



Open Report on behalf of the Environment Agency

Report to:	Flood and Water Management Scrutiny Committee
Date:	29 November 2021
Subject:	Update on Black Sluice Pumping Station Project, Boston

Summary:

In October 2018, following rigorous studies and consultation, the Black Sluice Pumping Station in Boston was operationally decommissioned. This report provides an update on progress by the Environment Agency to make the site safe, and the opportunity for local partners to re-purpose the site as a local amenity.

Actions Required:

The Flood and Water Management Scrutiny Committee is invited to consider and comment this report.

1. Background

An Environment Agency (EA) led study called the 'Black Sluice Catchment Works' began in 2012, with the aim of understanding flood risk in the South Forty Foot (SFF) system. This study included detailed modelling and economic assessment on a range of scenarios for the whole catchment, but closely linked to the role of the Black Sluice Pumping Station (BSPS) in Boston.

This evidence showed that, whilst the gravity sluice and dual-purpose lock play an important role in managing flood risk to people and property, the pumps do not. They also provided only a negligible benefit to protecting agricultural land (less than 1% of the catchment). See Appendix A for further detail on the asset and decommission.

Following the study and formal consultation, the EA and Black Sluice Internal Drainage Board (BSIDB) took forward two options: a transfer of the BSPS to the IDB or decommission of the asset. This was steered by a partnership of the Environment Agency, BSIDB, Lincolnshire County Council, Boston Borough Council, National Farmers Union, Association of Drainage Authorities and Anglian Northern Regional Flood and Coastal Committee.

In March 2018 it was confirmed by BSIDB that the cost to refurbish the pumps outweighed the resultant benefit and were unable to justify a business case. In October 2018, the partnership announced the formal decommission of the pumps at the Anglian Northern

Regional Flood and Coastal Committee (RFCC) meeting. The adjoining lock and sluice would be the focus of funding and resource for the EA, whilst the BSPS would be re-purposed as a community amenity (if feasible).



Picture 1: The Black Sluice Station in Boston

The EA part-decommission, and re-purposing opportunity are now being led by a Project Team and overseen by a Project Board, ensuring all key partners continue to be involved. See Appendix B for a full list of membership.

2. Update on EA decommission

Whilst the pumps have been decommissioned, the EA remain owners of the building and have continued to maintain the building itself (but not the pumps and associated elements) in the short term.

We are now in the second phase of scoping and designing what decommission looks like and how much it will cost. This will effectively involve making the site safe and 'watertight' to allow the building to be transferred to another Risk Management Authority, leased to an organisation to redevelop or sold on the open market. Whilst the EA will strive to carry out this 'make safe' decommission, the redevelopment of the site itself will need to be delivered by another organisation.

Whilst the partners will strive to deliver the best possible outcome for the town, it is essential to recognise the need to ensure the building remains safe and use public money appropriately. If the redevelopment is not financially viable, other options will need to be progressed such as sale of the building on the market. The project team are working closely with local finance leads and national operations to investigate all options.

3. Update on re-purposing of site

The EA are working with partners to facilitate investigations into a future use for the site and (if feasible) support delivery of works to re-purpose as a local amenity. Once the building has been 'made safe', the proposal is for a competent organisation or business to take on ownership or management of the building and redevelop the site to align with the Boston Town Plan and wider county opportunities.

The heritage value of the site is recognised by all, as shown by the recent Heritage Open Day held on 15 September. This saw a fully booked day with tours around the building to see the engines and learn about its incredible history.

The current proposal is to retain the wow-factor and magnitude of the pumps by building around them a unique visitor experience. With the oldest pumps at its centre, a destination bistro will provide a novel eating experience including outdoor space on the balcony over-looking the river. Set above this will be four self-contained holiday lets affording views of the impressive building, river, or tidal Haven. Education and the environment are central themes to the project, with an opportunity to not only display the engineering capabilities of the past but to embed sustainable and environmentally friendly ways of living for the future. The oldest pumps will remain in situ for schools, local groups and families to visit and learn about the wildlife, economy and history of this unique place. With the Boston Tidal Barrier easily viewed from the site, there is an opportunity to help people understand what is to be at risk from flooding and how we can all become more resilient in a changing climate.

The project will work closely with adjacent businesses in the Lock Cottages, building a strategy for the whole site that will see benefits and opportunities for everyone. With its prime location on both fresh and saltwater boating routes, this project is an opportunity to draw in river users to the area as well as providing a stop-off point on the National Cycle Network.

These discussions are in the early stages and are dependent on funding for the conversation and a strong business case for the proposed design. Whilst the partners while strive to deliver the best possible outcome for the town, it is essential to recognise the need to ensure the building remains safe. If the redevelopment is not financially viable, other options will need to be progressed such as sale of the building on the market.

4. The Black Sluice Complex & Water Management

We continue to maintain the strategically important gravity sluice and dual-purpose lock at the Black Sluice Complex. During normal operation, the levels in the SFF Drain are managed using the gravity or 'day' sluice only. The lock, which was specifically designed as a second gravity sluice, is operated ahead of and/or during high flow events.

The levels in the SFF Drain are managed for a variety of reasons including reducing flood risk, irrigation, and navigation. The sluice cannot discharge water when the tidal level in the Haven is at or above the river level of the SFF Drain (called a 'tide lock' period). This is normal operation for all fluvial-tidal assets. Prior to decommission, operational procedures were reviewed and updated. We now create capacity in the SFF Drain ahead of high rainfall events and utilise the lock as a second gravity sluice. This method is as effective as and more efficient than using the pumps, even accounting for the tide lock period, and allows deployment of critical field staff elsewhere in the area.

Over the summer of 2020 we delivered a £1m detailed asset inspection and refurbishment of the navigation lock to ensure it remains operational and resilient into the future. This year we are scoping the detailed inspection and refurbishment of the gravity or 'day' sluice for works next year. This will include upgrading the control system and dam board system to ensure efficient and effective maintenance for the longer term.

Partnership working is essential to manage water as a whole in the SFF catchment, and we continue to work closely with Black Sluice IDB both in and out of flood incidents. We are finalising the updated Operational Contingent Plan and Flood Incident Procedures for the asset, which includes mapping of all asset failure scenarios e.g., a sluice gate failing closed or a major obstruction in channel. BS IDB are providing vital input into this document, which will continue as we move onto reviewing Operational Action Plans for the catchment as a whole.

5. Conclusion

The Flood and Water Management Scrutiny Committee is invited to consider and comment this report and to receive the updates provided.

3. Consultation

a) Risks and Impact Analysis

N/A

4. Appendices

These are listed below and attached at the back of the report	
Appendix A	Key Facts and Figures for the asset and decommission decision
Appendix B	Project Governance

5. Background Papers

No background papers within Section 100D of the Local Government Act 1972 were used in the preparation of this report.

This report was written by Abigail Jackson, Project Lead, Environment Agency, and sponsored by Morgan Wray, FCRM Manager, Environment Agency, who can be contacted on morgan.wray@environment-agency.gov.uk.

Key Facts and Figures for the asset and decommission decision

- The pump station was constructed in 1946 with 3 diesel pumps, followed by an additional two pumps in 1966.
- When operational, they were able to move 60 cubic metres of water per second. However, generally only two pumps were ever operated and for short 1–2-hour periods. In their lifetime, the pumps sat idle 99% of the time.
- In comparison, gravity discharge from the lock and sluice is at least 90 cubic metres and can operate automatically (with no human intervention).
- The EA must prioritise their limited funding to people and property and will continue to invest in the operation and resilience of the lock and sluice as well as other important flood risk structures in the area.

A study called the Black Sluice Catchment Works (BSCW) from 2012-2016 assessed flood risk across the SFF catchment, including the role of the pumps. This rigorous study included modelling of the system (for various scenarios), an economic assessment and full public consultation. The key conclusions of this study were:

- The pumps were at the end of their operational life and required significant funding to refurbish (£2-3m minimum).
- The pumps being operated provided no benefit for people and their homes, and only reduced flooding of agricultural land by ~178ha (0.3% of the catchment).
- Whilst the preferred option by the public was for the Environment Agency to refurbish the pumps, the lack of properties protected meant there was no business case to secure the funding required.
- The next preferred option was for the Black Sluice Internal Drainage Board (IDB) to take on the building and operate them, alongside the EA operated sluice and lock. This was not financially viable.
- The best option economically was to decommission the pump station and focus funding and resource on the lock/sluice complex and sustaining the SFF banks.

Project Governance

Project Board governance:

Organisation	Representative
Environment Agency	Morgan Wray (Chair)
	Pete Reilly
	Kamen Kalchev (Project Exec)
	Abigail Jackson (Project Lead)
	Maria Piraino
Boston Borough Council	Michelle Sacks
	Cllr Paul Skinner
	Lydia Rusling
Lincolnshire County Council	Ian Walker
Heritage Lincolnshire	Greg Pickup
Black Sluice IDB	Jonathan Fowler

Project Team governance:

Organisation	Representative
Environment Agency	Abigail Jackson (Chair)
	Maria Piraino
	Ian Watts (Waterways)
	Antony Georgiou (Decommission)
	Zoe Conville (Boston Barrier)
Heritage Lincolnshire	Hannah Thompson
Boston Borough Council	Neil Cucksey
	Cllr Richard Austin
Lincolnshire County Council	Peter Fender
Other partners	Mick Taylor (Taylor Itex)