion to Ro-Ro.

8.3.16 For all construction contracts, the contractors' preliminaries have been profiled to be spent earlier in the construction projects, noting that these will cover the contractors' upfront costs for mobilisation, insurances, etc.

8.4 Maintenance Costs

Vessel

8.4.1 The actual maintenance costs for the vessel will not be clear until the design is finalised and maintenance plans etc agreed with the build.

8.4.2 The maintenance costs for the MV *Good Shepherd IV* are circa £70k per annum. Maintenance costs can be cyclical and would be expected to increase over time as the vessel gets older, therefore **£50k** per annum would be a reasonable estimate for a new vessel.

Landside Infrastructure

8.4.3 MML has developed maintenance cost profiles for Fair Isle and Grutness over a 30-year period. This encompasses:

- an allowance for annual general maintenance (i.e. miscellaneous items, life rings, lighting etc);
- dredging;
- linkspan painting;
- linkspan machinery maintenance
- linkspan machinery refurbishments
- dive inspections;
- above water inspections
- Fair Isle specific
 - refurbishment and painting of the cradle;
 - cradle rail maintenance;
 - winch maintenance
 - surface repairs to slipway

Fair Isle

8.4.4 Over the last five years, the maintenance expenditure on the existing infrastructure has totalled £317k, which is an average of £63k per year, incorporating both annual and cyclical maintenance.

8.4.5 Once a new terminal is in place, the anticipated annual maintenance expenditure is expected to increase over time, but for the purposes of this assessment is estimated at an average of £5k per annum.

- 8.4.6 Table 8.3 shows the cyclical forecast maintenance costs for Fair Isle at five-year intervals, which is in addition to the general annual maintenance:

Table 8.3: Fair Isle five-yearly maintenance cycle

	Yr5	Yr10	Yr15	Yr20	Yr25	Yr30
Dredging	£0	£0	£54,000	£0	£0	£54,000
Linkspan painting	£0	£0	£0	£100,000	£0	£0
Linkspan machinery maintenance	£5,000	£5,000	£5,000	£5,000	£5,000	£5,000
Linkspan machinery refurbishment	£0	£0	£0	£50,000	£0	£0
Dive inspections	£20,000	£20,000	£20,000	£20,000	£20,000	£20,000
Above water inspections	£2,000	£2,000	£2,000	£2,000	£2,000	£2,000
Refurbishment and painting of the cradle, including cathodic protection	£0	£0	£0	£75,000	£0	£0
Cradle rail maintenance	£0	£0	£0	£20,000	£0	£0
Winch maintenance	£5,000	£5,000	£5,000	£5,000	£5,000	£5,000
Surface repairs to slipway	£0	£0	£0	£0	£0	£20,000
Total	£32,000	£32,000	£86,000	£277,000	£32,000	£106,000

- 8.4.7 Annual general maintenance allowance for Fair Isle is **£5,000 per annum**.
- 8.4.8 Over a 30-year period, the combined annual and cyclical maintenance for Fair Isle is estimated at **£715,000**.

Grutness

- 8.4.9 Over the last five years, the maintenance expenditure has totalled £64k, an average of £13k per annum encompassing both regular and cyclical maintenance. Once a new terminal is in place, the anticipated annual maintenance expenditure is expected to increase over time, but for the purposes of this assessment is estimated at an average of £5k per annum.
- 8.4.10 Table 8.4 shows the forecast cyclical maintenance costs for Grutness at five-year intervals:

Table 8.4: Grutness five-yearly maintenance cycle

	Yr5	Yr10	Yr15	Yr20	Yr25	Yr30
Dredging	£0	£0	£51,000	£0	£0	£51,000
Linkspan painting	£0	£0	£0	£100,000	£0	£0
Linkspan machinery maintenance	£5,000	£5,000	£5,000	£5,000	£5,000	£5,000
Linkspan machinery refurbishment	£0	£0	£0	£50,000	£0	£0
Dive inspections	£20,000	£20,000	£20,000	£20,000	£20,000	£20,000
Above water inspections	£2,000	£2,000	£2,000	£2,000	£2,000	£2,000
Cathodic protection	£0	£0	£0	£75,000	£0	£0
Total	£27,000	£27,000	£78,000	£252,000	£27,000	£78,000

- 8.4.11 Over a 30-year period, the combined annual and cyclical maintenance for Grutness is estimated at **£639,000**.

8.5 Overall Affordability

8.5.1 Under the current model of ferry service delivery in the Shetland Islands, the Council is responsible for the capital funding needs of new vessels and ferry terminal infrastructure. The Council is continuing to engage constructively with the Scottish Government in relation to securing external capital funding and is also applying to the UK Government 'Levelling-Up' fund. However, no funding is as yet secured from either source at present and results in the following implications for the Council:

- In line with the Council's Capital Expenditure Policy, the project costs will require to be funded by borrowing and will add to the Council's external debt.
- Under the Local Government in Scotland Act 2003 there is a requirement that local authorities should adhere to the 'CIPFA Prudential Code for Capital Finance in Local Authorities'. The Prudential Code seeks to concentrate primarily on ensuring that local authorities' capital spending plans are affordable.
- The Council's approved Prudential Indicator for its authorised limit for external debt, which should not be breached, is £106m which is already fully committed. Without external funding this proposal would breach the Council's authorised limit and conflict with the Council's statutory obligations under the Prudential Code.
- Further, the Council's Medium Term Financial Plan, which sets out the Council's forecast income and expenditure over the next five years, demonstrates that the Council requires an unsustainable draw on reserves to balance its budget and, if further borrowing is undertaken, the revenue cost of principal and interest payments will add to this existing unsustainable draw on reserves. As borrowing costs result in fixed annual revenue costs with no scope for reduction, they put additional pressure on other revenue costs to find the reductions required to bring the Council back to a sustainable funding position. Additional borrowing costs will result in further considerable reductions in already constrained revenue service provision to balance the Council's budget which is a statutory requirement.

8.5.2 **In conclusion, the funding of this project without external financial support is not affordable or sustainable for the Council and therefore there is not as yet a fixed position in relation to the funding of this project. The above said, the funding package for publicly supported ferry infrastructure in Scotland is not typically agreed until the FBC stage.**

8.6 Financial Risks

8.6.1 A risk-register is included in **Appendix D** and the proposed risk strategy set-out in the Management Case.

8.7 Accounting Implications

8.7.1 If no external funding is secured, the impact on the Council's balance sheet for the preferred option will be an increase in the value of 'Long-Term Assets' for the new vessel and terminal infrastructure of circa £25m, with a corresponding increase in 'Long Term Liabilities' in the form of 'Long-Term Borrowing' for the capital expenditure. The vessel and terminal infrastructure will then be depreciated over their respective lives.

8.7.2 In line with 'The Local Authority (Capital Financing and Accounting) (Scotland) Regulations 2016', borrowing is undertaken and administered through the Council's Loans Fund on a maturity basis, and therefore the capital sum borrowed will remain as a long-term liability until the end of the loan period, which is the life of the asset.

8.7.3 There will be an annual draw on the General Fund Reserve for the loan interest payments which are charged to revenue and repaid annually. The loan principal payments which are also charged to revenue for the statutory repayment of debt are held in the Capital Adjustment Account, which is an Unusable Reserve, until the loan requires to be repaid at the end of the loan period.

- 8.7.4 The MV *Good Shepherd IV* and the existing landside terminal infrastructure at Fair Isle and Grutness will be removed from the balance sheet.
- 8.7.5 If external funding is achieved the balance sheet implications would change accordingly.

9 Commercial Case

9.1 Overview

- 9.1.1 The Commercial Case provides evidence on the commercial viability of a proposal and the procurement strategy that will be used to engage the market. It presents evidence on risk allocation and transfer, contract timescales and implementation timescale as well as details of the capability and skills of the team delivering the project and any personnel implications arising from the proposal.

9.2 Output Specification

- 9.2.1 The first step in the Commercial Case is to define the 'output specification' – i.e. determining what is being procured. In the context of this business case, the output specification, at least at a high level, is relatively clear cut – i.e. a new vessel which can deliver the supply-chain and personal travel needs of Fair Isle together with appropriate supporting terminal infrastructure to safely accommodate it.

Vessel

- 9.2.2 When placing an order for a new ferry, there are many potential ways of doing this:

- Procuring a bespoke vessel based on a **precise specification**:
 - With this approach, the Council would set out an exacting specification based on vessel general arrangement drawings which could include requirements in terms of engine type, fuel type, fit out requirements etc.
 - The advantage of this approach is that it ensures that the vessel design is precisely aligned with the specified requirements of the client. However, the disadvantage is that it limits scope for innovation and will likely lead to higher capital costs.
- Providing an **output specification** to the market:
 - With this approach, the Council would define a set of broad parameters such as required passenger capacity, speed, physical dimension ranges etc. Shipyards would then be invited to present their own costed solutions.
 - The advantage of this approach is that it allows the market to offer different and often innovative solutions and, as a result, may provide a lower capital cost. Conversely, the disadvantage is that elements of the design may not reflect the exact preferences of the client.
- Using an **existing proven design**:
 - With this approach, the Council would know that the design provides the level of specification and efficiencies required but can be modified to meet their detailed requirements.
 - The advantage of this approach is that the Council know that the design will provide exactly what they want and will meet their specification and exact preferences. However, the primary disadvantage is that the design may not be readily available from the builders / designer, in which case the Council would have to engage the shipyard / designers to access and develop the modified design.
- Develop a **concept design** to take to market to complete detailed design and build:
 - With this approach, the Council would engage a suitable organisation to develop a concept design based on in-depth design and feasibility studies. This would include developing general arrangement drawings and associated specifications that would allow shipyards to tender for the detailed design and build of the vessel on a fixed price basis whilst reducing design, construction and operating risks for the Council.

- The advantage of this option is that the Council will have an active input throughout concept design and know that the design will provide what is required. This option may seem to be more costly initially – however, the output concept design will provide a more secure position, reducing the risk of cost escalation through the build.
 - This option can be combined with the **existing proven design** option above.
 - Identify suitable **second-hand tonnage**.
 - For routes operating relatively standard vessel designs, it may be possible to procure second-hand tonnage from the market. This would clearly reduce the capital outlay but may bring forward the next cycle of vessel replacement and could also require specific adaptations to the infrastructure.
 - Given the sea conditions on passage to Fair Isle, the bespoke infrastructure (including the requirement to winch the vessel out of the water in Fair Isle) and the certification of the current crew, it is unlikely that readily available second-hand tonnage for the route exists. That said, it is possible that an existing vessel such as the MD240 could be modified to fit the route – the question however is the extent to which the cost of making such modifications would be uneconomical when set against the comparatively low cost of a bespoke new build.
- 9.2.3 The above options represent the most popular ship design solutions however it is possible to blend elements of each approach.

Preferred Option

- 9.2.4 The sea conditions and shoreside interface issues on the Fair Isle route – and in particular the need to take the vessel out of the water when it returns to North Haven – mean that a bespoke vessel design or modified existing vessel design will likely be required for the route. Whilst the MD240 was used as a design vessel in the Socio-Economic Case and may be suitable for the route, there may also be other options based on adaptations of existing designs or a more appropriate new-build design which could be progressed.
- 9.2.5 Given the multitude of requirements for any future vessel, **the preferred option is for the Council to develop an output specification and seek a concept design from the market based on this.** That said, the output specification will have to be carefully designed in partnership with the Council's Marine Services team, the current crew and the community. The following table provides an indicative and high-level specification for information purposes:

Table 9.1: Vessel Output Specification

Characteristic	Minimum Specification
Classification	Workboat – maximum 24m length overall / 12 passengers
Overnight location	Fair Isle, in an enlarged noust with new winch, winch-house, cradle and slipway all designed to suit the selected vessel.
Hull form	Monohull
Ship-shore interface	Council Type A Linkspan, but retention of at least one crane with a suitable lifting capacity to facilitate occasional Lo-Lo operations
Speed	To be specified as faster than GSIV – final design speed to be confirmed in SBC
Beam	11.2 metres (approx.)
Draught	2.8 metres (service) - a deeper draft would imply significant dredging.
Fuel type	Given the limited electrical supply on Fair Isle, electric propulsion may be challenging to achieve. It is further anticipated that fuel bunkering will take place on Shetland Mainland. It is anticipated that green propulsion options will be explored during vessel design and an appropriate solution selected, reflecting the Council's policy to reduce the carbon emissions of its ferry fleet.

Landside Infrastructure

- 9.2.6 The landside infrastructure specification is as per Section 7.8 of the Socio-Economic Case of the OBC. No further significant development of the design is undertaken at OBC. The next major stage of development is the detailed design, which is undertaken to feed into the FBC as previously explained. The detailed design of the infrastructure can be considered in three stages: design development, ground investigation and final design. The detailed design outputs will be progressively developed to account for the emerging vessel specification. Coordination between infrastructure and vessel packages will be required and is reflected in the overall programme. This is to ensure matters such as vessel fit with linkspan, vessel fit with slipway cradle and sizing of winch are appropriately addressed.

9.3 Procurement Strategy

- 9.3.1 This section identifies the procurement strategy through which the market will be engaged.

Vessel

- 9.3.2 The procurement strategy for a new vessel is very much driven by how it is funded. There are various options available for procuring new tonnage, each with its own advantages and disadvantages in terms of cost, affordability, strategic control and both financial and operational risk. This section considers the particulars of these options and the advantages and disadvantages of each before considering a preferred funding option.

Public Sector Capital Funding

- 9.3.3 This option would involve the public sector (either local authority or central government) providing up-front capital funding for the purchase of the new vessel. This has been the most commonly adopted approach for purchasing vessels for subsidised ferry services within the UK. Funding could be provided through one or a combination of:
- direct funding through the local authority or Scottish Government capital budgets; and / or
 - grant funding through external schemes such as e.g. the UK Government 'Levelling Up' Fund; and / or
 - prudential borrowing (local authorities and Tier 3 Regional Transport Partnerships only); and / or
 - drawdown on capital reserves.
- 9.3.4 The primary benefit of this approach is that the cost is internalised within the public sector and there is no ongoing cost liability or interest payments except in the case of prudential borrowing. However, the disadvantage of this approach is that the required funding must be found up-front, which could present an affordability challenge as well as questions over opportunity cost.
- 9.3.5 As a public sector example, the up-front capital funding approach is typically favoured by Transport Scotland in its procurement of new vessels to serve its relatively large ferry network, albeit other financing models have been used when the required funding has not been available or for other technical accounting or government policy reasons. However, up-front funding is much less common for a commercial ferry operator.

Prudential Borrowing

- 9.3.6 The advantage of using capital budgets or reserves is that all costs are met up-front. Borrowing on the other hand removes the requirement for up-front capital but creates a long-term liability in terms of financing that borrowing.
- 9.3.7 The decision as to whether to fund tonnage through the capital budget / reserves or prudential borrowing would be driven by: (i) available resources; and (ii) the comparative costs and benefits

of each approach. For many local authorities at present, the cost of borrowing is low and their invested reserves are generating reasonable returns, thus borrowing options represent better value for money than up-front capital funding.

Finance or Operating Lease

9.3.8 An alternative option for procuring new tonnage would be to arrange a finance or operating lease.

9.3.9 A **finance lease** is where a bank or other lending house meets the up-front costs of an asset (i.e. a vessel) and then provides it to a lessee (e.g. a local authority) for an agreed period and payment schedule. Under this arrangement, the finance company would remain the legal owner of the asset, with the lessee having control over it. The two parties share the economic risks and returns in terms of any changes in the residual value of the asset at the conclusion of the contract. An **operating lease** is a similar arrangement, the main difference being that at the end of the lease, the title to the asset does not pass to the lessee and thus the residual value risk remains with the lessor. In the past, the benefit of an operating lease from the public sector perspective was that it does not appear on balance sheet and thus does not count against the Public Sector Net Cash Requirement (PSNCR – i.e. borrowing), whilst on the other side, the lessor benefits from tax concessions. However, changes in accounting standards and definitions make operating leases less attractive than they once were.

9.3.10 The primary benefits of a lease arrangement are:

- There is no up-front capital cost for the buyer – the bank or finance house would pay for the construction and equipping of the vessel. Placing an order following price negotiations with one or more shipyards regularly results in a lower price in comparison to ‘one-shot’ public sector tendering. There may also be longer-term savings associated with the private sector being in a better position to manage risk, lever economies of scale in the build process and design a vessel to maximise its long-term residual value.
- The design and build risk is taken by the private sector rather than the public sector.
- An operating lease would mean that the asset would be off-balance sheet and would thus not contribute towards the PSNCR (albeit these leases are less attractive than they once were).

9.3.11 The disadvantages of a lease arrangement are:

- There is a commitment of future revenue budgets to fund the lease. As the lease fee will be based on commercial interest rates, this approach could be more expensive in the long-run compared to lower cost prudential borrowing (although this advantage is reduced by the private sector driving efficiencies in risk management - minimising the purchase price whilst maximising the residual value - and leveraging its economies of scale).
- With an operating lease, the local authority would never own the vessel and the lease period would need to be limited to ensure the company financing the vessel is taking a genuine residual value risk.
- Whilst a more subjective point, lease arrangements of this nature can attract negative publicity as private shareholders are seen to benefit at the expense of the public purse, irrespective of whether this is the case or not. For example, Scottish Ministers have been questioned in Parliament on several occasions about the lease used to fund the Stornoway – Ullapool ferry MV *Loch Seaforth*, despite Audit Scotland not identifying any concerns with the procurement approach used.²⁹

²⁹ <https://www.theyworkforyou.com/sp/?id=2018-09-06.6.0&s=speaker%3A25496>

Shipbuilder Financing

9.3.12 Under this option, a shipyard would pay for the cost of a new vessel and then rent it to the operator for an agreed period.

9.3.13 The key advantages of this approach are:

- As with a finance or operating lease, the up-front cost of the vessel is covered, in this case by the shipbuilder. In addition, it is in the interest of the shipyard to ensure a high-quality build as they retain liability for any future issues with the vessel.
- At the end of the lease period, there is flexibility as to whether the vessel is purchased, leased for a longer period or permitted to go off-hire and replaced with a new vessel.

9.3.14 The disadvantages are similar those of a finance or operating lease.

Tendering

9.3.15 The final procurement option is for the ultimate procuring party to wrap-up the procurement of a new vessel within a wider tendering of the service. Under this option, the procuring body would invite bidders to operate a clearly defined service specification and task them with identifying their own vessel(s) to deliver this service, albeit within agreed parameters defined in the tender (e.g. capacity, speed, fuel type etc).

9.3.16 The primary advantages of this approach are:

- There would be no up-front capital cost, rather the cost of a new vessel would be recovered over the contract period. Indeed, it is possible that a bidder could bring existing vessels to operate the service, thus reducing the vessel charge element of the tender.
- The incoming operator would likely have experience in procuring and managing the build of vessels and may thus be better placed to manage the risks associated with this. They may also bring innovative approaches to operating the service.

9.3.17 The primary disadvantages of this option are:

- A contract of at least 10 years, and likely 12-15 years, would likely be required for a bidder to fully recover the cost of the vessel. Whilst there are several ferry service contracts of this duration around Europe at present, the length of contract could be open to challenge.
- At the end of the contract period, there is a risk that if the incumbent operator was to lose the next tender, they would remove the vessel from the route. Whilst in theory an alternative bidder could bring a new vessel, there is a risk of service disruption during any transition period, or more likely no other bids would be received given that the incumbent has an appropriate vessel which would be heavily written down (i.e. a *de facto* monopoly). A transfer of assets clause is a possibility but this may be considered discriminatory if it prevents other operators bringing their own vessel (this issue is considered at some length in **Appendix C**).
- In the event that the incumbent operator went bust, arrangements would be required for an operator of last resort, which would need to have arrangements in place to take control of the vessel and the financial liabilities associated with it.

Landside Infrastructure

9.3.18 When procuring marine civil engineering projects, there are a number of considerations in relation to the approach adopted. These are summarised in this section, which concludes with consideration of a preferred option.

Funding

- 9.3.19 From a funding perspective, marine infrastructure for local authority services is typically funded directly by the Council. However, it should be noted that the Scottish Government runs the Transport Scotland Ports and Harbours Scheme, which allows local authorities, trusts and commercial organisations to make an application for grant funding. Grant funding made by Transport Scotland will be at an 'intervention rate', with the applicant contributing the balance. The intervention rate is based on the value of the project involved, typically 80% payable by grant with the applicant contributing 20%.
- 9.3.20 There are a range of key requirements and principles underpinning this scheme, with any application having to be supported by an appropriate business case.³⁰ Whilst this is an attractive model from a cost perspective, there is significant competition for central government funding and it is unclear as to whether there is precedent for central government supporting infrastructure for local authority controlled ferry services.
- 9.3.21 The proposed infrastructure works at Fair Isle and Grutness are also eligible for the first round of UK Government 'Levelling-Up' funding.

Type of Contract

- 9.3.22 There are two broad contract types which can be adopted, as follows:
- **'Traditional':** the customer prepares a fully designed output, with detailed drawings, materials and workmanship specification. This is tendered and the successful contractor delivers the contract to the tendered design and specification.
 - The advantage of this approach is increased certainty of outcome – i.e. the client gets exactly what they want in terms of an output.
 - The disadvantage is that it limits scope for innovation and may lead to higher capital costs.
 - **Design & Construct (D&C):** the customer sets out in broad terms what they want delivered and invites the market to bid for designing and ultimately delivering the solution.
 - The advantage of this approach is that it allows the market to offer different and sometimes innovative solutions and, as a result, may provide a lower capital cost.
 - Conversely, the disadvantage is that elements of the design may not reflect the exact preferences of the client (although this could be resolved to some degree through a competitive dialogue). There is also a risk attached to variations in the specification, whereby tenderers offer less durable solutions thus reducing the capital cost, but thereby transferring the costs to future maintenance / refurbishment. In remote locations, this is generally not considered good practice due to the disproportionate cost of mobilising to undertake maintenance works.
- 9.3.23 The above options do of course represent polar positions and it is possible to blend elements of each approach, particularly if procuring multiple contracts as part of the overall delivery.
- 9.3.24 At North Haven, there are considerable mechanical design elements required for the winch, stand-by winch and cradle. Where mechanical elements are required, contractors often offer alternatives to those outlined in a 'Traditional' approach. As a result, the client could provide the detailed design for all mechanical elements as part of the 'Traditional' approach, which would likely be superseded by contractor's alternatives. In this scenario, the Client has paid for the 'traditional' detailed design services but will also pay for contractor design associated with alternative elements through the contract fees.

³⁰ <https://www.transport.gov.scot/public-transport/ferries/infrastructure-projects/#60717>

Single Vs Multiple Contract

9.3.25 The key question for this business case is whether the works at North Haven and Grutness should be procured as a single contract or separately. In particular, consideration should be given to the merits of sub-dividing the works at North Haven given the likely requirement for seasonal working together with the differing nature of the works at each end of the quay.

9.3.26 The key reasons for procuring the works via a single contract are:

- to simplify the procurement process for the client as all works can be procured via a single procurement exercise rather than multiple procurements;
- to reduce the volume of contract administration;
- to attract larger contracting companies who can provide a 'one-stop-shop' to provide all elements of the scope of works;
- to minimise the number of interfaces between contracts or contractors; and
- to avoid knock-on impacts across contracts and to avoid blame, thus simplifying matters and minimising the contractor interface risks.

9.3.27 The key reasons for splitting the works across multiple contracts are:

- to reduce the risks associated with working in two distinct locations, with many miles of open sea between them;
- to manage the varying risk profiles at each location, i.e. technical, ground conditions, logistics etc;
- to efficiently manage time sensitive and seasonal working;
- to ensure efficiency regarding the nature of works under the contract and specialist skills involved, e.g. machinery, marine civils etc;
- to spread the resource risk across multiple suppliers;
- to acknowledge that the Fair Isle works will be logistically difficult, and subject to greater weather risks, associated with the transport of materials and personnel to site, than works on Shetland Mainland, and therefore risk being potentially unattractive to all but local Shetland contractors; and
- to allow for interface with the vessel design during the infrastructure design, without unnecessarily delaying procurement of all infrastructure works.

9.3.28 Typically, maritime construction contracts are procured via a single contract. However, in this instance, there are two distinct sites which are a considerable distance apart, with different risk profiles, consenting requirements and specialist skills required.

9.3.29 There are a number of anticipated logistical constraints at Fair Isle due to weather, seasonal working as a result of the likely consenting requirements and practical limitations on transport of materials and personnel, lack of connectivity and lack of accommodation. Grutness is located on Shetland mainland and so faces minimal logistical issues by comparison.

9.3.30 If all works are procured under a single contract, there is a risk that local contractors may not have the capabilities to deal with the entire scope. Conversely given the risk profile for Fair Isle, the works there may not be desirable to UK mainland and international contractors, who are likely to choose to bid works in lower risk locations that they are familiar with and have established supply-chains in.

Grutness

9.3.31 At Grutness, the scope of works is maritime civils with a small element of mechanical works for the linkspan. The mechanical elements are based on established designs for linkspans and control huts which have recently been installed at other locations in Shetland. This scope should

be well within the capabilities of a local contractor to deliver. The works at Grutness are likely to be seasonal and it is anticipated that the rock armour and pier extension works will be completed in the first season, with the linkspan and associated works completed the following season.

North Haven, Fair Isle

- 9.3.32 At Fair Isle, the scope of works can be split into two distinct locations within the harbour at North Haven, i.e. at each end of the existing quay. The works at the south end of the quay require to be completed to allow the new vessel to be removed from the water for shelter, and the scope includes enlarging the noust, provision of a new winch and winch house along with construction of a new slipway, cradle and pier. These works include significant mechanical elements which may be more suited to a specialist contractor.
- 9.3.33 The Ro-Ro works to the north of the harbour could complete later, as the new vessel's Lo-Lo capabilities could be used in the short-term whilst Ro-Ro works are completed. However, this would cause the works to extend into a third season and is considered undesirable due to the inflationary risk and ongoing impact on the community.
- 9.3.34 It is considered that completing the works at both ends of the harbour at North Haven simultaneously will be disruptive to harbour operations but can be managed. There will likely also be challenges with laydown areas, storage of materials and accommodation for the workforce required to service all of these works. These challenges will need to be explored with the community in advance of the works being tendered.
- 9.3.35 The works at the south end are anticipated to take two seasons (noust, then slipway and pier), whereas the works at the north end could be completed in one long season. To avoid unattractive inflationary risk and ongoing disruption to the community it is considered that the works should be undertaken simultaneously.

Preferred Option

- 9.3.36 To minimise the duration of the disruption to the community, manage the risks associated with contract duration, interface issues and the nature of the works, it is recommended **that the works at Fair Isle are let as a single contract**.
- 9.3.37 It is recommended that the **works at Grutness form a separate single contract** from those at Fair Isle.

Open Vs Restricted Tender

- 9.3.38 There is also a requirement to determine whether the contracts will be let using an open or restricted tender procedure.
- 9.3.39 The open procedure where the works are advertised, and any contractor can submit a tender, may result in numerous tenders being received thus maximising competition and, in theory, increasing the likelihood of a good value for money procedure being realised. However, depending on factors such as the weighting of any quality component of the tender assessment, there is a risk that this approach could also result in the contract being awarded to a tenderer with sub-optimal experience of works of this nature, thus exposing the Council to increased delivery and financial risk. Open procedures work well for small, uncomplicated jobs.
- 9.3.40 A risk to consider is that an open procedure could prove unattractive to tendering contractors, particularly when the market is busy. Contractors may be selective with tendering commitments given the resources required to submit a full tender submission. For this reason, open procedures can result in receipt of fewer tenders than expected. Given that the maritime market is currently busy and is anticipated to remain busy due to the generational nature of maritime infrastructure works, letting works via open tender procedures may be an unattractive option.

- 9.3.41 These risks can be addressed by the restricted procedure which includes a pre-qualification stage to the tender (whereby prospective bidders have to respond to a prequalification questionnaire covering topics such as legal, ethical, health and safety, financial strength and relevant technical experience). Only the top scoring tenderers would be shortlisted and progress to the quality and price tender process. The introduction of the pre-qualification element manages the risk of an inexperienced contractor being awarded the contract.
- 9.3.42 The key challenge with the restricted procedure is that it can increase the resource input required for both the procuring party and the tenderers (who will weigh the cost of bidding against the risk-adjusted expected profit), when compared to an open, price only bid. However, if prequalification is carried out in advance with only shortlisted contractors invited to tender, many contractors will view this favourably as it minimises their initial input and, assuming they pre-qualify, theirs will be one of a smaller number of tenders under consideration, giving them a statistically increased chance of being successful.

Preferred Option

- 9.3.43 The preferred option at both Fair Isle and Grutness is a **restricted procedure with prequalification carried out in advance of the main tender.**

Lump Sum Vs Re-Measurable

- 9.3.44 Lump sum versus re-measurable is essentially a decision on who carries the risk over quantities:
- in a re-measurable contract, the employer carries the risk on quantities; and
 - in a lump sum contract, the contractor carries the risk.
- 9.3.45 The key point of note here is that, in a lump sum contract, the fixed price is likely to be higher as the contractor will have to account for the quantities risk in their price, albeit the presence of competition will exert some pressure in the opposite direction. However, the risk envelope will be much narrower and hence there will be a higher level of price certainty. In a re-measurable contract, the anticipated contract tender price may be lower as the contractor is not including for that risk. However, the risk envelope is much larger and there is thus less certainty over the final price.

Preferred Option

- 9.3.46 The preferred option is the use of **lump sum contracts for both Fair Isle and Grutness.**

Fixed Price Vs Target Price

- 9.3.47 The option of a fixed price versus target price contract centres around the degree of flexibility which the Council wishes to permit in the design. A fixed price contract works to an exact specification for a fixed sum – there is limited opportunity for design innovation or methodology-led cost savings.
- 9.3.48 A target price contract allows the contractor to introduce cost savings by reducing the requirements of the specification, often through a value engineering process. There are potentially programme issues with target price and assessing a reduced specification, but these should be allowed for in the contract period and procedure. However, the required inputs to administer the contract must also be considered and balanced with the potential savings on offer. The required level of administrative input on a target price contract can be significantly more than on a fixed price contract, which is due to the need to consider the merits of alternatives promoted by the contractor and the need to administer the 'pain / gain' share mechanism, requiring an open book approach. In addition, the target price option again introduces the risk of less durable solutions being adopted, thus moving costs from capital to maintenance through the life of the structures. This can be particularly unattractive at remote locations where mobilisation costs become a disproportionately large element of maintenance costs.

Preferred Option

9.3.49 The preferred option is the use of **fixed price contracts** for both Fair Isle and Grutness.

Form of Contract ECC vs ICC

9.3.50 The two main suites of contracts currently used for construction contracts in the UK are:

- The Engineering & Construction Contract 4 (ECC4)
- The Infrastructure Conditions of Contract (ICC)

9.3.51 The Infrastructure Conditions of Contract are based on what was previously known as the ICE Conditions of Contract and are generally considered to be more adversarial than the more modern ECC conditions which were also created by the ICE. The ECC is a more collaborative form of contract where risks and change are proactively managed throughout the duration of the contract. ECC is endorsed for public sector use by the UK Government Construction Strategy, the Association for Project Management and others.

Preferred Option

9.3.52 The table below summarises the preferred approach to delivering the infrastructure works at North Haven and Grutness:

Table 9.2: Summary of the Council's preferred procurement strategy

	North Haven	Grutness
Type of Contract	Traditional, with some D&C elements (winch and cradle etc).	Traditional
Single or Multiple Contracts	1 No. contract	1 No. contract
Open or Restricted	Restricted (shortlist established before tender documents issued)	Restricted (shortlist established before tender documents issued)
Lump Sum or Remeasurable	Lump Sum	Lump Sum
Fixed Price or Target Price	Fixed Price	Fixed Price
Form of Contract	ECC Option A (NEC4)	ECC Option A (NEC4)

9.4 Sourcing Options

9.4.1 As a public body, the Council will be required to procure a new vessel and landside infrastructure in accordance with the Public Contracts (Scotland) Regulations 2015 (P(C)SR 2015). The proposed scale of works in this context will likely exceed the financial thresholds for works laid down in P(C)SR 2015 and thus are subject to the full set of requirements under the legislation.

9.4.2 Under PC(S)R 2015, the Council will need to select the appropriate procurement procedure – there are six potential options:

- **Open Procedures – Regulation 28:** Any interested party can submit a tender, there is no separate selection or pre-qualification stage and information to assess supplier suitability is provided with the tender. The tenders are evaluated and an award decision reached. It may be quicker than the other award procedures but may also be more onerous in terms of the number of tenders to be evaluated. Generally, the procedure is suitable only for the most straightforward procurements where the contract specification is clear and can be priced, with no need to negotiate with bidders.
- **Restricted procedure – Regulation 29:** This is a two-stage process, where interested parties submit an expression of interest (EOI) in response to a call for competition via 'Find

a Tender³¹ or an invitation to confirm interest where a Prior Information Notice (PIN) is used as the call for competition. Only those meeting the pre-qualification or selection criteria will be invited to submit a tender. The initial selection stage must be conducted using the Single Procurement Document (SPD) document. This two-stage procedure allows authorities to limit the number of candidates that will be invited to tender to a minimum of five, assuming that five or more candidates satisfy the minimum pre-qualification requirements. No negotiations with bidders are permitted at ITT stage.

- **Competitive Procedure with Negotiation (CPN) Procedure – Regulation 30:** Reserved for more complex contracts, this procedure involves an initial selection or prequalification stage using the SPD, after which a minimum of three eligible candidates are invited to negotiate the contract. Authorities are required to negotiate the contract on the basis of an initial tender (unless they have reserved the right in the contract notice to award the contract on the basis of the initial tenders). No negotiations are permitted on the minimum requirements or the award criteria. The negotiation phase may be conducted in successive stages to reduce the number of tenders (provided this was provided for in the Find a Tender contract notice). The authority must not conduct any further negotiations with bidders following submission of final tenders.
- **Competitive Dialogue (CD) Procedures – Regulation 31:** This procedure is also reserved for more complex contracts and involves an initial selection or pre-qualification stage using the SPD, after which a minimum of three eligible candidates are invited to participate in dialogue. Dialogue generally takes place over successive stages and involves a reduction in the proposed solutions. Once the authority is satisfied it has at least one solution capable of meeting its needs and requirements, it can close the dialogue phase and invite final tenders from the remaining bidders. Any negotiation and finalisation of the terms of the contract must not involve changes to the essential aspects of the tender or the procurement, including the authority's needs and requirements, where such changes are likely to distort competition or cause discrimination. Under Regulation 27(4) of the PC(S)R 2015, the use of both the CPN and CD procedure is only available to authorities where:
 - the needs of the authority cannot be met without adaptation of readily available solutions;
 - the works, supplies or services required include design or innovative solutions;
 - the contract cannot be awarded without prior negotiations because of specified circumstances related to the nature or complexity of the works, supplies or services or the legal and financial make-up or because of the risks attaching to any of them;
 - the technical specifications of the works, supplies or services cannot be established with sufficient precision by the authority with reference to a standard, European technical assessment, common technical specification or technical reference; or
 - in response to an open or restricted procedure only irregular or unacceptable tenders are submitted. The above exceptions are likely to be narrowly construed.
- **Innovation Partnership Procedure – Regulation 32:** This procedure is intended for the situation where there is a need for the development of an innovative product or service or innovative works not already available on the market. It allows authorities to establish a long-term innovation partnership for the development and subsequent purchase of a new, innovative product, service or works without the need for a separate procurement procedure once the product, service or work has been developed.
- **Negotiated procedure without prior publication – Regulation 33:** In limited circumstances, authorities may award contracts without the need to advertise them to the market, where no tenders or suitable tenders have been submitted, where only a particular operator can meet the authority's demands or where there is extreme urgency.³²

³¹ Find a Tender is the successor procurement guidance to the Official Journal of the European Union (OJEU)

³² *Guide to the public procurement rules in Scotland* (CMS, 2019), pp. 9-10.

- 9.4.3 The procurement regulations surrounding the purchase of new vessels by the public sector is strictly regulated. To this end, no preference can be given towards or against the shipyards of any country. It should be noted that companies bidding capital project contracts are increasingly being encouraged to lodge complaints if they are unsuccessful. Such complaints consume management time and costs as well as slowing down project progress, even if the complaint is ultimately found to be without substance.

Preferred Option

- 9.4.4 The ultimate preferred option will once again depend on how the final funding package is compiled, and in particular any stipulations attached to external funding provided.

9.5 Payment Mechanisms

Vessel

- 9.5.1 Assuming the preferred funding model involves up-front payment for the vessel rather than a lease arrangement or tender, a staged capital payment schedule based on agreed milestones would need to be determined with the yard as part of the contract placement process. The Council may wish to include a performance bonus for early completion and / or delay damages for late completion.
- 9.5.2 It should be noted that placing an up-front order with a yard does expose the buyer to very significant risk associated with the yard encountering financial difficulties. Through the tendering process, the Council may wish to specify the requirement for any yard to provide a refund guarantee to cover this eventuality (although it should be noted that few if any UK yards currently offer such a guarantee). In a worst-case scenario, the Council could find it has paid some 80% of the contract price, the vessel is incomplete, but the shipyard has suffered cashflow problems and is unable to pay suppliers and their workforce to complete the vessel. If the shipyard has ceased to trade, the part completed vessel would progressively deteriorate and could well be unseaworthy making a move to another yard for completion impossible.
- 9.5.3 The Council may also wish to discuss with its insurance brokers the potential for buying a Freight, Demurrage and Defence (FD&D) insurance policy, which would cover claims handling and legal costs in the event that disputes arose with the shipyard, as legal disputes are not uncommon in shipbuilding.

Landside Infrastructure

- 9.5.4 For each of the contracts tendered, the Invitation to Tender will establish a proposed payment mechanism and schedule. Prospective tenderers will be invited to bid against this and may be invited to suggest alternative proposed approaches where appropriate.
- 9.5.5 The preferred Form of Contract for the North Haven construction works and Grutness construction works is NEC4 Engineering and Construction Contract Option A (priced contract with activity schedule). Within the contract data, the Council will provide an activity schedule which will be tailored to include the specific activities within each contract. As part of their tender, contractors will allocate a price against each activity, allowing interim payments to be made as each activity or group of activities is completed.
- 9.5.6 Due to the nature of ground investigation works, they are normally executed under a remeasurable contract. The preferred form of contract is The ICC Conditions of Contract for Ground Investigation, which are generally regarded as the industry standard for this activity.

9.6 Risk Allocation and Transfer

As noted in the Financial Case, a combined risk register covering all three cases is included in **Appendix D**.

9.7 Contract Length

9.7.1 The Socio-Economic Case and the programme established in Section 10.3 of the Management Case sets out the following contract lengths:

- **Vessel contracts:**

- Vessel design contract (naval architect)
 - Vessel design only - 24 weeks
 - Vessel design and supervision of vessel construction – 151 weeks
- Vessel construction (shipyard design, shipyard construction and vessel trials) – 105 weeks

- **Infrastructure contracts:**

- maritime engineering consultancy contract
 - outline design, GI design and GI supervision – 57 weeks
 - detailed design only – 49 weeks
 - detailed design and construction supervision – 133 weeks
- GI contract (covering both sites) – 26 weeks
- North Haven, Fair Isle – 67 weeks (preferred option is one contract for all construction works at North Haven, however, this has been programmed over two seasons)
 - Season 1: noust, – 20 weeks*
 - Season 2: slipway, winch, cradle, pier, quay extension and Ro-Ro infrastructure – 28 weeks*
 - **Note contract durations may be subject to change should statutory consenting bodies impose seasonal working constraints.*
- Grutness – 80 weeks (preferred option is one contract for all construction works at Grutness, however, this has been programmed over two seasons).

9.7.2 All construction contract durations shown above are to completion of the works and exclude defects periods.

9.7.3 The Council may wish to consider including delay damages within one or more of the contracts in the event of late delivery – this is a particular consideration given the limited remaining life expectancy of the MV *Good Shepherd IV*. An alternative approach would be to provide a financial bonus for delivering ahead of the contracted date. A combination of the two would also be possible.

9.8 Human Resource Issues

9.8.1 The Socio-Economic case concluded that, for both operational and socio-economic reasons, the Fair Isle ferry must be based in and crewed from the island. Given the qualifications of the current crew, the vessel will need to be classified as a workboat.

9.8.2 To be coded as a workboat, any new vessel would be in the range of 150 gross tonnes (GT) – 500GT and less than 24m length overall. Current workboat legislation sets out the crewing and certification requirements. These requirements vary for vessels of less than 200 Gross Reregister Tonnes (GRT) (those required for the MV *Good Shepherd IV*) and vessels over 200GRT (those which are anticipated to be required for any new vessel). It should be noted that MSN 1892 (M) The Workboat Code Edition 2, published January 2019 will need to be adhered to for any new workboat compliant vessel operated on the Fair Isle route.

9.8.3 As the new vessel will undertake the same operation as the MV *Good Shepherd IV*, it is anticipated that the number of crew will remain the same. However, the new vessel will require

the Engineer to possess a Marine Engineer Operating License (MEOL). Obtaining this level of certification will entail a 30-hour course at the North Atlantic Fisheries College in Scalloway followed by an oral exam. It is understood that two of the current *MV Good Shepherd IV* crew have submitted funding applications to the Council to enable them to achieve the MEOL.

- 9.8.4 Six of the seven members of the current *MV Good Shepherd IV* crew are set to retire by 2032 or thereby. There is therefore a requirement for the Council to commit investment in a long-term training and succession plan, to be developed in partnership with the community.

9.9 Contract Management

Vessel

- 9.9.1 The contract placed with a shipyard through the tendering process will be managed by the Council, with staged capital payments linked to milestones in the construction process.
- 9.9.2 Given that the Council has not procured a new build ferry since the B600 vessels (circa 15-years ago), there are only a small number of Council staff with direct experience in this field. It is therefore recommended that the Council procures a specialist individual or firm with appropriate professional indemnity insurance to supervise and manage the build process (this will be set out in more detail in the Management Case). However, the Council will also need to have their own suitably experienced team member to liaise with the shipyard and the supervising consultants, overseeing progress and reporting back through the Council governance procedures.

Landside Infrastructure

- 9.9.3 With respect to the landside infrastructure, there are two key stages of contract management:

- Detailed Design and Specification - including management of:
 - designers;
 - Principal Designer;
 - Ground investigation (GI) contractors;
 - survey contractors;
- Construction – at this stage there will be management of:
 - Contractor(s);
 - NEC Project Manager and Supervisor;
 - Principal Designer; and
 - Principal Contractor.

- 9.9.4 Whilst the Council is ultimately the buyer, it is recommended that they appoint:

- For the **design and specification stage**, a specialist marine civil engineering firm to act as **Designer** and **Principal Designer**. These roles will involve taking the lead in planning, managing, undertaking, monitoring and coordinating the design process, and consideration of health and safety therein, including appointment and oversight of GI and survey contractors.
- For the **construction stage**:
 - **NEC Project Manager and Supervisor(s)**, to manage all aspects of contract delivery including programme, dependencies, budget and contractor interface.
 - **A Client Project Manager(s)**. This individual or firm would represent the client and co-ordinate between the NEC Project Manager & Supervisors and the Project Board. They

would effectively be responsible for ensuring the project is managed within the agreed framework and budget.

9.9.5 These roles are set out in more detail in the Management Case.

9.10 Consents

9.10.1 The issue of consents is of critical importance at Fair Isle given that the island: (i) is privately owned by the National Trust for Scotland; and (ii) is covered by numerous environmental designations. Consenting should be undertaken as part of the detailed design phase. The requirements for consents can be broken down into landside, marine and environmental consents, as follows:

■ Landside consents

- **Lease Agreements:** as noted above, Fair Isle is wholly owned by the National Trust for Scotland. Any proposed development by the Council may require amendments / creation of lease agreements which contain provisions for construction on leased land.
- **Planning Consents:** ahead of approaching statutory stakeholders, a review of any Harbour Orders and Harbour Revision Orders should be undertaken for both Fair Isle and Grutness to understand what powers are held by the Statutory Harbour Authority under the Harbours Act in relation to construction within the harbour limits.

■ Marine consents

- **Crown Estate:** following review of any existing consents, lease agreements may need to be amended or created to extend lease of the seabed to include the footprint of the new developments.
- **Marine Licence:** as detailed design progresses, consultation events should be held and statutory consultees engaged with to satisfy the requirements of Pre-Application Consultation. Further to this, an environmental screening and scoping decision should be sought identifying the need and extent of any Marine Environmental Impact Assessment required.

■ Environmental assessments

- **Environmental Impact Assessment (EIA)** screening, scoping and assessment phases will need to be undertaken as appropriate to inform the iterative design and consenting processes. Early engagement with statutory environmental stakeholders should be undertaken to confirm the level of environmental assessment and supplementary studies required to support concurrent landside planning and marine licence applications. The required environmental assessments need to be designed in an integrated manner to support both landside and marine elements of the project.

■ Impact assessments

- An **Equality Impact Assessment** and **Island Communities Impact Assessment** should also be scoped and carried out to ensure that the project advances equality of opportunity between people who share a protected characteristic and recognises the unique island characteristics of Fair Isle and the Shetland mainland.

9.10.2 Initial correspondence with NatureScot regarding likely consenting requirements for the ground investigation (GI) works at Fair Isle has confirmed the proposal is likely to have a significant effect on the vegetated sea cliffs of the Fair Isle Special Area of Conservation (SAC). If the GI is to be undertaken during the bird breeding season (April - September), the proposal is likely to have a significant effect on Fulmar, Arctic Tern and the seabird assemblage of the Fair Isle Special Protection Area (SPA).

9.10.3 For the marine-based boreholes, a marine license will be required.

9.10.4 For the land-based boreholes, the Council is required to consult with NatureScot to complete an appropriate assessment to determine if there will be an Adverse Effect on Site Integrity

(AESI). AESI could be avoided by providing further information through the submission of a Bird Management Plan and Habitat Management Plan, which would include measures to minimise disruption during the ground investigation works.

- 9.10.5 The anticipated requirements will be confirmed in writing by NatureScot, followed by similar correspondence regarding the GI at Grutness and the main construction works for both locations. It is anticipated that preparation for the works at Grutness will include liaison with HIAL as owners of Sumburgh Airport to confirm requirements in relation to the operation of cranes, along with use and lighting of marine plant in the vicinity. This information will allow a robust plan for consenting for the works to be developed, including timescales.
- 9.10.6 It should be noted that due to the exposed location of both sites, it is anticipated that little or no ground investigation or construction works will be undertaken during winter periods and consequently works will coincide with the bird breeding season.

State Aid

- 9.10.7 It is essential to note here that state aid is a matter of law – its definition is very broad, and its application is dependent on its interpretation and legal opinion. **Stantec and our partners are neither insured for nor qualified to provide advice in relation to state aid requirements. The narrative in this section highlights state aid considerations in relation to this business case – however, we strongly advise that the Council seeks appropriate independent legal advice on any state aid matters.** Furthermore, it is important to emphasise that, if a successful state aid challenge is ever brought in relation to a project, the financial liability lies with the recipient of that aid rather than the funding body – i.e. the Council in this case.
- 9.10.8 The granting of public funds for capital investment in assets and the provision of operating subsidies has historically been governed by the Treaty on the Functioning of the European Union (TFEU), particularly in relation to state aid. However, the United Kingdom's withdrawal from the European Union on 31st January 2020 and the completion of the subsequent transition period on 31st December 2020 means that the UK is no longer directly bound by these rules.
- 9.10.9 Under the EU-UK Trade and Cooperation Agreement (TCA), companies in the EU will be able to challenge state aid awarded to UK firms in Britain's national courts if they feel it violates the common principles set out in the agreed TCA, with British firms enjoying reciprocal rights in the European Union. Britain has also agreed to set-up an independent state-aid authority, although the deal does not require the UK to have an *ex ante* regime to approve subsidies / investment before they are granted. Both sides can unilaterally impose tariffs to counter the effect of any subsidies considered to distort free trade, albeit there will be an arbitration system in place to support discussions around this issue.³³
- 9.10.10 The implication of the above is that, to minimise any potential state aid challenge, the Council should ensure that the vessel and supporting landside infrastructure are procured in line with the Public Contracts (Scotland) Regulations 2015.

³³ <https://www.ft.com/content/bd71fda3-0a34-4b52-ae98-4769848cb628>

10 Management Case

10.1 Overview

- 10.1.1 The Management Case details project management plans, outlining the framework for managing delivery and operational risk, benefits realisation and post-project monitoring and evaluation.

10.2 Evidence of Similar Projects

- 10.2.1 In developing the business case for new investment, it is beneficial to reflect on the process and outcomes of any similar recent investments to establish whether any lessons can be learned, or good practice replicated. Whilst on paper there is much to be gained from this approach, a key challenge in establishing an objective evidence base is that it is rare – despite guidance to the contrary - for organisations to evaluate and document both the good practices and challenges with a project of this scale. This section therefore largely draws on the project team's (inclusive of Council staff) own extensive knowledge and experience rather than published documentation.
- 10.2.2 Our core project team members have collectively acted as board member, client, client project manager, NEC Project Manager & Supervisor and consultant across a wide range of ferry and marine infrastructure projects over many years. As such, most – although not all - of our experience relates to the Scottish ferry network and it is therefore important to respect confidentiality, thus we have not referenced individual projects. The narrative set out below therefore reflects general lessons learned which we have established through an internal team workshop.

Lessons Learned

- 10.2.3 The following sections highlight what we would consider to be the main 'lessons learned' in the context of projects of this nature.

Business Case

- The development of a robust business case – including an objective appraisal of options – is essential in ensuring that the rationale for investment is robust. A business case produced using the 'Five Case Model' covers all of the necessary headings which need to be considered in developing and implementing a project. The project should never be purely operationally led.
- The business case, including financial assumptions within it, should be continually reviewed, with the FBC completed at the point of procurement. The FBC should include tendered costs and a full review of affordability and risk should be undertaken at that point ahead of project commitment.
- The communities and stakeholders which the investment impacts should be engaged throughout the business case process, from SBC through to the point of procurement. Arrangements should be put in place to keep communities and stakeholders informed as the project progresses on-site.

Vessel Procurement

- Vessel procurement is notoriously challenging and can frequently end in litigation or with yards experiencing financial difficulties as a result of cost over-runs. This business case has suggested several approaches to transferring this risk, including the requirement for a refund guarantee, the purchase of FD&D insurance and the appointment of an experienced contractor / consultant to oversee the build on behalf of the client.

- Irrespective of whether a detailed or output specification is used, the design should be fully agreed before the contractors commence work. Moreover, every conceivable effort should be made to ensure that there is a common understanding of the client's requirements and thus minimal reworking of the design once construction has commenced.
- Appropriate documentation of design versions, decisions etc is essential – there should be a clear audit trail which can be followed in the event of staff moving on.
- Appropriate external expertise should be sought where required to oversee a build. Specific experience in the construction of small multi-function vessels is essential in the Fair Isle context.
- Where an uncommon or high-risk design is being pursued, that risk should either be transferred through the contract as far as reasonably possible and / or provisioned for in the risk register and financial contingency.
- The crew of existing vessels should also be engaged throughout the design phase. Whilst there is always a risk of change aversion, incumbent crew have an unrivalled understanding of the routes which they operate and can provide 'in the water' feedback which cannot be readily obtained elsewhere. This is particularly true for Fair Isle given some of the unique challenges faced on the route.
- The quality component of the procurement should focus on ensuring that bidding yards can demonstrate their experience and suitability to deliver the specification required. The same is true with respect to landside infrastructure.
- The build contract should include provisions around sign-off and acceptance of the vessel, potentially with an after-sales service provided.

Continuous Review

- Regular and continuous review will provide a good platform for project success. It is important to reflect regularly on what is going well and what is not and adjusting management of the project as it progresses. Challenge to processes, approaches etc. is required and the risk of 'group think' must be avoided. In our experience, it can help to have one or more individuals external to the client body in the team as this can bring a fresh perspective and challenge to established views (as well as a willingness to 'speak-up' which may be less common within an organisational structure).
- Many projects carry out a 'lessons learned' review at the end / completion. Whilst this is essential – and scoped later in this case – it should not detract from reacting actively during the project to anything identified as a problem or a potential problem.

Infrastructure Procurement

- To ensure a smooth procurement journey and contract delivery, it is essential that what is being tendered is very clear, detailed and that the tender returns will provide no ambiguity from any bidder – this is particularly essential where time is of the essence. The outputs required by the bidder must be set out in-depth and the evaluation methodology detailed to allow evaluation on a like-for-like basis.
- If not, it becomes a lengthy process while clarifications are sought from different bidders to allow evaluation to a standard which will stand-up to any challenge. Spending more time setting out the front end of the tender documents will save time in the long-run.

Governance

- Appoint a suitably qualified Client Project Manager, from internal or external resources and commit fully to the resource being available as needed to protect the interests of the client. For clarity, this is a different role to an NEC Project Manager & Supervisor (or those supervising vessel build), which is a much more contractual role.
- Where external funding parties or stakeholders are involved, there is benefit in forming a Stakeholder Group to keep them abreast of progress and seek inputs or views on funding,

regulatory or governance requirements. Such a group may only be advisory, but it is a useful way of ensuring there are no surprises or subsequent issues for the parties involved in a project.

- Build a good team ethos across all the parties including contractors, stakeholders, funders and the project board. Ensure the communications requirements are clearly established and delivered within and between groups and teams.
- Set out clear roles and responsibilities of all the parties involved and ensure the correct procedures are in place for any reporting requirements, change to scope / objectives or deliverables.
- Actively manage the risk around the delivery of the project as a whole and through the vessel build supervisor and NEC Project Manager & Supervisor(s). The risk register prepared as part of this business case (Appendix D) should be kept live and added to throughout the process.

Delivery

- Manage the programme actively and never assume 'no news is good news'. Be active, be visible and engage with the parties at appropriate times.
- If something is going wrong, ensure this is communicated to all key parties with details of what has gone wrong, why and how to fix it.
- Working actively with the teams will ensure that delivery will go as smoothly as reasonably practicable.

Project Completion

- On completion, a full review of the entire project should be undertaken to identify what went well, what went wrong and what could have been done differently (a process evaluation – this is scoped later in this chapter). This should involve all stakeholders and contractors. Keeping a record of the outputs will provide advice and guidance for any future projects.

10.3 Programme and Project Dependencies

- 10.3.1 The MV *Good Shepherd IV* – Current Life Expectancy Report highlighted that the vessel has a life expectancy of circa five years (i.e. Q1 2026), with either replacement or a significant life extension programme required at that point. A copy of the report is included in **Appendix A**. This is the single most important dependency and drives the critical path for the project.

Programme

- 10.3.2 The table below shows the key milestones for the project, with a full project programme (developed in conjunction with the Council) included in **Appendix E**.

Table 10.1: Key Project Milestones

Milestone	Commencement Date	Notes
Terminal Infrastructure Milestones		
Infrastructure design services award date - <i>Outline Design and GI Design</i>	11/06/2021	Award of outline design and GI design should be progressed as soon as possible to ensure consents are in place to have GI on site in Q2 2022.
Award ground investigation contract	26/11/2021	Contract award date linked to obtaining required consents for ground investigation works

Milestone	Commencement Date	Notes
Infrastructure design services award date - detailed design	21/03/2022	
Award North Haven construction contract	30/06/2023	
Award Grutness construction contract	24/02/2023	
Completion of noust, slipway, winch and cradle	11/10/2024	From April 2024 slipway facilities will not be available at North Haven, meaning that the vessel is likely to be based elsewhere. After October 2024 the widened noust, new winch and slipway should be available allowing the new vessel to be based on Fair Isle full-time.
Completion of construction	11/10/2024	
Vessel Infrastructure Milestones		
Vessel design services – award naval architect	08/10/2021	
Appoint Shipyard	09/09/2022	
New Vessel Enters Service	13/09/2024	

10.3.3 The durations that have been allowed in the programme are based on experience of marine construction projects of a similar scale, required procurement periods and likely durations for obtaining consents from statutory authorities based upon their advertised response periods for licence applications.

Programme Dependencies

10.3.4 The key dependencies at this stage are as follows:

- **Consents:** Marine and environmental consents are dependencies for awarding the ground investigation and main construction contracts. Consenting bodies may advise limitations on working periods which would introduce other project dependencies. To avoid consents impacting the critical path, engagement with statutory stakeholders (Marine Scotland, Crown Estate, NatureScot, Shetland Islands Council Planning Service etc) should be undertaken as early as possible during design stages.
- **Completion of the noust, slipway, winch and cradle** to allow for overnighing the Fair Isle vessel on the island, as there will be a period during construction where these facilities will not be available. This will likely result in the vessel having to be based on the mainland for a period. The current programme durations would indicate that this will likely be for a period of 28 weeks, but largely over the summer months. Subject to detailed risk assessment, it may be possible for the vessel to stay in Fair Isle but seek shelter elsewhere on forecast.
- **Seasonal working windows:** The ground investigation and construction contracts have been programmed to start as early as possible in the fair weather season (April - September). Should predecessors to these activities be delayed (e.g. design, consents, procurement), this could limit the available working time in a seasonal window. This may result in delays to construction of not only a few months but works may need to be delayed into another season. This could lead to a significant delay on the construction programme and will have associated impacts on project costs. **To re-iterate, due to the anticipated seasonal nature of the construction works, the programme will be sensitive to delays which could push works into the next construction season.**

10.4 Project Governance

10.4.1 This section considers how the project will be delivered and managed. It considers the:

- governance framework of the Council; and
- project team which will be responsible for the delivery of the vessel and landside infrastructure.

Shetland Islands Council Governance Framework

10.4.2 The governance principles are set out in **Appendix F**, the governance framework in **Appendix G** and the project management framework in **Appendix H**.

Project Team

10.4.3 A specific project team will be developed to deliver this project, consisting of Council Officers and external expertise as required. The governance structure for the project is outlined in Figure 10.1 below³⁴, which is assumed to be post-design stage. It should be noted that only primary roles are shown, but the project will however have wider administrative support, sub-contractors etc:

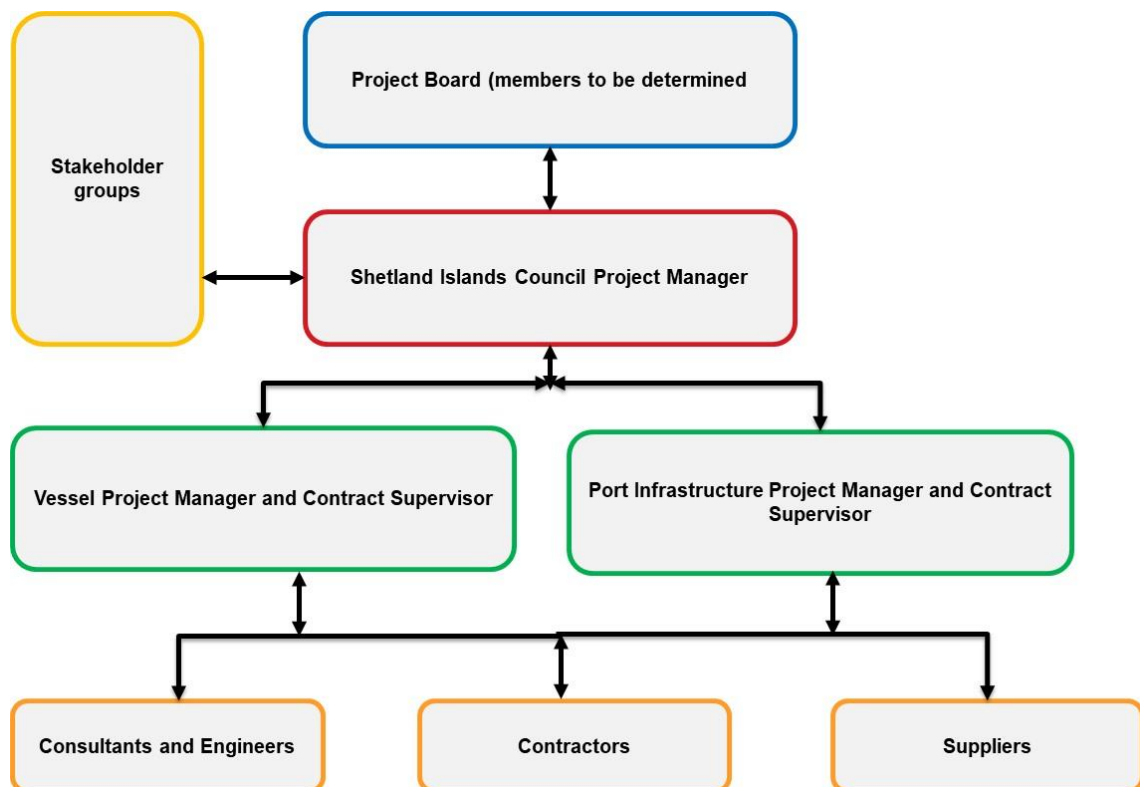


Figure 10.1: Governance Management Structure

10.4.4 To summarise:

- Ultimate responsibility for the delivery of the project will be the responsibility of the **Project Board**. It is likely that the Board will consist of any external funding partners, Council Officers, ZetTrans Officers, the Council Chief Executive, selected Heads of Service and relevant officers. The exact composition of the Board will be finalised at the conclusion of the OBC stage.

³⁴ This figure should be included in the project governance principles document.

- The Board will be guided by an advisory **Stakeholder Group**, the suggested composition of which is discussed in the next section.
- The project will require a significant day-to-day management input from the Council. A dedicated **Project Manager** for the whole project will need to be appointed. This will either be:
 - (i) from internal Officer resource within the Council;
 - (ii) through a competitive tender or direct appointment of a consultant; or
 - (iii) recruitment of a fixed-term employee (or a potential mix of the two depending on available skills).
- Irrespective of how the Project Manager is selected, it is essential that they can dedicate the necessary time to the delivery of the project. The PM will represent the Council and coordinate the flow of information between the Project Board and the Council Project Coordinators (see below). Their role will be to deliver project management and governance within the context of the Council's overall project governance procedures set out above. An outline job description is included in **Appendix I**.
- The vessel build and landside infrastructure workstreams will be led by dedicated Project Managers, who will act as the **Contract Project Manager and Supervisor(s)** – these roles are detailed below. Depending on the approach taken to procuring the landside infrastructure, a separate PM may be required for Fair Isle and Grutness, although to avoid the risks associated with introduction of a further interface, this is not recommended. The **Vessel Project Manager & Contract Supervisor** and **Port Infrastructure Project Manager & Contract Supervisor** will be responsible for managing all aspects of contract delivery including programme, dependencies, budget and contractor interface. It is essential that these roles are filled by an individual / organisation which has an appropriate level of relevant experience and professional indemnity insurance so as to ensure that the Council is protected if they prove to be negligent in their duties.
- The Vessel PM and Port Infrastructure PM will be required to liaise with each other to ensure appropriate interface, whilst also reporting to the Council Project Manager.

Roles and Responsibilities

10.4.5 Building on the above flowchart, the table below summarises the organisations and individuals which will fill each role in the project team:

Table 10.2: Roles & Responsibilities

Role	Individual / Organisation
Project Board	Representatives of external funding partners, Chair of ZetTrans, the Council Chief Executive, selected Heads of Service and relevant Officers
Council Project Manager	Council Officer(s); and/or fixed-term appointment; and/or consultant
Client's Designers (Vessel and Infrastructure)	External appointments through competitive tender
Vessel Project Manager & Contract Supervisor	External appointment through competitive tender
Port Infrastructure Project Manager & Contract Supervisor	External appointment through competitive tender
Financial advisers	Shetland Islands Council Finance, with external advice procured where required
Legal advisers	Shetland Islands Council Legal, with external advice procured where required
Vessel contractor	To be determined through competitive tender
Fair Isle contractor	To be determined through competitive tender
Grutness contractor	To be determined through competitive tender

Stakeholder Group

10.4.6 As previously noted, in order to ensure that the project aligns with the aspirations of Members and local stakeholders, there would be benefit in convening an advisory Stakeholder Group to update on progress, discuss any emerging issues, risks, operational considerations etc.

10.4.7 This group would meet at regular intervals (e.g. monthly or quarterly) and could include:

- a subset of the Project Board;
- the Council Project Manager;
- the Vessel and Port Infrastructure PMs;
- National Trust for Scotland;
- a representative of the crew of MV *Good Shepherd IV*;
- Council Officers leading on the delivery of the 'Islands of Small Population Locality Plan' work; and
- representatives of the Fair Isle community.

10.5 Assurances and Approvals Plan

10.5.1 The current expectation is that the project will be delivered by the Council irrespective of the funding partners. As a Council funded and procured project, the assurances and approvals plan is determined by the Council in-house governance arrangements for capital investment. If external funding was secured, compliance with the governance arrangements of the funding parties would also be required.

10.5.2 Underpinning each of these assurance and approvals stages will be this business case, which has been developed using the Transport Scotland business case guidance, which in turn aligns with the H.M Treasury *Green Book* using the 'Five Case Model'. This represents industry best practice for infrastructure business case development. To recap, the business case approach consists of three stages:

- **Strategic Business Case (SBC)**, consisting of high-level analysis which established the need for the project and identified the options to be shortlisted (completed in 2016).
- **Outline Business Case (OBC)**, containing more detailed analysis of a shortlist of options to identify a preferred option, and setting out the Financial, Commercial and Management strategies (i.e. this report).
- **Detailed design for vessel and landside infrastructure**, which will be used to deliver greater technical and cost certainty.
- **Final Business Case (FBC)**, updating the preferred option analysis and confirming the final financial, commercial, and management strategies.

10.5.3 The Final Business Case will need to be prepared following detailed design of the vessel and landside infrastructure, when a clearer position on costs, funding and procurement approach has been defined. This will be an essential step in the assurance and approvals framework as it will confirm or otherwise the financial and commercial viability of the proposed approach to delivering the project. It should be noted that the Final Business Case will need to be completed in phases to suit procurement of individual contracts for vessel and infrastructure.

10.6 Communications and Stakeholder Management

10.6.1 Significant work has already been undertaken to engage with key stakeholders and Fair Isle residents throughout the business case process. Effective ongoing communication and stakeholder management will be important in ensuring the successful delivery of the project, particularly given the lifeline role of the ferry service and the need to deliver the landside infrastructure works in an environmentally sensitive manner.

10.6.2 To this end, the Council Project Manager will be responsible for developing and implementing a Stakeholder Management Plan (SMP), the purpose of which will be to ensure close liaison with stakeholders and the local community is maintained and that they are kept informed of proposed plans, key dates, service impacts, FAQs etc.

10.6.3 Stakeholders can broadly be split into four categories:

- Statutory
- Strategic
- Operational
- Local

10.6.4 Examples of these stakeholders and the proposed approach to engaging with them is set out below. This initial list and approach will be fully developed in the SMP and may require to be extended / amended depending on any conditions attached through the consenting process (e.g. by Marine Scotland).

10.6.5 A project website will be established and regularly maintained by the Council. This will include progress updates, FAQs, notice of any service outages etc.

Statutory Stakeholders

10.6.6 Statutory stakeholders are those which are not necessarily local to the area, but will have a regulatory interest in the project because it may affect their own policies, strategies or operational plans – these stakeholders could include (but are not limited to), for example:

- Historic Environment Scotland
- Marine Scotland
- National Trust for Scotland, as the owners of the island
- NatureScot
- Scottish Environment Protection Agency
- Shetland Islands Council – Planning Service
- Crown Estate

10.6.7 Statutory stakeholders will be engaged as part of the consenting process. Thereafter, engagement with these stakeholders will be relatively light touch and focused on ensuring that they are aware of the work being undertaken, the exception being the NTS as owner of the island. Engagement with each statutory stakeholder will be tailored to suit their individual processes and consenting requirements.

Strategic Stakeholders

10.6.8 Strategic stakeholders may or may not be local to Fair Isle or Grutness but may have a strategic interest in the project. These stakeholders include:

- Royal Society for the Protection of Birds
- Scottish and Southern Energy
- The Commissioners of Northern Lighthouses
- The Maritime and Coastguard Agency
- Transport Scotland

10.6.9 These stakeholders will be written to and directed to the project website for information. It would however be courteous to engage more extensively with the RSPB given the importance of avian migration to the island.

Operational Stakeholders

10.6.10 Operational stakeholders are those on which the project will have a direct or indirect operational impact. These include:

- The crew of MV *Good Shepherd IV*
- Shetland Islands Council Ferries / Marine Services
- North Atlantic Fisheries College at Scalloway, which will play a major role in ensuring that the current and future crew are appropriately certified for the new vessel
- Public service providers to Fair Isle, including NHS Shetland and Shetland Islands Council Education Service.
- AirTask, which may be required to move labour or small equipment to Fair Isle during construction
- HIAL – as the construction works at Grutness will be adjacent to the eastern extent of the main runway at Sumburgh, any safety issues will have to be considered
- Shetland mainland wholesalers which deliver to Grutness

10.6.11 The Council Project Manager will be required to engage with some of these stakeholders on a very regular basis (in some cases weekly) to ensure that the project is delivered as required. This will at times involve coordinating discussions between these stakeholders and the Vessel Port Infrastructure PMs.

Local Stakeholders

10.6.12 The Fair Isle community has been heavily involved in the business case process to date and has the clearest understanding of what they need the service to deliver. As well as a regular liaison with key businesses, including the Fair Isle Bird Observatory Trust, accommodation providers and local craft businesses, island residents should be regularly engaged.

10.6.13 Whilst the website will be the main source of information, broadband connectivity on Fair Isle is limited and regular visits by the Council PM and other relevant individuals should take place. Periodic public meetings or exhibitions to update on progress should also be undertaken. This will again be detailed in the Stakeholder Management Plan.

10.6.14 A key objective of this investment should be to maximise the community benefits associated both the with the scale of investment and the improved connectivity which will follow. Integral to this is developing a pathway for future crew recruitment and development but other opportunities should also be explored.

10.7 Programme and Project Reporting

10.7.1 Clear reporting arrangements should be established to ensure progress against the programme timescales and budget are communicated effectively. Project reporting will focus on the following aspects of project delivery

- progress on each work stream – vessel, North Haven and Grutness;
- key activities to be undertaken before the next report / meeting;
- spend against budget; and
- review of strategic risks and issues.

- 10.7.2 Project reporting will be carried out throughout the project, with a weekly reporting cycle for each stream of work – e.g. the contractors will report to the Port Infrastructure PM, who will in turn report to the Council Project Manager and so forth.

10.8 Risk Management Strategy

As noted in the Financial Case, a combined risk register covering all three cases is included in **Appendix D**. However, it is beneficial to take a step-back from the individual risks, focus on strategic risks and highlight the risk strategy to be adopted on the project – this is summarised in the table below:

Table 10.3: Risk Management Strategy

Risk Item	Strategy	Comment
Vessel		
Design / procurement – i.e. the Council overpays for the vessel	Manage	The Find a Tender procedure is likely to attract only a limited number of bids compared to a commercial approach of working through shipbrokers. There is therefore a risk that the lowest cost is not achieved. However, it is mandatory for the Council to work through this process. This risk can therefore only be managed .
Construction cost – i.e. the cost of constructing the vessel exceeds forecast costs	Transfer	It is standard practice for shipyards to take the risk on the cost of newbuild vessels as they are best placed to manage that risk. This risk should therefore be transferred through the use of a fixed price contract for an agreed design specification. Care needs to be taken to ensure that the final design is that of the shipyard, as then any design error costs are for their account and not a claim against the Council.
Construction – the construction process does not go to plan	Transfer & Manage	As the Council has limited recent experience in managing a ship build, it is strongly recommended that they transfer this risk by appointing a specialist firm (with relevant experience and professional indemnity insurance) to supervise and manage the build. If the cost of appointing a specialist firm is excessive, this risk would have to be carefully managed , but doing that without recent expertise in shipbuilding would be highly challenging.
Completion – the vessel is not completed on-time or at all because the shipyard encounters financial difficulties	Transfer or Manage depending on cost	It is recommended that the Council transfer this risk through applying an appropriate financial standing threshold in the PQQ (without it being punitive) and the purchase of FD&D insurance. If the premiums for FD&D insurance are excessive, this risk would have to be managed by the Council.
Delay – the vessel's completion is delayed	Transfer or Manage depending on cost	Delays to new vessels are highly common. If the Council was to anticipate costs / losses because of any delay, it may wish to transfer this risk by including delay damages within the contract, although again not to the extent that they are punitive and deter yards from bidding. However, this may increase the cost of the contract / reduce competition and, if this is considered likely, this risk would have to be managed through regular progress meetings with the yard.
Maintenance – breakdowns or other costly maintenance occurs once the vessel is in service	Transfer and then manage over time	The Council should seek an appropriate warranty period for addressing defects with the vessel, and thereafter manage this risk through a scheduled programme of maintenance.
Landside Infrastructure		

Risk Item	Strategy	Comment
Design / procurement – there are interface issues between the new vessel and the landside infrastructure.	Reduce	The detailed design process should be used to reduce this risk. The Council PM should then work in tandem with the Vessel and Port Infrastructure PMs to further reduce this risk during construction.
Construction cost – the outturn cost identified through tenders is higher than anticipated.	Manage & Transfer	Costs should be updated through detailed design and FBC stage and an appropriate contingency retained until final tender prices are in – i.e. this risk should be managed . Once tenders are received, this risk should be transferred as far as reasonably possible to the contractor.
Construction – the construction process does not go to plan	Transfer & Manage	The Council has some recent experience in undertaking infrastructure works of this scale, e.g. the new breakwater at Hamars Ness. Nonetheless, this risk should be transferred though the construction contract to the contractor, as far as is reasonably possible. The Council PM and Port Infrastructure Project Manager and Contract Supervisor should though maintain regular dialogue throughout.
Completion / delay – the infrastructure is not ready in time for the new vessel entering service.	Reduce	The critical path for the Fair Isle project is determined by the impending life expiry of the current vessel. The priority should therefore be to replace the vessel as soon as possible and operate it on a Lo-Lo basis until the Ro-Ro infrastructure is available. Priority should be given to the infrastructure works to allow the vessel to be island based as soon as possible – i.e. the noust, winch, cradle and slipway. If there is a residual delay risk, alternative options of life extension of MV <i>Good Shepherd IV</i> should be costed and potentially pursued. This would however be an expensive and economically inefficient solution.

- 10.8.1 The Council PM will have day-to-day responsibility for managing the risks identified in the risk register and escalating any issues to the Project Board. The risk register will be reviewed regularly throughout the delivery of the programme by the Council PM in liaison with the Vessel and Port Infrastructure PMs.

10.9 Benefits Realisation

- 10.9.1 Business case guidance requires the promoter to identify in the Management Case the steps they will take to ensure that the anticipated project benefits are delivered. The benefits in the context of this project are succinctly summarised in the project logic map below.

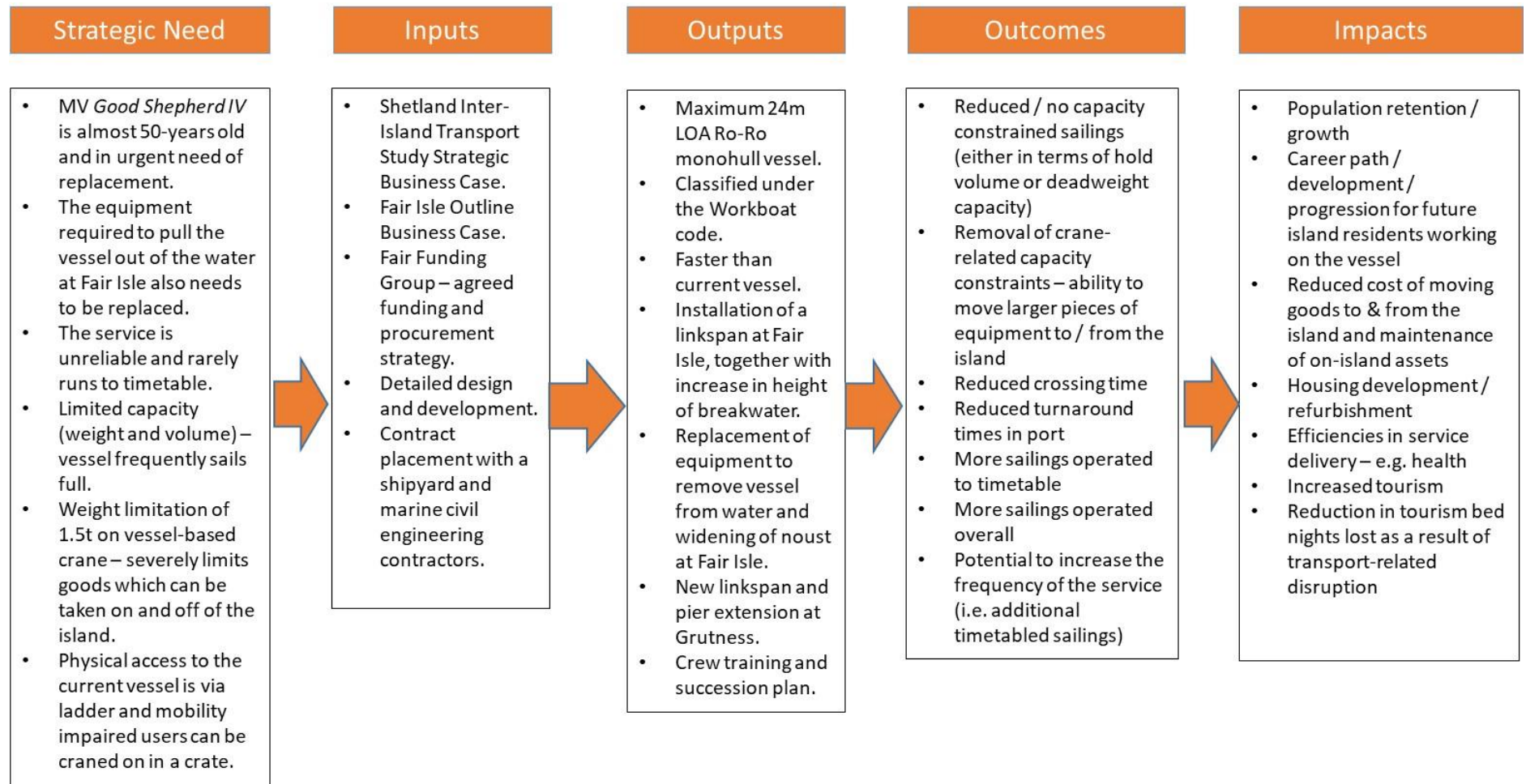


Figure 10.2: Fair Isle Logic Map

- 10.9.2 This logic map identifies the anticipated outputs, outcomes and impacts of the proposed investment, effectively mapping the investment through to the benefits which will be realised.
- 10.9.3 The first four boxes in the above logic map have been developed and addressed through the SBC and this OBC. The key issue in terms of benefits realisation is the extent to which the anticipated **transport** outcomes translate into the wider **societal** impacts which are sought for Fair Isle. One means of categorising and evaluating the extent to which the preferred option will deliver the desired impacts is to return to the 'appraisal aims', which were set early in the SBC (at the Pre-Appraisal stage of the STAG).

Appraisal Aims

- 10.9.4 At the outset of the SIITS process, a set of 'appraisal aims' was developed which were intended to encapsulate how the transport system should facilitate the economy and society of the nine islands served by the transport system. Reflecting the aspirations of the Shetland Transport Strategy 2008, four overarching aims were developed, with a set of sub-aims – the remainder of this section maps the preferred option for Fair Isle against these aims.

Aim 1: The inter-island transport network should support and promote inclusive economic growth.

- 10.9.5 The table below sets out each of the sub-aims and how the preferred option for Fair Isle may contribute towards them.

Table 10.4: Promoting Inclusive Economic Growth

Sub-Aim	Contribution of Preferred Option
It will help to mitigate the reduced access to opportunities associated with living on an island community.	More reliable and higher frequency ferry service would improve access to Shetland mainland. It would also support service delivery on-island from the mainland.
It will help to mitigate the increased cost associated with living and / or doing business on an island community.	The removal of a crane-based weight restriction will allow heavier goods and larger pieces of equipment to be brought onto the island without the need to charter a vessel. This will reduce the cost of serving Fair Isle.
It will help to mitigate the potential competitive disadvantage associated with basing a business in an island community.	Fair Isle has a niche economy which does not 'compete' in the conventional sense with other islands, although livestock exports would be more competitive if they could be moved to Shetland mainland more reliably. The proposed option would however reduce the challenges associated with operating a business on Fair Isle, for example the movement of livestock.
It will help to provide broad equality of opportunity for island residents (including vulnerable groups), both in a local and national context.	As well as improving access to opportunities on the mainland, a Ro-Ro ferry would provide equality of access to the vessel.
It will help to reduce income inequality across the islands where this is brought about by constrained access to employment opportunities and essential services.	The preferred option will assist in (i) reducing the cost of living on Fair Isle; and (ii) sustain and create well-paid and secure employment with a clear career path on in the ferry service for 6-8 individuals. Regular commuting to the mainland from Fair Isle is not a practical proposition.
It will provide access to a wide labour market and source of raw materials .	Given the geographic remoteness of Fair Isle, it is unlikely that the preferred option would contribute materially to this aim.

Aim 2: The inter-island transport network should support improved **access to opportunities and services** on mainland Shetland, including employment, health, education and personal services.

Table 10.5: Access to Opportunities and Services

Sub-Aim	Contribution of Preferred Option
It will help to provide access to a wide labour market for mainland-based concentrations of employment (and vice versa).	Given the geographic remoteness of Fair Isle, it is unlikely that the preferred option would contribute materially to this aim.
It will help to enable island residents to access essential public services , whether delivered on-island or off-island.	<p>This is an essential issue for Fair Isle. The provision of a reliable and potentially higher frequency ferry service would support service provision on the island, particularly in terms of allowing specialist providers or staff covering leave to access / egress the island in the event of the air service being suspended.</p> <p>It will also allow service providers which need to convey equipment to the island to do so more reliably, reducing transport and inventory costs.</p>
It will work towards providing island residents with a fair and consistent level of connectivity where no island is unduly disadvantaged relative to other islands in the group.	The provision of a more reliable Ro-Ro vessel would provide an opportunity to increase the connectivity of Fair Isle, both in terms of increasing the number of scheduled connections which operate and potentially allowing for additional connections to be timetabled. The air service will however always remain the primary mode of passenger travel to / from the island.
It will maximise ' at home ' time for children educated off-island, making the island a more viable place to live.	The air service is the primary mode of travel for school children. However, a more reliable ferry service may provide additional flexibility for children to travel home more often, although any such scope would be limited.
To enable people and goods to broadly travel at the time they wish with a high certainty of supply .	The preferred option would offer a faster crossing and reduced turnaround times in port, increasing the likelihood of services being operated to timetable and additional services being offered where possible. Whilst the specific conditions of the Fair Isle route mean there will never be absolute certainty of supply, this option would at least improve the current situation.
To reduce the time and money costs to service providers of providing island communities with essential services, both public and private (e.g. schools, health, tradespeople etc).	See 'access to essential public services' above.

Aim 3: The inter-island transport network should **promote population retention**, a balanced island demographic and capacity within the local community.

Table 10.6: Promote Population Retention

Sub-Aim	Contribution of Preferred Option
It will help to achieve / maintain critical mass in terms of population.	<p>The current ferry service and indeed wider transport connections have been identified as a challenge for island residents and a deterrent to members of the diaspora returning. 24% of respondents to the household survey do not consider the current transport connections as satisfactory to sustain the island, whilst 67% note that they could be improved.</p> <p>A new and more reliable vessel would assist in addressing this concern whilst also improving the efficiency of other businesses / activities on-island.</p>

Sub-Aim	Contribution of Preferred Option
	Moreover, basing the vessel on Fair Isle would sustain 6-8 well-paid and secure jobs with a clear career pathway and progression opportunities. These jobs in turn could be the anchor to retain / attract 6-8 families in / to the island.
It will help to support higher levels of economic concentration (i.e. a critical mass of employment opportunities) on the islands.	See above.
It will help to make the islands a practical proposition for those potentially minded to island life (i.e. in-migration) .	See above.

Aim 4: The inter-island transport network should support enhanced productivity and economic connectivity within the Shetland Islands.

Table 10.7: Productivity and Economic Connectivity

Sub-Aim	Contribution of Preferred Option
It will help to increase the proportion of total tourists visiting the islands.	Evidence collected through the business case process highlights that the current vessel imposes a constraint on the tourism industry. A more reliable and comfortable vessel would provide tourists with a more attractive alternative route onto / off the island including when the air service is disrupted.
It will help the island group to function more effectively as a single economic unit through increasing productivity / agglomeration .	Given the geographic remoteness of Fair Isle, it is unlikely that the preferred option would contribute materially to this aim.

Measuring contribution towards the aims

- 10.9.6 The above tables clearly highlight the likely positive impact of the preferred option in terms of delivering the study aims which reflect the contribution of transport connectivity to wider societal aspirations. A key challenge in demonstrating the success of the project and identifying value for money is however the measurement of these impacts.
- 10.9.7 In reality, given that there are likely to be numerous factors affecting Fair Isle at any one time, isolating and empirically evidencing the impacts of any new vessel will be challenging. This could most effectively be done by including an 'island engagement' exercise in the Outcome Evaluation (see next section). This would include a survey of residents and depth interviews with island businesses and suppliers at an agreed point (say one year) after the new vessel has entered service and the infrastructure works have been completed. The surveys undertaken as part of the OBC would form something of a baseline for the views of island residents against which change could be measured.
- 10.9.8 The survey would explore issues such as changes in travel patterns, additional ferry journeys made (and the purpose for these) and qualitative views on the new vessel and corresponding service. The depth interviews with island and related businesses would investigate changes to supply-chain arrangements and impacts on costs, whilst stakeholder engagement would assess how the new vessel has impacted on service provision to the island.

10.10 Monitoring and Evaluation

- 10.10.1 The final step in the Management Case process is the development of a monitoring and evaluation (M&E) framework, which can be used as the basis of retrospectively assessing the value for money and effectiveness of the investment made.

Monitoring Plan

10.10.2 The monitoring plan should predominantly be focussed on assessing the extent to which the investment contributes towards the Transport Planning Objectives (TPOs) set out in the Strategic Case. In the context of this study, the TPOs are largely operationally focussed and thus the monitoring plan should be built around this.

10.10.3 In order to understand the impact of investment, it is important to have a pre-intervention baseline against which to compare. In the context of this study, this should be fairly simple to develop as, for most of the TPOs, there will be a clear and factual 'before & after' position. Where this is not the case, data collection should not be particularly intensive.

10.10.4 The table below shows the monitoring requirements for each objective:

Table 10.8: Monitoring Plan

Transport Planning Objective	Required Monitoring Data
TPO1: The capacity of the services should not act as a constraint to regular and essential personal, vehicular and freight travel between the island(s) and Shetland mainland.	In terms of the physical characteristics of the vessels, this should be a straightforward comparison. However, in terms of capacity utilisation: Before: A record of all occasions when the vessel has been 'full' in terms of hold space and / or deadweight capacity. After: An equivalent record should be maintained for any new vessel and compared to the MV <i>Good Shepherd IV</i> .
TPO2b: Where an island does not have a 'commutable' combined ferry or air & drive / public transport / walk time to a main employment centre (e.g. 80 minutes), the connections provided should reliably permit a half day (e.g. 4 hours) in Lerwick, 7 days a week, all year round.	Monitoring of this objective should be combined with a wider monitoring exercise covering recent improvements to the air service.
TPO3: 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.	Before: Ferry connectivity calendar showing the number of connections across the year. After: An equivalent calendar should be developed for any new vessel and compared to the 'before intervention calendar'.
TPO4: The level of connectivity provided should minimise the variation within and between weekdays, evenings, Saturdays and Sundays.	Monitoring of this objective should be combined with a wider monitoring exercise covering improvements to the air service outlined in the Air OBC.
TPO5: Where practicable and realistic, islanders should be provided with links to strategic onward connections without the need for an overnight stay on Shetland mainland.	Monitoring of this objective should be combined with a wider monitoring exercise covering improvements to the air service outlined in the Air OBC.

Evaluation

10.10.5 The term 'Evaluation' in the business case context describes a one-off objective driven review or audit of a project's performance. There are two discrete elements to an evaluation:

- **Process Evaluation:** This is carried out early in the life of a project, before its full effects are known and concentrates on whether input (activity) and expected outcomes for a project are being / have been met;
- **Outcome Evaluation:** This is carried out once sufficient time has elapsed for the project to have delivered its principal outcomes and assesses whether the Transport Planning Objectives have been achieved.

10.10.6 The following sections sets out a recommended approach to the evaluation of the proposed investment.

Process Evaluation

10.10.7 The Process Evaluation would involve an evaluation of how the preferred option was selected and delivered. It would therefore focus on the process of implementation, with the aim of identifying the lessons that could be learned for delivering similar schemes in the future.

10.10.8 The process evaluation would gather a collection of qualitative and quantitative data to understand what worked well and what did not and would involve carrying out a series of mainly one-to-one interviews with staff involved in the delivery phase of the project.

10.10.9 From the interviews and review of documents, information should be gathered on both subjective issues (perceptions of how the implementation and delivery went) and objective issues (factual data on how the implementation and delivery went). More specifically, the evaluation should focus on the process of how the scheme was delivered, and identify factors that helped or hindered the effective delivery. The following types of questions should be considered in a process evaluation:

- How was the preferred option delivered?
- In what context was the scheme delivered?
- What worked well in delivering the scheme, why and how?
- What worked less well in delivering the scheme, and why?
- Was the scheme delivered in the way it was anticipated, if not how and why?
- Did the implementation meet budgetary expectations, and were there any unforeseen costs?
- Were there any issues with stakeholders that impacted on the effective delivery?
- Could engagement with stakeholders have been improved?
- What was the experience of staff in delivering the scheme?
- Were delivery team members suitably qualified to implement the scheme?
- Were there process issues that impacted on the outcome of the project?
- How might the delivery process be improved or refined?
- How were community benefits delivered through the project?

10.10.10 Other issues that may be of interest which are also part of the process, but not necessarily part of the implementation / delivery phase, relate to the appraisal stage. For example:

- Was sufficient resource put into establishing the case for the preferred option (i.e. at STAG / SBC and Outline Business Case stage) – i.e. was the appraisal undertaken sufficient for providing the necessary information for effective decision making?
- Was a clear 'case' made, in terms of quantifying problems which required a transport-based solution? Or was this essentially a solution led process?

10.10.11 The process evaluation would be brought together in a short note with clear and actionable findings for future projects of this nature.

Outcome Evaluation

10.10.12 The outcome evaluation would assess the extent to which the preferred option delivers each of the TPOs. It would use the monitoring framework to identify the extent to which the following outcomes have been delivered:

- Has the new vessel provided sufficient capacity (volume and deadweight capability) to meet the supply-chain needs of Fair Isle?
- Has the new vessel (i) facilitated the service running to timetable more often; and (ii) allowed more connections to be operated across the year? These two measures would permit an assessment of the extent to which the new ferry facilitates e.g. additional time on mainland, additional weekend connections etc.

10.10.13 The above evaluation would satisfy the requirements of STAG and the Business Case Guidance in terms of measuring the 'transport outcomes' of a 'transport investment'. However, it has to be acknowledged that the purpose of the transport investment in the Fair Isle context is to support the realisation of a wider set of social and economic objectives. To this end, additional benefits realisation research as recommended in Section 10.9 will also be required.

Appendix A *MV Good Shepherd IV* Life Expectancy Report



Shetland Islands Council – Fair Isle Ferry Service
MV Good Shepherd – Current Life Expectancy
Transport Planning
Marine and Airport Operations
Version 1.4
April 2021

Document Control	
Document Name/Description	Fair Isle Ferry Service, MV Good Shepherd – Current Life Expectancy
Version Number e.g. V1.1	Version 1.4

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Review Frequency		N/A		
Date of next planned review		N/A		

Version History				
Revision	Date Issued	Brief description of changes	Reviewer	Approved

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Executive Summary

This report outlines the current condition of Shetland Islands Council's ferry MV Good Shepherd IV, recent financial expenditure on maintenance and provides an estimation on the remaining life expectancy of MV Good Shepherd IV.

The current condition of the vessel is relatively mixed, with the hull being considered to be in fair condition but several repairs have been undertaken in recent years to tackle steelwork damage and failing steel pipework throughout the vessel. To date much of the pipework has been replaced to allow MV Good Shepherd to remain in service.

The conclusion on life expectancy of MV Good Shepherd is that the vessel has a remaining life estimated to be approximately five years with some expenditure.

This estimation of life expectancy is based on a position where no or minimal additional expenditure is available, i.e. expenditure which is required above what would be considered 'normal' or expected maintenance of the vessel.

Examples of additional expenditure include:

- Cargo hatch repair or replacement
- Cargo hatch rails repair or replacement
- Replacement main engine

The life of MV Good Shepherd can be extended beyond the estimated five years, however this would require significant investment to life extend the vessel.

To date some life extending works have been undertaken but these have been on an ad-hoc basis as equipment reached end of life or obsolescence.

It is also anticipated that some additional expenditure will be required in the five year timescale to allow MV Good Shepherd to remain in service.

Spend on vessel maintenance has steadily increased year on year with a significant increase in expenditure in financial year 2019/20 where costs reached £236,087, whilst in the previous four financial years costs ranged from £53,000 - £70,000c. This indicates the level of work and expenditure required to keep MV Good Shepherd in service on the Fair Isle route, such as the replacement of the deck crane as without this the vessel would have no means of loading and unloading cargo.

1. Introduction

- 1.1. Shetland Islands Council ferry MV Good Shepherd IV was built in 1986 and has been operating the ferry service between the islands of Fair Isle and Shetland Mainland.
- 1.2. MV Good Shepherd IV is certified as a workboat, which can carry up to 12 passengers with 4 crew members on board.
- 1.3. MV Good Shepherd is a Lo-Lo (lift on, lift off) type vessel as she does not support facilities for Ro-Ro (roll on, roll off) and is therefore dependent on her deck crane to move cargo and vehicles from ship to shore.
- 1.4. Given the age of the vessel and studies being undertaken, by Shetland Islands Council/ZetTrans, to consider the continued provision of its inter island transport links, an evaluation of the existing life of MV Good Shepherd IV requires consideration.
- 1.5. The evaluation seeks to determine when the vessel is 'life-expired', i.e. unable to operate due to safety concerns, vessel condition or considered financially uneconomic.
- 1.6. This evaluation involves Shetland Islands Council personnel as and is based the experience and knowledge of those involved. Personnel from the Ferry Operations, Transport Planning and Finance services have all been involved in the various discussions and information provided.

2. Vessel Condition

Vessel Hull

- 2.1. Externally hull is in good condition.
 - 2.1.1. Both visual inspection and Non-Destructive testing confirm this.
- 2.2. Internally the hull is in fair condition.
 - 2.2.1. Both visual inspection and Non-Destructive testing confirm this.
- 2.3. Below the cargo hold flooring and in bilge wells the hull found to be in a fair condition.
 - 2.3.1. Although recently repairs have been required.
- 2.4. Hull and bulkhead steelwork has been repaired or replaced in recent times.
 - 2.4.1. The most recent of these repairs include repairs to buckled flooring and bulkhead, associated with stresses caused by the deck crane.
 - 2.4.2. This repair required additional strengthening to the repaired steelwork.
- 2.5. Over recent years many bilge, ballast, cooling, vent and drain pipes have been removed and either repaired or replaced due to the condition of the steel.

- 2.5.1. It is anticipated that this type of repair and replacement of pipework will continue into the future. This includes investigation of ballast and bilge pipework between the engine room, aft cabin and aft ballast tanks.

Machinery

- 2.6. The main engine, gearbox, propeller and propeller shaft are original equipment from build.

- 2.6.1. The main engine was overhauled in March 2011.
- 2.6.2. The main engine cylinder heads were overhauled in 2020.
- 2.6.3. The main propulsion gearbox was overhauled in 2019.
- 2.6.4. The main generator set was renewed in 2000.
- 2.6.5. In 2020 the main generator cylinder head was renewed.
- 2.6.6. The deck crane was replaced in 2020, which included the replacement of the power take-off (PTO) hydraulic pump.

Anticipated works

- 2.7. In addition to works previously undertaken, there is also envisaged work being required in the near future.
 - 2.7.1. Cargo hold hatch rails will require to be repaired or renewed in the next 3 years.
 - 2.7.2. Cargo hold hatches further repairs or renewal in the next 3 years.
 - 2.7.3. Pipe work from the engine room will require to be removed for inspection and repaired or renewed.
 - 2.7.4. Main engine is due a major overhaul in 2023/4.
 - 2.7.5. Continued steelwork inspection will be undertaken with the expectation further repairs will be required on the vessel.

Additional vessel information

- 2.8. Supplementary information regarding vessel characteristics and passenger accessibility can be found in Section 3.2 of the Stantec report: Shetland Inter-Island Transport Study – Fair Isle Outline Business Case, Socio-Economic Case Report (Appendix 1).
- 2.9. MV Good Shepherd IV's workboat certificate is due for renewal in March 2021.
- 2.10. Obsolescence of parts, to date, has been dealt with on an ad-hoc basis, whereby issues are dealt with as they become apparent and this has been relatively easy to deal with. However it is recognised that there are instances where this might not be the case, such as the main engine. It is noted that on occasion that some parts have become difficult to source and the expectation is that it will become increasingly difficult to source other parts and longer term it may become a requirement to replace the main engine.

3. Financial Position

- 3.1. MV Good Shepherd IV has seen an increase in expenditure over the preceding years, up to and including current spend position at February 2021 in the current financial year.

3.2. Figure 1 shows a breakdown on total spend, in GBP, on maintenance related activities since 2015/16 financial year.

Expenditure Type	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Spare Parts	2,799	5,209	2,590	6,315	3,663	2,310
Equipment Purchase	1,286	2,589	476	3,029	45,777	186
Consumables – i.e. filters, etc.	-	-	823	527	581	-
Contracted Services	3,531	7,566	6,988	6,809	18,724	3,625
Dry Dock Contractors	34,051	27,177	45,244	31,492	109,225	50,795
Dry Dock Parts	7,515	22,870	10,225	8,417	42,097	6,634
Dry Dock Miscellaneous	700	1,394	1,144	1,448	2,430	1,141
Dry Dock Slipping Charge	2,366	222	294	95	12,397	311
Lubricants	201	660	1,603	232	1,115	57
Waste Oil Disposal	849	50	276	-	79	253
	53,299	67,737	69,662	58,364	236,087	65,312

Figure 1

3.3. Expenditure covered (figure 1) includes:

- 3.3.1. Annual refits/dry dockings
- 3.3.2. Annual certification costs
- 3.3.3. Safety equipment inspection/recertification/replacement as required.
- 3.3.4. New equipment
- 3.3.5. Parts and consumables
- 3.3.6. Contracted services
- 3.3.7. Lubricants and greases

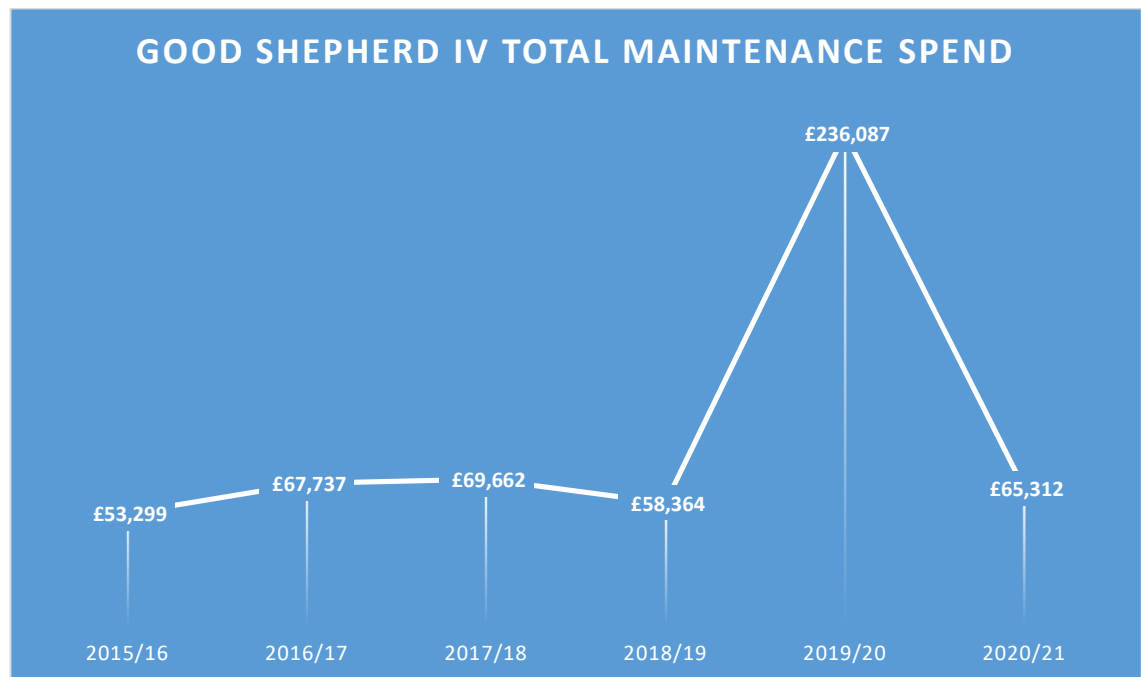


Figure 2

- 3.4. Figure 2 displays total spend from April 2015 to date.
- 3.5. 2015/16 through 2017/18 shows a steady increase in expenditure before a slight decrease followed by an increased spend of over three times expenditure previously recorded.
- 3.6. Currently in 2020/21 spend has decreased significantly, since 2019/20, but looks to continue the trend of increasing costs year on year.
- 3.7. Maintenance spend can be further analysed as:
- 3.7.1. Annual refit/dry docking costs (figure 3); and
 - 3.7.2. In-service repairs and maintenance (figure 4)
 - 3.7.3. With exception to spend on lubricants and waste oil disposal as this spans both 3.7.1 and 3.7.2 above.
- 3.8. Annual Refit/Dry Dockings' expenditure covers:
- 3.8.1. Annual certification costs
 - 3.8.2. Safety equipment inspection/recertification/replacement as required
 - 3.8.3. Vessel slippage costs (removal of vessel from water)
 - 3.8.4. Main engine, generator, gearbox, deck equipment, etc. servicing costs
 - 3.8.5. Contractor costs:
 - Mechanical engineers
 - Electricians
 - Marine electronics and navigation equipment engineers
 - Welders/Fabricators
 - Painters

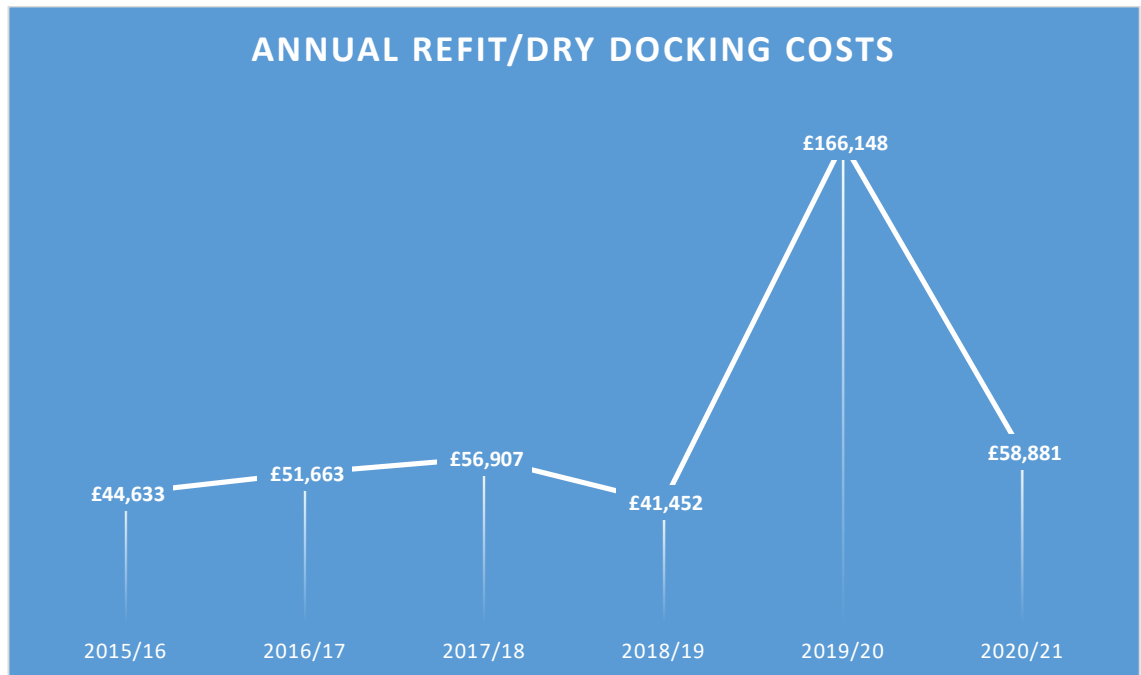


Figure 3

3.9. In-service repair and maintenance expenditure covers:

- 3.9.1. Breakdown/reactive maintenance
- 3.9.2. Repairs
- 3.9.3. Spare parts/equipment
- 3.9.4. Contractor costs

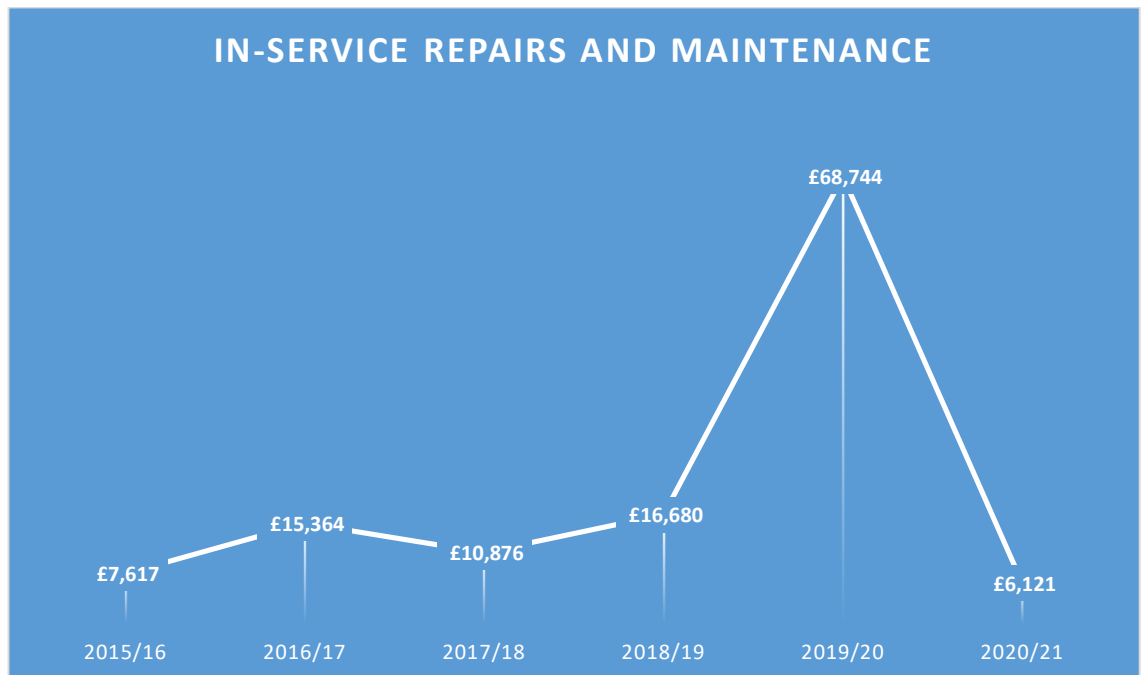


Figure 4

3.10. Costs included in figures 1 - 4 do not cover costs such as fuel, personnel, required publications, insurance costs, etc.

3.11. The increased spend in 2019/20 can be attributed:-

Annual Refit/Drydock:

3.11.1. Malakoff Refit Works - £95,000

3.11.2. Gearbox Overhaul - £42,900

In-Service repairs and Maintenance:

3.11.3. Purchase and installation of a new deck crane - £48,700

3.11.4. Replacement Navigation Equipment - £5,000

4. Conclusions

4.1. Without exceptional expenditure on the vessel the consensus is that MV Good Shepherd IV has an estimated remaining life in the region of five years.

4.2. This position takes account of the factors outlined in section 3 above, whereby additional expenditure, i.e. expenditure which is required above what would be considered 'normal' or expected maintenance of the vessel, will not be available or minimal funds available.

4.3. Any additional expenditure out with 'normal' or expected maintenance of the vessel is in essence 'life extending work' as without this expenditure the vessel could not operate and would fall out of certification.

4.4. This life extending work includes but is not limited to:

4.4.1. Cargo hold hatch rails will require to be repaired or renewed.

4.4.2. Cargo hold hatches further repairs or renewal.

4.4.3. Pipe work from the engine room will require to be removed for inspection and repaired or renewed.

4.4.4. Main engine replacement, to mitigate obsolescence of parts, however this may be more complex due to Marpol Annex VI – IMO Tier III emissions requirements when considered in conjunction on MV Good Shepherd size/available space, general arrangement, etc.

4.4.5. Continued steelwork inspection will be undertaken with the expectation further repairs will be required on the vessel.

4.5. It should be noted that upon inspection or breakdown additional expenditure may be required to meet certification or safety requirements to allow MV Good Shepherd IV to remain in service in the next five years.

4.6. Ongoing In-Service repairs and maintenance costs are increasing year on year and it is not anticipated that these costs will lessen into the future.

- 4.7. Annual refit/dry docking costs have shown a spike in financial year 2019/20 as a result of responding to the current condition of the vessel and in an effort to keep MV Good Shepherd in service, as currently no replacement vessel is available to operate the Fair Isle route.
- 4.8. MV Good Shepherd IV can be maintained to remain in service for many years to come, however this comes with a caveat.
- 4.9. Additional and life extending expenditure will be required to keep MV Good Shepherd in service beyond the five year life expectancy.
- 4.10. Within the five year life expectancy it is considered highly likely that some additional expenditure will be required to maintain MV Good Shepherd in service.
- 4.11. Beyond five years it is expected the main engine will require replacing, along with other integral ships systems to ensure the continued operation of the vessel. This would not address issues raised in the Stantec report: Shetland Inter-Island Transport Study – Fair Isle Outline Business Case, Socio-Economic Case Report (Appendix 1), however whilst these issues is out with the scope of this report it does have significance in any business case whereby a life extension of MV Good Shepherd is considered and the value for money that such expenditure would have.

Appendix 1



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Appendix B Detailed Landside Infrastructure Costs

Note that there are minor differences in the numbers presented in Table 7.2 of the main report and this appendix, which are associated with rounding. Contingency is also listed separately in this appendix but is integral to the numbers in Table 7.2, which means individual item costs will vary between the two sources, but the overall total cost is the same (rounding excepted).

Fair Isle

Table B1: Fair Isle Detailed Costs

Description	Quantity	Unit	Price per Unit	Item Cost
Linkspan				
Linkspan Deck Supply	1	No.	£0	£0
Linkspan Deck – Refurbish, Transport and Install	1	No.	£68,960	£68,960
Electrical Supply of new linkspan	1	No.	£21,220	£21,220
Modular Machinery Control Units Supply	1	No.	£137,920	£137,920
Machinery Control Units – Transport and Install	1	No.	£8,490	£8,490
Refurbish Cylinders from Sella Ness	1	No.	£21,220	£21,220
Install and Test Cylinders	1	No.	£15,920	£15,920
Substructure	200	m ³	£690	£138,000
Pier Extension				
RC Concrete Deck	550	m ³	£430	£236,500
Precast Concrete Blocks	2080	m ³	£690	£1,435,200
Infill Material	4508	m ³	£45	£202,860
Mass Concrete Fill Behind (special mix with micro silica for washout and erosion)	213.75	m ³	£270	£57,713
Additional Lighting to Extended Pier	1	No.	£5,310	£5,310
Deck Furniture	1100	m ³	£45	£49,500
Fenders (MV)	15	No.	£5,310	£79,650
Relocation of Pontoon	1	No.	£8,490	£8,490
Dredging				
Rock Dredging	2500	m ³	£70	£175,000
Disposal				
Soft Dredging	2400	m ³	£35	£84,000
Disposal at Sea	2640	m ³	£15	£39,600
Breakwater				
Primary Armour	4030	m ³	£100	£403,000

Description	Quantity	Unit	Price per Unit	Item Cost
Small Pier at Slipway				
Demolition of Existing Pier	1	No.	£212,180	£212,180
Re-provide Pier on offset footprint to accommodate extension to slipway	1	No.	£1,060,900	£1,060,900
Slipway and Cradle				
Slipway – Demolish Existing	1	No.	£265,230	£265,230
Slipway – Construct New Solid Concrete Slipway	1	No.	£2,121,800	£2,121,800
Rails on New Slipway – Supply and Install	14.46	ton	£2,550	£36,867
Increase Footprint of Noust	3305	m ³	£70	£231,350
Extend Slab in Noust	76	m ³	£480	£36,480
Rock Netting	1270	m ²	£80	£101,600
Demolish Existing Winch House	1	No.	£15,920	£15,920
New Winch House	1	No.	£37,140	£37,140
Re-provide Winch and Standby Winch	1	No.	£106,090	£106,090
Steel Access and Walkway to New Vessel	1	No.	£15,920	£15,920
Minor Roadworks	1	No.	£26,530	£26,530
Dredging Toe of Slipway				
Cradle	32.34	ton	£5,310	£171,706
	Sub-Total of Construction Works			£7,628,266
			Prelims (20%)	£1,525,653
			Fair Isle Remoteness Factor (15%)	£1,144,240
	Construction Works Total			£10,298,159
			GI	£450,000
			Design and Supervision	£1,029,816
			Contingency (15%)	£1,766,696
			Total	£ 13,544,671

Table B2: Grutness Detailed Costs

Description	Quantity	Unit	Price per Unit	Item Cost
Linkspan				
Linkspan Deck Supply	1	No.	£0	£0
Linkspan Deck – Refurbish, Transport and Install	1	No.	£53,050	£53,050
Electrical Supply of new linkspan	1	No.	£21,220	£21,220
Modular Machinery Control Units Supply	1	No.	£137,920	£137,920
Machinery Control Units – Transport and Install	1	No.	£8,490	£8,490
Refurbish Cylinders from Sella Ness	1	No.	£21,220	£21,220
Install and Test Cylinders	1	No.	£15,920	£15,920
Substructure	200	m ³	£690	£138,000
Road Realignment to Structure	1	No.	£21,220	£21,220
Pier Extension				
Provision of Internet Enabled CCTV and Area Lighting	1	No.	£21,220	£21,220
Remedials to Existing for Undercutting etc.	1	No.	£53,050	£53,050
RC Concrete Deck	700	m ³	£430	£301,000
Precast Concrete Blocks	2106.4	m ³	£690	£1,453,416
Infill Material	2501.35	m ³	£45	£112,561
Additional Lighting to Extended Pier	1	No.	£10,610	£10,610
Deck Furniture	700	m ³	£45	£31,500
Fenders (MV)	27	No.	£5,310	£143,370
Dredging				
Soft Dredging and Disposal at Sea	3900	m ³	£33	£136,500
Breakwater				
Slackening of Existing				
Primary Armour	960	m ³	£100	£96,000
Secondary Armour	960	m ³	£70	£67,200
Breakwater Extension (1st 50m)				
Primary Armour	1900	m ³	£100	£190,000
Secondary Armour	1600	m ³	£70	£112,000
Rockfill	1312.5	m ³	£60	£78,750
Last 15m				
Primary Armour	580	m ³	£100	£58,000
Secondary Armour	490	m ³	£70	£34,300

Description	Quantity	Unit	Price per Unit	Item Cost
Rockfill	438.75	m ³	£60	£26,325
	Sub-Total of Construction Works			£3,342,842
			Prelims (20%)	£668,568
	Construction Works Total			£4,011,410
			GI	£150,000
		Design and Supervision		£401,141
			Contingency	£684,383
			Total	£5,246,934

Appendix C Methods of Delivery

C.1 Overview

This section outlines a range of potential delivery models which could be considered for the future delivery of local authority internal ferry services. The options range from continued funding and operation of the services on their current basis through to a full transfer of responsibilities to Scottish Government / Transport Scotland and tendering of the services.

Whilst funding from the UK Government (UKG) may be sought through the 'Levelling-Up' Fund, it is not anticipated the UKG would play an active role in procuring or operating services, and thus they are not considered further in this appendix.

C.2 Procurement Law

The granting of public funds for capital investment in assets and the provision of operating subsidies has historically been governed by the Treaty on the Functioning of the European Union (TFEU), particularly in relation to state aid. However, the United Kingdom's withdrawal from the European Union on 31st January 2020 and the completion of the subsequent transition period on 31st December 2020 means that the UK is no longer directly bound by these rules.

Under the EU-UK Trade and Cooperation Agreement (TCA), companies in the EU will be able to challenge state aid awarded to UK firms in Britain's national courts if they feel it violates the common principles set out in the agreed TCA, with British firms enjoying reciprocal rights in the European Union. Britain has also agreed to set-up an independent state aid authority, although the deal does not require the UK to have an *ex ante* regime to approve subsidies before they are granted. Both sides can unilaterally impose tariffs to counter the effect of any subsidies considered to distort free trade, albeit there will be an arbitration system in place to support discussions around this issue.³⁵

Moreover, under the terms of the TCA, there is no reciprocity between the EU and the UK on maritime cabotage³⁶. Indeed, this item is specifically excluded from the ambit of the agreement.³⁷

All ferry contracts in Scotland at present were procured under EC rules and it remains to be seen how – or if – this approach changes over time. State aid in particular is a legal matter and often works on the basis of court precedent. Therefore, for the purpose of this appendix, it is assumed that the broad procurement framework associated with TFEU is maintained at least in the short-term.

C.3 Strategic Choice

At present, Council ferry services require subsidy to operate. This subsidy is met in part by additional Grant Aided Expenditure (GAE) funding³⁸ which the Council receives to operate these services. This additional GAE is not sufficient to meet the annual operating deficit, which the Council has historically covered out of its own funds and / or through periodic top-up lump sum funding provided by central

³⁵ <https://www.ft.com/content/bd71fda3-0a34-4b52-ae98-4769848cb628>

³⁶ Cabotage laws apply to merchant shipping in most countries that have a coastline so as to protect the domestic shipping industry from foreign competition amongst other items. When the UK was a Member State of the EU, the Maritime Cabotage Regulations applied the principle of free movement of services to maritime transport and obliged Member States to allow Community ship owners to operate freely in the European market – i.e. a Scottish tender competition could not discriminate against EU flagged vessels or ferry companies, the so-called 'level playing field' which underpins the Single Market.

³⁷ <https://www.insidebrexitlaw.com/blog/the-eu-uk-trade-and-cooperation-agreement-implications-for-the-shipping-industry>

³⁸ The Scottish Government *Green Book*, which sets out the detailed distribution of the Local Government Finance Settlement, includes a Local Authority Grant Aided Expenditure component. This recognises that Argyll & Bute Council, Orkney Islands Council, Shetland Islands Council and The Highland Council are responsible for inter-island ferry services and provides an expenditure based increment to contribute towards the operation of these services. However, in all cases, top-up funding is required from each local authority to maintain services.

government³⁹ (known as Section 70 funding). It should be noted that the Scottish Government budget 2021/22 committed to cover the full operating deficit of the Council services for that financial year. It is unclear at present whether this is a one-year settlement or a longer-term proposition.

There is also a need for a programme of capital investment in new vessels and major infrastructure works across Shetland for which there is no committed funding currently.

The overarching question therefore is which organisation(s) will be the funding authority / provider for the Council and wider local authority internal services in the long-term, both in revenue and capital terms.

In the event that there was an agreement to provide additional long-term Scottish Government / Transport Scotland funding for services in response to the ongoing 'Fair Funding'⁴⁰ discussions, a strategic choice is presented – i.e. whether to:

- **Option 1:** Provide additional funding to the Councils through GAE or Section 70⁴¹ funding to operate their services as at present; **or**
- **Option 2:** Transfer the services into Scottish Government / Transport Scotland and operate them directly, either in-house or on a contracted basis.

From a Scottish Government / Transport Scotland perspective, the key benefit of **Option 1** is that it does not imply a significant additional administrative burden from owning and operating inter-island services. There would also continue to be local management and accountability, which would ensure the services are tailored to the community planning outcomes and the needs of the individual islands which they serve. The primary disbenefit however is that government may have less direct visibility over how the funding is used and a robust governance framework would need to be put in place to demonstrate that value for money is being achieved in procurement and service delivery.

The position with respect to **Option 2** is effectively the inverse of the first option. The primary benefit for Scottish Government / Transport Scotland is that there would be a clear framework of accountability to accompany any additional funding. However, there would also be a significant increase in the administrative and political burden associated with operating the services and a loss of local accountability / flexibility.

From a user's perspective a key issue is whether any change from the current funding arrangements impacts on **fares**. Any increase in funding from, or transfer to, Scottish Government / Transport Scotland would have to be considered in the context of Transport Scotland's current fares policy, Road Equivalent Tariff (RET). Mapping the Council fares structure to RET would be a complex exercise.

The potential delivery models set out below require to be interpreted within the context of the above strategic choice.

C.4 Potential Delivery Models

The 'Methods of Delivery' (MoD) options which will be considered are as follows:

- **MoD, Do Minimum:** The Council continues to operate the services on the same basis as at present – this is the premise of the Fair Isle OBC CFM Cases.

³⁹ Note that the Scottish Government Budget 2021-22 committed to fund the full operating costs of inter-island ferry services in Argyll & Bute, Orkney and Shetland. From our reading, it appears that this is a one-year settlement at present.

⁴⁰ In 2014, Orkney and Shetland Islands Councils, through the 'Our Islands, Our Future' initiative, began a dialogue with the Scottish Government on establishing principles for the 'Fair Funding' of their inter-island transport services and infrastructure. The basis of these ongoing discussions is that the financial burden upon the respective Councils of providing inter-island transport is disproportionate.

⁴¹ The Scottish Ministers can may grants to any persons for any purposes relating to transport, known as Section 70 funding.

- **MoD, Do Minimum+:** The Council continues to operate the services on the same basis as at present, but receive additional Scottish Government / Transport Scotland funding to close the capital and revenue funding shortfall.
- **MoD1, Public Sector Operation:** Transfer of responsibilities to Transport Scotland, with the services being operated on an 'in-house' basis.
- **MoD2, Public Service Obligation:** The Council establishes a Public Service Obligation (PSO) for their services and seeks an operator(s) to run them.
- **MoD3, Public Service Contract:** Specify a Public Service Contract (PSC) and seek an operator to run the services – there are two variants to this option:
 - **MoD3a:** The Council establishes a PSC and seeks an operator(s) to run the services.
 - **MoD3b:** Seek a transfer of responsibilities to Transport Scotland, which would establish a PSC and seek an operator to run the services.
- **MoD4, Community Interest Company:** Transfer the services to a trust or community interest company.
- **MoD5, Privatisation / leave it to the market:** Privatised the services or leave it to the market to provide the service.

The following sections develop these options in more detail. The issues surrounding methods of delivery are complex and professional legal, tax and potentially state aid advice will be required if the Council chooses to move away from current arrangements.

C.4.1 MoD, Do Minimum: Continue with the current method of delivery

The current Council services are operated in-house, with the exception of the Foula ferry which is tendered. The Do Minimum would involve continuation of the current arrangements.

Implications

- The Council retains full control over the services, with the ability to specify all key variables such as fares, frequency and the length of the operating day. This ensures that the design of the service profile best meets the needs of local communities and economies.
- There is local democratic accountability, whereby the service specification is signed-off by the Elected Members of the Council.
- From a financial perspective, there would need to be significant Council expenditure to fund new or second-hand vessels or in maintaining the current ageing fleets (set against a backdrop of public sector spending reductions).
- The Council would be expected to meet all ongoing costs of the operation of the service (e.g. crew, fuel, dues, pension liabilities etc).
- The increasingly pressing need for capital funding would most likely need to be met from borrowing or reserves. This would lead to pressure on spending on other Council services or through very substantial increases in fares to meet the additional revenue costs.

C.4.2 MoD, Do Minimum+: Continue with the current method of delivery but with additional Scottish Government funding

This option would represent a variation of the current situation. Under this model, all elements of the service delivery would remain as at present, but the capital and revenue funding would be provided by Scottish Government or Transport Scotland on its behalf. The difference between the Do Min and the Do Min+ in many respects reflects the strategic choice outlined in Section 2.2.

Implications

- The funding shortfall in relation to inter-island transport services would be removed for the Council on a permanent basis.
- The Council would retain full control over services, with the ability to specify all key variables such as fares, frequency and the length of the operating day. This ensures that the design of the service profile best meets the socio-economic needs of local communities.
- There is a degree of democratic accountability, whereby the service specification is signed-off by Elected Members.
- This would be the most straightforward way of providing additional funding for the service – there would be no requirement for major changes in roles and responsibilities.
- There would be a significant direct additional financial cost to the Scottish Government / Transport Scotland associated with taking on the capital replacement and ongoing operating costs of additional ferry networks / routes. This would be in the context of significant and continuous downward pressure on government budgets.
- There would be an additional administrative burden on the Scottish Government / Transport Scotland, whilst a governance framework which ensured control over spending and value for money would need to be developed.
- The case for any additional capital investment and revenue funding for the Council services would be reframed at the national level, where there are a much wider range of competing priorities and demands. Infrastructure solutions may take much longer to materialise in relation to current expectations.
- Any additional funding could be provided directly to a local authority through Section 70, or indirectly via an intermediary such as a Regional Transport Partnership.

C.4.3 Option MoD1: Non-Local Authority Public Sector Operation

This option would involve a request from the Council to Transport Scotland to enter into negotiations for a 'transfer of responsibilities' (as per the *Scottish Ferries Plan 2013-22*). It is assumed in this option that, following the transfer of responsibilities, the services would continue to operate as an entirely public sector run service, either in their current form or as part of a wider bundle of in-house services. There are a number of challenges and risks associated with this which are spelled out below.

What are the key considerations in relation to this option?

The *Scottish Ferries Plan 2013-22* noted that the Scottish Government is willing to take responsibility for any 'lifeline' ferry service in circumstances where the current operator is unable to continue or where the operator otherwise considers it best if the Scottish Government assumes responsibility and agreement can be reached.

Any transfer of responsibilities would initially be predicated on a position of **no net detriment** to the Scottish Government. In principle, this would require an adjustment to be made to the Scottish Government's local government block grant (potentially over and above the ferries related GAE component) to ensure that the Scottish Government / Transport Scotland is in receipt of the revenue required to run the ferry services in future and a potential transfer of capital funding to address vessel and infrastructure replacement.⁴² The *Ferries Plan* notes that the Scottish Government cannot guarantee to be in a position to provide any additional funding and it may not always be agreed that a transfer goes ahead. The above would represent the starting point for any consideration and subsequent negotiations of a transfer of local authority services (albeit notwithstanding the commitment through the 'Fair Funding' workstream to develop a 'mutually acceptable' approach to future funding as part of that process).

⁴² *Scottish Ferry Services Ferries Plan 2013-2022* (Transport Scotland, 2012), pp. 52-54

As part of the Corran Ferry STAG Appraisal, Stantec engaged with Transport Scotland around the broad principles surrounding any potential transfer of responsibilities. Key issues which would need to be considered include:

- **Cost of Delivery:** What would be the cost differential between Scottish Government / Transport Scotland and Council operation of the services? Would the Council be required to provide additional funding on top of their GAE rebate to Scottish Government? If so, how much would this be?
- **Fares:** Transport Scotland noted that RET is their standard fares policy and would be the starting point for discussions around fares in any potential transfer situation. It was noted that:
 - If a local authority is seeking to continue with its current fares system, it may be possible (if acceptable to Ministers) for them to provide top-up revenue funding to cover the shortfall between the RET fare and the current level of fares where this exists.
 - The current RET policy also does not permit a differential between resident and visitor fares and thus would, in principle, lead to discontinuation of multi-journey books.
 - When RET was introduced on the Clyde & Hebrides Ferry Services (CHFS) network, the position was taken by Ministers that no community's fares would increase at the introduction of RET. Therefore, if the single RET fare was higher than the existing fare, the fares were generally capped at the multi-journey single-equivalent level. However, the focus was on the standard 6 or 10 journey multi-ticket books – RET fares were not pegged to the higher discount 50 journey ticket books, or season tickets, where these existed. A small number of communities retained their 50 journey books and season tickets, but this was the exception rather than the rule.
- **Community engagement:** what would be the mechanisms for engaging with the local transport authorities (Councils and RTPs), communities (including Members) and stakeholders on infrastructure and service specification issues once a transfer was completed?
- **Future operations and asset ownership:** How would the service be bundled / operated following the completion of any transfer? Who would own the landside infrastructure and vessels? Under a transfer of ownership, how would residual value / liabilities be dealt with?
- **Crewing:** Who would employ the current crew and what would this mean for their terms and conditions?

There would also be a legal question regarding any tendering 'thresholds' in terms of the size of the ferry network operation. Legal advice would be required on this, particularly in the context of the EU-UK TCA.

Where is this model currently in operation?

Fully integrated public sector operations can typically be found where:

- marine transport cannot be delivered commercially but is critical to the social and economic vitality of an area; and / or
- where an authority historically views a ferry as part of its road and / or public transport network.

Perhaps unsurprisingly, the main areas of public sector ferry operations in the UK are Argyll & Bute, Highland, Orkney and Shetland. The Mersey Ferries are also delivered wholly by the public sector.

The treatment of ferries as part of the road network is common in Scandinavian countries, with both Sweden and Norway providing public sector run ferry services across major rivers, inlets and fjords.

The commentary above also applies to the Do Minimum and Do Minimum+.

Implications

- The public sector retains full control over the service, with the ability to specify key variables such as fares, frequency and the length of the operating day. This ensures that the design of the service profile best meets the needs of local communities within the available resources of the public sector.
- There is a degree of democratic accountability, whereby the service specification is signed-off by elected politicians.
- There may, depending on the scope of any transfer agreement, be an opportunity for the Council top-up funding to achieve specific outcomes for the service.
- Whilst the public sector overall would retain control of the service, sign-off of the service specification, revenue and capital budgets would rest with the Scottish Ministers rather than Council Members. Whilst there are established mechanisms for consulting with communities in other centrally run services, there may nonetheless be a diminution of the current level of local control, accountability and much-valued influence / flexibility.
- The case for investment in the Council network would have to be made alongside a wide range of other requests for Scottish Government / Transport Scotland funding for ferry services and marine infrastructure. There is understood to be a long list of vessel, harbour and revenue funding requests of government across Scotland, and there is thus uncertainty as to where new infrastructure for current Council services would sit within this list.
- From a financial perspective, there would continue to be a need for significant public sector expenditure to fund new / second-hand vessels or in maintaining the current ageing fleet (set against a backdrop of public sector spending reductions).
- The public sector would also be expected to meet the ongoing costs of the operation of the service (e.g. crew, fuel, dues, pension liabilities etc).
- There remains a considerable degree of uncertainty around key issues such as how current fares systems would be reconciled with RET, the level of GAE adjustment etc.

C.4.4 Option MoD2: Public Service Obligation

This option considers the imposition of a Public Service Obligation (PSO) by the Council for their network. A PSO is a situation where the public sector defines the required service and looks to the private sector to provide it, either commercially or with the assistance of a subsidy.

Until 31st December 2020, this process was governed directly by the Treaty on the Functioning of the European Union (TFEU), in particular the European Maritime Cabotage Regulations (Council Regulation (EEC) No 3577/92). This directive regulates the transportation of passengers by sea between two points within Member States of the European Union. The Cabotage Regulations apply the principle of free movement of services to maritime transport and oblige Member States to allow community ship owners to operate freely in the European market. The Cabotage Regulations recognise that marine transport can often be vital to the economic prosperity of an area. As such, exceptions to the principle of free movement of services are allowed where, owing to special circumstances, market forces would not provide a satisfactory level of service. In certain circumstances, the Cabotage Regulations allow Member States to intervene in particular markets by imposing PSOs. The EU-UK Trade and Cooperation Agreement does not include reciprocity on the issue of maritime cabotage, which is specifically excluded from the agreement.⁴³ However, it is assumed that the PSO process will be broadly similar at least in the short-term, albeit there is a possibility that restrictions will be applied on non-UK registered firms bidding for PSOs.

Where the public sector does not wish to operate ferry services directly but, at the same time, has a desire to influence certain service characteristics, they can impose a PSO on a route. A PSO will help

⁴³ <https://www.insidebrexitlaw.com/blog/the-eu-uk-trade-and-cooperation-agreement-implications-for-the-shipping-industry>

to ensure an adequate regular ferry service to and from given location(s) where companies, in considering their own commercial interests, would not provide an adequate level of service.

PSO requirements are typically limited to the following service characteristics:

- the ports to be served;
- requirements in relation to the length of operating day, timetable, frequency of services and vessel capacity; and
- fare levels.

PSOs can be implemented in two ways:

- applying PSOs to all operators on a route by way of a fixed set of commitments for an operator or a licencing system; or
- entering into a public service contract (PSC) with individual operators for one or more routes

Note - this section considers the first bullet above, with the imposition of a PSC considered in the next option (Option MoD3).

What are the key considerations in relation to this option?

The key issues in relation to a local authority specified PSO are as follows:

- It is extremely unlikely that a commercial operator would sign up to a PSO on any Council route on the basis of the current volumes and fares.
- There would be no guarantee of tenure. The Council would therefore need to have a contingency plan in place should any operator which they did secure withdraw (i.e. an 'operator of last resort').
- The Council has limited experience of operating a marine PSO, although the Council does have an established track record in running an aviation PSO.

If the Council chose to pursue the PSO option, robust market testing and engagement with operators would be advisable to ensure the risk of service disruption / loss is minimised.

Where is this model currently in operation?

There are, as we understand it, no examples of marine transport PSOs in the UK, generally because non-commercial services require subsidies. However, PSO arrangements exist in various countries in Europe, such as Denmark, Spain and for freight services to the Portuguese Atlantic islands.

Implications

- The Council can influence a range of socially desirable service characteristics, including fare levels.
- The cost of all assets and operations (with the exception of shoreside infrastructure) rests with the private sector.
- Securing an operator on a PSO could be challenging, particularly on the basis of the current fares in Shetland.
- There is no guarantee of tenure and any PSO operator could choose to walk away from the service if it did not prove to be commercially viable. An operator of last resort would be required.

C.4.5 Option MoD3: Public Service Contract

This option theme would involve the imposition of a PSC on the Council network. There are two discrete options in this respect:

- **MoD3a:** The Council establishes a PSC and seeks an operator(s) to run the route(s) / network(s).
- **MoD3b:** Seek a transfer of responsibilities to Transport Scotland, which would establish a PSC and seek an operator(s) to run the route(s) / network(s). This is the current model on Clyde & Hebrides Ferry Services (CHFS) and Northern Isles Ferry Services (NIFS).

The following sections set out the specifics of a PSC before considering each of the above options.

The Basis for Establishing a PSC

If, upon imposition of a PSO, it becomes clear that no operators are willing to offer the required level of service without a subsidy, the organisation promoting the PSO can then seek to implement a Public Service Contract (PSC). Any PSC offered would have to be procured in accordance with the relevant procurement rules.

PSCs are the instrument typically used to impose PSOs where a subsidy is required for providing the PSO requirements. A PSC can cover a wider range of requirements than a PSO, including continuity of service over a defined contract period. With a PSO only, there are no barriers to operators entering or leaving the market, providing a lack of guarantees over the long-term viability of the service. A PSC negates this problem by contractually mandating the tendered operator to see out a tender period.

There are two distinct types of subsidy available to procurement bodies:

- **a gross-cost contract** pays the operator a specified sum to provide a specified service for a specified period. All revenue collected is returned to the funding authority, and thus that authority assumes the revenue risk.
- **a net-cost contract** is where an operator provides a specified service for a specified period and retains all of the revenue. The authority pays a subsidy to the operator if the services are forecast to be unprofitable. If the services are profitable, the operator will pay the authority a royalty. Under a net-cost contract, the operator has to forecast both the costs and revenues and the risk on this typically lies with the operator. This contract type is used on the CHFS and NIFS networks.

An important issue with a PSC is to identify the appropriate balance between risk and reward for operators that will bid for the contract. By definition, a PSC is put in place to ensure a service is delivered that the market would not otherwise offer. There will therefore be an element of prescription in the contract in terms of timetable, fares etc. In order to attract bidders and increase competition, a PSC should ensure that it offers bidders a fair return on investment, typically reflecting market rates of return.

State Aid

Any public support for internal ferry services must be compliant with state aid legislation as defined in the EU-UK TCA and national procurement rules. State aid is defined as an advantage in any form whatsoever conferred on a selective basis to undertakings by national public authorities. So, for example, the provision of a subsidy or public sector funded vessel to an operator could be considered a state aid if not procured in the manner described above.

In the European context, to avoid a state aid case being referred to the European Commission, the following four criteria – known as the Altmark Criteria - must be met (it is assumed that broadly similar tests will be adopted in the UK context):

- the receiving undertaking (i.e. the winning tenderer) must have public service obligations to discharge and these must be clearly defined in the contract;
- the subsidy must be calculated in an objective and transparent manner;

- the subsidy cannot exceed what is necessary to cover the costs in discharging the public service obligations plus a “reasonable” profit; and
- if the undertaking concerned is not chosen under a compliant public procurement procedure, then the level of subsidy must be determined on the basis of an analysis of costs of what an efficient undertaking would have incurred.

State aid is an issue of law – outwith the precedent related criteria set out above, there is not a firm definition of what does or does not constitute a state aid. This is decided on a case-by-case basis, although the risk of a state aid challenge is real and potentially expensive. Professional state aid advice should always be sought so as to ensure any risk of non-compliance is minimised.

Contract Length and Vessels

A further important consideration when procuring a PSC is the duration of the contract and how this relates to the vessel(s) offered. There is no set maximum contract length defined in regulation, although ferry tendering in Scotland in recent years has been on a ‘6+2’ basis (i.e. 6-years plus a 2-year optional extension), although some contracts in Europe now run for 12-years.

One of the criticisms of this approach across all transport tendering and franchising is that the cost of investment in capital assets such as ferries, aircraft or rail rolling stock are recovered over the life of that asset, typically 15-30 years. However, with comparatively short contract periods (i.e. relative to the life of the asset), there is obviously little incentive to purchase new tonnage because losing the next contract could lead to the operator being left with a vessel that they cannot use, particularly if it is built for very specific sea or river conditions, the Fair Isle, Corran or North Ronaldsay vessels for example. It also means that if an incumbent operator owns a bespoke vessel for the route, they are likely to be the only bidder for any contract.

One potential solution to this is that a vessel purpose built to serve a route undergoes what is known as a transfer of assets at the end of the contract. Under this arrangement, assuming ownership of the said vessel and the attached liabilities would form part of the next contract. As a result, an operator coming to the end of its contract would not face the problem of being left with an expensive capital asset and nowhere to use it. All bidders for the contract would also have access to a route-specific vessel on an equal basis.

It is our understanding that the operational crew would also move into the employment of the new operator under what is known as a “Transfer of Undertakings (Protection of Employment)” (TUPE for short), irrespective of whether the vessel was transferred or not. This again would need to be confirmed through bespoke legal advice.

However, the European Commission has not typically favoured this approach as it views a tender requirement whereby a successful bidder for a PSC has to assume control of existing vessels and crew as discriminatory. This is because it does not allow alternative ship owners to come forward with their own vessels or alternative solutions. It remains to be seen how this issue will be viewed by the UK authorities.

There is therefore a clear trade-off between tender length and securing the most appropriate tonnage. This is an issue that would have to be discussed with procurement experts should this option be pursued.

Testing the Market

In advance of announcing a competition for a PSC, it is possible to undertake a market testing exercise to assist in defining the scope of the procurement. The market testing process can help the contracting authority obtain clarity on what the market thinks is appropriate in terms of vessels, timetables, the length of the operating day etc. However, it is important to note that any market testing process must be carried out in a way which does not prejudice the process or preclude competition.

One way of carrying out market testing would be to issue a Prior Information Notice (PIN). A PIN would give the market notice that a procurement for ferry services in the area may be coming forward. Those

who respond to the PIN notice could be consulted in developing the tender notice. An exercise of this nature was carried out for the Corran Ferry in early 2020.

In order for the market testing to be successful, prospective bidders would have to be provided with a certain level of detail about the proposed procurement. However, the level of detail should not exceed what would be included in the ultimate tender notice. Any information provided to prospective bidders should be made available in the 'Information Room' to any bidders who come forward under the tendering process. The consultation should also be transparent, with a list of consultees and their responses being documented.

Crucially, the information provided as part of the PIN process should not give consultees at this stage an advantage over other bidders further down the line. The consultation should also be carried out in a way that does not preclude future competition.

What are the key considerations in relation to these options?

As noted at the outset of this section, there are two potential options by which a PSC could be introduced:

- **MoD3a:** The Council establishes a PSC and seeks an operator(s) to run the route(s) / network(s).
- **MoD3b:** Seek a transfer of responsibilities to Transport Scotland, which would establish a PSC and seek an operator(s) to run the route(s) / network(s).

The key considerations in relation to each of these options are considered in turn:

Option MoD3a

There are a number of key considerations in relation to the form of any PSC on the Council network:

- How would the services be bundled? Would the contract be let at the individual route level, mini-network level, network-level or even combined network level (e.g. Shetland and Orkney bundled together) or in some other bundle?
- The implementation of a PSC by the Council would allow them to retain long-term strategic control of all aspects of the service, whilst at the same time providing a means of securing external resource and expertise. A decision would be required as to whether the PSC would be intended as a basic ship management contract or a more flexible arrangement allowing operators to develop their own solutions.
- A key issue in defining the PSC would be the level at which the fares are set. The current model could be retained or amended as Members see fit, but this would be reflected in the level of subsidy which would need to be paid (bearing in mind that capital would also need to be funded).
- Consideration would need to be given as to whether the Council wanted to introduce a gross or net cost contract. Other innovative models such as profit sharing (as happens on the Ballycastle – Rathlin Island service in Northern Ireland) could also be considered.
- The Council would also need to consider whether they would be looking for operators to bring their own vessels or whether there is a case to be made for tonnage being provided by the public sector to potential bidders.
- The Council / ZetTrans would need to ensure that it had the appropriate in-house expertise to specify, procure and manage any PSC developed.

Option MoD3b

It is likely that the considerations around the method of delivery in a 'transfer of responsibilities' scenario would be dependent on negotiations surrounding the specifics of that transfer itself, including whether there was a requirement and / or desire to tender. Nonetheless, if a transfer was to be sought and

subsequently agreed, it should be noted that Transport Scotland currently specifies and manages PSC contracts in the maritime industry. Crucially however, the additional financial and administrative burdens accruing to the Scottish Government / Transport Scotland from a transfer to an in-house operator would also apply here, whilst there would again be a loss of local flexibility and accountability.

Where is this model currently in operation?

The PSC model is widely used across many European countries to support air and ferry services in particular. Indeed, PSCs are used extensively in Scotland to support the operation of ferry services to the Clyde & Hebridean islands and the Northern Isles. The most relevant local authority comparator was the Argyll & Bute Council PSC for services between Port Askaig (Islay) and Feolin (Jura), although this service has recently been brought back in-house by A&BC.

Scotland's tendered services currently operate on a broadly net-cost contract system, where the operators are paid a monthly subsidy to top-up the forecast revenue shortfall from farebox and other sales. When operated under tender, the Port Askaig – Feolin route worked on a gross cost basis and was effectively a ship management contract.

Implications

- The public sector can directly specify a range of socially desirable service characteristics, including fare levels.
- A PSC provides a degree of certainty of tenure based on an agreed contract period.
- The tendering process could allow bidders to offer innovative solutions in terms of vessels, service levels, value for money initiatives etc. In a situation where an operator brings their own vessels, lumpy capital payments are spread more evenly across the revenue budget.
- Tendering and contract management can be labour intensive and will place an additional burden on procurement, finance and legal departments in terms of designing and running the tender and managing the contract.
- The service becomes very contractually based, with variations in contract required where the procuring party wishes to change the service. This loss of flexibility may be seen as detrimental in the communities served.
- As any tenderer would be seeking to make a profit from a PSC, they would have to reduce costs and / or increase revenue if a profit was to be realised without any additional cost to the public purse (relative to the present day).

A further variant of the PSC option could see the PSC being delivered by the Council, with the Scottish Government / Transport Scotland providing additional resource to cover the increased deficit funding implied by the need for new infrastructure and vessels.

C.4.6 Option MoD4: Community Interest Company / Conversion to Trust Status

This option would involve the establishment of a Community Interest Company (CIC) or Trust to operate one or more Council services (there are differences between the two models but they are grouped together here given their similarity). Under such an arrangement, the ferry operation would be reconstituted and would be run by a Board of Trustees, with any profits made reinvested back into the company.

What are the key considerations in relation to this option?

There are several attractions to trust status. These include:

- potential tax concessions (including gift aid) and access to new funding streams, including for vessel procurement;
- the ownership and direction of the company for the local good; and

- increased civic involvement, including the use of volunteers.

However, a key issue which would remain to be overcome is how the service would be funded, as the operation is currently dependent on direct public sector funding. The burden of complying with maritime, human resource and other legislation could also be challenging for a small-scale organisation of this nature, whilst there is no immediate suggestion that it would resolve the sustainability challenges facing Council services.

Where is this model currently in operation?

The use of the trust model is widespread across the UK. From a ferries perspective, many small Scottish and Dutch routes are operated by local community trusts, the Glenelg ferry for example. The PS *Waverley* is also a highly successful trust. A community interest company has also recently been established in the Isles of Scilly with a view to operating lifeline transport services.

At a more macro level, British Waterways (in England & Wales) was recently reclassified as the Canal & River Trust, a move which appears to have been a success to date. A number of major ports also operate on a trust basis, Aberdeen for example.

Implications

The advantages of this operating model are that:

- The ferry service is run for the benefit of the local community – any profits raised are reinvested back into the company.
- Trust status provides a range of benefits in terms of tax concessions and access to funding streams.

The disadvantages of this operating model are that:

- Any trust operation would need to be financially sustainable, which would require farebox and other revenue to cover the cost of operation and any capital investment.
- It would also be challenging for a trust focussed on a single route to meet the wide range of safety and regulatory requirements that any operator is mandated to meet.

C.4.7 Option MoD5: Privatisation / Leave it to the market

At its simplest level, one or more local authorities could withdraw from operating services entirely. The existing infrastructure could be made available on an open access basis or sold to any operator wishing to run services. The vessels could be sold to any incoming operator or, if they were bringing their own vessels, sold on the open market.

What are the key considerations in relation to this option?

Should the Council choose to pursue this option, the following issues would need to be considered:

- A decision would need to be taken as to whether to engage with the market, secure an operator and then withdraw the service or sell the vessels directly to a private company.
- If the decision was taken to withdraw the service, the future role of the current crew (and any financial liabilities associated with their employment) would also need to be considered.
- The Council would also need to consider whether it wished to retain control over the landside assets. This could prevent an outright monopoly emerging but would mean that the local authority retains the ongoing liability for this infrastructure.
- A contingency plan would need to be developed in the event that the private operator ceased trading or withdrew the service (i.e. an 'operator of last resort' would be required).

Where is this model currently in operation?

The most high-profile UK example of (broadly) free market operations using public sector infrastructure are the riverboat services on the River Thames. The majority of the landing points, such as Embankment and Greenwich Piers, are provided by Transport for London (TfL), with riverboat operators paying harbour dues to TfL, which they recover through the farebox. This model is highly successful in London because the commuter and visitor market provide both volume and a high willingness-to-pay on a year-round basis.

The most prominent private sector Scottish ferry operators providing services of this nature are Western Ferries and Pentland Ferries. The major difference with these operators compared to their River Thames counterparts is that they own the landside infrastructure in its entirety (Gills Bay excepted). Almost all costs are thus internalised within the business and paid for through farebox revenue.

Implications

The advantage of a commercially provided ferry service is that it removes all operating and capital costs from the public sector (except for maintaining / replacing shoreside infrastructure if this remained in public ownership – although presumably berthing / pier dues could be charged) so long as a commercially satisfactory service can be established.

The disadvantages of a commercial operation in this context are:

- It is possible, and indeed highly likely, that no private operator would be willing to run any Council services on a commercial basis.
- The Council (and the public sector generally) would lose all control over the service. Key issues such as fares, frequency and the length of the operating day would be determined entirely by the operator's interpretation of the market, as would staffing and terms and conditions.
- Given the physical scale of the service and the volumes, it is unlikely that there would be more than one operator (if one could be found at all), thus the incumbent would have a *de facto* monopoly.
- There would be potential for a commercial operator to withdraw at any time, thus terminating the service until another operator could be found or an 'operator of last resort' stepped in.

C.4.8 Next Steps

The trust (Option MoD4) and privatisation / leave it to the market (Option MoD5) options are likely to be unrealistic in the Council context. They are thus not considered further.

It is also highly unlikely that a private operator would come forward under a PSO (Option MoD2). However, it is our understanding that a PSO may need to be declared and tested in advance of declaring a PSC (legal advice would be required on this). For completeness, this option is considered further in the next chapter.

The remaining models which could potentially be applied to the Council internal services are explored in more detail in the next chapter.

C.5 Implications of each Delivery Model

C.5.1 Overview

Section A.4 set out a range of potential future delivery models for the Council internal ferry services, shortlisting the most realistic for further consideration. These are as follows:

- **MoD, Do Minimum:** The Council continues to operate the services on the same basis as at present.
- **MoD, Do Minimum+:** The Council continues to operate the services on the same basis as at present, but receives additional Scottish Government / Transport Scotland funding to close the capital and revenue funding shortfall.
- **MoD1, Public Sector Operation:** Transfer of responsibilities to Transport Scotland, with the services being operated on an 'in-house' basis.
- **MoD2, Public Service Obligation:** The Council establishes a Public Service Obligation (PSO) for their services and seek an operator(s) to run them.
- **MoD3, Public Service Contract:** Specify a Public Service Contract (PSC) and seeks an operator to run the services – there are two variants to this option:
 - **MoD3a:** The Council establishes a PSC and seeks an operator(s) to run the services.
 - **MoD3b:** Seek a transfer of responsibilities to Transport Scotland, which would establish a PSC and seek an operator to run the services.

This chapter considers implications and outstanding questions surrounding the remaining models in terms of:

- How is the service funded and operated?
 - Who specifies and is accountable for the service?
 - What is the form of the contract?
 - Who operates the service?
 - Who pays the operating subsidy?
- Vessels
 - Who pays the yard for the build? (in the event of a new-build vessel)
 - How is the asset funded over its lifetime?
 - Who is the contracting authority?
 - Who owns the asset?
 - Who maintains the asset?
 - How is maintenance funded?
- Landside infrastructure
 - Who pays for the infrastructure?
 - How is the asset funded over its lifetime?
 - Who is the contracting authority for any infrastructure investment?
 - Who owns the infrastructure?
 - Who maintains the infrastructure?
 - How is maintenance funded?
- Crew
- Implications for the Council
- Implications for Transport Scotland / Scottish Government

C.5.2 Option Do Minimum: Current delivery model

How is the service funded and operated?

Who specifies and is accountable for the service?

- In Shetland, the duty to secure transport services as defined in the Transport Act 1985 lies with ZetTrans. This duty is fulfilled by virtue of the fact that the Council is providing adequate levels of service.

What is the form of the contract?

- There would be no contract under this option – the Council network would continue to be operated on an in-house basis. The only exception would be the Foula ferry which is a tendered service at present.

Who operates the service?

- Shetland Islands Council / ZetTrans

Who pays the operating subsidy?

- The Council, through a combination of the farebox, Council revenue budget, Local Government GAE settlement and periodic top-up funding from government. Any reduction in one these elements of funding would likely require an offsetting increase in the other.

Vessels

Who pays the yard for the build?

- Shetland Islands Council
- Note that financing options for ferry infrastructure are set out in more detail in the Commercial Case.

How is the vessel funded over its lifetime?

- Where the funding is drawn from reserves or prudential borrowing, the Council would fund the asset over its lifetime as they do at present.
- Where private finance is involved, this would depend on the contract agreed for the procurement of that vessel.

Who is the contracting authority?

- The Council would be the ultimate contracting authority.
 - Where the funding is drawn from reserves or prudential borrowing, the Council would contract directly with a shipyard.
 - Where private finance is involved, the local authority would contract with the funding body, which in turn would contract directly with the yard.

Who owns the vessel?

- Where the funding is drawn from reserves or prudential borrowing, the Council would own the asset outright.
- Where private sector finance is involved, ownership would depend on the exact terms of the contract. However, given that prudential borrowing would be the most cost-effective way to buy the asset, it is likely that any use of private finance would be on the basis of a lease arrangement, whereby the private company would retain ownership of the vessel at the end of the lease period.

Who maintains the vessel?

- Where the funding is drawn from reserves or prudential borrowing, the Council would maintain the asset over its lifetime.
- Where private sector finance is involved, maintenance of the asset would depend on the exact terms of the contract.

How is maintenance funded?

- As per above.

Landside infrastructure

Who pays for new infrastructure?

- The Council, as per current arrangements.
- The only exception is where a service is operating into Lerwick Port Authority (Bressay and occasionally Fair Isle), whereby any infrastructure would likely be paid by the port authority and recouped via dues.

How is the infrastructure funded over its lifetime?

- The Council – maintenance and asset replacement should be funded through harbour dues, albeit in this instance it would represent a transfer from one part of the Council to another, so there would be no net inflow or outflow of money.

Who is the contracting authority for any infrastructure investment?

- The Council as per current arrangements.

Who owns the infrastructure?

- The Council as per current arrangements.

Who maintains the infrastructure?

- The Council as per current arrangements.

How is maintenance funded?

- The Council as per current arrangements.

Crew

- No change.

Implications for the Council

The implications of this option for the Council are largely reflective of the above commentary. This option effectively maintains the current day arrangements, which means responsibility for funding new investment and maintaining services would rest wholly with the Council. The Council would however maintain control over all aspects of the service.

Implications for TS / SG

- None.

C.5.3 Option Do Minimum+: Current delivery model, with additional Scottish Government funding

How is the service funded and operated?

Who specifies and is accountable for the service?

- The Council would continue to specify and be accountable for all elements of the service, including the agreement of timetables, setting of fares etc.

What is the form of the contract?

- There would be no contract under this option – the network would continue to be operated on an in-house basis. The only exception would be the Foula ferry which is a tendered service at present.
- However, a clear governance framework would need to be established which demonstrates how SG / TS provided funding is allocated, what outcomes are being delivered, how value for money is being obtained etc. This would likely include discussion surrounding the funding of 'appropriate' levels of service and potentially Council top-up.

Who operates the service?

- Shetland Islands Council / ZetTrans

Who pays the operating subsidy?

- The subsidy would be paid by SG / TS but, as noted above, this would need to be within a clearly defined governance framework.

Vessels

Who pays the yard for the build?

- This would be entirely dependent on the governance framework established around any additional funding. The choices set out in Option Do Min remain the same, and the funding would effectively be a pass through.
- Notwithstanding the above point, the current Scottish Government is opposed to PFI-type deals and this therefore seems an unlikely option.

How is the vessel funded over its lifetime?

- TS / SG would fund the asset over its lifetime via a transfer of funding to the Council within an agreed governance framework.

Who is the contracting authority?

- This could either be TS directly / through CMAL or the Council via a transfer of funding within an agreed governance framework.
- Where private finance is involved, TS / CMAL or the Council would contract with the funding body, who in turn would contract directly with the yard.

Who owns the vessel?

- This would be entirely dependent on the governance framework established around any additional funding.
- Where private sector finance is involved, ownership would depend on the exact terms of the contract. However, given that prudential borrowing would be the most cost-effective

way to buy the asset, it is likely that any use of private finance would be on the basis of a lease arrangement, whereby the private company would retain ownership of the vessel at the end of the lease period.

Who maintains the vessel?

- This would be entirely dependent on the governance framework established around any additional funding.
- Where private sector finance is involved, maintenance of the asset will depend on the exact terms of the contract.

How is maintenance funded?

- As per above.

Landside infrastructure

Who pays for new infrastructure?

- Shetland Islands Council – maintenance and asset replacement should be funded through harbour dues. However, in this instance, as TS / SG would be paying for the services (and thus harbour dues), they would also ultimately be paying for the maintenance and replacement of the infrastructure (i.e. this would be another pass through element of funding).
- An alternative arrangement could be agreed whereby the Council provides direct funding for infrastructure, or some balance between the two.

How is the infrastructure funded over its lifetime?

- The asset would be funded through harbour dues over its lifetime, with potential top-up from the Council. If TS / SG was paying the full operating deficit, it would *de facto* be paying for asset maintenance through dues.

Who is the contracting authority for any infrastructure investment?

- This could either be Transport Scotland directly / through CMAL or the Council via a transfer of funding within an agreed governance framework,

Who owns the infrastructure?

- This would be entirely dependent on the governance framework established around any additional funding.

Who maintains the infrastructure?

- Shetland Islands Council

How is maintenance funded?

- The asset would be funded through harbour dues over its lifetime, potentially with top-up from the local authority. If TS / SG was paying the full operating deficit, it would be *de facto* paying for asset maintenance through dues.

Crew

- No change

Implications for the Council

The current revenue and capital funding shortfalls associated with the services would be resolved if 'full' funding was provided on a permanent basis. The service would continue to operate in its current form, although the Council would need to sign-up to an agreed governance framework and there would likely be a significant volume of reporting and a degree of government control associated with that.

Implications for TS / SG

There would be highly significant financial implications for TS / SG with this option in terms of closing the current revenue shortfall, any scaling up of the services and meeting future capital requirements, particularly if landside infrastructure was paid entirely through dues.

TS / SG would also need to develop a governance framework which ensured that any funding provided was allocated appropriately, demonstrated value for money and was within public sector funding / accounting rules. At least some degree of oversight of the operation would be needed and would require at least a marginal increase in resource.

C.5.4 Option MoD1: Transfer of responsibilities to Transport Scotland, with the services being operated on an 'in-house' basis.

How is the service funded and operated?

Who specifies and is accountable for the service?

- Transport Scotland would ultimately specify and be accountable for all elements of the service, including the setting of timetables, fares, vessel allocation etc.
- This could however be a partnership between TS and the Council depending on any / the level of Council funding (e.g. fares 'top-up').

What is the form of the contract?

- There would be no contract under this option – it would be an entirely in-house operation.

Who operates the service?

- The public sector would operate the service, either directly by Transport Scotland or more likely via a publicly owned company in the mould of David MacBrayne Ltd.

Who pays the operating subsidy?

- Transport Scotland.

Vessels

Who pays the yard for the build?

- Transport Scotland, either directly or via CMAL.

How is the vessel funded over its lifetime?

- The asset would be funded through TS and / or CMAL and / or an in-house operator's annual revenue budgets.

Who is the contracting authority?

- TS / CMAL.

Who owns the vessel?

- TS / CMAL.

Who maintains the vessel?

- CMAL and / or the in-house operator.

How is maintenance funded?

- Maintenance would be funded through TS, CMAL or an in-house operator's annual revenue budget.

Landside infrastructure

Who pays for new infrastructure?

- There are three options in this respect:
 - Full cost paid by TS / CMAL through central budgets (Section 70).
 - Partial cost paid by TS through the Ports and Harbours Scheme, with difference funded through Council budgets / prudential borrowing and recouped via dues (i.e. dues which reasonably reflect the cost of maintenance and replacement of ferry service infrastructure). This is the model largely used on the CHFS network at present.
 - Full cost paid by the Council using annual budget and / or prudential borrowing and recouped via dues.

How is the infrastructure funded over its lifetime?

- The asset would be funded through harbour dues over its lifetime.
 - If Transport Scotland was paying all or part of the asset through the Ports and Harbours Scheme, lower dues should be set to reflect this (i.e. to cover maintenance and contribute towards the next cycle of replacement).
 - If the asset was funded in part or in-full through Council funding, the dues would need to recover this element of the expenditure (or there would have to be a commitment from the Council to maintain and replace the assets from other funds).

Who is the contracting authority for any infrastructure investment?

- This could be TS / CMAL or the Council depending on the funding model chosen.

Who owns the infrastructure?

- The Council, unless there was a transfer of assets to TS / CMAL

Who maintains the infrastructure?

- The Council, unless there was a transfer of assets to TS / CMAL

How is maintenance funded?

- The asset would be funded through harbour dues over its lifetime. If Transport Scotland was paying the operating deficit, it would be *de facto* paying for asset maintenance through dues.

Crew

There are a range of questions which would need to be considered in any transfer negotiations, including:

- Would the current crew transfer from the employment of the Council to Transport Scotland under the Transfer of Undertakings (Protection of Employment)?
- Assuming the crew did TUPE over, would their T&Cs (e.g. salary, pension, leave entitlement, overtime, working hours, shift arrangements etc) be made equivalent to all other staff within the organisation to which they transfer?

The crewing question at this stage is a challenging one – it can be reasonably assumed that if the crew did TUPE over, the cost of running the services would increase, as crew would be transferring from a local authority contract onto one equivalent to that on other TS funded services.

Crew employment is therefore a key issue for further consideration with respect to any proposed transfer of services.

Implications for the Council

The current revenue and capital funding shortfalls associated with the services would be resolved (except for any top-up funding provided to deliver specific outcomes).

This option would however diminish local accountability as service design and operations would be managed centrally. Whilst there are established means of feeding into ferry related decisions in islands and peninsular communities across Scotland, Ferry Stakeholder Groups for example, Council Members would lose the ability to directly shape services.

Capital infrastructure needs would also be reframed within a national context, where there is competing pressures on government for investment.

Implications for TS / SG

There would be significant financial implications for TS / SG with this option in terms of permanently closing the current revenue shortfall, any scaling up of the services in line with e.g. Routes & Services Methodology related service improvements and meeting future capital requirements.

There would also be a requirement for a significant scaling up of internal resource and / or the development of new structures to manage the Council network. Again, some form of new partnership with the Council would likely be required to ensure local knowledge is not lost.

A change in political responsibility would also mean that Ministers would also likely receive additional and frequent correspondence and scrutiny.

C.5.5 Option MoD2: Public Service Obligation

How is service funded and operated?

Who specifies and is accountable for the service?

- The Council would define what they are seeking to achieve from a PSO in terms of the ports to be served, length of operating day, timetable, frequency of services, vessel capacity and fare levels.
- A private operator would be responsible for operating the service. Their level of accountability would be limited to compliance with legislation, PSO terms and their own customer service policies.

- It should be noted that, the more prescriptive the PSO, the less likely it is that an operator would be attracted to a route / network.

What is the form of the contract?

- The PSO would set out certain conditions for operating on a route, but there would be no contract beyond that. Any operator would be entitled to enter or leave the market at their own discretion.

Who operates the service?

- Private operator, although given that these are lifeline routes, an 'operator of last resort' would be required in the event that the private operator(s) withdrew.

Who pays the operating subsidy?

- There would not be an operating subsidy.

Vessels

Who pays the yard for the build?

- Private operator

How is the vessel funded over its lifetime?

- Private operator funded through the farebox.

Who is the contracting authority?

- No contract

Who owns the vessel?

- Private operator

Who maintains the vessel?

- Private operator

How is maintenance funded?

- Private operator

Landside infrastructure

Who pays for new infrastructure?

- There are three options in this respect:
 - Full cost paid by TS / CMAL through central budgets (Section 70).
 - Partial cost paid by TS through the Ports and Harbours Scheme, with difference funded through Council budgets / prudential borrowing and recouped via dues (i.e. dues which reasonably reflect the cost of maintenance and replacement of ferry service infrastructure).
 - Full cost paid by the Council using annual budget and / or prudential borrowing and recouped via dues.

How is the infrastructure funded over its lifetime?

- The asset would be funded through harbour dues paid over its lifetime by one or more private operators, with those dues accruing to the party which funded / owns the infrastructure. The level at which dues are levied would be a key component in the overall attractiveness of a route or bundle of routes to a private operator under a PSO (particularly if fares are specified in the PSO).

Who is the contracting authority for any infrastructure investment?

- This could be TS / CMAL or the local authority depending on the funding model chosen.

Who owns the infrastructure?

- The Council, unless there was a transfer of assets to TS / CMAL

Who maintains the infrastructure?

- The Council, unless there was a transfer of assets to TS / CMAL

How is maintenance funded?

- The asset would be funded through harbour dues over its lifetime – these would be recovered from the private operator.

Crew

The PSO operator would in all likelihood bring their own crew, which presents an obvious question over the future of the current crews. Given their experience and knowledge of their respective networks, it is however probable that at least some of the current crew would join the PSO operator. Nonetheless, it is possible that there would be some redundancies. As well as being negative for the economy of the local areas given that the current crew are mostly locally (and in some cases island) based, it also compromises the ability of the Council to act as an operator of last resort.

Implications for the Council

All day-to-day financial and operational risks would be passed to the PSO operator(s). The operator would ensure compliance with all maritime legislation and the PSO requirements.

The PSO operator(s) would bring their own vessel and recoup the cost of capital employed through the farebox. However, as noted above, the Council would need to develop a contingency plan for vessels and crew whereby they could step in as operator of last resort in the event that the PSO operator(s) chose to leave the route.

The Council would continue to bear the full operating and capital costs of the landside infrastructure (outwith any Ports & Harbours Scheme funding), although there would be a revenue stream in the form of dues coming from the PSO operator.

In terms of local accountability, the Council would have full control over the PSO specification and could set:

- the ports to be served;
- requirements in relation to the length of operating day, timetable, frequency of services and vessel capacity; and
- fare levels.

The Council would not control any other aspect of the service.

Implications for TS / SG

None

C.5.6 Option MoD3a: Local authority Tendered PSC

How is the service funded and operated?

Who specifies and is accountable for the service?

- The Council would define the service to be provided through the tender specification, although this could be informed through a market testing exercise.
- The Council would need to consider whether they wished to operate a gross or net cost contract arrangement.
- The PSC could specify all elements of a PSO whilst also granting exclusivity to an operator for a fixed period of time. However, it should be noted that, the more tightly defined the specification, the harder it may be to attract an operator, as there would be limited opportunity for innovation. In the worst case, the service could end up being a private company delivering a wholly prescribed public service for a profit.
- There would be commercial, legal and potential state aid considerations concerning the bundling of routes and whether vessels could be specified within the contract.
- Would an 'in-house' bid be permitted, e.g. from the Council / ZetTrans?

What is the form of the contract?

- The contract would provide an operator with exclusive rights to operate a route, bundle of routes or a network for a contracted period on an exclusive basis. A subsidy would be paid to the operator on either a gross-cost or net-cost basis depending on the form of the contract.

Who operates the service?

- A private operator or public sector bidder.

Who pays the operating subsidy?

- The Council. The decision as to whether to specify a gross or net cost contract would determine whether the contracting party or contractor takes the revenue risk.
- If the tendering process is tied in with new asset provision, the subsidy paid to any operator would likely be higher than the current net cost to the Council.

Vessels

Who pays the yard for the build?

- If the Council was supplying the vessel, this could be paid using a variety of different methods including the annual capital budget, reserves and prudential borrowing, as set out in the Commercial Case.
- Alternatively, the incoming operator could charter or build its own vessels and recharge it through the contract (the Council would still ultimately be paying). This option would likely depend on either a transfer of assets clause being available at the conclusion of the contract or the vessel being readily usable elsewhere. This was the approach adopted by Argyll & Bute Council when the new vessel was procured for the Port Askaig – Feolin route in the mid-1990s.

How is the vessel funded over its lifetime?

- Where the funding is drawn from annual budgets, reserves or prudential borrowing, the Council would fund the asset over its lifetime as they do at present. Where private finance is involved, this would depend on the contract agreed for the procurement of that vessel.
- If a private operator brought their own vessel, this would be reflected in the tender costs, with the Council paying a charter fee through the subsidy.

Who is the contracting authority?

- The Council would be the ultimate contracting authority.
 - Where the funding is drawn from the annual budget, reserves and / or prudential borrowing, the Council would contract directly with a shipyard.
 - Where private finance is involved, the Council would contract with the funding body, which in turn would contract directly with the yard.
- If a private operator brought their own vessel, they would contract for the vessel independent of the Council.

Who owns the vessel?

- Where the funding is drawn from the annual budget, reserves and / or prudential borrowing, the Council would own the asset outright.
- Where private sector finance is involved, ownership will depend on the exact terms of the contract.
- If a private operator brought their own vessel, they would own the vessel (or have a charter agreement in place with the ultimate owner).

Who maintains the vessel?

- Where the funding is drawn from the annual budget, reserves and / or prudential borrowing, the Council would maintain the asset over its lifetime.
- Where private sector finance is involved, maintenance of the asset will depend on the exact terms of the contract.
- If a private operator brought their own vessel, they would be responsible for its maintenance (although the contract could likely stipulate certain standards which would have to be met).

How is maintenance funded?

- As per above.

Landside infrastructure

Who pays for new infrastructure?

- The Council, as per current arrangements.

How is the infrastructure funded over its lifetime?

- The Council – maintenance and asset replacement should be funded through harbour dues charged to the PSC operator. However, these harbour dues would be reflected in the subsidy request of the PSC operator and thus would reflect a degree of circularity in terms of Council money.

Who is the contracting authority for any new infrastructure?

- The Council, as per current arrangements.

Who owns the infrastructure?

- The Council, as per current arrangements.

Who maintains the infrastructure?

- The Council, as per current arrangements. Basic maintenance of the ferry facilities could be included for the operator to undertake as part of the PSC contract.

How is maintenance funded?

- The Council, as per current arrangements. Where the operator undertook maintenance as part of the PSC contract, this would be recouped through their subsidy requirement.

Crew

The current Council employed crew would TUPE across to the incoming operator, a process that would be repeated at the start of each new contract period. However, TUPE only applies on day 1 of the transfer and it is highly probable that the incoming operator would wish to move the crew to their own T&Cs, which may be different to those of the local authority. The requirements in terms of crew T&Cs and manning levels could however be specified within the tender.

Implications for the Council

All day-to-day financial and operational risks would be passed to the operator assuming a net cost contract is specified. The operator would ensure compliance with all maritime legislation and the PSC requirements. It should be noted that, in order to attract bidders, the Council would potentially have to take the risk on key uncertainties, such as market entry, fuel prices and any future pandemics.

The terms of the contract would determine the degree of control that the Council would have over the service (and thus the level of local accountability). Precedent from other Scottish tendered services suggests that local accountability is a key requirement. For example, in the CHFS and NIFS contracts, proportion of profit retained, the vessels, fares, length of the operating day, service frequency etc are all defined within the contract.

It should however be noted that, the more tightly defined the contract, the more challenging it can be to attract a bidder, whilst the cost of the contract can also be higher – i.e. there is a risk of seeking a private sector solution and then so heavily constraining the private provider that you end up with a public service provided by a private sector operator for their profit.

Implications for TS / SG

- None

C.5.7 Option MoD3b: Transfer of responsibilities to Transport Scotland with Scottish Government Tendered PSC established

How is the service funded and operated?

Who specifies and is accountable for the service?

- The only difference with this option from a Council specified PSC (MoD3a) is that Transport Scotland would specify and be accountable for the service.

- It is common in other TS tendered contracts for local communities to be consulted in the specification of any future tender, albeit this is to feed in community aspirations rather than a formal role in actually defining the specification.
- Accountability once the contract is awarded is generally through representative Ferry Stakeholder Groups, although Ministers have ultimate accountability for services.

What is the form of the contract?

- The contract would provide an operator with exclusive rights to operate a route, bundle of routes or a network for a contracted period on an exclusive basis. A subsidy would be paid to the operator on either a gross-cost or net-cost basis depending on the form of the contract.
- Consideration would need to be given as to how to tender the Council network – i.e. how would it be bundled?

Who operates the service?

- A private operator or public sector bidder.

Who pays the operating subsidy?

- TS. The decision as to whether to specify a gross or net cost contract would determine whether the contracting party or contractor takes the revenue risk.

Vessels

Who pays the yard for the build?

- Transport Scotland, either directly or via CMAL.
- Alternatively the incoming operator could charter or build its own vessel and recharge it through the contract (TS would still ultimately be paying). This option would likely depend on either a transfer of assets clause being available at the conclusion of the contract or the vessel being readily usable elsewhere.

How is the vessel funded over its lifetime?

- The asset would be funded through TS and / or CMAL.
- If a private operator brought their own vessel, this would be reflected in the tender costs, with TS / CMAL paying a charter fee through the subsidy.

Who is the contracting authority?

- TS / CMAL.
- If a private operator brought their own vessel, they would contract for the vessel independent of TS / CMAL.

Who owns the vessel?

- TS / CMAL.
- If a private operator brought their own vessel, they would own the vessel (or have a charter agreement in place with the ultimate owner).

Who maintains the vessel?

- CMAL and / or the PSC operator through the contract.

- If a private operator brought their own vessel, they would be responsible for its maintenance (although the contract could likely stipulate certain standards which would have to be met).

How is maintenance funded?

- As per above.

Landside infrastructure

Who pays for new infrastructure?

- There are three options in this respect:
 - Full cost paid by TS / CMAL through central budgets (Section 70).
 - Partial cost paid by TS through the Ports and Harbours Scheme, with difference funded through Council budgets / prudential borrowing and recouped via dues (i.e. dues which reasonably reflect the cost of maintenance and replacement of ferry service infrastructure).
 - Full cost paid by the Council using annual budget and / or prudential borrowing and recouped via dues.

How is the infrastructure funded over its lifetime?

- The asset would be funded through harbour dues over its lifetime.
 - If Transport Scotland was paying all or part of the asset through the Ports and Harbours scheme, lower dues should be set to reflect this (i.e. to cover maintenance and contribute towards the next cycle of replacement). There would however be a degree of circularity to this as the dues would feed back through into the subsidy.
 - If the asset was funded in part or in-full through prudential borrowing, the dues would need to recover this element of the expenditure. This would in effect be a transfer from TS to the Council via the PSC operator to pay for new landside infrastructure.

Who is the contracting authority?

- This could be TS / CMAL or the Council depending on the funding model chosen.

Who owns the infrastructure?

- SIC unless there was a transfer of assets to TS / CMAL.

Who maintains the asset?

- The Council unless there was a transfer of assets to TS / CMAL.

How is maintenance funded?

- The asset would be funded through harbour dues over its lifetime. If Transport Scotland was paying the operating deficit, it would be *de facto* paying for asset maintenance through dues.

Crew

The current Council employed crew would TUPE across to the incoming operator (potentially via Transport Scotland), a process that would be repeated at the start of each new contract period.

The questions and issues around the crew in a transfer scenario from the Council to Transport Scotland are explored earlier in this appendix (see Option MoD1).

Implications for the Council

The implications of this model for the Council would be largely the same as in Option MoD1.

Implications for TS / SG

The implications of this model for TS would be largely the same as in Option MoD1.

The only additional point of note is that extra contract management personnel would be required.

C.5.8 Summary

This section has considered the key questions / issues / implications surrounding different delivery models for the Council internal ferry services. The table below summarises the main potential delivery models (and main sub-options in terms of the infrastructure owner, vessel provider, operator and operating deficit funding provider) which could be considered:

Table C1: Summary of Potential Delivery Models

Infrastructure Owner	Vessel Provider	Operator	Operating Deficit Funding Provider
Do Min: Public sector operation – continue with current delivery model			
SIC	SIC	SIC	SIC
Do Min+: Public sector operation – continue with current delivery model, with additional Scottish Government funding			
SIC	SIC	SIC	SG / TS
MoD1: Public sector operation – transfer of responsibilities to Transport Scotland			
CMAL	CMAL	Public sector operator	SG / TS
SIC	CMAL	Public sector operator	SG / TS
MoD2: Public Service Obligation			
SIC	Private Operator	Private Operator	None
MoD3a: Public Service Contract – local authority			
SIC	Private Operator	Private Operator / Public Sector Bidder	SIC
SIC	SIC	Private Operator / Public Sector Bidder	SIC
MoD3b: Public Service Contract – Transfer of Responsibilities to Transport Scotland			
SIC	Private Operator	Private Operator / Public Sector Bidder	SG / TS
SIC	CMAL	Private Operator / Public Sector Bidder	SG / TS
CMAL	Private Operator	Private Operator / Public Sector Bidder	SG / TS
CMAL	CMAL	Private Operator / Public Sector Bidder	SG / TS

C.6 Conclusions and Next Steps

Funding Scenarios

The figure below sets out at a high-level the main funding pathways identified to-date together with the emerging issues from each.

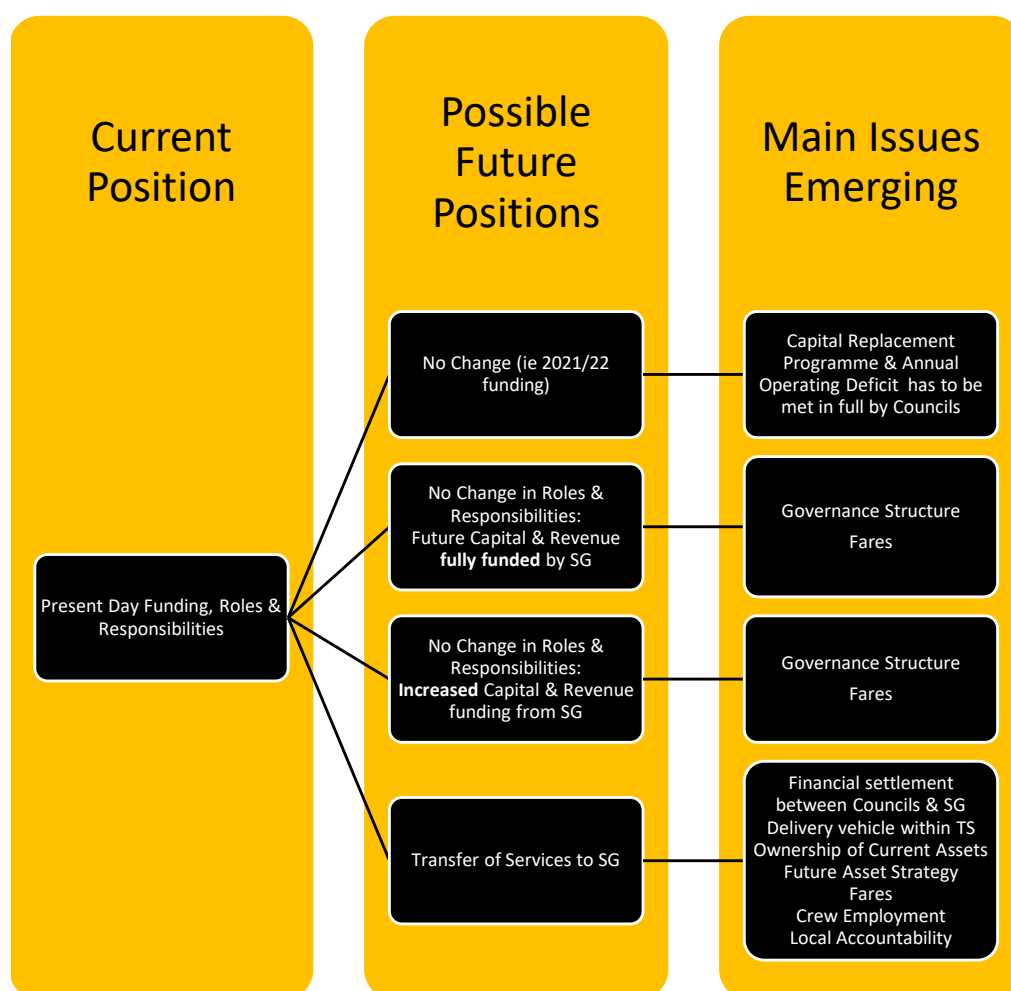


Figure C1: Overview of Funding Options

Delivery Models

The figure below sets out at a high level the main delivery approaches identified to date together with the implied operators(s) in each case.

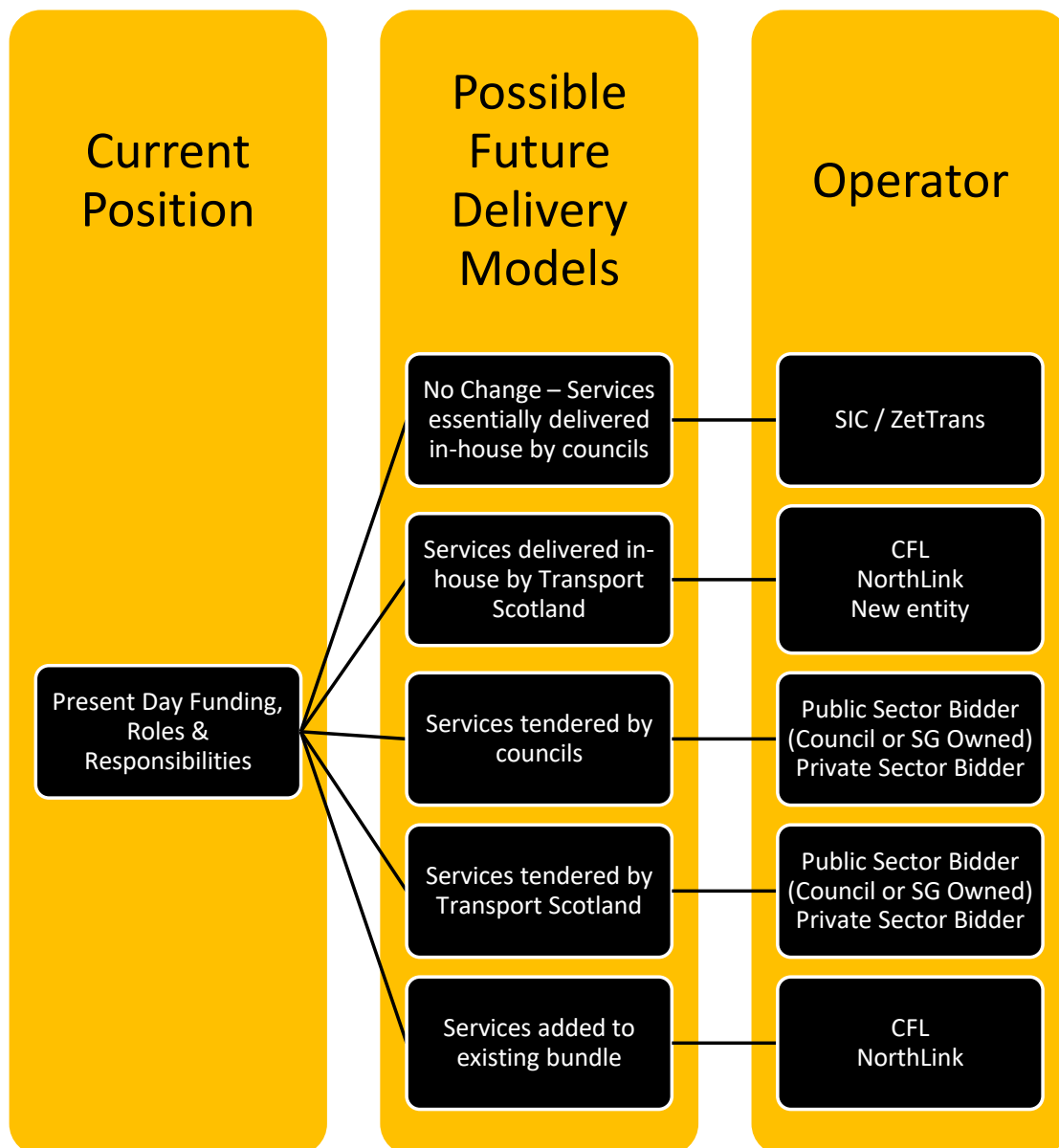


Figure C2: Overview of Delivery Options

Appendix D Risk Register

Risks and opportunities are assessed using two criteria:

- **Inherent Impact:** What would be the impact and severity if the risk materialised?
- **Inherent Probability:** How likely is the opportunity to occur within the period stated?

To produce a risk score, a risk is first judged for its inherent impact (extreme, high, medium, low or negligible) and for its inherent probability (almost certain, likely, possible, unlikely or rare) and scored from 1 to 5, where 1 is negligible / rare and 5 is extreme / almost certain. The maximum score for a risk is 25 – i.e. an extreme impact and almost certain likelihood. The table below, developed by Liverpool John Moores University, indicates the status of risks coded in terms of a 'traffic lights system'. A score of above 12 is regarded as needing full risk management.

It should be noted that all scoring is, by its nature subjective. Risk assessment is not an exact science and best estimates and frequent reviews are required to make such appraisals robust – indeed, the risk profile should be updated at Final Business Case stage.

Table D1: Risk Mitigation Table

Significance	Extreme	5	M	M	H	H	H
	High	4	L	M	M	H	H
	Medium	3	L	L	M	M	H
	Low	2	L	L	L	M	M
	Negligible	1	L	L	L	L	L
			1	2	3	4	5
			Rare	Unlikely	Possible	Likely	Almost Certain
Likelihood							

Risks are sorted on the basis of residual risk followed by inherent risk.

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
1	Schedule / Timescales	The procurement process is delayed due to the time required to get SIC internal approvals in place – this is a key issue in Fair Isle given the need to work around weather windows, where small delays can have much larger consequential effects.	4	5	20	(i) Initial working 'at risk' to tender works whilst funding is sought in early 2021; (ii) engagement with funders already undertaken ahead of business case submission; and (iii) revisit project schedule if required - potential rephasing of works.	4	4	16
2	Timescales	Vessel completion is delayed. This has particular implications for Fair Isle given the remaining life expectancy of the MV <i>Good Shepherd IV</i> .	5	4	20	Delays to new vessels are highly common and the Council may wish to transfer this risk by including delay damages and / or an early delivery bonus within the contract. However, delay damages may increase the cost of the contract and, if this is considered likely, it would have to be managed through regular progress meetings with the yard. The new vessel should be ordered as soon as possible to minimise this risk. However, a contingency plan will be required in the event that the vessel is delayed. This would entail either the minimum required life extension of MV <i>Good Shepherd IV</i> or operating the service from Shetland mainland with an alternative vessel for a period.	5	3	15
3	Schedule / Timescales	Inclement weather delays on-site work - this is a major risk in the context of Fair Isle, both in terms of physical work on site and the movement of contractors and equipment to site.	5	4	20	This risk can only be managed rather than resolved. However, site works will be run over the summer period to minimise the risk of disruption (albeit the haar season will impact on flight reliability). Note that NEC form of contract defines weather conditions for a compensation event to apply, and such circumstances are comparatively rare, and can be minimised by undertaking the works outwith the winter period.	5	3	15

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
4	Health & Safety	COVID-19 related restrictions lead to project delays and / or increased cost once on-site.	5	4	20	<p>(i) The Shetland Islands have typically been in the lower tier of restrictions; (ii) vaccination programme now underway and should be completed by the time the main works programme commences, although risk of further waves remains.</p> <p>Given that COVID-19 its impacts are now well understood, this risk should be transferred as far as practically possible.</p>	5	3	15
5	Financial	There will be very little information available on vessel costs until the market has been engaged.	4	5	20	<p>Detailed design will be undertaken ahead of the FBC. The FBC will reflect on affordability in the context of available funding and additional / alternative funding will be sought if required. Particularly close attention to emerging vessel costs will be required, as prices are influenced by UK / European rather than local demand and thus are subject to considerable fluctuation</p> <p>All costs will be regularly reviewed to the point of procurement and thereafter controlled through the project management framework.</p>	3	5	15
6	Schedule / Timescales	General programme slippages	5	4	20	<p>(i) Shetland Islands Council to gain internal approval as soon as possible in order to allow sourcing and appointment of designers; (ii) At construction stage, appointment of Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) to oversee programme; (iii) potential inclusion of delay damages in tender documentation for each package of work to be considered.</p>	5	3	15
7	Financial	Shipyard encounters financial difficulties during the build process	5	4	20	<p>It is recommended that the Council transfer this risk through:</p> <ul style="list-style-type: none"> - requesting a refund guarantee within the contract. - applying an appropriate financial standing threshold in the PQQ; and 	5	3	15

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
						the purchase of FD&D insurance. If the premiums for FD&D insurance are excessive, this risk would have to be managed by Council procurement.			
8	Technical	Vessel(s) is not built to necessary specification	4	5	20	As the Council has limited recent experience in managing a ship build, it is strongly recommended that they transfer this risk by appointing a Vessel Project Manager & Supervisor to supervise and manage the build. Whilst this approach will have up-front costs, it significantly reduces construction risk and also likely reduces the required time for addressing 'snagging' once the build is completed. An appropriately experienced individual should also be recruited by the Council to liaise with the yard and supervisory consultants.	4	3	12
9	Financial	Detailed landside infrastructure design has not yet been undertaken and thus there remains uncertainty around costs.	4	5	20	Detailed design will be undertaken ahead of the FBC. The FBC will reflect on affordability in the context of available funding and additional / alternative funding will be sought if required. All costs will be regularly reviewed to the point of procurement and thereafter controlled through the project management framework.	3	4	12
10	Financial	All landside infrastructure prices in this business case are presented in undiscounted Q1 2021 prices. However, inflation above market averages would increase the cost of any option above expectations. This is a significant short-term risk as long as COVID-19 restrictions remain in place.	4	5	20	Detailed design will be undertaken ahead of the FBC. The FBC will reflect on affordability in the context of available funding and additional / alternative funding will be sought if required. All costs will be regularly reviewed to the point of procurement and thereafter controlled through the project management framework.	3	4	12

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
11	Contractual	The shipyard or landside infrastructure contractor(s) do not perform as anticipated.	5	4	20	Risk partially mitigated through use of PCS procurement route and application of the Restricted Procedure, to ensure that only suitably qualified and experienced contractors are shortlisted. Any quality or timescale risks will be flagged by the Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) and addressed through liaison with the contractor(s). The works contract(s) will require sufficient levels of insurance to indemnify the Council against any losses in the event that contractors are negligent in their duties.	4	3	12
12	Schedule / Timescales	Landside infrastructure project completion delayed once on site. This is a major risk given the limited life expectancy of the <i>MV Good Shepherd IV</i> .	4	4	16	<p>Delays to marine infrastructure projects are not uncommon and the Council may wish to transfer this risk by including delay damages and / or an early delivery bonus within the contract. However, delay damages may increase the cost of the contract if bidders price in the risk, or they deter firms from bidding at all.</p> <p>Tender acceptance involves adoption of works programme by contractors.</p> <p>In the event that delays do emerge, a contingency plan will be required, which could include short-term life extension of <i>MV Good Shepherd IV</i> or basing the new vessel on the mainland for a period beyond that include in the project plan.</p>	4	3	12
13	Contractual	Landside infrastructure design errors lead to delay or additional cost on the project.	5	4	20	Recommended approach to splitting of contracts as noted in the Commercial Case reduces this risk.	5	2	10
14	Regulatory / Legal	MCA / Lloyds Register approvals	5	4	20	Request for design changes from the regulatory authority or classification society could lead to a need for contract variations and a delay in the process.	5	2	10

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
						This risk should however be addressed at the pre-construction phase through the appointment of a competent firm of naval architects. The risk is also low given that the vessel will be relatively small and built using established technologies.			
15	Financial	Landside infrastructure contractor(s) experiences financial difficulties	5	3	15	The tendering process will include a financial standing threshold which prospective bidders must pass.	5	2	10
16	Environment	Limitations on site works during avian breeding season	4	5	20	This issue will be explored through the consenting process and incorporated in the project plan as part of the FBC. The risk will be reassessed at that stage.	4	2	8
17	People / Societal	Inability to secure accommodation on Fair Isle for contractors and / or displacement of tourists in summer season.	4	5	20	A site plan will be developed as part of the SBC and, in partnership with the Council Client PM, engagement with the local community will take place to explore how impacts can be minimised.	2	4	8
18	Technical	All work will be undertaken in a live harbour environment. This presents a health and safety risk.	4	4	16	The development of a robust health and safety plan by the contractors will be required as part of the tender process. This will be discussed and signed off by the Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) and will be regularly monitored throughout the build process. Health & safety will form a standing agenda item at progress meetings.	4	2	8
19	People / Societal	Stakeholder conflict or disagreement over the project.	4	4	16	Council Project Manager will develop and implement a Stakeholder Management Plan, which will detail which stakeholders will be engaged, how they will be engaged and when they will be engaged. Integral to this will be working with the NTS as owner of the islands, the crew of MV <i>Good Shepherd IV</i> and the Fair Isle community.	4	2	8

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
20	Physical / Assets	Harbour closures during works periods	4	4	16	A detailed project plan will seek to minimise disruption and will identify any proposed harbour closures. Where Grutness is closed, the service will be redirected to Lerwick. The Fair Isle service is however operated on a highly flexible basis and the works are scheduled to minimise disruption to service and operation of the harbour, which will assist in reducing the impact of any closures.	2	4	8
21	Contractual	The Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) do not perform as anticipated.	5	3	15	Only suitably qualified and experienced consultancies to be appointed and will require to have sufficient levels of professional indemnity insurance to indemnify the Council against any losses in the event that they were negligent in their duties.	4	2	8
22	Professional	Contractor(s) and / or Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) are not sufficiently competent for the scale of work.	5	3	15	Adoption of proposed procurement approach through Public Contracts Scotland will ensure the widest possible competition for the works contracts and will also establish a minimum quality threshold which will have to be met. Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) will be selected on a similar basis, with emphasis placed on their experience in this field and knowledge of the Shetland-specific context.	4	2	8
23	Technical	The new vessel proves to be unreliable	4	3	12	Requirement for a warranty / after sales service. A short-term contingency plan for Fair Isle will be required.	4	2	8
24	Technical	Vessel design changes through process.	4	3	12	Changes to vessel design during the process can impact the critical path and lead to a request for contract variations from the yard. To mitigate this risk, governance arrangements must include a formal sign-off for the vessel design and an agreement that this will not be amended unless there are extenuating	4	2	8

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
						circumstances. A financial contingency should be retained for this.			
25	People / Societal	There are insufficient resources within the Council (Members and salaried staff) to meet the multiple needs of the project.	4	3	12	Appointment of Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) to oversee the day-to-day delivery of the project. Appointment of a dedicated Client Project Manager to oversee the contract from the Council side.	3	2	6
26	Contractual	Interface risk at design stage in ensuring compatibility between the vessel and the winch & cradle and linkspan.	3	4	12	Appointment of a Council Project Manager to oversee and coordinate all activities. Any key issues escalated to the Project Board	3	2	6
27	Financial	Cost of obtaining marine insurance.	3	3	9	Cost of marine insurance underestimated. Accurate insurance quotations difficult to obtain without complete detail of methodologies and liabilities. Advice to be obtained from appropriate insurers. Detail requirement for marine insurance within scope. Will be assed in risk schedules when building up the price.	3	2	6
28	Financial	COVID-19 response leads to financial cutbacks in the public sector and funding for scheme reallocated.	5	3	15	There is no 'Do Nothing' option for Fair Isle, and any delay will therefore increase costs both in the short and long-term. This risk will be managed through the detailed design and FBC stage with Council Heads of Service, the Chief Executive and Members being regularly updated on progress.	5	1	4
29	People / Societal	Limited experience within the Council of delivering a vessel and civil engineering project package of this scale.	4	3	12	(i) Several Council staff remain in-post from previous procurements, including the B600 fleet and associated harbour works, Hamars Ness breakwater and tugs procurement, so there is in-house experience; (ii) Appointment of Vessel and Port Infrastructure Project Manager(s) & Supervisor(s) for works contracts; and (iii) appointment of a specific Client Project Manager to oversee the project.	4	1	4

No.	Type	Description	Inherent Impact	Inherent Probability	Inherent Risk Score	Control Actions	Residual Impact	Residual Probability	Residual Risk Score
30	Reputation	The Council cannot demonstrate the benefits of the investment to Members.	3	3	9	OBC contains a benefits realisation plan and monitoring & evaluation plan which will track the outcomes and impacts of the project.	2	2	4
31	Financial	Risk of currency fluctuations if vessel is built outwith the UK or landside infrastructure components have to be sourced from abroad.	3	3	9	Agreements as close as possible to award to guarantee quoted and entered rates. Risk contingency allowance in tender price. Early material purchase with supplier on lower rates (assuming rates increasing) will maximise margin.	2	2	4
32	Contractual	The procurement approach for the vessel or landside infrastructure works is challenged.	4	2	8	Following PC(S)R 2015 minimises / eliminates the risk of challenge. Nonetheless, the Council should ensure that the procurement and approach and all documentation is signed-off by the in-house procurement and legal team.	3	1	3

Appendix E Programme

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Appendix F Shetland Islands Council

Management and Governance Principles for Project

Project Management is the discipline of planning, organising, securing, managing, leading, and controlling resources to achieve specific goals.

A project is a temporary endeavour with a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and objectives, typically to bring about beneficial change or added value.

The temporary nature of projects stands in contrast with business-as-usual (or operations), which are repetitive, permanent, or semi-permanent functional activities to produce products or services.

Shetland Islands Council, as client, is essential to the success of project and must be visible, take ownership and provide leadership throughout the whole construction vessel and landside infrastructure project and beyond.

A robust and efficient governance system is essential to support decision making and communications in any project. It ensures that timely decisions can be made, and lines of responsibility are clear.

Governance

Ensure there are effective reporting arrangements from the programme or project into the higher-level corporate environment.

Project Business Case

The content of a project Business Case should be prepared to meet the requirements of the specific project (i.e. this document).

A Business Case will generally provide information on:

- the background of the programme and why it is needed;
- what options have been considered and which one has been chosen (including the 'do nothing' option);
- the expected benefits and disbenefits;
- the costs, investment appraisal and funding arrangements;
- the risks and impact on the Project Document; and
- a summary of the delivery of the outputs and benefits.

Roles and Responsibilities

Getting the right team with the right skills together at the right time is an essential part of achieving success in projects. The core team that owns and drives the project will have a key impact and careful attention must be paid to the detail of forming and maintaining it throughout the lifecycle of the project and indeed for the future management of the asset.

Risk

Risk management at a project level is focussed on individual risks that, should they occur, will affect the project's objectives.

Planning

Projects range from simple to complex and plans must reflect the nature of the project. The project team should tailor the tools and techniques that are available to the needs of the project. However, the focus of the plan may be on delivery and how the outputs will be handed over and may contain:

- key milestones;
- details of the resources required to carry out the work;
- phasing and detailed timings for the activities to complete the work; and
- timings for the outputs to be handed over.

Resource Management

The purpose of resourcing activity is to determine the number, type and timing of the resources needed to complete the project successfully. As projects may be competing for a particular type of resource, it is essential that a resource plan exists at project level that can be used, with others, as basis for programme resource planning at a higher level and for management of the resource pool.

Stakeholders

Stakeholders are individuals or groups with an interest in the project because they are involved in the work or affected by the outcomes. Stakeholder management is a vital activity irrespective of the size and complexity of the project. A project should document the level of interest and influence of stakeholders and implement a communications plan.

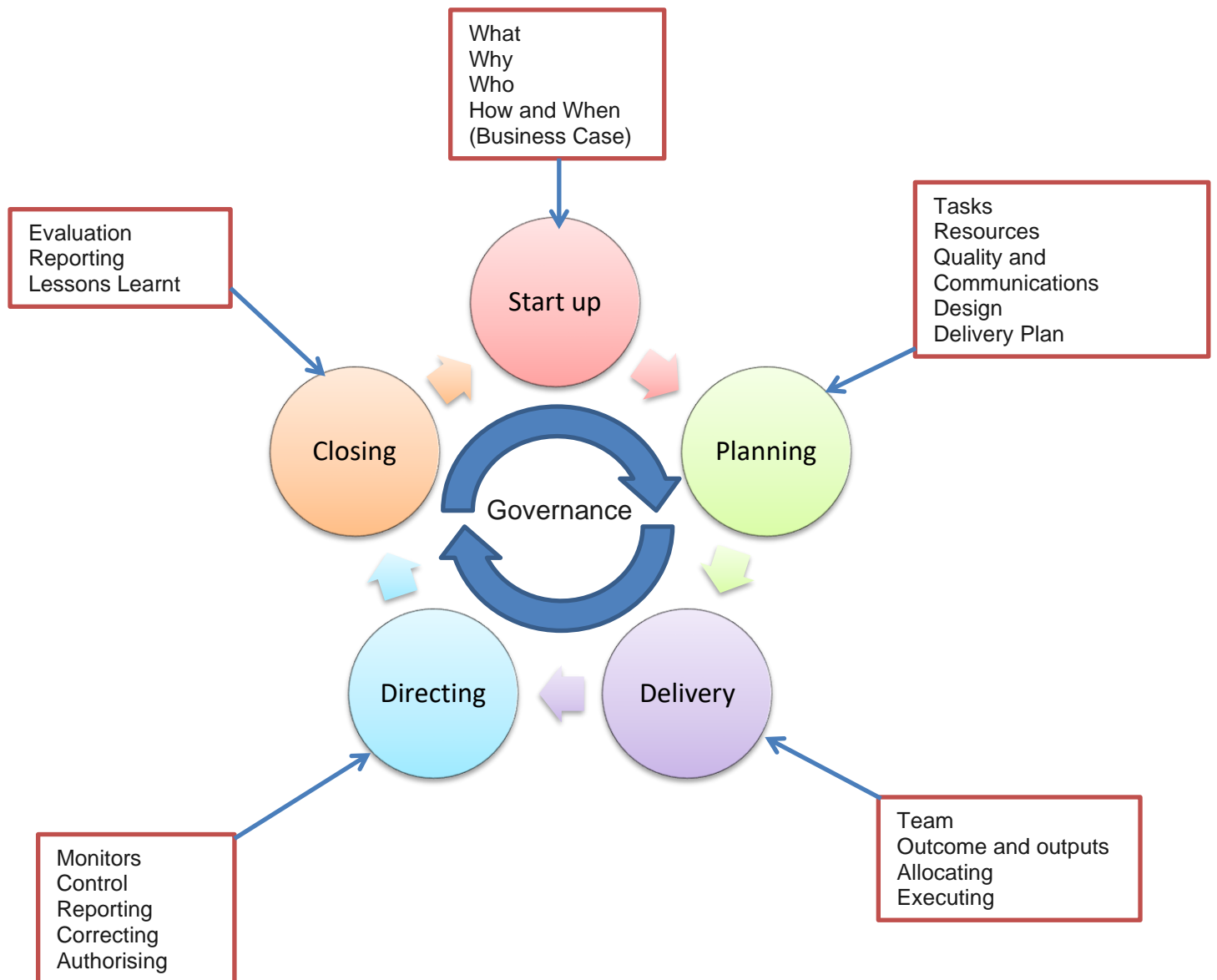
Closure

Project owners should be clear about when the project has delivered what it set out to do and that information required to support the business-as-usual environment is documented and readily available.

Lessons Learned

The project manager could speak to other project managers or research similar projects. Keeping a project record with a focus on lessons learned that could improve the effectiveness of project management is essential.

Appendix G Project Governance Framework



Appendix H Project Management Framework

Phase	Description	Key Activities	Key Deliverables
Starting up a Project	<p>Provides a firm foundation for the project by outlining:</p> <p>What is to be achieved</p> <p>Why it is important to achieve it.</p> <p>Who is going to be involved and what their responsibilities are?</p> <p>How and When it is going to happen.</p>	<p>Analysis - Lists objectives and benefits and links them to corporate plans. Starts to consider alternative solutions, identifies problems and opportunities. Considers Lessons Learned from previous projects.</p> <p>Scoping - Makes clear what the project covers / includes and what it does not.</p> <p>Project Business Case development – Balances the cost of possible options against the likely benefits. Starts to consider risks and their control.</p> <p>Relationship Management – Identifies internal and external stakeholders. Considers the impact of them working together - noting differing cultures, values, agendas and expectations of roles and approaches.</p> <p>Terms of Reference identified</p>	<p>Project Profile</p> <p>Roles and Responsibilities</p> <p>Stakeholder identification</p> <p>Project Document Checklist</p> <p>Project meeting requirements</p> <p>Project requirements: -</p> <p>Reporting</p> <p>Quality Management arrangements</p> <p>File structure</p> <p>Meeting requirements</p>
Planning (Initiation)	<p>Prepares for successful delivery by stating in detail:</p> <ul style="list-style-type: none"> What tasks have to be completed and in what order. Exactly who and what will be needed. How deliverables will be created and when. 	<p>Options Development</p> <p>Task Identification – Identify the deliverables that must be created, and the tasks needed to complete them. Indicates the order in which tasks must be carried out and their estimated duration.</p> <p>Resource Allocation – Identifies and acquires the required labour and non-labour resources needed to complete the project. Assigns the resources to the tasks and makes sure of availability and capacity.</p>	<p>Stakeholder communications plan</p> <p>Options considered and evaluated</p> <p>Project Plan</p> <p>Communications Tracker</p> <p>Project Risk Register</p> <p>Project Issue Register</p>

Phase	Description	Key Activities	Key Deliverables
	<ul style="list-style-type: none"> How the whole project will be monitored and controlled. Creates the Plan.	<p>Quality and Communication Planning – States how monitoring will ensure the project stays on track towards its objectives and within time and cost tolerances and constraints. States how the project team will communicate progress, highlights, exceptions, changes, risks, issues.</p> <p>Project Design - Describes all core elements of the project, including objectives, scope, deliverables, resources, assumptions, dependencies and risks. Indicates the approach that will be adopted to produce the deliverables.</p> <p>Approve Project delivery plans – Records the authority to proceed with the project.</p>	<p>Change control request</p> <p>Change control log</p> <p>Budget / cost control log</p>
Delivery	<p>Carries out the actual work needed to complete the project – producing real outcomes and outputs.</p> <p>Ensures that the work is properly allocated and agreed.</p> <p>Ensures that completed outputs meet quality criteria.</p>	<p>Agreeing Work – Team members agree what has to be done observing any constraints or tolerances. They agree how deliverables will be checked, approved and handed over.</p> <p>Executing Work – Tasks are completed, quality is checked, progress and status of work is fed back to the project manager.</p> <p>Handing Over Completed Work – Outputs are handed over to customers.</p>	<p>Lessons Learned Log</p> <p>Update / review</p> <p>Project Risk Register</p> <p>Project Issue Register</p> <p>Change control log</p> <p>Budget / cost control log</p>

Phase	Description	Key Activities	Key Deliverables
Directing	<p>Monitors and controls the project.</p> <p>Checks that work done meets quality standards and that it stays within cost and time limits.</p> <p>Gathers progress information, watches for changes, reports, and takes corrective action.</p> <p>Ensures that benefits are achieved.</p>	<p>Controlling – Focuses management and team members on delivery of outputs.</p> <p>Monitoring – Carefully monitors any movement away from agreed outputs and outcomes.</p> <p>Reporting - Produces highlight reports of progress, including serious variances (or this can be raised through an Exception Report).</p> <p>Correcting - Assesses the need for changes and progresses change proposals.</p> <p>Authorising - Ensure appropriate approval from Project Board at the necessary points, e.g. Initiation, Early Closure, Closure.</p>	<p>Highlight Report</p> <p>Project Board reports</p> <p>Stakeholder reports</p> <p>Update / Review:</p> <p>Communications Tracker</p> <p>Project Risk Register</p> <p>Project Issues Register</p> <p>Change control log</p> <p>Budget cost control log</p> <p>Lessons Learned Log</p>
Closing	<p>Confirms that:</p> <ul style="list-style-type: none"> ○ Objectives have been met. ○ The customer has accepted the outputs. ○ All project matters are finalised, and the project is completed. 	<p>Evaluation – Checks that everything has been delivered and is acceptable to the Council.</p> <p>Reporting – Completes the Project Review and Closure Report which should be presented for review by the Project Board who authorise the Project to Close.</p>	<p>Project Review and Closure Report</p>

Appendix I Shetland Islands Council Project Manager Specification

I.1 Role Description

Purpose

To represent Shetland Islands Council, ensuring appropriate project governance is applied to the project and that the project is delivered in line with the project governance principles to ensure the project is completed within scope, budget and timeframe.

Reporting to:

Shetland Islands Council Board

Key Accountabilities

- Familiarisation with the Business Case
- Develop and keep up-to-date a project budget
- Clarify and agree project objectives
- Establish the scope of the project, what is included and what is not
- Identify all stakeholders and develop a stakeholder matrix to inform the communications and consultation plan.
- Establish and agree the roles and responsibilities of the project team
- Set up the project folders
- Agree reporting requirements with the Project Board
- Develop, agree and implement Stakeholder communications and consultation plan
- Develop and keep updated the following project control documents
 - Project Plan
 - Communications Tracker
 - Project Risk Register
 - Project Issue Register
 - Change control request
 - Change control log
 - Budget / cost control log
 - lessons learnt log
- Ensure agreed reporting is maintained
- Attend Project Progress meetings with contractors, Vessel PM and Port Infrastructure PMs
- Undertake a project review and complete a project closure report.

Communications

- Communicating across a wide range of stakeholders
- Maintaining good communications and information flow between project board, Vessel and Port Infrastructure PMs and contractors

- Develop, reach agreement on and implement a communication and consultation plan for delivery of the project

I.2 Person Specification

Characteristics	Minimum	Desirable
Physical attributes		
	<ul style="list-style-type: none"> • Good attendance record. • Tidy appearance. • Ability to undertake site visits in Fair Isle / Grutness 	
Mental Attributes		
	<ul style="list-style-type: none"> • Understanding of general construction projects. • Ability to evaluate technical specifications, results and budget figures. • Ability to accommodate unpredictable work patterns. • Complex problem solving. 	<ul style="list-style-type: none"> • Sustained high performance and results. • Have the ability to handle situations diplomatically. • Conflict management.
Education and qualifications		
	<ul style="list-style-type: none"> • Technical qualification at HNC level as minimum. • Formal qualification in management, business or related field or a number of years relevant experience / proven track record • End-to-end experience in project lifecycle management • Driving licence. 	<ul style="list-style-type: none"> • IOSH managing safely/ H&S training. • Formal Project Management qualification
Experience, training and skills		
	<ul style="list-style-type: none"> • Experience in managing/coordinating and supervising vessel and marine infrastructure construction projects, and contractors/trades. • Working with range of stakeholders. • Working with civil engineering and other consultants. • Working with contractors • Project and budget management experience. • Experience in H&S legislation. • Competent in use of MS office software packages. • Experience in report writing. • Working within a QA environment. 	<ul style="list-style-type: none"> • Ability to communicate with people at all levels, in all professions and maintain good client relations • Excellent verbal & written communication skills • Experience in/working with public sector organisations
Personality		

Characteristics	Minimum	Desirable
	<ul style="list-style-type: none"> • High level of self-motivation. • Ability to listen to others. • Positive proactive approach required and ability to cope with the unexpected. • Creative approach to problem solving. • Flexible approach to work. • Willingness to contribute to the team effort. 	<ul style="list-style-type: none"> • Confident. • Good communicator. • Firm negotiator.
Special circumstances		
	<ul style="list-style-type: none"> • Ability to work to strict deadlines and during unsocial hours. 	