

Lossiemouth East Beach Footbridge - Appendix 2

LOSSIEMOUTH SEATOWN FOOTBRIDGE
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Document Control

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1 Introduction

This report provides details of the recent closure of the wooden footbridge that links the Lossiemouth Seatown area to East Beach. The report will set out what would be required if Moray Council was to take on the project management of repairing or replacing the bridge on behalf of the Lossiemouth Community Development Trust (LCDT), and will identify the risks associated with this course of action.

2 Background

The original bridge linking the town of Lossiemouth to East Beach was constructed by the railhead in 1906 by Lossiemouth Town Council. In 1918 the bridge was relocated to its current position by the Old Harbour Commission, to make it easier for boats to come in and out of the old harbour. The Lossiemouth Old Harbour Commission ceased to exist when the harbour closed, at which point the bridge became ownerless. This was confirmed in 2016 by the “Queens And Lord Treasurers Remembrance” Crown.

In the last six years concern has been raised about the condition of the bridge and questions have been asked regarding responsibility for maintenance. The Council’s position has been that it does not own the bridge and does not have the resources required to maintain it. The LCDT planned to raise sufficient funds to either replace or repair the bridge. The Council agreed to help the Trust with advice on funding streams and technical advice. The Trust would then take on the new or refurbished bridge and maintain it as a community asset.

In September of this year Scottish Government’s Culture Secretary committed to funding work required to reopen this bridge. The amount of money available and any possible restrictions associated with the funding are as yet unknown.



3 Governance

Good governance of this project is important to ensure process, decisions and outcomes are clear throughout the development and on delivery of the new bridge. The governance principles and an indicative structure are provided below.

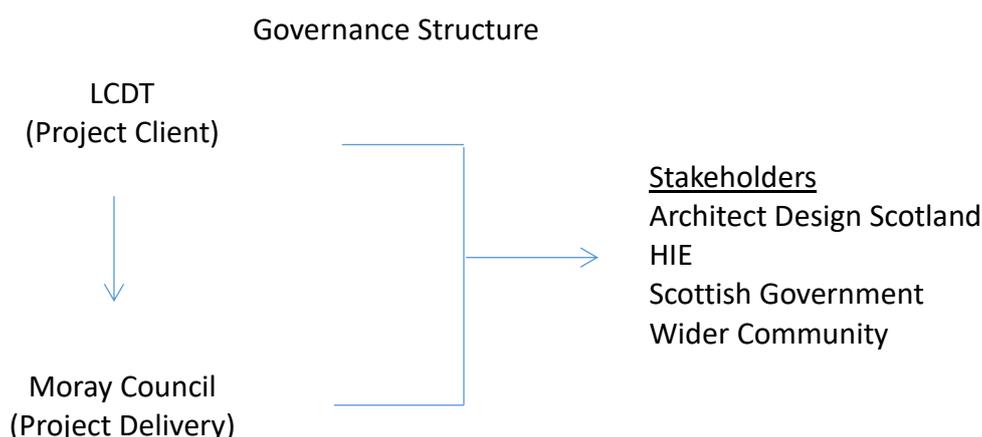
3.1 Principles

The project client will be the LCDT, and the project will be delivered for the LCDT by Moray Council. Funding for the project will be allocated in two stages.

Stage 1, the option appraisal, will be funded by the LCDT. It is understood that LCDT will provide £25k and receive £50k from SSE and £25k from HIE, resulting in a total allowance of £100k. LCDT will pay Moray Council £100k to deliver the option appraisal. If at the end of the tender assessment the cost of the option appraisal is greater than £100k, the project will be stalled until the additional funds required for this stage are confirmed.

Stage 2, design and construction, will be funded by Scottish Government. The funding required for Stage 2 will be determined by the outcome of Stage 1 and the tendering process. Details of the proposed tendering process are provided in Section 4 of this report.

3.2 Structure



Roles and responsibilities will be confirmed with each organisation before work on this project begins.

4 Procurement

Two options have been considered for procurement of the replacement bridge.

1. The option appraisal will be procured through the Scotland Excel framework and the findings of the appraisal will be used to inform the tender of a design and build contract for the new bridge.
2. A two stage design and build contract would be tendered, that will include as the first stage an option appraisal and identification of the preferred option and the second stage the design and construction of the preferred option for a new or refurbished bridge. The economic assessment for the second stage would be based on an existing bridge that would be similar in design to the proposed bridge at Lossiemouth. The contract would be set up

such that the second stage would be optional and dependent on the Council securing the required funding to undertake the second stage.

If option 1 is progressed, procurement of the option appraisal would be straight forward and the contract could be awarded reasonably quickly. There would however be less cost certainty than using option 2 where the contractor would be involved in costing the preferred option. As the funding would be secured on completion of the option appraisal stage of the bridge replacement process, the financial risk would be less if the approach set out in option 2 was adopted. Option 2 would carry less risk with regard to Planning approval and other statutory consents. Option 2 would also provide efficiencies with regard to design as there are likely to be fewer changes made in the transition from Stage 1 to Stage 2 of the project. Based on the advantages and reduced risk associated with Option 2 it is recommended that this approach is adopted when procuring this work.

5 Bridge Replacement Process

The bridge replacement has been split into three phases. The first phase will be an option appraisal to assess all of the potential options available to provide a crossing from Lossiemouth to East Beach. This stage will be progressed by Moray Council on behalf of the LCDT. The second stage will be the design and construction of the new bridge, which will be funded by Scottish Government. It is important to note that Scottish Government will not provide any funds until an option or a number of potential options have been agreed. The third stage will be the operation and maintenance of the bridge.

6 Stage 1

Stage 1 will assess potential options and identify a preferred option for a new or refurbished bridge from Lossiemouth to East Beach. The activities that will need to be undertaken to complete this stage of the project are set out below.

6.1 Site Investigation

A full site investigation will be required to inform the assessment of potential bridge replacement options. This investigation will include the following:

1. A topographic survey
 - a. The topographical survey will need to provide a detailed 3-dimensional understanding of the ground surface, including the river bed, the sand dunes and beach, the rock armour and harbour wall, and the surrounding land, roads and building perimeters. This could either take the form of a 3-dimensional CAD model, or a 2-dimensional model or plan with contours at close vertical intervals. Critical tide, storm surge and maximum wave levels would then be over-laid onto the model to inform the ongoing option development and design process.
2. Ground investigation
 - a. Derive representative geotechnical parameters in accordance with EuroCode 7 and characterise the ground for the purposes of geotechnical design.
 - b. Provide an assessment of suitable foundation types for the proposed development.
 - c. Assess the geotechnical suitability of material arising in earthworks activities for re-use on-site.
 - d. Desk study into likely sediment movement / natural alterations in river alignment which may occur over the proposed lifespan of the new crossing, and the potential effects on the proposals.

- e. Determine the contaminative status of the site.
3. Contaminated land - desktop study.
4. Utilities.

6.2 Statutory Consultees / Environmental Constraints

Early consultation with statutory consultees will inform the option appraisal and reduce the risk of abortive work. The key organisations that will need to be consulted are:

1. Marine Scotland
2. Scottish Natural Heritage
3. SEPA
4. Historic Environment Scotland
5. Moray Council Development Management

6.3 Land Purchase / CPO

It is proposed that LCDT own and maintain any new or replacement bridge.

Early identification of landowners for each of the options in 6.4 below is essential to progress the initial stage of site investigation. This exercise will help determine the most appropriate course of action for acquiring the land required to construct the bridge. Two options have been identified:

1. LCDT negotiate the acquisition of land directly from landowners. Given that:
 - parallel negotiations would be required with several landowners,;
 - landowners would need to be agreeable to a transfer ;
 - purchase price and professional fees would need to be agreed; and
 - there is uncertainty over ownership of the Old Harbour Commissioners title.

This option presents a significant time and cost risk.

2. The Moray Council assist LCDT by promoting a Compulsory Purchase Order (CPO) for the land and rights required for a new bridge, with a back to back transfer to LCDT. If unopposed a CPO could prove to be a quicker and cleaner option than option 1. From the date of final approval by Full Council the estimated timescale for determining a CPO could range from 9 to 24 months. Separate negotiation may still be required with Crown Estate Scotland for any interest they may still hold in tidal areas, if they refuse to waive their exemption from Compulsory Purchase. In such a case LCDT could negotiate purchase of any property rights required from the Crown Estate Scotland direct. It should be noted that Crown Estate Scotland may require that LCDT provide proof of a viable and funded plan for the bridges removal at the end of its life, given the long term risk of it reverting to the Crown Estate Scotland as a liability. LCDT may be unable to provide such assurances.

An allowance would need to be made for professional costs and compensation. A range of £15k to £40k is considered to be reasonable.

6.4 Option Appraisal

A number of options will be assessed to identify which option will provide best value in terms of economics, environment and amenity. A list of potential options is listed below.

1. Do nothing- this would involve maintaining the status quo, which is no safe means of access from the town to East Beach.

2. Do minimum – this would involve repairing the damaged span only. As the other remaining spans are in very poor condition, this option is not considered sustainable. This option would place a significant burden on Moray Council as the bridge would need to be inspected frequently in the interest of public safety. It is also likely when additional spans fail the bridge would be closed until such time as the funds required to repair it are raised or made available.
3. Replace the deck on the existing bridge – This would involve constructing a new deck on the existing timber piles. The condition of the piles is currently unknown and this would need to be established before any construction work is undertaken. Given the existing piles are approximately 100 years old the design life of this option is likely to be significantly less than that of a new bridge.
4. Replace the bridge in the same location as the existing bridge – This would involve demolishing the existing bridge and replacing it with a new bridge in the same location. This bridge would be approximately 140m long, with 1 or 2 main Spans, or as multiple short spans.
5. Construct a new bridge further downstream – This would involve constructing a new bridge from the esplanade to the beach. This bridge would be approximately 100m long with 1 main span, perhaps with short back-spans to ramp down to ground level at each end.

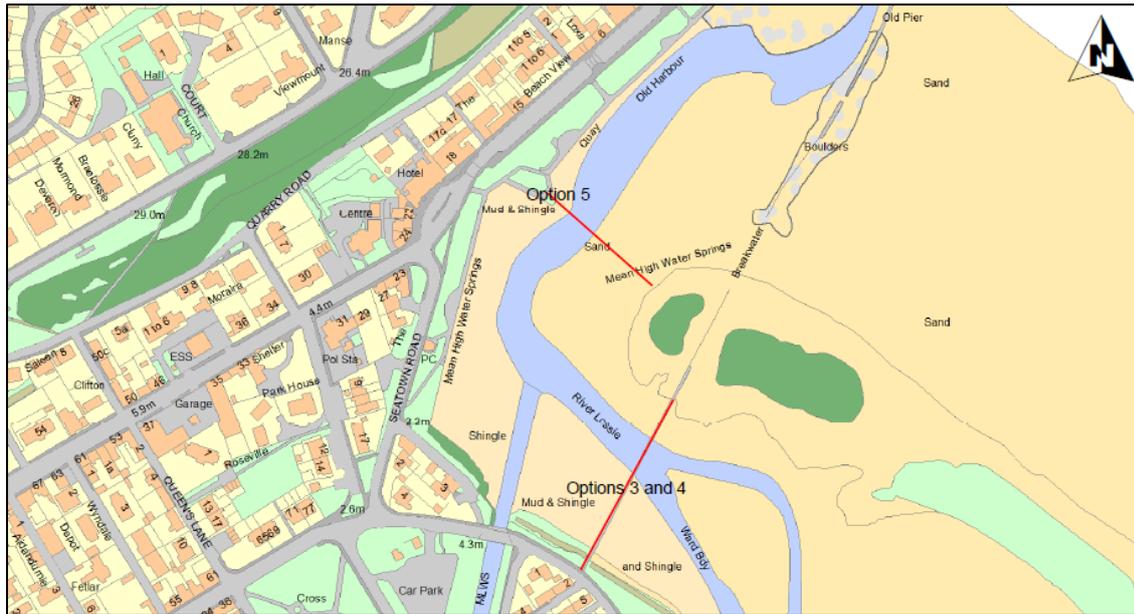
Option 5 would not require the existing bridge to be demolished, however, not demolishing this bridge would have a negative visual impact on the beach area. If this bridge was to be demolished the additional cost would be in the region of £20k.

Options 3, 4 and 5 will consider a number of influencing factors, including but not limited to those listed below.

- a) Geotechnical conditions, which may restrict the location and type of foundations.
- b) Wave and storm-surge levels and allowance for climate change, which may limit the viable structural forms.
- c) Location of the bridge, as this will define the total length required with associated cost implications.
- d) If a single span is desired to avoid foundations or piers within the river channel, which will increase the cost of the superstructure.
- e) If multiple shorter spans are desired to reduce the cost of the superstructure, this will increase the costs and risks associated with foundation installation.
- f) Whether access for service vehicles or emergency vehicles is desired, which would likely increase costs.
- g) Long term maintenance requirements and how these could be reduced through design.

The preferred option will be identified and presented to Scottish Government. If funding is agreed, the project will move to Stage 2, which is detailed design and construction.

A map showing the location of options 3, 4 and 5 is provided below.



7 Stage 2

7.1 Detailed Design

The preferred option will be designed in detail by the Contractor, in consultation with Moray Council. This process will involve:

- Preparation of details to enable Statutory Consents to be applied for and granted.
- Technical Approval of the proposals in accordance with Design Manual for Roads and Bridges (DMRB). The Technical Approval Authority (TAA) will likely be Moray Council.
- Material selection, and protective systems to suit the selected structural form and ensure minimal maintenance throughout the structure's design-life.
- Structural analysis for the selected structural form. Including evaluation of Actions from traffic and from the environment, and evaluation of the structure's resistance to these.
- Detailed foundation design for the selected structural form, taking into account the local site conditions and the Actions sustained by the superstructure.
- Preparation of construction details (drawings, specification documentation, etc.).
- Design and Check Certification.
- Supervision of the construction of the proposals.

The deliverables will be a full set of construction drawings, specification and site information.

7.2 Construction

The construction process will be dependent on the option taken forward. In general the tasks are likely to include:

1. Mobilisation and site set up, including traffic management.
2. Site clearance and demolition of existing bridge.
3. Installation of foundations.
4. Construction of superstructure.
5. Construction Compliance Certification.
6. Defect correction / maintenance period.
7. Operation and maintenance manual, including Health and Safety File.

On completion of all tasks, the bridge will be handed over to the bridge owner to maintain. The organisation that will take ownership of the bridge has not yet been confirmed. It is important that roles and responsibilities are clarified before the bridge is constructed.

8 Stage 3

8.1 Operation and Maintenance

Maintenance of the bridge will be dependent on the design, e.g. if the bridge has a high spec finish such as galvanising, the required maintenance over the life of the bridge will be significantly reduced. Required maintenance will typically include the tasks listed below:

1. Graffiti/vandalism unknown.
2. Repaint at 20 year intervals (this would only be required if the bridge is not galvanised) £200k.
3. Replace bearings at 40 year intervals £100k.
4. Replace surface at 20 year intervals £45k.
5. Reactive repairs as and when required
6. General Inspection every 2 years £0.4k.
7. Principle inspection every 12 years £1.8k.

9 Risks

A risk register will be developed at Stage 1 of this project and where possible time and cost will be allocated to each risk. Typical risks for this project are listed below. It should be noted that this list is provisional and will increase / change as the project progresses.

1. Roles and Responsibilities not clarified.
2. Insufficient funding to support tender process and for future maintenance.
3. Legal processes / land purchase is drawn out.
4. Ground conditions unknown.
5. Pressure to deliver quickly results in mistakes.
6. Site working hours restricted due to tidal environment.
7. Weather, wind, waves, surge.
8. Natura site plus other environmental designations.
9. Cheapest option would result in increased inspections and may only last a few years
10. Increased pressure on staff resources that are already stretched.
11. Any cost increases during construction will need to be covered.
12. Access to the beach for both SI and construction may be difficult.
13. Public objections to proposed solution.
14. Heritage consents.
15. Unexploded ordinance.

10 Conclusions

The replacement or refurbishment of the footbridge that connects the town of Lossiemouth to the East Beach will benefit the town in terms of amenity for local access and economically through increased / sustained tourism.

This is likely to be a high profile project and it is important to manage expectations, particularly with regard to programme, both at the start and throughout the development of the new bridge.

It is assumed that Moray Council will manage the development of the bridge. However, funding must be agreed particularly if tender returns are unable to be fully funded , and roles and responsibilities clarified before this project is started.