KALEMOUTH SUSPENSION BRIDGE - ESSENTIAL REPAIR WORKS

Report by Director – Infrastructure & Environment

EXECUTIVE

5 December 2023

1 PURPOSE AND SUMMARY

1.1 **This report provides an update on the status of Kalemouth Suspension Bridge. It proposes that further detailed design work is undertaken and that external grant funding be sought to allow essential repair works to be undertaken on the timber elements of the bridge.**

1.2 Kalemouth Suspension Bridge is a Category 'A' Listed structure which carries the unclassified D101/4 public road over the River Teviot. It is a fine example of a historic wrought iron chain-bar suspension bridge with timber deck.

1.3 The bridge was closed to vehicular traffic in August 2020 when substantial decay was discovered in some of the main timber deck elements. Prior to its closure the bridge had a 3T weight restriction which allowed single file traffic to cross the river between the A698 and the small settlement of Ormiston Mains which consists of around 12 properties

1.4 Various investigations and detailed assessment work has since been carried out and this has found that the main wrought iron suspension structure of the bridge is unable to demonstrate sufficient strength to safely carry 3T vehicles or sufficient strength to carry full pedestrian crowd loading. Passage has therefore been further restricted to a maximum of 10 people at any one time.

1.5 Due to the very high costs that would be associated with strengthening a Category 'A' listed wrought iron suspension bridge and the potential for adverse impacts on the bridges special architectural and historic nature it is proposed to progress a scheme to only replace and renew the timber elements on the bridge. These elements have reached the end of their serviceable life and replacing them will safeguard the bridge into the future and ensure it can remain in use for pedestrians and cyclists.

1.6 Costs associated with replacing all timber elements on the bridge are estimated to be around £1M and as such a proportion of external grant funding is being sought to allow these works to go ahead.

2 RECOMMENDATIONS

2.1 **I recommend that the Executive Committee: -**

(a) Notes the updated position regarding Kalemouth Suspension Bridge.

(b) Agrees to the proposed way forward of developing a project to replace all timber elements on the bridge in 2025/26 subject to successful external grant funding applications.

3 BACKGROUND

3.1 Kalemouth Suspension Bridge is a Category 'A' Listed structure located on a minor road which joins the A698 between Jedburgh and Kelso, close to the small village of Eckford. The bridge carries the unclassified D101/4 public road over the River Teviot just upstream of its confluence with the Kale Water.

3.2 The bridge is a fine example of an early wrought-iron chain-bar suspension bridge with timber deck. It was designed and built by Captain Samuel Brown and the bridge was completed in the 1830's. Captain Samuel Brown had earlier built the Union Chain Suspension Bridge, which links Scotland and England near Paxton. Kalemouth Suspension Bridge has a span of around 54 metres and is just over 4.5 metres wide. Due to its historical significance the bridge is protected by its Category 'A' Listed status.

3.3 The bridge was closed to vehicular traffic in August 2020 on safety grounds. During planned routine maintenance works substantial decay was discovered in some of the main timber deck elements and the Council took the decision to restrict passage to pedestrians and cyclists only. Prior to its closure Kalemouth suspension bridge operated under a 3T weight restriction and carried single file traffic between the A698 and the small hamlet of Ormiston Mains which consists of around 12 properties.

3.4 Following its closure to vehicular traffic the Council instigated various surveys and reviewed historic records about the bridge to gain a better understanding of its structural make-up and capabilities. This work included employing external consulting engineers, WSP, to undertake a Principal Inspection and Structural Assessment of the bridge.

3.5 The Principal Inspection found the wrought iron suspension system on the bridge to be in reasonably good condition for its age, however, the timber deck and parapet elements have reached the end of their serviceable life.

3.6 The outcome of the Structural Assessment work was that despite its relatively good condition the wrought iron suspension system was unable to exhibit sufficient strength to safely carry 3T vehicular loading. The suspension system was also unable to demonstrate the capacity to carry full pedestrian (crowd) loading and as such it has been further restricted, with a maximum of 10 people allowed to cross the bridge at any one time.

3.7 The closure of the bridge to vehicles under 3T has impacted those people living in Ormiston Mains and other surrounding villages. There are alternative routes to gain access to the main A698 road but distances and journey times are longer. The maximum diversion distance being 7 miles.

4 PROPOSED WAY FORWARD

4.1 Following the above research and assessment work Officers have considered the options for the bridge. Ideally these would involve a project to replace all the timber elements and works to strengthen the wrought iron suspension system. However, as has been seen at the Union Chain Bridge, major refurbishment of such an historic structure would be a very complex

task. Design and construction costs would therefore be very high. The Union Chain Bridge refurbishment project was circa £10M and given Kalemouth Suspension Bridge is half the span strengthening and timber replacement costs would likely be in the range of £2M- £4M, most probably at the top end of this scale. This, unfortunately, renders a project of this nature cost prohibitive and means it does not really offer value for money for the public purse.

4.2 Consequently, it is instead proposed to instigate a project which would aim to replace and renew all timber elements on the bridge to enable the bridge to continue to be safely used by pedestrians and cyclists. Subject to detailed design development, this would be based around the original design, and this will allow retention of Captain Brown's original wrought-iron elements. This will safeguard the bridge for the future and ensure it can remain in use for pedestrians and cyclists. Interpretation boards can be added to explain its history and its link to its sister bridge, the Union Chain Bridge.

4.3 It is estimated that costs associated with a project to replace all timber elements will be around £1M. This work is essential as the condition of the existing timber deck and parapets will continue to deteriorate and, in time, the bridge would have to be fully closed. Further design and preparatory work will be required to determine the total scheme cost more accurately but £1M is considered a reasonable initial estimate. Consulting engineers, WSP have been approached and asked to submit a price for the design of the timber replacement works.

5 FUNDING OPTIONS

5.1 Funding the above timber replacement project still presents the Council with some financial challenges. Currently a capital budget of around £750k is allocated by the Council for bridge improvement works across the entire Scottish Borders network. The Council has circa 1200 bridges to manage and maintain from this annual budget. Therefore, it is proposed to seek some external grant funding to assist with the refurbishment works at Kalemouth Bridge. Contact has already been made with Historic Environment Scotland (HES) and initial feedback has been positive. However, the standard grant rate from HES for local authorities is 25% of the grant eligible costs so the maximum contribution is likely to be around £200-250k. Other possible external funding streams will be explored, such as the National Lottery Grant Fund. It should be noted that any external organisation that offers funding does so with various conditions attached.

6 IMPLICATIONS

6.1 **Financial**

(a) It is proposed to undertake the above timber replacement works in financial year 2025/26. The current approved capital budget for masonry refurbishment within the Roads & Bridges Block in 2025/26 is £417k. The initial estimated total scheme costs associated with the project is circa £1M and we are therefore looking to maximise external funding opportunities to allow this project to proceed.

(b) Approval will be sought to increase the masonry refurbishment block allocation to £700k in 2025/26 from the wider Roads & Bridges Block as part of the 2024/25 Capital Programme Block Allocations report. If approved this will allow the Council to contribute circa £400k to this project leaving some budget to carry out essential work on other bridges in-year.

6.2 **Risk and Mitigations**

(a) There is a high risk that if timber replacement works are not carried out within next few years Kalemouth Bridge will have to be fully closed. This would detract from its Category 'A' Listed status and generate negative publicity for the Council.

(b) There is a risk that external grant funding may not be secured. This is considered unlikely as positive feedback has already been received for Historic Environment Scotland.

(c) There is a risk that costs associated with the timber replacement works will exceed the initial estimate of £1M. This is possible as much of the cost associated with working on a weak suspension bridge over a wide river is related to the temporary safe access arrangements for the construction work, be that scaffold or floating pontoon, and it is difficult to estimate these costs at the design stage.

6.3 **Integrated Impact Assessment**

The Integrated Impact Assessment template has been completed for this project which involves replacing all timber elements on Kalemouth Bridge to avoid it having to be closed. It is not considered that it will have any adverse effects on equality or opportunity.

6.4 **Sustainable Development Goals**

It is not envisaged that the proposal will impact on any of the UN Sustainable Development Goals. However, a potential benefit of the project may be to encourage walking and cycling in the area. A permissive path route already crosses Kalemouth Bridge, and the repair work and associated vehicular traffic restriction may further encourage these activities.

6.5 **Climate Change**

(a) Formally closing Kalemouth Suspension bridge to vehicles will increase journey distances and times for a small number of people. This will marginally increase their carbon output. However, over time as more efficient and predominantly electric vehicles come into circulation this increase will become very small.

(b) Replacement timber material for the project will only be sought from sustainable sources.

6.6 **Rural Proofing**

This project is not a new or amended policy or strategy it is a specific and individual project to repair Kalemouth Suspension Bridge.

6.7 **Data Protection Impact Statement**

There are no personal data implications arising from the proposals contained in this report.

6.8 **Changes to Scheme of Administration or Scheme of Delegation**
There are no changes required to either the Scheme of Administration or the Scheme of Delegation as a result of the proposals in this report.

7 CONSULTATION

7.1 The Director (Finance & Procurement), the Director (Corporate Governance), the Chief Officer Audit and Risk, the Director (People Performance & Change), the Clerk to the Council and Corporate Communications have been consulted and any comments incorporated into the final report.

Approved by

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Background Papers: N/A
Previous Minute Reference: N/A

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