Environment Agency

for information

February 2011

Duddington Sluice Refurbishment

Background

Duddington Mill is situated on the River Welland, on the westerly edge of Duddington Village. The mill complex consists of two sluice gates at the mill and a further sluice gate and over fall weir approximately 100m upstream. The weir and the upstream sluice gate (Gate 1) previously controlled the water level for the working mill. Since the mill has stopped operating, the wheel and bypass channels were blocked with sluice gates 2 and 3. They all now act to hold a higher water level in the mill channel and allow high flows into the original river channel.

We have discovered some problems with Gate 1 and the weir. Gate 1 jams when in use requiring an operative to open and close it. The weir is also in a poor condition and the bridge over it is unsafe. We intend to carry out works to solve these problems, maintaining the functionality of the system and investigate increasing fish passage by building a fish pass, rock ramp subject to funding availability. Gates 2 and 3, at the mill, do not require any works.

Options

We have short-listed four options that best fulfil the requirements of the structures.

Option 1 – Do Minimum – Make the gate structure safe by welding the gate shut and carry out works to the damaged walls and weir to make the structures last for a further 10 years.

Option 3 – Replace sluice gate 1 with a fixed crest weir – Remove the gate and replace with a fixed crest weir (similar to the current weir). Carry out minor repair works to the existing weir.

Option 4 – Extend the existing weir and remove gate 1 – Remove the weir and gate1 to allow for a more effective weir to be constructed.

Option 5 – Replace gate 1 and the weir with a rock ramp to improve fish passage – Remove the existing structures and re-grade the river bed, holding the higher water level at the current location and sloping downstream. The gradient will be suitable to allow fish to swim up the weir.

The mathematical modelling of the river has proven that all of these options do not increase the risk of flooding.

Programme

We are currently gathering information about the sluices and the immediate surroundings to allow us to decide on the most cost effective way to solve the problem and prepare a business case to justify the amount of money.

Subject to the availability of funds and the cost effectiveness of the different options we will be designing the works this year, 2011, and constructing next year, 2012.

We will be in contact when we have decided on the best way forward for the project.

If you have any questions or concerns about the project, or would like more information, please contact:

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