

Major Flood Prevention Schemes

In response to known flood risk areas The Highland Council is currently appraising a number of flood prevention/alleviation schemes, for progression of statutory consents and future implementation, subject to the availability of finance. Schemes currently being evaluated are detailed below.

Caithness

Thurso Flood 12 January 2005

On 12 January 2005, Thurso's Riverside area experienced severe flooding caused by a combination of an extreme high water, River Thurso in spate and a storm surge.

The incident was reported at 0900 and lasted for approximately two to three hours. During this time Thurso Harbour was overtopped and Riverside Road and surrounding properties flooded. Upstream of Sir George Street Bridge the park was severely flooded to the east side. However no commercial or residential properties were affected and damage was minor.

During the flooding the emergency services and Transport, Environmental and Community (TEC) Services were in attendance. Sand bags and pumps were supplied. However the rapid rise in water levels prevented sand bagging prior to properties being flooded. A number of roads were closed and signs erected. Throughout the flooding incident and afterwards the Thurso squad helped to limit the damage caused by flooding and assisted in the clean up operations.

As a consequence of the flooding TEC Services commissioned the engineering consultant, Arch Henderson to undertake an assessment of the properties at risk of further flooding and the return period for a similar event. A preliminary report has been completed and will be presented to the Caithness Committee in November 2005 for approval to proceed with cost benefit analysis and design work.

Inverness

Inverness, Smithton, Culloden and Balloch Flood Prevention

In recent years there have been increasing problems where the burns draining the catchment area to the south of Inverness meet developed land.

Consultants HR Wallingford were commissioned to undertake an audit of previous technical reports and make recommendations for immediate action.

HR Wallingford have recommended that the resistance to flow through the urban area should be reduced and arrangements are being put in hand to implement these measures as soon as finance permits. The measures will include removal of silt and other existing obstructions, clearance of vegetation and strengthening of vulnerable burn edges.

HR Wallingford further confirmed that a diversion to Holm Mains Burn would be the best long term drainage strategy. It is envisaged that sufficient flow would remain in any existing watercourses to maintain dilution of disposal from downstream developed areas, prevention of stagnant pondings and to preserve amenity value and local diversity.

The Council have employed a flood specialist Consultant, Mouchel Parkman, to advise and report on all areas south of Inverness, from the River Ness extending eastwards to Balloch. A number of reports and recommendations are complete, other reports are underway:

Feasibility study and recommendations have been completed for the south west area of Inverness.

It is proposed that the Lochardil Burn and Ault na Skiah Burns be dealt with by diverting floodflows via an artificial channel and an improved Holm Mains Burn to the River Ness. Detail design is in progress. An economic appraisal has been completed. A Flood Prevention Order has been drafted. Approval of this Order will allow the Council to implement the Scheme.

An Environmental Assessment has been completed for the schemes in the south west area of Inverness. This study considered the environmental effects of the proposed schemes and make recommendations for consideration. These have been incorporated in the draft Flood Prevention Order.

The feasibility study, recommendations and economic appraisal of the Mill Burn is also complete. Similarly, detail design is underway and it is proposed that a Flood Prevention Order be prepared and promoted for the scheme. The scheme will involve minor improvements of the watercourse and a diversion of a short section of the burn during times of flood.

A feasibility study is complete for the Dell Burn. The options are currently undergoing economic appraisal. A satisfactory appraisal will lead to the preparation and promotion of a Flood Prevention Order. The scheme will involve culvert improvement, provision of attenuation ponds and general watercourse improvements. The Scottish Executive have made improvements to the flow capacity of the A9(T) Trunk Road drainage between the entry of the Dell Burn and the Raigmore Interchange.

A feasibility study has been undertaken for the Smithton, Culloden, and Balloch areas. Options have been appraised. Maintenance work and cleaning has been carried out in a series of several works schemes. Further watercourse improvements which require Flood Prevention Orders are under consideration.

River Ness, Inverness

As identified in previous reports, objections to a proposed scheme at Ness Bank to protect several properties and the road were received. A specialist Consultant Mott MacDonald and Partners has reviewed the 1990 report on flooding incidents for Inverness, between Holm Mills and the Moray Firth. This review which is a pre-feasibility report, incorporates the latest advice on climate change and sea level rise, and includes an overview of the existing flood protection. A pre-feasibility report which will include recommendations is about to be published. Any improvements which are required will need the promotion of a Flood Prevention Order.

Drumnadrochit, River Enrick and River Coilte

Following flooding on the River Enrick, The Highland Council commissioned the Consulting Engineers, Halcrow Crouch, to assess the flooding risks.

This assessment included:

- a) A review of the 1990 flood study with identification of changes during the last decade.
- b) An inspection of the valley from Corrimony to Urquhart Bay.
- c) Consultation with the River Enrick Riparian Committee.

The report concluded that the last decade has seen an increase in the number of floods and that the development of a flood warning system is a good way of managing flood risk.

The report also made recommendations for the short and medium term. These recommendations include the clearing of tree debris, rip rap protection, monitoring of structures, monitoring of erosion, with the recommendation that further feasibility studies and flood risk assessments be carried out.

Most of the Phase 1 works for the River Coilte and some of the Phase 2 works identified by Consultants Mott MacDonald have been completed, involving the placement of 3850 tonnes of rock as bank protection. Funding will now be sought to complete further works downstream of the A82 Trunk Road.

A joint project involving The Highland Council, landowners and riparian owners commissioned a study by an independent consultant to assess the River Enrick catchment. A Catchment Management Plan in accordance with The Highland Council's Structure Plan is being developed to fully consider and advise on the future management of this catchment. Following this joint project a SAFER project has been set up. SAFER (Strategies and Actions for Flood Emergency and Risk Management) is supported by the Interreg IIIB programme and is promoting flood warning, community involvement and natural river management for these river systems.

Lochaber

Fort William, Caol

A scheme was prepared to prevent flooding of Caol and Lochyside. A draft Flood Prevention Order has been prepared but not published. Since the flooding in January 2005 a specialist Consultant Mott MacDonald & Partners has been employed to examine the River Lochy and the coastal protection at Caol. A report is currently in preparation.

Minor Flood Prevention Measures

Caithness

Unknown Watercourse, Whaligoe, Ulbster, Watercourse Ref C6

Works undertaken 2004 and planned for Oct/Nov 2005

Proposed works planned for Oct 2005 consisting of removal of debris and vegetation from invert and banks. Currently awaiting approval from Scottish Natural Heritage prior to works commencing.

Unknown Watercourse, West Gills, Thurso, Watercourse Ref C12

Works planned for Oct/Nov 2005

Proposed works planned for October 2005 consisting of removal of debris and vegetation from invert and banks downstream of A836 culvert.

The Crescent, Glengolly, Watercourse Ref C18

Works not programmed

Following severe and sustained rainfall on the 21st Oct 2004 the land drain in the adjacent field failed to cope with the volume of water draining into a natural depression. This overflowed causing the gardens to the rear of properties at The Crescent to flood. Pumps were supplied to over pump the flood water to a road surface drain. Design for work progressing. No start date programmed.

Groat's Loch – Loch Watenan, Watercourse Ref C21

Works planned for Nov 05

Remedial works to the bank of the burn which collapsed due to trampling by cattle. Currently awaiting land owners permission to enter land.

Inverness

During the summer of 2005, Inverness TECS carried out inspections of all urban watercourses in the Area and for the first time a comprehensive photographic record of this was created. A numbering system was established and details of potential problem areas were noted. Using this information a revised formal inspection regime is currently being set up.

There has been continued cooperation with Scottish Water, Consultants, SEPA and Forest Enterprise in seeking to resolve flooding problems.

There have been continued consultations with SEPA, Scottish Water and private Consultants and Contractors to agree SUDS proposals associated with new developments and to make recommendations to Planning Authority.

Lochaber

Clanranald Terrace, Mallaig

Behind houses, 3 monthly inspection of manholes are carried out at this location.

A82 Achintore Road

The Scottish Executive have issued an instruction to renew two new culverts where problems occurs.

Rear of Argyll Terrace, Heathercroft, Fort William

A very large development is proposed and hydrological studies have been requested before approvals granted. The drainage for the area of interest has to have unrestricted flow to Loch Linnhe.