

BARNSELEY METROPOLITAN BOROUGH COUNCIL

This matter is a Key Decision within the Council's definition and has been included in the relevant Forward Plan

REPORT OF THE EXECUTIVE DIRECTOR PLACE TO CABINET, 26 JANUARY 2022

Public or private report: Public

Works and Investigations at Worsbrough and Elsecar Reservoirs

1. Purpose of Report

- 1.1 To seek the authority and commitment to spend (including approval to procure a contractor(s) to undertake the works (with delegated authority to enter into a contract(s) on a phased scheme of works and investigations at Worsbrough reservoir to address issues of potential flood risk and health and safety concerns which were raised in the Reservoir Inspector's 2021 report and by the Council's health and safety team.
- 1.2 To seek the authority and commitment to spend (including approval to procure a contractor(s) to undertake the works (with delegated authority to enter into a contract(s) on investigations at Elsecar reservoir, as prescribed in the Reservoir Inspector's 2021 inspection report, to determine whether it too requires remedial works to reduce likelihood of flooding and/or health and safety concerns.

2. Recommendations

It is recommended that Cabinet:

- 2.1 **Approves the proposed phased investment plan for investigations, remedial works, and ongoing maintenance of Worsbrough and Elsecar reservoirs to bring these sites in line with legislation regarding flood prevention and health and safety.**
- 2.2 **Delegates authority to officers (Executive Director, Place and Service Director, Regeneration and Culture) in relation to procurement of and entering into a contract(s) with suitable contractors to carry out the investigations, works and maintenance.**

3. Introduction

- 3.1 The Council owns both Worsbrough and Elsecar reservoirs and surrounding parkland. Due to the reservoirs' water-holding capacity and the potential impact of flooding on residents, infrastructure, and property downstream in the event of failure, under the Reservoirs Act 1975, the reservoirs are considered to be 'Category A, high risk' structures.

- 3.2 This means that the Council has to appoint a Government registered All Reservoirs Panel Engineer (ARPE) (currently Jacobs) to undertake annual inspections (S12), and more detailed 10-yearly (S10) inspections of the structures and implement any recorded measures in the interest of safety within the timeframe the ARPE dictates.
- 3.3 As well as the Council's obligations under the Reservoirs Act 1975, it is also obliged under Section 4 of Health & Safety at Work Act 1974 to undertake "all reasonable measures to ensure that all [premises] are safe and without risks to the health of both employees and non-employees."
- 3.4 The Council's health and safety team inspected Worsbrough in April 2021 which highlighted significant concerns regarding the stability of the embankments surrounding the reservoir and the potential risks should someone fall into the water as a result of accessing these areas.
- 3.5 The users of those embankments tend to be anglers affiliated to the Barnsley and District Amalgamated Angling Society (BDAAS).
- 3.6 BDAAS has a covenant in place dating from 1964 which grants them the right to stock the water course and fish from its banks, ad infinitum. As a result of that, the Council, as current site owner, is obliged to maintain those banks in a safe state for anglers' access.
- 3.7 Following the 2019 S12 inspection of Worsbrough reservoir, investigations and works have been carried out to repair some identified issues with the main spillway structures.
- 3.8 However, Worsbrough's 2021 S10 report has highlighted that further measures in the interest of safety are needed to minimise the risk of flooding and subsequent potential impact on residents, property and infrastructure.
- 3.9 As Elsecar reservoir is of a similar age, construction, and consequence upon failure or flood events (with historical events having impacted the Heritage Centre as well as local residential and business premises), its 2021 S12 report has recommended that a suite of investigations are conducted to determine whether that site will also require works similar in nature to Worsbrough.
- 3.10 In relation to the Worsbrough reservoir embankment issues, the Council has already commissioned surveys and design proposals through Align Property Partners Ltd for remediation of those areas.
- 3.11 These surveys found that there are two extensive areas on the northern bank which have been most severely attacked by wave erosion due to the direction of prevailing winds at the site. This attack has caused under-cutting of the wall foundations and created mini 'sink-holes' in the banking which creates a significant health and safety risk for users. At the worst affected point (known locally as the 'shallows' area), the retaining wall has actually overturned and is collapsing into the water.
- 3.12 Consultation with H&S and Legal colleagues have confirmed that the Council is responsible for carrying out remedial works to keep these structures safe for their intended use as fishing platforms (pegs).

- 3.13 As a precautionary measure, sections of the north bank have been cordoned off using heras fencing and signage indicating no unauthorised access.
- 3.14 Inspections of the southern banks at Worsbrough have identified a similar issue to that of the north but the degree to which this is impacting safety is currently lower, though will continue to deteriorate if remedial works are not carried out.
- 3.15 Align have created an options appraisal on the most cost effective and safe ways (considering heritage and ecological concerns regarding timing of works and materials/equipment used) to carry out remedial works before the banks deteriorate to the point of having to be completely replaced.
- 3.16 The values quoted in this paper are estimates based on Align’s previous experience, current market conditions and the restrictions of the site (eg access/ecology/heritage).

4. Proposal and Justification

- 4.1 It is proposed that a phased schedule of investigations and works (see Appendix A) be carried out over the next seven years (including the remainder of 2021/22 financial year) at Worsbrough reservoir.
- 4.2 This is to address concerns raised in the 2021 ARPE inspection report; concerns raised by the Council’s Health and Safety team in April 2021; the findings of the embankment surveys; and to create an ongoing schedule of maintenance and surveillance to prevent future deterioration of the reservoir structure.
- 4.3 It is also proposed that investigations are to take place at Elsecar reservoir within the remainder of 2021/22 financial year to determine whether that site requires any remedial works in the interest of flood prevention, health and safety for site users, and ongoing surveillance and maintenance.
- 4.4 These investigations and works are required under the Council’s statutory obligations (as owner of these publicly accessible sites) to minimise flood risk and hazards to site users.
- 4.5 The total anticipated cost for the works and inspections totals £3.375M, which is detailed in Section 7 below.

5. Consideration of Alternative Approaches

- 5.1 A number of alternative approaches have been considered, particularly in relation to Worsbrough, which have been outlined in the table below.

| Approaches considered | For further consideration or rejection |
|--|---|
| Discussions have been undertaken as to whether it would be feasible to drain the reservoir partially or completely in order to avoid having to undertake repair and maintenance works. | This approach has been rejected on the following basis: <ul style="list-style-type: none"> • The site is a significant draw for visitors and contributes to the local economy / culture budget through sales in the café, gift shop and of flour from the mill. • Were the water level to be lowered any further than it is for current remedial works this would equate to |

| Approaches considered | For further consideration or rejection |
|--|---|
| | <p>a loss of profit ~£8-10k p.a just from flour production alone.</p> <ul style="list-style-type: none"> • BDAAS entered into a conveyance in 1964 which means the owner of the reservoir is obliged to provide them unhindered access to fish and manage the fish stock in perpetuity, whether or not the site changes ownership. By draining the water completely, the Council would be in breach of this conveyance and liable for civil action. • The Reservoirs Act 1975 requires that even disused reservoir structures have to undergo a degree of regular inspection and maintenance so some costs would still be incurred. • Under SSSI designation, the currently low levels of water (required for the spillway repairs) would not be acceptable in the longer term as they would result in the certified areas of wetland becoming drier and therefore less hospitable to the existing biodiversity of the area. |
| <p>In relation to the spillway and structures covered by the Reservoir Act 1975, the Council has the right to explore use of a 'risk-based approach' to site maintenance.</p> | <p>Whether this approach is something the Council has an appetite for needs to be discussed further. If we do proceed along this route we will need to ensure rigorous control, monitoring and maintenance schedules and actions are in place in order to mitigate the risks and potential consequences of dam failure.</p> |
| <p>In relation to the embankment structures, the Council could cordon off all the landscaped fishing platforms (pegs) and expect anglers to operate from the public footpaths.</p> | <p>This approach has been rejected on the following basis:</p> <ul style="list-style-type: none"> • This would not address the issue of the 'shallows' end footpath collapse. • This would create a new hazard for anglers and the wider public through conflicting use of paths (some of which are quite narrow) in terms of tripping on equipment, damage to equipment, pedestrians being caught and injured by hooks when anglers are back-casting. • BDAAS could argue we were hindering their rights to fish by this approach and so could pursue civil action. |
| <p>In relation to embankments, the Council will be presented with a selection of options following the visual inspection and may choose the least costly at the expense of longevity, safety, or biodiversity.</p> | <p>Decisions about which option(s) to pursue must strike a reasonable balance between cost, safety, longevity of the solution and any consequences for the local flora and fauna (and include consequential maintenance implications).</p> |
| <p>Don't put in place any routine maintenance programme for keeping on top of vegetation and minor repair works</p> | <p>Rejected as this approach would put us in same situation as currently facing whereby vast sums of money are required to correct years of neglect.</p> |
| <p>Don't carry out recommended health and safety works re emergency release valve and access arrangements</p> | <p>Reject not doing valve works as that would prevent controlled release in event of impending dam wall failure. Could consider objecting to recommendation re handrails and access paths as not currently in place and hadn't been recommended in past inspections. This would save money in short term but could have</p> |

| Approaches considered | For further consideration or rejection |
|--|--|
| | dire consequences if someone is injured or worse when operating at the site. |
| Seek 2 nd opinion on recommendations from an alternative ARPE | Could consider this but would require procurement process and additional initial expense for the review and site visits. Based on timelines for current inspectors that would put timeline for all things spillway structures back by up to 6 months. Would leave us at risk of litigation should an incident occur in interim period. |

6. Impact on Local People

- 6.1 Visitors and staff at the sites may experience some disruption or inconvenience while the investigations and works are carried out. These will be minimised wherever possible and clear communication will be provided throughout to inform stakeholders of the expected dates and reasons for the activities.
- 6.2 Upon completion of the works at Worsbrough, the site will be more attractive to, and most importantly safe for, visitors.
- 6.3 Investigations and any subsequently required works at Worsbrough will provide the Council, the Government's ARPE, and the Environment Agency (EA) with assurance that there is almost no risk of that reservoir catastrophically failing and creating risk to residents, property, and infrastructure downstream.
- 6.4 Investigations at Elsecar will determine whether there is any unacceptable risk to site users and the local residents/businesses (including the Heritage Centre) from the reservoir's presence. If this is found to be the case, the Council will need to develop an action plan to mitigate those risks as far as practicably possible.

7. Financial Implications

- 7.1 Consultations have taken place with representatives of the Service Director – Finance (S151 Officer).
- 7.2 This report is to seek approval for both the remedial works and exploratory survey works at Worsbrough and Elsecar reservoirs respectively.

Capital Expenditure

- 7.3 The total estimated cost of the these works total £3.375M phased across a number of financial years, based on priority. The types of works and associated expected timings are detailed in Appendix A and are also summarised in the Table below.

| Year | Works Include: | £M |
|-------------|---|-----------|
| 2021-22 | Part 1 of North Banking Repairs, Release Valve Repairs, Detailed Investigation Works | 0.450 |
| 2022-23 | Part 1 of South Banking Repairs, Part 2 of North Banking Repairs, North Bank Wall Replacement | 1.660 |
| 2023-24 | Part 2 of South Banking Repairs, Remedial Works to Side Channel Foundations | 0.940 |
| 2024-25 | Inspections and Ongoing Management of the Sites | 0.070 |
| 2025-26 | Inspections and Ongoing Management of the Sites | 0.110 |

| | | |
|--------------|---|--------------|
| 2026-27 | Inspections and Ongoing Management of the Sites | 0.070 |
| 2027-28 | Inspections and Ongoing Management of the Sites | 0.075 |
| TOTAL | | 3.375 |

Capital Funding / Resources

- 7.4 The proposal was discussed at the Council's Capital Oversight Board in December 2021 where it was agreed that the scheme required progressing.
- 7.5 The Section 151 officer has therefore committed to utilise capital resources that had been held in contingency for both unforeseen circumstances and to mitigate price volatility as a result of the uncertainty in the current economic landscape.
- 7.6 The Council will continue to explore a number of potential external funding sources i.e., grants from heritage and lottery funding bodies, Sheffield City Region's Place-Based Investment Plan, and donations from the angling society to contribute towards the cost of this scheme. Should any external funding requests be accepted, then the call on the Council's own resources would be reduced accordingly.
- 7.7 The financial implications to this report are summarised in the attached Appendix A.

8. Employee Implications

- 8.1 Monitoring, surveillance, and emergency response activities and responsibilities are under discussion as part of statutory on-site flood planning.
- 8.2 Where works/investigations are not of a specialist nature, BMBC staff resources will be utilised whenever possible.

9. Communications Implications

- 9.1 An initial stakeholder analysis has been carried out to determine the 'who, who, when, why and what' for communication. This can be found at Appendix B.

10. Consultations

- 10.1 To date, consultation has taken place with the ARPE, the EA, BDAAS, a resident neighbouring Worsbrough (Kip's Cottage), BMBC's Culture, Parks, BPS, Finance, Heritage, Biodiversity, Equality & Inclusivity, Emergency Planning, and Highways teams.
- 10.2 Further consultations will take place as required throughout the programme of works to ensure clear two-way communication and opportunities for concerns to be addressed are maintained.

11. The Corporate Plan and The Council's Performance Management Framework

- 11.1 This proposal links to the following corporate priorities/strategies:
- BU6 Business Plan to prioritise H&S; to contribute to the Local Resilience Forums & Council's Response & Recovery Strategy; and to protect the Borough for future generations.

- BU4 Business Plan core outcome to: strengthen our visitor economy; care for our heritage assets and collections for future generations to enjoy; be prepared to take calculated and innovative and managed risks in order to achieve our aspirations; maintain stewardship of our asset portfolio; develop a masterplan for Worsbrough Mill and Country Park; Implement the Elsecar Masterplan.
- BMBC Council Plan 2021-24 – healthy Barnsley - People are safe and feel safe; sustainable Barnsley - Our heritage and green spaces are promoted for everyone to enjoy.
- BMBC Health & Safety Policy.
- BMBC Emergency Planning statutory duties under the Civil Contingencies Act (CCA) 2004 as a Category 1 Responder.
- BMBC Sustainability Decision Making Wheel – Environmental Guidance on habitat protection, flood defences, and water management.

12. Promoting Equality and Diversity and Social Inclusion

- 12.1 No negative impacts anticipated should all recommended works be carried out. If not, then access to the site could have to be further restricted for safety reasons. This could impact some people with protected characteristics.

13. Tackling the Impact of Poverty

- 13.1 Wherever possible, BMBC staff and local businesses will be utilised to undertake the programme of works.

14. Tackling Health Inequalities

- 14.1 Improved safety and accessibility of these sites will enable more visitors to take advantage of them for exercise, thereby contributing to the Healthy Barnsley strategic objective.

15. Reduction of Crime and Disorder

- 15.1 There are no anticipated impacts on crime and disorder rates as a result of this proposal.

16. Risk Management Issues

- 16.1 If the measures in the interest of safety, noted by the reservoirs inspector, are not addressed BMBC is liable for criminal proceedings as these measures are required to ensure Worsbrough reservoir does not breach its banks and flood the downstream neighbourhood (approx. 50 residential and 25 commercial properties) and arterial route (A61).
- 16.2 If repairs to Worsbrough reservoir's embankments are not carried out there is significant risk of harm to site users; especially the angling community who have a covenant giving unhindered access to fish from those banks.

- 16.3 If investigations of Elsecar, as prescribed by the reservoirs inspector, are not carried out and the structure fails BMBC will be liable for criminal and civil proceedings.
- 16.4 These sites are registered nature reserves monitored by the Environment Agency (EA). Any works undertaken must comply with EA legislation and guidance on preservation of the ecology. As a result, some of the activities can only be carried out at certain times of year, using specialist materials to minimise disruption to the local flora and fauna, and reduce risk of introducing/spreading any non-native or invasive species.
- 16.5 An assessment of all currently known risks can be found at Appendix C.

17. Health, Safety and Emergency Resilience Issues

- 17.1 As discussed above, the health and safety and emergency resilience implications of not undertaking this proposal could be catastrophic both in terms of public safety and the Council’s standing as a statutory body responsible for proper maintenance of these high-risk sites.
- 17.2 Collaboration is ongoing with all relevant parties to establish effective onsite flood planning procedures.

18. Compatibility with European Convention on Human Rights

- 18.1 Under Article 2, public authorities must consider individuals’ right to life when making decisions that might put them in danger or that affect their life expectancy. At this point in time, Worsbrough reservoir’s poor condition is deemed as potentially in contravention of Article 2 and the state of Elsecar is yet to be determined.

19. Conservation of Biodiversity

- 19.1 Extensive discussions have been, and will continue to be, held with BMBC’s biodiversity officer and contacts at the EA to ensure the sites’ biodiversity is protected as far as is possible throughout this programme of works.

20. Glossary

| Abbreviation | Meaning |
|---------------------|---|
| EA | Environment Agency |
| BDAAS | Barnsley and District Amalgamated Anglers Society |
| ARPE | All Reservoirs Panel Inspector |
| SSSI | Site of Special Scientific Interest |
| S10 | Section 10 of the Reservoirs Act 1975 |
| S12 | Section 12 of the Reservoirs Act 1975 |

21. List of Appendices

- 21.1 Appendix A – Financial Implications
- Appendix B – Stakeholder Analysis using [Mendelow’s Stakeholder Engagement Matrix](#)
- Appendix C – Risk Analysis

22. Background Papers

22.1 Investigation reports and survey results are stored within the Facilities Management SharePoint site.

If you would like to inspect background papers for this report, please email governance@barnsley.gov.uk so that appropriate arrangements can be made.

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