

## Part 1 Appraisal Summary Tables

Proposal Details			
Name and address of authority or organisation promoting the proposal:  (Also provide name of any subsidiary organisations also involved in promoting the proposal)		Mr Michael Craigie, 01595 744 160, <a href="mailto:michael.craigie@shetland.gov.uk">michael.craigie@shetland.gov.uk</a>  Shetland Islands Council, Development Service, Transport Planning Service, 6 North Ness, Lerwick, Shetland, ZE1 0LZ	
Proposal Name:	Option CO6 – Construct a fixed link between Unst and Yell.	Name of Planner:	Stephen Canning, Peter Brett Associates
Proposal Description:	<p>This option would involve the construction of a dual lane, single bore tunnel with a footway between Hill of Troilva and Holga Ness.</p> <p>One vessel would require to be retained for Fetlar, which could operate to Gutcher, Belmont or a new harbour at Mid Yell. It is assumed that the current length of operating day would be retained, which would require a three crew operation. If the length of the operating day was to be reduced to 14 hours (as RSM suggests), this option would require a two crew operation.</p>	Estimated Total Public Sector Funding Requirement:	<p><i>Capital costs/grant:</i></p> <p>A range of capital costs have been provided for a fixed link, as set out in the main report:</p> <ul style="list-style-type: none"> <li>• Unlined UK: £71.2m (£132.5m including optimism bias &amp; contingency)</li> <li>• Unlined Norwegian: £56.8m (£105.7m including optimism bias &amp; contingency)</li> <li>• 1/3 Lined UK: £75.9m (£141.0m including optimism bias &amp; contingency)</li> <li>• 1/3 Lined Norwegian: £60.0m (£111.6m including optimism bias &amp; contingency)</li> </ul>
			<p><i>Current revenue support:</i> £0</p>
			<p><i>Annual revenue support:</i></p> <p>It is likely that a fixed link of this nature would require revenue support for ongoing maintenance. However, as this option is rejected from further consideration, an estimation of these costs and a determination of who would meet the costs has not been undertaken</p>
Funding Sought From:	Transport Scotland	Amount of Application:	<i>Present Value of Cost to Govt.</i>

(if applicable)			Costs in this study are all reported in 2016 prices only. The costs would reflect those set out above.
<b>Background Information</b>			
Geographic Context:	<p>The islands of Fetlar and Unst are the most northerly inhabited islands within the archipelago. The island of Unst is separated from Yell by the Bluemull Sound, and Fetlar lies to the south of Unst and east of Yell .</p> <p>Unst is by far the larger of the two islands in terms of population, but both islands have close connections with neighbouring Yell and Shetland mainland.</p> <p>Transport connectivity is wholly delivered by a two-vessel triangular ferry service, which links Fetlar and Unst to each other and to neighbouring Yell. The ferry from Unst – Yell takes 10 minutes; from Fetlar – Yell takes 25 minutes; and from Unst – Fetlar 25 minutes.</p> <p>The ferry terminal on Unst is located at Belmont in the south-west of the island, some way south of the main settlement of Baltasound. Fetlar ferry terminal, Hamars Ness, which has recently benefitted significant investment in a breakwater, is in the north-west of the island. The Yell landfall is at Gutcher, which is in the north-east of the island and around 25 minutes' drive to Ulsta, where the ferry can be caught to Shetland mainland.</p> <p>The MV <i>Bigga</i> currently lies overnight at Gutcher, with her first service of the day being to Belmont. The MV <i>Geira</i> lies overnight at Hamars Ness, with her first service of the day being to Gutcher.</p>		
Social Context:	<p>Population in <b>Unst</b> declined following the closure of RAF Saxa Vord in 2006 but is now relatively stable at the 600-650 mark. The availability of housing on Unst is reasonably good (although there are some local issues) but there are concerns that housing is of the 'wrong type' for retaining and attracting families. Healthcare in Unst is seen to be of a high standard, although there is a community concern about the lack of some resident specialist services. The school roll in Unst declined sharply with the closure of RAF Saxa Vord, but has recovered slightly since 2006.</p> <p><b>Fetlar</b> has experienced a significant recent decline in population (81 residents in 2013, down to 59 in August 2015) and the community is now very fragile. Limited on-island economic opportunities, a lack of appropriate housing and the closure of the island shop are amongst a number of factors cited as an issue. The lack of appropriate housing is deemed to be a problem on Fetlar. The island continues to have an on-island primary school and nursery, which is critical, but the roll in each is very low.</p>		
Economic Context:	<p>The economic activity rate in <b>Unst</b> also declined with the closure of RAF Saxa Vord and the out-migration of a number of young and economically active families from the island. Whilst the standard of living remains good, the community highlighted the significant economic challenges faced by the island in the longer term.</p> <p>Unst has had its economic challenges in recent years but has now stabilised to some extent, albeit with a much smaller population. It was noted by HIE that there are some promising signs of growth in the local economy, with tourism and</p>		

	<p>food &amp; drink being key growth industries, although the community note that this is small scale in nature.</p> <p><b>Fetlar</b> currently has a shortage of viable economic development opportunities, an issue the Fetlar Development Plan is seeking to address. The island has limited economic opportunities, with the bulk of employment concentrated in agriculture, small scale tourism and the public sector – travel to neighbouring islands and mainland is therefore essential. Overall, the Fetlar community explained that the reinstatement of fares on the Bluemull Sound coupled with the reduction in service provision as part of the 2013 budget cuts is seriously undermining the sustainability of the island.</p>
<p><b>Planning Objectives</b></p>	
<p>Objective:</p>	<p>Performance against planning objective:</p>
<p><i>TPO1: The capacity of the services should not act as a constraint to regular and essential personal, vehicular and freight travel between the island(s) and Shetland Mainland</i></p>	<p><b>Performance against Transport Planning Objective: Major Positive</b></p> <p>The provision of a fixed link between Unst &amp; Yell would remove all capacity related constraints associated with the current ferry service. The evidence suggests that the current capacity constraints on the Gutcher – Belmont route are constraining the economic development of Unst. The remaining single vessel would comfortably meet the capacity needs of the Fetlar community.</p>
<p><i>TPO2a: Where an island has a 'commutable' combined ferry or drive / public transport / walk time to a main employment centre (e.g. 80 minutes), the connections provided should reliably facilitate commuting</i></p>	<p><b>Performance against Transport Planning Objective: Minor Positive</b></p> <p>A fixed link between Yell &amp; Unst, coupled with a high service frequency on Yell Sound could potentially open up commuting opportunities for Unst residents. Journey times would continue to be relatively long for trips to Lerwick, but would nonetheless be significantly reduced, whilst Sullom Voe would be much more accessible.</p> <p>A fixed link between Unst &amp; Yell would also open up commuting opportunities between the two islands.</p> <p>The provision of a dedicated vessel for Fetlar would also support potential commuting opportunities, particularly to Yell. However, the continued need for a double ferry connection would limit opportunities for commuting to the mainland.</p>
<p><i>TPO2b: Where an island does not have a 'commutable' combined ferry or air / drive / public transport / walk time to a main employment centre (e.g. 80 minutes), the connections provided should reliably permit at least a half day (e.g. 4 hours) in Lerwick 7 days a week, all year round.</i></p>	<p><b>Performance against Transport Planning Objective: Neutral</b></p> <p>The current ferry service delivers this objective.</p>
<p><i>TPO3: The scheduled time between connections should be minimised to</i></p>	<p><b>Performance against Transport Planning Objective: Major Positive</b></p>

<p><i>increase flexibility for passengers and freight by maximising the number of island connections across the operating day.</i></p>	<p>The provision of a fixed link would remove any frequency related considerations associated with the ferry between Unst and Yell, although onward connections from Yell to the mainland would still be dependent on capital and revenue options in relation to Yell Sound.</p> <p>The provision of a dedicated ferry for Fetlar would result in a significant increase in frequency for that island. A dedicated service between Hamars Ness and Belmont / Gutcher could be provided.</p>
<p><i>TPO4: The level of connectivity provided should minimise the variation within and between weekdays, evenings, Saturdays and Sundays.</i></p>	<p><b>Performance against Transport Planning Objective: Major Positive</b></p> <p>The provision of a fixed link would remove any timetable related variations associated with the current Unst – Yell service. A dedicated ferry service for Fetlar would allow for a consistent daily timetable provided sufficient revenue funding is available for the same crewing level at weekends.</p>
<p><i>TPO5: Where practicable, islanders should be provided with links to strategic onward transport connections without the need for an overnight stay on Shetland mainland.</i></p>	<p><b>Performance against Transport Planning Objective: Minor Positive</b></p> <p>A fixed link would make a marginal improvement to strategic connectivity for Unst, although this would still be constrained by connections across Yell Sound.</p>
<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option is rejected from further consideration given the very high up-front capital costs. In addition, there are very high levels of technical and funding uncertainty, whilst the elapsed time before this option could be realised means that it will not be considered further in the appraisal.</p> <p>This elapsed time would also mean that if taken forward, this option would not be in place until the tail end of the strategy period, meaning that an interim ferry-based solution would be required, adding further to the cost.</p> <p>Should a nationally funded programme of fixed links emerge in future, the proposal could be revisited at this stage.</p>
<p><b>Implementability Appraisal</b></p>	
<p>Technical:</p>	<p>Numerous fixed link suggestions have been examined in varying levels of detail over the years, but none of the studies commissioned to date has had the benefit of any supporting ground / seismic investigation. This necessarily limits the engineering accuracy of design assumptions and consequently the robustness of any cost assessments. The many assumptions that have been made will have to be tested before construction risks can be properly understood and an attempt at their quantification made. All costs suggested to date will have to include for full unmitigated optimism bias.</p>
<p>Operational:</p>	<p>A proposal of this nature could not be funded independently by Shetland Islands Council and a bid for funding</p>

	<p>support would therefore have to be made to Transport Scotland. A scheme of this nature would be considered a nationally significant infrastructure project, similar in scale to e.g. the Airdrie – Bathgate Rail Link (£300 million) and Borders Rail (£353 million). To this end, the project would need to go through several steps to secure funding and it should be noted that it is not included as one of Transport Scotland’s 29 strategic transport priorities through to 2032 (identified by the Strategic Transport Projects Review). The project is also not cited in the Infrastructure Investment Plan 2011.</p> <p>The lead time for a fixed link of this nature would also be considerable, with an elapsed time of several years from initial planning through to scheme opening. The combination of a lack of funding certainty, the absence of a supporting policy commitment and the long lead-times for such a scheme give rise to significant operational risks associated with an Unst – Yell fixed link.</p> <p>A basic ferry infrastructure would also need to be maintained to ensure continuity during times of tunnel closure / maintenance or where there is a catastrophic failure of the asset (akin to that experienced on the Forth Road Bridge in December 2015).</p> <p>The current ferry infrastructure on the Bluemull Sound route is approaching the end of its operational life – cascade opportunities would therefore be limited.</p>	
Financial:	<p>A range of capital costs have been provided for a fixed link, as set out in the main report:</p> <ul style="list-style-type: none"> <li>• Unlined UK: £71.2m (£132.5m including optimism bias &amp; contingency)</li> <li>• Unlined Norwegian: £56.8m (£105.7m including optimism bias &amp; contingency)</li> <li>• 1/3 Lined UK: £75.9m (£141.0m including optimism bias &amp; contingency)</li> <li>• 1/3 Lined Norwegian: £60.0m (£111.6m including optimism bias &amp; contingency)</li> </ul> <p>Ongoing maintenance costs would be in addition to the up-front capital costs.</p>	
Public:	<p>A fixed link was identified as the preferred option of the Unst community, with potential spin-off benefits for Fetlar also envisaged. Strong support for this option through public engagement.</p>	
<b>STAG Criteria</b>		
<b>Criterion</b>	<b>Assessment Summary</b>	<b>Supporting Information</b>

<p>Environment:</p>	<p>xxx</p>	<p>The provision of a fixed link is likely to have a minor negative impact through increasing vehicle kilometres, whilst there will also be potentially major environmental impacts associated with construction (further work on the alignment and design would be required to more accurately assess these impacts).</p> <p><b>Environmental Constraints</b> The environmental constraints at the Bluemull Sound ports are provided below for information</p> <p>Gutcher Constraints</p> <ul style="list-style-type: none"> <li>• Residential properties within 50m of ferry terminal</li> <li>• Fetlar to Haroldswick MPA located in waters just offshore from the ferry terminal (and within 50m of the outer edge of the harbour)</li> <li>• Southwick Cullivoe Shellfish Water Protected Area within 1km and Bastavoe Shellfish Water Protected Area within 4km</li> <li>• Geological SSSI to north and south of ferry terminal</li> <li>• listed building within 100m</li> <li>• Coastal flooding risk</li> <li>• Good air quality</li> </ul> <p>Belmont Constraints</p> <ul style="list-style-type: none"> <li>• Residential properties within 200m of the ferry terminal</li> <li>• Core paths CPPUO03 Belmont to Lund starts at the harbour</li> <li>• Fetlar to Haroldswick MPA located in waters just offshore from the ferry terminal (and within 50m of the outer edge of the harbour)</li> <li>• Southwick Cullivoe Shellfish Water Protected Area within 0.5km and Bastavoe Shellfish Water Protected Area within 6km</li> <li>• Coastal flooding risk</li> <li>• Good air quality</li> </ul> <p>Hamars Ness Constraints</p> <ul style="list-style-type: none"> <li>• Not applicable as no significant works proposed</li> </ul>
<p>Safety:</p>	<p>x</p>	<p>The provision of a fixed link would lead to an increase in car trips to and from Unst, which would lead to a marginally higher accident rate. There would also be potential fire risks with a tunnel but it is assumed that the design and safety standards would minimise this risk.</p>
<p>Economy:</p>	<p>✓✓✓</p>	<p>The provision of a fixed link would be of a significant benefit to Unst, with indirect benefits to Fetlar</p>

		<p>from having access to a dedicated ferry. Firstly, there would be substantial TEE benefits, associated with the removal of capacity constraints on the Gutcher – Belmont route and journey time savings associated with not having to wait for or travel on a ferry. In addition, Yell would be accessible 24 hours per day and there would be no frequency related issues.</p> <p>The EALI benefits to Unst would also be considerable. The island would be much more closely integrated with the larger neighbouring island of Yell and to some extent Shetland mainland. This could create additional job opportunities for Unst and would encourage both inward investment and in-migration / population retention. A fixed link would also lead to cost reductions / productivity enhancements for Unst businesses, particularly the strategically important aquaculture sector. Other sectors which would benefit include tourism and locally traded services.</p>
Integration:	✓✓✓	<p>A fixed link would marginally enhance transport integration with the Shetland and indeed Scottish mainland (there would remain a dependence on the Yell Sound ferries for onward connections).</p> <p>A fixed link could also promote land-use development in Unst (in the 'Area of Best Fit' in Baltasound), supporting the economic development of the island.</p> <p>A fixed link would also support a range of policies including the respective Unst &amp; Fetlar Development Plans.</p>
Accessibility and Social Inclusion:	✓✓✓	<p>The provision of a fixed link would fundamentally transform the community accessibility of Unst, effectively making the island an extension of Yell, and also improving access to the Scottish mainland. Fetlar residents would also record an accessibility benefit through improved access to ferry services.</p>