

Executive Summary

Introduction

ZetTrans commissioned Faber Maunsell to undertake a detailed examination of options with regard to the transport link between Whalsay and the Shetland Mainland¹. The analysis follows Scottish Transport Appraisal Guidance (STAG²). This note summarises the STAG process undertaken in order to reach a preferred option to be considered for funding.

The 'Do Nothing' option is considered to be unacceptable. Currently the route suffers capacity constraints at peak times which is reported to be hampering the commuter base of the island. Almost one quarter (22% or 160 residents) of the working population on Whalsay commute to the Mainland and depend on a regular and reliable ferry service. Current issues with capacity lead to uncertainty about being able to travel which can cause personal stress to people and potentially make continued commuting to the Mainland untenable. Added to this is the uncertainty regarding the state of the infrastructure and the vessels serving the route. The infrastructure is currently operating at its limit in terms of berthing pressures with ever increasing maintenance costs required to keep the service operational. The route is served by two vessels, MV 'Linga' and MV 'Hendra'. MV 'Hendra' was recently refurbished to extend her serviceable life but it is not anticipated that this could be extended further and she will need to come out of regular service use in approximately 2014; waiting time on new ferries is three years and can be potentially up to five years.

These factors all combine to provide a bleak future picture for Whalsay under the 'Do Nothing' scenario with ongoing capacity constraints hampering access to economic activity for residents of the island and increasing likelihood of service disruptions due to the aging infrastructure and vessels. All of this could serve to make living on Whalsay and commuting to the Mainland untenable which could in turn generate population decline on the island as people move off in search of employment opportunities.

Whalsay is the most populated of the Shetland Islands and the Whalsay route is the third busiest on the Shetland network. The route has been experiencing sustained and continued growth in passenger and vehicle numbers.

Problems and Opportunities

Analysis of the problems and opportunities has been undertaken and found the key problems to be:

- Aging vessels and changing legislation with regard to ferry design standards which affects the medium term use of MV 'Hendra';
- Aging infrastructure and increasing berthing pressures and increasing rate of wear and tear on the terminal infrastructure;
- Vehicle capacity problems aboard the ferries, particularly during peak commuting times, as well as problems related to the booking system and service gaps - commuting to the Mainland is essential for 22% of the working population on Whalsay (approximately 160 people);
- Restricted capacity for HGVs and taller vehicles on MV 'Linga'; due to competition for space the vehicle deck, there can be lengthy delays for larger vehicles;
- Marine congestion in Symbister Harbour;
- Concern regarding affordability, both in terms of affordability of fares as well as the importance of finding an affordable solution for funding bodies; and

¹ Shetland Mainland will be referred to simply as the Mainland within the remainder of this document which is distinct from the "Scottish Mainland" or "UK Mainland"

² STAG is the official appraisal framework developed by the Scottish Government to aid transport planners and decision-makers in the development of transport policies, plans, programmes and projects in Scotland.

- Concerns expressed over the operational reliability of the ferries with regard to operation in inclement weather as well as continuation of service during times of repair and routine maintenance.

Statutory Context and Planning Objectives

National, regional and local policies have been reviewed as part of this study and common theme is the emphasis on the importance of efforts to sustain island communities, and accept that local and central funding will be central to the sustaining of these, often isolated, populations.

Following assessment of the problems, opportunities and statutory context for the study a list of planning objectives was prepared. These objectives are six-fold:

- To deliver a solution that is affordable (for funding bodies);
- To deliver a solution that is operationally sustainable;
- To at least maintain the current level of accessibility to the island;
- To reduce conflict between ferry and other harbour users;
- To better match supply and demand; and
- To ensure that the socio-economic characteristics of the island are not constrained.

Option Generation and Sifting

A long list of options was generated and sifted to produce a list of options for appraisal. The following list shows those that were appraised at STAG Part 1 and Stag Part 2 and the outcome of this appraisal:

- **Option 1 ('Do minimum' option)** – *This option would see Laxo and Vidlin, renewed or replaced on a like-for-like basis and the current location of the Whalsay terminal within Symbister Harbour, renewed or replaced on a like-for-like basis; MV 'Linga' and MV 'Hendra' would be retained until life expiry, then replaced on a broadly like-for-like basis.*

This option provides an essential benchmark against which the other options can be compared. It performs only marginally better than the Do Nothing scenario however as it does not address the capacity constraints and would see the uncertainty involved with commuter travel continue. Congestion issues at Symbister would continue and the socio economic prospects for Whalsay would be compromised. The option has little impact on the environment, safety, integration or accessibility.

- **Option 2** – *Laxo is retained as the Mainland terminal, with Vidlin retained as diversionary terminal. Both terminals are replaced with new, larger terminals capable of accommodating 31 vehicle capacity vessels. Symbister remains the Whalsay Ferry terminal but is extended to be capable of accommodating 31 vehicle capacity vessels. One new 31 vehicle capacity vessel is introduced to operate alongside MV 'Linga'*

This option sees the capacity constraints addressed in the medium term and allows the route to grow whilst also removing the current uncertainties with commuter travel. The terminal upgrades would improve their reliability. Two options were investigated for extending Symbister; an outward and inward extension. The outward extension allows greater separation of the marine traffic and better addresses the issue of congestion at Symbister but the risks involved with constructing a breakwater in deep water and the risks involved with the construction (whereby the existing northern breakwater would have to be removed thus leaving the harbour exposed) have been deemed too significant to take this option forward. The outward extension was therefore dropped following STAG Part 1 appraisal. The inward extension of Symbister allows the larger ferries to make use of the harbour but does not fully address the congestion issues within the harbour. This option has little impact in terms of the environment, accessibility, integration or safety.

- **Option 3** – *Option 3 is the same as option 2 in infrastructure terms but sees two new 31 vehicle capacity vessels introduced onto the route*

As above with option 2, the outward extension of Symbister is ruled out due to technical risks; the inward extension is retained but does not fully address the congestion issues at the harbour. The introduction of two new 31-vehicle vessels onto the route addresses the capacity constraints but is significantly more expensive in the early years when compared with option 2.

The introduction of two new larger vessels is therefore considered unnecessary when one new larger vessel operating alongside MV 'Linga' addresses the capacity constraints and this option has been dropped after STAG Part 2 appraisal.

- **Option 4** - Laxo is retained as the Mainland terminal, with Vidlin retained as diversionary terminal. Both terminals are replaced with new, larger terminals capable of accommodating 31 vehicle capacity vessels. The Whalsay Ferry Terminal is relocated to North Voe with a new terminal constructed capable of accommodating 31 vehicle capacity vessels. One new 31 vehicle capacity vessel is introduced to operate alongside MV 'Linga'

This option sees the capacity constraints addressed in the medium term and allows patronage on the route to continue to grow whilst also removing the current uncertainties with commuter travel. The terminal upgrades would improve their reliability. Developing North Voe addresses the congestion issues at Symbister and provides a more efficient operational arrangement. Due to developing an undeveloped voe, this option, has negative environmental impacts in terms of landscape and visual impacts. It has little impact on safety, integration or accessibility.

- **Option 5** – Option 5 is the same as option 4 in infrastructure terms but sees two new 31 vehicle capacity vessels introduced onto the route

As above with option 4, the relocation of the ferry terminal to North Voe has environmental impacts but addresses the issues of congestion at Symbister harbour and, through the introduction of larger vessels addresses the capacity constraint issues. The introduction of two new larger vessels is therefore considered unnecessary when one new larger vessel operating alongside MV 'Linga' addresses the capacity constraints and this option has been dropped after STAG Part 2 appraisal.

- **Options 6 and 7** – These were the fixed link options of a bridge and tunnel respectively

Fixed links would provide a long term solution to capacity issues and remove uncertainty for commuter traffic. It would address the issues of congestion at Symbister. However, in light of the relative urgency to provide a solution for the Whalsay transport link and the timescales involved in constructing such a fixed link and the competing demand for fixed links from other islands within Shetland it is not considered that a fixed link is a feasible solution in the medium term for Whalsay.

- **Option 8** – Grunna Voe is developed as the Mainland terminal and Vidlin is not upgraded as diversionary terminal since the attraction of Grunna Voe is more sheltered berthing conditions and therefore an anticipated reduction in the number of diversions that would be required. Symbister is retained as the Whalsay Ferry Terminal and is upgraded to be capable of accommodating 31 vehicle capacity vessels. One new 31 vehicle capacity vessel is introduced to operate alongside MV 'Linga'

This option addresses the capacity constraints in the medium term. However, following detailed assessment of weather records, etc. concern exists about the performance of this option in inclement weather since Vidlin would not be upgraded and would therefore not be capable of accommodating the larger vessel. At these times the service would reduce to being served by only MV 'Linga'. In this sense, the option does not address the uncertainty issues which affect commuter traffic. Additionally, this option sees a largely undeveloped area at Grunna Voe developed to provide a ferry terminal with the associated visual and landscape impacts. The option also introduces additional journey time for vehicles accessing / egressing Grunna Voe compared with Laxo with associated negative TEE and safety impacts. The option has little impact on accessibility and integration. Due to the poor performance of this option in economic terms and the environmental impact and the inability of the option to address the uncertainty issues affecting commuter traffic, this option has been dropped following STAG Part 2 appraisal.

- **Option 9** – Grunna Voe is developed as the Mainland terminal and Vidlin is not upgraded as diversionary terminal since the attraction of Grunna Voe is more sheltered berthing conditions and therefore an anticipated reduction in the number of diversions that would be required. The Whalsay Ferry Terminal is relocated to a new ferry terminal at North Voe capable of accommodating 31 vehicle capacity vessels. One new 31 vehicle capacity vessel is introduced to operate alongside MV 'Linga'

As above, this option addresses the capacity constraints in the medium term, however it does not address the uncertainty issues which affect commuter traffic. This option has negative impacts on TEE and safety associated with increased length of journey accessing / egressing Grunna Voe and has the negative environmental impacts of developing North Voe. The option has little impact on accessibility and integration. Due to the poor performance of this option in economic terms and the environmental impact and the inability of the option to address the uncertainty issues affecting commuter traffic, this option has been dropped following STAG Part 2 appraisal.

A full appraisal has been undertaken for the options and the key monetary summaries are provided in the table below.

30 year appraisal period	PVB	PVC	NPV	BCR*
Option 1 – Do-Minimum	0	0	0	0
Option 2 – Symbister with extension, plus upgraded Laxo terminal, Vidlin upgraded plus one new 31-vehicle ferry vessel and MV 'Linga'	£593,613	(£29,584,909)	(£28,724,693)	0.02
Option 3 – Symbister with extension, plus upgraded Laxo terminal, Vidlin upgraded plus two new 31-vehicle ferry vessels	£763,094	(£38,564,678)	(£37,461,256)	0.02
Option 4 – North Voe terminal, with Laxo terminal, Vidlin upgraded plus one new 31-vehicle ferry and MV 'Linga'	£593,613	(£26,305,170)	(£25,444,955)	0.02
Option 5 – North Voe terminal, with Laxo terminal, Vidlin upgraded plus two new 31-vehicle ferries	£763,094	(£35,284,939)	(£34,181,517)	0.02
Option 8 – Grunna Voe, plus one new 31-vehicle ferry and MV 'Linga', plus Symbister terminal with extension	(£442,995)	(£29,636,971)	(£29,813,364)	-0.01
Option 9 – Grunna Voe, plus one new 31-vehicle ferry and MV 'Linga', plus North Voe terminal	(£442,995)	(£26,357,233)	(£26,533,626)	-0.02

*Ratio not monetary value

Taking this information along with the assessment of the performance of the options against the planning objectives, the government objectives and technical and deliverability issues, the preferred option has emerged as Option 4.

Summary and Conclusions

The STAG analysis examined the benefits and disadvantages associated with each of the option packages. Through careful appraisal against the study objectives and against the five national transport strategies, the recommended preferred Option comprises the following elements:

- Retention and maintenance of MV 'Linga'
- Introduction of one larger-sized ferry vessel (31 vehicle capacity) to replace MV 'Hendra';
- Upgrading of Laxo ferry terminal to accommodate larger-sized ferries;
- Development of North Voe as a replacement ferry terminal on Whalsay; and
- Upgrade of Vidlin to remain as diversionary port capable of accommodating the larger ferry and MV 'Linga'.

The next steps for this study would be to finalise designs for each of the terminals in order that the works can be procured. For this, North Voe requires a degree of testing to determine the position of the breakwaters and to ensure the facility can be built in the Voe as anticipated.

The STAG study outputs should be revised following such works to ensure the preferred option is still the preferred option and stacks up against the others in terms of delivering against the objectives.