West Dunbartonshire Council

Flood Prevention and Land Drainage (Scotland) Act 1997

Flood Prevention and Mitigation Report

November 2009

1. Introduction

The Flood Prevention and Land Drainage (Scotland) Act 1997 came into force on 26th May 1997 (Sections 1, 3, 4 & 5) and 28th July 1997 (Section 2). Section 3 of the Act requires local authorities to prepare and publish reports, at intervals of no more than two years, specifying the measures that they consider necessary to prevent or mitigate the flooding of non-agricultural land. This is the seventh report of West Dunbartonshire Council. This will be the last report required under this legislation as it will be replaced by the Flood Risk management (Scotland) Act 2009 in due course. This report considers:

a) all occurrences of flooding of non-agricultural land since the publication of the previous biennial report in November 2007.

b) The measures the Council has taken since the date of publication of the previous report to prevent or mitigate such flooding.

c) The measures the Council considers require to be taken to prevent or mitigate the flooding of non-agricultural land in the future.

The flooding referred to may be taken to mean that which is liable to cause inundation of non-agricultural land, as a result of a watercourse being unable to contain the flow of water.

The Flood Risk Management (Scotland) Act 2009 received royal assent on 16 June 2009. The Act transposes the requirements of the EU Floods Directive and aims to modernise existing Scottish flooding legislation. All substantive provisions have yet to be commenced. Part 4 (Local Authority Functions and Process) will not be commenced until later in 2009 / early 2010. The 1961 Flood Prevention (Scotland) Act will be repealed only when Part 4 commences. However any Flood prevention Schemes or works that have commenced before that time are likely to continue under the 1961 Act procedures. The Scottish Government has set up the Scottish Advisory and Implementation Forum on Flooding (SAIFF) to provide technical support to all parties involved in implementation of the Act.

The Act covers all types of flooding with the exception of flooding arising “solely from a sewerage system” due to sewer blockage or collapse for example (flooding arising from the sewers being overloaded by higher than usual rainfall is covered). Fluvial flooding; coastal flooding; pluvial flooding due to intense rainfall; flooding from sewer surcharge; groundwater flooding; dambreak or other infrastructure failure flooding are all included.

The Act makes substantive provision in relation to:

- New duties that clarify responsibilities for flood risk management. This includes new duties on local authorities, SEPA, Scottish Water and other ‘responsible authorities’ to act with a view to reducing overall flood risk and to collaborate when exercising flooding related functions.

- Provisions to **replace the Flood Prevention (Scotland) Act (1961**) with broad powers to allow local authorities to take forward a full range of sustainable flood risk management measures based on a streamlined and local authority led statutory process.

- Provisions to establish a framework for flood risk assessment and management planning based on strategic Flood Risk Assessments undertaken on a national basis at an early stage to define Potentially Vulnerable Areas (PVAs); Flood Hazard and Flood Risk Maps prepared on a national basis; Scotland-wide strategic Flood Risk Management Plans and Local Flood Risk Management Plans (LFRMPs) for Local Plan Districts (as assessed by SEPA on the basis of the PVAs identified). SEPA will have primary responsibility for preparation of flood risk assessments, national mapping and strategic flood risk management plans but supported by information gathered by local authorities and others. Local authorities will have primary responsibility for LFRMPs and implementation of measures arising from these plans. Local authorities may have to form groupings based on Local Plan Districts and headed by a 'lead authority'. They will work closely with other responsible authorities including Scottish Water.

The Act also amends the Reservoirs Act (1975) and replaces the current enforcement regime, operated by 32 local Authorities, with appointment of a single enforcement authority (SEPA) for Scotland

2. Flooding events since last report

Since November 2007 there has been no significant flooding event in West Dunbartonshire but there have been a number of more minor events, where problems with carriageway drainage have locally affected roads without affecting adjoining properties. Most of the flooding cases in Clydebank fall into this category and are mainly caused by lack of capacity of Scottish Water's drainage system. Such flooding is not covered by this report.

3. Works undertaken since last report

A list of works carried out since the last report is noted below.

In addition to the items listed, ongoing maintenance is carried out on watercourses where debris is assessed as a problem or where culvert grids etc are found to be in need of clearing.

Location	*Work Carried Out / Programmed*
Hillbank Street, Bonhill	Culvert headwall & grid replaced
O'hare Burn, Bonhill	Bed of burn cleared of vegetation & debris between O'Hare and Hillbank Street
Mollanbowie Estate, Balloch	CCTV survey of culverted watercourse carried out. Debris & roots removed
Mill Lade, Alexandria	Flow control device improved at upper end of lade.

Location	*Work Carried Out / Programmed*
Knowle Burn - Dumbarton	Bed of burn cleared of vegetation and debris along length of Crosslet Road to Railway culvert. Network Rail asked to clear their culvert.
Bannachra Crescent, Balloch	Culvert Replaced
Carrochan Burn, Balloch	Burn cleared of vegetation & debris between Carrochan Road & River Leven
Duntocher Burn, Clydebank	Burn cleared of vegetation & debris between Burnside Crescent and Old Mill Road
Dumbarton	Repairs carried out to various sea walls
Drumry Station	Watercourse adjacent to station cleared of vegetation & debris
Clydebank(general)	Various drainage improvement schemes carried out
Dillichip Close, Bonhill	Drainage improvement scheme carried out
Culverted watercourses (various locations)	Ongoing programme of CCTV surveys.

Ongoing investigations have also been continuing from consulting engineers into potential flooding in the River Leven corridor, from Gruggies and Knowle burns in Dumbarton and Duntocher Burn in Clydebank.

The Council has facilitated discussions between SEPA and Scottish Water with a view to improving flood monitoring and warning on Loch Lomond. These discussions have now led to the establishment of a local strategic liaison group involving the key public agencies.

By way of update on the main investigations undertaken in recent years on our key watercourses, it should be noted that:

River Leven

The River Leven corridor investigation was commissioned originally in December 2001 to consider the likelihood of both river and tidal flooding events. The area covered extended from the outflow from Loch Lomond to the confluence with the River Clyde together with the Clyde shoreline from Clydeshore Road in the west to Hunter's Burn in the east.

A programme of topographical surveys was undertaken and mathematical modelling carried out to obtain predicted peak water levels for a variety of flood return periods.

Outline design of flood defence measures was carried out, together with estimations of construction costs and preliminary benefit/cost assessments.

A number of locations along the length of the river were identified as being at risk of flooding. Upstream of Vale of Leven Academy the risk is as a consequence of high flows in the river, downstream of the Academy the risk is as a consequence of both river flows and tidal effects.

The final flood report was submitted in November 2002 and reported to the Council in January 2003. Further modelling was carried out in November 2003 to consider the effects of narrowing the river through Dumbarton as part of a wider economic regeneration programme. In 2008, the flood model was updated based on rainfall and river flow data based on the extreme events of December 2006. New flood inundation maps were created.

In May 2009, a bathymetric survey of the river bed profile from Dumbarton Bridge to the confluence with the River Clyde was carried out. This showed evidence of significant sediment build-up especially around the Sandpoint area. This is considered to be natural build-up recognising that the River Leven has not been dredged since the 1970s. The river bed profile information has subsequently been added to the river model.

In 2009, outline proposals were developed to consider localised protection of only Riverside Gardens, Balloch and Glebe Gardens, Bonhill, separate from the wider Flood Prevention scheme. These proposals have not been taken forward at this time, due to the consequential affects of taking such measures out of sequence with nearby areas which would be at increased flood risk as a result of the works taking place. This work demonstrated that a holistic scheme is required for the River Leven rather than piecemeal local improvements.

Since 2004, British Waterways have been investigating opportunities to develop navigable links between the River Clyde and Loch Lomond. During 2008 and 2009, proposals were developed to bring forward the Lomond Canal project. This would deliver a new canal between Dumbarton town centre and Loch Lomond with the necessary flood prevention works integrated into the canal construction. An outline business case was presented to the Scottish Government in June 2009 and further guidance is awaited. In the meantime, flood prevention scheme development cannot proceed.

Gruggies Burn and Knowle Burn

A commission to investigate possible flood alleviation measures on Gruggies and Knowle Burns in Dumbarton was awarded in July 2003.

The first stage of the commission included for assessment and examination of the watercourses, including topographical surveys and mathematical modelling, together with the identification of options for flood alleviation measures. This stage was completed in December 2003 for Knowle Burn and February 2007 for Gruggies Burn.

Following extensive detailed design, development and consultation, the Flood Prevention Order for Knowle Burn was published in October 2008. Following a Public Local Inquiry in February 2009, the Scottish Ministers confirmed the Flood Prevention Order for Knowle Burn in August 2009. Planning Consent for the works was approved by the Council in December 2008.

Further detailed investigation into Gruggies Burn has taken place during 2008/9. Alternative upper catchment storage options have been identified for further consideration. Proposed new development in the downstream section of the burn has recognised the need to protect the development against flooding from this watercourse. This will therefore reduce the area of land affected by flooding from Gruggies Burn, and improve downstream flows.

4. Ongoing and Future Activities

River Leven

The report of the investigation into possible flooding in the River Leven corridor concluded that there was a significant risk of flooding at numerous locations between Loch Lomond and the River Clyde. Outline solutions and preliminary costs have been identified, and proposals for flood measures in local areas have been indentified. In conjunction with the Lomond Canal project, subject to the availability of funding, it is intended to develop the initial findings further, with the intention of preparing and submitting an application for a comprehensive Flood Prevention Order for the entire River Leven from its source at Loch Lomond to its confluence with the River Clyde. This will be developed in conjunction with the proposed regeneration of the waterfront in Dumbarton, the regeneration of the Vale of Leven and the evolving Strathleven Corridor project.

Consultants have been retained to provide services to update the previous work to comply with current Government guidance and economic modelling. The current estimated cost of the flood defence works is some £20M (circa 2006).

Knowle Burn

The Flood Prevention Order has been confirmed and final detailed design is now underway by Jacobs.

It is expected that site preparation works will begin in Autumn 2010 with the initial phase of main works (the flood storage pond) starting in Spring 2011.

The estimated total project cost is ~£3M, funding is being provided from the Council for this on an annual basis.

Gruggies Burn

The results of the first stage investigation have been considered and preferred options have been identified. Jacobs have brought the work up to date in terms of Government legislation and economic evaluation and have identified some upstream storage opportunities.

Work is continuing through 2009 and 2010 to assess the best option for upstream storage which will then allow development of more detailed proposals for the burn south of the A82. The current estimated cost for this project is £8M (circa 2006).

Watercourse Inspection and Maintenance

At present, the Council carries out detailed inspections of the principal watercourses annually. All grids and screens at 'hotspots' are inspected and cleared (where necessary) on a monthly basis. When severe weather warnings are received, additional inspections are undertaken.

Riparian owners are reminded of their responsibilities as and when an inspection requires such action.

5. Preparing for Flooding

There is a common misconception of the role and responsibilities of the Council with regard to flood prevention and the maintenance and improvements of watercourses.

While the Council has a statutory duty under the Flood Prevention and Land Drainage (Scotland) Act 1997 to assess watercourses and carry out maintenance where we are aware of any condition or circumstance which may give rise to flooding which would extend beyond a single property, the Scottish Government has made it clear that individual owners living in flood prone areas have primary responsibility for the prevention of flooding of their property.

The Council has emergency planning arrangements that can be put into operation in the event of major flooding. However, as the law states, the primary responsibility for dealing with floods and avoiding them lies with the property owner and it is important that owners are aware of their responsibilities and take appropriate action. For example:

- Where property adjoins a watercourse the owner of that property is probably responsible for the area of the banks. The owner should check that any garden rubbish etc. within their property is removed and not allowed to slip into the water and create a blockage.

- If a boundary wall or fence is in poor repair, the owner should have it repaired. Floods have been as a result of collapsed walls, or may cause walls to collapse, with possibly serious consequences for neighbouring properties.

- If a property owner lives in an area which has experienced flooding, or is concerned about flooding, they should take time to identify where water might enter their house or garden and consider how to deal with it.

- Property owners may wish to have some sandbags to hand. Individual owners should not expect these to be available from the Council at times of flood; the priorities of the Council may not be those of the individual. Sandbags are available from builder's merchants and large DIY stores or can easily be made from bin bags and earth. However the Council will aim to deploy bags to known problem areas once flooding is expected.

- Property owners may wish to consider installing barriers to prevent the entry of water; there are many proprietary systems available and information on these can be obtained from the Scottish Environment Protection Agency (SEPA) web site at www.sepa.org.uk.

- During particularly wet periods owners should check the weather forecast for any severe weather warning. Owners can also phone the national FLOODLINE on 0845 988 1188. This service is run by SEPA and is available 24 hours a day, 7 days a week, 365 days a year. FLOODLINE information is also available through the SEPA web site.