

FloodLink

EA-MIDLANDS

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Working together to prepare for flooding



John Fitzsimons talking to the media

Welcome to the second edition of the Midlands Floodlink newsletter. I am pleased to be able to bring you news of work carried out by the Agency in the last twelve months, and of important activities in communities ensuring people are prepared for flooding.

This newsletter is part of the 2002-2003 public awareness campaign, which aims to raise awareness and offer support for those people whose lives could be affected by flooding. If you have not experienced the trauma of flooding before, it is important that you are aware of the risks. You could experience flooding to your home, place of work, or even while out driving. You may have friends and relatives who could suffer the impact of flooding and would welcome your support. Flooding damages homes and possessions; in some cases it can cause health problems or even result in loss of life.

With scientists predicting flooding to happen more regularly in the future, due to climate change, people need to be prepared. In 2002, the country experienced very stormy, wet weather, resulting in just under 600 flood warnings being issued in the Midlands, over 100 of which were issued over the Christmas period. Flooding has been experienced in parts of Derbyshire, Leicestershire, Shropshire, Staffordshire and Warwickshire.

Whilst the Environment Agency builds and maintains flood alleviation schemes, we can only help reduce the risk of flooding. The Agency does offer support and provides information to help people prepare for flooding, to minimise its impact on their lives. This newsletter is just one way we hope to help you prepare. If you want any more information after reading Floodlink, please visit our website on www.environment-agency.gov.uk, or call our flooding hotline Floodline on 0845 988 1188.

John Fitzsimons
Flood Defence Manager
Environment Agency
Midlands Region

New Year Floods

Communities at risk from flooding were once again asked to be prepared, as prolonged rainfall brought the threat of severe flooding across the region at the beginning of the new year.

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1 on Avon in flood, January 2003

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Reducing flood risk

The Environment Agency works to improve flood defences and provide information on the risks of flooding to those people that could be affected. We work with all sections of the community to promote a more sustainable approach to land-use planning (to reduce the risk of flooding), and we also construct and maintain flood alleviation schemes, monitor and forecast river levels, and issue flood warnings.

We have teams that specialise in the following:

- regulation/development control - we push for development away from the floodplain
- flood warning - we provide a flood warning service where it is technically possible
- operations - maintenance and improvement work is carried out along the 3873 km of Midlands' rivers that we look after
- improvements - we have a responsibility to invest in new defences which meet defined criteria and to maintain existing defences
- strategic planning - data management, business planning, high level monitoring and reporting, and developing high level strategies to minimise risks to future generations.

We have five main offices in the Midlands, the Regional Office is in Solihull, with four area offices:

Upper Trent Area (Fradley, near Lichfield)
Lower Trent Area (Nottingham)
Upper Severn Area (Shrewsbury)
Lower Severn Area (Tewkesbury).

Raising awareness



Flood campaign bus

In September 2002, the Environment Agency launched its fourth national flood awareness campaign. The campaign aims to raise awareness of the trauma caused by flooding and encourages everyone who lives, works or drives in flood risk areas to be prepared for flooding.

In the Midlands, a bus shelter in Birmingham was transformed into a flood damaged room, complete with wet sofa, to launch the campaign and draw attention to the horrors of flooding. This was



The bus shelter

supported by poster and telephone-box advertising and adverts in the local press and on local radio.

We also had an eye-catching flood campaign bus, which traveled the region, visiting Alcester, Tenbury Wells, Ludlow, Gloucester and Leicester. The bus provided information on flooding and Environment Agency staff were on hand to talk to local people and give advice.

New Year Floods ...continued from front page

The Trent catchment was the worst affected in the Midlands, experiencing, in some places, the second highest levels since 1977. Flooding affected low lying rural land and some minor roads, such as Slash Lane near Leicester. Flood defences in largely populated areas such as Burton upon Trent, Leicester and Nottingham served to keep communities safe and floodwater at bay. However, flood waters did come close to properties along the middle of the Trent in Willington, Swarkestone and Barrow. The River Avon, in the Severn catchment, also experienced high levels, in places such as Evesham and Bidford on Avon.

On New Year's Day, the demountable flood barriers in Bewdley were erected and used for the first time in a real emergency event.* They were put in place as a precautionary measure, should rainfall persist in the Wyre forest, causing levels to rise significantly. Fortunately, rainfall in the Severn catchment was light and flooding was low-level only, with reports of only one property in Upton upon Severn affected. There were 118 flood warnings and 14 flood watches issued across the region, between December 29 and January 3.

Regional Flood Defence Manager, John Fitzsimons said, 'The Agency's preparations for flooding were well and truly tested over the New Year, particularly the demountable barriers in Bewdley, which were used in anger for the first time. Whilst this test was passed, we will continue to prepare for future floods and urge those at risk to do the same.'

* See page 13 for article on the demountable defences at Bewdley.

Events in the region

Diwali

The Environment Agency attended the Diwali celebrations in Birmingham in November to raise awareness of flooding.

There are up to 8,500 properties at risk of flooding in and around Birmingham, not to mention the many people who work in and travel to the city who are at risk too. Birmingham has a large multi-cultural population and many people who could experience the impact of flooding are unaware of the risk.

Information panels gave information about the Agency in Hindi, Gujarati, Punjabi, Bengali, and Urdu, the main Asian languages spoken in Birmingham. Packs were also available, giving advice on the measures people can take to minimise the impact of flooding on themselves and their possessions.



Diwali in Birmingham

Celebrating diversity day

In October this year, the Agency attended a celebrating diversity day at the Pakistani Community Centre in Burton upon Trent, to promote the same messages about flood risk and self help.

There are over 7,000 properties at risk from flooding in Burton upon Trent, although they are behind a flood defence. However, any flood defence can only protect to its maximum level, and the autumn 2000 floods very nearly came over the top of these defences.

Regional Symposium gives forum for talks

Representatives from communities at risk of flooding in the Midlands have had the opportunity to discuss flooding issues, at a Regional Flood Symposium.

The symposium was held in September. It gave the Agency and delegates the opportunity to work more closely to minimise the impact of flooding on the region's communities. Subjects covered included: flood alleviation, flood warning and flow forecasting and the session included a visit to the Agency's Regional Flow Forecasting Centre and Regional Communications Centre.



Symposium delegates discussing flow forecasting

The symposium provided an invaluable opportunity to learn from each other's experiences. It is hoped that another session can be organised to pick up on the various issues raised, and move forward together.

If you would be interested in attending a similar event, or working with the Environment Agency at this level, please contact the Regional Flood Warning Team on 0121 711 2324 or e-mail midlandsfloodlink@environment-agency.gov.uk.

New Flood Warning Areas



The Agency is committed to improving the flood warning service we offer to give local people as much warning of impending flooding as possible, so that they can take effective action. Last year the flood warning service was introduced to Pinxton in Derbyshire, on the River Erewash. Within months, this service had provided residents with the warning they needed to take effective action. When flooding hit the community on the 26 October 2001, a flood warning was issued giving people time to move their cars to higher ground, out of the reach of flood water.

We are working to add new warning areas to our flood warning service on a continuing basis. This year we have been able to extend our flood warning service to the following communities:

In the Upper Trent area:

A number of improvements are ongoing in Staffordshire.

The flood warning area HA1, on the River Hamps, has been introduced. This flood warning area covers the river from Caldon Mill, Waterhouses to the River Manifold at Beeston Tor.

At the start of 2003, a new flood warning area RD1 is to be set up on the Ridings Brook, from Rumer Hill to Deepmore Farm.

By summer 2003, a new flood warning area on the Marston Brook will be introduced, covering the stretch of the river from Astonfields Road to Lammascote Road.

On the River Blithe, a new flood warning area Bi2, covering the area Blithfield to Kings Bromley will be introduced in spring 2003.

If you would like any information on any of these improvements, please contact: the Agency flood warning team in Fradley, on 01543 444141.

In the Lower Trent area:

In Derbyshire, the flood warning area DES covering the River Derwent from Ambergate to Spondon has been split into two new areas, which are:

DE4, covering the River Derwent from Ambergate to Little Eaton (including Little Eaton). Areas at risk from flooding along this stretch include parts of Belper, Duffield, Little Eaton, Milford, as well as low lying roads, including Bridge Foot and Wyver Lane, Belper.

DES, covering the River Derwent from Little Eaton to Spondon (including Derby). Areas at risk along this area include parts of Derby, principally Haslam's Lane, Darley Abbey, Parker's Piece, Darley Fields, Little Chester, Elvaston, Allestree and Armaston Cottages, as well as isolated farmland and low lying roads.

In Leicestershire, flood warning area DV1 has been introduced. This covers the River Devon from Woolsthorpe to Shelton (including Bottesford).

In Nottinghamshire, two new flood warning areas ID1 and ID2 will be introduced in Spring 2003. ID1 will cover the River Idle from Gamston to West Stockwith, including Retford and ID2 will cover the River Idle tributaries, the Rivers Maun, Meden and Poulter.

If you would like more information on any of these improvements, please contact: the Agency flood warning team based in Nottingham, on 0115 945 5722.

Upper Severn area:

In Powys, a siren was commissioned in early 2002 to warn the town of Llanidloes of impending flooding. The River Severn reacts rapidly in this location and the siren is considered the most effective method of warning once the river level reaches its warning threshold. From September 2002, information about this flood warning area, referred to as SL, was also made available on the Agency's Floodline service and the internet.

In Worcestershire, two flood warning areas will be introduced on the Barbourne Brook in early 2003. The flood warning area B1, will cover the brook from Blackpole to Perdiswell, and B2 will cover from Perdiswell to the River Severn confluence.

Through 2003, the feasibility of extending the flood warning service on the River Stour between Kinver and Stourport, and the River Salwarpe in Droitwich will be investigated.

For information on any of these flood warning areas, please contact: the Agency flood warning team in Shrewsbury, on 01743 272828.

Lower Severn area:

In Gloucestershire, the Environment Agency has improved its flood warning service to people living close to the Severn Estuary, downstream of Gloucester and will be able to provide more localised and relevant information.

In order to provide a more targeted and specific flood warning service, the flood warning area previously known as Severn Estuary has now been divided into three new areas:

S13T, the tidal Severn estuary from Gloucester to Westbury

S14T, the tidal Severn estuary from Westbury to Aust. This will be a Flood Watch only service until forecasting improvements are made here.

S15T, the tidal Severn estuary from the old Severn Crossing at Aust to Avonmouth, including Severn Beach.

These flood warning areas will reflect the fact that river conditions in the estuary, which is tidal, are very different from those in the Gloucester area, where river flows are more important.

For information on any of these flood warning areas, please contact: the Agency flood warning team in Tewkesbury, on 01684 850951.



Severn Beach

National Flood Forum created by Midlands Group



Gill Holland, National Flood Forum

The National Flood Forum is a not-for-profit organisation led by three residents from Bewdley in Worcestershire, who were closely involved in establishing a local action group for their own community after the autumn 2000 floods. The forum was set up in January 2002, to give a cohesive voice and support to those affected by, or at risk of flooding all over the country, managed by people who have had direct experience themselves.

The initiative is funded by the Agency, via a social research project.

The three founding directors are Peter Barnett (Chairman), John Iles (Deputy Chairman) and Gill Holland (Operations Director and the forum's only full-time employee). Four regional directors have recently joined them, to spread the geographical base of the forum and start building up a regional structure. These are: Di Keal of Derwent Flood Action from Malton and Norton in North Yorkshire, Brendan Glynane, of the Nene Flood Prevention Alliance at Northampton, Phil Awford of Gloucestershire Action Against Flooding, and Vanessa Minns of the Cuckmere Flood Forum in East Sussex. The intention is gradually to bring in further directors to represent other areas of the country, or other aspects of flooding.

The National Flood Forum is now in contact with over forty community flood groups across the country, varying in size. For instance Lewes Flood Action in Sussex represents a large population, whilst North Curry Flood Group in Somerset consists of just a few households. Both individuals and groups are welcome to use the forum as a resource for information and advice on flooding issues.

The forum is interested in contacting existing residents' flood groups or organisations to invite them into the network. The forum is also keen to work towards establishing new groups and can offer support for residents at meetings with the authorities, or provide help from existing groups who have tackled similar problems.

You can contact the National Flood Forum at:

5 Beale's Corner, Bewdley, Worcs. DY12 1AF.

Tel: 01299 403055. Fax: 01299 403101.

E-mail: gill.holland@floodforum.org.uk. Website: www.floodforum.org.uk

Agency preparations for flooding

Approximately 55,000 properties are protected by Agency flood defences in the Midlands. These include homes and offices in Birmingham, Alcester, Nottingham, Burton-on-Trent, Derby, and Leicester - but people living behind these defences are urged not to be complacent. Flooding is a natural event and, although the defences can be expected to offer protection from most floods, exceptional weather conditions can occur, causing flooding above and beyond the limits of any defence.

Members of the Agency's emergency work force have been working hard since the summer, repairing and improving the region's existing flood defences, to ensure that they are ready for winter. The work includes a new flood wall in Alcester, a new pumping station at Barton near Stratford-upon-Avon, repairs to Beckingham Marshes flood bank near Gainsborough, and improved protection works are being undertaken for the centre of Stafford. Work is also continuing on the demountable flood defences for Frankwell in Shrewsbury, and Bewdley.



Beckingham marshes

The Agency is urging people living or working in flood risk areas, to follow our example and make their own flood preparations in good time. There are many things people can do to minimize the impact of flooding, and it is sensible to begin these well in advance. For more information read the article, 'Be prepared for flooding' on page 8 or call Floodline on **0845 988 1188**.

Flood risk and insurance



Around one in ten of the UK's 20 million homes and businesses is situated in the floodplain. The Environment Agency urges people to be prepared, including making sure that they have adequate insurance cover to protect them should flooding damage their property. Acceptance that your property is in a flood risk area is a subject that some people are uneasy with, because they are concerned that flood risk will raise the levels of their insurance premiums.

The Association of British Insurers (ABI) announced in September 2002 that flood insurance for domestic properties and small businesses should continue to be available for as many customers as possible. This follows the government's announcement that it will invest in more and better flood defences.

If you have any questions about insurance against flooding, please contact: the ABI at Association of British Insurers, 51 Gresham Street, London, EC2V 7HQ, phone number **020 7600 333**, or visit their website at **www.abi.org.uk**

Funding for England and Wales' flood defences

Following the government's comprehensive spending review in July 2002, the Chancellor announced an increase in flood and coastal defence expenditure of £150 million per year by 2005.

The Environment Agency, together with many other organisations, has called for such an increase to help address many of the issues highlighted by the Department of Environment, Food and Rural Affairs' (DEFRA) own research into assets at risk of flooding, including the likely impacts of climate change in the future.

The governments policy objectives are to:

- provide long term flood alleviation solutions to the increasing impacts from flooding
- provide effective flood warning systems
- discourage inappropriate development in areas at risk of flooding.

Work has already begun on prioritising where additional funding should be spent. New Treasury Rules will come into effect in April 2003.* This means that flood alleviation proposals that failed to meet the necessary cost/benefit criteria in the past, may now be eligible for approval. Revisions to prioritisation rules have been made so that flood risk, social vulnerability and environmental measures have to be considered in the assessment of whether a scheme can go ahead or not.

Another priority is to make sure that existing flood defences are kept in a good state of repair. The Agency will have to ensure that urban defences are in good or very good condition by 2005 with further improvements beyond this. The extra funding will also be utilised to support ongoing commitment to improve flood forecasting and warning.

The Environment Agency is liaising with the Regional Flood Defence Committee to develop a national strategy for making best use of additional funds, whilst managing increased flood alleviation across the region.

** To allow flood defences to be constructed, national processes must be applied, so that the country's limited funds are spent fairly and to the maximum benefit. Currently, this means that the monetary value of the benefits must be greater than the cost of the works. This is called the benefit/cost ratio, and for a scheme to be viable, it must be greater than 1, ie the benefits over the life of a scheme must be over £1m if the works are to cost £1m, to be justifiable through Treasury Rules.*

Be prepared for flooding

Things to do before a flood:

- Check your insurance - make sure you have got adequate flood protection
- Know your codes - understand the flood warning system and what each warning means



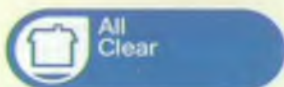
Flood Watch - flooding is possible. Be aware, be prepared, watch out!



Flood Warning - flooding is expected. It will affect homes, businesses and main roads. Act now!



Severe Flood Warning - serious flooding is expected. There is imminent danger to life and property. Act now!



An 'all clear' will be issued when flood water levels start receding.

- Get protection - there are many products available to help prevent flood water entering your property, or you can make your own, or find out where you can get sandbags when you need them
- Mark your gas and electricity supplies - for locating easily when you need to turn them off
- Make a check list - of things you need to do and pack and keep with you when a flood warning is issued
- Prepare your flood kit - (see list below) and keep it somewhere easily accessible
- Make a family plan - to be sure your family all know what to do and where to be, should a warning be issued for your area
- Get a copy of your local flood directory - call Floodline on 0845 9881188 to get a copy of a directory with all the phone numbers you should need in a flood.

When a flood warning is issued for your area make sure your flood kit is complete and have a checklist of things to remember to do, never wait till the last minute.

Things for your flood kit:

- Medication - make sure you have any medication with you that you need to take regularly. Remember the elderly and children and any essentials they need with them
- First aid kit
- Torch (with spare battery) - electricity supply may be cut off
- Wind up or battery powered radio - stay in tune with your local station to keep check on the weather and flood warning situation
- Insurance policy - keep it with you and keep it safe and dry in a plastic wallet or something waterproof
- Emergency numbers - including Floodline, your local authority, sandbag suppliers, again in something waterproof. Your local flood directory will have most of this information. If you have any medical requirements, for instance if you're pregnant, be sure to list important numbers, for example your local midwife, local health centre and hospital
- Rubber gloves - to use if you need to touch anything that has come in contact with contaminated floodwater



- Flask of coffee/tea/soup - you will need warm drinks in ready supply
- Food - pack food that is easy to eat, for example, chocolate, sandwiches, crisps, biscuits etc. You could even buy in special vacuum packed survival foods and canned drinks that automatically heat up. Don't forget food for your pets
- Wellies, waterproofs and warm clothes - you will need to have these ready for all your family to wear
- Blankets - to wrap up and keep warm in
- Camera - to record the damage to supply to your insurers when you put in a claim.

Things to remember when you move upstairs or to another place of safety:

- Put your flood protection equipment in place - across doorways and air bricks
- Flood kit - keep it with you, it should have everything in that you need
- Valuable possessions - move them upstairs or out of the way of flood water
- Possessions with sentimental value - don't forget things like record collections, wedding photos that can never be replaced
- Put warm clothes on with waterproofs over the top
- Put your wellies on
- Remember your animals (indoor and outdoor) - move animals outside to higher ground, out of the reach of flood water, and keep indoor pets with you
- Remember your family elsewhere and any vulnerable neighbours - make sure they're safe
- Pile up furniture and move electrical equipment where possible. Tie up your curtains and roll up your carpets if you can
- Turn off gas and electricity supplies
- Move what you can upstairs or away from flood water
- Move vehicles to higher ground
- Secure and seal all your rubbish and chemicals
- Stay tuned to local radio - keep up to date on the situation in your area, you may need to evacuate your home. Make sure you're ready.



Stay safe during a flood:

- Never attempt to walk through floodwater, it can hide obstacles and uncovered manholes. 15cm of fast flowing water is enough to knock you off your feet
- Do not drive through floodwater. Your car could be swept away, or hidden obstacles mean that you could be stranded
- Respect those people whose properties have been affected by flooding. Driving through floodwater creates waves, which can cause damage to buildings and windows
- Do not handle anything that has come into contact with floodwater. Use rubber gloves as it may be contaminated with sewage
- If you require special medical attention, for instance, if you're diabetic, pregnant or require regular treatment from your local health centre or nurse, please be sure to make necessary arrangements. It is essential to gain assistance so that treatment continues, and help is available if you have to move your possessions, or if you have to evacuate.

Communities taking effective action

In **Clifton in Worcestershire**, a flood defence scheme was not viable for the community, so the Environment Agency and the community worked together to enable the residents to carry out repair works themselves.

Embankments built in the 18th Century were repaired using left-over clay from a local quarry. Approximately 12 properties are now protected, to at least the same level as the banks provided originally.

South-west Birmingham has frequently been affected by flooding. In response to this, Birmingham City Council has set up two task forces, following a flood summit arranged by the local MP Richard Burden.

The Technical Task Force, led by the Highways Department, was set up to look at the causes of flooding in certain locations and possible solutions. The Community Task Force holds meetings for a wide range of interested people. This group has representation from flood victims, local authority departments, the Environment Agency, councillors and other agencies. The group is looking at the support mechanisms that can be put into place to help the local residents affected by floods and to resolve problems. There are over 40 sites subject to flooding; some of these include significant property flooding where others suffer flooding of gardens and/or roads only.



River Rea, Northfield

In Northfield, a flood action group was formed. With perseverance and commitment the group has constructed a flood disaster plan which identifies who should be contacted during an event, and incorporates a list of voluntary flood wardens from the local community who are called on to help during a flooding emergency.

A flood co-ordinator has also been appointed by Birmingham City Council to act as a link person between victims of flooding, relevant city council departments and outside agencies. The flood co-ordinator works closely with residents, to translate their needs into practical solutions, to keep them updated on flood-related issues, and to report any action being taken by the council who are using their permissive powers, carrying out flood defence work to mitigate the effects of flooding.

In North Leicestershire, the Environment Agency has worked closely with residents of **Bottesford**.

Bottesford is a picturesque village with the River Devon flowing through it. In July 2001, the river overtopped its banks after the area received 92mm of rainfall in twenty hours, twice more

than would usually be expected for the whole month. Fifty properties were flooded, along with main access routes and surrounding agricultural land.

Since this high rainfall, the Environment Agency has since taken steps to minimise the effects of flooding in Bottesford by setting up a flood warning service for the village.

Along with this, a flood warden scheme has been set up where local representatives work closely with the Agency by promoting the flood warning service to residents and encouraging greater awareness of the risk of flooding in Bottesford and nearby areas.

The **Packington Flood Action Group** was formed after serious flooding hit the community in 2001. Five properties were affected in Packington in North West Leicestershire, when heavy summer rainfall caused the Gilwiskaw Brook to flood.

Studies concluded that a flood alleviation scheme would not be justifiable through Treasury Rules, (see 'Funding for England and Wales flood defences' for more information on Treasury Rules.) Despite this, the group has been very active in finding their own solution to managing the flood risk in Packington, supported closely by the Agency. Residents have been approaching organisations like the local authority to assist with funding for a feasibility study for flood management options.

BSI Kitemark for flood products

As part of the effort to encourage people at risk from flooding to prepare, the Agency is supporting the development of a new certification scheme for flood protection products.

The scheme has been developed in response to research sponsored by the Department of Trade and Industry (DTI) and is supported by a wide range of partner organisations including the Association of British Insurers (ABI).

Under the scheme, products will be tested in simulated flood conditions and those which perform to the required standard will receive the British Standards Institution (BSI) Kitemark, a widely recognised quality mark for manufactured goods.

The first phase of the scheme will cover household devices, for example, floodboards and air brick covers. The second phase will include temporary and demountable defences used to protect structures.

Testing started in November 2002 and the first Kitemarked products will be launched from February 2003 onwards.

Today's technology for tomorrow's warnings

The Multimedia Warning Dissemination System (MMWDS) is a ground breaking new project to improve the flood warning service delivered by the Agency. Working in partnership with the Met Office, the project will develop new, more efficient, technology for sending flood warnings.

The first stage will provide voice

messaging (for example; telephone/mobile) plus fax and pager messaging and will replace the existing Automated Voice Messaging system (AVM). The final system should be fully operational by 2005.

The project was formally set-up in April 2002 following the Agency's successful bid for £2.7m funding

from the Treasury's Investor Save Scheme.

It is essential that the Environment Agency meets the expectations and needs of the end user: the public, industry and professional partners. To this end, the Agency has carried out research to find out what people need from a flood warning system.

Practice makes perfect

The Environment Agency is required by the Department for Environment, Food and Rural Affairs (DEFRA) to carry out emergency exercises with its key partners.

During civil emergencies, such as major floods, it is very important that all the emergency and public services work closely together. Pre-planned emergency exercises give the Agency, local authorities, water authorities and emergency services an opportunity to practice the necessary skills that will ensure that we respond effectively and efficiently to an incident.

So far in the Midlands, exercises have been run in Leicestershire, Derbyshire, Warwickshire, West Midlands and Powys. In February 2003 the Agency will be running through its flood response in conjunction with Gloucestershire authorities and emergency service organisations.



Agency staff and representatives from local councils and emergency services at the Derbyshire Exercise

The exercises have been designed and directed jointly by the Environment Agency and JBA Consulting Engineers and Scientists. The principal objectives of the exercises are to test the response procedures during a major flood and

to examine the inter-relationship, co-ordination and joint response of the participating organisations. Findings from the exercises help ensure vital improvements to systems and working relationships are in place when flooding occurs.

What the agency is doing

The Environment Agency works at many different levels to manage flood risk. Works carried out to alleviate flooding are a result of strategic analysis of catchments and river behaviour. Sitting at the top of the hierarchy of strategies is the Catchment Flood Management Plan. At a greater level of detail is the Flood Management Strategy, which usually relates to a river corridor or part of a river corridor, and develops the recommendations into more definite options. The third level starts with a project-specific feasibility study to decide whether the scheme is suitable for public expenditure.

Pre-feasibility studies taking a very initial look at the possibility of feasibility studies for flood alleviation options, are due or currently being carried out for areas such as:

- Boskey Dyke and Torksey on the River Trent,
- River Leen in Nottingham,
- Foston in the Dove valley,
- River Tean in Staffordshire,
- Locations on the River Severn such as Haw Bridge, Tirley, Uckinghall and Worcester, Wolston near Rugby on the River Avon,
- Llanfyllin on the Afon Cain.

A major reason for doing pre-feasibility studies is so that the Agency can press on in looking at the potential to alleviate flooding, even where there isn't a strategy at that time.

The River Severn Catchment

Currently, the Severn Catchment Flood Management Plan looks at flood risk management for the whole River Severn catchment down to Gloucester, and includes the catchments of the Rivers Vyrnwy, Stour, Teme and Avon.

At the next level of detail to the Severn Catchment Flood Management Plan, and running alongside it, is the Fluvial Severn Flood Management Strategy. Fluvial means 'river flow' and the strategy covers the Severn corridor from its source to downstream of Gloucester.

Similarly, the Tidal Flood Management Strategy concentrates on the area of tidal influence of the Severn Estuary between Gloucester and Avonmouth. The first phase of this study, a review of existing data and production of a consultation report, is complete.

Considerable achievements have been made towards managing flood risk in the Severn catchment so far, including:

- Flow and level data gathering and analysis, providing an understanding of how the catchment reacts during different rainfall conditions

g to manage flood risk

- Consultation with the public and relevant bodies to develop our understanding of the catchment and of people's concerns and priorities
- Broad scale computer modelling for the catchment
- Review of relevant documents that may interact with the Strategic studies
- Research into those things that may have a bearing on flood risk management, for example agriculture and environmental needs
- Development of methods for comparing the options for reducing flood risk.

The River Trent Catchment

On the River Trent another Flood Management Plan is being carried out, covering the Trent corridor from Stoke-on-Trent to Cromwell Weir near Newark. Again, this involves extensive computer modelling of the river, to enable many different options to be tested.

The River Tame Catchment

A Flood Management Plan for the River Tame has just commenced, and will be carried out in conjunction with a European-funded project looking into the management of the Tame catchment.



Bewdley - erecting the defences

Demountable flood defences for Bewdley and Frankwell, Shrewsbury

Bewdley and Shrewsbury are the first places in the UK to benefit from innovative demountable flood defences used successfully in Europe. When a flood is forecast, the barriers will be erected along the quayside of Sevenside North, and in Frankwell, and removed when the flood danger has passed. The demountable posts are bolted

onto permanent steel base-plates level with the paving and barriers slotted into place. When river levels are within normal limits, these base-plates are the only visible sign of the flood defence. The steel plates are set into the top of an underground waterproof flood wall.

The Agency is able to erect the barriers quickly and efficiently in the event of a real flood, because of the sufficient amount of warning time that is possible of the River Severn. Trial runs have been conducted throughout autumn and winter.

Exercise Atlas took the Agency through a simulated flood similar to the one that occurred in Autumn 2000.

Site investigations and consultation is ongoing for the proposed second phase of the scheme, for Severnside South in Bewdley. Similar studies have been carried out for remaining flood risk areas in Shrewsbury. Further progress however, is dependant on the outcome of Government revisions to the cost-benefit rules.

Melton Mowbray - defences completed

In 1998 Melton Mowbray suffered from devastating floods when the River Eye overtopped its banks following heavy rainfall. The Environment Agency investigated whether an alleviation scheme to cope with such severe conditions was practical; design work was then undertaken and construction began in December 2000.

The scheme offers protection for up to 650 properties, from floods with a 1% chance of happening in any one year (called a 1 in 100 year event).

A control structure just outside Melton, will control downstream river flow, restricting it to an acceptable volume that can pass through the town without damage. Any river water in excess of this will be held back and stored temporarily until flows decline. The water will then be gradually released into the River Eye.

Mark Jackson, Project Manager, says 'Flood Alleviation Schemes are major construction projects involving some very specialised engineering, and can take many years to complete. Despite difficult weather conditions, the second phase of Melton's flood alleviation scheme was operational before Christmas 2002, ready to protect people's homes and livelihoods, less than five years after the devastating 1998 floods that led the Agency to propose a flood defence for the town.'

Hatton - formal opening

The flood alleviation scheme in Hatton, Derbyshire was formally opened in September 2002 by Mark Todd, MP for Derbyshire South, and Peter Watts, Chairman of the Regional Flood Defence Committee.

The opening of the new flood defences came less than two years after the village suffered from severe flooding in November 2000.

The defences protect over 40 houses from floods that, statistically, have a 1% chance of happening in any one year. This means that Hatton will be protected from floods equal to, or greater than, the event of November 2000.



Hatton, the opening

The flood defences consist of two clay flood banks, one each side of the main road, which extend along the riverbank before turning inland to protect the houses. The scheme cost around £350,000 and took 12 months to build.

During the opening ceremony Mr Todd completed the re-seeding of the flood banks by scattering wildflower seed using a special piece of equipment, known colloquially as a 'fiddle' that feeds seed from a hopper into a turntable to scatter it in measured amounts on the ground.

Strategic Planning and Improvements Team Leader at the time, Barry Russell, said: 'We have pulled out all the stops to ensure that residents of Hatton are protected from floods like those that devastated the village almost two years ago. The fact that we have been able to build these defences so quickly is due in no small measure to the support we have received from Mr Todd, local councils, landowners and the local community.'

Temporary flood defences

Since the damaging floods of Autumn 2000, there has been much interest in the growing use of temporary defences. Systems such as the Swedish pallet barrier, and the Danish mobile dam, in particular, provide the potential for a simple and efficient means of defending local communities. Trials of such temporary flood defences are being organised at locations on the River Severn to protect areas against flooding. The mobile dam consists of two tubes filled with water. These can be erected quickly, covering 1km in an hour using four people and a tractor. Each 400m section of tubing is joined together, inflated with air and filled with water from the river. In comparison, it would take 100,000 people to cover the same length using sandbags.



The mobile dam

The tubes are made of a special material, which is resistant to splitting. At the end of use, the dam can be easily deflated, emptied and rolled up for transportation to a new site.

The pallet barrier system is also simple and robust, consisting of strong collapsible steel frames designed to support common wooden pallets. The pallet is then covered by reinforced plastic membrane, which stops the water.

Both systems have been demonstrated at Shrewsbury and Ironbridge and are available for trials this winter.

Publications and guidance

The Environment Agency has several leaflets to help you prepare for flooding and keep you well informed on what we are doing to minimise flood risk. Many of these publications are also available on the Agency's website. Please either email: midlandsfloodlink@environment-agency.gov.uk, or visit our website at: www.environment-agency.gov.uk, or ring any of our offices during working hours and we will be happy to help you.

USEFUL CONTACTS

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Tel: 02 7600 333
www.abi.org.uk

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Bewdley, Worcs
DY12 1AF
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gill.holland@floodforum.org.uk
www.floodforum.org.uk

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