

ANNEX F

BRESSAY LINK

STAG 1: APPRAISAL SUMMARY TABLES (ASTs)

Table F1 STAG 1 Appraisal Summary Table: Do Minimum

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland’s Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Do minimum	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	This assessment is against the current service, providing a baseline against which to assess options.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: approx £25,000/year for both terminals
			Annual revenue support: current cost of service estimated to be £1.365,000 for 2008-09
			Present Value of Cost to Govt.: estimated to be £1.040,000 for 2008-09 (local and national)
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not applicable at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ¹ . Approaching 8,000 of these live in Lerwick, the main town ² . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ³ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ⁴ . The study found that access to employment, skills, services and social activities was key to a person’s feeling of well being.		

¹ Census, 2001² Shetland Islands Local Plan, June 2004³ Shetland Islands Local Plan, June 2004⁴ Study into Deprivation and Social Exclusion in Shetland, 2006

Economic Context:	Fishing and agriculture are Shetland’s traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour’s current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>The current operation does not constrain the current activities of Lerwick Harbour or the plans of the Lerwick Port Authority (LPA). The do minimum would not ensure long-term sustainability of the Bressay community as evidence suggests that current transport arrangements are a hindrance to population stability and economic development on Bressay. Fare levels, given Bressay’s reliance on Mainland Shetland for employment and training, services and social activities are not affordable to users. Establishing sustainable and affordable transport links throughout Shetland is a key priority of ZetTrans, and more work is required to understand what capital and revenue costs are available in the long-term from local and national sources, particularly in a climate of financial savings and ongoing efficiencies.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>The current operation constrains the Bressay community’s access to employment, services and recreation, both through the operational day (7-11pm) and frequency (hourly except at peak times) and the cost. This includes access to shift work at the Bressay factory and elsewhere. This means the community does not have the same level of access as other communities in Shetland. A lack of public transport within Bressay makes access to the ferry link difficult for those without private transport. However, the central location of the link in Bressay and Lerwick is of value. At the current time there are constraints on housing: opportunities for private housing as landowners can be reluctant to sell land at the current time of uncertainty over the link and cost of construction; and opportunities for social housing, because of a lack of demand to be housed on Bressay because of real and perceived access issues. The current service is generally felt to be adequate for emergency services but there is a barrier to providing necessary out-of-hours assistance.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy</p> <p>Env1: To develop a link to Bressay that recognises and protects Shetland’s unique environment and safeguards the natural, cultural and social heritage of the</p>	<p>The do minimum would have no additional impact on the environment and island heritage or patterns of land use. More information is required on the current operation’s carbon footprint and resource use for use in comparisons with other options.</p>

<p>island Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	
<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>The do minimum would have no additional impact on maritime, road or community safety or health, although it does hinder access to indoor exercise facilities (Clickimin) and to health facilities, for example.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>The do minimum provides limited integration to other transport services, in particular it is unable to enable Bressay residents to access the early morning flights from Sumburgh, without an overnight stay on Mainland Shetland. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options, including do minimum, on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>Due to issues of access and opportunities, there is a need to implement one or more of the nine options below, as the do minimum is unable to address the issues raised by stakeholders nor provide an affordable, efficient, flexible and sustainable transport link between locations in Bressay and Mainland Shetland.</p>

Implementability Appraisal	
Technical:	No technical difficulties.
Operational:	Current operation until at least 2012, when some capital investment may be required. Long-term replacement of ferry.
Financial:	Service currently difficult to afford for many users (Bressay residents and businesses), and issues over long-term sustainability of revenue funding from national and local government. Issues over capital replacement costs in the future.
Public:	Do minimum would not be acceptable to the community of Bressay, primarily due to issues of access and associated cost (fare levels).

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	0	No change unless in the future the ferry was replaced by a vessel using new technologies which could reduce its carbon footprint.
Safety:	0	No change to safety of users.

Economy:	--	No change to employment opportunities or access to employment opportunities, however, evidence suggests an increasingly constrained local economy under current service levels.
Integration:	-	No change to transport integration. However, evidence suggests this lack of integration is constraining the community in some areas.
Accessibility & Social Inclusion:	0	No change to accessibility for users, including value of centrally located service. However, evidence of difficulty in accessing terminal on Bressay and barriers (operational day, frequency and cost of fares) to access jobs, services and other facilities.

Table F2 STAG 1 Appraisal Summary Table: Option 1 Reconfigured Ferry Service

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland’s Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 1 – Reconfigured Ferry Service (existing vessel)/ Reconfigured Ferry	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	This option would include an enhanced ferry service, which could include length of operational day, frequency of sailings, revised fare structures and alternative crewing arrangements. Electric or hydrogen ferries could be considered for replacement vessels in the future.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: not known at this stage
			Annual revenue support: not known at this stage
			Present Value of Cost to Govt.: not known at this stage (all above dependent on configuration)
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ⁵ . Approaching 8,000 of these live in Lerwick, the main town ⁶ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ⁷ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ⁸ . The study found that access to employment, skills, services and social activities was key to a person’s feeling of wellbeing.		

⁵ Census, 2001⁶ Local Plan, June 2004⁷ Local Plan, June 2004⁸ Study into Deprivation and Social Exclusion in Shetland, 2006

Economic Context:	Fishing and agriculture are Shetland's traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour's current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>If the ferry operation was reconfigured to a longer operating day, greater frequency and reduced fares (perhaps only for Bressay residents) feedback from consultation suggests that this would assist with the long-term sustainability of the community by increasing opportunities for economic development on the island and providing opportunities to access improved employment opportunities. A more frequently run ferry would require greater management of vessels in that area of the harbour, to ensure navigational safety, but would be manageable. As long as the option to reconfigure and/or replace the existing ferry did not require substantial changes to terminals, there would be no other impact on the operations of Lerwick Harbour. Such an impact would be small. The likelihood is that this option would require increased revenue from funders, with capital spend when a replacement is required.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>An enhanced ferry service would improve the Bressay community's access to employment, services and recreation, both through the operational day (7-11pm) and frequency (hourly except at peak times) and the cost. This includes access to shift work at the Bressay factory and other shift work and opportunities. This would assist the community to have the same level of access as other communities in Shetland. A lack of public transport within Bressay makes access to the ferry link difficult for those without private transport. However, increased frequency of sailings may enable greater provision of public transport, and the central location of the ferry link in Bressay and Lerwick would be retained. An improved service could provide opportunities for private housing, removing uncertainty over the link and possibly bring down construction costs; and demand and opportunities for social housing. An enhanced service would ensure access for emergency services and out-of-hours assistance. The only access constraints would be poor weather (this could be overcome by installing engines of higher power output) and possible capacity issues at certain times of day.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport</p>	<p>An enhanced ferry service is unlikely to have additional adverse impact on the island's environment, heritage or patterns of land use. However,</p>

<p>which minimise emissions and consumption of resources and energy Env1: To develop a link to Bressay that recognises and protects Shetland's unique environment and safeguards the natural, cultural and social heritage of the island Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>increased operation and increased access for vehicles would increase emissions. Increased public transport facilities on Bressay could help reduce traffic generation. New technologies may provide some benefits (hydrogen or electric power) but more information is required to confirm this.</p>
<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>Improved access could lead to increased use of vehicles and associated community and road safety issues. However, increased frequency could remove the vehicle dash to the 8.30am ferry. There might be negative health impacts as it would be easier for vehicles to use the route, rather than users walking or cycling, however, access to indoor sports activities would be improved. Some navigational safety issues with increased crossings (see above).</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>This option would improve integration with other transport services. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options, including do minimum, on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option will be considered at Part 2. The option is strong in terms of access, integration and possible economic sustainability of the Bressay community. However, more information is required on revenue and capital investment required in the long-term, in order to be able to fund such an enhanced service (lower resident fares, longer operational day, increased crossings).</p>

Implementability Appraisal	
Technical:	No apparent technical difficulties, continuation of existing expertise.
Operational:	No apparent operational difficulties, continuation of existing expertise.
Financial:	Potentially significant issues in terms of operational and maintenance costs, which could affect long-term affordability.
Public:	Highly acceptable to some Bressay residents particularly if more affordable but expectations over those desiring a fixed link would have to be managed.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information

Environment:	-/+?	Increase in emissions and use of finite resources. Use of new technologies (e.g. hydrogen or electricity from renewable sources) could reduce impact and provide benefits.
Safety:	0/+	May lead to increased traffic, and associated problems on Bressay and Mainland Shetland, and navigational problems would have to be well managed. However, access for emergency services and out-of-hours care would be enhanced.
Economy:	++	Increased opportunities for economic development on Bressay (existing and new/relocated businesses) and access to employment elsewhere. Possible reductions in business costs.
Integration:	++	Potential for increased integration and retention of central location of service.
Accessibility & Social Inclusion:	++	Improvements in access to employment, services and facilities, and for service delivery in Bressay. Retention of central location. Further benefits could be delivered by improving public transport provision on Bressay.

Table F3 STAG 1 Appraisal Summary Table: Option 2 Passenger Ferry/Water Taxi

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland’s Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 2 – Passenger Ferry/Water Taxi	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	This option considers a, potentially, smaller vessel, carrying passengers only. It enables exploration of a versatile service, with central accessibility, in combination with other link option(s). Consideration would be made of electric or hydrogen vessels.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: not known at this stage
			Annual revenue support: not known at this stage
			Present Value of Cost to Govt.: not known at this stage (all above dependent on configuration)
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ⁹ . Approaching 8,000 of these live in Lerwick, the main town ¹⁰ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ¹¹ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ¹² . The study found that access to employment, skills, services and social activities was key to a person’s feeling of wellbeing.		

⁹ Census, 2001¹⁰ Local Plan, June 2004¹¹ Local Plan, June 2004¹² Study into Deprivation and Social Exclusion in Shetland, 2006

Economic Context:	Fishing and agriculture are Shetland's traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
Planning Objectives	
Objective:	Performance against planning objective:
Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour's current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	This option would need to be considered alongside other options – as a stand-alone option it would prevent movement of vehicles or freight. Alongside other options it would help to sustain the population and provide some opportunities for economic growth and employment, in particular for those businesses benefiting from foot passengers and for those able to access employment and leisure activities by foot, cycle or ongoing public transport. Therefore some of the benefits accrued would be dependent on other forms of public transport being in place. There may need to be greater management of vessels in that area of the harbour, to ensure navigational safety, but this would be manageable and impacts on the operations of Lerwick Harbour could be controlled. Affordability to users would depend on fare levels. Implementation of this option would require additional funding from funders, depending on the extent to which the Council operates the service or the degree of subsidy required.
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	There is potential to use this option alongside other options (chain ferry, reconfigured ferry or fixed link) in order to ensure an accessible central link and/or extend the length of the operational day and level of services, providing possible efficiencies of other options. This could enhance the Bressay community's access to employment, services and recreation, could include access to shift work at the Bressay factory and elsewhere, and provide a useful route for visitors. This would assist the community to have the same level of access as other communities in Shetland. To fully meet objectives this option would also require improved public transport within Bressay. The improved accessibility provided could improve demand and opportunities for social housing and enable callouts for out-of-hours and possible emergency assistance, along with other measures. Poor weather may prevent sailing at certain times, probably more than with the current ferry service.
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy</p> <p>Env1: To develop a link to Bressay that recognises and protects Shetland's unique environment and safeguards the natural, cultural and social heritage of the</p>	This option is unlikely to have additional impact on the island's environment, heritage or patterns of land use. A centrally located passenger ferry/water taxi would encourage less use of vehicles than under some other options, but more would need to be understood about the carbon footprint and resource use of the vessel and of the options with

<p>island Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>which it was linked.</p>
<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>This option would have little or no impact on community, road or maritime safety, and have the potential to improve health, by encouraging more walking and cycling and provide a rapid response service.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>This option would have the potential to improve integration with other transport services. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options, including do minimum, on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>Whether or not this proposal is selected for consideration at Part 2 depends on which other options were selected. It should remain a possible option if fixed links and/or ferry services remain, as it has the potential to provide a useful contribution to ensuring accessibility and integration objectives alongside other options that do not perform so well in these areas and could enable efficiencies with other options.</p>

Implementability Appraisal	
Technical:	No apparent technical difficulties.
Operational:	No apparent operational difficulties, but value in exploring private operation.
Financial:	More information required, especially with regard to likely usage.
Public:	Public acceptability would depend on other options implemented.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	-/0/+?	The increased service frequency may increase use of fuels. The option, if using new technologies, may provide overall benefits.
Safety:	0	Limited impact on maritime, road and community safety.

Economy:	+	Limited economic impact, but increased opportunity for tourist access and development, including for those living elsewhere in Shetland, and access for Bressay residents to employment opportunities.
Integration:	++	This option provides opportunities for integration with other transport modes, including walking and cycling.
Accessibility & Social Inclusion:	++	Alongside another option or options, this proposal could provide a more flexible, round-the-clock service, maintaining or enhancing the central location of the current service.

Table F4 STAG 1 Appraisal Summary Table: Option 3 Public Transport Improvements

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland's Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 3 – Public Transport Improvements	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	This option includes bus, taxis and other vehicles capable of providing a flexible and demand responsive transport system within Bressay, integrated with travel options on Mainland Shetland. This option will be considered alongside other options.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: not known at this stage
			Annual revenue support: not known at this stage
			Present Value of Cost to Govt.: not known at this stage (all above dependent on configuration)
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ¹³ . Approaching 8,000 of these live in Lerwick, the main town ¹⁴ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ¹⁵ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ¹⁶ . The study found that access to employment, skills, services and social activities was key to a person's feeling of wellbeing.		
Economic Context:	Fishing and agriculture are Shetland's traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically		

¹³ Census, 2001¹⁴ Local Plan, June 2004¹⁵ Local Plan, June 2004¹⁶ Study into Deprivation and Social Exclusion in Shetland, 2006

	active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour’s current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>This option would need to be considered alongside other options in order to help sustain the population and provide some opportunities for economic growth and employment, by improving access to employment and business on Bressay and employment opportunities on the Mainland for Bressay residents, particularly those without access to a private vehicle. There would be no impacts on the operations of Lerwick Harbour. Affordability to users would depend on fare levels. Implementation of this option may require additional funding from funders, depending on the extent to which the Council operates the service or the degree of subsidy required.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>It will be necessary to use this option alongside other options (chain ferry, reconfigured ferry or fixed link) in order to ensure a transport system for residents and visitors that provides access to employment, services and facilities. The improved accessibility provided could improve demand and opportunities for housing.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy</p> <p>Env1: To develop a link to Bressay that recognises and protects Shetland’s unique environment and safeguards the natural, cultural and social heritage of the island</p> <p>Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources</p> <p>Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>This option is unlikely to have additional impact on the island’s environment, heritage or patterns of land use. However, if the system put in place was appropriate it could decrease people’s reliance on vehicles.</p>

<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>This option would have no impact on community, road or maritime safety, and have the potential to improve health, if combined with hearts and mind measures to encourage walking.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland’s transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>This option would have the potential to improve integration with other transport services. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options, including do minimum, on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option is selected for consideration at Part 2, since all options across the Sound require improved public transport if they are to meet access, environment and integration objectives appropriately.</p>

Implementability Appraisal	
<p>Technical:</p>	<p>No apparent technical difficulties.</p>
<p>Operational:</p>	<p>No apparent operational difficulties, dependent on availability of transport operators.</p>
<p>Financial:</p>	<p>More information required, but likely to be affordable to Council.</p>
<p>Public:</p>	<p>High level of public acceptability.</p>

Government’s Objectives for Transport		
<p>Objective</p>	<p>Assessment Summary</p>	<p>Supporting Information</p>
<p>Environment:</p>	<p>++</p>	<p>An appropriate system has the potential to reduce use of private vehicles, and thereby reduce carbon emissions.</p>
<p>Safety:</p>	<p>0/+</p>	<p>Slight improvement on safety, due to better safety record of both buses and taxis.</p>
<p>Economy:</p>	<p>+</p>	<p>Positive impact on the economy by: improving residents ability to access employment opportunities both within Bressay and on Mainland Shetland; improving those living elsewhere to access employment on Bressay, as well as tourist opportunities.</p>
<p>Integration:</p>	<p>++</p>	<p>Ability to enhance integration with other services and to reduce social exclusion.</p>
<p>Accessibility & Social Inclusion:</p>	<p>+++</p>	<p>Significant positive impact on improving people’s accessibility to employment, services and facilities, on Bressay and Mainland Shetland.</p>

Table F5 STAG 1 Appraisal Summary Table: Option 4 Improved Provision for Walkers and Cyclists

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland's Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 4 – Improved provision for walkers and cyclists.	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	This option includes sustainable travel opportunities, including walking and cycling, within Bressay and integrated with travel options on Mainland Shetland. This option will be considered alongside other options.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: not known at this stage
			Annual revenue support: not known at this stage
			Present Value of Cost to Govt.: not known at this stage
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ¹⁷ . Approaching 8,000 of these live in Lerwick, the main town ¹⁸ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ¹⁹ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ²⁰ . The study found that access to employment, skills, services and social activities was key to a person's feeling of wellbeing.		
Economic Context:	Fishing and agriculture are Shetland's traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of		

¹⁷ Census, 2001¹⁸ Local Plan, June 2004¹⁹ Local Plan, June 2004²⁰ Study into Deprivation and Social Exclusion in Shetland, 2006

	Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour’s current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>This option would need to be considered alongside other options, and would have little perceivable impact on sustaining the population or providing opportunities for economic growth or employment. There would be no impacts on the operations of Lerwick Harbour. The cost to users would be the equivalent of a passenger fare, depending on whether a charge was made for cycles and any measures required would be at minimal relative cost to funders. This option would provide better facilities for tourists, that has the potential to be marketed.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>It will be necessary to use this option alongside other options (any of chain ferry, reconfigured ferry, fixed link and public transport) in order to ensure a transport system for residents and visitors that provides access to employment, services, recreation and facilities.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy</p> <p>Env1: To develop a link to Bressay that recognises and protects Shetland’s unique environment and safeguards the natural, cultural and social heritage of the island</p> <p>Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources</p> <p>Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>This option would have no additional impact on the island’s environment, heritage or patterns of land use. However, if the system put in place was appropriate it could decrease people’s reliance on vehicles with associated benefits from reduction in emissions.</p>

<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>This option would have no impact on community or maritime safety, but could detriment road safety of users if not properly designed and managed. It would improve health.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>This option would have the potential to improve integration with other transport services. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options, including do minimum, on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option is selected for consideration at Part 2, since it is able to promote sustainable transport options at limited financial cost to users or funders.</p>

Implementability Appraisal	
Technical:	No apparent technical difficulties.
Operational:	No apparent operational difficulties, care required to ensure safety is maintained.
Financial:	Limited financial resources required.
Public:	High level of public acceptability.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	++	Reduction in carbon emissions and finite resource use as a result of decreased use of vehicles. Potential to improve health.
Safety:	0	No impact on safety, if appropriate measures were put in place.
Economy:	0/+?	Unlikely to impact directly on economy, although improvements in health improve employability and performance. Benefits for tourists.
Integration:	0/+?	Small enhancement.
Accessibility & Social Inclusion:	+	Improvements to access other modes of transport.

Table F6 STAG 1 Appraisal Summary Table: Option 5 Chain Ferry

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland’s Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 5 - Chain Ferry	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	Passenger/vehicle carrying vessels plying between two points and connected at both points by chains or cables. Examples include Plymouth Sound and Dartmouth. It is assumed that this option would be from The Point of Scotland to Heogan.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: Estimated to cost similar/slightly less to existing ferry replacement
			Annual revenue support: £40-70,000 based on Cowes
			Present Value of Cost to Govt.: not known at this stage
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ²¹ . Approaching 8,000 of these live in Lerwick, the main town ²² . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ²³ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ²⁴ . The study found that access to employment, skills, services and social activities was key to a person’s feeling of wellbeing.		

²¹ Census, 2001

²² Shetland Islands Local Plan, June 2004

²³ Shetland Islands Local Plan, June 2004

²⁴ Study into Deprivation and Social Exclusion in Shetland, 2006

Economic Context:	Fishing and agriculture are Shetland’s traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour’s current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>This option may be able to improve the long-term economic prospects of Bressay. It is unable to operate along the route of the existing ferry, instead operating from The Point of Scatland or Greenhead. Although the crossing may take three minutes (length of the Poole Harbour operation) there would be additional journey time on either side, centre to centre, in addition to embarking/disembarking time. There would be potential to increase service frequency, but with no substantial decrease in operational costs (manning levels would be similar to current operation to ensure the ability to safely evacuate a vessel in an emergency situation). A chain ferry would have an impact on the operations of other vessels in the harbour: the master of the ferry generally has to ascertain that the way is clear before leaving shore and, following a marine accident in Poole Harbour in 2001, vessels less than 50m long have to give way to the ferry when it is crossing. Mariners also have to be warned not to pass directly in front of the chain ferry and the draught behind the ferry can also be restricted by the chain.</p> <p>There would be a need to have a clear piece of land either side to enable the vessel to be pulled fully out of the water: they generally operate from slipways rather than Ro-Ro terminals. Evidence suggests lower operating costs than the current service (primarily through fuel savings, as similar crewing levels are required). However, greater capital investment would be required for vessels (a primary vessel and back-up (in situ or for times of overhaul)), as well as slipways on each side (existing terminals not suitable for use) and mooring facilities.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p>	<p>This option has the potential to increase the operational day length and frequency of access to opportunities and improve equality of access for the Bressay community and others’ access to the island, depending on operational configuration and improvements to the public transport system on Bressay. However, there may be an increased overall length of journey, which may also compromise access for emergency services. The service could be adversely affected by sea conditions, particularly waves</p>

<p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>and poor visibility when ferry service may not be possible, as chain ferries are not manoeuvrable, restricted to moving in a straight line. Using a slipway can lead to passengers getting wet feet.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy Env1: To develop a link to Bressay that recognises and protects Shetland's unique environment and safeguards the natural, cultural and social heritage of the island Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>Unlikely to have additional impact on the environment and island heritage or patterns of land use. Considered likely to have a lower carbon footprint than the current service, on the basis of information known at this time.</p>
<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>Unlikely to have an impact on community safety or health, but compromise in maritime safety, because it may cause complications in the operations of the harbour. The ferry has no means of steerage if the chain were to break, as happened with the Dartmouth Ferry in 2005, when the ferry was washed out to sea. The Maritime and Coastguard Agency (MCA) code of practice will only consider issue of a certificate allowing a Chain Ferry to operate in Category A-C waters; Bressay Sound is categorised as a Category D water.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>This option provides the opportunities for a longer operational day, to integrate with other services. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option will not be considered at Part 2: higher levels of capital investment would be required compared to the existing service, without a significant decrease in operational costs; the increased journey time and loss of central location would not provide significant improvements in accessibility, in addition to operational constraints from sea conditions, particularly waves or in times of poor visibility. There would be a level of disruption to harbour activities, particularly if the ferry were to operate a shuttle service. There would also be safety issues as there is no steerage if the chain were to break. A Chain Ferry would not be certified by the MCA in Bressay Sound.</p>

<p>Implementability Appraisal</p>	
<p>Technical:</p>	<p>No apparent major technical difficulties, although no examples of chain ferries operating in similar locations. The chain would have to be dismantled in order to undertake any maintenance.</p>
<p>Operational:</p>	<p>Operational constraints in poor sea conditions and safety issues if the chain were to break. A Chain Ferry would not be certified by the MCA in Bressay Sound.</p>
<p>Financial:</p>	<p>Higher level of capital investment required, relative to existing ferry option, with minimal decrease in revenue expenditure.</p>

Public:	Acceptability would depend on service improvements provided, fare levels, location and integration with other transport services.
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Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information
Environment:	0	Possible reduction in emissions, but possible increase use and distance driven by vehicles.
Safety:	-	Possible compromise to maritime safety, and operational issues if the chain were to break.
Economy:	+	Operational improvements and fare reduction might provide opportunities for economic growth and access to additional employment opportunities for the population.
Integration:	+	Potential for improved integration with some services, with operational improvements. Due to the location, additional measures would need to be put in place, for the benefits to be accrued by all.
Accessibility & Social Inclusion:	+	Potential for improved access, with operational improvements in length of day and fare levels, but higher chance of operational downtime because of sea conditions. A less central service may lead to a decline in accessibility, unless additional measures are put in place.

Table F7 STAG 1 Appraisal Summary Table: Option 6 Drill and Blast Tunnel

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland's Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 6 – Drill and Blast Tunnel	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	Option covers the construction of a tunnel by drill and blast techniques in the rock beneath the Sound of Bressay on an alignment between Point of Scatland and Heogan. The tunnel would allow bi-directional traffic movement.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: £20 to £25 million
			Annual revenue support: £50,000 to £100,000
			Present Value of Cost to Govt.: not known at this stage
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ²⁵ . Approaching 8,000 of these live in Lerwick, the main town ²⁶ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ²⁷ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ²⁸ . The study found that access to employment, skills, services and social activities was key to a person's feeling of wellbeing.		
Economic Context:	Fishing and agriculture are Shetland's traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of		

²⁵ Census, 2001²⁶ Local Plan, June 2004²⁷ Local Plan, June 2004²⁸ Study into Deprivation and Social Exclusion in Shetland, 2006

	Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour's current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>This option would assist in the ensuring the long-term sustainability of the Bressay community, and enhance business opportunities on Bressay and access to employment opportunities elsewhere. However, there would be a negative impact due to the loss of ferry jobs based on the island, which unless jobs could be found elsewhere on the ferry service, would not be compensated for by jobs associated with the maintenance requirements for the tunnel. There would be no long-term impact on the current operations of Lerwick Harbour or its future expansion although there would be disruption to land during construction. To ensure no future constraint on depth, advance dredging to future proof may be required. There could be impacts to the harbour during construction and these would have to be managed to reduce their impact. There would be high levels of capital investment required, but running costs would be relatively low.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>This option would provide flexible, 24-hour access to and from Bressay, providing equality of access for the Bressay community, particularly for those with access to a private vehicle. There would also be ease of access for emergency services and out-of-hours services. The cost to users would depend on whether tolls would be included. Opportunity for private and social housing would only be restricted by availability of land and the Local Development Plan. The option may not be attractive to cyclists and walkers, although provision could be included. There would be limited temporary restrictions whilst dangerous fuels were transported.</p>

<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy Env1: To develop a link to Bressay that recognises and protects Shetland's unique environment and safeguards the natural, cultural and social heritage of the island Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>The level of access provided by this option could lead to negative impacts on the natural, cultural and social heritage of the island, unless land use planning were put in place, such as strong planning control measures. The link could also lead to increased use of vehicles, increasing carbon emissions. However, more information about traffic predictions is required to fully understand the impact. Construction of the tunnel could have impacts to properties and land uses and the tunnel portals may have a negative visual impact unless carefully designed. There could be operational impacts from fans used to ventilate the tunnel (increased emissions etc). The link itself would not be visible, assisting with retaining the island feel.</p>
<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>The levels of access provided by this option could lead to a real and/or perceived deterioration in community safety. Measures would have to be put in place to accommodate additional vehicles and ensure road safety. There would be no compromise to maritime safety.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>The level of access provided by this option would ensure improvements in integration with other modes of transport for those with access to a private car. For those currently reliant on public transport services, walking and cycling, integration would be compromised if additional measures were not put in place. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options, including do minimum, on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option will be considered at Part 2. This option is strong in terms of possible economic benefits it can provide, and in terms of access and integration, subject to additional measures being put in place. The effects on existing land uses would need to be assessed.</p>

Implementability Appraisal	
Technical:	No apparent technical issues with implementability of tunnel, although may be some land use constraints on the Lerwick side.
Operational:	No apparent operational difficulties. Care is required to ensure safety is maintained with transport of dangerous loads.
Financial:	Significant financial resources required.
Public:	May not be acceptable to those who wish to retain the ferry service, or who do not like tunnels, depending on implementation of other options.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information

Environment:	0/+	Some impacts during construction (on landuses; generation of waste from tunnelling, noise and vibration etc), but tunnels generally have a low environmental impact. Option may generate traffic and tunnel would require ventilation, both with potential for increasing emissions. More information required on predicted traffic flows and operational requirements to confirm this. May stimulate further development with potential for impacts.
Safety:	0	No impact on safety, providing movement of dangerous loads is carefully managed.
Economy:	++	Levels of access would provide greater economic stability for Bressay. Fixed link would provide access to land for business and residential development.
Integration:	++	Access provided would enhance integration opportunities, particularly for those with private vehicles. However, the benefits would not be accrued by all, unless other measures were put in place.
Accessibility & Social Inclusion:	++	Levels of access would be enhanced, but other measures would have to be put in place to ensure no deterioration in access for some. This option would not be affected by weather.

F8 STAG 1 Appraisal Summary Table: Option 7 Immersed Tube Tunnel

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland’s Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 7 – Immersed Tube Tunnel	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	A tunnel constructed by excavating a trench and placing precast concrete sections in and backfilling. At this stage it is not known which exact location would be most suitable. This option could include part causeway and part tunnel.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: dredging to 20m would cost £8-9 mn alone, making costs £30-35mn
			Annual revenue support: £150,000 to £200,000
			Present Value of Cost to Govt.: not known at this stage
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ²⁹ . Approaching 8,000 of these live in Lerwick, the main town ³⁰ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ³¹ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ³² . The study found that access to employment, skills, services and social activities was key to a person’s feeling of wellbeing.		

²⁹ Census, 2001

³⁰ Local Plan, June 2004

³¹ Local Plan, June 2004

³² Study into Deprivation and Social Exclusion in Shetland, 2006

Economic Context:	Fishing and agriculture are Shetland’s traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour’s current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>This option would assist in the ensuring the long-term sustainability of the Bressay community, and enhance business opportunities on Bressay and access to employment opportunities elsewhere. However, there would be a negative impact due to the loss of ferry jobs based on the island, which would not be compensated for by maintenance required. There would be no long-term impact on the current operations of Lerwick Harbour or its future expansion although there would be disruption to land during construction. To ensure no future constraint on depth, advance dredging to future proof may be required. There could be impacts to the harbour during construction and these would have to be managed to reduce their impact. There would be high levels of capital investment required, but running costs would be relatively low, although higher than for a drill and blast.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>This option would provide flexible, 24-hour access to and from Bressay, providing equality of access for the Bressay community, particularly for those with access to a private vehicle. There would also be ease of access for emergency services and out-of-hours services. The cost to users would depend on whether tolls would be included. Opportunity for private and social housing would only be restricted by availability of land and the Local Development Plan. The option may not be attractive to cyclists and walkers, although provision could be included. There would be limited temporary restrictions whilst dangerous fuels were transported.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy</p> <p>Env1: To develop a link to Bressay that recognises and protects Shetland’s unique environment and safeguards the natural, cultural and social heritage of the island</p> <p>Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources</p> <p>Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>The level of access provided by this option could lead to negative impacts on the natural, cultural and social heritage of the island, unless land use planning were put in place, such as strong planning control measures. The link could also lead to increased use of vehicles, increasing carbon emissions. However, more information about traffic predictions is required to fully understand the impact. Construction of the tunnel could have impacts to properties and land uses depending on where the location was and the tunnel portals may have a negative visual impact unless carefully designed. There would also be impacts during construction that would</p>

	<p>affect water quality and could affect other activities in the harbour (e.g. fish related) and could result as impacts on habitats and species at either coast. It is likely that effects would be short term and could be controlled. However, 160-170 cubic metre of material would be produced, with nowhere to easily use/dispose of this quantity locally. There could be operational impacts from fans used to ventilate the tunnel (increased emissions etc). The link itself would not be visible, assisting with retaining the island feel.</p>
<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>The levels of access provided by this option could lead to a real and/or perceived deterioration in community safety. Measures would have to be put in place to accommodate additional vehicles and ensure road safety. There would be no compromise to maritime safety.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>The level of access provided by this option would ensure improvements in integration with other modes of transport for those with access to a private car. For those currently reliant on public transport services, walking and cycling, integration would be compromised unless additional measures were put in place. There is insufficient integration of plans and strategies to be able to fully understand the impact of different options, including do minimum, on other committed plans and strategies.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option will not be considered at Part 2. This option is strong in terms of possible economic benefits it can provide, and in terms of access and integration, subject to additional measures being put in place. However the capital and operational costs are higher than for a Drill and Bore Tunnel; technically more difficult to construct with Shetland's location and climate (increasing levels of risk) and with higher environmental impacts. The effects on existing land uses would need to be assessed.</p>

Implementability Appraisal	
Technical:	Technical issues in terms of construction and Shetland's climate, in addition to use/disposal of material locally. Unable to include part causeway option, as there would be insufficient width in the channel to reach the required depth to the tunnel in this location.
Operational:	No apparent operational difficulties. Care is required to ensure safety is maintained with transport of dangerous loads.
Financial:	Significant financial resources required, and higher than for other fixed link options.
Public:	May not be acceptable to those who wish to retain the ferry service, or who do not like tunnels, depending on implementation of other options.

Government's Objectives for Transport		
Objective	Assessment Summary	Supporting Information

Environment:	0/- with -- during construction	Some impacts during construction (on landuses; noise and vibration etc, water quality) and unable to easily dispose of quantity of material locally. Option may generate traffic and tunnel would require ventilation both with potential for increasing emissions. More information required on predicted traffic flows and operational requirements to confirm this. May stimulate further development with potential for impacts.
Safety:	-	Issues around safety of operation for Lerwick Harbour during construction.
Economy:	++	Levels of access would provide greater economic stability for Bressay. Fixed link would provide access to land for business and residential development.
Integration:	++	Access provided would enhance integration opportunities, particularly for those with private vehicles. However, the benefits would not be accrued by all, unless other measures were put in place.
Accessibility & Social Inclusion:	++	Levels of access would be enhanced, but other measures would have to be put in place to ensure no deterioration in access for some. This option would not be affected by weather.

Table F9 STAG 1 Appraisal Summary Table: Option 8 Opening Bridge

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland’s Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 8 – Opening Bridge	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	An opening bridge with clear width between supports of at least 200m. It is assumed that the bridge crossing location would be from Point of Scatland to Heogan on Bressay. The bridge would open by two separate halves of the bridge swinging through 90 degrees. When closed the bridge would provide an air draft above mean high water of between 10m and 15m to enable smaller vessels to pass. The time for the bridge to fully open from closing the barriers would be between 5 and 15 minutes.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: £20 to £30 million
			Annual revenue support: £100,000 to £200,000
			Present Value of Cost to Govt.: not known at this stage
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not known at this stage
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ³³ . Approaching 8,000 of these live in Lerwick, the main town ³⁴ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ³⁵ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ³⁶ . The study found that access to employment, skills, services and social activities was key to a person’s feeling of wellbeing.		

³³ Census, 2001³⁴ Shetland Islands Local Plan, June 2004³⁵ Shetland Islands Local Plan, June 2004³⁶ Study into Deprivation and Social Exclusion in Shetland, 2006

Economic Context:	Fishing and agriculture are Shetland’s traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour’s current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>This option would assist in the ensuring the long-term sustainability of the Bressay community, and enhance business opportunities on Bressay and access to employment opportunities elsewhere. There would be a negative impact due to the loss of ferry jobs based on the island, to some extent compensated for by bridge operators. However when the bridge was swung, there would be delays to access, which could often be difficult to predict. It would constrain current activities of Lerwick Harbour and its future expansion, impacting on the local and Shetland economy. There may also be delays in opening due to bad weather. There would be high levels of capital investment required, but running costs would be relatively low.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>This option would provide flexible, 24-hour access to and from Bressay, providing equality of access for the Bressay community, particularly for those with access to a private vehicle. However, there would be unpredictable problems with access when the bridge was open, and more would need to be understood as to the frequency and length of time required when the bridge would be inaccessible, particularly in relation to emergency services. The cost to users would depend on whether tolls would be included. Weather would constrain operations to open the bridge, leading to access issues within the harbour and may also exacerbate access to and from the island.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy</p> <p>Env1: To develop a link to Bressay that recognises and protects Shetland’s unique environment and safeguards the natural, cultural and social heritage of the island</p> <p>Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources</p> <p>Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>The level of access provided by this option could lead to negative impacts on the natural, cultural and social heritage of the island, and on land use planning were put in place, such as strong planning control measures. The link could also lead to increased use of vehicles, increasing carbon emissions. However, more information is required to fully understand the impact. Depending on the design of the bridge, it may have a negative visual impact.</p>

<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>The levels of access provided by this option could lead to a real and/or perceived deterioration in community safety. Measures would have to be put in place to accommodate additional vehicles and ensure road safety. Maritime safety would be compromised: in terms of operation of the bridge opening; the real and/or perceived risk to shipping of there being a structure in the water; and from falling objects.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>The level of access provided by this option would ensure improvements in integration with other modes of transport for those with access to a private car. For those currently reliant on public transport services, walking and cycling, integration would be compromised unless additional measures were put in place. This option does not integrate well with the plans of the LPA and in other areas there is insufficient integration of plans and strategies to be able to fully understand the impact of different options.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option will not be considered at Part 2. This option is strong in terms of possible economic benefits it can provide, but access and integration provided would be unpredictable in nature, with associated impacts. Operational costs are higher than for other fixed link options.</p>

<p>Implementability Appraisal</p>	
<p>Technical:</p>	<p>No apparent technical issues with implementability, although may be some land use constraints on the Lerwick side.</p>
<p>Operational:</p>	<p>Operation of the bridge would have to be coordinated with shipping movements. Operation of the bridge could be restricted in very high winds. A back up operating system would be required in the event of mechanical or electrical failure.</p>
<p>Financial:</p>	<p>Significant financial resources required, capital and relatively higher operational costs.</p>
<p>Public:</p>	<p>The unpredictability of access and integration would make public acceptability low, and unacceptable to those who wish to retain the ferry service, or do not like bridges, depending on implementation of other options. Option would affect operations of Port.</p>

<p>Government's Objectives for Transport</p>		
<p>Objective</p>	<p>Assessment Summary</p>	<p>Supporting Information</p>
<p>Environment:</p>	<p>0/-</p>	<p>Some impacts during construction (on landuses; harbour uses, water quality etc). Option may generate traffic with potential for increasing emissions. More information required on predicted traffic flows and any operational requirements to confirm this. May stimulate further development with potential for impacts.</p>
<p>Safety:</p>	<p>-</p>	<p>Issues around safety of operation and of use, both for users of the link and of Lerwick Harbour. Less vulnerable to wind than other bridge option.</p>

Economy:	+?	Levels of access would provide greater economic stability for Bressay, but unpredictability of access would remain an issue, which may have an impact. In addition there would be a negative impact on the operations of Lerwick Harbour and knock-on effect to local economy.
Integration:	+?	Access provided would enhance integration opportunities, particularly for those with private vehicles. However, the benefits would not be accrued by all.
Accessibility & Social Inclusion:	+?	Levels of access would be enhanced, but unsure extent of reliability, considering possible weather, shipping and operational constraints.

Table F10 STAG 1 Appraisal Summary Table: Option 9 High Level Bridge

Proposal Details			
Name and address of authority or organisation promoting the proposal: (Also provide name of any subsidiary organisations also involved in promoting the proposal)		ZetTrans – Shetland’s Regional Transport Partnership 11 Hill Lane Lerwick SHETLAND, ZE1 0HA	
Proposal Name:	Option 9 – High Level Bridge	Name of Planner:	Michael Craigie, Lead Officer, ZetTrans
Proposal Description:	A high level fixed bridge having an airdraft above mean high water springs of at least 40m and a clear width between supports of at least 200m. It is assumed the bridge crossing location would be from Point of Scatland to Heogan on Bressay. The bridge would be of box girder or cable supported type.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: £20 to 30 million
			Annual revenue support: £40,000 to £60,000
			Present Value of Cost to Govt.: not presently known
Funding Sought From: (if applicable)	Scottish Government and Shetland Islands Council.	Amount of Application:	Sum: not presently known
Background Information			
Geographic Context:	The Shetland Islands are the most northerly local authority area in the UK, 298 miles north of Edinburgh and 211 miles north of Aberdeen. Shetland comprises more than 100 islands, 15 of which are inhabited, and the total population is around 22,000 ³⁷ . Approaching 8,000 of these live in Lerwick, the main town ³⁸ . Lerwick has developed around Bressay Sound, a sheltered stretch of water between the Mainland of Shetland and Bressay. Bressay lies of the east coast and is 7 miles (11km) long by 3 miles (5 km) wide with a current population of approximately 400 ³⁹ . This is the primary study area. Bressay Sound provides a sheltered shipping channel that has provided safe anchorage for vessels for centuries. Currently Bressay is reached from Lerwick by a seven minute ferry crossing that runs at hourly intervals during the days and evenings and on a more frequent basis at peak times.		
Social Context:	Shetland was central to the North Sea oil boom, and over the last 30 years this has had a major impact on the economy and helped to raise living standards. However, a recent study has shown that, although Shetland has a generally high standard of living and quality of life, there are still individuals and households in Shetland who are living in poverty and are unable to access the many opportunities Shetland has to offer ⁴⁰ . The study found that access to employment, skills, services and social activities was key to a person’s feeling of wellbeing.		

³⁷ Census, 2001³⁸ Local Plan, June 2004³⁹ Local Plan, June 2004⁴⁰ Study into Deprivation and Social Exclusion in Shetland, 2006

Economic Context:	Fishing and agriculture are Shetland’s traditional industries. Since the 1970s, oil has had a significant impact, but is now decreasing and the Shetland economy must adapt to this change. The oil rig decommissioning industry and tourism are areas of potential growth. Shetland continues to have one of the lowest unemployment rates in the country. However, economically active individuals who are unable to find work, tend to move away. The Gross Regional Domestic Product per capita of Shetland is lower than the UK average.
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Planning Objectives	
Objective:	Performance against planning objective:
<p>Aim: To provide an affordable, efficient, flexible and sustainable transport link between Bressay and Mainland Shetland</p>	
<p>Economy: Promote economic growth by building, enhancing, managing and maintaining transport services, infrastructure and networks to maximise their efficiency</p> <p>Ec1: To enhance the transport infrastructure between Bressay and Mainland Shetland to ensure the long-term sustainability of the Bressay community.</p> <p>Ec2: To provide a link which does not constrain Lerwick Harbour’s current activities or its future expansion</p> <p>Ec3: To provide and promote a link which supports a stable and sustainable economy and enhances employment opportunities</p> <p>Ec4: To provide a link which is affordable for users</p> <p>Ec5: To provide a link which is sustainable for funders and value for money</p>	<p>This option would assist in ensuring the long-term sustainability of the Bressay community, and enhance business opportunities on Bressay and access to employment opportunities elsewhere. There would be a negative impact due to the loss of ferry jobs based on the island, which would not be compensated for by maintenance required. However it would constrain current activities of Lerwick Harbour and its future expansion, impacting on the local and Shetland economy. There would be additional constraints during construction, as much of this work would be in situ and may require parts of the harbour to be closed. There are likely to be some access issues in high winds, but this is unlikely to impact on economic development. There would be high levels of capital investment required, but running costs would be relatively low.</p>
<p>Accessibility: Promote social inclusion by connecting remote and disadvantaged communities and increasing the accessibility of the transport network</p> <p>Ac1: To provide and maintain an accessible, efficient, cost effective transport network for Bressay</p> <p>Ac2: To provide a link which enables the Bressay community equal opportunities to access employment, services and facilities as other communities in Shetland</p> <p>Ac3: To provide a link which does not restrain opportunities for housing in Bressay</p> <p>Ac4: To maintain and improve accessibility and response times for emergency services and other service providers, including out-of-hours needs.</p>	<p>This option would provide flexible, 24-hour access to and from Bressay, providing equality of access for the Bressay community, particularly for those with access to a private vehicle. There would also be ease of access for emergency services and out-of-hours services. On occasions when the bridge was shut for weather, alternative arrangements would have to be in place.. The cost to users would depend on whether tolls would be included. Housing would be restricted by availability of land and the Local Development Plan. At times weather could prevent access to and from the island, but the frequency of this, compared to the current ferry service is currently unknown.</p>
<p>Environment: Protect our environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimise emissions and consumption of resources and energy</p> <p>Env1: To develop a link to Bressay that recognises and protects Shetland’s unique environment and safeguards the natural, cultural and social heritage of the island</p> <p>Env2: To provide a link that seeks to minimise carbon emissions and the use of finite resources</p> <p>Env3: To promote a link that can accommodate current and future patterns of development and land use in Bressay</p>	<p>The level of access provided by this option could lead to negative impacts on the natural, cultural and social heritage of the island, and land use planning were put in place, such as strong planning control measures. The link could also lead to increased use of vehicles, increasing carbon emissions. However, more information is required to fully understand the impact. Depending on the design of the bridge, it may have a negative visual impact on the harbour and its environs. There would be impacts during construction on water quality and other land uses and mitigation measures would be required to mitigate these impacts. Some potential long-term effects on harbour activities from new infrastructure in the sound.</p>

<p>Safety: Improve safety of journeys by reducing accidents and enhancing personal safety of pedestrians, drivers, passengers and staff S1: To ensure the link continues to maintain and enhance community safety and health S2: To ensure the link does not compromise maritime safety or road safety</p>	<p>The levels of access provided by this option could lead to a real and/or perceived deterioration in community safety. Measures would have to be put in place to accommodate additional vehicles and ensure road safety. Maritime safety would be compromised: in terms of the real and/or perceived risk to shipping of there being a structure in the water; and from falling objects.</p>
<p>Integration: Improve integration by making journey planning and ticketing easier and working to ensure smooth connections between different forms of transport Int1: To provide a link which integrates with all Shetland's transport services and infrastructure, including air, ferry, bus, cycling and walking opportunities Int2: To promote a transport link that facilitates the delivery of other committed plans and strategies</p>	<p>The level of access provided by this option would ensure improvements in integration with other modes of transport for those with access to a private car. For those currently reliant on public transport services, walking and cycling, integration would be compromised unless additional measures were put in place. This option does not integrate well with the plans of the Lerwick Port Authority and in other areas there is insufficient integration of plans and strategies to be able to fully understand the impact of different options.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option will be considered at Part 2. This option is strong in terms of possible economic benefits it can provide, and in terms of access and integration, subject to additional measures being put in place. Effects on Lerwick Port would need to be assessed.</p>

Implementability Appraisal	
<p>Technical:</p>	<p>Design options available that could meet technical challenges.</p>
<p>Operational:</p>	<p>No significant operational issues.</p>
<p>Financial:</p>	<p>Significant financial resources required.</p>
<p>Public:</p>	<p>Unacceptable to those who wish to retain the ferry service, or do not like bridges, depending on implementation of other options. Effects on Lerwick Port would need to be assessed.</p>

Government's Objectives for Transport		
<p>Objective</p>	<p>Assessment Summary</p>	<p>Supporting Information</p>
<p>Environment:</p>	<p>-</p>	<p>Some impacts during construction (on land uses; harbour uses, water quality etc). Option may generate traffic with potential for increasing emissions. More information required on predicted traffic flows and any operational requirements to confirm this. May stimulate further development with potential for impacts. Would restrict movements through the harbour for vessels with greater than 40m air draft.</p>
<p>Safety:</p>	<p>-</p>	<p>Possible real and perceived deterioration in community safety and road safety. Issues around safety of operations of Lerwick Harbour.</p>

Economy:	+?	Improved economic opportunities for Bressay and potentially surrounding area and Shetland. However, a negative impact on the operations of Lerwick Harbour and knock-on effect to local economy.
Integration:	++	Access provided would enhance integration opportunities, particularly for those with private vehicles. However, the benefits would not be accrued by all.
Accessibility & Social Inclusion:	++	Levels of access would be enhanced, but other measures would have to be put in place to ensure no deterioration in access for some.