

EA-MIDLANDS

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flood alleviation proposals

for Bakewell and Ashford in the Water



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The River Wye Valley is an area of great scenic beauty within the Peak District National Park. Nestling on the banks of this nationally important river, are picturesque Bakewell and Ashford in the Water. Famous for the Bakewell show and the two great estates of Haddon and neighbouring Chatsworth, many visitors are drawn to this area of outstanding beauty to enjoy walking and fishing.

Finding solutions to the flooding problems in Bakewell and Ashford in the Water is not going to be easy.

Firstly, the physical properties of the river and its surroundings cause problems:

- The river divides into several channels due to the construction of mill channels and passes over 22 weirs along this stretch
- There is a large redundant mill pond and weir and a shallow lake upstream of Bakewell

- Weirs, bridges and islands need to be considered
- New development in Bakewell within the flood plain complicates things
- The old river bridges are mainly of architectural value and are Scheduled Ancient Monuments (SAMs)
- The river is very quick to react to rainfall because of its very steep catchment, which gives little or no time for people or the emergency services or agencies to prepare for flooding

flood

What the scheme would look like

These images are impressions of how the proposals might look



Bakewell Bridge

Although the main bridge has been shown by detailed studies not to cause flooding, we need to cater for large floods overtopping the river bank by construction of a small riverside wall, which could be designed to include seating and other riverside amenities. In addition we are looking at the effect of the two footbridges in the town during major flooding.

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The preferred solution

After looking at the benefits and problems of each option, it appears that the most appropriate solution consists of a combination of flood walls and embankments, together with some minor and hidden alterations to listed structures, to alleviate the obstructions to the flow. Although the idea of upstream storage appears attractive, there is no area large enough to accommodate significant volumes of water in the catchment without severe detriment to the viability of the areas concerned, as well as significant environmental impacts.

Various combinations of hard defences and channel modifications have been modelled to determine the best options in terms of both hydraulic efficiency and minimising construction impact. This will involve very detailed design and construction considerations prior to finalising the design. As the landscape varies markedly through the built up areas of Ashford and Bakewell, the detailed treatment will also vary significantly. To illustrate this, we have put together detailed proposals for four areas of the scheme together with photo montage images showing how it could look.

Feedback

We can only achieve an effective and acceptable flood defence scheme if we carry out detailed consultation and reach agreement with interested parties. If you have any comments on the proposals we would like to hear your views. Please contact the Environment Agency Project Manager, Roger Prestwood on 0121 711 5896 or John Adams, Area Flood Defence and Water Resources Manager on 0115 945 5722, or write to him at the Environment Agency, Trentside Offices, Scarrington Road, West Bridgford, Nottingham NG2 5FA.



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Ashford in the Water - Sheepwash Bridge

This shows how by building a stone faced defence wall downstream of the bridge near Bridge Cottage, as well as improving the height of the existing bund upstream, we can prevent flood water inundating the upstream end of Ashford. This construction would work to alleviate flooding in combination with an improved flow through the Sheepwash Bridge, which is a scheduled ancient monument. This would be achieved by deepening the channel under the bridge by constructing a new concrete invert together with structural underpinning of the bridge piers. This would have the effect of strengthening the bridge to stand up to many more years of winter flood flows. Following completion of the work the view of the bridge would be as it is at present, with the new work only visible at very low flows.

The consultation and design process

Extensive consultation and public meetings are taking place and the Agency has provisionally allocated funds for alleviation works, if a scheme can be agreed and justified as a viable scheme.

With any flood alleviation scheme there are numerous hurdles that have to be overcome:

- The Agency has to complete an Environmental Impact Assessment (EIA) - this process is underway
- An effective design solution has to be found
- The scheme has to be justified under strict Treasury Rules implemented by the Department for

Environment, Food and Rural Affairs (DEFRA) (formally MAFF). This is carried out using a benefit/cost analysis to ensure that the scheme gives value for money

- The scheme has to be granted planning permission
- If work is likely to affect the SAMs (Scheduled Ancient Monuments) permission has to be obtained
- During this process all the options need to be reviewed against human, environmental, technical and financial considerations.

With this scheme, the situation is particularly challenging, due to the historic and environmental significance of Bakewell and Ashford in the Water. The divided river channel through Bakewell and the many gardens, paths, roads and recreation areas and the SAMs, all mean that constructing defences through Bakewell would be extremely difficult.

However, the Agency is hopeful that solutions will be found and that it will be possible to design and construct a scheme to protect Bakewell and Ashford, although this is by no means certain.



Lumford Mill - Packhorse Bridge

This bridge acts as a major obstruction to flows during flood events. As it is a scheduled ancient monument, amending the arches or constructing bypass channels is not an option, and so the only viable method is by deepening the invert by construction of a new channel. To prevent flooding of the houses on the downstream side, a new flood wall, stone faced to match the local environment, would replace the existing garden wall. On the upstream side we would construct either a wall or bund along the edge of Lumford Mill access road to protect Lumford Cottages from flood water. The height of this will depend on its position as the ground rises towards the properties. Access and parking also have to be considered in the detailed design.

- Any flood alleviation scheme would have to be sympathetic to, and in keeping with, the aesthetics of the environment in Bakewell and Ashford.

Secondly, there are major considerations caused by the very nature of the communities and their location:

- Important landscape areas (as identified within the Peak Park 1997 Deposit Plan for Bakewell) lie on and near the river
- The Wye Valley Site of Special Scientific Interest (SSSI) falls within 4km of Bakewell and 1.5km of Ashford

- Most of the Wye Dales are Special Areas of Conservation (SACs)
- Eight Scheduled Ancient Monuments (SAMs) in the parish of Bakewell include Holme (Packhorse) and Bakewell Bridges over the River Wye, and Lumford Mill
- Five SAMs for Ashford include Ashford and Sheepwash Bridges
- The mature trees and areas of wet woodland of the riverside environment are of ecological and landscape value
- Sandmartins breed at Haddon, and Ring Ouzels, and Kingfishers breed along the length of the river

- The area is thought to contain otters, water voles and badgers
- The River Wye is a strong breeding ground for Grayling and Brown and Rainbow Trout.

Options considered by the Environment Agency design team

The Environment Agency has undertaken studies and calculations to determine what options there are for building a flood alleviation scheme here. At present options being looked at include:

- Upstream storage for flood water
- Building defences in Bakewell and Ashford
- Removing obstructions to flow.

Work to date

Agency study work includes significant computer modelling to examine the effects of the various options on river flows. We have also undertaken some practical mitigation works to help the situation straight away. These include dredging which has been undertaken around Packhorse Bridge in Bakewell and Sheepwash Bridge in Ashford. In addition the flood channel downstream of Sheepwash Bridge has been re-opened and the Agency's flood warning system has been extended to an additional 200 premises.

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Millford

The first flooding has usually occurred here, with water from the Victoria Mill spilling around behind the Fire Station before joining flood water from the rising Wye to flood Millford. This area can be protected from flooding from the main river by construction of earth bunds and low walls across the flood plain at the back of the gardens. These can be landscaped into the area to give a seamless addition to the local topography. In addition flood water would be prevented from backing up the mill stream by means of a flap valve at its junction with the main river.

This picture shows how the view would look from the Scot's Garden.

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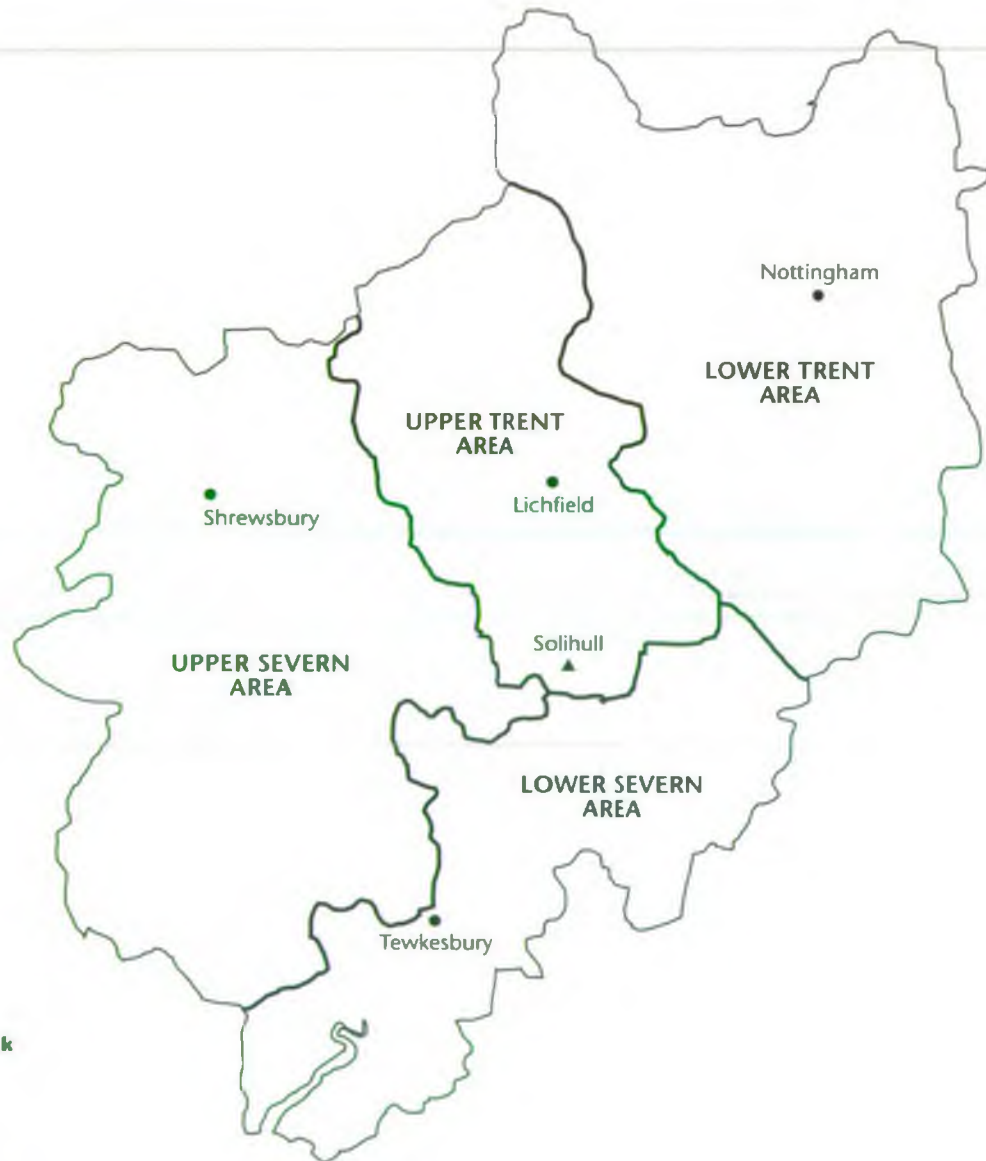
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