

CASE STUDY



Blue Boar use an innovative approach to help British Waterways ensure that the River Weaver navigation remains attractive and accessible

“I had used Blue Boar in the past and was very keen to get them back as their performance was very good. Their ability to find an appropriate solution was a real differentiator. We would be very happy to use them again and in fact they are doing more work for us this year elsewhere in the region.”

Neil Rice - Senior Engineer, Wales and Border Counties Business Unit, British Waterways



River Weaver Navigation

The River Weaver navigation as it stands today is a far cry from how it used to be back in the 17th century, when it was just a shallow tidal stream that was used to transport salt from the Cheshire salt areas. The mineral was brought down by men with horses to meet the oncoming tide, then the sailing barges would load at high water and depart on the ebbing tide. Then, in 1721 an Act of Parliament was obtained to make and maintain the river as a navigation from Frodsham to Winsford. Plans were drawn up, labourers were organised and by 1732 the Weaver was fully navigable for up to 40-ton barges as far as to Winsford. Bearing in mind that it started out as a stream, this was no mean feat back then.

Moving forward some 270 years, the River Weaver navigation, which runs for 50 miles between the Manchester Ship canal and Frodsham, is now used primarily for pleasure use and for the mooring of ocean-going yachts at Northwich. This means that regular maintenance has to be carried out to ensure that the waterway remains 'open' for traffic along its full length and that it remains attractive and accessible to its many visitors.

The river is also a key tourist attraction as it contains the Anderton Boat Lift, the only one of its kind in the UK, which has recently re-opened after a £7m restoration project. Known as the 'Cathedral of the Canals', the Anderton Boat lift was used in the 18th and 19th centuries to connect the River Weaver navigation to the Trent & Mersey canal, lifting barges and narrowboats and moving them across onto the Weaver

from the canal. Now that it has been renovated and is fully operational it is vital that river traffic is able to reach it, so that its benefit as a tourist attraction can be maximised. Heather Airlie, Project Manager for the Wales and Border Counties business unit of British Waterways, explains:



“We have a responsibility to maintain all of the waterways within our region to certain pre-determined ‘advertised standards’, to ensure that they can be used properly by the traffic which travels along them. For the River Weaver navigation below Winnington, this means a depth of 3.2m and a width of 10m, with a depth of 2.67m between Winnington and Winsford. To achieve this requires regular maintenance - and until last Autumn this had not been necessary for five years. Every year we undertake a hydrographic survey to assess the river and to identify any ‘hot spots’ where it no longer meets these standards, which are especially likely near locks and where tributaries join the river.

After surveying the river in 2005 we discovered that it did in fact require dredging again, to deal with some high spots on the river bed. If this was not done, the yachts which are moored at Northwich could start to have a problem getting through. There are also other issues to consider. We have an environmental code of practice to adhere to and our team of ecologists need to keep a careful eye on the dissolved oxygen levels in the water and its turbidity (or cloudiness), as these factors can cause distress to fish.”



The required dredging work was carried out between October 2005 and March 2006 as part of British Waterways' national dredging contract arrangement with Blue Boar Contracts, who are one of only two approved suppliers on the British Waterways list. Duncan Davenport, who manages the River Weaver navigation for British Waterways, explains the benefits of the dredging works:

"More than 3,000 leisure craft used the River Weaver in 2005. The dredging programme serves a dual purpose, securing safe access for the larger commercial vessels using the navigation and also ensuring that the growing number of leisure craft can continue cruising this hidden gem of a waterway."

Because the Weaver navigation is a canal-ised river it contains a number of locks, which have been in place for over 200 years. Silt can built up around these quite considerably and in total just over 30,000m³ was removed from a six mile section of the river. This included various 'high spots' upstream of Dutton Locks, upstream and downstream of Saltisford locks and also a 200m length at the Town Bridge section. Heather continues:

"This work was carried out as part of our national dredging contract. We do have two suppliers to choose from, but I had used Blue Boar in the past and was very keen to get them back as their performance was very good. This proved to be a good decision as we encountered some issues which required a creative approach and Blue Boar were able to find a way to solve the problem."

Basically, we discovered that the silt around Dutton Locks was the consistency of jelly, which made it very hard to dig out using a normal excavator. If we had used standard methods, the time required would have exceeded our budget, but Blue Boar recommended suction dredging instead, which is more economical and gives a better result - and this solved the problem swiftly and efficiently."

With suction dredging there is also no need to physically move the silt which has been excavated and place it elsewhere. Instead, Blue Boar created a 200m channel along the side of the river into which the silt was pumped - and this was then flushed out and carried away downstream, making the whole process very simple to manage. The remainder of the dredging was carried out using a standard excavator on a floating pontoon. This silt was then transferred onto barges and taken to British Waterways' own tip at Action, as this was the most cost-effective disposal method. Heather concludes:

"We were pleased with the work that Blue Boar did and with their adaptability to meet our requirements via different methods, to achieve the result we needed. To use the floating dredging throughout would have been beyond our budget and we realised that it was going to be a lot more expensive, which would definitely cause a problem. But Blue Boar found a way round it for us and recommended the suction dredging."

Their ability to find an appropriate solution was a real differentiator. We would be very happy to use them again and in fact they are doing more work for us this year, on the Llangollen canal."



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