

Black Sluice & Lock: Project Briefing Note

This briefing provides a summary of the works at the Black Sluice complex in Boston as part of the Environment Agency's programme to ensure our critical assets remain resilient during flood incidents.

Why now?

The gravity sluice and dual-purpose navigation lock sits on the outfall of the South Forty Foot Drain in Boston. They are critical assets to manage water in the South Forty Foot Catchment, allowing us to regulate the levels in the watercourse for a variety of reasons including flood risk management, navigation and water abstraction.

Over the autumn and winter of 2019/20 the county was impacted by prolonged and heavy rain, with persistently saturated ground resulting in high levels in our watercourses. Over this time, we continually operated the sluice and lock to let water out of the South Forty Foot Drain, including during breaks in the weather to create room for more. We saw some of the highest water levels recorded in the area, but over-topping of the embankments was minimal and only in the upper part of the catchment with no homes flooded. This underlines not only the successful management of water levels using the sluices, but also the importance of these two structures as critical assets.

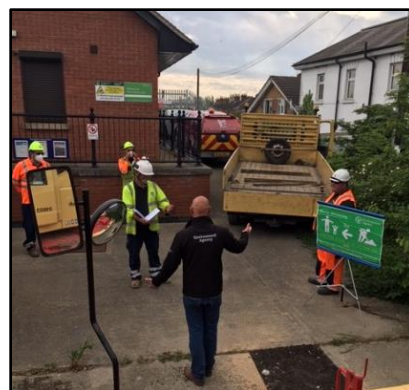
Following the winter flooding, we have a Recovery Programme delivering a large number of projects this year to maintain the resilience of our flood defences. This is the first incident where we have fully implemented our new way of operating the lock as a full gravity sluice. The work we now need to carry out is to mitigate the expected 'wear and tear' that will help ensure the assets remain functional during flood incidents. In addition, the navigation lock is due for its 10 year detailed inspection service to make sure our river users can safely gain passage to the South Forty Foot Drain.

Completion of the first phase

As we would like to avoid both sluice and lock being out of commission at the same time, we have taken a phased approach to the works. The first phase of this programme has been completed on the gravity sluice, and involved replacing the hinges to the guillotine gate and fitting new straps to the tidal pointing doors. Because of the importance of this flood defence, this first phase was completed during the



Coronavirus lockdown period, with our contractors applying the government guidelines to safeguard staff and the general public.



What is happening now?

The second phase is a far larger piece of work focused on the navigation lock which involves a full drain down of the structure. This will allow specialist contractors to safely carry out detailed inspections of all parts of the lock which are often under water, as well as replacing or repairing any required parts. We are also carrying out general maintenance and service to the site, plus a 3D survey of the whole structure will be taken to provide an extremely detailed model of the lock for our records.

The drain down of the lock will involve fitting purpose-built dam boards, sealing off the inflow of water. This means that navigation will not be possible during these works, and the lock will be formally closed for a four week period from the 10 August 2020. Because of the lock's vital role as a gravity sluice during heavy rain, we have opted to close the asset during the summer months to mitigate the flood risk. In addition, our contractors have a contingency plan in place for unexpected events. Should we receive a high rainfall alert during the time the lock is closed and managing through the guillotine gate alone may lead to flooding, a crane will be on site to remove the dam boards and allow us to use the sluice as normal.

Future works

The outcome of the detailed survey will decide what further works are needed. Every step is being taken to make the most of the August closure of the lock to avoid further impacts to navigation along the South Forty Foot Drain. We also have some further works for the adjacent gravity sluice programmed in for 2021, which may be packaged with the output of the detailed survey (depending on the issues found).

Should there be a need for closure of the lock again, all formal procedures will be followed.



What about Black Sluice Pumping Station?

Sit alongside the Black Sluice & Lock Complex is a large and impressive building called the Black Sluice Pumping Station. From 2012 to 2016 we carried out a detailed study and formal consultation into how we manage flooding in the South Forty Foot Catchment. This included the role of the pumps which required significant refurbishment due to their age and the impact of the December 2013 tidal surge. This rigorous study, working with our key partners in the area, showed that the pumps do not protect people and their homes from flooding and play only a negligible role in protecting agricultural land. As shown over winter, we are able to more effectively and efficiently manage rainfall events using the lock and sluice only.

As such, a partnership, including the Environment Agency, Black Sluice Internal Drainage Board and Boston Borough Council, formally decommissioned the pumps in October 2018. The building and pumps are an important part of local history, and we are now working with the partners to understand options for the future use for the building as a local amenity. Whilst this project has been on pause since the summer of last year, we are hoping to begin conversations with the local community over the coming months.

Who to contact for further information

If you would like to find out more about the current works to the Black Sluice Complex, or the proposed re-purposing of the Black Sluice Pumping Station, please contact Abigail Jackson on 02030 255877 or email SouthFortyFoot.Catchment@environment-agency.gov.uk.