



Which Council Aim does this case study deliver?

One of the key aims of the Council's Corporate Plan is to have a "High Quality and Sustainable Environment".

The main objectives are to reduce waste and CO₂ emissions and contribute to the planning of adaptation to climate change of which priority has been given to managing the risk of flooding.

Performance is monitored quarterly at Community Services Committee regarding these core objectives reporting progress against actions, plans and indicators.

In addition Community Services has a standing Environmental Item and Policy and Resources a standing item on Flooding to ensure members are updated on these areas at every Committee meeting.

Heads of Service act as the cross cutting team, climate change being a standing agenda item at their bi weekly meetings.

Background

Throughout the recent years, Ryedale has been unfortunate enough to be involved in several flooding incidents. The Community Risk Register places all categories of severe weather in North Yorkshire as a high or very high risk, making essential the up to date, tried and tested flood response plan.

Although many of the effects are the same, there are three different types of flooding that concern the Ryedale District, the main risk coming from river and surface water flows.

- River (fluvial) flooding: Occurs as a result of water overflowing from river channels
- Surface water (pluvial) flooding: Occurs when natural and man made drainage systems have insufficient capacity to deal with the volume of rainfall and
- Groundwater flooding: When the level of water under ground rises above its natural surface.

The main areas at risk from flooding are Malton/Norton however significant and robust flood defences now protect these areas. Pickering, Sinnington and Kirby Mills are now the areas of main concern, together with the potential for flash floods in small steep catchments, such as Helmsley.

Climate change forecasts indicate that there could be 20% increase in rainfall directly equating to a 20% increase in properties at risk, indicating the sensitivity of the catchment to climate change. The frequency of flooding is also identified as increasing. In turn the increased intensity of rainfall will increase the occurrence of surface water and sewer flooding as existing networks will be required to cope with additional volumes of water

What was done

The new Corporate Plan has recently been approved (2009), one of the key aims being "to have a High Quality and Sustainable Environment". This aim is underpinned by 3 strategic objectives:

- Objective 5 - Reducing Waste and CO₂ emissions.
- Objective 6 - Planning to adapt to climate change.
- Objective 7 - To Improve the quality of our local environment. Embed environmental awareness and action within policies and systems.

Major risks have been identified (as per NI 188 - Aecom LCLIP report), the multi agency flood risk management plan and studies commissioned (eg Pickering Channel Management Study) to mitigate

against effects of climate change. Capital funding of £1 million has been set aside for a potential 'slowing the flow' flood scheme development at Pickering.

Land Drainage Liaison Group

The group was set up by RDC to discuss land drainage matters. Comprising RDC officers and Members, Environment Agency (EA), land drainage reps, North Yorkshire County Council (NYCC), National Farmers Union, flood support groups and members of the public, the group has been successful in developing and supporting a number of local initiatives eg Pickering Channel Management Project and the Slowing the Flow Project etc.

Pickering Channel Management Project

The project follows an independent assessment (RDC funded) of the condition of main rivers in the Vale of Pickering. Adaptation to climate change is a key strategic objective of the Council; flood risk management being identified as a priority service area in terms of the Council's Climate Change Strategy.

- Alleviation to the flooding problems in these areas is being addressed by a two-year EA land management project designed to slow the flow of the water by increasing the time it takes from rain falling on the upper catchment to flood waters arriving in the watercourses flowing through Pickering and Sinnington.
- The Pickering Channel Management Project looks to address this from the other side of the equation, looking at the potential effects of vegetation and sedimentation on water levels in the Vale of Pickering. It aims to quantify any benefits gained from enhanced river management strategies, focusing on key maintenance points in the river system. The project could facilitate the development of best practice, which could be applied to all critical watercourses.
- The project is unique in that to the best of our knowledge this is the first study in which the EA have actively agreed to explore the possibility that the potential effects of vegetation and sedimentation could impact on flooding.

Slowing the Flow Project – Pickering

'Slowing the Flow' is a two year pilot partnership project in the Pickering and Sinnington areas to show that land management could help to reduce the risk of flooding and also bring other benefits for water quality, wildlife and soil protection. Forest Research is leading the project in partnership with the EA, Forestry Commission, Natural England, Durham University, North York Moors National Park Authority and RDC.

The partnership recognises that it will never stop flooding in Pickering and Sinnington due to the nature of the landscape but it is hoped that the planned measures will reduce the frequency of future flooding and its impact.

The basic aim of the approach is to increase the time it takes from rain falling on the upper catchment to flood waters arriving at Pickering and Sinnington, and by so doing, decrease the height of the flood peak and therefore the likelihood of flooding. To do so will involve working with landowners and residents to try to change how the land is used and managed upstream, and to improve the resilience of affected households. This will involve everyone working together to bring about change through a series of relatively small steps that will collectively make a big difference in terms of the risk of flooding

The project explores various options for land management changes:

- Forestry work - planting trees and creating woody debris dams to slow water down in the upper river catchment. Initial results indicated that by implementing these measures at key locations the peak flood flow could be reduced by 10%.
- Moorland management - blocking gullies on the moorland could help to slow down the flow of water. Some of the moorland gullies were man made and others were natural but both types reduced the amount of time that water remained on the land and as a result increased flood risk.
- Farmland management - creating buffer strips on field margins to improve soil management and create areas for water storage. Buffer strips involve leaving up to six metres of riverbank unmanaged allowing the grass and vegetation to trap sediment and reduce water flow.

Ryedale District Council

Ryedale House, Malton, North Yorkshire, YO17 7HH

Tel: 01653 600666 Fax: 01653 696801

www.ryedale.gov.uk

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- Flood storage - creating low-level bunds (small dams) to store floodwater upstream of Pickering. These would only store water for short periods of time, during high river flow conditions.

Multi Agency Flood Response Co-ordination Plan

The plan aims to outline the policies and procedures, which enable the emergency services and supporting agencies to manage river and surface/round water flooding within Ryedale District. The plan is the first to be fully signed off in the Yorkshire and Humber region and due to the many flooding events has been fully tested.

In line with criteria set by the Department for Environment, Farming and Rural Affairs (DEFRA), the document covers the procedures for preparing for a flooding incident, the management of a flooding incident and the recovery from a flooding incident at both Bronze and Silver levels in order to meet criteria set by Defra. It encompasses such areas as:

- Flooding information and risk plan activation
- Thresholds and triggers
- Communications strategies
- Actions, roles and responsibilities
- Stand down of response and recovery
- Community specific information

Sustainability Audit

A high-level audit review was carried out August 2009 regarding sustainability. The Audit's assessment regarding performance was 'Good - Minimal Risk'. The audit encompassed other related issues, which extend the subject area much wider, covering the 3 strategic objectives that underpin the Corporate Plan aim:

- Objective 5 - Reducing waste and CO₂ emissions.
- Objective 6 - Planning to adapt to climate change
- Objective 7 - To maintain the quality of local environment

Sandbag catches

In response to the frequency of flooding incidents RDC has developed in liaison with the Parish and Town Councils a series of sandbag catches for immediate response use in critical areas such as Helmsley, Kirkbymoorside, Pickering, Sinnington and Thornton le Dale. The catches are extremely popular and are located with local farmers/agricultural centres and can be immediately accessed by the public and first response Ryedale emergency teams, allowing teams to travel directly to site and start sandbagging within 15-20 mins of a call out, a prime concern in flash flooding situations.

Who was involved

- Staff
- Heads of Service
- Members
- Environment Agency
- Forestry Commission.
- Landowners
- Internal Drainage Boards
- NFU
- Flood interest Groups
- Friends of the Earth
- North Yorkshire and City of York Waste Partnership
- NYCC
- Police
- Fire
- PCT
- Yorkshire Water

What was achieved

- Agreed, embedded and tested multi agency flood plan.
- Protection to all properties at previous risk of flooding in Malton, Norton and Old Malton
- Major risks have been identified regarding flooding and adaptation to climate change. £1 million capital funding has been set aside to fund a potential flood scheme development at Pickering. The scheme is envisaged to offer one –in 25 year protection to Pickering properties and will reduce the magnitude and duration of flooding in those properties for larger events
- £28K has been approved to deliver the Vale of Pickering Channel Management Project The objectives of the 3 year pilot project are to:
 - Assess the effects of vegetation and sedimentation on water levels in the main rivers within the Vale of Pickering
 - Assess the effects of maintenance of vegetation and sedimentation of the main rivers within the Vale of Pickering on ecological biodiversity

Next steps

- Regarding 'slowing the flow', the combined effects of the land management measures and bunds will be evaluated and both the 'Overflow' and bund models thoroughly tested.
- A presentation is planned for members to evaluate the scheme as a prelude to considering funding arrangements.
- Outcomes from the channel management study will be monitored through the land drainage liaison group and reported back to committee.

Author and Contact Details

Phil Long, Head of Environment, phil.long@ryedale.gov.uk, 01653 602820 ext 477/461

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B Background documents/Links:

[..\KLOE 3 1\Self Assessment -Use of Natural resources KLOE 3.1 UPDATED VERSION.doc](#)

[\\rdcdt26\commercial\Phi\emergency-flood plans etc\AA - MAFP FINAL VERSION 2009 - no maps version.doc](#)

[\\rdcdt26\commercial\Phi\NI188\RDC LCLIP Summary of major risk.doc](#)

[\\rdcdt26\commercial\Phi\NI188\Ryedale LCLIP v1 issue.pdf](#)

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