

Ouse Washes Section 10 Works

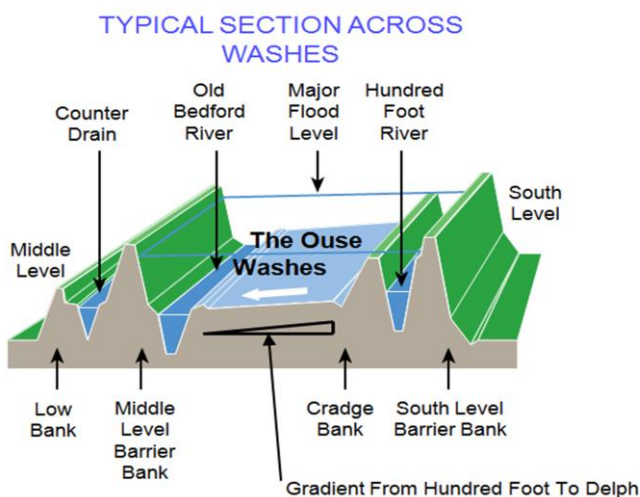
November 2015

This briefing provides an update on the project established to address the ‘Matters in the Interest of Safety’ for the Middle Level Barrier Bank of the Ouse Washes flood storage reservoir.

What is the Ouse Washes Flood Storage Reservoir?

The Ouse Washes Flood Storage Reservoir (FSR) is located on the River Great Ouse north east of Huntingdon in the Environment Agency’s Cambridgeshire & Bedfordshire Area. It is registered under the Reservoirs Act 1975 and the Environment Agency is the Undertaker for the reservoir.

The FSR is approximately 30km long, varies in width between 200m and 800m and covers an area of approximately 1,900ha. The Middle Level Barrier Bank (MLBB) and the Cradge Bank form the two dams of the reservoir. Both are approximately 30km long and have a maximum height of 5m.

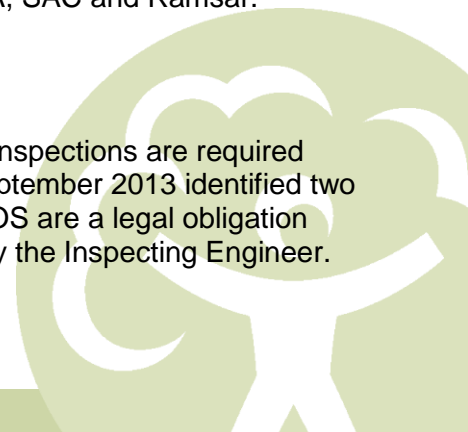


When the water level in the reservoir reaches the Cradge Bank’s crest it is storing approximately 90,000,000 cubic metres of water above the surrounding ground. This is enough water to fill Wembley Stadium 22 times.

The Ouse Washes system was originally conceived over 350 years ago. Its creation played a major role in turning the Fens into agricultural land. The Washes span more than ten parishes and two counties. As well as being one of the country’s largest flood defence systems it is an internationally important nature reserve attracting visitors for wildlife and recreation. Its designations include SSSI, SPA, SAC and Ramsar.

Why are we doing this project?

The FSR is a ‘large raised reservoir’ under the Reservoirs Act 1975. Periodic inspections are required under Section 10 of the Act. The recent Section 10 inspection report, dated September 2013 identified two Matters in the Interest of Safety (MIOS) for the Ouse Washes FSR. These MIOS are a legal obligation under the Reservoirs Act, and must be implemented within the timescale set by the Inspecting Engineer.



The MIOS are:

- i) The required design crest level of the MLBB and the need for any overflow facilities should be determined taking into account the risk posed by extreme flood events, the consequences of failure, the guidance given in Floods and Reservoir Safety and 'As Low As Reasonably Practical' (ALARP) analysis where the cost of implementation of that guidance would be disproportionate. Any overflow facilities recommended by this study shall be implemented.
- ii) Once the design level has been determined the 2012 crest survey should be reviewed in greater detail in order to identify any sections of the MLBB which need raising, and any recommended crest raising shall be implemented.

It was recommended that the above studies be completed by 31 March 2017 and any physical works recommended by such studies within a further four year period, i.e. by 31 March 2021.

The Environment Agency must ensure it complies with its legal duties to maintain the reservoir dam in a safe condition.

What are the objectives and outcomes?

Stage 1 – project justification

- Demonstrate the justification for continuing to maintain and operate Ouse Washes FSR and hence the justification for addressing the MIOS.

Stage 2 – project appraisal

- Ground investigation and interpretation of results to inform the design process
- Confirm crest level required to satisfy MIOS
- Option appraisal
- Environmental assessment and mitigation

Stage 3 – detailed design & planning of the works

- Design the proposed works
- A business case to support the delivery of the works recommended
- Tender competition for construction

Stage 4 – Construction

We are currently completing Stage 1 of the work and have started consultation with local stakeholders to inform the following stages of the project. We held drop in events at the Environment Agency's Brampton office during November.

What is required by the Reservoirs Act?

Recent changes to the Reservoirs Act and the guidance in 'Floods and reservoir safety Fourth edition' (FRS4) have introduced a more risk based approach to the assessment of dam safety. This includes the application of ALARP:

'As Low as Reasonably Practicable' – The ALARP principle is met when it is deemed to be grossly disproportionate in terms of expending resources to gain any further reduction in that risk. ALARP is also influenced by the Likely Loss of Life and the Value for Preventing a Fatality.

The FRS4 contains guidance on the design standards required to ensure safety of reservoir dams. We carried out some breach modelling to determine the risk posed by an uncontrolled release of water from the reservoir. The majority of properties close to the dam are on raised ground although there are a small number of properties close to the bank. The Inspecting Engineer has determined that those at highest risk

are where there is a cluster of 4 or more houses within 500m of the MLBB. We therefore need to do work to make the dam safe for the standards stated in the guidance for Category A and B dams.

We will need to raise the MLBB to satisfy the FRS4 requirements. This may also include some additional erosion protection to the downstream slope of the bank in some locations. We will also need to consider how we allow for settlement.

What are the cost and design criteria for the proposed works?

The proposed works will maintain the existing profile of the MLBB and raise the crest to accommodate the 1:1,000 or 1:10,000 probability water level depending on the location.

A capital scheme was carried out in the 1990's and surveys have shown that the MLBB has settled since that time (by approximately 300mm). Therefore, an allowance will also be added for future settlement.

Although final crest levels are yet to be determined, we expect them to be similar to the 1990's crest level. We have £10 million in the Environment Agency's six year capital programme for this project.

How and when will the work be done?

Because of the special environmental importance of the Ouse Washes, we are only able to do certain types of works at certain times of the year. Bank works are likely to be restricted to between July and October.

- We will try to limit work to the downstream face of the bank but we will also need to work on the crest using small plant.
- Access to the bank is along a pre-constructed haul road at the downstream toe, within Environment Agency land ownership.
- Material will be imported from a local pit. The source of the material and transport routes to our access points are still to be determined.
- We currently expect to import approximately 20,000 cubic metres of material. This will be confirmed during the detailed design.
- We have concluded that the works should be undertaken as part of our Permitted Development Rights.

Key dates for stage 4 of the project are as follows:

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| • MIOS deadline (studies) | 31 March 2017 |
| • Contract award | April 2017 |
| • Construction start | 15th July 2017 (HRA dependent) |
| • Likely completion | November 2020 |
| • MIOS deadline (works) | 31 March 2021 |

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