

BRITISH WATERWAYS CHASEWATER UPDATE

21 April 2010

Chasewater dam works update

Last week, the council asked a shortlist of contractors to tender for the construction works to Chasewater Dam.

Download the drawings from the Lichfield blog (<http://www2.lichfielddc.gov.uk/chasewaterdam>) which illustrate the works, which have been prepared by the Council's Consulting Engineers, Travis Baker Associates under the direction of Rod Bridle of Dam Safety Ltd – the reservoir's Inspecting Engineer.

Cllr Val Richards said: "This represents a major milestone of the project – and these drawings begin to identify the complexity and the scale of the works we need to complete."

The deadline for submissions is 11am on 10 May 2010 and we hope to start on site during June.

Works have begun on the translocation of protected species ready for the works to commence. The fish rescue has begun. The fish that are caught are being relocated into the canal system in and around the Midlands area. The main priority will be in the North Staffs and Worcs Canal where the pollution instead a few years ago caused significant fish kill and this will assist restocking that area.

Water resource situation as 21 April 2010

As of 21 April our current resource situation is as follows:-

- Chasewater Reservoir has now been dewatered to below canal level and the only supply we get will be when the contractor pumps out the last remaining 3m and if there are any significant inflows during the works
- Bradley Pumps are now our main source of supply and they have had maintenance on them at the start of April. One pump is currently being repaired and the remainder are capable of delivering our maximum abstraction licence.
- Rotten Park Reservoir is currently above its long term average level for this time of year



Prevention of Water Loss from the Wolverhampton Level

As part of the new measures ,BW has reluctantly taken the decision to close down selected lock flights overnight to reduce the likelihood of subsequent canal closures enforced by reduced water resources.

The closure of selected lock flights overnight will address three major concerns:

1. It will help to reduce the possibility of vandalism on lock flights where we currently suffer from regular water loss over the summer period.
2. It will reduce overnight lock usage on the Wolverhampton level in order to allow the water level to recover from the previous days activities using Bradley Pumps.

It will provide a proactive strategy aimed at preventing the need for similar closures on lock flights on the Birmingham Level should further problems occur. By taking this approach from the outset we will be able to provide more clarity for boaters rather than closing other lock flights throughout the course of the summer.

The closures, which will take effect from 19 April, are shown in the table below. The times shown are the earliest times that any of the flights will be closed and customers should be assured that no one will be locked in a flight because they have not managed to clear it on time. Customers who find themselves running late and unlikely to reach a lock flight in time are advised to call the Waterway office (01827 252000) for advice on suitable safe moorings.

Lock Flight	Locks to be secured	Time opened	Time closed
Ryders Green	1, 5, 6, 7, & 8	8.00am	4.00pm
Walsall Locks	Entire flight	8.00am	4.00pm
Rushall Locks	Top, bottom & locks 3 to 9	8.30am	3.30pm
Spon Lane Locks	Entire flight	8.30am	3.30pm
Smethwick Locks	Entire flight	8.30am	5.00pm
Brades Locks	Top and bottom locks	8.00am	4.00pm
Factory Locks	Entire flight	7.30am	6.00pm
Wolverhampton 21	Top, bottom & locks 5 to 16	7.30am	6.30pm
Parkhead Locks	Entire Flight	Passage to be booked in conjunction with Dudley Tunnel via Dudley Canal Trust Tel 01384 236275	

Further Technical Information

Description of the works

- To protect the dam from overtopping, a new culvert will be built through the railway causeway that separates the main reservoir and Jeffrey's Pool.
 - The bridge on the main dam will be replaced
 - Strengthening works will be undertaken to the spillway and channel that takes the water from the reservoir during periods of high water levels.
 - To prevent erosion, filters are being installed to the dam headwall which will allow water to continue to seep through the dam but which will capture any fine material being carried by the flow
- Filter material will be installed along the entire length and height of the dam to make sure it remains as safe as possible

The planned program of works is:-

- Reservoir to be effectively empty by May 2010
 - Appointment of Contractor 10 May 2010
 - Start on site Mid June.
 - Anticipated reservoir refill to start 15 September 2010
 - Completion of site works 26 November 2010
- Refilled at the earliest late 2012

The following are the key levels on the start

- Canal Level 144m AOD
- Level for Works 142m AOD

The from valve level to the final works level will require a further 200ml to be pumped out.

Water resources implications

Below is some of the key water related information with regard to the canal network and Chasewater revision:-

- The predicated average inflow in to Chasewater is 8.4M/d
- On an average dry summer we draw up to 58ml/week from Chasewater
- Chasewater is a key water supply as we have the ability to turn it off and on when required with minimal cost to BW. It provides BW with long tem water security and when we have incidents on the network we can refill at a substantial rate
- The licensed maximum pump output for Bradley Pumps is 32.7ml/d.
- Bradley can currently deliver approximately 24.6ml/d in normal operating conditions.

If the Wolverhampton level were to lose 150mm it would take a minimum of 7-10 days to recover and this would be via a complete closure. The refill rate is dependant on the delivery at Bradley and leakage through the system.

Long Term Water Resource Strategy

Water resource on the whole BCN required a significant amount of detailed work to determine the effects of Chasewater's dewatering. To understand what the effects and implications of this are, British Waterways technical experts have looked into both the water resource implications, looking at the amount of water available and hydraulic specialist looking at how we can get the water round the system.

The findings from the hydraulic modelling and trails show that when pumping from Bradley Pumps the water can be transferred around the system to the Cannock extension and Anglesey branch. This means that with some localised works we are able to push the water around the Wolverhampton level.

British waterways have developed a water model which has allowed us to assess the demand for water based on a number of different scenarios. The model has been used to assess the needs and requirements for water resource. The model has been run using a relatively dry year to see what effects the loss of feed from Chasewater will have on the system. The model has highlighted that we have sufficient resource from Bradley Pumps to meet the weekly demands for the Wolverhampton level and the Birmingham reservoirs will be able to cope with the Birmingham Level weekly demands. The model looks at the water resources of the whole BCN and even further field.

However, the model has highlighted that we are susceptible to peak demands such as boating festivals and large boat movements, as well as uncontrolled events such as vandalism, poor boating and illegal abstractions. These risks are significant and because we are reliant on one main source for supply, which is pumped, we have undertaken and will be undertaking further mitigation methods.

As part of ensuring that we have adequate water supply during the work and refilling of the reservoir we may undertake one or more of the following actions:-

1. Carrying out works to improve the efficiency of the existing Earlswood Lakes feeder supply to reduce demand on the Wolverhampton level
2. Increasing weed cutting on the Bradley Arm to improve water flow into the canal network
3. Strengthening the maintenance regime and introducing a new control system at Bradley Pumps
4. Increasing water control and optimising all water resources.

We have identified a number of surface water points where we could possibly abstract, these being in the areas covered by the following CAMS:

- The Tame, Anker and Mease
- The Staffordshire Trent Valley
- Worcestershire Middle Severn

We are also looking at abstracting from ground water source. These types of abstraction are more difficult and are heavily regulated so these are our secondary options for securing supply if required.