Anderson Solutions
ECONOMIC DEVELOPMENT CONSULTANCY

Bressay STAG Appraisal:
Economic Activity and Location Impacts

15 May 2008

ZetTrans

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1 Introduction

1.1 ZetTrans commissioned Anderson Solutions to undertake an Economic Activity and Location Impact (EALI) appraisal of the proposed options for the future of the transport link between the island of Bressay and the Shetland Mainland. This appraisal has been undertaken as part of a wider appraisal by a multi-disciplinary team in line with Scottish Transport Appraisal Guidance (STAG) and is summarised in Chapter 11 of the STAG 2 report.

Study Objectives

1.2 The purpose of the EALI is to explore the economic activity and location impacts that may be generated through the transport options proposed. The options are summarised in Chapter 2 of this report and described in detail in Chapter 7 of the STAG 2 report. The options are:

- a drill and blast tunnel (Option 1);
- a high level bridge (Option 2);
- a reconfigured ferry service (Option 3); and
- the Do Minimum option (Option 4), which is to retain the existing ferry service.

1.1 The proposed options fall into two quite distinct and different forms of transport solution. The first two options propose a fixed link solution which would provide unrestrained access, and as such both would be expected to have quite different impacts from Options 3 and 4, which retain a ferry service that operates to a timetable and would have a fare structure in place.

1.2 Guidance prepared by the Scottish Government on undertaking an EALI recommends considering the economic impact that may accrue from a transport project in both employment and GDP terms. However, the expectation prior to appraisal was that the options would generate very localised and distributional impacts only, and that wider benefits would only be attainable if there is a significant constraint on economic activity in Shetland that improved access to Bressay could relieve. Therefore the differences in expected impact, both positive and negative, between the options are presented in a qualitative manner. This approach is recognised as acceptable within the EALI guidance if it is appropriate to the scale of the transport proposals under consideration. The approach that has been adopted for the EALI appraisal was agreed in advance with ZetTrans.

1.3 Through discussions at an early date in the process with ZetTrans and the wider STAG team, the main areas of impact anticipated from the introduction of a new transport solution for Bressay are expected to be:

- potential impacts on the costs associated with living and working in Bressay; and
- potential impacts from the location or relocation of economic activity to Bressay.

1.4 On the basis of the expectation of impact, the framework for the EALI appraisal was built around the need to discover to what degree there is an economic need for a new transport solution; how each transport option might give rise to changes in economic activity; and the need to understand who might benefit from an option and who might be disadvantaged. On this basis, the research tools were designed to find responses to the following questions:

- is there an economic need for a new solution, and in particular:
  - are there constraints on economic activity in Bressay as a result of the existing ferry service;
  - are there existing or potential land and property constraints in and around Lerwick on industry growth or housing development;
  - are there existing or potential harbour infrastructure constraints in Lerwick on industry growth;
- how might each option respond to any need that has been identified and give rise to changes in economic activity; and
- who might benefit from an option and who might be disadvantaged?

Methodology

1.5 The research and analysis was undertaken between mid-March and late April 2008. The appraisal has combined the following research activities to establish the level of need for a new transport solution and potential impacts from the options:

- a survey of 16 businesses in Lerwick and Bressay using a structured questionnaire;
- a consultation programme with representatives of 21 organisations including departments of Shetland Islands Council (SIC) and other private and public bodies; and
- secondary research using published data.

1.6 The names and organisations of those that contributed to the study are contained in Appendix A.

1.7 Of the 16 businesses interviewed, six were located in Bressay. In total 27 businesses were contacted for interview but for varying reasons, some due to indifference towards the project, it was not possible to complete interviews with 11 potential interviewees, two of whom are based in Bressay. Of the two Bressay businesses that an interview could not be completed with, one stated that none of the options would affect their business, whilst a convenient time could not be found for the other Bressay business. No businesses that could be interested in locating in Shetland from elsewhere in the future were identified for interview.

1.8 The questionnaire used for the business interviews is included as Appendix B. Due to timescale restrictions it was not possible to undertake consultations prior to the design of the questionnaire and as such there are some questions which turned out to be inappropriate for the level of need and potential impact that respondents were able to identify. The relevant findings from the business survey are included throughout the report.

1.9 The timescale restrictions removed an earlier planned consultation programme that would have included a wider range of public service providers, however a number have been able to provide valuable background information. The core questions covered in every consultation are included as Appendix C. Additional questions were added as appropriate to suit the field of expertise of each consultee.

1.10 In addition, the study has been informed by:

- an early project meeting with the Bressay Link Group, 12 March 2008;
- regular meetings with the client and the multi-disciplinary team brought together to conduct the full STAG appraisal; and
- discussions held following the presentation of emerging findings to:
  - Councillors of Shetland Islands Council, 28 April 2008;
  - a public community meeting in Bressay, 28 April 2008; and
  - a public community meeting in Lerwick, 29 April 2008.

Report Structure

1.11 The report is structured as follows:

- Chapter 2 provides a brief summary of the four options;
- Chapter 3 summarises the findings from the financial analysis in the Transport Economic Efficiency (TEE) appraisal;
- Chapter 4 responds to the study objective to identify to what degree an economic need can be identified that may then influence the findings of the option appraisal. The chapter uses secondary data and findings from the programme of interviews and consultations to identify current economic conditions in Bressay and more widely in Shetland;
- Chapter 5 presents the analysis of findings on how each option would be expected to respond to any economic need identified in Chapter 4 or give rise to impacts; and for each option, who might benefit and who might experience a negative impact; and
- Chapter 6 draws conclusions from the study.

2 Summary of the Options

2.1 The four options that are the subject of both the EALI and wider STAG appraisal are:

- a drill and blast tunnel (Option 1);
- a high level bridge (Option 2);
- a reconfigured ferry service (Option 3); and
- the Do Minimum (Option 4), which means the retention of the existing ferry service with no alterations.

2.2 Both fixed link options have an alignment that crosses the Sound of Bressay between the Point of Scatland, which is within the industrial area to the north of Lerwick, and Heogan, an area to the north of the main settlement area in Bressay. Both of the ferry options would operate from the existing terminal locations in the centre of Lerwick and close to the main settlement area in Bressay.

2.3 Each option is described very briefly below. More detail on the construction and alignment of the fixed links and the operating framework for the ferry options is provided in the main Bressay Link STAG 2 Report (Chapter 7). The appraisal assumes an opening or start date of 2012 for each option.

Drill and Blast Tunnel

2.4 The first option involves the construction of a tunnel by drill and blast techniques in the rock beneath the Sound of Bressay. The tunnel would allow two-way traffic movement, with a separate cycleway/footpath. Included in this option is a bus service between Lerwick and Bressay and road improvements in Bressay.

High Level Bridge

2.5 The second option involves the construction of a bridge with an airdraft of 60m and a span of 260m. The bridge would allow two-way traffic movement, with a separate cycleway/footpath. Included in this option is a bus service between Lerwick and Bressay and road improvements in Bressay.

Reconfigured Ferry Service

2.6 This option uses the existing ferry, and its subsequent replacements, to deliver an enhanced ferry service. The enhancements would include a lengthened operational day and an increase in frequency at certain times of day. Included in this option is a public transport service internally within Bressay and public transport infrastructure improvements in Bressay.

2.7 There are also three proposals within this option to alter fare levels so as to improve affordability to users.

Do Minimum

2.8 The final option retains the existing ferry service. The operational day of the ferry, frequency of service and fare levels would therefore remain unchanged.

3 Conclusions from the TEE Analysis

3.1 The Transport Economic Efficiency (TEE) analysis undertaken as part of the wider STAG process is a quantitative analysis of potential benefits against both the capital and operational costs of each option. The approach of comparing costs to benefits provides a Net Present Value (NPV) and Benefit Cost Ratio (BCR) for each option.

3.2 For each fixed link option the capital costs include:

- professional fees and surveys;
- land acquisition;
- construction costs;
- road improvements in Bressay; and
- public transport provision and infrastructure on Bressay (Table 3.1).

3.3 For each ferry option the capital costs include:

- three replacement ferries during the 60 year period;
- three replacement linkspans (six in total) in both Lerwick and Bressay;
- one replacement of the berthing structure (two in total) in both Lerwick and Bressay; and
- for the reconfigured ferry service only, public transport provision and infrastructure on Bressay (Table 3.1).

3.4 The operational costs include maintenance of each option, and for the ferry services additional operating costs such as fuel and salaries.

3.5 Table 3.1 shows that the tunnel, including public transport provision, performs significantly better than the ferry and bridge options. The estimates suggest that over a 60 year period the combined capital and operational costs of a tunnel would be approximately 40% less than the bridge option; almost 60% less than that reconfigured ferry service and 55% less than the current ferry service, the Do Minimum option.

3.6 One significant influence on the outcome is the annual operating cost for the ferry options. The operating costs of the current ferry service are just under £1 million per annum, after revenue has been accounted for.

Table 3.1: Capital and Operational Costs for Each Option

	Tunnel (plus bus service)	Bridge (plus bus service)	Reconfigured Ferry (plus bus service)	Current Ferry
Capital Costs	£26.3m	£51.5m	£27.8m	£27.8m
Operational Costs over 60 years	£11.7m	£11.7m	£65.7m	£56.1m
Total	£38.0m	£63.2m	£93.5m	£83.8m

Source: TEE Analysis, Bressay Link STAG 2 Report

3.7 The financial analysis presented in Table 3.1 is based on current estimates of construction and operational costs. For the NPV and BCR calculations these estimates were altered in line with guidance for civil construction projects. For the fixed link options, the estimated capital costs were increased by 66% to include an allowance for optimism bias and then a further 20% contingency was added. In the calculation presented here, no optimism bias or contingency was added to the replacement cost of the vessels in the ferry option. However, the full TEE analysis (Chapter 10, STAG 2 report) does include various sensitivity analyses that explore different scenarios, including vessel costs subject to optimism bias.

3.8 For the calculation of benefits, the analysis focused solely upon the value that users would gain in terms of time savings and travel cost savings. This involved the allocation of a financial value to the time savings of different groups of users. It is perhaps not surprising that the creation of a link which provides 24 hour unrestricted access, that is free to users and has significantly lower costs to the public sector over the 60 year appraisal period performed the best in both the NPV and BCR calculations. This occurred despite the estimated capital cost of the two fixed link options being increased significantly to include optimism bias and contingency (Table 3.2).

3.9 The tunnel returned a positive NPV. This demonstrates that it provides better value for money than retaining the existing ferry service. The bridge and reconfigured ferry options each returned a negative NPV, therefore these latter two options represent poor value for money in comparison to the Do Minimum.

Table 3.2: NPV and BCR Findings for Each Option

	Tunnel (plus bus service)	Bridge (plus bus service)	Reconfigured Ferry (plus bus service)	Current Ferry
NPV	£16.8m	(£22.5m)	(£3.6m)	0
BCR	7.44	0.46	0.22	0

Source: TEE Analysis, Bressay Link STAG 2 Report

3.10 The TEE analysis summarises the reasons for the good performance of the tunnel as:

- the reduction in journey times (from existing ferry crossing times) resulting from the introduction of a tunnel;
- the reduction in user charges due to no longer having to pay ferry fares; and
- operational cost savings to the public sector from the removal of the ferry service.

3.11 However, there are additional positive and negative impacts not considered in the above analysis of public sector costs and user time and price measures. This is largely because there are problems associated with their measurement. These potential additional positive and negative economic impacts are the purpose of this report and are explored in the remaining chapters.

3.12 For more detail on the TEE analysis please refer to Chapter 10 in the Bressay Link STAG 2 report.

4 The Need for a New Transport Solution

4.1 Chapter 4 is divided into three sections in order to establish to what degree economic need can be identified in the local economy for a new transport solution between Bressay and the Mainland:

- the first section identifies the constraints of the existing ferry service that have either been identified through the previous STAG 1 process undertaken by ZetTrans, or through the research for this appraisal;
- the second section provides an analysis of the current economic conditions in Bressay and the immediate vicinity, which includes Lerwick and central Shetland; and
- the final section provides an analysis that, on the basis of research findings, identifies to what degree economic growth is hindered by a lack of access to land or harbour facilities, that could potentially be resolved through improved accessibility to land and shore-line in Bressay.

Impacts Arising from the Existing Ferry Service (Option 4)

Findings from STAG 1

4.2 Consultation undertaken with Bressay residents and businesses in Bressay and Lerwick, prior to the commissioning of this study, identified a number issues and beliefs surrounding the transport link between Bressay and the Mainland. These issues were highlighted in the STAG 1 Report as follows[1]:

<u>Business Constraints</u>

- loss of time planning and waiting for ferry, with direct and indirect impacts on businesses operating from Bressay and other Shetland businesses using service;
- belief that Bressay is not currently conducive to business expansion or new development: e.g. restricts visitors choosing to stay on Bressay; and
- previous debate was detrimental to harbour developments.

<u>Long-term Impacts</u>

- lack of economic development opportunities on the Isle and the high costs of accessing employment, services, recreation and learning may be accelerating an ageing and possibly declining population; and
- unresolved decision about a fixed link, resulting in other aspects of the community's development not being addressed and house sites seldom available.

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[1] Bressay Link STAG 1 Report, January 2008, Natural Capital Limited

Economic Development

- a fixed link could provide opportunities to sustain the community;
- a fixed link could provide opportunities for housing: the land is seen to be desirable;
- a fixed link could provide opportunities for economic development;
- existing Bressay businesses could expand;
- new business could become established;
- there is the potential for harbour developments, although there are no immediate requirements to do so;
- knock-on benefits to Mainland businesses of economic growth and house building;
- this would have to ensure LPA would be able to continue to 'manage, maintain, and regulate the Port and Harbour of Lerwick, including the undertaking to improve and deepen the harbour area' in interests of industries operating in harbour, and ensure their business potential can be achieved;
- in terms of potential economic growth, there is a need to consider the impact of fixed links on local marine engineering companies that receive regular work from SIC ferries; and
- employment based on Bressay is heavily reliant on the ferry.

Impact of the Existing Ferry Service (Option 4)

4.3 The research for this appraisal has followed-up on the findings presented in the STAG 1 Report and has explored the impact of the existing ferry service.

4.4 The SIC berths the majority of the inter-island ferries overnight in the islands that they serve. This provides important employment in the most fragile and peripheral economies within Shetland. The ferry crossing between Lerwick and Bressay is short, with a journey time of seven minutes, and operates on an hourly basis from 0700hrs until 2300hrs. There is an increase in frequency at peak times and an extension to the timetable on Friday and Saturday evenings. The ferry terminal at Lerwick is located in the town centre.

4.5 However, ferry services have both positive and negative impacts. This section reviews the different impacts highlighted by the research of the existing ferry service to Bressay

Impact on the Local Economy

4.6 The ferry service serving Bressay provides 18 full-time positions, twelve of which are currently filled by Bressay residents. The average wage for each post is £30,000 per annum[2], which is 25% higher than the average wage of £24,000 reported for Shetland in 2007[3].

4.7 A further direct impact of the current ferry service is that supplies and services are required for the operation and maintenance of the ferry service and upkeep of the terminals. SIC spends £33,000 per annum within the local economy on the purchase of supplies and services and this will benefit local firms. However, the current bi-annual docking of the ferry does not benefit the Shetland economy as the nearest facilities that can accommodate the ferry are in the North East of Scotland.

Impact on Users

4.8 The ferry service restricts the movements of those resident in the island and those that must operate in Bressay. Accessibility is controlled by a timetable and fares. The view of consultees is that the barrier created by the ferry service restricts development in Bressay as both perceived and real barriers associated with inaccessibility mean that Bressay is generally less attractive than the Mainland as an area to either live or do business.

4.9 However, despite the challenges there is evidence of a stable population, discussed in the following section, and sustainable private sector enterprise. Three substantial agricultural farms exist on Bressay, a fish processing factory and there are consumer based businesses such as the Maryfield Hotel and the Northern Lights Holistic Spa.

4.10 Six private sector businesses in Bressay were interviewed for the study. With regards to the impact of the existing ferry service their responses are summarised below:

- four of the six said that the existing ferry service constrained their business. Comments on the ferry service related to inconvenience, the cost of travel, the time associated with either business or employee travel and the barrier it creates to customers and potential employees; and
- one business respondent said that the biggest constraint on their business was the uncertainty over the link and that development opportunities had been on hold for almost 10 years as a result.

4.11 One Bressay based business representative that did not wish to complete an interview stated that the nature of the transport link between Bressay and Lerwick made no difference to their business.

4.12 Two non-Bressay business representatives that were interviewed also said that the ferry service constrained their business. This is because they undertake activity in Bressay and experience the same problems of inconvenience and cost.

4.13 It is not just private enterprise that is affected by the constraints created by the ferry service. Information provided by the Roads Department of SIC (see Annex B of the STAG 2 report) also demonstrates the impact of the

[2] Source: Ferry Service Division, Shetland Islands Council
[3] Source: Annual Survey of Hours and Earnings by the Office for National Statistics, 2007

inconvenience and additional costs that arise from the existing ferry service. The following activities when undertaken in Bressay all result in an additional cost to the Department:

- general road maintenance;
- reactive maintenance and minor improvement works;
- surfacing, surface dressing and major improvement works (not an annual occurrence);
- winter service, in particular a gritter lorry must be permanently stationed in Bressay which has capital cost implications for the Council and restricts the value that can be obtained from the equipment for the wider benefit of Shetland; and
- surveys, inspections and supervision of works.

4.14 The Roads Department calculated that the additional cost of activity on Bressay is the equivalent of 1.25 hours per person for each day worked in Bressay, and that the cost of this time will generally incorporate overtime payments in order to secure at least a seven hour working day on the island. Over the space of just six working days, this loss of productivity per person would be the equivalent of almost one full working day, suggesting a loss in productivity of approximately 15% when operating in Bressay.

Impact of the Uncertainty

4.15 The findings from the research show that the uncertainty which surrounds the transport link also has economic consequences. The 'bridge debate' has existed since the 1970s. In recent years, the Council policy and subsequent dispute over the construction of a bridge has heightened the debate's prominence in the minds of people, particularly residents of Bressay. The ongoing debate has created an air of uncertainty in the island and according to one respondent has led to antagonism and challenges within the island community, as referred to in Chapter 3 of the STAG 2 Report

4.16 The uncertainty has also had economic impacts. Land owners have been reluctant to release land as, should a fixed-link be created, the value of the land is expected to increase dramatically. In addition, the ferry service has found it increasingly difficult to recruit to vacant posts across Shetland. In Bressay these problems are understood to be exacerbated due to the uncertainty over the potential fixed-link and the difficulty in finding accommodation in Bressay. The uncertainty surrounding the future transport link is highly likely to have led to a reluctance to invest in both homes and businesses on the island.

Conclusions on the Impact of the Current Ferry Service

4.17 The ferry itself provides high value employment opportunities for residents. However, development on the island is constrained by the barriers created by the ferry service. Barriers include inconvenience, negative perception of accessibility, additional cost of operations and uncertainty over the future of the transport link. In addition, for those that must trade or operate in the island there are cost implications that will, for private enterprise, affect profitability and, for the public sector, reduce the value achieved from resources utilised.

Current Economic Conditions in Bressay and the Surrounding Area

4.18 Eighty-five percent of the population of the Shetland Islands live in one connected area which incorporates the main island, referred to as the Mainland, and four islands which are connected to the Mainland by one or more bridges. The remaining 15% of the population live on nine islands, four of which had resident populations of over 100 in the 2001 census. Of the nine islands, the largest population is on Whalsay which, census data shows, in 2001 had a resident population of 1,034.

4.19 Lerwick is the main town in Shetland and has a population close to 7,000. Lerwick is the economic hub of Shetland and the outer communities depend on the economic strength and sustainability of the central region for employment, facilities and services. The islands not connected to the Mainland by a fixed link, and the more remote areas of the Mainland, tend to be the most fragile communities in Shetland, and are amongst the most fragile in Scotland.

4.20 The geography of Bressay means that it provides natural shelter for Lerwick Harbour. The island of Bressay is 28km^2 and has a population of 384 (2001)[4]. The island of Bressay, like many other communities in central Shetland, is dependent on Lerwick for almost all of its day-to-day needs.

4.21 The remainder of this section presents information from secondary research sources on:

- population statistics;
- economic activity; and
- employment in Bressay and central Shetland.

Population

4.22 The population of Bressay in 2001 was 384 (Table 4.1). Unlike the majority of inhabited islands, which are not connected by a fixed link to the Shetland Mainland, the population of Bressay has been steadily rising over the last 40 years. When compared to those islands with a population of 100 or higher, Whalsay is the only other island to have seen a similar level of growth, although the population of Whalsay has reduced slightly in recent times.

4.23 For Bressay and Whalsay the main period of population increase was between 1961 and 1981. However, for the other islands, Yell and Unst, that have experienced significant population decline this has largely all occurred in the last decade.

[4] Shetland in Statistics, 2007, Economic Development Unit, SIC

Table 4.1: Islands with a Resident Population of 100 or more in 2001

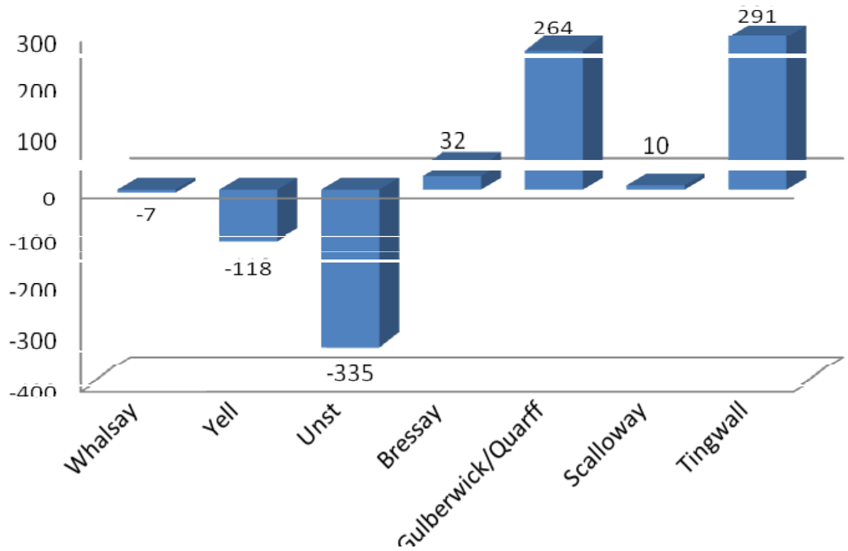
	1961	1971	1981	1991	2001	% change 1961-2001	% change 1991-2001
Bressay	269	251	334	352	384	43%	9%
Whalsay	764	870	1025	1041	1034	35%	-1%
Yell	1155	1143	1191	1075	957	-17%	-11%
Unst	1151	1127	1140	1055	720	-37%	-32%
Lerwick	5913	6028	6899	7336	6830	16%	-7%
Shetland	17814	17582	22768	22522	21988	23%	-2%

Source: Population of Shetland by Area based on Census, Shetland in Statistics 2007

4.24 When compared to Shetland as a whole, Bressay also performs comparatively well with a 9% increase in population between 1991 and 2001 compared to a population decline of 2% across Shetland. However caution should be used when interpreting these results. When there is a relatively small population, as there is in Bressay, it only takes change in one or two households to create a noticeable percentage shift in population.

4.25 In addition, population increase may also be a result of its central location. Figure 4.1 below shows population change between 1991 and 2001 in the larger islands of Shetland and areas in close proximity to Lerwick: Gulberwick, Quarff, Scalloway and Tingwall. With the total population of Shetland in decline Figure 4.1 appears to support anecdotal observations of population drift from island communities that may be supporting population increase in central areas. Bressay may be in a unique position in population terms as Bressay is perhaps less affected by population decline in islands because of its central location; and perhaps the SIC policy to create a fixed link to Bressay may have raised expectations and encouraged population stability. However, in contrast to other central areas, Bressay may have been less affected by population increase because of its island geography, and therefore the associated accessibility constraints.

Figure 4.1: Population Change in Large Island and Central Areas of Shetland, 1991-2001



Source: Shetland in Statistics 2007, Economic Development Unit, Shetland Islands Council

4.26 Forecasts for population change in Shetland suggest a slow but continuing decline in population. Population projections from the General Register Office for Scotland suggest that the population of Shetland will reduce to 19,800 by 2031. Of greater concern is the demographic change predicted in the same period. The General Register Office for Scotland has forecast that in Shetland in the years between 2006 and 2031 the:

- total population will decline by 9.6%;
- population of 0-15 year olds will fall by 31.3%;
- population of working age will fall by 20.7%; and
- population of pensionable age will increase by 50.7%[5].

Economically Active Population

4.27 In Bressay in 2001 67% of all people aged 16-74 were economically active, which includes those employed, self-employed, unemployed or those who are full-time students (Table 4.2). This is 8% lower than the average for Shetland which is 75% but compares well to the Scottish average of 65%.

4.28 The proportion of the population that is economically active and in employment is lower in Bressay (52%) than in the rest of Shetland (60%), and is very similar to the average across Scotland (51%). The figures suggest that in 2001 141 Bressay residents were in either full-time or part-

[5] Source: Population Projections Scotland (2006-based), General Register Office for Scotland

time employment. The difference between the percentage in employment in Bressay (52%) compared to Shetland as a whole (60%) appears to support a view that peripherality within Shetland does affect levels of economic activity. However, there is negligible difference between Bressay and the rest of Shetland in the rate of self-employment.

4.29 Traditionally unemployment is below the national average in Shetland and 2001 was no exception (Table 4.2). The unemployment rate is one percent higher in Bressay than in Shetland but the numbers are small therefore the difference is not regarded as significant.

4.30 Amongst the economically inactive the most noticeable difference between Bressay and the rest of Shetland is the higher than average proportion of the population that is either retired (15%) or looking after home / family (8%).

Table 4.2: Economic Activity of All People Aged 16-74, 2001

	Bressay	Shetland	Scotland
People aged 16-74	272	15,698	3,731,079
Economically Active	67%	75%	65%
Employed: part-time	11%	15%	11%
Employed: full-time	41%	45%	40%
Self-employed	10%	11%	7%
Unemployed	3%	2%	4%
Full-time student	2%	2%	3%
Economically Inactive	33%	25%	35%
Retired	15%	11%	14%
Student	1%	2%	4%
Looking after home / family	8%	5%	6%
Permanently sick / disabled	5%	4%	7%
Other	3%	3%	4%

Source: www.scrol.gov.uk

Employment in Bressay

4.31 In 2007, 1,014 public, private, voluntary and charitable organisations responded to the Employment Survey undertaken by the Economic Development Unit of SIC. These organisations were found to support 12,244 full-time and part-time jobs throughout Shetland.

4.32 The survey is expected to have incorporated the majority of employers in Shetland but it has not been altered to account for any employment perhaps missed by the survey, in particular self-employment.

4.33 The findings for Bressay show the dependence upon the public sector for employment on the island. The survey identified 77 full-time and part-time jobs in Bressay and found that half of all jobs in the island are within the public sector. One important source of public sector employment is the current ferry service which provides 17 permanent full-time posts and one temporary full-time relief post. Twelve of these posts are currently filled by residents of Bressay (see paragraph 4.5 above).

4.34 The other main employer in Bressay is Shetland Fish Products, a fish processing plant. The company was interviewed for the study and currently provides a mix of full-time and seasonal posts which account for 25% of the recorded jobs on the island. The Agriculture, Wholesale and Retail, Catering, Construction and Other Service sectors offer further employment opportunities in Bressay.

4.35 Anecdotal information suggests that both public sector and private sector posts in Bressay are filled by a mix of residents and commuters into the island. Estimates provided by the Community Council and the Ferry Crew to ZetTrans suggest that approximately 120 people commute out of Bressay for work. However, a comparison of the numbers of Bressay residents in work in 2001 (141), the number of employment opportunities in Bressay (77 in 2007) and the number of Bressay residents that are estimated to commute out of Bressay (120), suggests that either:

- there is an extremely high crossover of commuters leaving Bressay for work with commuters coming from elsewhere into Bressay for employment;
- the estimated number of commuters by the Community Council and Ferry Crew is perhaps a high estimate; or
- unrecorded population increase has occurred since 2001, which is a theory that anecdotal comments do not support.

Employment in Central Shetland

4.36 Lerwick is the main centre of employment in Shetland. The Employment Survey undertaken in 2007 by the Economic Development Unit counted 7,247 full-time and part-time posts within Lerwick (Table 4.3). Therefore, while Lerwick has 31% of the population, including children, the survey suggests it has 60% of the jobs, demonstrating its importance as a source of employment for residents in other areas of Shetland. Within the posts counted, almost 44% were within the public sector, including but not limited to the local authority, NHS and police.

4.37 If connected by a fixed link, the main housing area in Bressay would be almost 7 miles from King Harald Street, which is considered to represent the centre of Lerwick's employment opportunities. This would mean accessibility by road similar to:

- Scalloway (6 miles);
- Tingwall (7 miles); and
- Quarff (6 miles).

4.38 In comparison to these areas, Bressay is much more dependent on public sector employment, or alternatively, there is much less evidence of private enterprise in Bressay than in these areas. The SIC survey found that of the 258 jobs counted in Gulberwick, Quarff & Cunningsburgh, four-fifths are in the private sector. This proportion is higher still in Tingwall, Whiteness & Weisdale where 85% of the jobs counted are in the private sector. In contrast, less than half of the jobs are in the private sector in Bressay. When employment currently created by the ferry service is removed from the equation, it is estimated that the split of public and private employment in

Bressay would be 23% in the public sector and 77% in the private sector. This would more closely mirror the areas that, if a fixed link is constructed, would be within similar drive times of Lerwick (Table 4.3)

4.39 Scalloway's position as Shetland's second largest settlement means that it provides a range of services and facilities to its residents. This may explain a higher proportion of public sector employment (67.9%) in comparison to other central areas. However, settlements such as Tingwall, Gulberwick and Quarff could be considered to be similarly dependent to Bressay on external services and facilities.

Table 4.3: Employment by Sector in Central Shetland, 2007

	Private Sector	Public Sector	Other
Bressay	49.4%	50.6%	-
Gulberwick, Quarff and Cunningsburgh	80.5%	19.5%	-
Scalloway	67.9%	31.1%	0.9%
Tingwall, Whiteness and Weisdale	85.2%	13.5%	1.3%
Lerwick	49.5%	43.8%	6.7%

Source: Employment Survey 2007, Economic Development Unit, Shetland Islands Council

4.40 The concentration of Shetland's employment opportunities in Lerwick is likely to be one reason why population is drifting from the more outlying and peripheral communities in Shetland to those within easy commuting distance, such as Scalloway, Tingwall and Gulberwick. For example in the 20 years between 1981 and 2001, despite an overall decline in the population of Shetland, the population of Tingwall has increased by 59%.

Constraints on Economic Growth

4.41 This section explores to what degree economic need may exist in the wider Shetland economy, in particular the economic hub of Lerwick, for the land and shore-line that could become more readily accessible through an improvement in the transport provision between Bressay and the Mainland.

4.42 The analysis considers how well current and planned provision meets current and potential future need for the following factors:

- commercial and industrial land;
- land for housing development; and
- harbour facilities.

Access to Commercial and Industrial Land in Shetland

4.43 Improvement to the transport link, particularly through a fixed link option, is expected to increase the availability of land for development in central Shetland. Bressay is a large island with only a small population and is relatively flat in comparison to many of the areas left for development in Lerwick. For this reason an important aspect of the appraisal was to understand whether development in Lerwick is constrained by a lack of access to commercial and industrial land, and if so whether Bressay would provide a solution to the constraint.

4.44 In the business survey, seven respondents identified that land issues were a constraint on their business. However, three of these businesses were in Bressay and land constraints included: the existing site is physically constrained, an expectation that it would be difficult to get more land because of reluctance within the isle to sell, and the bureaucracy involved in freeing land for development would restrict new activity.

4.45 For the four businesses located in Lerwick that are subject to land constraints, their constraints are physical constraints on an existing site (two businesses), availability of land, not the cost of land (one business) and the cost of land (one business). Of these businesses, one respondent thought that Bressay might provide a solution to their problems if there was a fixed link. The remainder would prefer to be in Lerwick and one commented on the lack of infrastructure in Bressay that could support industrial development.

4.46 However, only one of the seven business respondents said that property or land issues were the biggest constraint on growing their business, and this business is already in Bressay. Therefore the business survey suggests that land constraints may exist within the economy but that they are perhaps not currently constraining business development to any significant degree.

4.47 A recent report for Highlands and Islands Enterprise in Shetland by Graham & Sibbald, Chartered Surveyors[6], concludes that there is a supply of land available for industrial development in Lerwick. In the report, a number of estates in Lerwick are identified that still have serviced sites available for development.

4.48 In addition, the report identified two land holdings that are anticipated to be able to meet demand for industrial land for the foreseeable future, these are:

- Staney Hill, a site of 8.56 hectares, for which plans have been prepared for a potential 33 development sites, released over four phases of development; and
- the land holdings of Lerwick Port Authority (LPA) including land to the rear of the Port Business Park and plans for further development at existing sites.

4.49 Consultees for this appraisal also confirmed that with the sites currently available, and the new sites potentially available at Staney Hill and within the estate of LPA, there is a supply of industrial land which can more than fulfil the potential demand for industrial and commercial land for the foreseeable future.

4.50 However, a small number of businesses and consultees either stated themselves or commented that others frequently say that in Lerwick:

- the rates charged for the lease of land or property rental are too high; and

[6] Commercial Property Study for Highlands and Islands Enterprise, March 2007, Graham & Sibbald

- that not enough land is available for purchase so as to allow owner occupation.

4.51 LPA is the major owner of industrial land and property in Shetland. Consultation with LPA identified that while almost 100% of their properties are fully occupied they would wait until an agreement with a tenant was secured before undertaking development of any further property. LPA will either lease a site or, under agreement with the tenant, construct a property and lease both site and property to the tenant. However, they have a policy of not selling land so as to secure long-term income for the port. This is therefore likely to be the driver behind the second point above.

4.52 With regards to the availability of land for purchase, the report by Graham and Sibbald concludes that while the preference for some is owner occupied land that the lack of it is unlikely to constrain development, particularly when alternative sites are available through long-term leasing arrangements. This conclusion ties in with the comments of consultees for this study.

4.53 Regarding the level of rental charged for land and property, the Graham & Sibbald report appears to conclude that rental values are favourable compared to Thurso and Inverness, particularly given the high costs of development. The Graham & Sibbald report uses the following example to demonstrate the high costs to a developer in Shetland 'a new warehouse of 450sqm on a site of 0.20 hectares may have a build cost including land acquisition costs of approximately £440,000 with a market value of £225,000-£275,000.'

4.54 The cost of construction in Shetland; low demand for sites and properties; and the low market value of a completed development is expected to be prohibitive to securing 'low' market rentals.

4.55 Therefore the conclusion from the research on access to commercial and industrial land is that there is sufficient supply available but that development or leasing costs associated with land or property may hinder business activity that may not be able to financially commit to a property lease, for example start-up businesses. However, the need for start-up units is already under consideration by both Highlands and Islands Enterprise and LPA.

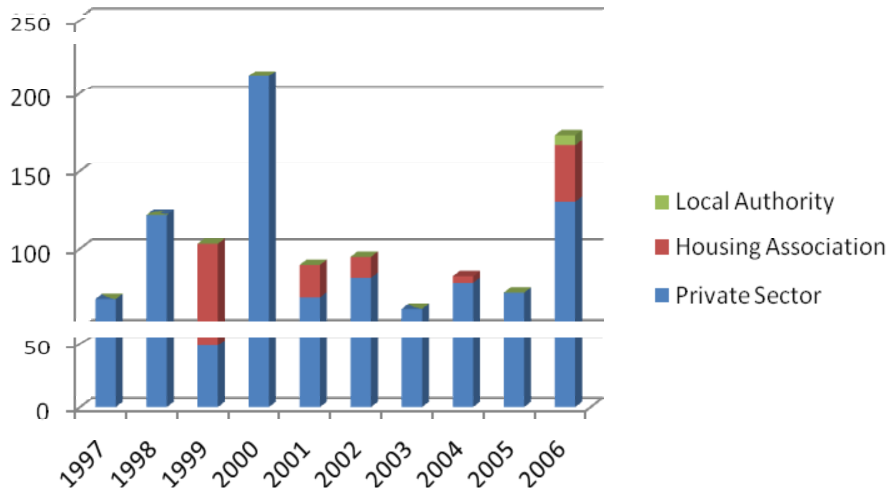
Access to Land for Housing Development

4.56 If a fixed link option is developed, there are both concerns and aspirations that the proximity of Bressay to Lerwick would lead to a significant increase in housing demand on Bressay. Therefore the research set out to understand to what degree Bressay might be used to address unmet demand for housing in and around Lerwick.

4.57 Respondents in Bressay have indicated that there is an unmet demand for housing sites in Bressay as sales have been constrained by the uncertainty over the future of the link. This is believed to be because people are unwilling to sell land that may attract a higher price in the near future through the introduction of a fixed link. As a result, it is understood that recently only a small number of sites have been released for housing development in Bressay.

4.58 Throughout Shetland an average of 100 new dwelling houses has been completed per annum over the last decade (Figure 4.2). The vast majority of these (88%) have been constructed by the private sector. Unfortunately the published data does not provide statistics by settlement so it is not possible to identify what proportion of this development has taken place in central Shetland. However, the comments of consultees and the evidence of population drift suggest that the majority of these homes would have been constructed in central Shetland.

Figure 4.2: New Dwelling Houses Completed in Shetland, 1997-2006



Source: www.scotland.gov.uk

4.59 The pattern of construction by sector is expected to change significantly over the next five years as Hjaltland Housing Association (HHA) and potentially SIC commit to a substantial new build programme.

4.60 In the period between 2007/08 and 2012/13, HHA's new build programme will result in 500 new homes in Shetland. The current HHA waiting list suggests demand for approximately 700 homes. Hjaltland and the Council operate a joint application and waiting list system, although the Council list is longer at 960 applicants as it includes existing tenants that are seeking a transfer. In addition to recorded demand, there is also recognised to be a hidden demand for housing. It is believed that people who wish to live in a specific area do not go onto the waiting list if they perceive there to be no opportunity to secure a home in their preferred location.

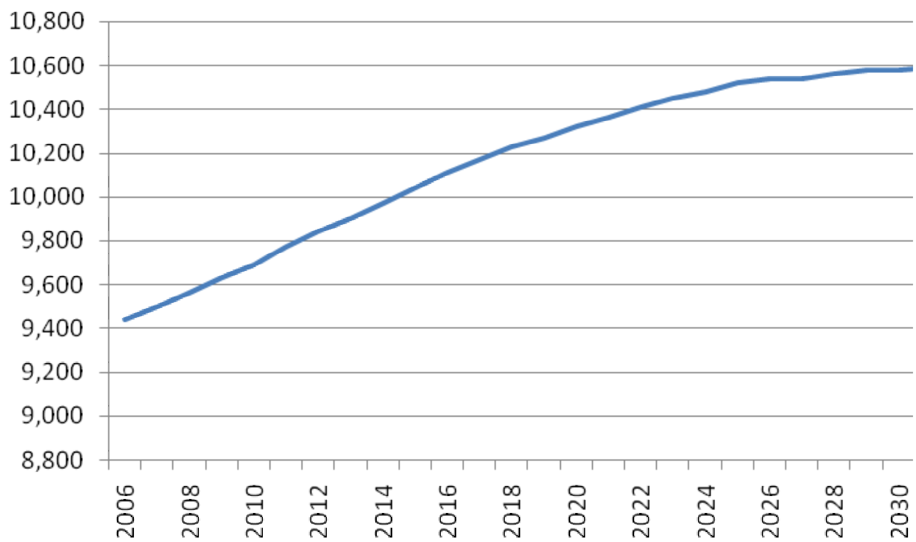
4.61 The waiting list statistics disclose how significant demand is for Lerwick. Over 400, or approximately 60%, of those on the HHA waiting list have a preference for Lerwick. To address almost half of this demand HHA are on-site or have plans for almost 200 new units in Lerwick. However, the shortage of land in Lerwick means that the new build programme is seeking to address some of the demand for Lerwick by developing housing across central Shetland. The HHA definition of central Shetland is all areas, excluding Lerwick, within 10 miles of the main Lerwick Post Office. In these central areas, outside of Lerwick, HHA will be building almost double the number of houses (200) as there are individuals on the waiting list (111). The hope is that housing in these areas will absorb some of the excess demand for housing in Lerwick. Approximately 130 of the 200 houses planned for central Shetland will be built in Scalloway. HHA does have properties in Bressay but has no plans to develop further housing on the island.

4.62 In addition to the 500 new homes to be built by HHA, there has also been a recent indication from the Convener of SIC that the Council would be interested in developing 200 new homes[7] although at this time it is not known where these might be located.

4.63 The location of new housing by either HHA or SIC is, or will be, driven by the sustainability associated with proposed developments. Currently both the Planning Department and Housing Department of SIC are undertaking intensive strategic processes that will ultimately aim to focus new housing development in existing settlements within easy access of key services and infrastructure.

4.64 Despite an increase in housing association and potentially local authority new builds, it is expected that, with predictions of population decline, demand for new private housing may begin to slow over the next 25 years (Figure 4.3). Household projections for Shetland suggest that in the next five years there will be approximately 60 new households per annum, which is a lower rate than new home construction has been undertaken in the last decade. The projections show a further slowdown around 2017 with numbers beginning to level out in 2026. In total, household projections estimate 1,150 new households in the next 25 years. With potentially half of these new households being accommodated by new homes constructed by either the housing association or the local authority in the next 5 or so years, the speed of new household development may be faster than projected by the General Register Office for Scotland but consequently, unless demographics and population projections change, the number of households could level out sooner than predicted.

Figure 4.3: 2006-based Household Projections for Shetland Islands



Source: General Register Office for Scotland

[7] Source: Sounding Off, An Occasional Commentary by Convener of SIC, The Shetland Times, 25 April 2008

4.65 The analysis presented in this section suggests that in the future there may not be a significant need or a demand for large-scale housing development in Bressay to the degree that has been seen in other areas close to Lerwick in recent years. In addition, regardless of the operation of the house building sector and the proportion that is housing association, council or private sector, it appears that there is land available for development in central Shetland. Although consultees have indicated that development is hampered by constraints on the accessibility of land either through zoning or existing designations. However, it is not anticipated that access to land would be any easier in Bressay than it is in alternative locations. In addition, consultees that discussed the need for new housing were of the opinion that alternative central Shetland sites provide more favourable infrastructure and services.

Access to Harbour Facilities in Shetland

4.66 The Shetland economy is highly dependent on marine based industries which include fisheries, North Sea oil and aquaculture. Further economic activity is generated in the harbours through the lifeline ferry service between Shetland and the UK Mainland and the tourism industry, through the arrival of visiting yachts and cruise ships. To ensure economic success and growth, Shetland must provide harbour facilities that match the needs of these industries.

4.67 During the years of debate over a fixed link to Bressay, the potential for Bressay to provide a second side to Lerwick Harbour has frequently been raised as an opportunity that would arise from a fixed link. In order to address whether industry is constrained by a lack of harbour infrastructure the following research was undertaken:

- consultations were held with LPA and SIC Ports and Harbours Department;
- respondents to the business survey were asked whether access to harbour facilities represented a constraint for their business.

4.68 In response to the question in the business survey, only one of the 16 respondents to the business survey highlighted that access to harbour facilities was a constraint in the development of the fishing industry. The respondent's view is that the current fish market is inadequate for the rising volume of landings and the operational requirements arising from modern quality standards. In addition, a consultee identified that fishing vessel owners regularly complain about the lack of available berthing space in Lerwick.

4.69 Consultees also identified that if the future potential growth of the decommissioning industry is to be realised in Shetland that there would be a requirement for further facilities. These comments regarding both the demands of the fishing industry and the future potential growth of the decommissioning industry in Shetland, suggest that there are development needs within Shetland's harbour infrastructure.

4.70 However, it appears as though the identified needs would be addressed within current development activity and future plans for the existing harbour infrastructure in Shetland.

4.71 LPA is currently dredging the harbour to a depth of nine metres to enhance access and therefore the competitiveness of the port. The spoil from the dredging project is being used to create a 14 acre site to the north of the current Greenhead base. This site could be levelled in the future for industrial use, most probably for use by the decommissioning industry. In addition to this activity LPA has further development plans that include:

- development of new quayside and jetty facilities within the Holmsgarth area of the harbour to accommodate the fishing industry cluster, and in particular a new fish market;
- plans to rebuild a pier structure and develop more quayside at Gremista/Arlanda for fishing industry and general use; and
- plans to create two additional berths at Greenhead for fishing industry and oil service industry use.

4.72 In addition, LPA has long-term plans that, should the needs of industry demand it, include the extension of Dales Voe quayside to the north to accommodate further decommissioning activity and the development of Alexendra Wharf to provide more berthing and deep water for cruise ship and general use.

4.73 In addition to Lerwick Harbour, Shetland has a number of harbours scattered around its coast. The two other most significant harbours for economic activity are Sullom Voe Harbour in the north Mainland of Shetland, which provides the berthing facilities for Sullom Voe Oil Terminal, and Scalloway Harbour on the west of Shetland. The harbour authority for both Sullom Voe and Scalloway is SIC.

4.74 Activity in Sullom Voe is currently tied in with the fortunes of the North Sea oil industry. Consultation with the Head of Ports and Harbours for the SIC revealed that the decline of the industry has slowed in recent years as a result of the rising oil price and there is an expectation that Sullom Voe should be active for another 20 years.

4.75 There are continuing oil industry related opportunities for the port that include support for offshore construction and exploration activities and the potential to attract decommissioning activity. In addition, the Laggan Gas Field is the next big development to the west of Shetland and there may be opportunities for Sullom Voe to attract further activity through its development.

4.76 SIC has begun a research and development process to look at the long-term opportunities for Sullom Voe Harbour. There are also detailed plans in place to extend the pier facilities at Sella Ness within the harbour to provide increased berthing to an average depth of 10m and permission does exist for the development of a fish processing facility, although progress on this particular initiative appears to have halted for the time being.

4.77 Scalloway Harbour provides facilities for fishing, aquaculture, leisure and oil industry activity on the west of Shetland. Further expansion of the harbour facilities are constrained by geography and the lack of space for either new piers or development onshore.

4.78 However, despite constraints at Scalloway Harbour, the findings of the research clearly demonstrate that growth in Shetland's key economic industries is not constrained by a lack of harbour infrastructure, or at least would not be constrained if current development plans are progressed.

Conclusions on the Evidence of Need

4.79 The preceding analysis has sought to identify to what degree there is an economic need for a new transport solution between Bressay and the Mainland.

Impact of the Existing Ferry Service

4.80 To understand the impact of the proposals for change it was important to understand what impacts, positive and negative, the existing ferry service creates. The main economic impacts of the current ferry service were found to be:

- the provision of 18 full-time posts in Bressay at higher salary than is the average in Shetland;
- a constraint on investment and development in Bressay due to the barrier created by the ferry service and the fragility associated with ferry service provision, in particular related to the frequency of service and fares;
- the loss in productivity for private sector enterprise and public sector services that travel into Bressay to trade or deliver services; and
- a high degree of subsidy from the public sector towards the operation of the ferry service.

4.81 In addition, the uncertainty that surrounds the provision of a fixed link to Bressay itself has an impact on economic activity. The uncertainty means that land is not being released for development, in particular one-off private housing development, proposed within the island.

Conditions in the Local Economy

4.82 Sixty percent of employment opportunities in Shetland exist in Lerwick and the population of Shetland is drifting towards the areas that surround the town. The Bressay community, like many other communities in central Shetland is dependent on Lerwick for many of its day-to-day needs. The population of Bressay has been steadily growing, and in recent years has bucked the trend of overall population decline in Shetland. This could be due to its central location or possibly as a result of the expectation created by the SIC policy to construct a bridge.

4.83 Unemployment is low in Bressay, and Shetland as a whole, and while this is positive it creates challenges for economic growth as many employers find it difficult to recruit and retain skilled staff.

4.84 Economic activity in Bressay is more dependent on public sector jobs than communities that, if a fixed link is constructed, would provide similar accessibility to Lerwick. However, if the ferry jobs are taken out of the equation the sectoral breakdown in Bressay would more closely mirror these comparable areas where approximately 80% of available posts are in the private sector.

Constraints on Economic Growth

4.85 The potential provision of a fixed link was perceived to have the potential to enhance Bressay's competitiveness as a location for commercial, industrial, harbour and housing development in central Shetland. However, the conclusions from the research are:

- there is little evidence that development is currently constrained by a lack of access to commercial and industrial land in Lerwick;
- that Lerwick would almost always be the preferred location for industrial development as 'businesses like to be near other businesses'. This is the expectation unless land in Bressay can offer incentives that outweigh potential disadvantages by offering land to purchase at an attractive price;
- there are development needs for new harbour infrastructure, however, there are also either current or planned developments that would address the needs of the potential growth industries for the foreseeable future; and
- there are constraints on housing development in Lerwick and as a result there is an increase in population and housing development in alternative central locations, in particular Scalloway, Tingwall and Gulberwick. In addition, with the exception of the HHA programme of new builds, the rate of house building is expected to slow and there are weaknesses associated with locating significant housing development in Bressay that alternative locations in Shetland are perhaps not constrained by.

5 Impact of the Options

5.1 The purpose of the EALI appraisal is to identify the likely impacts from each of the options, within the context of current conditions, and identify where possible who the 'gainers' and 'losers' are and the magnitude of the expected economic impact.

5.2 The chapter focuses on the three proposals for change, the impact of the Do Minimum Option was considered under the need for change in the previous chapter. The analysis suggests that there are only a small number of areas where the impacts vary between the two fixed link options, therefore unless otherwise specified the analysis of the impacts associated with the tunnel and bridge options are grouped together under the term fixed link. The remainder of the chapter is structured as follows:

- definition of direct and indirect impacts;
- direct impact of a fixed link;
- indirect impact of a fixed link;
- direct impact of a reconfigured ferry service; and
- indirect impact of a reconfigured ferry service.

5.3 The chapter ends by identifying the preferred option arising from the research and analysis.

Definition of Direct and Indirect Impacts

5.4 This chapter reports on the impacts expected from each of the potential options for a new transport solution. The expected and potential impacts are discussed under the headings of direct and indirect impacts.

Direct Impacts

5.5 Direct impacts are considered to be:

- o employment linked to the construction and/or operation of an option;
- o spend associated with the construction and/or operation of an option; and
- o impacts experienced through the use of an option.

Indirect Impacts.

5.6 Indirect impacts refer to the knock-on effects within the economy from the proposed new link. Indirect impacts are by definition more difficult to predict accurately than direct impacts. The type of impacts considered can include the impact of an option on employment or investment decisions in the wider economy. However, these decisions would also be subject to fluctuations in the economy that may have greater influence than the provision of a new transport link between Bressay and Lerwick.

5.7 In order to address the risk associated with predicting future indirect impacts the analysis is split into:

- expected areas of indirect impact in the short-medium term (1-5 years) as a result of an option; and
- potential sources of indirect impact in the medium-long term (beyond 5 years) as a result of an option.

Direct Impact of a Fixed-Link

5.8 The analysis of the direct impacts of a fixed link on the Shetland economy considers:

- impacts that arise through the construction process;
- impact on users through unrestricted access; and
- the removal of the ferry service.

Construction Impacts

5.9 The nature of impacts created by construction activities for both fixed link options are similar, what varies is the period of construction and the numbers involved in construction.

5.10 The construction of a tunnel is not particularly labour intensive. Information from Donaldson Associates Limited, the experts advising on tunnel construction, suggests that the construction period would be 22 months, during which 15 full-time equivalent posts would be required. A further 10 full-time posts would be required for 18 of the 22 months. The skills that would be required for the majority of these posts are highly specialised and as a result approximately 90% of the posts would be expected to be filled by individuals from outwith Shetland. Therefore leakage from the local economy of the potential benefits of the income earned during construction is expected to be high.

5.11 The construction of the high level bridge is estimated by Halcrow, the experts advising on bridge construction, to require a total of 65 posts in Shetland and 25 posts elsewhere, for the pre-fabrication of bridge sections. The posts in Shetland would be a mix of professionals and foremen (25%), tradesmen (40%) and unskilled workers (35%). Similar to the construction of the tunnel, it is anticipated that the majority of the skilled tradesmen and professionals would be imported to Shetland for the project. However, due to nature of the construction project and its exposure to the elements, approximately 70% of the workers would only be active in Shetland from April through to October over a three year period. With the majority of activity focused during the peak tourism season and the higher number of workers required, the bridge option is expected to lead to greater displacement of tourism activity compared to the tunnel option, unless temporary accommodation is provided. However, any full-time posts that would be required year-round in Shetland may bring additional off-peak benefits to accommodation providers that could not accrue through alternative activity. Although a proportion of these year-round posts may be filled by local residents.

5.12 In addition to the construction activities described above, there would be a contract for road building and general road works. If competitively priced the contract could be won by a Shetland based company and in total sub-contracting work on the project could be worth £3 million. However, it is frequently commented that the construction industry in Shetland is constrained through a lack of appropriate skills and labour and there are a number of significant construction projects in the pipeline, including new housing and a new High School. This is similar to the rest of the UK where there is a general shortage of construction trades. Therefore the construction of one project is likely to take place at the expense of another project, largely through delays and rising costs.

5.13 During construction, it is expected that both the fixed link options would have a negative impact on businesses in close proximity to the construction activity. For the bridge construction, it is understood from the plans that access to a fish processing facility would be constrained, perhaps permanently, and this may affect the businesses trading activity. For the tunnel construction there may be accessibility constraints during some activity at the Lerwick portal.

5.14 One impact specific to the tunnel option is that an LPA property would have to be demolished on the Lerwick side. It is understood there would be compensation that is appropriate to the market value of the property, however, tenants may be adversely affected as the property is old and rental is relatively cheap when compared to other more modern properties. The condition of the property suggests that it has a limited expected lifespan and therefore the tunnel project is perhaps bringing forward an impact that in the medium-term may be inevitable. However, it is still an impact and a potentially negative impact for the business activities located within.

5.15 Once operational the fixed links would require only limited maintenance which is not expected to create the need for a new full-time equivalent post within Shetland. It is expected that everyday maintenance could be undertaken by SIC with any specialist work undertaken by manufacturers or the contractor.

Impact for Users

5.16 The existence of a free to access fixed link option would have direct impacts for the users of the transport link. Current users of the ferry would be able to travel without the constraint of a timetable or fares. While the distance of the journey may be longer for many users, the cost per individual user would be less.

5.17 The response of residents and those who trade in Bressay to relatively unconstrained access is expected to result in an increase in the number of trips being made. Evidence from Faroe and other fixed links that have recently been introduced in Scotland show significant increases in traffic flows. The assumption used in the TEE analysis is that the number of journeys would double, which may be a conservative estimate.

5.18 The predicted increase in trips would include trips being made by residents, businesses and services operating in the island, and visitors that are either staying overnight in Bressay or making a day-trip to Bressay.

Impact on the Ferry Service

5.19 If a fixed link is constructed one significant and permanent anticipated direct impact is the removal of the ferry service. Removal would mean that no replacement ferries are required in the future and that the operating costs of the inter-island ferry service would reduce by almost £1million per annum. However, it will also mean the loss of 18 full-time posts. SIC has a policy of re-locating staff wherever possible. In this particular situation, the Ferry Service Manager has confirmed that should a decision be made relatively soon, it is fully expected that the same grade of post would be available to each Bressay crew member on other inter-island ferry services, should they wish to take them. This is because a number of posts become vacant prior to 2012 as a result of the retirement of existing post holders. If re-located to the Yell service, post holders would be able to commute daily from Bressay.

5.20 However, the postholders on the Bressay service are skilled and in demand in the wider economy and the Ferry Service Manager expects that if the decision is taken to construct a fixed-link that some of the more mobile staff would seek to leave the Service rather than wait on relocation proposals.

5.21 Outwith the ferry service, the recruitment of skilled workers is difficult for almost a quarter of organisations in Shetland[8]; the population of Shetland is ageing; and there is very low unemployment. Therefore, it is expected that if an individual did not wish to relocate within the ferry service that new employment could be readily secured and, with a fixed link, employment outside of Bressay would become more accessible to residents (see Chapter 12 of the STAG 2 report for an analysis of accessibility).

5.22 In addition, vacancies in the ferry service are becoming increasingly difficult to fill and the service is frequently going outside of Shetland for either agency staff or applicants for new posts. This raises the challenges and costs associated with every recruitment exercise. It is therefore possible that one impact from the contraction of the ferry service may be to ease recruitment problems for the Council.

5.23 Impacts would therefore exist at an individual level for the crew members of the ferry service and for some this may lead to a change in occupation or relocation. However, the conditions expected to exist in Shetland prior to 2012 would mean that there is expected to be no increase in unemployment at a Bressay or a Shetland level and that the overall savings from the removal of the ferry service would quickly benefit the public purse.

Indirect Impact of a Fixed Link

5.24 The preceding section outlined the direct impacts that are associated with the construction and operation of a fixed link. The research conducted concludes that those impacts are highly likely to occur, and that the majority would be inevitable.

5.25 However the indirect impacts, those that happen as a knock-on effect of the fixed link, are more difficult to be equally certain about. The nature and

[8] Source: Employment Survey 2007, Economic Development Unit, Shetland Islands Council

degree of indirect impacts are likely to depend on many other factors in the economy. If key economic factors continue as expected, for example growth in particular industries; low unemployment; and population drift to central Shetland then more certainty can be applied to the expectation of indirect impact. However, should an economic shock, either positive or negative, occur in Shetland the certainty associated with their occurrence would be reduced.

5.26 The indirect impacts identified through the research which are expected to happen relatively quickly after the introduction of a fixed link have a higher degree of likelihood associated with them as they are based on knowledge of current conditions. However, the level of uncertainty related to indirect impacts rises the further into the future the predicted impact is expected to occur. For this reason the appraisal of indirect impacts is split into:

- impacts expected in the short to medium term, defined as 1-5 years post construction; and
- medium to long term expectations of impact that may occur more than 5 years after construction.

5.27 Where the impacts are expected to vary between the tunnel and bridge options this is highlighted in the text.

Expected Indirect Impact in the Short-Medium Term (1-5 years)

5.28 The indirect impacts expected in the short-medium term include:

- increased competitiveness of Bressay as a location for private enterprise;
- increased competitiveness of Bressay as a location for new housing development;
- reduced costs to service providers;
- exposure of some Bressay based businesses to increased competition;
- an increase in the rate of new one-off private housing developments on Bressay;
- an increase in the number of overnight visitors to Bressay;
- a reduction in the fragility of the community in Bressay and as a consequence an increase in confidence to invest in the island; and
- a negative impact from the bridge option on the wider economy, in particular the marine based sector.

5.29 Each of these short-medium term indirect impacts is discussed in more detail below.

<u>Increase in Competitiveness for Private Enterprise</u>

5.30 The creation of a fixed link between Bressay and the Mainland would reduce costs for organisations operating in Bressay. In addition, for those businesses based in Bressay it would improve access to markets and potential labour. For all of the businesses affected, this should lead to an increase in their competitiveness and ultimately an improvement in profitability.

5.31 In the survey of businesses five of the six business respondents from Bressay expect that a fixed link would be a benefit to their business. The main reasons were that it would reduce costs, improve access to markets, increase flexibility and general access and increase the value of land. A further four of the ten respondents from non-Bressay businesses expect that a fixed link would be a benefit to their business. Benefits were largely expected for businesses that have to trade in Bressay and that would therefore benefit from a reduction in costs and enhanced accessibility. Although an additional benefit for one business is expected to be improved access to more economically viable land for housing.

5.32 Four of the six Bressay businesses and three of the non-Bressay businesses expect that a fixed link would increase their business turnover. This is largely through increases in the value of the business and easier access to markets. One respondent believes that business turnover would go up by more than 50%. However, one of the six Bressay respondents expected that a fixed link would reduce their business turnover as the distance that customers would then have to travel would reduce the appeal of the business, as for this business the ferry is seen as a benefit to market access.

5.33 While there are benefits expected for the majority of Bressay businesses, there is no evidence that potential growth industries in Shetland require Bressay as a location for potential expansion. There appear to be more suitable alternatives either under development or already available. Weaknesses of Bressay as a location for additional private enterprise in the short-medium term include:

- a lack of infrastructure, in particular dual lane roads, although this may not significantly affect development at Heogan, near the tunnel entrance; and

- remoteness from existing activity as one consultee commented ‘businesses like to be near other businesses’.

5.34 The importance of these weaknesses to decision-makers will depend on the scale of the potential benefit. If development land in Bressay offers significant incentives, for example the potential to purchase land at an attractive price, there may be more willingness to locate in Bressay. However, no evidence has been collected that this incentive would exist.

5.35 One potential improvement in private enterprise may arise as a result of the removal of the ferry service. One attendee at a presentation of the emerging findings from the STAG appraisal suggested that a private water taxi enterprise would be a new business opportunity that they would consider pursuing (see Annex N of the STAG 2 report). This is presumed to be because a central Lerwick sea-based link may still be attractive to some travellers.

Competitiveness of Bressay as a Location for Housing Development

5.36 The existence of a fixed link is expected to increase the competitiveness of Bressay as a location for housing development. However, there are conditions that suggest overall demand may be in decline as a result of a falling population and a slowdown in the increase of new households. In addition, by 2013 the Housing Association will have constructed 500 new homes, 400 of which will be in Lerwick and its immediate vicinity, and none of which will be constructed in Bressay (see paragraphs 4.55-4.56). This analysis suggests that large-scale housing development in Bressay appears unlikely. In addition, Bressay is recognised to have some weaknesses in comparison to alternative locations in central Shetland. The lack of infrastructure, including a dual lane road on the approach tothe fixed link, is expected by consultees to be a particular hindrance to any significant housing development.

5.37 However, all consultees who discussed housing opportunities in central Shetland, recognised that should a fixed link option be progressed there would be an inevitable increase in one-off private sector housing developments in Bressay. This is expected due to the perceived proximity of Bressay to Lerwick in comparison to other central Shetland locations and the quality and price of land that may be available.

Reduced Costs to Service Providers

5.38 The Roads Department have quantified the cost of the accessibility constraints, highlighted in Chapter 4, linked to working in Bressay.. It is estimated that by introducing a fixed link that the savings to the service would be in the region of £10,000 per annum, possibly higher when more significant works are being undertaken. While a wide programme of consultation was not undertaken with public service providers, it is anticipated that improvements to productivity would be secured for all public services that must send employees to the island in order to provide services.

Exposure to Competition

5.39 Discussions for this study have also revealed there are fears that exposure to competition may result in the decline or closure of one or more businesses in Bressay. This is perceived as a negative impact on the community. However, this fear could be unfounded because there are examples of successful rural enterprise outside of Lerwick; the size of the potential market in Bressay would increase as the local population is likely to rise, at least slightly, through private housing developments; and there would be unrestricted access to the larger 'Mainland' market. Therefore it is likely that the success or otherwise of a business in Bressay would inevitably be determined by its ability to meet the needs of its existing, and potentially new customer base, by offering competitive and value for money products and/or services. While exposure to competition introduces greater threats to the business it could ultimately lead to improved local provision, if local businesses compete successfully.

Increase in Overnight Visitors

5.40 The consultation with VisitShetland revealed that despite the frequency of the ferry service and the proximity of Bressay it was difficult to convince visitors that Bressay is an appropriate alternative to Lerwick for overnight stays. The creation of a fixed-link is expected to remove this barrier and therefore improve the utilisation of bed-spaces in Bressay. However, the creation of a fixed-link is not expected to attract new visitors to Shetland. Therefore, unless there is unmet demand that currently chooses not to visit Shetland because they cannot find accommodation in or close to Lerwick the outcome of this would be displacement of activity from elsewhere in Shetland.

Reduction in Fragility

5.41 The provision of an inter-island ferry service is dependent on the provision of revenue support from the Scottish Government and finance from SIC. Therefore the level of fares and the frequency of service are dependent on the cost of operating the service and the willingness of public bodies to subsidise provision. The nature of a ferry service means that it is vulnerable to change as a result of a change of political policy towards subsidy and what is considered, at a particular time, to be an appropriate price and level of service. As long as a subsidised ferry service remains, this fragility is inherent in island life.

5.42 The creation of a fixed link removes this form of fragility. Bressay becomes permanently linked to 85% of the population of Shetland and is expected to benefit through an increase in confidence of both individuals and businesses to invest in the island.

Negative Impact from the Bridge Option

5.43 The debate over the current Council policy for a bridge has focused upon the restriction that a bridge is expected to have on marine related activity. If a bridge restricted growth or affected current levels of activity this would be a significant concern for Shetland as a whole as the economy is largely dependent on marine related activity for its success. This concern resulted in a change to the design of the original proposed bridge to both increase its air draught and extend its span so as to reduce the potential constraints.

5.44 However, a number of respondents remain concerned, or due to the redesign of the bridge have new concerns, about the bridge proposal. These concerns are:

- a perceived risk of collision. A particular concern was raised by a respondent that the decommissioning industry in Shetland would be severely constrained by the bridge. Not because of the expectation of collision but because of the risk of collision. The respondent commented that the presence of a bridge would be perceived as a hazard and would be appraised as such in risk assessments and therefore would affect access to insurance for activity. The business was of the firm belief that the existence of a bridge would have a significant negative impact on the existing turnover of the business and severely limit the opportunities to secure business growth and decommissioning activity in Lerwick; and
- fears that the significant height of the redesigned bridge (60 metres) would mean that it would be closed more often than the ferry currently has to stop due to high winds. This would have a negative impact on all those that rely on the link for both commercial and personal activity. The knock-on effect of this fear, whether real or perceived, is that this may add to the reluctance of economic activity to locate to Bressay.

Expected Indirect Impact in the Medium-Long Term (5 years and beyond)

5.45 The design life of a fixed link is 120 years and it is not sensible to try and predict economic performance in such a time frame. However, many of the impacts described in previous section would be expected to continue beyond a five year timeframe. In addition to these more predictable impacts, some consultees and business respondents identified impacts that, whilst not expected to happen in the near future, they would expect to see occur in the longer-term if a fixed link is created. These impacts tended to be based more on intuitive expectation rather than evidence from economic forecasts. Therefore these should be considered as perhaps a vision for the future rather than an expectation of likely impact.

5.46 Consultees identified that a fixed link has the potential to enable:

- harbour development on the Bressay side of Bressay Sound;
- if a dual lane road is constructed, there is a potential for larger scale industrial and housing development; and
- a more diversified Bressay economy with less dependence on the public sector.

5.47 These impacts are each discussed below.

Harbour Development

5.48 Commenting on the potential for new harbour facilities a small number of consultees would expect LPA to benefit from a fixed link through access to a new shore line for development. The view expressed by LPA is that there is deep water at a site south of the current fish processing factory that, through reclamation, could provide a deep water berthing facility. However, there is little immediate need for such a facility and no obvious industrial activity that would be based there other than lay-by activity. This is because the sectors where economic growth is expected would need to be, or would wish to be, closely located to existing facilities and services on the Lerwick side.

5.49 However, a number of consultees thought that a logical progression for the long-term development of the economy of Shetland would be to expand Lerwick Harbour along the shore-line of Bressay. Although as stated above and through the analysis of the need for harbour facilities there is no obvious need at this moment in time for such development.

Larger Scale Industrial and Housing Development

5.50 The availability of flat land in Bressay is expected to attract interest in industrial and housing development in the long-term, should Shetland experience economic growth. While no immediate need for development of a significant scale has been identified it is considered inevitable by consultees that development, in particular private housing development would take place for the foreseeable future in Bressay. In addition, industrial activity could be attracted through incentives such as the ability to purchase land at an attractive price.

5.51 However, the degree to which any housing and industrial development can take place would be highly dependent on land-use planning and the availability/accessibility of land and services.

A More Diversified Bressay Economy

5.52 In the longer-term improved access, profitability and increased confidence is likely to lead to more investment in economic activity in Bressay, either by businesses currently based there or businesses who may view it as a potential location for activity. Either way, inclusion in the inter-connected area of Mainland Shetland and proximity to Lerwick is expected to result in new and more diversified opportunities for private enterprise on the island.

Summary of the Impacts of a Fixed Link

5.53 The direct impacts discussed in an earlier section are expected to occur. In addition, the short to medium term indirect impacts have a reasonably high likelihood of occurring if a fixed link is progressed. The conclusion from the analysis is that if a fixed link is created there would be inevitable change in the nature of economic activity in Bressay which would be wider than the direct impact through the loss of the ferry jobs.

5.54 For a small number of businesses this would mean rising to the challenge of increased competition, or face potential business failure, but for the majority of businesses the reduction in operating costs and access to new markets would increase profitability and enable business growth and development.

5.55 If these businesses are attracting income from outwith Shetland the overall Shetland effect would be positive. However, even if all of the new activity which benefits Bressay businesses results in displacement from other areas, there is still a positive argument for the sharing of wealth more widely within Shetland.

5.56 In addition, there is expected to be an increase in one-off private sector housing developments which would lead to some population increase. Although again, this is anticipated to result in displacement from alternative areas in central Shetland. However, significant housing development is likely to be restricted due to weaknesses in the existing infrastructure on Bressay and the large-scale housing developments that are already planned for other areas in central Shetland.

5.57 The medium to longer term impacts described in the previous section are much less certain than the direct and short-term indirect impacts. The longer-term impacts would be dependent on the future direction of the Shetland economy, for example the ageing and declining population is expected to slow demand for new housing and constrain economic growth. In addition, the extent of any impact would depend on the response of the potential ‘gainers’ to the new opportunity, and the response of potential ‘losers’ to the challenge.

Direct Impact of a Reconfigured Ferry Service

5.58 The remaining option to be considered is the reconfigured ferry service. The direct impact of a reconfigured ferry service would be to increase the employment and finance required to provide the service. ZetTrans estimate that the reconfigured ferry service would require between two and three full-time equivalent posts. ZetTrans does not anticipate that the reconfigured ferry service would increase significantly the amount that is spent by the ferry service on supplies and services in the local economy. In total, the cost of the reconfigured ferry service is estimated to be an additional £300,000 per annum.

5.59 The cost of this would be met by the SIC and as the total amount of money available to the Council for the ferry service is not expected to increase as a result, the investment is likely to occur at the cost of employment or activity that supports employment elsewhere in the local economy.

5.60 If as one fare proposal suggests, the reconfigured ferry service is provided free of charge this would reduce the price for users and therefore have similar positive impacts on an individual's disposable income and the profitability of businesses that must trade in Bressay as the fixed-link options provide. However, the inconvenience of a timetabled and restricted capacity service would remain, as would the fragility associated with continuing with the frequency of service and the fare policy.

Indirect Impact of a Reconfigured Ferry Service

5.61 The retention of any form of ferry service would mean that barriers to investment remain and economic growth would be restricted. In addition, there is a risk that if the free fares approach is adopted and demand is subsequently rasied that it may make it difficult for economic units or individuals to know that they would secure a passage when required. Therefore in addition to the cost to the public purse, there may be further negative impacts to those residents and businesses in Bressay that wish to travel unrestricted. This could necessitate a booking system which at the moment does not exist for the Bressay service.

5.62 Benefits from the reconfigured ferry service are perceived to be leisure and access related but are judged to, on the whole, have negligible economic impact and as the TEE analysis proves, this does not provide good overall value from the additional public sector investment required.

5.63 There were no longer-term indirect impacts expected from the reconfigured ferry service that were highlighted by either consultees or business survey respondents.

Preferred Option

5.64 The research for this study suggests that the economic development need that could be addressed from a new transport solution is largely localised to those working or living in Bressay and for those businesses and services that operate in Bressay. The findings show that the impact of a fixed link is expected to result in the most positive solution for the island of Bressay as the subsequent reduction in fragility would strengthen the long-term confidence and therefore investment in the island's future. In addition, it appears that the loss of the ferry jobs can be mitigated by either employment elsewhere in the ferry service or in the wider Shetland economy.

5.65 There is a difference between the performance of the two fixed link options in the appraisal. Both options would affect businesses during their construction, however, some of the impact created by the tunnel would have been inevitable in the medium-term and the tunnel would therefore only bring it forward. However, the bridge option is expected to have an ongoing negative effect on the wider economy of Shetland as a result of the perceived risk of collision rather than the actual likelihood of collision. Therefore the tunnel option outperforms the bridge and becomes, in line with the TEE analysis, the preferred option.

5.66 This conclusion also mirrors the responses to the business survey and the views of the consultees. At the end of each interview, the business survey respondents were asked to identify their preferred option out of the four potential options, including the Do Minimum. The findings were:

- 70% of the 16 business respondents stated that their preferred option is the tunnel, as even if they themselves did not expect any benefit, they could see how it would benefit others;
- 6% said the bridge as the respondent perceived it to be safer than the tunnel, but said they wouldn't mind if it was a tunnel;
- 6% said an improved ferry service;
- 6% said maintain the existing ferry service in order to retain ferry jobs; and
- 12% were indifferent.

5.67 Of those that stated their preferred option is the tunnel, some did not expect any benefits to their own business, and one even expected a negative impact for their business but still picked this option. The following comments were made by those that did not expect a positive impact themselves:

- 'Ferry [maintenance] business is good for our business but long-term benefits [from a tunnel] for Shetland outweigh this.'
- 'Everyone deserves better opportunities.'
- 'It's the logical thing to do so that you can have opportunities for development in the long-term.'

6 Conclusions

6.1 The purpose of the study was to explore:

- is there an economic need for a new transport solution, and in particular:
  - o are there constraints on economic activity in Bressay as a result of the existing ferry service;
  - o are there existing or potential land and property constraints in and around Lerwick on industry growth or housing development;
  - o are there existing or potential harbour infrastructure constraints in Lerwick on industry growth;
- how might each option respond to any need that has been identified and give rise to changes in economic activity; and
- who might benefit from an option and who might be disadvantaged?

6.2 The four options under consideration in the wider STAG appraisal are

- o a drill and blast tunnel;
- o a high level bridge;
- o a reconfigured ferry service; and
- o the Do Minimum option, which retains the existing ferry service.

Evidence of Need for a New Transport Solution

Impact of the Existing Ferry Service (the Do Minimum Option)

6.3 To understand the impact of the proposals for change it was important to understand what impact the existing ferry service has on both Bressay and the wider economy. The main economic impacts of the current ferry service were found to be:

- the provision of 18 full-time posts in Bressay at higher salary than is the average in Shetland;
- a constraint on investment and development in Bressay due to the barrier created by the ferry service and the fragility associated with ferry service provision, in particular related to the frequency of service and fares;
- the loss in productivity for private enterprise and public sector services that travel into Bressay to trade or deliver services; and
- a high degree of subsidy from the public sector towards the operation of the ferry service.

6.4 In addition, the uncertainty that surrounds the provision of a fixed link to Bressay itself has an impact on economic activity. The uncertainty means that land is not being released for development, in particular one-off private housing development, proposed within the island.

Current Economic Conditions

6.5 The majority of employment opportunities in Shetland are in Lerwick and this is leading to population drift towards central Shetland. In contrast to other island communities within Shetland that are not connected by a fixed link, the population of Bressay has been steadily growing. This could be due to its central location or perhaps as a result of the expectation that there would be a fixed link.

6.6 Unemployment is low in Bressay and while this is positive there is a dependency on Lerwick for both employment and the day-to-day needs of residents in Bressay.

6.7 Both low unemployment and a stable or rising population does not suggest that the community of Bressay is experiencing an economic crisis that needs to be resolved by an improved transport link. However, as described in the previous section, development of private enterprise is constrained by the costs of transport and difficulties and barriers presented by dependency on a ferry service.

Potential Economic Constraints

6.8 In addition to reviewing the current conditions in Bressay, the research sought to establish to what extent there is unmet demand for industrial, commercial, harbour and housing development in Lerwick, or more widely in Shetland, that could be addressed through a new transport link to Bressay. The conclusions are:

- there is no evidence that development is currently constrained by a lack of access to commercial and industrial land in Lerwick;
- that Lerwick would almost always be the preferred location for industrial development as 'businesses like to be near other businesses' This is the expectation unless land in Bressay can offer incentives that outweigh potential disadvantages by offering land to purchase at an attractive price;
- there are development needs for new harbour infrastructure, however, there are also either current or planned developments that would address the needs of the potential growth industries for the foreseeable future; and
- there are constraints on housing development in Lerwick and as a result there is an increase in population and housing development in alternative central locations, in particular Scalloway. However, there is no evidence that housing in central Shetland is constrained by a lack of appropriate land for housing. Although it is recognised that accessing the available land for development purposes can in some cases be challenging.

6.9 Therefore the research has identified that current economic development need for a new transport link between Bressay and the Mainland is in general localised to those businesses and organisations based or active on the island. .

Impact of the Options

6.10 The TEE analysis summarised in Chapter 3 shows that the tunnel, including public transport provision, performs significantly better than the ferry and bridge options. The estimates suggest that over a 60 year period the combined capital and operational costs of a tunnel would be approximately 40% less than the bridge option; almost 60% less than that reconfigured ferry service and 55% less than the current ferry service, the Do Minimum option.

6.11 Therefore there is a situation where the need for a new transport solution is highly localised within Bressay and is expected to create little net impacts at a Shetland level and no net impacts at a Scotland level; but also, there is a situation where the TEE analysis clearly demonstrates that a fixed link provides the best economic value from public sector investment.

6.12 In general, both the tunnel and the bridge are expected to have similar types of impacts and are therefore grouped together as 'fixed link' options. However, there are some differences in the nature or degree of impact expected and where relevant these are highlighted.

6.13 The direct impacts of the fixed link options, which are those impacts inherently linked to the actual construction and operation of an option, are expected to be:

- benefits from construction, that largely result in sub-contracting opportunities and potential opportunities for accommodation providers off-season;
- displacement of tourism activity during the peak-season due to accommodation requirements for imported construction labour unless temporary accommodation is provided. This impact would be greater for the bridge option as there would be a higher number of imported workers;
- negative impacts from the construction activity for the fixed links. For the tunnel option this means a displaced tenant and potential disruption to accessibility during activity at the Lerwick portal. For the bridge option this means constraints on those businesses operating in close proximity to the construction of piers for the bridge through restricted access;
- removal of the ferry service and therefore the reduction of employment opportunities in Bressay, however there is expected to be no increase in unemployment as similar opportunities exist elsewhere in the Shetland economy; and
- unrestricted travel access which is expected to improve the profitability of businesses and the disposable income of individuals. In addition, the unrestricted access is expected to lead to an increase in the number of trips made.

6.14 The indirect (short-medium) term impacts of the fixed link options are:

- productivity improvements to both private enterprise and public services that travel into Bressay to trade or deliver services;
- increased competitiveness of economic activity based in Bressay through a reduction in costs and improved access to opportunity;

- exposure of some Bressay based businesses to increased competition;
- an increase in the rate of new one-off private housing developments on Bressay;
- an increase in the number of overnight visitors to Bressay;
- a reduction in the fragility of the community in Bressay and as a consequence an increase in confidence to invest in the island; and
- a negative impact from the bridge option on the wider economy, in particular the marine based sector.

6.15 The longer term, and perhaps more visionary, impacts of the fixed link options were predicted to be:

- harbour development on the Bressay side of Bressay Sound;
- if a dual lane road is constructed from the fixed link in Bressay and further infrastructure secured a potential for industrial and larger scale housing development; and
- a more diversified Bressay economy with less dependence on the public sector.

6.16 In summary the tunnel option performs better than the bridge option but both fixed link options would have positive and negative impacts. These impacts would lead to inevitable changes in the economic activity that occurs within Bressay, which may have knock-on social impacts, and during construction negative impacts on those businesses in the close proximity of activity. However, the overall outcome for the community is expected to be enhanced access to opportunity and improved competitiveness to bring the island in line with many other central areas of Shetland.

6.17 The remaining option is therefore the reconfigured ferry service. The direct impacts of this option would be:

- an increase in employment on-board the ferry service;
- an increase in cost to the public sector; and
- some improvement in accessibility and if the free fares option is implemented a likely increase in demand.

6.18 However, the reconfigured ferry service would maintain a degree of fragility within Bressay as the frequency of service and fare levels remain changeable and dependent on ongoing and significant public subsidy.

6.19 The indirect impacts of the reconfigured ferry service are expected to be:

- continuing restrictions on investment in economic activity on Bressay due to the fragility associated with the ferry service; and
- if the free fares option is implemented potential challenges for economic actors that wish to access a more popular but capacity constrained service.

Conclusion

6.1 The research and analysis suggests that the economic development need for any improvement to the transport option is highly localised within Bressay and for those businesses and services that operate in Bressay. It is not expected that the construction of a fixed link or a reconfigured ferry service would generate new benefits or opportunities at a Shetland wide level, at least in the foreseeable future.

6.2 The fixed link options best address the local needs identified in this process. However, both fixed links would have positive and negative economic impacts. In the analysis of potentially negative impacts both are expected to have construction related impacts on those in the immediate vicinity, and for the tunnel option the apparently inevitable demolition of one building which is owned by the LPA. However, the bridge option is anticipated to generate the greatest negative impact of all the options as there are concerns that once operational it would present an ongoing barrier to marine related activity and potential economic growth, and there are fears that the new design would lead to a more frequent loss of access than is currently experienced with the ferry service due to high winds. Therefore the fixed link options are appraised to best address need, and the tunnel option performs the best as it is expected to create negative impact only during the construction period.

6.3 If the fixed link options, and the tunnel in particular, had performed significantly worse than the ferry service in the financial analysis summarised in Chapter 3, it is likely that more focused research would have been required. This would have been required in order to explore whether the value of the benefits identified in a qualitative manner in this analysis would outweigh any additional investment required, particularly as many of the expected benefits to Bressay may occur at the expense of other areas in Shetland.

6.4 However, the TEE analysis shows that the tunnel option significantly outperforms not just the other options for change but also the Do Minimum option in terms of both the anticipated cost over the 60 appraisal period and the quantified return in terms of community value expected from the investment. Therefore the tunnel is appraised as the best performing option in both the TEE and EALI appraisal.

6.5 There would be winners and losers through the introduction of a tunnel but it is expected that the strength of the local economy would absorb many of the negatives, and overall a tunnel would reduce fragility for the community of Bressay and improve the competitiveness of Bressay as a place to live and work. This would help to sustain the community for the foreseeable future.

6.6 However, to maximise economic activity and land impacts and to protect Bressay from inappropriate development, the potential approval of a drill and blast tunnel must be accompanied by appropriate land-use planning and infrastructure development.

6.7 In addition, the negative economic impacts created by the uncertainty surrounding the transport link suggest that to enable the community of Bressay to address its challenges and develop appropriately, there is a need for a decision at the earliest appropriate date.

Appendix A: Consultees

Businesses Interviewed Using a Structured Questionnaire

Name	Organisation
Peter Tait	DITT
George Garriock	Garriock Brothers
John Scott	Garth Estate
Grant Hunter	Hoversta Farm
Davie Paul	JBT
David Manson	Keldabister Farm
Sandy Laurenson	L & M Engineering
Dougie Stevenson	Malakoff Limited
Dave Wood	Maryfield Hotel
Rita McNab	McNabs Kippers
Paul Parsons	Northern Lights Holistic Spa
Murdo McIvor	SBS Logistics
Billy Cromwell	Scomi Oiltools
Brian Isbister	Shetland Fish Producers Organisation
Mark Waldstrom	Shetland Fish Products Limited
Martin Leyland	Shetland Seafood Auctions

Consultees Interviewed Using a Structured Aide Memoire

Name	Organisation
Katrina Wiseman	Highlands & Islands Enterprise
Brian Leask	Hjaltland Housing Association
Sandra Laurenson	Lerwick Port Authority
Victor Sandison	Lerwick Port Authority
Michael Thomson	Michael Thomson FRICS
Douglas Irvine	Shetland Islands Council, Economic Development Unit
Anita Jamieson	Shetland Islands Council, Housing Department
Hannah Nelson	Shetland Islands Council, Planning Department
Jim Dickson	Shetland Islands Council, Ports and Harbours Department
Andy Steven	Visit Shetland

Consultees that Provided Statistics or Background Information

Name	Organisation
Andy Sloan	Donaldson Associates Limited
Iain Salisbury	Halcrow
Richie Simpson	LHD Limited
Thomas Coutts	Shetland Islands Council, Economic Development Unit
Alistair Christie-Henry	Shetland Islands Council, Ferry Service Division
Ian McDiarmid	Shetland Islands Council, Planning Department
David McNae	Shetland Islands Council, Roads Department
Dávid Reinert Hansen	Vágatunnilin p/f, Faroe Islands
Michael Craigie	ZetTrans
Emma Perring	ZetTrans
Ken Duerden	ZetTrans

Appendix B: Business Questionnaire

Economic Activity and Location Impacts of Bressay Link Research with Businesses

Anderson Solutions has been commissioned by ZetTrans to undertake research with local businesses. The purpose of the research is to find out what impacts may be generated by the different options proposed to improve transport links with Bressay.

You have been identified as one of the people whose views are expected to add significant value to the research. I have a number of questions which will take around 30 minutes to go through, would you be willing to take part either now or at a more convenient time?

The questions I would like to go through cover the nature of your business; issues related to property and land; likely impacts of the options for a new link to Bressay; and the potential opportunities that may arise if a new link is created.

i	**Name of Business**	
ii	**Interviewee**	
iii	**Date of interview**	
iv	**Interviewer**	
v	**Method**	

Section A - Characteristics of the Business

A1 Nature of Business

A2 How many business sites do you have in…

a) …Lerwick and Bressay?	
b) …elsewhere in Shetland?	
c) …elsewhere in UK?	
d) …elsewhere in World?	

A3 Number of Employees in Shetland

a) Full-time	
b) Part-time	
c) Seasonal	

A4 Do you sell products or services to businesses outside of the Shetland or temporary visitors to Shetland (businesses and individuals)?

Yes		No	go to A7

A5 If yes, briefly state nature of products/services sold outside of Shetland

A6 What proportion of your turnover is accounted for by these type of sales?	%

A7 Where are your main competitors located?

	Tick all that apply
Bressay	1
Lerwick	1
Rest of Shetland	1
Rest of Scotland	1
Rest of Europe	1
Rest of World	1

Section B – Business Development and Property Issues

B1 What were the most important factors in deciding on your current business location(s) (main site in Shetland if they're very different)**?**

	Tick all that apply
Access to labour	1
Access to harbour	1
Access to raw materials / supplies	1
Access to transport	1
Access to other facilities (please specify)	1
Cost	1
Landlord / owner of site or property	1
Other (please specify)	1

B2 Did you consider alternative locations in Shetland?

Yes	Y
No	N
Don't know	D
Comment on why other sites not appropriate	

B3 Do land and property issues restrict your ability to grow your business? (including access to harbour facilities)

	Tick all that apply
a) Yes, land issues	1
b) Yes, property issues	1
c) Yes, access to harbour facilities	1
d) Yes, other, brief description	1
e) No	1

B4 If yes, please explain for each

e.g. affordability, availability, access, not enough land available to buy

B5 Does the existing ferry service to Bressay constrain your business?

Yes		No	
Please explain			

B6 Do you expect your business to grow over the next 3 years?

Yes, significant growth expected, more than 50%	A
Yes, substantial growth expected, 20-50%	B
Yes, moderate growth expected, 5-19%	C
Remain similar (+ or – 4%)	go to B9 - D
No, expect business to decline	go to B9 - E

B7 If yes, are you considering sites / locations for business expansion?

Yes		No	go to B9

B8 Where is your ideal location for business expansion?

Bressay	A
Lerwick	B
Rest of Shetland	C
Rest of Scotland	D
Rest of World	E

B8a Please explain

B9 Overall, what is the biggest constraint on growing your business?

	Tick one
No constraint	A
Land and Property Issues, discussed above	B
Market Size	C
Availability of Labour	D
Access to or cost of raw materials / supplies	E
Cost of Transport	F
Location	G
Access to Finance	H
Uncertainty about future / lack of confidence to invest	I
Other (please explain)	J

B9a Comment

B10 Does your outlook for growth /stability /decline in your business reflect the expectation for your sector as a whole?

Yes		No	

B10a Comment

Section C – Impact of a New Link to Bressay

TUNNEL QUESTIONS

C1 Would a tunnel be a potential benefit or disadvantage to your business?

Benefit	A
Disadvantage	B
Both	C
Neither, would have no impact	go to C9 – D
Don't know / not sure *(try to avoid this response if possible)*	E

C2 How might impact occur?

Please describe i.e. business expansion, new premises, access to labour

C3 Interviewer, if possible, please try to categorise

Potential Benefit	
Improve your competitive advantage	A
Enable you to increase production / access new markets	B
Enable you to reduce costs	C
Enable you to develop more attractive products / services	D
Potential Disadvantage	
Expose you to greater competition / threat of competition	E
Reduce opportunities to expand business	F
Increase costs	G
Restrict development of products / services	H

C4 Could a tunnel to Bressay solve any property or land constraints previously discussed?

Yes	A
No	B
Not applicable, no property, land or harbour constraints	C

C4a Any Comment

C5 Do you expect the benefit(s) / disadvantage(s) to have an impact on your sales turnover?

Yes		No	go to C8

C5a Can you estimate potential impact on turnover?

	Positive	Negative Go to C8
Small, 1-4%	A	E
Moderate, 5-19%	B	F
Substantial, 20-50%	C	G
Significant, more than 50%	D	H

C6 Do you expect the benefit(s) / disadvantage(s) to have an impact on your costs?

Yes		No	go to C8

C6a Can you estimate potential impact on costs?

	Reduction	Increase Go to C8
Small, 1-4%	A	E
Moderate, 5-19%	B	F
Substantial, 20-50%	C	G
Significant, more than 50%	D	H

C7 If beneficial, could the same benefits be achieved without a fixed link, or at another location?

Yes, definitely, same benefits could be achieved through alternatives	A
Yes, possible, but may not achieve same level of benefit	B
No, benefits are only possible with a fixed link between Bressay and Lerwick	D

C8 Please comment

BRIDGE QUESTIONS

C9 If the fixed link was a bridge rather than a tunnel would the impact on your business be different from that described for a tunnel

Yes, different		No, the same	go to C17

C10 Would a bridge be a potential benefit or disadvantage to your business?

Benefit	A
Disadvantage	B
Both	C
Neither, would have no impact	go to C17 – D

C11 How might impact occur?

Please describe i.e. business expansion, new premises, access to labour

C11a Interviewer, if possible, please try to categorise

Potential Benefit	
Improve your competitive advantage	A
Enable you to increase production / access new markets	B
Enable you to reduce costs	C
Enable you to develop more attractive products / services	D
Potential Disadvantage	
Expose you to greater competition / threat of competition	E
Reduce opportunities to expand business	F
Increase costs	G
Restrict development of products / services	H

C12 Could a bridge link to Bressay solve any property or land constraints previously discussed?

Yes		No	

C12a Any Comment

C13 Do you expect this benefit / disadvantage to have an impact on your sales turnover?

Yes		No	go to C16

C13a Can you estimate potential impact on turnover?

	Positive	Negative Go to C16
Small, 1-4%	A	E
Moderate, 5-19%	B	F
Substantial, 20-50%	C	G
Significant, more than 50%	D	H

C14 Do you expect the benefit(s) / disadvantage(s) to have an impact on your costs?

Yes		No	go to C8

C14a Can you estimate potential impact on costs?

	Reduction	Increase Go to C8
Small, 1-4%	A	E
Moderate, 5-19%	B	F
Substantial, 20-50%	C	G
Significant, more than 50%	D	H

C15 If beneficial, could the same benefits be achieved without a fixed link, or at another location?

Yes, definitely, same benefits could be achieved through alternatives	A
Yes, possible, but may not achieve same level of benefit	B
No, benefits are only possible with a fixed link between Bressay and Lerwick	D

C16 Please comment

FERRY QUESTIONS

C17 Would an improved ferry service be a potential benefit or disadvantage to your business?

Benefit	A
Disadvantage	B
Both	C
Neither, would have no impact	go to Section D – D

C18 How might impact occur?

Please describe i.e. business expansion, new premises, access to labour

C18a Interviewer, if possible, please try to categorise

Potential Benefit	
Improve your competitive advantage	A
Enable you to increase production / access new markets	B
Enable you to reduce costs	C
Enable you to develop more attractive products / services	D
Potential Disadvantage	
Expose you to greater competition / threat of competition	E
Reduce opportunities to expand business	F
Increase costs	G
Restrict development of products / services	H

C19 Could an improved ferry service to Bressay solve any property or land constraints previously discussed?

Yes		No	

C20 Any Comment

C21 Do you expect the benefit(s) / disadvantage(s) to have an impact on your sales turnover?

Yes		No	go to C24

C21a Can you estimate potential impact on turnover?

	Positive	Negative go to C24
Small, 1-4%	A	E
Moderate, 5-19%	B	F
Substantial, 20-50%	C	G
Significant, more than 50%	D	H

C22 Do you expect the benefit(s) / disadvantage(s) to have an impact on your costs?

Yes		No	go to C8

C22a Can you estimate potential impact on costs?

	Reduction	Increase Go to C8
Small, 1-4%	A	E
Moderate, 5-19%	B	F
Substantial, 20-50%	C	G
Significant, more than 50%	D	H

C23 If beneficial, could the same benefits be achieved in another way, or at another location?

Yes, definitely, same benefits could be achieved through alternatives	A
Yes, possible, but may not achieve same level of benefit	B
No, benefits are only possible through an improved ferry service between Bressay and Lerwick	D

C24 Please comment

Section D – Potential Infrastructure Opportunities

A number of ideas exist for developments that could create new opportunities or benefits for Shetland. First of all I'd like to ask you whether your business might be affected if any of these developments went ahead, regardless of location; and if so, I'd then like to ask you about questions about preferred locations.

D1 If the following developments were to go ahead, could they have an impact on your business or the sector that you operate in?

	Yes	Possibly	No
a) Medium-large scale housing development, 100 houses plus	Y	P	N
b) Synchro lift facility / dry-dock for vessels	Y	P	N
c) New fish market	Y	P	N
d) Deep water lay-by berth for vessels	Y	P	N

Insert number of developments to be discussed in more detail, and use the Appendix as loose sheets to complete questions on each before returning to questionnaire and Section E	

Section E – Construction Impacts

E1 Do you expect that the construction activity linked to either a tunnel or bridge would affect your business?

Yes, construction of either a tunnel or a bridge would affect business	A
Yes, but only construction of bridge would affect business	B
Yes, but only construction of tunnel would affect business	C
No, construction would not affect business	D

E2 Can you indicate significance of impact to your business?

	Positive	Negative
Minor	A	D
Moderate	B	E
Significant	C	F

E3 How might impact occur?

Please describe potential impacts, access, employment, sales opportunities, disruption

E4 Can impact be quantified in terms of jobs or costs/revenues affected?

Please include timeframe in which impact would be experienced

Section F – Preferred Option

F1 What would be your preferred transport link between Bressay and Lerwick?

Fixed link, either tunnel or bridge	A
Tunnel	B
Bridge	C
Improved ferry service	D
Maintain existing ferry service	go to F6 – E
Don't know / not relevant to me	go to F6 – F

F2 Please comment

F3 If your preferred link is introduced, what priority would your business give to pursuing the opportunities it could create?

It would be the highest priority	A
It would one of a number of high priorities	B
We would explore opportunities but it would not be a high priority	C
We would wait for opportunities to arise	D
Other, please describe	E

F4 Do you think that your preferred link could benefit your industry as a whole over the next 20-30 years?

No, would be detrimental to industry	A
No, would make no difference	B
Yes, would expect some, but minor, benefits	C
Yes, would expect moderate benefits	D
Yes, would expect significant benefits	E
Other, please describe	F

F5 Please explain (include any factors that benefits would be dependent on)

F6 Finally, approximately what was the most recent annual turnover of your business?
If you are a subsidiary of a group with HQ outside of Shetland please indicate turnover for your Shetland based organisation.

F6a	Interviewer, try to get a figure if possible, if not get a category	£
		Tick one
F6b	0 – 99,999	A
	100,000 – 499,999	B
	500,000 – 1 million	C
	1 million – 5 million	D
	5 million – 10 million	E
	Over 10 million	F

F7 Any further comments?

Thank you for taking part in the research

Appendix C: Consultation Aide Memoire

Core Questions

Anderson Solutions proposes the following questions as the framework for our discussion. The questions use a term ‘economic land’, for clarity this refers to space for physical development in which new business can be created, existing businesses can expand or through inward investment, it also where appropriate to you includes land for housing The potential developments could be of any scale and come from any sector of the economy.

For discussion:

1. Is there a high level of enquiries / unmet demand for economic land in Shetland?
2. Is there a high level of enquiries / unmet demand for economic land in Lerwick?
3. Is there land that has the potential to offer appropriate opportunity for development in Bressay?
4. Could additional harbour facilities be created in Bressay?
5. Could the development of an option in both the short-term and long-term (discussion will cover each option):
    - advantage or disadvantage particular industrial sectors;
    - attract economic activity from other areas of Shetland; and
    - change the attractiveness of Lerwick and Bressay as a location for inward investment?