Bluemull Sound
STAG 1 Report

ZetTrans
June 2008

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Executive Summary

Introduction
Zetland Transport Partnership (ZetTrans) commissioned Faber Maunsell to undertake a Scottish Transport Appraisal Guidance (STAG[1]) assessment to examine options for the future of the transport links across Bluemull Sound, connecting the North Isles of Unst, Fetlar and Yell. This Executive Summary summarises the STAG process undertaken in order to determine the study options to be taken forward to STAG 2 Appraisal.

Doing nothing is not considered feasible due to the impacts and costs of continuing to operate ageing ferry and terminal infrastructure beyond its lifespan. There would be increased expenditure to maintain the ferry terminals and linkspans and this would be difficult to continue to do whilst simultaneously operating a ferry service. The vessels would be subject to increased problems with scheduled and unscheduled maintenance, and increasing costs. From a passenger perspective, there would be more disruptions and delays. There would be increased journey and wait times as passengers over-compensate for the risk of disruption.

Overall, in the long term, adopting a Do Nothing position would lead to a significant reduction in the vitality and viability of Unst and Fetlar and a significant reduction in the feasibility and attractiveness of living on these islands, raising a family and undertaking any form of economic enterprise.

Consultation
An extensive consultation process was carried out in the North Isles to identify problems with the current Bluemull Sound transport link and future options for the transport links between Unst, Fetlar and Yell. A range of groups, including North Isles residents, local businesses and various Shetland-wide agencies were consulted, and there was an overall consensus among consultees for a cost effective solution for the long term sustainability of the transport link.

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

- Planning for the replacement of existing vessels;
- Changing vessel legislation;
- The renewal and replacement of the Gutcher and Belmont ferry terminals;
- The Hamars Ness ferry terminal;
- The existing timetable;
- Other operational issues;
- Managing vehicle demand;
- Wider network issues;
- Accessibility;
- Affordability; and
- Sustaining the socio-economic prospects of the North Isles.

[1] 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

Statutory Context and Planning Objectives
National, regional and local policies have been reviewed as part of this study and a 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 were developed as follows:

- *Provide a transport link which is economically efficient;*
- *Provide a transport link which is operationally reliable on a day to day basis;*
- *Provide a transport link which is operationally sustainable in the long term;*
- *Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland;*
- *Provide a transport link which has a regular and easily understandable pattern of transport opportunities;*
- *Provide a transport link which is considered to be affordable to users;*
- *Provide a transport link which is considered to be affordable for funders and operators.*
- *Provide a transport link which provides sufficient capacity for passengers and vehicles;*
- *Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell; and*
- *Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*

Option Generation and Sifting
Based on the consultation results and the analysis of problems and opportunities, a long list of potential options was generated and sifted to produce a list of options for appraisal. The following list shows those that were appraised and the outcome of this appraisal:

- **Option 1 – Do Minimum – Replacement of Gutcher and Belmont terminals and *MV Bigga* and *MV Geira***

This option would involve providing two replacement ro-ro vessels which are compliant with legislation and able to cope with forecast vehicle and passenger demand over the appraisal period. This option could also include options for alternative off linkspan berthing at the new terminals.

The Do Minimum acts as a viable option in its own right, and also as a benchmark for comparison against other options.

- **Option 2 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + development of Fetlar breakwater**

This option is similar to option 1, but also includes the development of a breakwater at Fetlar.

- **Option 3 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service**

This option is similar to option 1, but also includes the introduction of a third, passenger only, ferry service.

- **Option 4 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x FT)**

This option is similar to option 1, but also includes the introduction of one additional full-time crew, providing a more frequent service.

- **Option 5 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x PT)**

This option is similar to option 1, but also includes the introduction of one additional part-time crew, providing a more frequent service.

- **Option 6 – Single Fast Vessel**

This option involves the introduction a single fast vessel, instead of the existing two vessels that operate on the route.

- **Option 7 – Unst-Yell Tunnel with 1 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of dedicated Fetlar ferry service, operated by one crew running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

- **Option 8 – Unst-Yell Tunnel with 2 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of a dedicated Fetlar ferry service, operated by two crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

- **Option 9 – Unst-Yell Tunnel with 3 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of dedicated Fetlar ferry service, operated by three crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

STAG 1 Appraisal

The results of the appraisal lead to the recommendation that the following options are not taken forward.

- **Option 3 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service**

It is considered that it is unlikely to be cost effective to introduce a third vessel onto the route, and it could be poorly utilised. It may be considered more efficient to use investment to increase the frequency of existing services rather than introduce a new service.

- **Option 6 – Single Fast Vessel**

A single fast vessel would have operational risks, and has not been taken forward to STAG 2 Appraisal.

- **Option 7 – Unst-Yell Tunnel with 1 x Fetlar crew**

This option has not been taken forward because a single Fetlar crew would result in a significant reduction in the levels of service for Fetlar.

The remaining options (Options 1, 2, 4, 5, 8 and 9) are proposed to be retained for further detailed analysis which will be undertaken within a more detailed STAG 2 assessment.

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 appraisal criteria, Options 1, 2, 4, 5, 8 and 9 are proposed to be retained for further detailed analysis which will be undertaken within the more detailed STAG 2 assessment framework.

Table of Contents

Introduction

1 Introduction

1.1 The Commission

Zetland Transport Partnership (ZetTrans) commissioned Faber Maunsell to undertake a Scottish Transport Appraisal Guidance (STAG)[2] assessment to examine options for the future of the transport links across Bluemull Sound, connecting the North Isles of Unst, Fetlar and Yell. This involves an appraisal of options to ensure the long-term provision of the link between each of the North Isles, as well as the wider links between the North Isles and Shetland Mainland.

The study aims 'To identify means of providing sustainable efficient transport links across Bluemull Sound for the long-term and identify the most appropriate actions to carry forward to implementation for the benefit of Shetland as a whole.'[3]

Due to the level of investment envisaged, ZetTrans may require to seek external funding in the future. There is therefore a requirement for the study to be progressed using an auditable, evidence based, and objective based optional appraisal framework. Such a framework is provided by the STAG methodology, which represents "best practice" in the appraisal of transport options.

1.2 STAG Appraisal

STAG (Scottish Transport Appraisal Guidance) is the official option appraisal framework developed by the Scottish Executive[4] to aid transport planners and decision-makers in the development of transport policies, plans, programmes and projects in Scotland. It is a requirement that all transport projects for which Scottish Government support or approval is required, are appraised in accordance with STAG.[5]

STAG has two parts:

- A Part 1 appraisal: This provides an initial appraisal and a broad assessment of impacts, designed to decide whether different options should proceed to more detailed development and appraisal, subject to meeting with the scheme's planning objectives and fitting with relevant local and national policies; and
- A Part 2 appraisal: Provides a detailed and quantitative appraisal against the scheme specific objectives, and the national set of transport objectives.

Appraisal Summary Tables (ASTs) are used to present summaries of the appraisals: AST1 tables are used for Part 1 appraisals, and AST2 tables for Part 2 appraisals.

This report presents the results of the Part 1 Appraisal undertaken for the Bluemull Sound Study. It has benefited from the input of the Bluemull Sound STAG Group[6], which has assisted in guiding the development of this study since its inception.

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[2] Scottish Executive, *Scottish Transport Appraisal Guidance (Version 1.0),* 2003

[3] The study aim was agreed by the Bluemull Sound STAG Group. Chapter 4 provides an overview of the role of this group in the study

[4] Now Scottish Government

[5] See STAG section 1.2

[6] See Chapter 4

1.3 Study Methodology

The study has been progressed in line with the STAG guidance. Key elements of the option development and appraisal work undertaken to date has included:

- A review of previous information, studies, and public consultation exercises;
- A review of relevant local and national policy;
- A review of the socio-economic factors relating to Unst, Fetlar and Yell;
- Consultation within the Bluemull Sound STAG Group[7];
- Consultation with a range of North Isles based stakeholders and ferry users;
- Consultation with a wider set of Shetland-based stakeholders, including different Council departments;
- Analysis of historic ferry carryings;
- Review of current and future problems and opportunities;
- Development of specific planning objectives for the appraisal;
- An option generation and sifting exercise; and
- An initial appraisal of options.

1.4 Requirement for Study

ZetTrans' Regional Transport Strategy (RTS) highlights specific issues relating to inter-island links in Shetland. Three issues in particular are the driving force for this study:

- The existing ferry infrastructure is approaching the end of its operational lifespan.

The Bluemull Sound vessels are ageing, face potential future MCA compliance problems and are non DDA compliant for foot-passengers. The condition of the terminals (Gutcher and Belmont) is deteriorating and their upgrading or replacement will be required in the future.

- Problems and constraints with the existing Bluemull transport links.

The RTS stated there is a relatively urgent requirement to address peak period vehicle deck capacity issues on Bluemull Sound, address difficulties related to the timetabling of ferry services to Unst and Fetlar, and address ferry service reliability concerns on the Fetlar route. The necessity to use vessels currently on the Bluemull route to relieve other routes (particularly during the peak summer months) effectively decreases vehicle carrying capacity on Bluemull Sound during these times.

- Potential for Fixed Links

A fixed link study being progressed in parallel with this study, which may indicate that there is a case for considering a fixed link connecting Unst and Yell. There will therefore be a need to identify an efficient and sustainable means of connecting Fetlar with Unst and/or Yell.

During the consultation period for the RTS, there was strong support for a fixed link between Unst and Yell. With regards to Fetlar, there was support for a dedicated Fetlar ferry and crew, with the development of a breakwater at Hamars Ness cited as vital in facilitating improvements to the ferry service.

In addition, there are a wider set of issues that impact upon this STAG appraisal, including the relationship with the future provision of links to other islands (such as Whalsay and Bressay). STAG studies for these links have recently been completed.

A significant constraining factor is the affordability of the different options to funding bodies, both in terms of capital investment, day-to-day operational costs, and cost to users.

[7] See Chapter 4

1.5 Structure of Report

This report is divided into eight further sections as follows.

Chapter 2 provides background details of the study area, current transport connections, population and economic characteristics.

Chapter 3 sets out the current national and local policy context, including relevant transport, and planning policies.

Chapter 4 details the outcomes of the consultation exercise undertaken in relation to the study.

Chapter 5 analyses the current and future problems and opportunities related to the development of transport links to the North Isles.

Building on the previous four chapters, **Chapter 6** presents a series of "planning objectives", which provide a clear statement on what outcomes the project is seeking to achieve. It also details those constraints and uncertainties that will have a significant bearing upon the study.

Chapter 7 provides a review of the option generation and sifting process that was undertaken.

Chapter 8 presents an appraisal of a short-listed range of options, against the set of project planning objectives, a set of "implementability" criteria, and the five national transport objectives.

Chapter 9 then provides a Summary and sets out the Next Steps.

This report is also supported by Appendices. Appendix A outlines the wider objectives of the Regional Transport Strategy that are relevant to the Bluemull Sound study. Appendix B presents initial undiscounted cost estimates for the study options while Appendix C provides the series of STAG Appraisal Summary Tables, which help to summarise, on a consistent basis, the key findings from the initial appraisal.

A number of sources have been consulted to develop this STAG 1 Report. These include Shetland Islands Council and ZetTrans, BM Consulting for information on ferry carryings and various sources of statistical data such as the 2001 Census, Shetland in Statistics and Scottish Transport Statistics for additional information to set the context for the study.

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Background

2 Background

2.1 Introduction

The following chapter provides an overview of the study area, in the context of Shetland. It details the existing transport connections related to the North Isles, prior to examining the population and economic context of the three islands.

2.2 Study Area

The Shetland Islands are located 150 km north east of the Scottish Mainland. There is over 1440 km of coastline covered over 100 islands. The capital of the Shetland Islands is Lerwick, which is located on Shetland Mainland. Lerwick is the main focus for commercial, administrative and servicing activity on the island, and is where the largest concentration of population exists. External air links to and from Shetland are provided from Sumburgh Airport, whilst ferry links to and from Shetland (principal destination is Aberdeen via Kirkwall) are provided from Lerwick.

The focus of the study is Bluemull Sound, a relatively narrow stretch of water which effectively divides the North Isles of Unst, Fetlar and Yell. The largest of these islands, Yell, is located three km north of Shetland Mainland, a 20 minute ferry crossing. Unst is located to the north-east of Yell, whilst Fetlar is located to the east of Yell, and the south of Unst. At its narrowest point, Bluemull Sound is approximately 1 km wide. The ferry route between Gutcher (Yell) and Belmont (Unst) is some two km in length (just over 1 nautical mile), and takes ten minutes. The crossing is relatively sheltered.

Photo 2.1 – Gutcher ferry terminal, Bluemull Sound

The ferry route to Hamars Ness (Fetlar) is around 6 km (3.2 nautical miles) in length from either Gutcher or Belmont and takes around 25 minutes. This crossing is more exposed.

Photo 2.2 – Fetlar crossing, Bluemull Sound

The North Isles are characterised by cliffs, beaches, peat bog, farmland, heathery hills, and moorlands. Fetlar is also a Site of a Special Scientific Interest (SSSI).

The North Isles support a number of settlements. On Unst, these include Baltasound, Uyeasound and Haroldswick. Fetlar supports a relatively dispersed population with the main centre of population being Houbie. The main settlements on Yell are Burravoe, Aywick, Mid Yell, Cullivoe and Gutcher.

The total population of Shetland was 21,988 at the 2001 census, and 18,606 (85%) are resident on Shetland Mainland. The remaining 3,382 residents are based on the nine islands detailed in Table 2.1. This also shows the resident population at the 1981, 1991 and 2001 censuses.

Table 2.1 – Island Population Trends, 1981-2001

Island	1981 Census	1991 Census	2001 Census	20 Year % Population Change
Bressay	334	352	384	+15.0%
Fair Isle	69	67	69	0.0%
Fetlar	101	90	86	-14.9%
Foula	45	42	32	-28.9%
Papa Stour	35	35	24	-31.4%
Skerries	88	87	76	-13.6%
Unst	1,140	1,055	720	-36.8%
Whalsay	1,025	1,041	1,034	+0.9%
Yell	1,191	1,075	957	-19.6%

Source: Shetland in Statistics (2007)

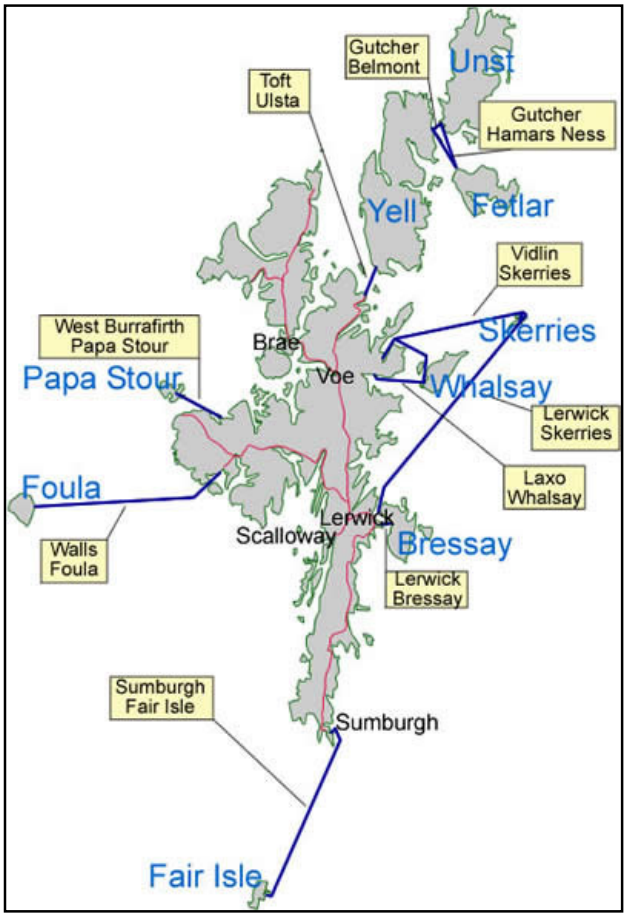
It can be seen that Yell and Unst are the second and third most populated islands respectively (after Whalsay). However, it can be noted that both Yell and Unst (and Fetlar) have

experienced population decline over the last twenty years. Population decline in Unst has been affected by the closure of RAF Saxa Vord in March 2006.[8]

2.3 Shetland's Internal Ferry Services

Shetland Islands Council operates a fleet of 12 ferries providing lifeline services between Shetland Mainland and the islands. The services run from 14 terminals serving eight islands with a total population of just under 3,500 people. Figure 2.1, below, shows the existing ferry services that operate throughout the islands.

Figure 2.1 – Map of Shetland Inter-Island Ferry Services



The most important ferry services in terms of utilisation are Yell (Toft-Ulsta), Bressay (Lerwick-Bressay), Whalsay (Laxo/Vidlin-Symbister), Unst (Gutcher-Belmont) and Fetlar (Gutcher/Belmont-Hamars Ness). Table 2.2 shows recent carryings on these five key routes.

Table 2.2 – Recent carryings on selected routes

Island	Route	2006 Passengers (000s)	2006 Cars (000s)
Bressay	Lerwick-Bressay	207.9	65.5
Fetlar	**Bluemull Sound**	**20.5**	**9.9**
Unst	**Bluemull Sound**	**117.9**	**56.4**
Whalsay	Laxo/Vidlin-Symbister	169.2	73.2
Yell	Toft-Ulsta	245.0	115.4

Source: Scottish Transport Statistics 26, 2007 Edition

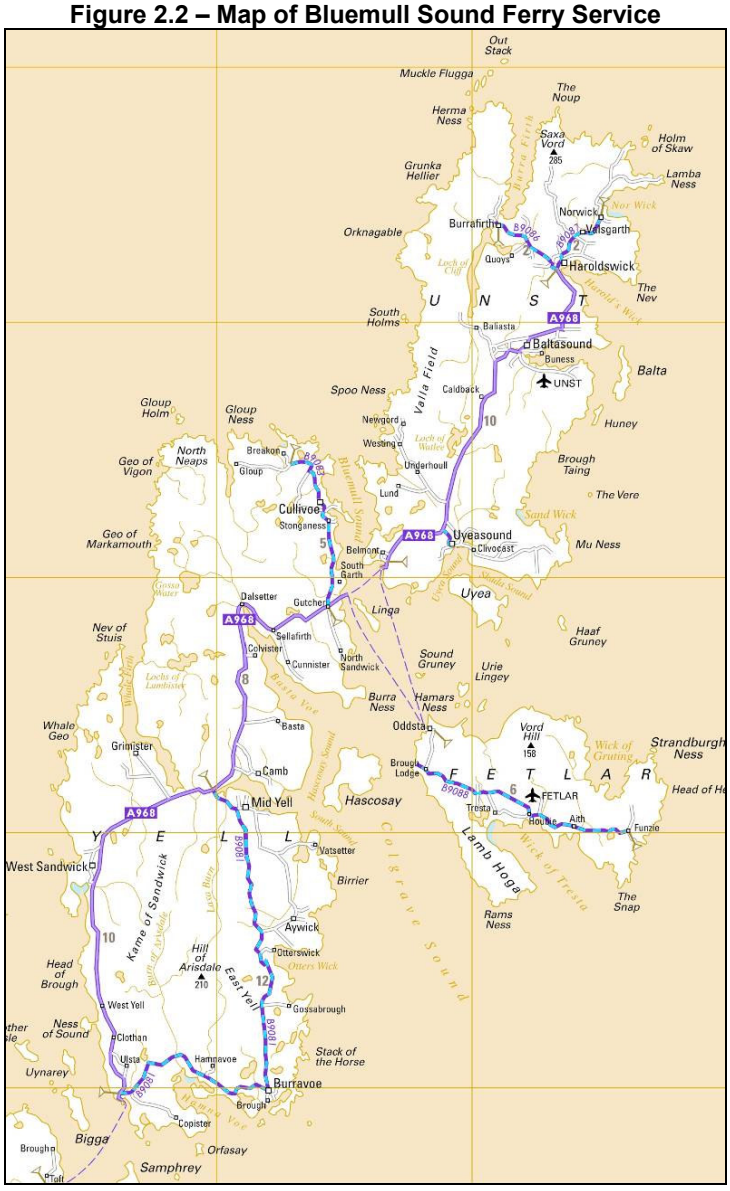
[8] Reference Economics (Nov 2005), "Assessing the Impact of Saxa Vord Job Losses", Report for Shetland Enterprise

While the figures presented above underline the importance of the Toft-Ulsta route, they also highlight that the Gutcher-Belmont route is the fourth busiest. However, there is an important relationship between the Bluemull Sound services and the Yell Sound service, as the Toft-Ulsta service carries not only Yell passengers and vehicles, but also many of those passengers and vehicles using the Bluemull Sound services. Two new vessels were introduced onto the Yell Sound route in the summer of 2004 and this route has also benefited from terminal upgrades.

2.4 Bluemull Sound Ferry Service

The Bluemull Sound ferry link has a timetabled journey time of 10 minutes (Gutcher-Belmont) and 25 minutes (Gutcher/Belmont-Hamars Ness), which extends to 35 minutes when the ferry travels to Fetlar via Yell/Unst. The route is generally served by two vessels during the working week. During the summer timetable, two vessels operate on Saturday, whilst a single vessel operates on a Sunday. During the winter timetable, a single vessel operates for the whole of the weekend.

Figure 2.2 – Map of Bluemull Sound Ferry Service



Source: eMapSite

There are typically between five and nine sailings per day from Hamars Ness, depending on the day of the week and season. Some of these sailings call at Belmont (Unst) prior to a departure to Yell.

In periods of strong winds and swell, the ferry can experience difficulties berthing at Hamars Ness because there is not a breakwater, and that it is unable to berth overnight on Fetlar.

The ferry service between Gutcher and Belmont is more frequent than the Gutcher-Hamars Ness service. This runs approximately half-hourly during peak travel periods, and nearly hourly during off-peak periods.

Shetland Islands Council approved a decision to suspend fares on Bluemull Sound ferry services from 15th September 2005[9], to support the economic regeneration of the area, following the announcement that the RAF was to close its base at Saxa Vord in March 2006. The approval for this suspension of fares was granted until the summer of 2008. An additional decision has since been made to suspend the fares until the end of the summer timetable in 2008.

2.4.1 *Vessels*

The Bluemull Sound ferry service is currently typically operated by two vessels, *MV Bigga* (16 vehicle capacity) and *MV Geira* (11 vehicle capacity). Relief vessels on the route are typically *MV Fivla*, *MV Thora* and *MV Hendra*. A profile of these vessels is provided within Table 2.3 below.

Table 2.3 – Vessel Profiles

Vessel	Current Vehicle Capacity (PCUs)	Maximum Passenger Capacity (Gutcher-Belmont route)	Maximum Passenger Capacity (Fetlar route)	Year of Construction
MV Bigga	16	96 (year round)	96 (summer) 50 (winter)	1991
MV Geira	11	96 (summer) 92 (winter)	87 (summer) 50 (winter)	1988
MV Fivla	11	95 (summer) 92 (winter)	75 (summer) 50 (winter)	1985
MV Thora	6	93 (year round)	93 (summer) 50 (winter)	1975
MV Hendra	14	95		1982

Photos of *MV Bigga* and *MV Geira* are provided below.

Photo 2.3 – *MV Bigga* at Belmont, Unst

Photo 2.4 – *MV Geira* on Bluemull Sound

[9] http://www.shetland.gov.uk/news-advice/bulletins/2005/09/prinfra0914.asp

2.4.2 *Terminals*

Three ferry terminals are utilised by the Bluemull Sound service: Gutcher (Yell), Belmont (Unst) and Hamars Ness (Fetlar).

Facilities at these terminals include electronic variable message signs (to inform passengers of ferry information), waiting areas, parking facilities and toilets. There is also a privately run café near the ferry terminal at Gutcher. The Gutcher and Belmont terminals opened in the 1970s and were designed for the first generation of ferries. The original ferry terminal on Fetlar was at Oddsta but this was relocated to a new terminal at Hamars Ness in 2004.

2.4.3 *Road Access*

Access to the ferry terminal at Gutcher is via the main A968 spine route, which runs the length of the islands. Similarly, access to Belmont is formed by the continuation of the A968. Access to the Hamars Ness terminal is formed by a minor 2 km road from the B9088. The terminal is some 7 km from the settlement of Houbie.

2.4.4 *Public Transport*

There is an integrated bus/ferry service between Lerwick and Unst, Fetlar and Yell which operates once per day Monday-Saturday. A single from Belmont, Hamars Ness, Cullivoe or Gutcher to Lerwick is £4.20.

Public transport within the North Isles is available primarily on Yell. There are also services in Unst and a service in Fetlar operated by the Royal Mail runs between the Post Office and the ferry terminal on Mondays, Wednesdays and Fridays, subject to availability, and costs between £0.50 and £0.70. ZetTrans is also providing a dial-a-ride passenger service in Fetlar between 1st April and 30th September 2008, which connects with the ferry service and existing bus services.[10]

2.5 Carryings Analysis

Analysis of route characteristics was undertaken to ascertain the extent of vehicular and passenger demand for the service. Table 2.4 below presents historic trends on the route.

Table 2.4 – Bluemull Sound Service: Historic Trends (1998-2006)[11]

Year	Number of sailings	Passenger carryings	Passenger capacity utilisation	Vehicle Deck Utilisation	Commercial vehicles carried
1998	21578	117566	6%	19%	4636
1999	21637	123634	6%	29%	7170
2000	18806	134596	6%	32%	7584
2001	21226	128569	7%	34%	7744
2002	20979	141222	7%	35%	7029
2003	20606	145583	8%	39%	8114
2004	20738	145324	8%	38%	8323
2005	20003	138584	8%	36%	8279
2006	19690	141875	8%	36%	7024

[10] http://www.zettrans.org.uk/bus/NorthIsles.asp

[11] BM Consulting, Analysis of Carryings and Performance data on Inter-Island Ferry Services 1998 to 2006

In addition, Figure 2.3 (overpage) presents PCUs (Passenger Car equivalent Units) on the route for every month throughout 2006.

Figure 2.3 – Bluemull Sound Monthly PCUs, 2006

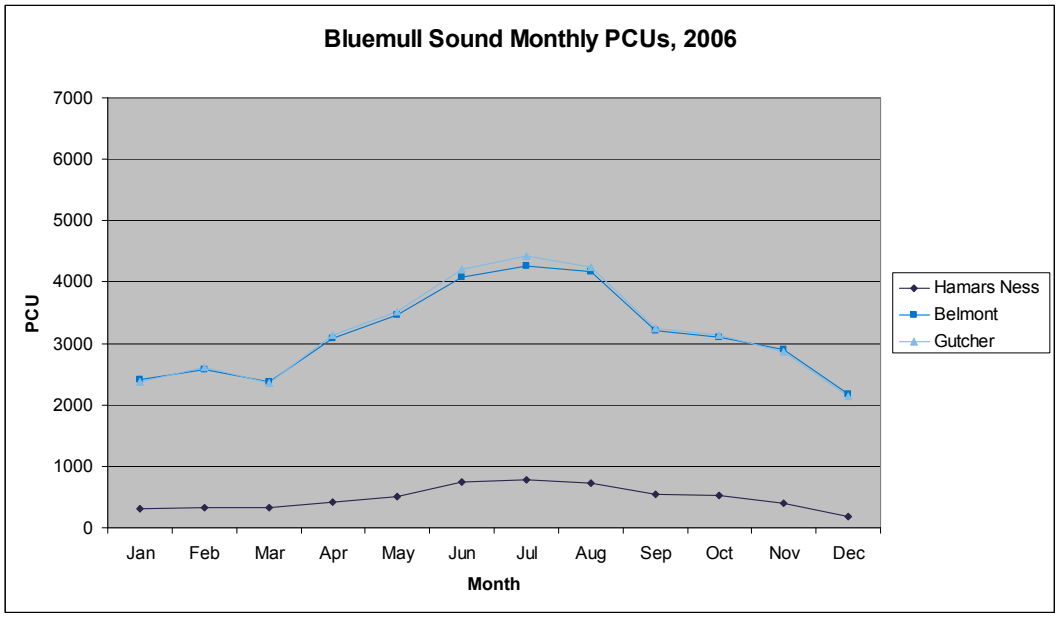
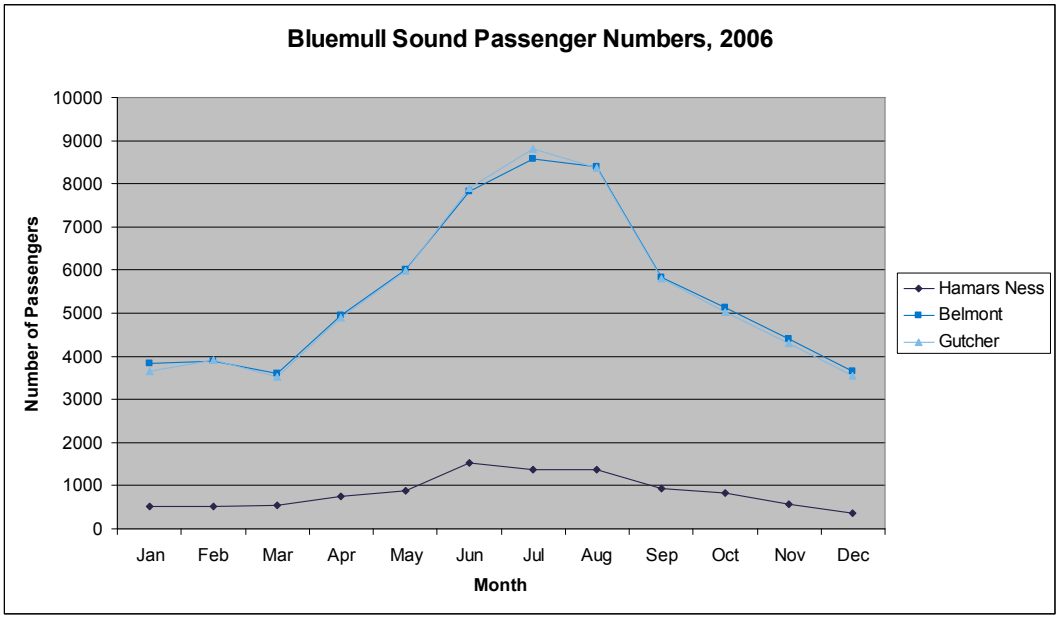


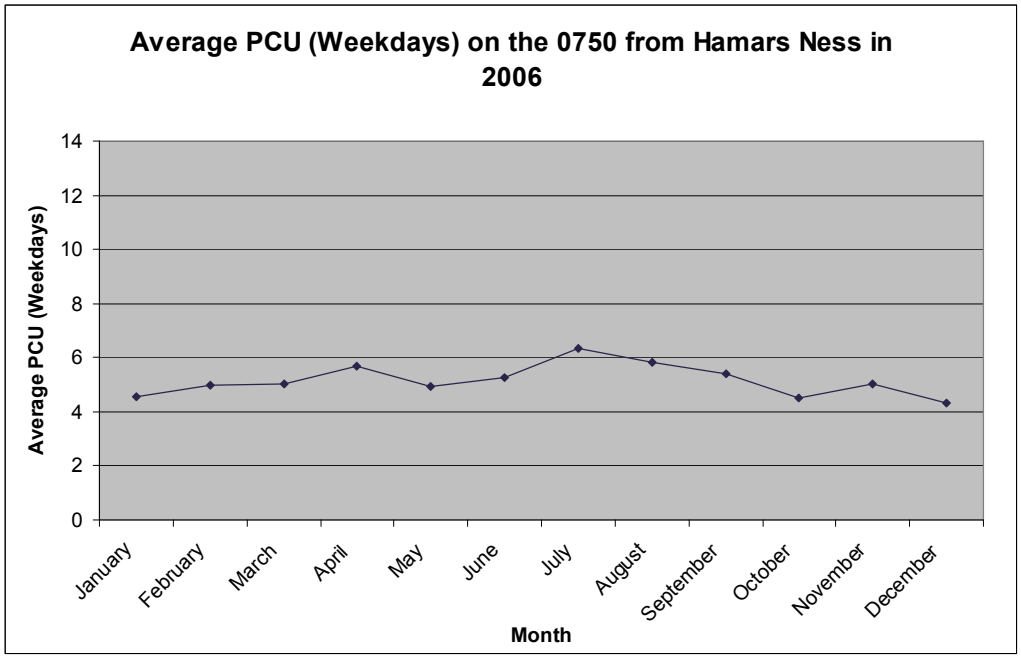
Figure 2.3 indicates that vehicular demand is seasonal, with the number of vehicles on the route peaking in the summer months. Passenger demand is also seasonal, although the summer peak in passenger numbers is more pronounced than that for vehicular demand, as evidenced by Figure 2.4 below.

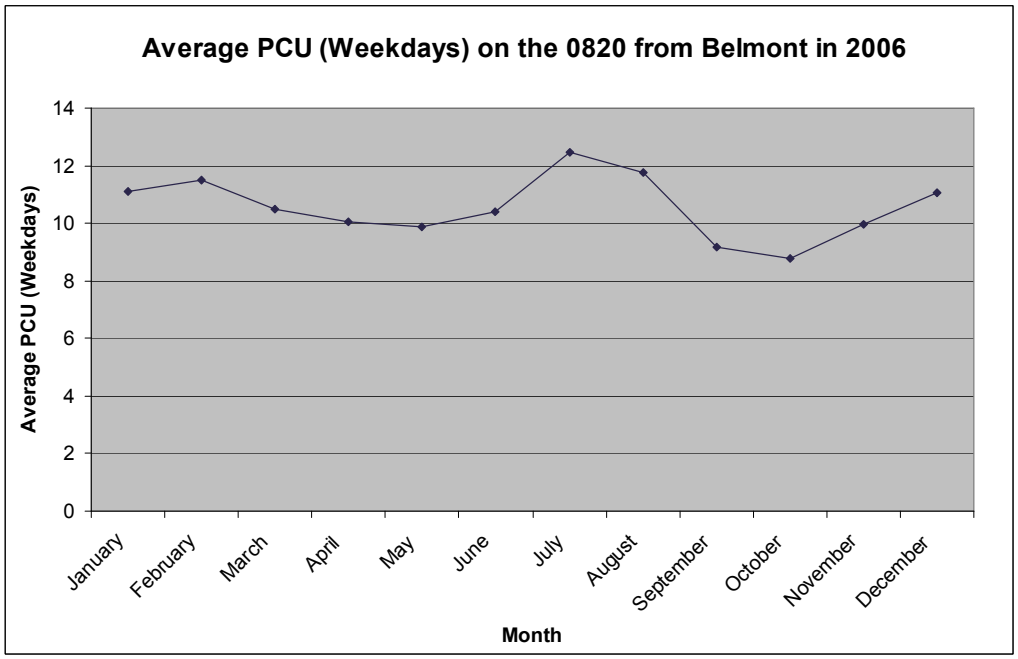
Figure 2.4 – Bluemull Sound Passenger Numbers, 2006



Further analysis has also been undertaken on the key morning peak sailings on the route. These are the 0750 departure from Hamars Ness and the 0820 departure from Belmont. Figure 2.5 presents average PCU on weekdays for each of these two sailings throughout 2006.

Figure 2.5 – Average PCU (Weekdays) on the 0750 (Hamars Ness) and 0820 (Belmont) in 2006





Carrying capacity on the 0820 departure is exacerbated as this is the vessel which departs from Hamars Ness at 0750 via Belmont to Gutcher, and so prior to departure from Unst, it already has a complement of vehicles from Fetlar on board.

In addition, it can be seen that average PCU peaks on both sailings in the month of July. This analysis is consistent with comments raised during consultation which stated that the service can experience capacity constraints at peak times, and in the summer months. *MV Bigga* goes on the Bressay route in June and July to relieve *MV Leirna* during her annual overhaul.[12]

The extent of carrying capacity constraints on the 0820 departure from Belmont is examined further in Figure 2.6.

[12] See Chapter 5 (Section 5.9) for further information

Figure 2.6 – PCU Frequency on the 0820 from Belmont in 2006

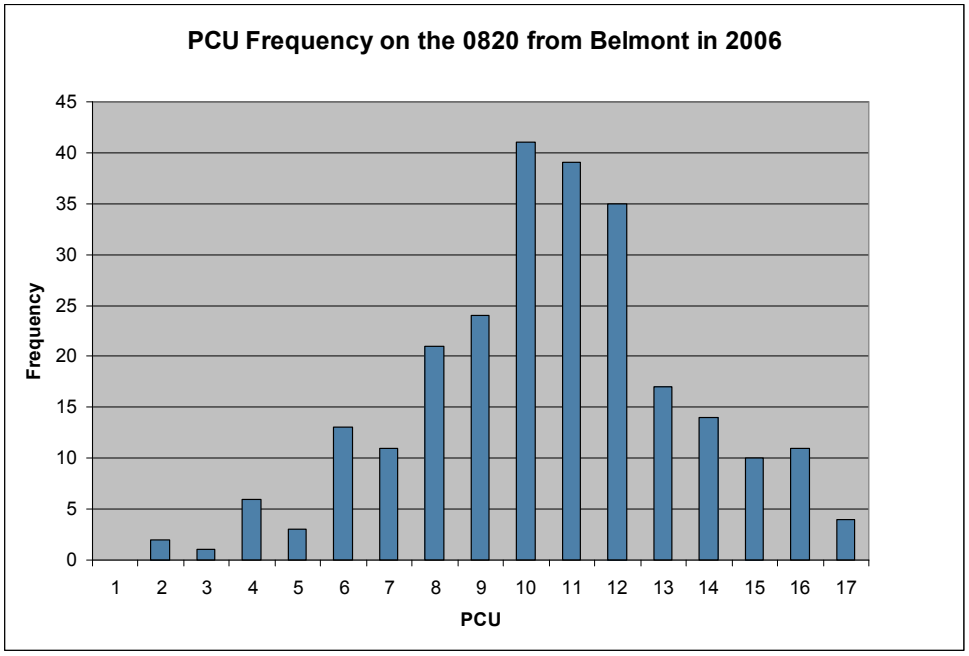
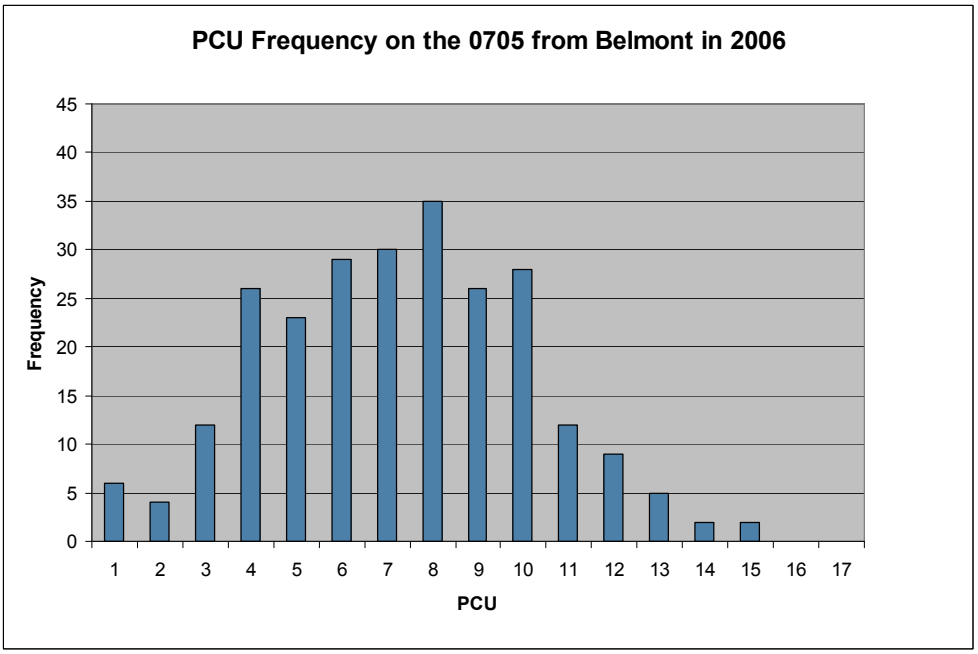


Figure 2.6 highlights that over the course of 2006, a high frequency of sailings departing Belmont at 0820 had a PCU of between 10 and 12. Accordingly, Figure 2.7 presents PCU frequency on the earlier sailing from Belmont at 0705.

Figure 2.7 – PCU Frequency on the 0705 from Belmont in 2006



Analysis of the earlier 0705 departure confirms the 0820 departure as the critical peak sailing, as Figure 2.7 indicates that there is a more evenly distributed PCU frequency on the 0705 sailing.

Furthermore, of the 19,690 sailings made in 2006, 44% (8,654) were on *MV Bigga*, which has a PCU of 16. This means that the remaining 56% of sailings were on either *MV Geira* or *MV Fivla*, which only have PCUs of 11.

Overall, this analysis of carryings on the Bluemull Sound route has shown that there are capacity constraints on peak services such as the 0820 service from Unst-Yell. It has also been shown that vehicular and passenger demand on the route is seasonal, with vehicle and passenger numbers especially peaking in the summer months.

2.6 Socio-Economic Analysis

2.6.1 Population Trends in the North Isles

As highlighted previously, there has been a general trend of depopulation on each of the three North Isles, with the most dramatic decrease in population on Unst due to the closure of RAF Saxa Vord in March 2006.

The population in the North Isles is ageing. While the median age in Scotland is 38 years, the median ages of Unst, Fetlar and Yell are 41, 46 and 45 respectively.[13] The age structure of Unst, Fetlar and Yell at the 2001 census is provided in Table 2.5.

Table 2.5 – North Isles Age Structure

Age Category	Percentage of Population at 2001 Census		
	Unst	Fetlar	Yell
0-9	13.3%	5.8%	11.4%
10-19	9.4%	13.9%	9.9%
20-29	9.3%	2.3%	7.7%
30-44	23.9%	20.9%	20.8%
45-59	23.3%	29.1%	22.2%
60-64	5.8%	3.5%	7.4%
65-74	7.1%	15.1%	11.3%
75-84	5.4%	9.3%	7.1%
85-89	1.8%	0%	1.6%
90 and over	0.6%	0%	0.6%

Source: 2001 Census

Table 2.5 indicates that around 20% of Unst's population is 60 or over, and around 28% of the population of both Fetlar and Yell is over 60. Approximately a fifth of the population of each island is 20 years old or younger.

More recent population figures based on Doctor Registration Areas (2007) indicate that the Unst population is 598 with Yell (including Fetlar, where residents of the island are registered) at 1,023.[14] However, it is recognised that this is not necessarily a true reflection of the population of each of the islands because residents in the North Isles may be registered with another doctor (e.g. Lerwick), and not in Unst or Yell. Therefore, they would not be included in population figures based on Doctor Registration Areas.

2.6.2 Housing

In the North Isles in 2006, there was a total of 807 privately owned dwellings and 145 local authority or housing association dwellings.[15] This makes up 10.1% and 6.6% respectively of the Shetland total. The North Isles comprises 7.9% of Shetland's total population, so it can be concluded that a higher proportion of people in the North Isles live in private dwellings than rented accommodation compared to Shetland as a whole. Table 2.6 below offers a breakdown in housing type for each of the North Isles.

[13] 2001 Census
[14] Shetland in Statistics (2007)
[15] Shetland Islands Council, Local Housing Strategy 2006 Update

Table 2.6 – North Isles dwellings

Island	Private dwellings	Rented dwellings	Total
Unst	349	66	415
Fetlar	40	14	54
Yell	418	65	483

Source: Shetland Islands Council, Local Housing Strategy 2006 Update

House sales in the North Isles are low. Sales in Unst have fluctuated, with 1 or 2 per year in recent years. Sales in Fetlar are very low, with one sale in 2000/2001. Sales in Yell have decreased with none sold in 2005/2006.[16]

An analysis of recent Housing Monitor Completion figures for 2007[17] indicates that there have been no completions in Unst and Fetlar, while there have been two in Yell.

2.6.3 *Education*

"Shetland in Statistics" presents historic school role data for secondary schools across Shetland. There are a number of schools in the North Isles. Table 2.7 below shows the roll at primary and secondary schools in Unst, Fetlar and Yell.

Table 2.7 – North Isles School Rolls

School Roll	1976	1981	1986	1991	1996	2001	2004	2005	2006
Baltasound Junior High (secondary)	58	75	47	33	55	37	37	44	38
Mid Yell Junior High (secondary)	58	48	56	44	55	47	42	52	50
Baltasound Junior High (primary)	100	106	71	85	72	54	60	44	20
Burravoe Primary	31	36	29	32	26	19	14	7	8
Cullivoe Primary	23	24	24	18	15	12	12	15	15
Haroldswick Primary	33	21	30	25	14	-	-	-	-
Fetlar Primary	6	15	9	7	13	4	5	5	4
Mid Yell Junior High (primary)	76	65	53	48	47	49	48	50	47
Uyeasound Primary	27	16	8	9	21	17	10	7	8

Source: Shetland in Statistics (2007)

Table 2.7 shows that the school roll has generally fallen in the last two decades in the North Isles. Mid Yell Junior High School is an exception, where primary and secondary enrolment has remained fairly steady for the past 20 years. Baltasound Primary, Burravoe Primary and Uyeasound Primary have had notable decreases in numbers, and Fetlar Primary has been at an all time low of 4 or 5 pupils since 2001 and is due to close when these pupils reach secondary school level unless new families move to the island.

After primary school education, all Fetlar pupils attend Anderson High School in Lerwick as weekly boarders as the ferry timetable is not suited to pupils returning to Fetlar in the afternoon during the winter. All North Isles pupils undertake their Highers at Anderson High School and board there during the week.

[16] Shetland Islands Council, Local Housing Strategy 2006 Update
[17] Shetland Islands Council, Planning

2.6.4 *Employment and Economic Activity*

Of the 1,763 residents in the North Isles, 1,267 are aged between 16 and 74. Table 2.8 provides further detail of the status of these residents.

Table 2.8 – Analysis of North Isles Population, Aged 16 to 74

Category	Unst	Fetlar	Yell
Part Time Employed	16.4%	15.2%	15.8%
Full Time Employed	44.1%	28.8%	36.9%
Self Employed	9.6%	16.7%	11.5%
Unemployed	3.7%	6.1%	2.8%
Full Time Students	0.6%	0%	0.4%
Retired	12.7%	19.7%	18.7%
Students	1.4%	0%	0.7%
Looking after home/family	5.7%	6.1%	4.8%
Permanently sick/disabled	3.1%	4.6%	5.2%
Other	2.7%	3%	3.2%
Total Population Aged 16-74	100%	100%	100%

Source: 2001 Census

Key industries in Unst and Yell include agriculture, fishing and aquaculture and there a number of salmon farms in the Bluemull Sound area. The Sellafirth Business Park – funded by Highlands and Islands Enterprise (HIE) and the European Regional Development Fund (ERDF) – opened in Yell in 2005, with 4 business units. There are five units at the Hagdale Industrial Estate at Baltasound in Unst.

In 2006, the Ministry of Defence withdrew from RAF Saxa Vord, leading to depopulation and fears over the future of the island. In response, the Unst Response Team was set up to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. There are a number of specialist industries on Unst, including a renewable energy initiative, a brewery and a chocolate factory and the Saxa Vord tourism resort is being developed near Haroldswick. There are a number of tourism opportunities on Unst including the Unst Boat Haven museum, Unst Heritage Centre and other facilities such as a bistro at Haroldswick.

Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists and there is an Interpretative Centre at Houbie. Many also travel to Fetlar for its renowned ornithology. The RSPB have a reserve on the island, where a relatively rare bird species, the red-necked phalarope, can be found.

Table 2.9 provides an overview of employment by industry in the North Isles.

Table 2.9 – Employment by industry for North Isles residents

Area		% of people aged 16-74 in employment residing in Unst, Fetlar and Yell (n=847)	% of people aged 16-74 in employment residing in Scotland (n=2261281)
Percentage of people aged 16 - 74 in employment working in	Agriculture, hunting and forestry	5.4%	2.1%
	Fishing	8.5%	0.3%
	Mining and quarrying	1.8%	1.2%
	Manufacturing	7.6%	13.2%
	Electricity, gas and water supply	1.2%	1.0%
	Construction	7.2%	7.5%
	Wholesale & retail trade, repairs	7.0%	14.4%
	Hotels and restaurants	4.0%	5.7%
	Transport, storage & communications	13.7%	6.7%
	Financial intermediaries	0%	4.6%
	Real estate, renting and business activities	5.9%	11.2%
	Public administration and defence, social security*	12.6%	7.0%
	Education	8.2%	7.3%
	Health and social work	10.6%	12.4%
	Other	6.4%	5.3%

Source: 2001 Census

* It is noted that the RAF base at Saxa Vord on Unst closed down after the 2001 census in March 2006 resulting in a loss of 119 jobs (or 105 full-time equivalent jobs).

It can be seen that residents in the North Isles have a higher than average proportion of the population in industries such as agriculture, fishing and transport, storage and communications, compared with the Scottish average.

2.7 Summary

This Chapter has provided background information on the study area and an overview of the main transport links within the study area. An overview of ferry operations on Bluemull Sound, and throughout the Shetland Islands as a whole, has been presented where it has been shown that the Bluemull Sound service is a major route within Shetland's internal ferry network. An analysis of carryings on the Bluemull Sound route has also been presented and it has been shown that vehicular and passenger demand on the route is seasonal. It has also been shown that there are capacity constraints on peak commuter services such as the 0820 departure from Belmont. Focus has also centred on the vessels and terminals involved in sustaining these key ferry links between Unst, Fetlar and Yell.

This Chapter has also presented an overview of some of the main socio-economic trends in the North Isles, where it has been demonstrated that the populations of Unst, Fetlar and Yell are decreasing, with decline in Unst having been exacerbated by the closure of RAF Saxa Vord in 2006. Employment and economic activity in the North Isles has also been assessed where it has been shown that there are a variety of industries across the islands, with a number of specialist industries on Unst in particular providing new employment opportunities.

The following Chapter sets out the statutory context within which this study is being progressed.

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Statutory Context

3 Statutory Context

3.1 Introduction

The aim of this Chapter is to set out the national and local planning policy context within which this study is set.

ZetTrans' Regional Transport Strategy sets the regional and local policy context for this study.

At the national level, consideration has been taken of the National Transport Strategy published in 2006, as well as the national planning guidelines including Scottish Planning Policy 17: Planning for Transport, and Scottish Planning Policy 15, which focuses more specifically on measures to promote sustainable rural development.

At the local level, focus has centred on how this study fits with policies and principles adopted within the key Shetland specific policy documents such as the Shetland Islands Structure Plan and the Shetland Local Plan. In addition, the Economic Development Plan, 'Shetland 2012', and the Corporate Plan have been reviewed in order to highlight the links between the objectives of the Bluemull Sound project and the wider objectives fostered by Shetland Islands Council and other Shetland bodies.

3.2 National Planning and Policy Framework

The national policy framework for transport is set out in the National Transport Strategy (2006). Relevant Planning advice is contained in SPP 17: Planning for Transport, and PPG15: Planning for Rural Development.

3.2.1 National Transport Strategy (2006)

In December 2006, the Scottish Executive[18] published Scotland's National Transport Strategy (NTS) outlining the long term vision for transport, together with its objectives, priorities and plans. The NTS focuses on three strategic outcomes which will set the context for transport policy making for the next twenty years:

- improve journey times and connections between our cities and towns and our global markets to tackle congestion and provide access to key markets;
- reduce emissions to tackle climate change; and
- improve quality, accessibility and affordability of transport, to give people the choice of public transport and real alternatives to the car.

The following national transport objectives, published in the 2004 White Paper *Scotland's Transport Future*, have been retained in the NTS:

- To promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency;
- To promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network;
- To protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy;
- To improve safety of journeys by reducing accidents and enhancing the personal safety of pedestrians, drivers, passengers and staff; and

[18] Now Scottish Government

- To improve integration by making journey planning and ticketing easier and working to ensure smooth connection between different forms of transport.

Particular initiatives included in the National Transport Strategy relevant to Shetland are:

- a commitment to a national concessionary travel scheme for young people, and continuation of schemes for older and disabled people;
- support for lifeline airports and air services;
- a review of ferry services, with a view to developing a long-term strategy for lifeline services to 2025;
- review of the affordability of public transport in relation to ferry services;
- support for the Air Discount Scheme;
- expanded funding for Demand Responsive Transport services; and
- encouragement for more sustainable travel patterns.

3.2.2 *National Performance Framework*

Since publication of the NTS, the Scottish Government has set out five new Strategic Objectives[19] that apply across all aspects of society, as well as transport. These objectives are that Scotland should be:

- Wealthier and Fairer;
- Healthier;
- Safer and Stronger;
- Smarter; and
- Greener.

Fifteen new National Outcomes[20] have also been set out by the Scottish Government.

As part of the Single Outcome Agreement (SOA) Settlement, the Scottish Government called on all Local Authorities to develop a list of Local Outcomes and Indicators to demonstrate how each Council will contribute to the delivery of the five new Strategic Objectives and fifteen National Outcomes. In April 2008, Shetland Islands Council approved its SOA, setting out its Local Outcomes and containing the list of Local Outcome Indicators which the Council will monitor to measure its progress in delivering these new Strategic Objectives and National Outcomes. Those Local Outcome Indicators that this Study has the potential to influence are as follows:

- LI 1: Increase the availability, accessibility and usage of internal public transport; and
- NI 36: Increase the proportion of journeys to work made by public or active transport.

3.2.3 *Scottish Planning Policy SPP17: Planning for Transport*

The aim of this planning guidance is to develop the integrated land use and transport planning elements proposed in the White Paper policy package.

As with all SPPs, SPP17 is underpinned by the sustainable development principles of economic competitiveness, social justice, environmental quality and design. Working towards this, SPP17 has the following objectives:

- to meet European and UK commitments and targets on greenhouse gas and local air quality;

[19] http://www.scotland.gov.uk/About/purposestratobjs
[20] http://www.scotland.gov.uk/Publications/2007/11/13092240/9

- to maintain and enhance the natural and built environment, through avoiding or mitigating adverse environmental impacts, minimising environmental intrusion and retaining, improving and enhancing areas for biodiversity;
- to maintain and enhance the quality of urban life, particularly the vitality and viability of urban centres;
- to reinforce the rural economy and way of life; and
- to ensure that the impact of development proposals on transport networks does not compromise their safety or efficiency.

In reference to rural, remote and island communities, one of the policy aims of SPP17 is "*to have a prosperous rural economy, with a stable or increasing population where rural communities have reasonable access to good quality services."*

3.2.4 *Scottish Planning Policy SPP 15: Planning for Rural Development*

This guideline states that the clear goal for Scotland's rural areas, including islands, should be to maintain the viability of existing communities and bring new life into places which have seen years of decline.

SPP 15 also recognises that Scotland's rural areas are "unique resources" and future life-style changes and technological advancements could increase the demand for living and working in rural areas. Consequently, it is advised that planning authorities are proactive in releasing rural land for development.

This guideline also supports the main message put forward in 'Rural Scotland – A New Approach', which was published in 2000. The overarching aim of this strategy is "to have a prosperous rural economy, with a stable or increasing population that is more balanced in terms of age structure and where rural communities have reasonable access to good quality services". It is recommended that planning support this aim by allowing development where good infrastructure capacity and accessibility exists, or where it can be provided at reasonable cost or to meet justifiable social and economic costs.

SPP 15 also notes the importance of retaining younger community members in rural areas and suggests that planning should support economic opportunities, particularly those that seek environmental enhancement, such as the aquaculture industry. The important role that planning authorities can play in the development of the tourism industry in rural areas is also stressed within SPP 15.

Finally, SPP 15 highlights the importance of considering local circumstances and treating each development case individually according to its 'appropriateness' in terms of scale, location, design and transport provision.

3.3 Local Planning and Policy Context

This section examines the planning and policy framework for the study area in relation to transport, in the local context. The local context is set out within ZetTrans' Regional Transport Strategy (RTS) and the Shetland Islands Council's Structure and Local Plans. Reference is also made to some of the key policies outlined in 'Shetland 2012', which details the economic development strategy for the islands, and the Corporate Plan. A brief summary of the key objectives arising from these documents is provided below.

3.3.1 *ZetTrans' Regional Transport Strategy*

ZetTrans finalised the RTS for submission to Scottish Ministers in March 2007 and resubmitted the updated RTS in May 2008. The vision of the strategy is:

"To develop an effective, efficient, safe and reliable transport system for Shetland. The transport system will comprise an integrated network of accessible, and affordable internal, inter-island and external links, which will contribute to the development of a safe, healthy, vibrant and inclusive society, a diverse, successful and self-sufficient economy, and enhanced environmental quality."

Further to this overarching vision for Shetland, the RTS sets out objectives under the five headings of: Economy, Safety, Environment, Accessibility and Social Inclusion, and Integration.

These objectives align with and support the five national objectives for transport. Under these five headings, the RTS also outlines a series of sub-objectives in the context of Shetland. In effect, these provide the context within which our planning objectives have been developed.

A revised Transport Strategy for Shetland has recently been produced, and approved by the ZetTrans Board. This revised strategy is currently awaiting Scottish Ministerial approval, but remains committed to delivering a sustainable, long-term solution for the transport links across Bluemull Sound. A number of elements are relevant to this piece of work:

"In developing the Inter-Island strategy there have been some key challenges to consider, such as the limited amount of available capital and the pressures to reduce current levels of spending. There is also the over-riding requirement to secure the availability of existing links in the face of ageing vessels which are potentially becoming non-compliant, and the number of ferry terminals now requiring significant structural upgrading or replacement."

With specific reference to Unst, Fetlar and Yell, the RTS indicates that there is strong support for a fixed link from Unst to Yell. There was a strongly held belief that both Unst and Fetlar would benefit from dedicated ferry services. With regards to Fetlar: *"The development of the breakwater at Hamars Ness was seen as vital in facilitating improvements to the ferry service that the Fetlar community wish to see and could deliver a number of other improvements to the island. It was also stated that a dedicated ferry/crew and breakwater facility in Fetlar, tied in with other development opportunities, would have a significant impact on both Unst and Fetlar's futures by allowing each island to have more influence in addressing their own particular needs."*

The RTS also proposed a detailed investigation of the Bluemull Sound transport links alongside a separate but related study examining the potential for fixed links within Shetland. The principal links to be considered are between Lerwick and Bressay, Shetland Mainland and Yell, Shetland Mainland and Whalsay and also between Yell and Unst.

3.3.2 *Structure Plan*

The Shetland Islands Structure Plan (2000) focuses on shaping a more sustainable Shetland Islands and sets out a series of 'top goals' to help achieve this. With regards to the topic of transport, the Structure Plan states that its top goal is "to deliver an integrated transport system that meets the needs of Shetland people and seeks to minimise impact on the environment."

With more specific reference to ports, harbours, ferry terminals and bridges, the Structure Plan states that these play a vital role in the economy of Shetland. For example, it is stated that ports and harbours offer opportunities for further growth and should be safeguarded against inappropriate development. At the same time, however, the Structure Plan recommends that 'port related development should not be constrained by the inappropriate use of land immediately adjacent to port areas'.

Work to deliver new planning legislation through the Structure Plan is currently being undertaken.

3.3.3 *Local Plan*

According to Shetland's Local Plan, it is important that the character of Shetland's coast is protected from inappropriate development and that development which requires a coastal location is directed in the first instance to areas where development has taken place. Globally it is likely that sea levels will rise significantly over the next hundred years and that storms will become more severe. Around Shetland a sea level rise of 0.8 to 0.9 metres (3 feet) is predicted. This will have consequences for all existing and proposed coastal development. Great care will be taken to ensure development proposals will not increase the likelihood of erosion or tidal inundation. The aim of this policy is to protect the coastline from inappropriate development, balancing the needs of industry and the environment, while recognising the importance of the coast in the day-to-day life and economic prosperity of Shetland.

The Local Plan also notes that Shetland's traditional industries such as fishing, agriculture and knitwear are vulnerable to external influences such as the cost of fuel and transport, climate change, increasing regulation and the rapid development of the global economy. If Shetland's rural communities are to prosper then they must be able to develop, and attract and sustain new economic activities. The challenge lies in ensuring that these new activities do not destroy the environment on which they depend.

Generating and promoting new jobs in existing rural communities embraces the principles of sustainability, reducing the need to travel and maintaining the viability of local services and infrastructure. The policies in this chapter of the Local Plan hope to achieve this, by encouraging industry to locate in existing settlements where sufficient infrastructure is present, potential employees are nearby and the impact on the environment is minimised.

The main goal of the Local Plan in relation to Shetland's transport network is to deliver an integrated transport system that meets the needs of Shetland's people and seeks to minimise impact on the environment.

3.3.4 *Economic Development Strategy*

Shetland 2012 is the latest economic development strategy for the Shetland Islands and aims 'to ensure that Shetland has access to transport and communication links that are of a high quality and support economic and community development'.

The Strategy seeks to deliver this aim through a range of strategies that will attempt to improve the islands communication links with the outside world, including measures to improve external air and ferry links into the islands and through the implementation of high quality electronic communications links and IT, which will increase the connectivity of Shetland Islands and improve its links to the global economy.

Shetland 2012 also adopts a local view and aims 'to foster sufficient economic activity in the remoter parts of Shetland to ensure that rural communities remain and/or become places where people can live and work with good career prospects'.

3.3.5 *Corporate Plan 2008 – 2011*

The vision for Shetland as described in the Corporate Plan is "We will seek to improve the quality of life in Shetland by promoting an economy where traditional industries thrive and innovate alongside newer, emerging industries. We will seek to focus economic development activity and investment on projects that will maximise income through the production of high quality produce aimed at discriminating consumers. For these ambitions to be sustainable, they must be achieved in ways that protect or enhance Shetland's environment and strengthen Shetland's society."

To achieve this vision, the Corporate Plan aims to:

- Link all economic development activity to market needs;
- Encourage enterprise and sustainable economic growth;
- Expand knowledge and build skills;
- Improve access and extend opportunities; and
- Focus on quality.

The Corporate Plan sets out a suite of long-term targets with regard to population, housing and employment opportunities, minimised environmental impacts and with regard to improving the quality of life for residents of Shetland.

The Corporate Plan recognises that because Shetland is geographically remote from its markets, it will be vital to improve Shetland's communication links to help competitiveness. In addition to the improvement of sea and air travel to assist in this aim, the plan also highlights the importance of ensuring that Shetland is connected to the UK by high quality electronic communications.

In addition to external links, the Council also discusses the importance of improving internal transport links within its Corporate Plan. For example, it is stated that Shetland is a scattered community and it is important to provide a sustainable and easy to use system for transporting freight and people. The Corporate Plan sets out an action plan in order to help *"Develop an environment in which the travel needs and priorities of Shetland's communities can be thoroughly researched and understood, enabling effective planning appraisal, prioritisation, integration and delivery of transport services and infrastructure."*

3.4 Summary

This Chapter has outlined the national and local planning policy context for the study area. The key points emerging from the policy review for the study are that national, local and transport policies all emphasise 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. On a national level, there is a policy commitment to lifeline ferry links and to support the development of improved services and maintenance of affordable fares and introduction of new vessels and routes. Additionally, there is an overarching aim to have a prosperous rural economy with a stable or increasing population.

Local level policies recognise that frequent and affordable ferry links to Shetland Mainland are vital for the social and economic well-being of the community.

The following Chapter will provide a review of the consultation undertaken for the study.

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Consultation

4 Consultation

4.1 Introduction

This Chapter provides an overview of the consultation process and summarises the principal findings from consultees including North Isles residents, local businesses and various Shetland-wide agencies including service providers. This process was undertaken using a number of methods including:

- Initial Public Meetings;
- Resident Questionnaires;
- Face-to-face discussions, telephone interviews, and letter/email correspondence with a variety of key North Isles stakeholders;
- Workshops, including discussion sessions with local schools;
- Drop-In Sessions;
- A review of previous consultations; and
- Public Feedback Meetings.

4.2 Bluemull Sound STAG Group

A joint working group involving representatives from ZetTrans, local Councillors, local Community Councillors and ferry crews was set up in December 2007, adopting the title 'The Bluemull Sound STAG Group'. This group agreed to a study *'To identify means of providing sustainable efficient transport links across Bluemull Sound for the long-term and identify the most appropriate actions to carry forward to implementation for the benefit of Shetland as a whole.'* The group is guiding the development of the study, and has helped with option development and sieving, and the weighing up of the advantages and disadvantages of the various options.

4.3 North Isles Residents

Public meetings were held on Unst, Fetlar and Yell on the 21st, 22nd and 24th January 2008 respectively to outline how the community could get involved in the study. These meetings also explained the questionnaire which was distributed to Unst and Fetlar households and various public locations in Yell. A good level of response was received from Unst and Fetlar residents, while the response from Yell residents was lower.

The questionnaire provided North Isles residents with the opportunity to comment on the current arrangements with the Bluemull Sound transport link and to provide views on various options that could improve the link in the future.

Discussion sessions were also held with young people at local schools, and Drop-In Sessions were held in Unst and Yell which provided an additional opportunity for residents to discuss the study.

A brief overview of the main findings from this consultation with North Isles residents is presented below.

In terms of what is liked about the service, residents described it as good and reasonably reliable, particularly when the weather is good. The frequency is generally good. The removal of fares on the Bluemull Sound service was also frequently stated as a reason for liking the ferry service. The crew are seen to be friendly and helpful.

4.3.1 Problems and Concerns

Timetable

- There is a poor weekend / festive period timetable (single vessel);
- There are gaps in the timetable during Fetlar runs / lunch / ferry maintenance;
- Not enough early and late sailings (including for Fetlar);
- Timetables are difficult too understand / in too small print / not user friendly and Voicebank not updated enough/clear;
- Connections with the Yell Sound service / buses are poor;
- In the morning, Fetlar crew has to travel to Cullivoe to board vessel and begin shift. This wastes time that could be used for an earlier first run from Fetlar;
- Capacity constraints at peak times – the 0820 sailing from Belmont is always booked – and in the summer;
- Accessibility problems;
    - Unable to catch the first flight out of Sumburgh in the morning / attend evening events on the Mainland / Yell;
    - Fetlar children cannot attend school at Baltasound, Unst because of transport constraints so instead they attend Anderson High in Lerwick; and
    - Tricky to book when going to Whalsay.

Fares and Ticketing

- The costs of the Yell Sound service are high;
- There is no provision for buying tickets with credit or debit cards;
- The fares set up is expensive for pensioners / senior citizen car drivers;
- The fares set up causes confusion for visitors – unsure when or if they have to a pay a fare; thus the promotion of the service and fares could be improved to attract more visitors to the North Isles; and
- Concerns regarding uncertainty over future fares levels.

Terminals

- Are ageing and need upgraded or replaced;
- Lack of breakwater at Hamars Ness, Fetlar;
- Facilities at terminals need upgraded;
- Smell of septic tank at Hamars Ness;
- In the summer, parking / waiting areas are inadequate at Hamars Ness;
- The information boards are not always kept up to date;
- Signs can be confusing for tourists; and
- The lane markings at the Ulsta, Yell terminal are confusing.

Vessels

- The vessels were said to be ageing and too small;
- Yell Sound ferries are bigger, leading to a bottleneck at Gutcher;
- If the *MV Bigga* is taken off the route for other commitments, capacity is restricted;
- Vessels have poor disabled access and steep stairs to the lounge; and
- The issue of the future impact of ongoing fuel price increases on the cost of the service was raised.

4.3.2 Improvements and Future Options

Fixed Links

There was a high level of response with regards to the potential for a fixed link between Unst and Yell with consultees expressing support for a tunnel – rather than a more weather dependent bridge.

Benefits of a fixed link cited during consultation included:

- Provide freedom of movement and be a long term solution;
- Prevent depopulation;
- Would allow living on Unst and working on the Mainland;
- Boost for businesses and tourism; and
- Fetlar would benefit from a dedicated ferry. A Fetlar-Gutcher ferry route would still be preferred by a majority of Fetlar residents.

However, there was concern over the centralisation of services between Unst and Yell (health care, schools etc), and also the potential impact of the loss of ferry jobs. It was also stated that people like living on an island.

Timetables

- Improve weekend timetable;
- Lengthen service day on Bluemull Sound and keep ferries running in the middle of the day;
- Unst / Yell runs every 20 minutes (shuttle service);
- An additional sailing from Belmont in the morning between the current times of 0705 and 0820;
- Earlier and later ferries to enable attendance at events on the Mainland / Yell;
- Make timetables more user friendly and review connections with the Yell Sound service.

Fares and Ticketing

- Consultees stated that if fares have to be reintroduced, North Isles residents should have passes, and non-residents should pay fares.

Terminals

- Upgrading or replacement of the existing terminals;
- General maintenance and improved facilities;
- Hamars Ness breakwater; and
- Improved information including displaying the time and destination of the next ferry.

Vessels

- Bigger or new ferries with a larger capacity;
- Fetlar based ferry;
- Unst based ferry;
- Water taxi for late night service; and
- Better disabled and child access.

4.4 North Isles Stakeholders

Consultation was also undertaken with a range of specific North Isles based stakeholders. The main findings are summarised below.

The ferry service is used by North Isles businesses in a number of ways including:

- Their employees commuting between the islands;
- Businesses use the ferry to import and export products / supplies;
- To access business / carry out jobs on the Mainland; and
- The Fetlar shop uses the service once a week to travel to Lerwick to pick up stock for the shop and post arrives on the 11am ferry and goes out on the first ferry out.

Businesses generally believed that the service provided is good, fairly reliable and generally frequent. The free fares on Bluemull Sound were frequently cited as positive for businesses. However, problems and concerns that emerged during stakeholder consultation include:

- A Yell based business which has staff commuting from Unst expressed concern, because if fares were reintroduced, they would have to pay fares to get their workers across to Yell;
- Time is lost working around the timetable and waiting for the ferry; and
- Capacity constraints on the early morning sailings from Belmont and the bottleneck at Gutcher caused by the Yell Sound ferries were also highlighted during consultation.

Suggested improvements to the current service included:

- A service to enable people to get to the early morning flights from Sumburgh;
- A ferry arriving in Yell nearer 8am because currently workers commuting from Unst have to wait half an hour before starting work because the ferry gets them there too early;
- Reinstatement of the 1800 sailing (as opposed to the 1850) from Gutcher – Hamars Ness;
- A round the clock service, with sailings first thing in the morning and last thing at night and after hours;
- Another bigger ferry (like the *MV Bigga*);
- Two ferries on a Saturday, including in the summer for tourists; and
- Dedicated ferries (for both Unst and Fetlar).
- Fixed link;

- More flexibility for commuting between the islands;
- Open up the area and make it more accessible and easier to get to the Mainland;
- Encourage the growth of tourism;
- The economic benefits of fixed links in Norway and the Faroe Islands were cited, where new jobs have been created due to their development;
- A fixed link between Unst and Yell would further the case for a dedicated Fetlar ferry service berthed on the island;
- There was also some support for a fixed link on Yell Sound.

4.5 Other Stakeholders

Service providers in Shetland believed the current ferry service to be reasonably good, but can impose constraints on service providers because it is not available out of hours and only runs for a certain number of hours per day. For example, in terms of health care, this can cause difficulties when transporting patients to access care.

There are a number of advantages a fixed link from Unst-Yell would be able to provide to improve service delivery:

- Reduced travel time to Ulsta / and on to the Mainland and between Unst and Yell;
- 24 hour access to the islands for the emergency services – enabling 'out of hours' operations if necessary; and
- A tunnel would enable the movement of manpower and resources between Unst and Yell without any (weather related) problems.

Elected representatives and Community Councils across Shetland were also invited to respond to the study. Of those who responded, the possibilities a fixed link could bring were among the points discussed.

4.6 Initiative at the Edge

Initiative at the Edge (IatE) is a partnership programme involving communities in specific areas in Scotland. Supported by the Scottish Government, IatE gives community groups the power to identify their needs and actions, and develop projects accordingly.[21] The North Isles are currently an IatE area, and are experiencing decline due to depopulation. IatE North Isles is currently undertaking a number of projects in the North Isles including the Trails project, which aims to attract more tourists to the area to explore the isles.

Transport is an important factor in sustaining these communities and IatE has assisted ZetTrans in communicating this study to the community since its inception.

The findings from the initial consultation process (Chapter 4), the draft objectives and long list of options for consideration were made available by ZetTrans to the North Isles community as part of IatE's formal launch at their new premises at the Sellafirth Units in Yell on March 22nd 2008.

4.7 Summary

The consultation process revealed that consultees recognised the wider relationships between transport, and issues of future island vitality and viability, such as housing supply (there is a lack in Yell), provision of key services, population dynamics, opportunities for employment, and opportunities for accessing retail, leisure and social opportunities.

Overall, there was a consensus amongst respondents to the consultation process for a cost effective solution for the long term sustainability of the transport link. In terms of fixed links, it would need to be demonstrated that investment in a fixed link represented value for money, and

[21] Initiative at the Edge, http://www.initiative-at-the-edge.org.uk/home.htm

also that it represented the best use of this money. It was realised that attracting external funding support could be due to competition for funding from elsewhere.

ZetTrans made the full Consultation Report and Executive Summary available on the dedicated Bluemull Sound STAG Study webpage, http://www.shetland.gov.uk/transport/bluemull

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Problems and Opportunities

5 Problems and Opportunities

5.1 Introduction

This Chapter provides a review of the key problems and opportunities related to the study. It should be highlighted that many of the problems and opportunities are inter-related.

5.2 Planning for the Replacement of Existing Vessels

Currently, two of the following three vessels are typically assigned to the route: *MV Bigga, MV Geira* and *MV Fivla. MV Thora* also provides relief on the route.

A profile of the vessels within the Shetland fleet, currently suitable for use on the Bluemull Sound routes is provided in Table 5.1 below. Other vessels in the fleet are either non roll-on roll-off, are specifically designed for the requirements of a particular route, or would require enlarged terminal and linkspans.

Table 5.1 – Current Vessels Suitable for Bluemull Sound routes

Vessel	Vehicle Capacity (PCUs)	Maximum Passenger Capacity	Year of Construction	Current Age
MV Bigga	16	96	1991	17
MV Geira	11	96	1988	20
MV Fivla	11	95	1985	23
MV Thora	6	93	1975	33
MV Hendra	14	95	1982	26

Nominal economic life expectancies for vessels are twenty years. It can be seen that *MV Bigga* and *MV Geira* will shortly reach or pass this milestone, *MV Fivla* and *MV Hendra* have passed this milestone and *MV Thora* is currently significantly beyond this age.

Options exist to secure modest life extensions to vessels in the fleet (at a cost of around £0.4m to £0.5m per vessel). It is noted that such a life extension was recently undertaken for *MV Hendra.* Whilst the re-engineering work was successful, such overhauls cannot in themselves guarantee a more reliable vessel. As an example, there is still the problem of the hull rusting and getting thinner over time, reducing the Scantlings, and this problem was apparent during *MV Hendra's* latest overhaul. This demonstrates the difficulties, risk and potential inefficiencies of securing such refurbishments in the medium to long term.

Present EU Directives require that *MV Bigga*, and other similar aged vessels, be modified to match EU requirements by a certain date (July 2010 for *MV Hendra* and *MV Thora*, a year later for the others). At present there is a UK Merchant Shipping Notice (MSN) which indicates that the UK believes that existing regulations give "equivalent" safety to the EU Directive. However, this interpretation is unlikely to be accepted outwith the UK.

Modifications to *MV Bigga* etc are not practicable so SIC cannot adhere to the EU Directive. Therefore Shetland Islands Council is reliant upon the UK MSN to allow the vessels to continue in service. This MSN is not backed by specific legislation and can, therefore, be withdrawn at any time. Clearly other operators are in a similar situation to us so there will be pressure to either retain the MSN or to give a long lead time before it is withdrawn. However there is no certainty such pleas would be listened to.

If the vessel fails, the relief vessel can be taken on the route but problems would be encountered if this vessel is being used elsewhere. Repair parts are also becoming harder to obtain for the older vessels. Difficulties resulting from vessel failure were evident in April 2008, when *MV Geira* grounded when departing from Gutcher. This meant that *MV Thora* – with its lower carrying capacity – had to be used to restore the two vessel service on Bluemull Sound

with *MV Bigga*. In combination, a strategy of delaying replacement of the vessels increases the risk of higher levels of service unreliability and failure, and also increases the risk of legislative constraints severely restricting current operational patterns.

Accordingly, there is a relatively urgent requirement to plan for the replacement of those vessels that can be used on the route.

5.3 Changing Vessel Legislation

It is highlighted that a like-for-like replacement of existing vessels could not necessarily be achieved under current legislation. This is principally due to new safety features required by recent legislation[22], for example stability requirements, and the requirement for passenger accommodation to be above the vehicle deck. In combination, these factors result in a larger sized vessel just to carry a similar number of vehicles. This has implications for the future renewal and replacement of the ferry terminals.

The vessels which are currently deployed on the Bluemull Sound service do not comply with stricter maritime legislation (MARPOL and SOLAS)[23] and they are non DDA compliant for foot passengers.

5.4 Renewal and Replacement of Gutcher and Belmont Ferry Terminals

The ferry terminals at Gutcher and Belmont were designed for the first generation of ferries and were constructed in the 1970s. They are now at the limits of their operation due to the increased size of vessels utilising them and consequential increased berthing pressures.

A survey conducted in 2005 into Shetland's ferry terminals[24] stated that the Belmont and Gutcher terminals are steadily deteriorating and exhibit failure in several places. It was recommended that they need to be upgraded to cater for the large ferries using them. It was also stated that the structures are being asked to withstand over twice the 1970s design loadings.

The Belmont and Gutcher terminals have, in the recent past, been subject to expensive emergency maintenance costs. In 2006/2007, there was a need to address the deterioration of the foundations and steel sheet piling around the linkspan structure and berthing face of the Belmont terminal. At the same time, there was a requirement to address the progressive deterioration of the Gutcher ferry terminal.

Overall the maintenance during this period – in addition to normal maintenance – incurred costs of approximately of £636,000 for the Belmont terminal and £98,000 for the Gutcher terminal.[25]

In addition, whilst the work at Gutcher was progressing, it was discovered that there was minor grounding on soft areas of the ferry berth. A survey identified the extent of emergency dredging to safeguard the terminal for the immediate future of the ferry service.

The ongoing availability of these terminals and linkspans is thus a critical issue in terms of service reliability.

If the linkspan at the Belmont terminal was to fail, Unst would essentially be cut off as there would be no means of transferring vehicles and freight to and from the island. If the linkspan at the Gutcher terminal was to fail, there could be the option of diverting the service to Toft on Shetland Mainland, meaning lengthy diversions, and significant service disruption and costs.

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[22] Principally EU 2002/25/EC and EU 1998/18/EC (also known as L144) – Safety Rules and Standards for Passenger Ships (EU Class B domestic ferry)

[23] IMO Convention for the Prevention of Pollution from Ships (MARPOL: covers control of oil, sewage, garbage and air pollution), IMO Convention for the Safety of Life at Sea (SOLAS)

[24] SIC Ferry/Transport Piers Survey (2005), R.G. Jamieson BSc(Hons), C.Eng., F.I.C.E. Consulting Engineers/Shetland Islands Council

[25] Shetland Islands Council Ferry Services

5.5 Hamars Ness Ferry Terminal

The Fetlar ferry terminal at Hamars Ness is relatively new, opening in 2004, and consequently will not require renewing or replacing in the near future. Hamars Ness terminal lacks a breakwater which exposes the terminal to swell, posing difficulties when vessels try to berth during periods of adverse weather, and also limiting the viability of overnight berthing in inclement weather. As the vessel cannot be berthed overnight at Fetlar during the winter, this reduces opportunities for the introduction of a more island centred service for Fetlar.

Photo 5.1 – Hamars Ness Ferry Terminal, Fetlar

During an average year, the total number of hours of operational downtime at the Hamars Ness terminal, in the winter, is 35 hours. This consists of 20 hours of downtime from wind, 5 hours of downtime from wind and waves and swell, with 10 hours of downtime solely from waves or swell.[26] It should be noted, however, that not all of the 35 hours of operational downtime would affect ferry crossings, as the ferry service does not run for a full 24 hours.

The development of a breakwater and pier/berthing facility, with slipway, on Fetlar has been an aspiration of the Fetlar community for over 60 years. It is the only inhabited isle in Shetland without ready access to the sea. The development of a breakwater and small boat berthing facility was originally incorporated in the new terminal construction at Hamars Ness. However, for a number of reasons, it was unable to proceed at that time.

Consultation has revealed that, for the community of Fetlar, the ability to berth the ferry in Fetlar overnight throughout the year and the opportunities brought to them by having facilities to access the sea, remain the highest priority. It is the absence of these facilities that is believed to be contributing to a lack of economic opportunities and depopulation of the island.

Currently, in the morning, the Fetlar ferry crew has to catch the ferry across to Yell and drive to the pier at Cullivoe where the Fetlar vessel is berthed overnight. Once the crew reach Cullivoe this vessel then has to sail to either Belmont or Gutcher before it can then begin service. This process wastes time that could be used for an earlier first run from Fetlar.

[26] Shetland Islands Council (2005), Hamars Ness Wave Protection Options Report

ZetTrans have recently undertaken a study[27] examining the socio-economic benefits that a breakwater and small berth facility could provide to the island. This study identified that the provision of a breakwater could allow overnight berthing of the ferry all year round, subsequent service pattern enhancements for both Fetlar and Unst and greater reliability in poor weather conditions. In doing so, Fetlar residents would benefit from improved levels of accessibility to services off the island, with greater employment opportunities opened up through improved commuting opportunities. The provision of a breakwater at Fetlar would also benefit Unst by increasing peak period vehicle capacity. Service pattern enhancements on Fetlar could include the provision of an earlier morning sailing from the island, which in turn could help to reduce capacity constraints on the 0750 service from Hamars Ness – Gutcher (which travels via the 0820 departure from Belmont).

By basing the ferry in Fetlar all year round, the timetable could be arranged so that commuting from Fetlar to Yell and Unst is more viable. This assists not only the economy of Fetlar but also the North Isles as a whole. For example, one business on Yell is known to be struggling to recruit staff; opening up the employee base for Yell and the opportunities for employment for people based on Fetlar. There are many other synergies between the three North Isles that would benefit from improved accessibility between the isles. Basing the ferry on Fetlar all year round would also provide the ferry crew with a greater level of confidence regarding their job security. It is considered that these factors could all assist in halting the currently declining population.

The provision of a small berthing facility has also been a long term aspiration of the community and currently, Fetlar is the only inhabited island in Shetland that is not served by an adequate berthing facility for boats other than the ferry. It is felt by the residents that this has already had a detrimental effect on the economy and population of the island by preventing economic and leisure opportunities to be exploited. It is considered that the development of a small berthing facility could support opportunities for a fishing vessel, angling tours and other sea based tourist activities and that it would allow some of the businesses, such as the aquaculture to grow.

While it is recognised that transport infrastructure alone is unable to repopulate an island, evidence collected from the study has suggested that constructing a breakwater and small-berth facility could provide a catalyst to further social and economic development on the island.

5.6 Existing Timetable

There is variation in the timetable across the week, with five different variations across the seven days. This makes it difficult to use the service for island residents and visitors alike. This was reflected in the results of the consultation where the timetable was said to be “hard to understand” and “daunting” for those who do not know it.

There is also an uneven pattern of ferry departures, and significant gaps. For example:

1. At lunchtime. For example, there are no departures from Belmont between 1205 and 1345 and this causes a subsequent surge in demand after the break.

2. When the single vessel operates and particularly when this vessel serves Fetlar, there is a break in the service between Unst and Yell. For example, on Monday mornings during vessel maintenance, there is no departure from Unst to Yell between 0945 and 1135 with the 1020 from Belmont going to Hamars Ness. Similarly, there is no service from Gutcher to Belmont on a Sunday between 1030 and 1220 because the single vessel departs Gutcher for Hamars Ness at 1100.

The effect of the single vessel operating on the Sound causes accessibility problems and capacity constraints during the summer tourist season, particularly at weekends.

3. The second vessel does not run during the AM peak and consequently this causes capacity constraints on busy sailings such as the 0820 from Belmont to Gutcher.

These timetable gaps result in extended waiting times and restrict freedom of movement.

[27] SIC CPRT Report, Breakwater and Small Berthing Facility at Hamars Ness, Fetlar (Jan 2008)

5.7 Other Operational Issues

Other problems were raised.

- The timetable is difficult to understand.

The layout of the current timetable is not user friendly. The pupils at Fetlar Primary School have produced a version of the ferry timetable which is easier to understand and available to purchase at a small price at locations across the North Isles.

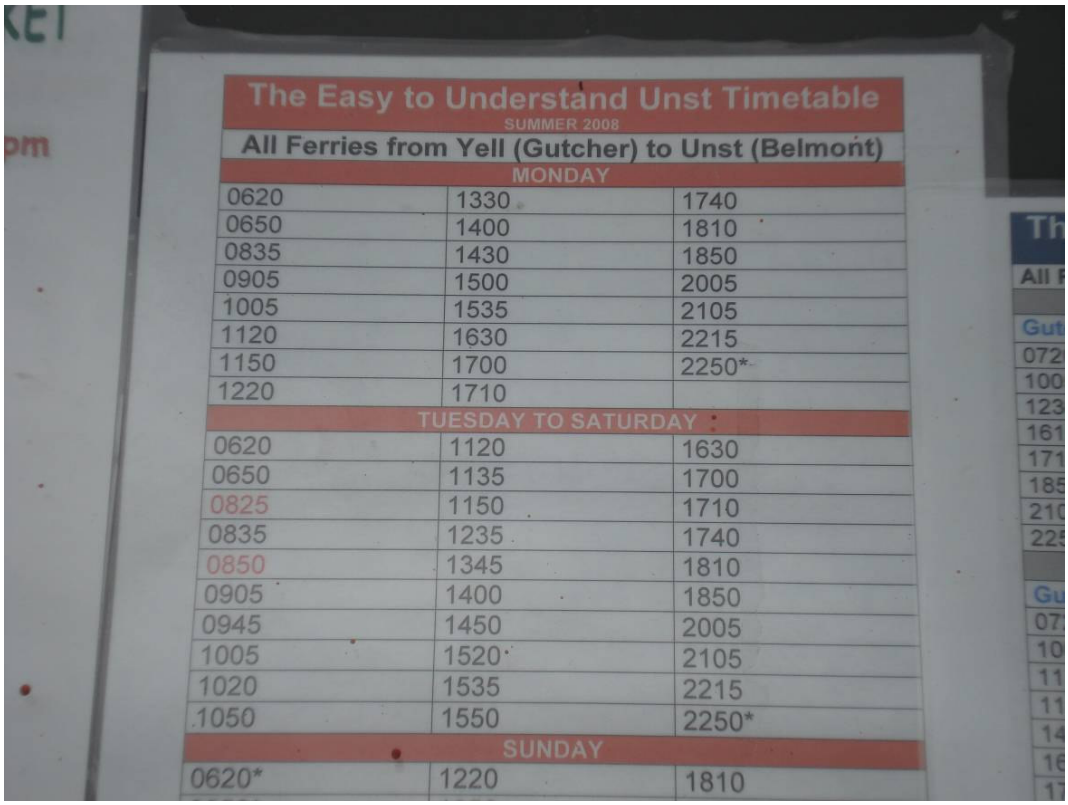

Photo 5.2 – The Easy to Understand Timetable

- The Voicebank service is not kept up to date.

Updating of the Voicebank can be difficult because of IT related problems.

- The electronic variable message signs at the terminals are not updated frequently enough.

This is due to difficulties in transmitting SMS messages due to problems with receiving mobile phone reception in some areas.

- Connections with the Yell Sound ferry service.

It was highlighted during consultation that timing can be tight when travelling through Yell to catch the ferry to either Toft or Belmont and can cause drivers to travel at high speeds. There are occasions where it can be difficult to catch the connecting ferry as outlined by examples in Tables 5.2 and 5.3 below although a wait of around five minutes to catch the next ferry is typical. Waiting times can extend to around ten or fifteen minutes. However, by contrast, some connections leave a twenty minute wait, on Sundays, for example.

Table 5.2 – Ulsta Terminal Connections

Belmont	**16.15**	**16.45**	**17.55**
Gutcher	16.25	16.55	18.05
Mid Yell	16.40	17.10	18.20
Arrive Ulsta:	16.50	17.20	18.30
Ulsta	**16.55**	**17.25**	**18.30**

Table 5.3 – Gutcher Terminal Connections

Toft	**7.45**	**16.55**	**17.20**
Ulsta	8.05	17.15	17.40
Mid Yell	8.15	17.25	17.50
Arrive Gutcher:	8.30	17.40	18.05
Gutcher	**8.35**	**17.40**	**18.10**

Delays to any leg of these journeys could make these connections difficult to make.

Conversely, following the 2105 sailing from Toft-Ulsta, there is not another departure to Unst from Yell until 2215.

5.8 Managing Vehicle Demand

The key issue relates to the requirement to address high demand for vehicle deck space on commuter sailings, such as the 0750 morning service from Hamars Ness via Belmont to Gutcher. There is also a high level of demand for vehicle deck space at weekends during the height of the tourist season in the summer.

The vessels operating on Yell Sound – *MV Daggri* and *MV Dagalien* – are large and have higher capacities than the Bluemull Sound vessels, carrying up to 31 cars and 4 trucks. A bottleneck at Gutcher results as the Bluemull Sound vessels are too small to accommodate the higher number of vehicles transferred from the Yell Sound ferries.

On the Bluemull Sound service, vehicle demand has shown an increase in the 5 years to 2004. Volumes fell back in 2005 with Fetlar traffic accounting for the bulk of this reduction. This was due to the additional traffic associated with construction of the ferry terminal at Hamars Ness, replacing the old terminal at Oddsta. Overall vehicle deck utilisation peaks in July with average monthly utilisation typically between 25 and 50%. There is evidence of severe vehicle constraints at peak times.

Vehicle and passenger demand is seasonal, with volumes conveyed in June, July and August more than double that of volumes in January.

A further pressure for vehicle deck space has arisen due to historical growth in the average vehicle mass (due for example to additional features to meet safety requirements), which, over time, tends to effectively reduce the average vehicle carrying capacity of a vessel.

5.9 Wider Network Issues

There are a number of wider network issues which affect the Bluemull Sound service.

In the past few years, there has been a requirement to take *MV Bigga* off the route to relieve the *MV Leirna* on the Bressay service whilst it is docked for overhaul. This effectively reduces capacity on Bluemull during the peak summer period in June and July.

With respect to ferries, greater operational reliability can be achieved through greater standardisation within the fleet and with terminals. This can allow a flexible deployment of vessels to cope during periods of planned vessel and linkspan maintenance, and facilitate efficient relief services during periods of unscheduled vessel or linkspan maintenance.

Accordingly, it is important to consider options which continue to facilitate this wider network compatibility, as far as is possible.

5.10 Accessibility

Consultation revealed that the service timetable poses problems for accessibility. The following section provides some examples of the types of issues and problems experienced by residents in the North Isles in trying to access employment, health care and education, as well as the types of issues faced by businesses and tourists in trying to access the North Isles.

Many of the accessibility issues listed below cause issues for residents of Fetlar and Unst, and are important to capture. However, it must also be recognised that the physical constraints to movement imposed by living on an island cannot always be readily or economically be overcome. There is therefore a requirement to make best use of the resources that can be made available, in order to meet the needs of each island's community.

5.10.1 *Access to employment and off island opportunities*

With regards to Fetlar, jobs off the island are difficult to access because the first ferry departure of the day from Hamars Ness is not until 0750, and does not arrive at Gutcher until 0830 after going via the 0820 from Belmont.

This means the earliest start for employment in Mid Yell would be around 08.45 and following the crossing from Ulsta-Toft, not until after 09.30 for jobs on Shetland Mainland e.g. at Sullom Voe or Brae. The summer timetable, which allows arrival in Gutcher at 0820, provides a degree of improvement, but only in conditions of clement weather.

The existing timetable prevents Unst and Fetlar residents from catching the first flight from Sumburgh in the morning because the first sailing from Belmont is not until 0635, with the first flight departing Sumburgh for Edinburgh at 0730. It is also difficult to attend evening events in Lerwick and elsewhere in Shetland Mainland, because the last ferry departure from Gutcher to Belmont is at 2250 (Monday-Saturday) and a booking is required for this service which means a degree of forward planning is required.

5.10.2 *Access to health care*

Accessing health care in Yell can entail a lengthy trip due to the current timetable. If Fetlar residents have a routine appointment in Yell during the week for example, they will typically catch the 1050 service to Gutcher (the next earliest departure is at 0750). They cannot then get back to Fetlar until the 1415 crossing. Therefore it could be around 1500 before the resident returns to their home – a trip of 4.5 hours, door to door. However, health care can be accessed in Fetlar when the doctor does a fortnightly surgery on the island.

Consultation revealed that a number of Fetlar residents also have friends and relatives in the care centre in Yell as in-home care cannot be provided on the island as easily as elsewhere in Shetland. Fetlar residents visiting these friends and relatives in Yell at weekends cannot get back to Fetlar until the afternoon if they have travelled in the morning. As a result, they tend to go across to Yell on a later sailing instead which incurs less waiting time to travel back to Fetlar in the evening.

Unst residents benefit from having a Health Care centre in Baltasound. However, with two ferry crossings, face issues with accessing health care in Lerwick, or on the Scottish Mainland.

5.10.3 *Access to education*

In terms of access to education, Fetlar secondary pupils do not attend school in either of the nearest schools (Baltasound or Mid Yell) due to the constraints imposed by the winter ferry timetable, which is in effect between October and April. Attending the nearest schools would entail a ferry departure at 0750 and a return to Fetlar at 16.40. They therefore have to go to Anderson High School in Lerwick and board for the week.

There is also difficulty with inbound journeys for these pupils returning to the island on Friday evenings. Currently, the pupils are transported back to Gutcher from Lerwick. They then have a long wait until the next sailing for Fetlar, departing via Belmont at 1905, arriving at Fetlar at 1930.

5.10.4 *Access to the North Isles*

Consultation suggested that there are problems in bringing in skilled tradesmen to carry out small jobs in Fetlar because of the length of time that is spent waiting for ferry connections. For example, if a contractor was to travel to Fetlar on a Monday on the 1230 from Gutcher, there is no return ferry from Fetlar until 1645. Therefore a quick job taking an hour would result in a long wait before the next ferry. As a result, it is either particularly difficult, or costly, for Fetlar residents to obtain services from off the island.

Finally, in terms of tourism, opportunities for visitors to make a day trip to Fetlar can be limited because of the gaps between departures from Hamars Ness. Despite accessibility constraints,

a visitor survey undertaken by Fetlar Interpretative Centre and HIE between July and September 2007 indicated that the number of visitors to the island in the 2007 summer season was 1,029 – an increase from 1,006 in 2006.[28] It is particularly difficult to get to and from Fetlar on Sundays with the current timetable. For example, the first direct crossing from Unst to Fetlar on Sunday is not until 1905. Therefore a family staying in Unst (where the majority of tourist accommodation in the North Isles is located) wishing to visit Fetlar would have to first cross to Yell then take, for example, the 1100 to Hamars Ness. There is then just one departure from Fetlar for the rest of the day that goes directly to Unst, at 1600. This reduces flexibility and imposes restrictions on a day trip to Fetlar from Unst.

This would pose similar problems for families visiting Fetlar from elsewhere in Shetland, such as Lerwick. With a lack of accommodation on Fetlar, a day trip from elsewhere in Shetland on a Sunday is made difficult by this restrictive window for getting to and from the island on the same day.

5.11 Affordability

A recurring theme for the supply of Shetland's inter-island links is the relatively high cost of providing them, as well as the future prospect of revised fares structures.

5.11.1 Impact of Fuel Prices

As has been stated, a particular issue relates to the high operational and maintenance costs that are incurred in sustaining the current service[29]. Whilst the increasing cost of petrol and diesel has recently hit Shetland's residents, it has also had a significant impact on the cost of running the ferry service. Table 5.4 provides an indication of the highest unit cost of fuel for vessels operating on Shetland's inter-island ferry network in selected monthly periods between April 2006 and April 2008.

Table 5.4 – Unit Costs of Fuel for Shetland's Ferries, 2006 – 2008

Month	Highest Unit Cost of Fuel in Month (£ per litre)
April 2006	0.3343
October 2006	0.2819
April 2007	0.2843
October 2007	0.3332
April 2008	0.4951

Source: Shetland Islands Council Ferry Services

Table 5.4 indicates that the highest unit cost of fuel in the month in which the snapshot was taken has risen since October 2006. This general trend of increasing cost is reflected further in unit costs to date for the period 2008-2009, with the unit cost reaching 0.5311 pounds per litre in May 2008.

Affordability is thus an ongoing issue for Shetland Islands Council with regards to the provision of the inter-island ferry service.

5.11.2 Fares

The affordability of the service to ferry users is also an important issue and was highlighted during consultation. Although fares have been suspended on the Bluemull Sound service since September 2005, householder consultation revealed concern over the possible re-introduction of fares. It was also felt that the costs of the Yell Sound service are high and this is an important issue given the inter-relationship between the two ferry services.

ZetTrans have undertaken a study to evaluate the social and economic impacts of the removal of fares on the Bluemull Sound ferry services[30]. This study was prompted by the proposed re-

[28] Fetlar Visitor Survey 2007 (Fetlar Interpretative Centre/HIE)
[29] See Section 5.4
[30] Reference Economics (Dec 2007), *Evaluation of the Social and Economic Impact of the Removal of Fares on the Bluemull Sound Ferry Service,* prepared for Shetland Islands Council

introduction of fares onto the route in April 2008. The key outcomes from this work are presented below:

The removal of ferry fares has not impacted equally on all residents and businesses of Unst and Fetlar. For many residents the benefits have been through cost savings rather than through generating new off-island trips. However, the research has shown that the fare changes have led to:

- *Increased trip-making and thus improved access to services and opportunities for employment and social activities.*
- *Improved business performance.*
- *Greater household income.*
- *Improved quality of life and greater participation in wider Shetland life.*
- *Improved confidence in the future prospects of Unst and Fetlar.*
- *Potentially, a slower rate of population decline than would otherwise have occurred.*

The fares removal has not led to radical changes in the economy or population of Unst and Fetlar. In part, this reflects the barriers to economic and social participation that stem from the financial costs, distance, time and travel issues involved in living on what are off-islands within an island group (i.e. Shetland); and ones with low populations and limited internal markets. Reducing the financial costs of accessing other places, while clearly welcomed, acts to remove/reduce only one of the barriers to wider participation.

Overall, there is a need for a cost effective solution for the long term sustainability of the transport link, balancing both the requirement for affordable travel, but also ensuring that the service can be financially sustained.

5.12 Sustaining the Socio-Economic Prospects of the North Isles

Research has indicated the key role that frequent ferry services can have on the economic and social prospects for island communities.[31] Economically, it is known that frequent and accessible ferry services can bring benefits to local producers and retailers, and local hauliers and transport providers. A good ferry service is also a prerequisite for any growth in tourism activity. However, there are wider social benefits. This can include community confidence, increased levels of social interaction between groups on and off the island, improved access to services including health and training, as well as changes in perception of inclusion. This is particularly significant for Fetlar.

With concern over the future vitality and viability of Unst, Fetlar and Yell due to the continuing depopulation of the islands, and ageing profile or residents, it should be highlighted that transport could help to release wider positive impacts for the North Isles, for example in terms of economic development and social integration, by improving access to jobs on and off the islands.

5.13 Opportunities

Based on analysis of the problems above, the following opportunities have emerged:

- Development of a breakwater at Hamars Ness;

The development of a breakwater at Hamars Ness would facilitate the delivery of socio-economic benefits for Fetlar and Fetlar residents would benefit from improved accessibility to services off the island. It could help to address current timetabling and capacity constraints on the whole route.

- Service delivery efficiency;

Service delivery could be made more effective by rationalising services such as health centres, the provision of education facilities, etc. For example, a teacher could teach a class in Yell in the morning and Unst in the afternoon.

- Greater coherence of service for visitors;

[31] For example, Grangeston Economics, *Evaluation of the Social and Environmental Impact of the Sound of Harris Ferry Service,* 2003, prepared for Highlands and Islands Enterprise and Western Isles Enterprise

This would boost tourism by making the service more accessible and easier to use and understand.

- The promotion of wider opportunities for Unst, Fetlar and Yell.

Promoting wider opportunities for each of the North Isles would enhance their viability and attractiveness as places to live, work in and visit.

5.14 Summary

In summary, this Chapter has addressed the range of problems and opportunities that have been uncovered in this study.

This has included consideration of the problems related to the Bluemull Sound ferry service timetable, capacity problems and issues with the vessels and terminals.

It has been shown that there is a relatively urgent requirement to plan for the replacement of those vessels which can be used on the Bluemull route, as these are approaching or have exceeded their life expectancies. In addition, a like-for-like replacement of existing vessels could necessarily be achieved under current EU legislation. These issues increase the risk of service unreliability and failure.

Service reliability is also at risk due to the deteriorating nature of the ferry terminals and linkspans at Gutcher and Belmont. Failure of this infrastructure would result in significant disruption to the ferry service, and Unst would essentially be cut off from the other islands.

The provision of a breakwater and small berth facility on Fetlar could allow overnight berthing of the ferry overnight all year round, service pattern enhancements and greater reliability in poor weather. Wider social and economic benefits for Fetlar could also be promoted.

It has also been shown that variations in the ferry timetable make the service difficult to use and gaps in the timetable result in extended waiting times and reduced freedom of movement. This poses problems for accessibility.

It has also been shown that there is concern over the future vitality and viability of the North Isles.

Following an analysis of the problems, a number of opportunities have emerged. The development of a breakwater at Fetlar could release a number of socio-economic benefits and improve accessibility. Service delivery could be made more effective by rationalising services. By making the service more accessible and easier to use, there would be a greater coherence of service for visitors, in turn boosting tourism.

The promotion of wider opportunities for each of the North Isles would enhance their viability.

The following Chapter presents the planning objectives that have been developed for the project.

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Planning Objectives, Constraints and Uncertainties

6 Planning Objectives, Constraints and Uncertainties

6.1 Introduction

This chapter presents the planning objectives that have been developed for the project, based upon the previous reviews of policy, problems, and the consultation process.

6.2 Planning Objectives

The following ten planning objectives for the Bluemull Sound study have been developed below. These are complimented by the wider objectives of the Regional Transport Strategy and those RTS objectives that are relevant to the Bluemull Sound study are listed in Appendix A. The planning objectives below are not listed in any order of priority.

6.2.1

Objective 1
Provide a transport link which is economically efficient

Specific – we want a transport link which maximises the direct and indirect benefits to society, for a given sum of investment.

Measurable – this objective can be measured in terms of a cost-benefit analysis.

Time Based – Government advice requires cost benefit appraisals to be undertaken over a 60 year period.

6.2.2

Objective 2
Provide a transport link which is operationally reliable on a day to day basis

Specific – this objective addresses the requirement for the transport link to be as dependable as possible in the future, and as far as possible, free from disruptions to operation.

Measurable – current levels of service reliability (% of timetabled sailings operated) will be used as a benchmark for comparison of options.

Time Based – the baseline will be the three years prior to 2007. The aim will be for this baseline to be maintained, or improved, over the next 60 years.

6.2.3

Objective 3
Provide a transport link which is operationally sustainable in the long term

Specific – the preferred option must be able to be operated throughout the appraisal period, taking into account construction, scheduled and emergency maintenance, and manning of the transport link.

Measurable – the different elements of this objective cannot necessarily be measured.

Time Based – the principal focus will be on ensuring sustainable operations over the next 60 years.

6.2.4

Objective 4
Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland.

Specific – it is important that the transport link continues to provide linkages with the wider transport network – road network, walking and cycling opportunities, the bus network, appropriate linkage with the Yell Sound inter-island ferry service, and external links from Holmsgarth ferry terminal and Sumburgh Airport.

Measurable – it is possible to assess connectivity with existing public transport services, the level of integration with the Yell Sound inter-island ferry service, and also the opportunities for connections with external transport links.

Time Based – as public transport times and routes are liable to change, it is only possible to consider existing services, and other committed or known service changes, or recommend changes to public transport.

6.2.5 *Objective 5*
Provide a transport link which has a regular and easily understandable pattern of transport opportunities

Specific – this objective relates to the existing problem of the timetable varying across different days of the week, and also during different times of the day.

Measurable – this objective will be achieved if the pattern of transport opportunities is (at a minimum) consistent across the working week, with a regular and broadly predictable pattern of departures during each day.

Time based – it is important that the proposal would allow for such a pattern of timetable opportunities from the commencement of operations.

6.2.6 *Objective 6*
Provide a transport link which is considered to be affordable to users

Specific – this objective seeks to ensure that the cost to users of the transport link is considered to be affordable. Affordability is complex to define and measure – however, any proposals can be benchmarked against a) the existing situation b) other routes in Shetland c) other routes in Scotland.

Measurable – the fares to be levied (if changes are proposed) can be measured for passengers, car drivers and freight.

Time based – it is important that the cost of the transport link to users remains affordable throughout the whole of the appraisal period.

6.2.7 *Objective 7*
Provide a transport link which is considered to be affordable for funders and operators

Specific – it is necessary to develop an option which is considered to be affordable for funders relative to capital funding, and also for operators relative to revenue funding.

Measurable – the amount of capital funding required can be compared relative to existing published budgets. The amount of revenue funding can be assessed relative to current levels of expenditure.

Time Based – the affordability has to be considered for the whole of the appraisal period.

6.2.8 *Objective 8*
Provide a transport link which provides sufficient capacity for passengers and vehicles

Specific – it is necessary to ensure that the proposed transport link can provide sufficient capacity for vehicles and passengers across the appraisal period. The critical periods are during specific peak times. Account will be taken of historic trends, forecast changes in population, and issues such as the historic growth in size of vehicles.

Measurable – it is possible to measure how well a particular option can cater for current and forecast demands.

Time Based – forecasts will be prepared for a thirty year period.

6.2.9 *Objective 9*

Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell

Specific – the preferred option needs to facilitate key accessibility requirements which meet the needs of the islands of Unst, Yell and Fetlar. This includes opportunities to work on other islands / Shetland Mainland and opportunities to provide day trip opportunities on and off the islands (for example, access to health, shopping, leisure, visiting local care homes and tourist trips).

Measurable – it is possible to measure the number of trip opportunities available for residents of each island.

Time Based - it is hoped that the proposal would allow for such a pattern of opportunities from the commencement of operations.

6.2.10 *Objective 10*

Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.

Specific – transport is a necessary, but not sufficient, requirement for sustaining vibrant rural communities. The preferred option should not introduce additional barriers to supporting each community, and would ideally remove barriers. The preferred option should also be compatible with wider regeneration activities in the North Isles.

Measurable – a proxy would be the levels of transport movements taking place for each option over the appraisal period. This may also be accounted by an economic activity and locational impact assessment (EALI).

Time Based – this needs to consider short term impacts (5 years), as well as longer term impacts (60 years).

6.3 Constraints

STAG defines “Constraints” as the bounds in which the study is being undertaken. STAG notes (paragraph 3.6.6) that “no proposal should be developed that is dependent upon a change to the constraints upon a study, unless the promoting organisation is in a position to change those constraints”.

This study is being promoted by Zetland Transport Partnership (ZetTrans). Together with Shetland Islands Council, the local ferry operator, they have the power to promote changes to the ferry network, and introduce terminal and vessel improvements, although these are subject to legislative constraints imposed by the MCA.

6.3.1 *Funding*

Funding of capital and revenue costs could be a key constraint. Capital costs relate to those costs required to improve infrastructure and in the case of Bluemull Sound, could include replacement of ferries, terminals or the construction of fixed link infrastructure. Revenue costs, on the other hand, refer to the ongoing operational costs required to maintain the Bluemull Sound link such as, for example, crewing costs.

Funding available to promote change could primarily be sourced from the following available bodies:

- Shetland Islands Council
- Scottish Government
- Other European sources

6.3.2 *Physical Environment*

The physical environment could also act as a constraint that will influence the appraisal process of the various options. Bluemull Sound can be subject to severe weather conditions that disrupt the ferry timetable. Other key physical constraints relate to depths of sea-water, and include wave and swell characteristics.

6.3.3 *Wider Inter-Island Ferry Network*

Another constraint imposed on this study is the relationship Bluemull Sound has with Yell Sound and the wider inter-island ferry network. This is because any options developed for Bluemull need to ensure it maintains the current service compatibility with Yell Sound, in particular in terms of timetabling.

6.3.4 *Operational and Legislative Requirements*

Finally, it is noted that each particular potential transport link option will be constrained by its particular operational requirements, and legislative requirements. For example, it is necessary that ferries operate within the legislative provisions of the MCA, the requirements of vessel maintenance and servicing, and safe operating procedures. Potential fixed link options are subject to legislative restrictions, as well as potential operational practices to facilitate maintenance and safe operation.

6.4 Uncertainties

The greatest uncertainties affecting the study relate to the future vitality and viability of Unst, Fetlar and Yell in the context of depopulation and socio-economic trends. This is dependent on many different factors and not only on the adequacy and attractiveness of the transport links.

There is also uncertainty over future fuel costs which would have a direct impact on the costs of the service but also wider impacts on costs of living and working in the North Isles, visiting the North Isles and the economic viability of Unst, Fetlar and Yell.

The lifespan of the existing ferry infrastructure is not known for certain, but it is likely to become increasingly unreliable, more costly and more difficult to maintain.

It is also important to consider the impacts of vessel crewing in relation to the population dynamics of the islands.

A more immediate uncertainty is the fares policy for Bluemull Sound, with fares having been suspended on the route since September 2005 to allow for economic regeneration in the wake of the RAF's decision to withdraw from Saxa Vord from March 2006. The approval for this suspension of fares was granted until the summer of 2008. An additional decision has since been made to suspend the fares until the end of the summer timetable in 2008.

6.5 Summary

This Chapter has set out key planning objectives for study development. The planning objectives have been developed based following reviews of policy, problems, and the consultation process. These objectives are accompanied by constraints and uncertainties.

Constraints imposed on the study include financial constraints, regarding the funding of capital and revenue costs. The physical characteristics of the study area also impose constraints to the operation of the ferry service, particular with regards to severe weather and the wave and swell characteristics of Bluemull Sound. Accordingly, any options developed for the study area will need to ensure compatibility with the Yell Sound ferry service is maintained. Operational and legislative requirements also impose constraints on the study.

Uncertainties relate to the future vitality and viability of the islands, future fuel costs and the lifespan of the existing ferry infrastructure. An immediate uncertainty is the fares policy for Bluemull Sound, with fares currently suspended.

The following Chapter sets out initial option development and sieving for the study.

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Option Generation and Sifting

7 Option Generation and Sifting

7.1 Introduction

This Chapter will discuss and define the options generated and considered for the appraisal process and will provide a summary of those options which will be taken forward to STAG 1 appraisal.

The initial list of options was developed to provide a broad range of alternative ways to address the project aims and objectives. Many were generated through the initial consultation exercise. It is to be highlighted that many of the options are inter-related and dependent upon others, and for this reason, have been grouped together into packages for appraisal.

7.2 Do Nothing

- This retains the existing vessels and terminals and contains only committed expenditure.

Do Nothing is considered to be unacceptable because of the impacts and costs of doing nothing to improve the current transport link.

Under Do Nothing, there would be increased expenditure to maintain the ferry terminals and linkspans and this would be difficult to continue to do whilst simultaneously operating a ferry service. The vessels would be subject to increase problems with scheduled and unscheduled maintenance, and increasing costs.

In parallel, there would be an increased use of relief vessels, but it would be very likely that the service would be reduced to a single vessel service for lengthy periods. There is also the potential additional cost of some form of bare boat charter, if this were available. There is a long term risk of significant curtailment of operations due to the enforcement of legislation.

From a passenger perspective, there would be more disruptions and delays. There would be increased journey and wait times as passengers over-compensate for the risk of disruption.

Disruption would suppress journeys to and from the North Isles as the service becomes unreliable, and has a reputation for being so.

The Do Nothing would have a wider impact on the economic viability of Unst and Fetlar, making the islands more difficult places to live and work. This would hasten population decline, reducing the prospect of people moving in and starting families. The feasibility of tourism would also be reduced. There would be increasing costs for deliveries and supplies and increased difficulties of getting services from Shetland Mainland, due to perceived transport difficulties.

Accordingly, service delivery would become increasingly costly and difficult, and it would be difficult to attract and retain staff. This would accelerate closures.

Overall, in the long term, assuming the Do Nothing would have a significant reduction in the vitality and viability of Unst and Fetlar and a significant reduction in the feasibility and attractiveness of living on these islands, raising a family and undertaking any form of economic enterprise. It would be particularly difficult to maintain an adequate standard of service to these populations.

7.3 Do Minimum

- Replacement of vessels and terminals on a broadly like-for-like basis.

This option would involve providing two replacement ro-ro vessels which are compliant with legislation and able to cope with forecast vehicle and passenger demand over the appraisal period. This option could also include options for alternative off linkspan berthing at the new terminals.

The Do Minimum acts as a viable option in its own right, and also as a benchmark for comparison against other options.

7.4 Vessels

A number of vessel options have been considered for the Bluemull Sound service. These options are summarised below.

- Single fast vessel.

A single fast vessel operating on Bluemull Sound would not have to reach high speeds on crossings between Unst and Yell, but could increase its speed on crossings to Fetlar to make up the time on the current 25 minute crossing to the island from Unst or Yell.

While this option is to be considered further as a vessel option, it is to be highlighted that the operation of such a vessel is untried in Shetland and as such would contain an element of risk. It is unknown how the vessel would cope in rougher weather, and how the service would be affected as a result of such difficulties.

This option has been retained for further consideration

- An additional ro-ro vessel.

This option has not been considered further because there is not a requirement to bring an additional vessel into service. Problems experienced on the route are related to issues over the utilisation of the second vessel, which is inactive at weekends.

This option has not been considered further

- An additional passenger vessel.

An additional passenger vessel could be used to provide a service from, for example, Houbie in Fetlar to Mid Yell without significant infrastructure costs. This service would be more difficult to provide on Unst and Yell because the terminals are far from the main settlements, particularly in terms of walking distance. This option has been retained, but the reliability and attractiveness of such an option requires further consideration.

This option has been retained for further consideration

- Inter-island (*Earl of Zetland*) passenger service.

The *MV Earl of Zetland* was a passenger ferry which operated between Shetland's isles until the mid 1970s before the introduction of ro-ro ferries. The introduction of such a vessel again could be beneficial for tourists visiting Unst, Fetlar and Yell, but would be unlikely to be frequently used by commuters and businesses based in the North Isles because of the longer journey times between the different ports on Shetland's transport network.

This option has not been considered further

- Two Stand-Alone Vessels for Unst and Fetlar.

The current service operates with two vessels that are inter-compatible with each other. However, it is conceivable that one vessel could be commissioned on the service that operated only between Unst and Yell (due to the lower maritime rating of this stretch of water), and a second vessel (similar to current vessels) operating the service between Yell and Fetlar. Despite apparent benefits of providing specific island focussed services, with existing crewing patterns, this proposal would significantly reduce levels of service to Fetlar, and significantly reduce operational flexibility.

This option has not been considered further

7.5 Terminals

A number of terminal options have been considered for the Bluemull Sound service. These options are summarised below.

- Breakwater at Fetlar.

There has been considerable work into the potential benefits of providing a breakwater at Hamars Ness, Fetlar. A breakwater for Fetlar would allow the ferry to dock at Hamars Ness in adverse weather and be based on the island overnight.

This option has been retained for further consideration

- Overnight (off-linkspan) berthing facility at Belmont.

This option involves providing overnight berthing facilities at Unst (off linkspan), opening up future opportunities for the vessel to be crewed from Unst.

This option has been retained for further consideration

- Off linkspan berthing facility at Gutcher.

Similarly, this option involves providing overnight berthing facilities at Gutcher (off linkspan).

This option has been retained for further consideration

- Improved facilities at terminals.

These improvements would be beneficial with any of the options taken forward by helping to make the terminals “gateways” to the isles.

This option has been retained for further consideration

- Establishing the ferry terminal at Toft as the hub for the inter-island ferry network.

Any benefits a “hub” for the inter-island ferry network would bring would be minimised in the North Isles because of the lengthy sea crossing and journey time that would have to be undertaken to reach Toft from Unst and Fetlar.

This option has not been considered further

7.6 Crewing

The following crewing options have been considered for the Bluemull Sound service.

- Additional full time crew.

This option has been retained for further consideration, but is inter-related with vessel and timetable options.

This option has been retained for further consideration

- Additional part time crew.

This option has been retained for further consideration. It is envisaged that a part time crew could help to improve service delivery at peak times, for example at the height of the tourist season.

This option has been retained for further consideration

7.7 Timetable

A number of timetable options that have been considered for the Bluemull Sound service and are summarised below. It is to be highlighted that a number of these options are inter-related.

- Early morning service from Fetlar.

An earlier sailing from Fetlar could help to reduce the level of Fetlar traffic travelling to Yell via the 0820 from Unst, thus alleviating congestion on this busy sailing. This option would have positive benefits for Fetlar residents wishing to access employment on Yell or Shetland Mainland.

This option has been retained for further consideration

- Regularised timetable during the week.

A more regularised timetable would help to make the service easier to understand by having a consistent timetable across the week.

This option has been retained for further consideration

- Reduce number of timetable gaps.

As stated previously, gaps in the timetable at lunch and during periods of ferry maintenance restricts movement between the isles. A service less punctured by gaps in the timetables would enable more flexible travel and be more coherent, potentially helping to even out demand during the day.

This option has been retained for further consideration

- More bookings only.

This option would entail that only those sailings that are booked, at all times of the day, would operate. Ensuring that vessels only run if there is a requirement (i.e. a booking) could help to improve efficiency and reduce operating costs.

This option has been retained for further consideration

- Fewer sailings during the day.

This option could be used to tailor the timetable so that the service is improved at key travel times – for example with more sailings around the morning and evening peaks, and the early afternoon peak – but reduced when there is lower demand.

This option has been retained for further consideration

- Fetlar and Unst running as separate ferry services.

This option could help to reduce the disproportionate impact on Unst caused when the single vessel service calls at Fetlar. It would also help to improve the service to and from Fetlar.

This option has been retained for further consideration

7.8 Fixed Link

- Fetlar fixed link.

Given the small population that the ferry service to Fetlar currently serves, a fixed link to Fetlar would not be a viable or cost effective solution.

This option has not been considered further

- A bridge across Bluemull Sound between Unst and Yell.

This option would involve the construction of a bridge – broadly comparable in length with the Forth Road crossing – across Bluemull Sound between Unst and Yell. This option would be problematic as weather constraints that impose problems for the current ferry service would also affect the reliability of a bridge. A bridge would also have a more visual impact than a tunnel and could have negative impacts on sense of place factors (for example, reducing the perception of Unst and Yell as individual islands).

This option has not been considered further

- A barrage or causeway across Bluemull Sound between Unst and Yell.

This could also be used to generate power. However, with water depths greater than 30m and strong currents, construction of a suitable barrage/causeway would be particularly difficult, risky and costly despite the potential electricity generation benefits. Due to the complexity and scale of such a project, this option has not been taken forward.

This option has not been considered further

- A tunnel under Bluemull Sound between Unst and Yell.

A tunnel would have less visual impact than a bridge, and would remain open during periods of adverse weather.

This option has been retained for further consideration

- Fixed link between Yell and Shetland Mainland.

Although this option was raised during consultation, it is considered to fall outwith the scope of this study, in that it would fail to address the future of Bluemull Sound. . A Yell Sound link could be an efficient way to bring travel time savings to all residents of all the North Isles, though it would not address the requirement to find a sustainable option for Bluemull Sound. A fixed link for this route was previously considered before the decision was made to introduce two new ferries, *MV Daggri* and *MV Dagalien,* onto the route in the summer of 2004.

This option has not been considered further within this study

Other options which could be related to the development of a fixed link between Unst and Yell are detailed below.

- Fetlar-Mid Yell ferry service.

If a fixed link was to be developed between Unst and Yell, Fetlar would still require a ferry service. It is considered that the use of a terminal at Mid Yell as the destination port for the Fetlar ferry service would not be viable due to the longer and rougher sea crossing that would have to be undertaken. Therefore the destination port for the Fetlar service would remain at one of the existing terminals at Gutcher or Belmont. Given the deteriorating condition of these terminals, the terminal selected as the destination port for the Fetlar service would require replacement.

This option has not been considered further

- Fetlar – Basta Voe ferry service.

If a fixed link was to be developed between Unst and Yell, there is another option of developing a terminal at Basta Voe. Whilst this may have the advantage of being slightly shorter in length than the current crossing, it would involve significant upgrading of road links, and also creation of new marshalling areas etc. It is considered that, in comparison, keeping the terminal at either Belmont or Gutcher would be a more efficient use of resources overall, as these would require only minimal redevelopment work in the event of a fixed link between Unst and Yell.

This option has not been considered further

The following options relate to the number of ferry crews that could operate a Fetlar ferry service in the event a fixed link is built between Unst and Yell.

- 1 x Fetlar ferry crew

One Fetlar crew could run a service operating for five days of the week, with an operating day of 8 hours.

- 2 x Fetlar ferry crew

Two Fetlar crews could run a seven day service, with an operating day of 8 hours.

- 3 x Fetlar ferry crew

Three Fetlar crews could carry out a full week's service equivalent to the current service.

These options have been retained for further consideration

7.9 Other Options

A number of other options have been considered during the option generation process, as set out below.

- Re-establishment of Unst and Fetlar air links.

Re-establishing air links to Unst and Fetlar could promote a number of wider benefits. Direct chartered air services could support the re-development of RAF Saxa Vord in Unst, whilst air links to Fetlar could help to improve the accessibility of the island to tourists and generate additional wider economic benefits. However it is to be highlighted that this option is outwith the scope of the study and the aim of the study, in the first instance, is to identify options for the long term sustainability of the Bluemull Sound transport link.

This option has not been considered further, but could be a worthy complement to the Bluemull Sound Service

- Bus service improvements.

Public transport improvements would be appropriate to seek with any of the options taken forward. Integrated links between the ferry service and buses would help to improve accessibility between the North Isles, and between the North Isles and Shetland Mainland.

This element would be a worthy complement to the Bluemull Sound Service when outcomes from the appraisal become clearer. The importance of complementary public transport services has been emphasised due to the high (and continually rising) price of petrol and diesel in Shetland.

7.10 Options Taken Forward to STAG 1 Appraisal

The different options highlighted above in relation to the vessels, terminals, crews, ferry timetable and fixed links have been combined to form a number of packages, which are outlined below.

The packages are predominantly defined by the infrastructure required to provide the link. It is as a consequence of this that operational issues such as timetabling are not fully captured at this stage. It is envisaged that the detail of the operational aspects, and some items of design detail (such as terminal facilities) can be addressed when there is a clearer picture emerging of the most appropriate option for the nature of the proposed transport link.

- **Option 1 – Do Minimum – Replacement of Gutcher and Belmont terminals and *MV Bigga* and *MV Geira***

This option would involve providing two replacement ro-ro vessels which are compliant with legislation and able to cope with forecast vehicle and passenger demand over the appraisal period. This option could also include options for alternative off linkspan berthing at the new terminals.

The Do Minimum acts as a viable option in its own right, and also as a benchmark for comparison against other options.

- **Option 2 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + development of Fetlar breakwater**

This option is similar to option 1, but also includes the development of a breakwater at Fetlar.

- **Option 3 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service**

This option is similar to option 1, but also includes the introduction of a third, passenger only, ferry service.

- **Option 4 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x FT)**

This option is similar to option 1, but also includes the introduction of one additional full-time crew, providing a more frequent service.

- **Option 5 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x PT)**

This option is similar to option 1, but also includes the introduction of one additional part-time crew, providing a more frequent service.

- **Option 6 – Single Fast Vessel**

This option involves the introduction a single fast vessel, instead of the existing two vessels that operate on the route.

- **Option 7 – Unst-Yell Tunnel with 1 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of dedicated Fetlar ferry service, operated by one crew running from Fetlar to

either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

- **Option 8 – Unst-Yell Tunnel with 2 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of a dedicated Fetlar ferry service, operated by two crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

- **Option 9 – Unst-Yell Tunnel with 3 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of dedicated Fetlar ferry service, operated by three crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

7.11 Initial Cost Estimates

Initial work has been undertaken to determine preliminary capital and operational costs for each option considered for further appraisal, based on information currently available. These provide an initial comparison between options, however:

- Further detailed work is required to confirm these initial estimates;
- The STAG 2 financial and economic appraisal will be undertaken on the basis of an appraisal of discounted costs and benefits; and
- The STAG 2 appraisal will also take into account wider appraisal criteria.

Table 7.1 below provides the cost estimates for the options taken forward to STAG 1 appraisal, based on a 60 year time period (i.e. they take into account ferry and terminal replacement costs, as well as annual operating cost estimates). These costs have been calculated using current ferry cost figures provided by Shetland Islands Council Ferry Services, and estimates from equivalent schemes elsewhere. A detailed breakdown of cost estimates is provided in Appendix B.

Table 7.1 – Initial Undiscounted Cost Estimates for 60 year appraisal

Option	60 year capital cost estimate	60 year operating cost estimate	Total 60 year cost estimate
Option 1 - Do Minimum Replacement of Gutcher and Belmont terminals and *MV Bigga* and *MV Geira*	**£70 Million**	**£120 Million**	**£190 Million**
Option 2 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + development of Fetlar breakwater	**£73 Million**	**£120 Million**	**£193 Million**
Option 3 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service	**£79 Million**	**£126 Million**	**£205 Million**
Option 4 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x FT)	**£70 Million**	**£132 Million**	**£202 Million**
Option 5 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x PT)	**£70 Million**	**£126 Million**	**£196 Million**
Option 6 Single Fast Vessel	**£55 Million**	**£72 Million**	**£127 Million**
Option 7 Unst-Yell Tunnel with 1 x Fetlar crew	**£104 Million**	**£64 Million**	**£168 Million**
Option 8 Unst-Yell Tunnel with 2 x Fetlar crew	**£104 Million**	**£76 Million**	**£180 Million**
Option 9 Unst-Yell Tunnel with 3 x Fetlar crew	**£104 Million**	**£94 Million**	**£198 Million**

All figures have been prepared on a consistent basis, making best use of available information, including those figures provided by Shetland Islands Council ferry services. However, further option development is required to confirm more refined feasible designs and cost estimates.

Outline tunnel cost estimates have been produced based on costs derived from completed projects of a similar type.

The following chapter presents the initial appraisal of the different options.

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STAG 1 Appraisal

8 STAG 1 Appraisal

8.1 Introduction

This chapter provides an overview of the results of the STAG Part 1 Appraisal.

The appraisal is broken into four main categories. Consideration is given to how well each option responds to the planning objectives, as set out in Chapter 6. It then continues to consider the performance of the options against four specific implementability criteria: technical feasibility, operational feasibility; affordability; and public acceptability. Finally, the options are broadly assessed in relation to the five Government transport appraisal criteria based on the Environment; Safety; Economy; Integration; and Accessibility and Social Inclusion.

The results of the appraisal have been presented in STAG Appraisal Summary Tables (ASTs) which are presented in Appendix C.

8.2 Performance Against Planning Objectives

The performance of each of the ten options against each of the planning objectives is summarised below.

8.2.1 Objective 1: Provide a transport link which is economically efficient.

Do Minimum secures the link at the status quo, but would involve capital costs incurred by replacing the vessels and terminals. The introduction of new infrastructure would however reduce the existing high maintenance liabilities.

Options to enhance the current ferry service (Options 2, 3, 4, 5 and 6) typically incur increased operational or capital costs. For instance, operating costs would be increased with the introduction of a third (passenger only) ferry service (Option 3) and it is considered that the benefits delivered by the purchase of such a vessel could be more efficiently delivered through improvements to existing services, such as for example revenue support for an additional crew, which would facilitate an improved service timetable.

Option 6 could increase economic efficiency through the operation of one vessel rather than two vessels, as currently operated on the route.

The overall economic efficiency of options related to the implementation of tunnel infrastructure between Unst and Yell (Options 7, 8 and 9) is a critical element to this study, and will be determined during the STAG 2 appraisal.

The development of a fixed link, however, would not remove the requirement for a ferry service to Fetlar, and thus investment in ferry infrastructure replacement as well as ferry operating costs, in addition to tunnel construction costs, would continue under these options. The introduction of three Fetlar ferry crews (Option 9) would be more costly than one or two crews (Options 7 and 8) but has the potential to slightly enhance current service levels. The operation of a service operated by one or two Fetlar ferry crews would either broadly retain, or reduce the current level of service.

8.2.2 *Objective 2: Provide a transport link which is operationally reliable on a day to day basis.*
Replacement infrastructure under the Do Minimum option would enhance operational reliability by reducing the need for frequent and expensive maintenance of the vessels and terminals.

Options to enhance the current ferry service (Options 2, 3, 4, 5 and 6) generally perform well against this objective. Option 2 in particular would address this objective through the provision of a breakwater on Fetlar, which would allow the ferry to berth overnight throughout the year as well as in periods of adverse weather. With regards to Option 3 (passenger only ferry), it could be anticipated that the operation of a smaller, passenger only ferry could be more prone to disruptions during adverse weather.

The provision of a single fast vessel (Option 6), would present an operational risk as it is untried in Shetland, and it is unknown how such a vessel would cope in rougher weather, and how the service would be affected as a result of any difficulties. For example, unreliability could be increased due to operation of a single vessel service, leaving the islands isolated during sudden vessel breakdown.

Tunnelling options (Option 7, 8 and 9) would perform well against this objective, as the provision of a tunnel would remove weather related constraints that affect the current ferry service. These options also assume the development of the Fetlar breakwater, allowing the vessel to berth at Hamars Ness in periods of adverse weather.

8.2.3 *Objective 3: Provide a transport link which is operationally sustainable in the long term.*
Replacement infrastructure under the Do Minimum option would deliver an operationally sustainable transport link in the long term, by providing infrastructure which would operate for the duration of the appraisal period.

Options to enhance the current ferry service (Options 2, 3, 4, 5, and 6) generally perform well against this objective by replacing the existing ageing infrastructure, thus enhancing service reliability and facilitating the provision of a link which is operationally sustainable for the lifetime of the infrastructure.

The effect of providing a single fast ferry (Option 6) on service reliability is generally unknown, though it is considered that the provision of replacement vessels during periods of maintenance etc. could be problematic. Two vessels may be required to replace the single vessel.

Tunnelling options (Option 7, 8 and 9) provide a long term solution to providing a sustainable transport link between Unst and Yell and therefore perform well against this objective. The provision of a Fetlar breakwater and dedicated ferry for the island could also support the long term sustainability of Fetlar, but this is dependent upon the levels of service that are provided.

8.2.4 *Objective 4: Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland.*
The Do Minimum option is only concerned with the replacement of physical infrastructure. This option would not facilitate greater sailing frequency nor timetable changes. Consultation revealed constraints with the current timetable which limits connectivity with the Yell Sound ferry service, public transport and Shetland's wider transport network such as Sumburgh Airport. Therefore, the Do Minimum option performed poorly against this objective.

In contrast, replacement of vessel and terminal infrastructure, plus the provision of a Fetlar breakwater (Option 2) could provide integration improvements as this option would allow a vessel to berth overnight on Fetlar, allowing an additional commuter sailing, thus potentially providing improved integration opportunities between the transport networks of Unst, Fetlar, Yell, and Shetland Mainland.

The provision of a third, passenger only, service could also increase transport integration opportunities. However, this would be dependent upon how it operated. A Gutcher/Belmont link would require additional public transport links as all the terminals are remote from nearby settlements. In contrast, a Houbie (Fetlar) to Mid Yell link could potentially operate without supporting public transport links, although opportunities to link with the mian North /South public transport connection would be lost.

Option 4, which involves the provision of a more frequent service, enabled by the introduction of an additional full-time crew, performs well against this objective. The main impact of this option is to regularise the timetable, allowing easier journey plans and a more consistent pattern of opportunities across the week. Option 5, which involves the introduction of an additional part-time crew, also performs well against this objective, albeit to a lesser extent than Option 4.

The operation of one single fast vessel (Option 6) would be designed to broadly replace the existing service pattern, so the impact would be reasonably negligible when operating normally.

Tunnelling options (Options 7, 8 and 9) would perform well against this objective by providing 24 hour access to Unst from Yell. The introduction of three Fetlar crews (Option 9) would enhance existing levels of accessibility to and from the island and in turn provide potentially improved levels of integration with the wider transport network. Option 7 (one crew) and Option 8 (two crews) would result in either a broadly equivalent, or a less frequent ferry service for the island and either equivalent, or poorer levels of transport integration.

8.2.5 *Objective 5: Provide a transport link which has a regular and easily understandable pattern of transport opportunities.*

The Do Minimum option performs poorly against this objective. Consultation revealed that the current timetable is irregular and difficult to understand, particularly for visitors.

While Option 2 only assumes infrastructure improvements, the development of the Fetlar breakwater and overnight berthing of a vessel on Fetlar could have a slight positive impact against this objective through the provision of more frequent morning sailings, depending on the timetable that is put in place.

Option 3, which includes the introduction of an additional passenger only service, could have positive impacts on this objective through the provision of more frequent sailings for foot passengers. However, for the ro-ro services, similar to 2, this option only assumes infrastructure improvements and would therefore not facilitate changes in service frequency.

Options 4 and 5 perform well against this objective, because they contain measures which would increase the number of sailings or regularise the timetable through the provision of additional crews, thus making the timetable easier to understand overall.

The introduction of a single fast vessel (Option 6) would generally be designed to broadly replace the existing service pattern. While it is considered that the operation of one vessel instead of two could make the service more understandable, this option would have no impact on service frequency.

Tunnelling options (Option 7, 8 and 9) would perform well against this objective by providing 24 hour access to Unst from Yell. Levels of service frequency for Fetlar would be slightly improved, relative to those currently provided with a three crew option, but there would be a reduced pattern of sailings to the island under Options 7 with only one crew operating the Fetlar ferry service. A two crew service would be broadly negligible.

8.2.6 *Objective 6: Provide a transport link which is considered to be affordable to users.*

The Do Minimum and Options 2, 3, 4, 5 and 6 are currently considered to have a negligible impact on this objective with fares currently suspended on Bluemull Sound routes to support economic regeneration in the North Isles following the closure of RAF Saxa Vord. A fares study has been undertaken, and proposals are shortly to be put before SIC's Full Council.

With regards to Options 7, 8 and 9, the impact of tunnels on user affordability is unknown at present, as the cost to users would depend on whether tolls would be included. It is noted that it is current Scottish Government policy to remove fares on tolled crossings.

8.2.7 *Objective 7: Provide a transport link which is considered to be affordable for funders and operators.*

The Do Minimum and Options 2, 3, 4, 5 and 6 would incur high capital costs associated with new infrastructure though in the longer term would minimise high operating costs incurred by frequent maintenance of the existing, ageing ferry infrastructure.

Option 6 (single fast vessel) is considered affordable for funders and operators as costs could be saved through the operation of one vessel rather than two.

Options 7, 8 and 9 (tunnelling) involve high capital costs but lower operating costs. The use of three Fetlar ferry crews (Option 9) is similar to the four crew service currently provided across the route, while Options 7 (one Fetlar crew) and Option 8 (two Fetlar crews) involve a reduction in crew numbers and would thus be considered more affordable for funders.

8.2.8 *Objective 8: Provide a transport link which provides sufficient capacity for passengers and vehicles.*

The Do Minimum and Options 2, 3, 4 and 5 perform well against this objective because they include the provision of two replacement ro-ro vessels which are able to cope with forecast vehicle capacity demand over the appraisal period. Option 3 also performs well against this objective, with the provision of the passenger only service providing additional passenger capacity on the route. However, this is dependent upon the service being utilised by passengers.

A single fast vessel (Option 6) could help to relieve existing capacity problems and it is considered that this vessel would be built with appropriate capacity for passengers and vehicles.

Tunnelling Options 7, 8 and 9 would provide unrestricted capacity for vehicles and passengers travelling between Unst and Yell. It is envisaged that a dedicated Fetlar ferry would be designed to provide sufficient capacity for passengers and vehicles at peaks times across all options. Over the day, Options 7 (one crew) and 8 (two crews) would provide less capacity than Option 9 (three crews).

8.2.9 *Objective 9: Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*

The Do Minimum option could have minor positive benefits for island accessibility through the provision of new infrastructure that could increase service reliability. However, opportunities for increased access to services etc. would be negligible because this option is focussed on infrastructure improvements rather than service enhancements.

The provision of a breakwater for Fetlar (Option 2) would improve access to and from the island. Option 3 performs well against this objective as it could also help to improve accessibility to and from Fetlar, if the service can be designed to be attractive to users. Options 4 and 5 generally perform well against this objective, because they contain measures which would increase the number of sailings or regularise the timetable, providing some additional sailings.

The provision of one single fast vessel (Option 6) instead of two could lead to a perceived reduction in opportunities to access the islands, although overall the service would be designed to broadly replace the existing service pattern and thus this option would have a negligible impact on accessibility.

Tunnelling options 7, 8 and 9 would provide high levels of accessibility to/from Unst and Yell. Access problems to/from Fetlar could remain due to operation of a one or two crew service. The operation of a three crew, dedicated ferry service would increase the accessibility of the island.

8.2.10 *Objective 10: Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*

The Do Minimum option would enhance service reliability. However, this option would require additional complimentary measures in order to promote wider socio-economic opportunities for the islands.

Option 2 would enhance service reliability whilst the provision of a Fetlar breakwater would enable an additional commuter sailing which would improve accessibility. The breakwater could further support wider socio-economic opportunities if supported by small boat berthing facilities.

A passenger only service (Option 3) could generate a greater number of day tripping tourists in the summer months which could promote wider benefits for the islands, although this would require to be matched by associated improvements in public transport.

Option 4 could provide wider socio-economic opportunities by providing greater opportunity for travel to and from the isles, particularly tourist travel during peak times, and would enable businesses/residents greater freedom of movement to carry out jobs elsewhere within the North Isles, and other parts of Shetland. There would be improved access to services. Option 5 would also have a positive effect on the delivery of this objective.

Option 6 (single fast vessel) would have a minor positive impact on the socio-economic development of the North Isles by providing a service which helps to relieve capacity constraints.

A tunnel (Options 7, 8 and 9) between Unst and Yell could encourage wider socio-economic benefits by improving the potential for inward investment and stimulating population growth, which in turn would support local economic growth. Wider impacts on Fetlar would be limited with the operation of a one or two crew ferry service, but could be increased with a three crew service with additional sailings being provided.

8.3 Implementability

Some of the options are considered to be more technically and operationally feasible than others, as discussed below.

8.3.1 *Technical Appraisal*

The Do Minimum and Options 2, 3, 4 and 5 are considered to be technically feasible.

There would be questions over the technical feasibility of Option 6 (single fast vessel) as such an option is untried in the Shetland context.

The development of a tunnel between Unst and Yell (Options 7, 8 and 9) would be technically feasible, although work is required to continue to refine design options and costs, and manage technical risk. In the UK, there is no experience of tunnels constructed for low-volume island links.

The provision of a dedicated Fetlar ferry (as assumed under Options 7, 8 and 9) is considered to be technically feasible.

8.3.2 *Operational Appraisal*

The replacement of vessels and terminals (included in the Do Minimum and Options 2, 3, 4, 5 and 6) is considered to be operationally feasible, but operational difficulties related to higher demands for vehicle deck space may apply at the end of the appraisal period should levels of car ownership and use continue to increase. It is noted that current rises in fuel prices, if sustained, may result in people buying smaller, more fuel efficient cars and rationalising their trip making behaviour, which could help to ease this pressure. Demands for vehicle deck space could be partially eased by the operation of a more frequent service which reduces demand at peak times (Options 4 and 5, additional full-time/part-time crew).

It is operationally feasible to provide a passenger only service (Option 3) from, for example, Houbie in Fetlar to Mid Yell. This service would be more difficult to provide on Unst and Yell

because the terminals are far from the main settlements, particularly in terms of walking distance.

Option 6 (single fast vessel) would present operational risks. It is unknown how the vessel would cope in rougher weather, and how the service would be affected as a result of such difficulties. Provision of replacement vessels during periods of maintenance could also be problematic.

With regards to tunnelling Options 7, 8 and 9, systems would be required to manage operational risks.

8.3.3 *Financial Appraisal*

Each of the ten options has been appraised relative to current costs.

The Do Minimum and Option 2 would incur high capital costs with similar operating costs.

Options 4 and 5 would incur higher operating costs, and crewing costs, as they include the provision of an additional full-time or part-time crew.

Option 6 would incur lower capital and operating costs as a single (fast) vessel would replace the two existing vessels currently operating on the route.

The provision of tunnel infrastructure (Options 7, 8 and 9) would require significant capital investment though would reduce current ferry service operational costs. However, the impact on operating costs would be dependent on the level of service to Fetlar, provided by either one, two or three ferry crews.

It is considered that the benefits delivered by Option 3 (passenger only service) and Option 6 (single fast vessel) could be achieved at a lesser cost by providing improvements to the existing service, for example by funding an additional crew to facilitate more sailings.

8.3.4 *Public Acceptability Appraisal*

Consultation highlighted that there is a strong aspiration for improvements to the current situation.

Stakeholder consultation revealed support for the replacement of the vessels and terminals (the Do Minimum and Options 2, 3, 4, 5 and 6). However, the Do Minimum would not facilitate changes to service frequency or the timetable. Support for the development of a breakwater at Fetlar (Option 2) was unanimous among residents of Fetlar, and no objections were raised among residents of Unst and Yell.

The attractiveness of Option 3 (passenger only vessel) could be questioned given the distance between the main settlements in Unst and Yell from the respective ferry terminals, and the longer sea crossing from Fetlar (Houbie to Mid Yell).

Consultation also revealed a need to reduce the gaps in the service and improve the ferry timetable. The introduction of an additional full-time crew (Option 4) would facilitate this and could provide employment opportunities for residents of the North Isles. The introduction of an additional part-time crew (Option 5) could provide a more intensive service during the summer peak period, and also provide employment opportunities.

The introduction of one single fast vessel (Option 6) instead of two could lead to a perceived reduction in accessibility levels, and could also be perceived as a risky option to take forward due to the service disruption that could occur during periods of service maintenance or breakdown.

With regards to the tunnel options, consultation revealed a majority of residents on Unst supported the development of a tunnel between Unst and Yell, although it is worth noting that consultation revealed some anxiety that a tunnel could reduce the perception of Unst and Yell as unique, individual islands and lead to a rationalisation of services between Unst and Yell. Fetlar residents generally support the development of a tunnel as this would provide the opportunity for the island to have a dedicated ferry service with the ferry based on the island.

However, Fetlar residents expressed concerns that the provision of a fixed link between Unst and Yell could lead to the provision of a 'watered-down' ferry service, as could be anticipated with the provision of a one crew service. The provision of a dedicated Fetlar ferry service, operated by three crews (Option 9) could support increased accessibility to the island.

8.4 Performance Against Government Objectives

This section summarises the appraisal of each of the options against the Government's five key objectives for transport: Environment; Safety; Economy; Integration; and Accessibility and Social Inclusion.

8.4.1 Environment

The development of new infrastructure, as proposed by the Do Minimum and Options 2, 3, 4, 5 and 6 could lead to some adverse environmental impact, particularly during construction. There is a geological SSSI on both sides of the Gutcher terminal. The provision of the Fetlar breakwater (Options 2, 7, 8 and 9) would also have potential environmental impacts during construction.

Options 7, 8 and 9 involve the construction of a tunnel between Unst and Yell and this could lead to some impacts during construction (on land uses; generation of waste from tunnelling, noise and vibration etc.). Once operational, a tunnel would remove the requirement for emissions related to the operation of ferries across Bluemull Sound, although the development of a tunnel would lead to increased levels of private vehicle emissions.

8.4.2 Safety

Replacement vessels (the Do Minimum and Options 2, 3, 4, 5, 6, 7, 8 and 9) would comply with maritime legislation (SOLAS).

Whilst the removal of a ferry link removes one set of safety consideration (maritime legislative requirements), Options 7, 8 and 9 would introduce road safety risk, which would require to be managed through the introduction of tunnel operational procedures.

8.4.3 Economy

Increased service reliability and user confidence due to improved quality of infrastructure (the Do Minimum and Options 2, 3, 4 and 5) could have a minor positive impact for economic development.

Wider economic benefits could be brought to Fetlar through the development of the breakwater (Option 2) and to the North Isles as a whole due to regularisation of the timetable (Options 4 and 5). Wider economic benefits could also be delivered through the provision of more opportunities to access the islands, as facilitated by provision of the passenger only service (Option 3).

Option 6 could have negative economic impacts as service breakdowns could have wider economic costs due to the requirement to replace the single fast vessel, with two conventional vessels (two of which may not necessarily be available).

A tunnel could provide the opportunity to improve business performance, and potentially widen the job search market for North Isles residents. Reduced accessibility, associated with the operation of a single crew service (Options 7), would have a detrimental impact to the Fetlar economy e.g. reduced opportunities for tourists to visit the island and locals to work off the island. There would be a loss of ferry jobs across the North Isles associated with the introduction of a single vessel serving Fetlar. The potential to deliver positive wider economic impacts on Fetlar would be increased with a three crew option, with a dedicated ferry service serving the island (Option 9).

8.4.4 *Integration*

The Do Minimum and Options 2 and 3 would not significantly promote or enhance integration with other transport modes and Shetland's wider transport network, as these are focussed primarily on infrastructure enhancements as opposed to service timetabling improvements.

The introduction of a more regular ferry service (Options 4 and 5) could provide better opportunities to improve integration with the wider transport network in the North Isles and Shetland Mainland.

The operation of one single fast vessel (Option 6) would be designed to broadly replace the existing service pattern, and hence the impact would be reasonably negligible when operating normally.

In terms of transport integration, a tunnel (Options 7, 8 and 9), would enable the provision of a continuous bus service from Unst as far as Ulsta in Yell and provide opportunities for Unst residents to catch the earlier departures from Sumburgh Airport in the morning. With regards to the dedicated Fetlar service, the provision of a single crew service (Options 7) would have negative impacts on transport integration opportunities, due to the operation of a reduced service frequency. The provision of a dedicated Fetlar service, operated by three crews (Option 9), would on the other hand have a positive impact on transport integration opportunities.

8.4.5 *Accessibility and Social Inclusion*

The Do Minimum option would have a minor positive impact on accessibility due to the provision of a more reliable service. However, concerns related to the existing problems that residents face in terms of accessing jobs on and off the islands, shops, services and other facilities would remain because these opportunities are restricted by the current timetable and this option entails only infrastructure rather than service level improvements. This option would have a negligible impact on Fetlar residents because the same problem of access to and from the island would remain.

The development of the breakwater at Fetlar (Option 2) would improve accessibility to and from the island as well as promoting a number of wider social and economic benefits for the local community by enabling the ferry to berth on the island overnight. This increases the potential to introduce commuter sailings from the island in the morning, allowing Fetlar residents to access jobs off the island.

A passenger only service (Option 3) from Fetlar-Mid Yell could enhance opportunities for Fetlar residents to access key services in Mid Yell. The provision of this service could also improve access to the island, enabling tourists to make day trips to Fetlar in the summer months, which in turn could promote wider benefits for the local community. This is dependent on service levels.

Provision of a more frequent service through the introduction of an additional full-time crew (Option 4) would increase the accessibility of the North Isles and its residents, allowing increased opportunity to access services off the isles. The introduction of a part-time crew (Option 5) would provide a reasonably frequent service.

Provision of one vessel instead of two could have a slight negative impact on accessibility through a perceived reduction in opportunities to access the islands, although overall the service would be designed to broadly replace the existing service pattern and thus this option would have a negligible impact on accessibility.

The provision of a tunnel (Options 7, 8 and 9) would provide quick and easy access from Yell to Unst, which in turn should increase the social and economic opportunities available to residents. Opportunities generated for Fetlar would be limited in scope, as inflexibility would remain with regards to travel to and from the island with only one/two crews operating the service. A three crew, dedicated Fetlar ferry service would deliver a number of wider benefits to the island through increased accessibility levels, depending on the level of service that could be provided.

8.5 Outcome of Initial Appraisal

As a result of the initial appraisal, the following options are not being taken forward:

- **Option 3 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service**

It is considered that it is unlikely to be cost effective to introduce a third vessel onto the route, and it could be poorly utilised. It may be considered more efficient to use investment to increase the frequency of existing services rather than introduce a new service.

- **Option 6 – Single Fast Vessel**

A single fast vessel would have operational risks, and has not been taken forward to STAG 2 Appraisal.

- **Option 7 – Unst-Yell Tunnel with 1 x Fetlar crew**

This option has not been taken forward because a single Fetlar crew would result in a significant reduction in the levels of service for Fetlar.

8.6 Options to be Taken Forward to STAG 2 Appraisal

Based on the results of the STAG 1 appraisal, the following options will be carried forward for further assessment as part of a STAG Stage 2 Report:

- **Option 1 – Do Minimum – Replacement of Gutcher and Belmont terminals and *MV Bigga* and *MV Geira***

This option would involve providing two replacement ro-ro vessels which are compliant with legislation and able to cope with forecast vehicle and passenger demand over the appraisal period.

The Do Minimum acts as a viable option in its own right, and also as a benchmark for comparison against other options.

- **Option 2– Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + development of Fetlar breakwater**

This option is similar to option 1, but also includes the development of a breakwater at Fetlar.

- **Option 4 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x FT)**

This option is similar to option 1, but also includes the introduction of one additional full-time crew, providing a more frequent service.

- **Option 5 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x PT)**

This option is similar to option 1, but also includes the introduction of one additional part-time crew, providing a more frequent service.

- **Option 8 – Unst-Yell Tunnel with 2 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of a dedicated Fetlar ferry service, operated by two crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

- **Option 9 – Unst-Yell Tunnel with 3 x Fetlar crew**

This option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of a dedicated Fetlar ferry service, operated by three crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.

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Summary and Next Steps

9 Summary and Next Steps

9.1 Summary

The existing ferry infrastructure on the Bluemull Sound service is approaching the end of its operational lifespan and ZetTrans has commissioned a study to examine options for the future of the transport links connecting the North Isles of Unst, Fetlar and Yell.

Consultation was undertaken with North Isles residents, local businesses and various Shetland-wide agencies. Key issues raised during consultation related to the ferry timetable, concerns over fares and the condition of the ferry terminals and vessels operating on the route.

Further analysis has confirmed that the study needs to address the following problems related to:

- Planning for the replacement of existing vessels;
- Changing vessel legislation;
- The renewal and replacement of the Gutcher and Belmont ferry terminals;
- The Hamars Ness ferry terminal;
- The existing timetable;
- Other operational issues;
- Managing vehicle demand;
- Wider network issues;
- Accessibility;
- Affordability; and
- Sustaining the socio-economic prospects of the North Isles.

Based on analysis of the problems above, the following opportunities have emerged:

- Development of a breakwater at Hamars Ness;
- Service delivery efficiency;
- Greater coherence of service for visitors; and
- The promotion of wider opportunities for Unst, Fetlar and Yell.

We have developed a set of planning objectives for the study which are as follows:

- *Provide a transport link which is economically efficient;*
- *Provide a transport link which is operationally reliable on a day to day basis;*
- *Provide a transport link which is operationally sustainable in the long term;*
- *Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland;*
- *Provide a transport link which has a regular and easily understandable pattern of transport opportunities;*
- *Provide a transport link which is considered to be affordable to users;*
- *Provide a transport link which is considered to be affordable for funders and operators;*
- *Provide a transport link which provides sufficient capacity for passengers and vehicles;*

- *Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell; and*
- *Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*

A broad range of options was developed and consideration was given to how well each option responded to the planning objectives. After a sieving exercise, ten options have been considered:

- **Option 1 – Do Minimum – Replacement of Gutcher and Belmont terminals and *MV Bigga* and *MV Geira***
- **Option 2 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + development of Fetlar breakwater**
- **Option 3 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service**
- **Option 4 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x FT)**
- **Option 5 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x PT)**
- **Option 6 – Single Fast Vessel**
- **Option 7 – Unst-Yell Tunnel with 1 x Fetlar crew**
- **Option 8 – Unst-Yell Tunnel with 2 x Fetlar crew**
- **Option 9 – Unst-Yell Tunnel with 3 x Fetlar crew**

Following consideration, the following options have been rejected, the reasons for which are outlined below:

- **Option 3 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service**

It is considered that it is unlikely to be cost effective to introduce a third vessel onto the route, and it could be poorly utilised. It may be considered more efficient to use investment to increase the frequency of existing services rather than introduce a new service.

- **Option 6 – Single Fast Vessel**

A single fast vessel would have operational risks, and has not been taken forward to STAG 2 Appraisal.

- **Option 7 – Unst-Yell Tunnel with 1 x Fetlar crew**

This option has not been taken forward because a single Fetlar crew would result in a significant reduction in the levels of service for Fetlar.

The remaining options (Options 1, 2, 4, 5, 8 and 9) are proposed to be retained for further detailed analysis which will be undertaken within a more detailed STAG 2 assessment. This will include a detailed comparison of performance against the planning objectives, a feasibility appraisal and the five national transport objectives: environment, safety, economy, integration and accessibility and social inclusion. Outcomes of the recently completed fixed link study will feed into the STAG 2 Appraisal.

9.2 Next Steps

The next steps that will be taken for this study are as follows:

- Determination of costs and details for each of the STAG 2 options;

Further option development work will be undertaken on the remaining options to determine operating capital costs and issues related to feasibility and risk.

- Understand the potential impacts of the options taken forward;

The potential impacts of the options taken forward will be understood through a detailed comparison of performance against the planning objectives, a feasibility appraisal and the five national transport objectives.

- Ferry User Survey;

A short ferry user survey will be carried out on the Bluemull routes to find out general travel patterns and assist with the economic appraisal.

- Appraisal against more detailed criteria in STAG 2;

The final options will be recommended in the context of the outcome of the appraisal against different objectives and appraisal criteria provided by the STAG 2 framework and will be reported to the ZetTrans project board for their consideration.

- Feedback to the North Isles Community.

Letters will be sent to residents of Unst, Fetlar and Yell updating them on the progress of the study, and a public meeting will be held to outline the STAG 2 findings and emerging recommendations.

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Appendices

Appendix A – RTS Objectives for the Study

Economy Objectives

ECON 1	Work to ensure ongoing reliability of Shetland's transport networks.
ECON 2	Work to ensure that external and inter-island ferry and air links are affordable to all (passengers, livestock and freight).
ECON 3	Work to improve the robustness of the transport system (public and private) against significant potential increases in fuel prices.
ECON 4	Support measures that efficiently address current and anticipated capacity constraints on the islands' transport links.
ECON 5	Deliver a transport system that is economically efficient, maximising the overall benefits across each of the five main objectives for a given sum of investment.
ECON 7	Work to achieve beneficial service development and market growth on Shetland's public transport networks.

Social Inclusion and Accessibility Objectives

SIA 1	Support the retention of measures to ensure continued operation and availability of external, inter-island and internal lifeline freight, livestock and passenger services and infrastructure to specified service levels.
SIA 2	Support measures to ensure access for all on the transport network.
SIA 3	Seek to ensure that the timings and frequency of internal and external passenger services take account of specific requirements of those accessing essential health and welfare services in Shetland and on the Scottish Mainland.
SIA 4	Maximise accessibility (frequency, operating day, service delivery options) to and from each community within constraints of funding, demand, technical and operational feasibility, and taking account of convenient access to essential services, and the social and economic well-being of the community.
SIA 5	Work to improve accessibility for vulnerable groups to essential services.

Environmental Protection Objectives

ENV 1	Reduce carbon dioxide and greenhouse gas emissions, and the consumption of non-renewable resources arising from transport, travel and infrastructure in control of ZetTrans, SIC and its partners.
ENV 2	Encourage and facilitate reductions in carbon dioxide and greenhouse gas emissions, and the consumption of non-renewable resources arising from transport and travel in control of private users and other operators.
ENV 4	Minimise impacts of transport and associated infrastructure on the terrestrial and water environments.

ENV 5	Reduce impacts of transport services and new transport infrastructure on landscape, the historic environment and biodiversity.
ENV 7	Encourage design of transport infrastructure that is appropriate to Shetland.
ENV 9	Seek to reduce the vulnerability of transport / infrastructure to climate change.

Safety Objectives

SAFE 1	Ensure compliance with internal and external safety and security requirements.
SAFE 6	Discourage excessive and inappropriate vehicle speeds.

Integration Objectives

INT 1	Deliver effective and integrated public transport links to and from Shetland's principal passenger transport interchanges at Sumburgh Airport and Holmsgarth Ferry Terminal, with the inter-island ferry service terminals, and the inter-island air service.
INT 4	Maintain integrated freight facilities at each relevant ferry terminal.
INT 5	Deliver integrated and multi-modal ticketing across Shetland's public transport network.
INT 6	Provide effective journey planning information for visitors and residents for trips within, to and from Shetland.

Appendix B - Initial Undiscounted Cost Estimates

Option Description	*Capital Cost*	*Total Capital Cost (60 year)*	*Annual Operating Cost*	*Total Operating Cost (60 year)*	*Total Cost (60 Year)*
Option 1 Do Minimum – Replacement of Gutcher and Belmont terminals and *MV Bigga* and *MV Geira*	£15,000,000 (Vessels)	£45,000,000 (Vessels replaced every 25 years)	£2.0 million (Based on current operational costs)	£120 million	
	£10,000,000 (G/B Terminals)	£20,000,000 (G/B Terminals replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
		£70 million		**£120 million**	**£190 million**
Option 2 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + development of Fetlar breakwater	£15,000,000 (Vessels)	£45,000,000 (Vessels replaced every 25 years)	£2.0 million (Based on current operational costs)	£120 million	
	£10,000,000 (G/B Terminals)	£20,000,000 (G/B Terminals replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
	£3,000,000 (Breakwater)	£3,000,000 (Breakwater replaced every 35 years)			
		£73 million		**£120 million**	**£193 million**

Option Description	***Capital Cost***	***Total Capital Cost (60 year)***	***Annual Operating Cost***	***Total Operating Cost (60 year)***	***Total Cost (60 year)***
Option 3 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service	£18,000,000 (Vessels)	£54,000,000 (Vessels replaced every 25 years)	£2.1 million	£126 million	
	£10,000,000 (G/B Terminals)	£20,000,000 (G/B Terminals replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
		£79 million		**£126 million**	**£205 million**
Option 4 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x FT)	£15,000,000 (Vessels)	£45,000,000 (Vessels replaced every 25 years)	£2.2 million	£132 million	
	£10,000,000 (G/B Terminals)	£20,000,000 (G/B Terminals replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
		£70 million		**£132 million**	**£202 million**
Option 5 Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x PT)	£15,000,000 (Vessels)	£45,000,000 (Vessels replaced every 25 years)	£2.1 million	£126 million	
	£10,000,000 (G/B Terminals)	£20,000,000 (G/B Terminals replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
		£70 million		**£126 million**	**£196 million**

Option Description	*Capital Cost*	*Total Capital Cost (60 year)*	*Annual Operating Cost*	*Total Operating Cost (60 year)*	*Total Cost (60 year)*
Option 6 Single Fast Vessel	£10,000,000 (Vessel)	£30,000,000 (Vessels replaced every 25 years)	£1.2 million	£72 million	
	£10,000,000 (G/B Terminals)	£20,000,000 (G/B Terminals replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
		£55 million		**£72 million**	**£127 million**
Option 7 Unst-Yell Tunnel with 1 x Fetlar crew	£7,500,000 (Vessel)	£22,500,000 (Vessel replaced every 25 years)	£0.9 million	£54 million	
	£5,000,000 (G or B Terminal)	£10,000,000 (G or B Terminal replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
	£3,000,000 (Breakwater)	£3,000,000 (Breakwater replaced every 35 years)			
	£63,000,000 (Tunnel)	£63,000,000	£165,000	£9.9 million	
		£104 million		**£64 million**	**£168 million**
Option 8 Unst-Yell Tunnel with 2 x Fetlar crew	£7,500,000 (Vessel)	£22,500,000 (Vessel replaced every 25 years)	£1.1 million	£66 million	
	£5,000,000 (G or B Terminal)	£10,000,000 (G or B Terminal replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
	£3,000,000 (Breakwater)	£3,000,000 (Breakwater replaced every 35 years)			
	£63,000,000 (Tunnel)	£63,000,000	£165,000	£9.9 million	
		£104 million		**£76 million**	**£180 million**

Option Description	***Capital Cost***	***Total Capital Cost (60 year)***	***Annual Operating Cost***	***Total Operating Cost (60 year)***	***Total Cost (60 year)***
Option 9 Unst-Yell Tunnel with 3 x Fetlar crew	£7,500,000 (Vessel)	£22,500,000 (Vessel replaced every 25 years)	£1.4 million	£84 million	
	£5,000,000 (G or B Terminal)	£10,000,000 (G or B Terminal replaced every 35 years)			
	£5,000,000 (HN Terminal)	£5,000,000 (HN Terminal replaced once during appraisal period)			
	£3,000,000 (Breakwater)	£3,000,000 (Breakwater replaced every 35 years)			
	£63,000,000 (Tunnel)	£63,000,000	£165,000	£9.9 million	
		£104 million		**£94 million**	**£198 million**

Appendix C – STAG Appraisal Summary Tables

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 1 – Do Minimum – Replacement of Gutcher and Belmont terminals and *MV Bigga* and *MV Geira***	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	This option would involve providing two replacement ro-ro vessels which are compliant with legislation and able to cope with forecast vehicle and passenger demand over the appraisal period. This option could also include options for alternative off linkspan berthing at the new terminals. The Do Minimum acts as a viable option in its own right, and also as a benchmark for comparison against other options.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £70 million (60 Years, Undiscounted*)* *Total revenue support:* £120 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)	N/A	Amount of Application:	£190 million (60 Years, Undiscounted)
Background Information			
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.		
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is generally stable at around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.		
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the future of the island. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. A tourism resort is being developed at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.		

Planning Objectives		
Objective:		Performance against planning objective:
1.	*Provide a transport link which is economically efficient*	Do Minimum secures the link at the status quo, but with significant capital costs incurred by replacing the vessels and terminals. The introduction of new infrastructure would address high recurring maintenance costs associated with the ongoing operation of vessels and terminals beyond their lifespan. (0)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Provision of new terminals and vessels will secure operational reliability. (+1)
3.	*Provide a transport link which is operationally sustainable in the long term*	Replacement infrastructure would deliver an operationally sustainable transport link in the long term, by providing infrastructure which would operate for the duration of the appraisal period. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	The Do Minimum option is only concerned with replacement of physical infrastructure and not other service improvements. Consultation revealed some constraints with the current timetable which limits connectivity with Shetland's wider transport network such as Sumburgh Airport. Improvements to public transport could help to deliver this objective. (0)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	The Do Minimum only assumes infrastructure improvements and thus would effect no change to the existing situation (0)
6.	*Provide a transport link which is considered to be affordable to users*	Fares were removed from Bluemull Sound routes to support economic regeneration in the North Isles following the closure of RAF Saxa Vord. Whilst fares are due to be re-introduced at the end of the Summer 08 timetable, a review of fares policy has been undertaken, and is shortly to be considered by SIC. Outcomes will be fed into this study. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	The option would incur high capital costs associated with new infrastructure. In the longer term would minimise potentially high maintenance costs associated with operation of the existing, ageing ferry infrastructure (-1)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	The Do Minimum performs well against this objective through the provision of two replacement ro-ro vessels which are able to cope with forecast vehicle capacity demand over the appraisal period. (+2)
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	Do Minimum would have minor benefits through increased service reliability, although opportunities for increased accessibility would be negligible as option only entails infrastructure, rather than service enhancements. Option would also specifically fail to address the problems with regards to accessibility to and from Fetlar. (0)
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	The Do Minimum would ensure future service reliability but would require additional complementary measures such as timetable improvements to help promote wider socio-economic opportunities for the islands. (+1)
Rationale for Selection or Rejection of Proposal:		The Do Minimum option acts as an option in its own right, and as a benchmark upon which to compare alternative options. It is therefore recommended that this option is taken forward to STAG 2 appraisal.
Implementability Appraisal		

Technical:	This option is considered to be technically feasible.
Operational:	This option is considered to be operationally feasible.
Financial:	Replacement of vessels and construction of improved terminals would incur significant capital costs, which would require external funding support through the Scottish Government and/or European Grant Aid. Future high operating costs associated with the maintenance of ageing vessels and terminals would be alleviated through the replacement of existing infrastructure.
Public:	Although existing problems relating to accessibility would remain, stakeholder consultation revealed support for the replacement of the vessels and terminals.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-1	The development of new terminal infrastructure could lead to some adverse environmental impact, particularly during construction. There is a geological SSSI on both sides of the Gutcher terminal.
Safety:	+1	Replacement vessels would comply with maritime legislation (SOLAS).
Economy:	+1	Service reliability improvements, due to improved quality of infrastructure, could have a minor positive impact for economic development.
Integration:	0	The Do Minimum option is primarily concerned with replacement of physical infrastructure. This option does not facilitate greater service frequency nor timetable changes and would not therefore enhance integration with other transport modes and Shetland's wider transport network, but additional public transport measures could assist with this.
Accessibility & Social Inclusion:	0	Do Minimum option could improve accessibility through the provision of new infrastructure that would enhance service reliability. However, concerns related to the existing problems that residents face in terms of accessing jobs on and off the islands, shops, services and other facilities would remain as this would require timetables alterations and changes in service frequency. Option would have a negligible impact on Fetlar residents because the same problem of access to and from the island would remain.

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 2 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + development of Fetlar breakwater**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	This option is similar to option 1, but also includes the development of a breakwater at Fetlar.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £73 million (60 Years, Undiscounted) *Total revenue support:* £120 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)		Amount of Application:	£193 million (60 Years, Undiscounted)
Background Information			
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.		
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.		
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.		

Planning Objectives		
Objective:		Performance against planning objective:
1.	*Provide a transport link which is economically efficient*	Significant capital costs associated with replacement of vessels and terminals, including breakwater at Fetlar. The introduction of new infrastructure would address high recurring maintenance costs associated with the ongoing operation of vessels and terminals beyond their lifespan. (0)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Provision of new terminals and vessels will secure operational reliability. Service reliability to Fetlar could be improved as the provision of a Fetlar breakwater could allow the ferry to berth overnight on Fetlar throughout the year as well as in periods of adverse weather. (+2)
3.	*Provide a transport link which is operationally sustainable in the long term*	Option improves the quality of the infrastructure, thus enhancing service reliability for **all** of the North Isles, and facilitating the provision of a link which is operationally sustainable in the long-term. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	Ability to berth overnight on Fetlar would provide an additional commuter sailing, thus providing improved integration opportunities between the transport networks of Unst, Fetlar, Yell, and Shetland Mainland. (+1)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	While this option is primarily concerned with physical infrastructure improvements, this option could have slight positive impacts through the provision of more frequent morning sailings, depending on the timetable that is put in place. (+1)
6.	*Provide a transport link which is considered to be affordable to users*	Fares were removed from Bluemull Sound routes to support economic regeneration in the North Isles following the closure of RAF Saxa Vord. Whilst fares are due to be re-introduced at the end of the Summer 08 timetable, a review of fares policy has been undertaken, and is shortly to be considered by SIC. Outcomes will be fed into this study. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	The option would incur high capital costs associated with new infrastructure. In the longer term would minimise potentially high maintenance costs associated with operation of the existing, ageing ferry infrastructure. (-1)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Option involves the provision of two replacement ro-ro vessels able to cope with forecast vehicle capacity demand over the appraisal period. (+2)
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	Accessibility would be improved for North Isles residents through the potential to provide additional commuter sailings facilitated with the development of a Fetlar breakwater (and overnight berthing). (+1)
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	Option would enhance service reliability through the provision of new infrastructure, whilst provision of Fetlar breakwater would enable additional commuter sailing and in turn improve accessibility. Fetlar breakwater could support wider socio-economic opportunities if supported by small boat berthing facilities. (+2)
Rationale for Selection or Rejection of Proposal:	The option addresses a number of the planning objectives and should be taken forward for more detailed consideration as part of a STAG Stage 2 assessment.	
Implementability Appraisal		

Technical:	This option is considered to be technically feasible.
Operational:	This option is considered to be operationally feasible. The development of a breakwater at Fetlar would enable the vessel to berth overnight throughout the year including during periods of adverse weather.
Financial:	Replacement of vessels and construction of improved terminals, including breakwater at Fetlar would incur significant capital costs, which would require external funding support through the Scottish Government and/or European Grant Aid. However, the existing high operating costs associated with the maintenance of ageing vessels and terminals would be alleviated through the replacement of existing infrastructure.
Public:	Stakeholder consultation revealed support for the replacement of the vessels and terminals. Support for the development of a breakwater at Fetlar was unanimous among residents of the island, and no objections were raised among residents of Unst and Yell.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-1	Development of new terminal infrastructure could have negative impact on the environment. There is a geological SSSI on both sides of the Gutcher terminal. Provision of Fetlar breakwater would have potential environmental impacts during construction.
Safety:	+1	Replacement vessels would comply with maritime legislation (SOLAS).
Economy:	+2	Improved service reliability due to improved quality of infrastructure. Wider economic benefits brought to Fetlar by development of the breakwater.
Integration:	+1	For residents of Unst and Yell, option does not significantly promote or enhance integration with other transport modes and Shetland's wider transport network. Slight benefits for Fetlar residents.
Accessibility & Social Inclusion:	+2	The development of the breakwater at Fetlar would improve accessibility to and from the island as well as promoting a number of wider social and economic benefits for the local community by enabling the ferry to berth on the island overnight. For example, this could increase the potential to introduce commuter sailings from the island in the morning, allowing Fetlar residents to access jobs off the island.

Proposal Details

Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 3 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of a passenger only service**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	This option is similar to option 1, but also includes the introduction of a passenger only service.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £79 million (60 Years, Undiscounted) *Total revenue support:* £126 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)		Amount of Application:	£205 million (60 Years, Undiscounted)

Background Information	
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.

Planning Objectives	
Objective:	Performance against planning objective:

1.	*Provide a transport link which is economically efficient*	Option could reduce operating costs associated with maintenance burdens. Overall operating costs would be increased. Considered more efficient to use any available investment to improve existing service. (-2)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Provision of new terminals and vessels will improve operational reliability, although anticipated that operation of smaller passenger only ferry would be more prone to disruptions during adverse weather. (+1)
3.	*Provide a transport link which is operationally sustainable in the long term*	Option improves the quality of the infrastructure which would enhance service reliability and facilitate the provision of a link which is operationally sustainable in the long-term. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	Provision of a passenger only service could increase transport integration opportunities, though would require additional public transport links. (+1)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	Option could have positive impacts through provision of more frequent sailings for foot passengers. However, does not address current timetable issues, and additional timetable could cause additional confusion. (0)
6.	*Provide a transport link which is considered to be affordable to users*	Fares were removed from Bluemull Sound routes to support economic regeneration in the North Isles following the closure of RAF Saxa Vord. Whilst fares are due to be re-introduced at the end of the Summer 08 timetable, a review of fares policy has been undertaken, and is shortly to be considered by SIC. Outcomes will be fed into this study. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	Increased capital funding required to improve vessel and terminal infrastructure, though ongoing maintenance costs would be minimised. Provision of passenger only vessel would also incur additional costs. (-2)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Option includes the provision of two replacement ro-ro vessels which are able to cope with forecast vehicle capacity demand over the appraisal period. The provision of the passenger only service would provide additional passenger capacity on the route. (+2)
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	Option would increase service reliability for Unst and Yell. Passenger only service could help to improve accessibility to and from Fetlar, if the service can be designed to be attractive to users. (+1)
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	Option would enhance service reliability but would require complementary measures such as timetable improvements to help promote wider socio-economic opportunities for the islands. Passenger only service could generate a greater number of day tripping tourists in the summer which could promote wider benefits for the islands, though would require associated public transport improvements. (+1)

Rationale for Selection or Rejection of Proposal:	Option rejected on the grounds that it is considered that the benefits delivered by the purchase of a third, passenger only vessel could be more efficiently delivered through improvements to existing services.

Implementability Appraisal

Technical:	This option is considered to be technically feasible.
Operational:	This option is considered to be operationally feasible. It is operationally feasible to provide a passenger only service from, for example, Houbie in Fetlar to Mid Yell. This service would be more difficult to provide on Unst and Yell because the terminals are far from the main settlements, particularly in terms of walking distance.
Financial:	Option would require external funding support from Scottish Government and/or European Grant Aid. It could be considered that the benefits delivered by the purchase and operation of an additional vessel could be achieved at a lesser cost by providing improvements to existing service e.g. funding an additional crew to facilitate more sailings.
Public:	Option was generated during public consultation. However, it is unlikely that the option would secure wider public support, given limitations on its utility for the majority of North Isles residents.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-1	With new infrastructure being developed, there would be some environmental impact. There is a geological SSSI on both sides of the Gutcher terminal.
Safety:	+1	Replacement vessels would comply with maritime legislation (SOLAS).
Economy:	+1	Reduced service disruption due to improved quality of infrastructure. Wider economic benefits could be delivered through provision of more opportunities to access islands, as facilitated by the provision of a third passenger only ferry.
Integration:	0	A third, passenger only vessel would require associated public transport link improvements in order to ensure service integration.
Accessibility & Social Inclusion:	+1	Passenger only service from Fetlar-Mid Yell could enhance opportunities for Fetlar residents to access key services in Mid Yell. Potential for day trips to Fetlar by tourists using the service, although this would require to be supported by improved public transport links.

Proposal Details

Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 4 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x FT)**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	This option is similar to option 1, but also includes the introduction of one additional full-time crew, providing a more frequent service.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £70 million (60 Years, Undiscounted) *Total revenue support:* £132 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)		Amount of Application:	£202 million (60 Years, Undiscounted)

Background Information	
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.

Planning Objectives	
Objective:	Performance against planning objective:

1.	*Provide a transport link which is economically efficient*	Significant capital costs associated with replacement of vessels and terminals, though option would alleviate the existing high maintenance costs associated with the ongoing operation of vessels and terminals beyond their lifespan. (0)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Provision of new terminals and vessels will improve operational reliability. (+1)
3.	*Provide a transport link which is operationally sustainable in the long term*	Option improves the quality of infrastructure, thus enhancing service reliability and facilitating the provision of an operationally sustainable link in the long-term. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	The provision of a more frequent service, enabled by the introduction of an additional full-time crew, would provide greater opportunity to integrate the ferry service with the wider transport network. (+2)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	The introduction of an additional full-time crew would enable a regularisation of the timetable by reducing the gaps in the current service. This would make the overall timetable easier to understand. (+2)
6.	*Provide a transport link which is considered to be affordable to users*	Fares were removed from Bluemull Sound routes to support economic regeneration in the North Isles following the closure of RAF Saxa Vord. Whilst fares are due to be re-introduced at the end of the Summer 08 timetable, a review of fares policy has been undertaken, and is shortly to be considered by SIC. Outcomes will be fed into this study. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	Increased capital funding required to improve vessel and terminal infrastructure associated with this option, though ongoing operating costs associated with maintenance would be minimised. There would however be additional crewing costs incurred by the introduction of the additional (full-time) crew. (-2)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Option includes the provision of two replacement ro-ro vessels which are able to cope with forecast vehicle capacity demand over the appraisal period. The introduction of an additional full-time crew would also provide the opportunity to introduce additional sailings, helping to even out demand during the day and reducing capacity constraints at peak times. (+2)
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	Introduction of an additional full-time crew would increase accessibility of the North Isles by providing a more frequent, regularised service between the isles (+2)
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	Introduction of an additional full-time crew and more frequent, and reliable, service could provide wider socio-economic opportunities by providing greater opportunity for travel to and from the isles, particularly tourist travel during peak times, and would enable businesses/residents greater freedom of movement to carry out jobs elsewhere in Shetland. (+2)
Rationale for Selection or Rejection of Proposal:	This option addresses many of the planning objectives and should be taken forward for more detailed assessment as part of a STAG Stage 2 Report.	
Implementability Appraisal		

Technical:	This option is considered to be technically feasible.
Operational:	This option is considered to be operationally feasible.
Financial:	Replacement of vessels and construction of improved terminals would incur significant capital costs, which would require external funding support through the Scottish Government and/or European Grant Aid. The existing high operating costs associated with the maintenance of ageing vessels and terminals would be alleviated through the replacement of existing infrastructure, although relative to some of the other options, this option would incur higher crewing costs due to the provision of an additional full-time crew.
Public:	Stakeholder consultation revealed support for the replacement of the vessels and terminals. Consultation also revealed a need to reduce the gaps in the service and improve the ferry timetable. The introduction of an additional full-time crew would facilitate this and could provide employment opportunities for residents of the North Isles.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-1	With new infrastructure being developed, there would be some environmental impact. There is a geological SSSI on both sides of the Gutcher terminal.
Safety:	+1	Replacement vessels would comply with maritime legislation (SOLAS).
Economy:	+2	Reduced service disruption due to improved quality of infrastructure. Wider economic benefits brought to isles due to regularisation of timetable.
Integration:	+1	The introduction of a more regular ferry service would provide better opportunities to improve integration with the wider transport network in the North Isles and Shetland Mainland.
Accessibility & Social Inclusion:	+2	Replacement infrastructure would enhance the reliability of the service, while provision of a more frequent service through the introduction of an additional full-time crew would increase accessibility of the North Isles and its residents, allowing increased opportunity to access services off the isles.

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 5 – Replacement of Gutcher and Belmont terminals, *MV Bigga* and *MV Geira* + introduction of an additional crew (1 x PT)**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	This option is similar to option 1, but also includes the introduction of one additional part-time crew, providing a more frequent service.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £70 million (60 Years, Undiscounted) *Total revenue support:* £126 million (60 Years, Undiscounted) *Present Value of Cost to Government*: N/A
Funding Sought From: (if applicable)		Amount of Application:	£196 million (60 Years, Undiscounted)
Background Information			
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.		
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.		
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.		

Planning Objectives		
Objective:		Performance against planning objective:
1.	*Provide a transport link which is economically efficient*	Significant capital costs associated with replacement of vessels and terminals. Introduction of part-time crew could be more efficient than full-time crew. (0)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	New terminals and vessels will improve operational reliability. (+1)
3.	*Provide a transport link which is operationally sustainable in the long term*	Option improves the quality of infrastructure, thus enhancing service reliability and facilitating the provision of an operationally sustainable link in the long-term. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	The provision of a more frequent service, enabled by the introduction of a part-time crew, would provide the opportunity to better integrate the ferry service with the wider transport network. (+1)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	The introduction of an additional part-time crew would enable a regularisation of the timetable by reducing the gaps in the current service. This would make the overall timetable easier to understand. (+2)
6.	*Provide a transport link which is considered to be affordable to users*	Fares were removed from Bluemull Sound routes to support economic regeneration in the North Isles following the closure of RAF Saxa Vord. Whilst fares are due to be re-introduced at the end of the Summer 08 timetable, a review of fares policy has been undertaken, and is shortly to be considered by SIC. Outcomes will be fed into this study. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	Increased capital funding required to improve vessel and terminal infrastructure associated with this option, though ongoing operating costs associated with maintenance would be minimised. The introduction of an additional part-time crew would be less expensive than a full-time crew. (-1)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Option includes the provision of two replacement ro-ro vessels which are able to cope with forecast vehicle capacity demand over the appraisal period. The introduction of an additional part-time crew would provide the opportunity to introduce additional sailings, helping to even out demand during the day and reducing capacity constraints at peak times. (+2)
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	The introduction of an additional part-time crew would increase the accessibility of the North Isles by providing a reasonably frequent, more regularised service between Unst, Fetlar and Yell. (+1)
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	Introduction of an additional part-time crew and relatively more frequent, and reliable, service could provide wider socio-economic opportunities by providing greater opportunity for travel to and from the isles, particularly tourist travel during peak times, and would enable businesses/residents greater freedom of movement to carry out jobs elsewhere in Shetland. (+1)
Rationale for Selection or Rejection of Proposal:	This option addresses many of the planning objectives and should be taken forward for more detailed assessment as part of a STAG Stage 2 Report.	
Implementability Appraisal		

Technical:	This option is considered to be technically feasible.
Operational:	This option is considered to be operationally feasible.
Financial:	Replacement of vessels and construction of improved terminals would incur significant capital costs, which would require external funding support through the Scottish Government and/or European Grant Aid. The existing high operating costs associated with the maintenance of ageing vessels and terminals would be alleviated through the replacement of existing infrastructure, although relative to some of the other options, this option would incur higher crewing costs due to the provision of an additional part-time crew.
Public:	Stakeholder consultation revealed support for the replacement of the vessels and terminals. Consultation also revealed a need to reduce the gaps in the service and improve the ferry timetable. The introduction of an additional part-time crew could facilitate this to a certain extent (for example, by providing a more intensive service during the summer peak period) and could provide employment opportunities for residents of the North Isles.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-1	With new infrastructure being developed, there would be some environmental impact. There is a geological SSSI on both sides of the Gutcher terminal.
Safety:	+1	Replacement vessels would comply with maritime legislation (SOLAS).
Economy:	+1	Reduced service disruption due to improved quality of infrastructure. Wider economic benefits brought to isles due to some regularisation of timetable.
Integration:	+1	The introduction of a more regular ferry service would provide better opportunities to improve integration with the wider transport network in the North Isles and Shetland Mainland.
Accessibility & Social Inclusion:	+1	Replacement infrastructure would enhance the reliability of the service, while provision of a reasonably frequent service through the introduction of an additional part-time crew would increase accessibility of the North Isles and its residents, allowing increased opportunity to access services off the isles.

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 6 – Single Fast Vessel**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	Option involves the introduction of a single fast vessel, instead of the existing two vessels that operate on the route.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £55 million (60 Years, Undiscounted) *Total revenue support:* £72 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)		Amount of Application:	£127 million (60 Years, Undiscounted)
Background Information			
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.		
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.		
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.		

Planning Objectives	
Objective:	Performance against planning objective:

1.	*Provide a transport link which is economically efficient*	Option could increase economic efficiency through operation of one vessel rather than two vessels, as currently operate on the route. (+2)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Option presents an operational risk as it is untried in Shetland, and it is unknown how the vessel would cope in rougher weather, and how the service would be affected as a result of such difficulties. Unreliability could be increased due to operation of one vessel service. (-2)
3.	*Provide a transport link which is operationally sustainable in the long term*	Option improves the quality of the infrastructure, though effects on service reliability generally unknown. Provision of replacement vessels during periods of maintenance etc. could be problematic. Option requires a uniquely trained crew. (-2).
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	This option would be designed to broadly replace the existing service pattern, and hence the impact would be reasonably negligible when operating normally. (0)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	The introduction of a single fast vessel would generally be designed to broadly replace the existing service pattern. While it is considered that the operation of one vessel instead of two could make the service more understandable, this option would have no impact on service frequency. (0)
6.	*Provide a transport link which is considered to be affordable to users*	Fares were removed from Bluemull Sound routes to support economic regeneration in the North Isles following the closure of RAF Saxa Vord. Whilst fares are due to be re-introduced at the end of the Summer 08 timetable, a review of fares policy has been undertaken, and is shortly to be considered by SIC. Outcomes will be fed into this study. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	Increased capital funding required to improve vessel and terminal infrastructure associated with this option, though costs could be saved through operation of one vessel rather than two. (+2)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Provision of single, high speed vessel could help to relieve existing capacity problems. Considered that new vessel would be built with appropriate capacity for passengers and vehicles. (+1)
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	The service would be designed to broadly replace the existing service pattern and thus this option would have a negligible impact on accessibility. (0)
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	While unreliability could be increased due to operation of one vessel service, leaving islands isolated during vessel breakdown, provision of service which helps to relieve capacity constraints. Overall, limited impact. (0)

Rationale for Selection or Rejection of Proposal:	Although this option addresses a number of the planning objectives, due to the operational risks involved with the introduction of a single, fast vessel, this option has not been taken forward to STAG Stage 2 assessment.

Implementability Appraisal

Technical:	Option untried in the Shetland context, which would pose questions over its technical feasibility.
Operational:	Option is untried and would present operational risks. For example, it is unknown how the vessel would cope in rougher weather, and how the service would be affected as a result of such difficulties. Provision of replacement vessels during periods of maintenance could be problematic. Crew would be uniquely trained for this vessel, making relief arrangements more problematic.
Financial:	Replacement of two vessels with one single vessel would reduce capital and operating costs. However, option would still require external funding support through the Scottish Government and/or European Grant Aid.
Public:	The introduction of one single fast vessel (Option 6) instead of two could lead to a perceived reduction in accessibility levels, and could also be perceived as a risky option to take forward due to the service disruption that could occur during periods of service maintenance or breakdown.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-1	Development of new terminal infrastructure could have negative impact on the environment. There is a geological SSSI on both sides of the Gutcher terminal.
Safety:	+1	Replacement vessel would comply with maritime legislation (SOLAS).
Economy:	-1	Service breakdowns could have wider economic costs due to lack of replacement vessels.
Integration:	0	This option would be designed to broadly replace the existing service pattern, and hence the impact would be reasonably negligible when operating normally.
Accessibility & Social Inclusion:	0	The service would be designed to broadly replace the existing service pattern and thus this option would have a negligible impact on accessibility.

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 7 – Unst-Yell Tunnel with 1 x Fetlar crew**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	Option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of dedicated Fetlar ferry service, operated by one crew running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £104 million (60 Years, Undiscounted) *Total revenue support:* £64 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)		Amount of Application:	£168 million (60 Years, Undiscounted)
Background Information			
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.		
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.		
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.		
Planning Objectives			
Objective:	Performance against planning objective:		

1.	*Provide a transport link which is economically efficient*	Despite high capital costs, in the longer term, fixed link has the potential to be more efficient than existing ferry service between Yell and Unst (+2) Provision of dedicated Fetlar service operated by one crew inefficient compared to benefits delivered. (-1)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Weather related constraints would be removed on Unst-Yell journeys. (+3). Fetlar breakwater would allow vessels to berth at Hamars Ness in periods of adverse weather. (+2)
3.	*Provide a transport link which is operationally sustainable in the long term*	Provides a long term solution to providing a sustainable and efficient transport link between Unst and Yell (+3). The provision of a Fetlar breakwater and dedicated ferry for the island would provide an operationally sustainable ferry service. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	Option would facilitate improved transport integration by enabling continuous bus services to operate from Unst to Yell. Unst residents would also be able to catch earlier flights from Sumburgh Airport. (+2) Option would reduce accessibility to/from Fetlar due to operation of one crew service. This in turn would reduce integration with the transport network on Unst and Yell, and Shetland Mainland. (-2)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	A tunnel would provide 24 hour access to Unst. (+3) The ferry timetable would be easy to understand, though there would be a reduced pattern of sailings to Fetlar due to the use of only one crew on the route. (-2)
6.	*Provide a transport link which is considered to be affordable to users*	The impact of tunnels on user affordability is unknown at present, although it is noted that it is current Scottish Government policy to remove fares on tolled crossings. (0) Potential re-introduction of fares on a Fetlar service would also require consideration in line with recommendations from the fares review. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	Fixed link would incur high capital costs but lower operating costs. (-2) Single crew Fetlar service could be more affordable to funders than options with higher crew provision. (+1)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Tunnel option provides unrestricted capacity for vehicles and passengers travelling between Unst and Yell. (+3). The dedicated Fetlar ferry service would be designed to provide sufficient capacity for passengers and vehicles at peak times, over the course of the day option provides less capacity than other options that entail the use of 2 and 3 crews. (-2)
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	Tunnel option provides high levels of accessibility to/from Unst and Yell. (+3) Access problems to/from Fetlar would worsen with only one ferry crew operating the service. (-3)
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	Tunnel between Unst and Yell could encourage wider socio-economic benefits by improving the potential for inward investment and stimulating population growth, which in turn would support local economic growth. (+2) Wider impacts on Fetlar would be more limited with the one crew ferry service restricting access to the island, such as for visitors. (-2)

Rationale for Selection or Rejection of Proposal:	Option rejected on the grounds that accessibility levels to Fetlar would be severely reduced through the introduction of this option.

Implementability Appraisal

Technical:	The development of a tunnel between Unst and Yell would be technically feasible, although work is required to continue to refine design options and costs, and manage technical risk. In the UK, there is no experience of tunnels constructed for low-volume island links. The provision of a dedicated Fetlar ferry considered to be technically feasible.
Operational:	The operation of a tunnel between Unst and Yell is considered to be operationally feasible. This would be subject to the introduction of rigorous tunnel management procedures. The provision of a dedicated Fetlar ferry considered to be operationally feasible.
Financial:	Provision of tunnel infrastructure requires significant funding resources. However, while a tunnel would require high capital costs, operating costs would be lower compared to ongoing operation of ferry services. A single crew Fetlar ferry service would be more affordable to funders than other options.
Public:	Consultation revealed a majority of residents on Unst supported the development of a tunnel between Unst and Yell, although it is worth noting that consultation revealed some anxiety that a tunnel could reduce the perception of Unst and Yell as unique, individual islands and lead to a rationalisation of services between Unst and Yell. Fetlar residents support the development of a tunnel as this would provide the opportunity for the island to have a dedicated ferry service with the ferry based on the island. Fetlar residents expressed concerns that the provision of fixed link between Unst and Yell could lead to the provision of a 'watered-down' ferry service, as could be anticipated with the provision of a single crew service.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-2	This option involves the construction of a tunnel between Unst and Yell which could lead to some impacts during construction (on landuses; generation of waste from tunnelling, noise and vibration etc).
	-1	Provision of Fetlar breakwater would have potential environmental impacts during construction.
Safety:	0	Whilst the removal of a ferry link removes one set of safety considerations (maritime legislative requirements), this option requires the introduction of rigorous tunnel operational procedures.
	+1	Replacement vessel for Fetlar would comply with maritime legislation (SOLAS).
Economy:	+3	A tunnel could provide the opportunity to improve business performance and potentially widen the job search market for North Isles residents.
	-2	Reduced accessibility, associated with the operation of a single crew service, would have a detrimental impact to the local economy e.g. reduced opportunities for tourists to visit the island, locals to work off the island. There would also be a loss of ferry jobs across the North Isles associated with introduction of a single vessel serving Fetlar.
Integration:	+3	In terms of transport integration, a tunnel would enable the provision of a continuous bus service from Unst as far as Ulsta in Yell and enhance opportunities for Unst residents to catch the earlier departures from Sumburgh Airport in the morning.
	-2	Reduced accessibility, associated with the operation of a single crew service, would have a negative impact on transport integration opportunities.
Accessibility & Social Inclusion:	+3	The provision of a tunnel would provide quick and easy access from Yell to Unst, which in turn should increase the social and economic opportunities available to residents. Could be supported by public transport improvements.
	-3	Opportunities generated for Fetlar would be limited in scope, as inflexibility would remain with regards to travel to and from the island with only one crew operating the service.

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 8 – Unst-Yell Tunnel with 2 x Fetlar crew**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	Option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of dedicated Fetlar ferry service, operated by two crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £104 million (60 Years, Undiscounted) *Total revenue support:* £76 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)		Amount of Application:	£180 million (60 Years, Undiscounted)
Background Information			
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.		
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average.		
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.		

Planning Objectives	
Objective:	Performance against planning objective:

1.	*Provide a transport link which is economically efficient*	Despite high capital costs, in the longer term, fixed link has the potential to be more efficient than existing ferry service between Yell and Unst (+2) Provision of dedicated Fetlar service operated by two crews more efficient (relative to benefits delivered) than single crew service. Potential to provide broadly equivalent service as currently experienced. (0)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Weather related constraints would be removed on Unst-Yell journeys. (+3). Fetlar breakwater would allow vessel to berth at Hamars Ness in periods of adverse weather. (+2)
3.	*Provide a transport link which is operationally sustainable in the long term*	Provides a long term solution to providing a sustainable and efficient transport link between Unst and Yell (+3). The provision of a Fetlar breakwater and dedicated ferry for the island would provide an operationally sustainable ferry service. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	Option would facilitate improved transport integration by enabling continuous bus services to operate from Unst to Yell. Unst residents would also be able to catch earlier flights from Sumburgh Airport. (+2). Option would broadly sustain accessibility to/from Fetlar due to operation of two crew. This in turn would broadly sustain integration with transport network on Unst and Yell, and Shetland Mainland. (0)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	Tunnel would provide 24 hour access to Unst. (+3) Ferry timetable would be easier to understand, and current levels of service would be broadly maintained. (+1).
6.	*Provide a transport link which is considered to be affordable to users*	The impact of tunnels on user affordability is unknown at present, although it is noted that it is current Scottish Government policy to remove fares on tolled crossings. (0) Potential re-introduction of fares on a Fetlar service would also require consideration in line with recommendations from the fares review. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	Fixed link would incur high capital costs but lower operating costs. (-2) Two crew Fetlar service is less affordable than a single crew, yet more affordable than 3 crews. (0)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Tunnel would provide unrestricted capacity for vehicles and passengers travelling between Unst and Yell. (+3) A two crew service Fetlar service would broadly provide similar levels of capacity as experienced at present (0).
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	Tunnel option provides high levels of accessibility to/from Unst and Yell. (+3) Access problems to/from Fetlar broadly equivalent to current situation, but would be assisted by the construction of the breakwater (0).
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	Tunnel between Unst and Yell could encourage wider socio-economic benefits by improving the potential for inward investment and stimulating population growth, which in turn would support local economic growth. (+2) Wider impacts on Fetlar would be more limited (0).
Rationale for Selection or Rejection of Proposal:	Option retained for further consideration	
Implementability Appraisal		

Technical:	The development of a tunnel between Unst and Yell would be technically feasible, although work is required to continue to refine design options and costs, and manage technical risk. In the UK, there is no experience of tunnels constructed for low-volume island links. The provision of a dedicated Fetlar ferry considered to be technically feasible.
Operational:	The operation of a tunnel between Unst and Yell is considered to be operationally feasible. This would be subject to the introduction of rigorous tunnel management procedures. The provision of a dedicated Fetlar ferry considered to be operationally feasible.
Financial:	Provision of tunnel infrastructure requires significant funding resources. However, while a tunnel would require high capital costs, operating costs would be lower compared to ongoing operation of ferry services. A two crew Fetlar ferry service represents a balance between single crew operation, and higher levels of resource provision.
Public:	Consultation revealed a majority of residents on Unst supported the development of a tunnel between Unst and Yell, although it is worth noting that consultation revealed some anxiety that a tunnel could reduce the perception of Unst and Yell as unique, individual islands and lead to a rationalisation of services between Unst and Yell. Fetlar residents support the development of a tunnel as this would provide the opportunity for the island to have a dedicated ferry service with the ferry based on the island. Fetlar residents expressed concerns that the provision of fixed link between Unst and Yell could lead to the provision of a 'watered-down' ferry service. A two crew service broadly replicates current service provision but with timings to suit Fetlar and overnight berthing of the ferry on the island.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-2	This option involves the construction of a tunnel between Unst and Yell which could lead to some impacts during construction (on landuses; generation of waste from tunnelling, noise and vibration etc).
	-1	Provision of Fetlar breakwater would have potential environmental impacts during construction.
Safety:	0	Whilst the removal of a ferry link removes one set of safety considerations (maritime legislative requirements), this option requires the introduction of rigorous tunnel operational procedures.
	+1	Replacement vessel for Fetlar would comply with maritime legislation (SOLAS).
Economy:	+3	A tunnel could provide the opportunity to improve business performance and potentially widen the job search market for North Isles residents.
	0	The two crew service would broadly be equivalent to the current situation.
Integration:	+3	In terms of transport integration, a tunnel would enable the provision of a continuous bus service from Unst as far as Ulsta in Yell and enhance opportunities for Unst residents to catch the earlier departures from Sumburgh Airport in the morning.
	0	The two crew service would broadly be equivalent to the current situation.
Accessibility & Social Inclusion:	+3	The provision of a tunnel would provide quick and easy access from Yell to Unst, which in turn should increase the social and economic opportunities available to residents. Could be supported by public transport improvements.
	0	The two crew service would broadly be equivalent to the current situation.

Proposal Details

Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans, 11 Hill Lane, Lerwick, Shetland, ZE1 0HA	
Proposal Name:	**Option 9 – Unst-Yell Tunnel with 3 x Fetlar crew**	Name of Planner:	ZetTrans / Faber Maunsell
Proposal Description:	Option involves the development of a fixed link tunnel between Unst and Yell, in addition to the operation of dedicated Fetlar ferry service, operated by three crews running from Fetlar to either an upgraded terminal at Belmont or Gutcher. This option also assumes the development of a breakwater at Fetlar.	Estimated Total Public Sector Funding Requirement:	*Capital Costs:* £104 million (60 Years, Undiscounted) *Total revenue support:* £94 million (60 Years, Undiscounted) *Present Value of Cost to Government:* N/A
Funding Sought From: (if applicable)		Amount of Application:	£198 million (60 Years, Undiscounted)
Background Information			
Geographic Context:	The Shetland Islands are located 150 km north east of the Scottish Mainland. Within the Shetland Islands, Bluemull Sound is located between the North Isles of Unst, Fetlar and Yell. In physical size, these are the three largest islands in Shetland off the Mainland. Small settlements and individual properties are scattered across the landscapes of these islands, which consist of uninhabited moorland, peatbogs, farmland, cliffs and beaches. Fetlar is also a Site of Special Scientific Interest (SSSI). By ferry, crossing the Bluemull Sound takes 10 minutes between Unst and Yell, and 25 minutes between Unst/Yell and Fetlar.		
Social Context:	The population of each of the North Isles has been declining over the last 20 years. Population decline on Unst in recent years has been accelerated following the closure of RAF Saxa Vord in March 2006 and the island now has a population of around 500. On Fetlar, there are currently around 60 people residing on the island. The population of Yell is also decreasing, but the island is the most populated of the North Isles with around 1000 residents. Each of the islands also display trends of an ageing population, with a relatively low number of young adults, though it is recognised in the 2001 Census that Unst has a higher percentage of people aged 0-4 compared with the Scottish average. .		
Economic Context:	Key industries in Unst and Yell include agriculture, fishing and aquaculture. In 2006, the Ministry of Defence pulled out of RAF Saxa Vord, leading to depopulation and fears over the islands future. In response, the Unst Response Team was established to encourage economic development on the island, while fares were abolished on the Bluemull Sound ferry service. Unst is also home to some more specialist industries, including a renewable energy initiative, a brewery and chocolate factory. There are also plans to develop a tourism resort at Saxa Vord. Crofting is a key industry on Fetlar, while residents are also employed on the Bluemull Sound ferries. Fetlar is also popular with tourists, many of whom travel to the island for its renowned ornithology.		

Planning Objectives		
Objective:		Performance against planning objective:
1.	*Provide a transport link which is economically efficient*	Despite high capital costs, in the longer term, fixed link has the potential to be more efficient than existing ferry service between Yell and Unst (+2) Provision of dedicated Fetlar service operated by three crews could be less efficient (relative to benefits delivered) than two crew service. (-1)
2.	*Provide a transport link which is operationally reliable on a day to day basis*	Weather related constraints would be removed on Unst-Yell journeys. (+3). Fetlar breakwater would allow vessel to berth at Hamars Ness in periods of adverse weather. (+2)
3.	*Provide a transport link which is operationally sustainable in the long term*	Provides a long term solution to providing a sustainable and efficient transport link between Unst and Yell (+3). The provision of a Fetlar breakwater and dedicated ferry for the island would provide an operationally sustainable ferry service. (+2)
4.	*Provide a transport link which is integrated with the transport network on Unst, Fetlar and Yell, and Shetland Mainland*	Option would facilitate improved transport integration by enabling continuous bus services to operate from Unst to Yell. Unst residents would also be able to catch earlier flights from Sumburgh Airport. (+2). Option would provide island focussed accessibility opportunities due to operation of three crews. This in turn would improve integration with transport network on Unst and Yell, and Shetland Mainland. (+1)
5.	*Provide a transport link which has a regular and easily understandable pattern of transport opportunities*	Tunnel would provide 24 hour access to Unst. (+3) Ferry timetable would be easier to understand, and current levels of service could be enhanced. (+2).
6.	*Provide a transport link which is considered to be affordable to users*	The impact of tunnels on user affordability is unknown at present, although it is noted that it is current Scottish Government policy to remove fares on tolled crossings. (0) Potential re-introduction of fares on a Fetlar service would also require consideration in line with recommendations from the fares review. (0)
7.	*Provide a transport link which is considered to be affordable for funders and operators*	Fixed link would incur high capital costs but lower operating costs. (-2) A three crew service for Fetlar is the least affordable, relative to alternative options (-1)
8.	*Provide a transport link which provides sufficient capacity for passengers and vehicles*	Tunnel would provide unrestricted capacity for vehicles and passengers travelling between Unst and Yell. (+3) A three crew service Fetlar service slightly enhance current levels of capacity (+1).
9.	*Provide a transport link which provides island – focussed accessibility opportunities for Unst, Fetlar and Yell.*	Tunnel option provides high levels of accessibility to/from Unst and Yell. (+3) Access problems to/from Fetlar could be addressed with a three crew service and assisted by construction of the breakwater (+2).
10.	*Provide a transport link which promotes wider socio-economic opportunities for North Isles communities.*	Tunnel between Unst and Yell could encourage wider socio-economic benefits by improving the potential for inward investment and stimulating population growth, which in turn would support local economic growth. (+2) A three crew service introduces wider opportunities on Fetlar (+1).
Rationale for Selection or Rejection of Proposal:	Option retained for further consideration	

Implementability Appraisal	
Technical:	The development of a tunnel between Unst and Yell would be technically feasible, although work is required to continue to refine design options and costs, and manage technical risk. In the UK, there is no experience of tunnels constructed for low-volume island links. The provision of a dedicated Fetlar ferry considered to be technically feasible.
Operational:	The operation of a tunnel between Unst and Yell is considered to be operationally feasible. This would be subject to the introduction of rigorous tunnel management procedures. The provision of a dedicated Fetlar ferry considered to be operationally feasible.
Financial:	Provision of tunnel infrastructure requires significant funding resources. However, while a tunnel would require high capital costs, operating costs would be lower compared to ongoing operation of ferry services. A three crew Fetlar ferry service represents a relative high level of resource provision.
Public:	Consultation revealed a majority of residents on Unst supported the development of a tunnel between Unst and Yell, although it is worth noting that consultation revealed some anxiety that a tunnel could reduce the perception of Unst and Yell as unique, individual islands and lead to a rationalisation of services between Unst and Yell. Fetlar residents support the development of a tunnel as this would provide the opportunity for the island to have a dedicated ferry service with the ferry based on the island. Fetlar residents expressed concerns that the provision of fixed link between Unst and Yell could lead to the provision of a 'watered-down' ferry service. A three crew service has the potential to enhance the current provision with timings to suit Fetlar and overnight berthing of the ferry on the island.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-2	This option involves the construction of a tunnel between Unst and Yell which could lead to some impacts during construction (on landuses; generation of waste from tunnelling, noise and vibration etc).
	-1	Provision of Fetlar breakwater would have potential environmental impacts during construction.
Safety:	0	Whilst the removal of a ferry link removes one set of safety considerations (maritime legislative requirements), this option requires the introduction of rigorous tunnel operational procedures.
	+1	Replacement vessel for Fetlar would comply with maritime legislation (SOLAS).
Economy:	+3	A tunnel could provide the opportunity to improve business performance and potentially widen the job search market for North Isles residents.
	+1	The three crew service would broadly enhance the current situation.
Integration:	+3	In terms of transport integration, a tunnel would enable the provision of a continuous bus service from Unst as far as Ulsta in Yell and enhance opportunities for Unst residents to catch the earlier departures from Sumburgh Airport in the morning.
	+1	The three crew service would broadly enhance the current situation.
Accessibility & Social Inclusion:	+3	The provision of a tunnel would provide quick and easy access from Yell to Unst, which in turn should increase the social and economic opportunities available to residents. Could be supported by public transport improvements.
	+1	The three crew service would broadly enhance the current situation.