

Lower Witham Flood Resilience Project

Phase One: Grand Sluice

August 2025

The Lower Witham Flood Resilience Project aims to improve the catchment's resilience to flood events and reduce the harm caused by flooding where possible. Phase One of the project includes the refurbishment of Grand Sluice.

Grand Sluice was officially opened in 1766. For the last 250+ years it has kept the tide out of the River Witham and managed water levels in the river from Boston to Bardney. Since its construction it has been refurbished, repaired, and upgraded multiple times and we are now starting another refurbishment which will take place over four years and is scheduled to begin in early May 2025.

What have we been doing?

We have fabricated stop log liners for both upstream and downstream of the gates. These will be installed within the existing grooves, allowing stop logs to be placed into position on each channel to create a dry working area. This is vital preparation which needs to be carried out before the main works to replace the gates can begin.

Factory Acceptance Testing (right) shows the stop log liners which will be in the channel accepting two stop logs. When the stop logs are dropped in, they will temporarily dam off the river creating a dry and safe environment for gate replacement work.

Our site compound is located next to the Boston Rowing Club. The majority of the work will be carried out from the water using a floating pontoon. This will minimise disruption to the busy road bridge.



Factory Acceptance Testing stop log liners that will hold stop logs in place to create safe and dry working areas.



A diver in the water with dive attendant in support.

Dive Surveys:

Our divers have recently been assessing the timbers that form the bed of the river upstream of the sluice. One loose plank was hauled out of the water and gives us a great sense of the lifespan of the timbers that are permanently submerged in the water. Whilst it's submerged there is no oxygen to cause the wood to rot, but over a period of time the abrasion caused by decades of sediment movement have scoured the plank down to a much thinner width than original. These will now be replaced with oak planks that will extend the lifespan of the apron well into the future.





Timber plank from the upstream apron of Grand Sluice.

The stop log liners will be placed on a bed of concrete to create a flat surface and allow the stop logs to form a seal and reduce leakage. Before this can happen, we need to test the strength of the concrete to ensure it won't damage in the river environment. To do this we create multiple cubes of concrete and test them in a range of conditions, recording their curing time and strength. As the concrete will need to be poured under water, some of the samples will be tested in the river near the rowing club.



Cross section through one of the timber planks showing the deterioration which has eroded over many years.



Concrete cubes which will be tested in a range of conditions.



What about the weed in the river?

This year has been challenging as we have experienced almost seven months with very little rainfall and consistently high temperatures. These are ideal conditions for weed growth. We have recently pumped water from the River Trent into the River Witham to sustain levels for abstractors and river users. Currently, each time Grand Sluice is used to flush weeds a significant quantity of water is lost from the system. We need to balance retaining water in the river and flushing the weed.

We work with the Canal and River Trust (CRT) and have agreement that allows them to operate Grand Sluice to flush weed from the River Witham to Witham Haven when river levels allow. Our dive team are also flushing weed before their dives to allow some better visibility.

The additional flushing won't address the cause as to why the Witham suffers so badly with weed growth in hot summers, and it's not guaranteed to keep the channel clear.

Aquatic weed flushing is being considered as part of the Grand Sluice refurbishment. We plan to alter the sluice gates so water can skim over the top. This will help remove floating weed more consistently without losing as much water from the system as weed flushing does now. This will allow for more frequent flushing with less impact on water levels.

What's coming up?

- We will be creating a concrete base in the river and installing the liners into the concrete and existing side grooves.
- We will fabricate new stop logs for both upstream and downstream of the sluice, which will be tested to ensure they are water tight.
- We will be relocating the Environment Agency's access between the piers.

How might I be affected?

You may see our contractors working in and around Grand Sluice. Although there will be no road closures, we have closed the footpath at the rowing club to allow plant to safely travel between the barge and the bankside.

Throughout the construction works, we will be monitoring the river levels and weather forecasts to plan the works accordingly. This includes planning work during the drier summer months, and around tide times.

Our contractors normal working hours are between 08:00 to 18:00. However, in some incidents due to the nature of the tides or to minimise disruptions, they may need to work outside of these hours.

Where can I go for more information?

If you have any questions or wish to be added to our mailing list for updates, please email: Lowerwitham.Floodresilience@environment-agency.gov.uk

You can also find our Lower Witham Flood Resilience Project engagement page by scanning our QR code.

For information on flood risk in your area please visit www.gov.uk/flood.

If you need to report an incident, please use our incident hotline: 0800 80 70 60. You can find more information about reporting an environmental incident at: <https://www.gov.uk/report-an-environmental-incident>

Scan our QR Code to access our Citizen Space-

