

5 OPTION GENERATION AND SIFTING OF OPTIONS

A long-list of options was generated by combining possible solutions put forward during the initial consultation phase (see Annex B) and additional options proposed at the 'Option Generation and Initial Appraisal' Workshop (See Annex D).

Box 2: Long List of Options

- Chain ferry
- Reconfigured ferry service (existing vessel)
- Passenger ferry (or also a ferry service)
- Water taxi
- Electric ferry
- Hydrogen ferry
- Ferry: cheaper to funders and users (less crew etc), less passengers, more frequent
- Improve public transport: Bus links; Taxi; demand responsive; Mini bus etc
- Helicopter service
- Transport subsidy to local people
- Increase provision for cyclists and pedestrians
- Tunnel (drills and blast bore etc)
- Immersed tube
- Causeway (and pier/energy generation)
- Opening bridge
- Causeway and tunnel (north end)
- High level bridge
- Transporter bridge

The current service is included in the appraisal, as a baseline with which to compare other options (Do Minimum).

The workshop participants discussed and screened the options and decided which met the planning objectives sufficiently well to be worthy of further consideration (broad appraisal).

Table 5.1 sets out the findings of the initial appraisal against the planning objectives, and those options that were sifted out because it was considered that they were unable to offer significant potential to achieve the planning objectives. The following options were sifted out:

- **Helicopter Service:**
 - Unable to take cars; unable to take many passengers/freight; safety issues; could be used in combination with other options, but too expensive.
- **Causeway:**
 - Significant problems to operation of Lerwick Port, and the economic activities supported. For example the port would be split in two, not enabling boats to move around easily; requiring two sets of tugs to operate; and constraining activities such as decommissioning;
 - Safety considerations: for example the lifeboat would be on one side, unable to quickly reach incidents in the other direction, and build up of shipping in one area, rather than another.

- o Environmental issues: would cause silting of harbour and increased fuel used of boats moving from one side of the harbour to the other, around Bressay.
- **Transporter Bridge:** increased journey time; potential weather constraints; constraints on harbour; negative scenic value; safety issues of operation.

Table 5.1 Findings of Initial Appraisal of Options versus Planning Objectives

Option	Description	Comment	Meets Planning Objectives?
1	Chain ferry		✓
2	Reconfigured ferry service (existing vessel)	All options (which would be considered in detail at STAG2)	✓ ✓
3	Passenger ferry (or also a ferry service)	May be in combination with other options (e.g. passenger ferry)	✓ ✓
3a	Water taxi	Included in 3	Yes if in combination with another link option
4	Electric ferry	Need more information and to be considered as a ferry option-may be worthy of consideration as a ferry replacement option in future	Yes but to be considered as ferry option
5	Hydrogen ferry	Need more information and to be considered as a ferry option-may be worthy of consideration as a ferry replacement option in future	Yes but to be considered as ferry option
6	Ferry – cheaper to funders and users (less crew etc), less passengers, more frequent	See No. 2	✓ ✓
7	Improve public transport: Bus links, Taxi, DRT, Mini bus, etc	To be considered with all options	✓ ✓
8	Helicopter service	Not considered a viable alternative to ferry	✗
9	Transport subsidy to local people	Only considered a viable option in combination with other options e.g. reconfiguration of ferry service-could be considered as a sensitivity test at later stage	✗? Only viable with other options
10	Increase provision for cyclists and pedestrians	To be considered with all options	✓ ✓
11	Tunnel (drills and blast bore etc)	All options to be considered further	✓ ✓
12	Immersed tube	Also in combination with part causeway	✓ ✓
13	Causeway (and pier/energy generation)	Doesn't meet safety objectives (access north for lifeboat) Option would not meet LPA objectives Environmental impacts?	✗
14	Opening bridge	Worthy of some further consideration although LPA has reservations	✓ / ?
15	Causeway and tunnel (north end)	Include with no 11	Yes but to be considered as tunnel option
16	High level bridge	Worthy of some further consideration although LPA has reservations	✓ / ?
17	Transporter bridge	Not considered worthy of further consideration because of constraints to harbour and not as efficient as current provision	✗

6 BROAD APPRAISAL

This section provides information on all those options taken forward to broad appraisal; and the conclusions made as a result of the Broad Appraisal. The STAG Part 1 Appraisal Summary Tables (ASTs) can be found in Annex E. This also includes appraisal against Do Minimum, as a baseline.

6.1 OPTIONS CONSIDERED FOR BROAD APPRAISAL

At this stage, these options are considered in terms of the capital and revenue costs associated with development, but do not consider any associated infrastructure, such as road improvements.

Option 1 – Reconfigured Ferry Service (Existing Vessel)/ Reconfigured Ferry

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. It is assumed this option would retain the existing crossing.

Option 2 – Passenger Ferry/Water Taxi

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. It is assumed this option would retain a central location.

Option 3 – Public Transport Improvements

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.

Option 4 – Improved provision for Walkers and Cyclists

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.

Option 5 – Chain Ferry

Chains or cables attached to both shores, are used to guide or propel a ferry across. There are a number of chain ferries in operation in the UK, all located on the South coast of England including Poole Harbour, Dartmouth and Cowes on the Isle of Wight. The advantage of the chain ferry is that the chain helps to keep the ferry in position in strong cross currents. The Poole Harbour ferry operates at the mouth of the harbour in currents exceeding 6 knots.

Vessels less than 50m long have to give way to the ferry when it is crossing. Mariners 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.

The Poole Harbour crossing, at approximately 365 metres (m), is similar in length to a crossing of the Bressay Sound at Point of Scatland or Greenhead. The Poole Harbour crossing takes just under 3 minutes. A crossing of Bressay Sound at North Ness or the existing ferry route is considered too great for the operation of a chain ferry.