ABERDEENSHIRE COUNCIL

FLOODING

IN

ABERDEENSHIRE

SIXTH BIENNIAL REPORT

THE FLOOD PREVENTION & LAND DRAINAGE (SCOTLAND) ACT 1997

NOVEMBER 2007

Flooding in Aberdeenshire

SUMMARY REPORT

As required by the Flood Prevention & Land Drainage (Scotland) Act 1997, Aberdeenshire Council publishes a report on flooding every two years to inform Aberdeenshire Residents. The last report was published in November 2005. This, the sixth Biennial Report, covers the period from November 2005 to October 2007.

All flood events reported to the Council have been investigated. Over 85% of the flood events recorded over the last two years were due to local land or road drainage systems being overwhelmed by the intensity of rainfall. In most cases, improvement action was agreed in conjunction with the various parties involved. Frequently, the responsibility lay with individual land owners to carry out these improvements. Road drainage improvements where required have been included in annual road maintenance programmes, prioritised against other demands. Basic maintenance work has been carried out on watercourses where to do so would significantly reduce the likelihood of properties being flooded. Other improvements are planned, some on a large enough scale to require authorisation by the Scottish Government. An event in Pennan in August 2007, resulting in evacuation of the village, is currently the subject of a request to the Scottish Government for funding assistance. Full details of this incident are included within the report.

The report briefly details all of the flooding incidents reported to Aberdeenshire Council since November 2005. The locations of flooding tabulated are deliberately vague to avoid unnecessary concern and possible blight. Any member of the public who has a legitimate interest may come into the Councils Office at Carlton House, Stonehaven and look at the flood records for any particular location. Alternatively, by prior arrangement, some records can be made available for inspection at any local Aberdeenshire Council Office. Contact details are given at the end of the report.

A pilot “Flood Action Network” based on the well established Neighbourhood Watch format was established in Port Elphinstone in 2004. Fortunately only one incident of flooding (although no properties were affected) has been reported since 2005, and therefore it has not been possible to gauge the success of this network to any great degree.

Many of the opportunities to carry out flood prevention work on river systems also provide opportunities for improving natural habitat, water quality and bio-diversity, and vice versa. Aberdeenshire Council is therefore continuing to work in partnership with agencies such as SEPA, SNH, Scottish Water and the Salmon Fishery Boards. In promoting sustainable flood alleviation schemes utilising natural floodplains, Aberdeenshire Council are also working

closely with landowners. Flood Prevention Schemes on this basis are still being progressed in Fettercairn, Aboyne and Tarland.

ABERDEENSHIRE COUNCIL

SIXTH BIENNIAL REPORT - NOVEMBER 2007

CONTENTS

1. **Reason for Report**

1.1 This report specifies the measures which Aberdeenshire Council consider they require to take to prevent or mitigate against flooding on non-agricultural land within Aberdeenshire. This report is published as required by the Flood Prevention & Land Drainage (Scotland) Act 1997.

1.2 This report details:

(1) all the flood events which have occurred since the publication of the Fifth Biennial Report;

(2) all the measures which Aberdeenshire Council have taken to prevent or mitigate flooding since publication of the Fifth Biennial Report;

(3) all the further measures which Aberdeenshire Council propose to take to prevent or mitigate flooding.

1.3 This report is based on a review of all the information which is available to Aberdeenshire Council at the present time and proposes actions considered necessary arising from that review. As it is intended primarily to inform Aberdeenshire Residents, the use of technical terms has been kept to a minimum. Nevertheless, technical terms are unavoidable in a report which is essentially technical. Synonyms have generally been defined within the text where first encountered. Please refer to Appendix B at the back of the report for a glossary of terms used in the text.

2. Flood Events in Aberdeenshire between November 2005 and November 2007

2.1 The general weather pattern over the two-year period covered by this biennial report has been "dry to normal". Consequently, heavy rain has not cause watercourses to overtop as frequently during the reported period 2005 to 2007 as during the period covered by the previous biennial report.

2.2 Local flood events occurred in Aberdeenshire during the period November 2005 to October 2007 are tabulated by river catchment in Appendix A. See Appendix C for details of community locations and river catchments.

2.3 Although no major fluvial flood events occurred in Aberdeenshire during the reported period, a major incident requiring evacuation of residents did occur in the village of Pennan on the North Coast of Aberdeenshire. This is covered in more detail in Section 3.10 of this report. Of all the flood problems reported, 75% related to land and/or road drainage problems; 25% related to watercourses.

2.4 Incidents of flooding reported to Aberdeenshire Council were investigated and assessed. The locations of flooding tabulated are deliberately vague to avoid unnecessary concern and possible blight. Any member of the public who has a legitimate interest may come into the Councils Office at Carlton House, Stonehaven and look at the flood records for any particular location. Alternatively, by prior arrangement, some records can be made available for inspection at any local Aberdeenshire Office.

2.5 Aberdeenshire Council has adopted an internal Performance Indicator (PI) to measure the percentage of flood reports which are investigated within 10 working days of having been reported. Since inception in early 2005, the PI for investigation of flood incidents has consistently been 100%.

3. Action Taken by Aberdeenshire Council under the Flood Prevention & Land Drainage (Scotland) Act 1997 since November 2005

3.1 Assessment of Watercourses

The systematic inspection and assessment of watercourses has continued. Main river channels and principal tributaries have all been inspected and an interim flood risk assessment made. A geo-morphological assessment of most of the main rivers has been carried out. In summary, the overall progress to date with the first inspection and assessment is approximately 95% complete. Locations and features which were assessed as being to some degree likely to flood have been subject to regular follow-up inspection since.

3.2 Discussion with Regulatory Bodies

3.2.1 The North East Flood Liaison & Appraisal Group (NESFLAG) is now well established as the forum for discussion and resolution of issues relating to the impact of development on flooding and vice versa.

3.2.2 In addition to discussion within the Flood Appraisal Group, the close working relationship developed between Development Control Officers and the Flood Prevention Team within the Council and Officers of SEPA has continued, to mutual advantage.

3.2.3 Ad-hoc liaison meetings are held with the river fishing control bodies in Aberdeenshire.

3.2.4 Discussion with Officers of neighbouring councils will continue through occasional meetings to exchange information and share best practice.

3.3 Flood Warning & River Gauging

3.3.1 Aberdeenshire Council continues to measure watercourse levels at various locations throughout Aberdeenshire. This monitoring is used to gather data on watercourse response to rainfall events.

3.3.2 The existing SEPA gauges are located on the main river channels and some principal tributaries. Funding of £1 million was announced in September 2007 for SEPA in conjunction with local authorities to develop a new flood warning scheme for the North East of Scotland. This will cover the Dee, Don, Deveron and North Esk rivers.

3.4 **The Dee Catchment Management Plan**

Further to the designation of the River Dee Catchment as an SAC (Special Area of Conservation), the Dee Catchment Management Plan has been prepared over the past 2 years and is due to be published on 21 November this year. Further information on this can be found at www.theriverdee.org.

3.5 **Works of Maintenance by Aberdeenshire Council**

3.5.1 Works of Maintenance have been carried out in many locations where to do so would significantly reduce the likelihood of flooding. The demand for such works inevitably exceeds the available funding. A simple system of assessing schemes by a point score method was devised some time ago to establish relative priorities. This system takes account of flood frequency and social factors. It has been reviewed recently and is considered reasonable and workable.

3.5.2 Whenever possible, "soft engineering" methods have been utilised in Works of Maintenance. Hydraulic and climatic conditions often control the methods which may be adopted. However, Aberdeenshire Council proceeds generally on the basis of a presumption for soft engineering methods unless conditions dictate otherwise. The recently introduced Controlled Activities Regulations (CAR) by SEPA also heavily promote soft engineering erosion control and flood prevention measures where appropriate. Further information on these regulations and their implications for flood prevention schemes can be found at www.sepa.org.uk.

3.5.3 Works of Maintenance have been carried out at the locations listed below:

Kingsford Road, Inverurie
Deveron Floodbank, Huntly
Whitehills Attenuation Bund
River Cowie Estuary, Stonehaven
River Bervie Estuary, Inverbervie

3.6 **Flood Studies**

It is often necessary to carry out a flood study in order to obtain a comprehensive understanding where the mechanism of flooding is complex. Several consultants have been commissioned from time to time for specific studies. The hydraulic models generated have been used to quantify the flood risk and to test possible solutions in order to identify the optimum solution. In addition to those flood studies already carried out as detailed in the fifth biennial report, flood studies have been carried out at the following locations:

Burn of Cauldcotts, Fettercairn
River Ythan, Ellon
Ythan Estuary, Newburgh (due for completion Jan 2008)
Ugie Burn, Inverugie

River Dee (Peterculter – Aberdeen Harbour)
River Don (Inverurie – Kintore)
Tuach Burn/Don confluence, Kintore

Where appropriate, the studies will generate cost benefit analyses which will be used to justify proposals for Flood Prevention Schemes (see para 4.4 below).

3.7 **Marykirk Flood Alleviation Scheme**

Following several flood events on the A937 in Marykirk, a scheme was designed and finished in 2006 at a cost of £52,000. This scheme was funded entirely by Aberdeenshire Council.

An area of controlled flood storage was created by bunding an adjacent field. Now when water exceeds the capacity of the road culvert, a side weir takes the excess water to the field storage area. This storage area then discharges into the watercourse further downstream at a controlled rate. The scheme has worked successfully on at least 4 occasions since it was constructed. The cooperation and positive attitude of the landowner at Marykirk is gratefully acknowledged.

3.8 **Flood Prevention Works on the B974 Banchory to Fettercairn Road at Strachan**

Aberdeenshire Council completed a flood relief scheme at Strachan in October 2006 at a cost of £290,000. As no housing/properties were affected by this flooding, this work did not qualify as a Flood Prevention Scheme under the 1961 Act. This scheme was therefore entirely funded by Aberdeenshire Council.

The scheme involved raising the road level locally and installing flood relief culverts underneath the road to allow flood waters to pass below the road rather than flooding it.

3.9 **Pennan Landslip**

Due to a very heavy localised rainfall event, excessive run off from fields above the village caused parts of the vegetated cliff face to slip. These along with the water cascaded down to the houses below caused damage to around 20 properties and the village hall along the sea frontage, requiring the village to be evacuated by the Emergency Services.

Aberdeenshire Council provided emergency response by assisting with clear up operations and engaging a specialist consultant to assess the safety of the cliffs. Ten properties were initially categorised at “high risk” of further damage. All but 4 properties were considered safe to reoccupy within 25 days, and at the time of writing, 3 properties remain at ‘high risk’. Arrangements are in place to have further loose material removed from the cliff face and make

these properties safe for reoccupation. An application for funding is currently under consideration by the Scottish Government to support measures required to reduce the risk of a similar incident in the future.

4. Further Action Proposed by Aberdeenshire Council under the Flood Prevention & Land Drainage (Scotland) Act 1997 and the Flood Prevention Act 1961

4.1 Further Works of Maintenance

It is recognised that regular maintenance can contribute significantly to the prevention or mitigation of flooding. Aberdeenshire Council therefore propose to carry out further Works of Maintenance under the Flood Prevention & Land Drainage (Scotland) Act 1997 to reduce the likelihood of flooding where a significant risk has been assessed. Such works will range in size from clearing debris which blocks the watercourse to minor engineering works to provide flood protection or to improve hydraulic efficiency.

4.2 Flood Studies

Aberdeenshire Council propose to commission flood studies whenever necessary to better understand the mechanism of flooding.

4.3 Inspection and Assessment of Watercourses

Inspection and assessment of watercourses will continue as required by the Flood Prevention & Land Drainage (Scotland) Act 1997.

4.4 Flood Prevention Schemes under the 1961 Act

Authorisation is being sought for Flood Prevention Schemes under the Flood Prevention Act 1961 for works which are beyond the scope of Works of Maintenance. Schemes are currently proposed on the Cauldcotts Burn at Fettercairn, and the Tarland Burn at Aboyne and Tarland.

An Initial Environmental Impact Assessment was completed in September this year for the Tarland scheme. This will aid in the identification of the most suitable areas for use as flood storage areas on the Tarland Burn.

4.5 Flood Prevention Works at Boddam, Peterhead

The problem caused by surface water coming off the Trunk Road at Boddam and flooding domestic property remains unresolved despite the best efforts of Aberdeenshire Council. The Council have provided the properties with demountable flood guards to cover doorway openings and air vents as temporary flood protection meantime. A feasibility study has been completed to date, the cost of which was shared between Aberdeenshire Council and the Trunk Road Authority. Further progress will depend upon agreement being reached with the current owners of the former RAF Buchan site, and the adjacent Army Cadets.

4.6 **Liaison with Neighbouring Authorities**

The need to ensure that neighbouring authorities are aware of significant development proposals is recognised. The North East Scotland Flood Appraisal Group serves to allow data and advice to be shared. Flood studies, Works of Maintenance and Flood Prevention Schemes are being and will continue to be jointly promoted.

4.7 **Public Awareness**

4.7.1 There is still much to be done to ensure that members of the public are fully aware of all the issues relating to flooding and its causes. This includes educating riparian owners where possible of their responsibilities for both bank maintenance, and not disposing of garden waste into the watercourse, which invariably leads to blockages downstream.

4.7.2 Aberdeenshire Council are also currently discussing methods to best educate homeowners of their responsibilities for maintenance of their own sustainable urban drainage systems (SUDs).

4.8 **Flood Warning & River Gauging**

The supplementary river level gauges and rainfall gauges on un-gauged tributaries will continue to provide data which is analysed statistically to provide estimates of the 100 year and 200 year return period river flow events. As time goes by and more data is collected, these estimates will be reviewed and will become increasingly reliable.

4.9 **The Aberdeenshire Flood Action Network**

Aberdeenshire Council will encourage and support other community groups who are at risk of flooding from watercourses who wish to form their own Flood Action Networks.

5 **Funding**

5.1 The funding allocated to Flood Prevention in Aberdeenshire Council's Revenue Budget has allowed reasonable progress to be made in the inspection and assessment of watercourses and for some Works of Maintenance to be carried out. It is clear that the need for further Works of Maintenance will be identified as the assessment of watercourses continues. It is also clear that, by its very nature, maintenance work is in most cases repetitive. It is evident therefore that the current level of funding must be at least maintained for the foreseeable future.

5.2 The financial consequences of flood damage have traditionally been met by property insurance. The Association of British Insurers have made it

clear that they will not continue to provide blanket cover against flooding as a matter of course. Insurance premiums can be expected to increase significantly for flood-prone property and may in some cases be refused. It would appear that they take into account the degree to which councils are pro-active in flood prevention when assessing insurance risk. It is to the benefit of Aberdeenshire residents therefore to maintain a reasonable level of funding for flood prevention.

5.3 Where appropriate, Aberdeenshire Council will seek to recover reasonable costs from parties who have responsibility and whose inactivity may have required the Council to carry out works to prevent flooding of non-agricultural land.

5.4 Where the cost benefit and protection level criteria set by the Scottish Government can be met, Aberdeenshire Council will continue to take advantage of grants available for Flood Prevention Works.

6 **Contact Point**

Formal enquiries arising from this report should be addressed to Ken Morrison, Head of Roads, Cape House, 21 Seafield Street, Banff, AB45 1ED or e-mail <ken.morrison@aberdeenshire.gov.uk> or via the Councils web site.

Informal enquiries should be made to Willie Murdoch, Projects Manager, tel. 01467 628092 or e-mail <William.murdoch@aberdeenshire.gov.uk> or via the Councils web site.

7 **Conclusion**

This is the Sixth Biennial Report by Aberdeenshire Council under the Flood Prevention & Land Drainage (Scotland) Act 1997.

Signed…….

Iain Gabriel B.Sc, C.Eng, MICE, MIHT
Director of Transportation & Infrastructure
Aberdeenshire Council

KM/WM/GKIC/S/1/175
November, 2007

APPENDIX A

TABLE OF FLOOD EVENTS RECORDED IN ABERDEENSHIRE
NOVEMBER 2005 – OCTOBER 2007

SEE 2ND ATTACHMENT ON WEB PAGE

APPENDIX B

GLOSSARY OF TERMS USED IN THE TEXT

SEPA
The Scottish Environment Protection Agency – a government agency tasked mainly with controlling pollution of land and water throughout Scotland and, significantly in the context of this report, also tasked with river flow gauging and river flood warning.

SNH
Scottish Natural Heritage – a government agency tasked mainly with the protection of ecology throughout Scotland.

GIS
Graphical Information System – a computerised mapping system on which data can be displayed by its location and accessed for reference.

Catchment
River Catchment – the area which drains into a river. The term can be applied to an entire river system from the mouth of the river estuary or to an individual tributary river.

Riparian
An adjective meaning on or of river banks. A riparian owner is an individual who owns the bank of a river.

APPENDIX C

TABLE OF CATCHMENT AREAS WITH MAIN WATERCOURSES, PRINCIPAL TRIBUTARIES AND SETTLEMENTS

Catchment	Watercourse	Settlement (or district)
Deveron	River Deveron	Haugh of Glass
		Blairmore
		Huntly
		Milltown of Rothiemay
		Inverkeithny
		Turriff
		Banff
		Macduff
	Glenburn/Collonach Burn	(Longhill)
	River Bogie	Huntly
		Bridgend
	Water of Bogie	Gartly
		Rhynie
	River Isla	Nethermills
	Burn of Forgue	Inverkeithny
		Forgue
	Burn of Turriff	Turriff
	Idoch Water	Cuminestown
	Rosy Burn	Newton of Mountblairy
	Burn of Brydock	Mill of Brydock
Ugie	River Ugie	Inverugie
		Peterhead
	North Ugie Water	Strichen
		Fetterangus
		Hythie
		Cuttyhill
	South Ugie Water	New Deer
		Maud
		Old Deer
		Stuartfield
		Mintlaw
		Longside
	Water of Fedderate	Bonnykelly
		Oldwhat
	Burn of Ludquharn	Longside
Ythan and Coastal	River Ythan	Ythanwells
		Logie Newton
		Kirkton of Auchterless

Catchment	Watercourse	Settlement (or district)
		Mains of Towie
		Inverythan
		Fyvie
		Woodhead
		Methlick
		Ellon
		Waterton
		Kirkton of Logie Buchan
		Newburgh
	Tifty Burn	Tifty
	Fordoun Burn	Rothienorman
	Little Water	(Burneno)
	Black Burn	(Bellmuir, Gowanwell)
	Ebrie Burn	(Blackhill of Fortrie)
	Yowlie Burn	Mirton of Ardlethen
	Bronie Burn	Littlemill of Esslemont
		Pitmedden
		Udny Green
	Burn of Forvie	(Forvie)
	Tarty Burn	Tipperty
	Foveran Burn	Newburgh
Don	River Don	Strathdon
		Bellabeg
		Forbes Town
		Waterside
		Glenkindie
		Towie
		Kildrummy
		Bridge of Alford
		Montgarrie
		Alford
		Keig
		Pitfichie
		Monymusk
		Kemnay
		Burnhervie
		Port Elphinstone
		Inverurie
		Kintore
		Hatton of Fintray
		Cothall
	Allt Tuileach	(Dunandhu)

Catchment	Watercourse	Settlement (or district)
	Burn of Loinherry	Loinherry
	Cock Burn	Cock Bridge
	Delavine Burn	(Delavine)
	Burn of Tornahaish	(Tornashaish)
	Conrie Water	(Culfork)
	Ernan Water	(Glen Ernan)
	Water of Carvie	(Birkford)
	Water of Nochty	(Glen Nochty)
	Deskry Water	(Deskry)
	Water of Buchat	(Glen Buchat)
	Kindie Burn	(Pitcandlich)
	Socach Burn/Long Burn	(Culfork)
	Leochel Burn	Muir of Fowlis
	Suie Burn	Montgarrie
		Tullynessle
	Ton Burn	(Dalriach)
	River Urie	Inverurie
		Drimmies
		Inveramsay
		Pitcaple
		Whiteford
		Mill of Carden
		Old Rayne
		Pitmachie
Dee	River Dee	Braemar
		Balnaut
		Easter Balmoral
		Bridge of Muick
		Ballater
		Dinnet
		Aboyne
		Kincardine O'Neil
		Banchory
		Crathes
	Geldie Burn	(Geldie)
	Bynack Burn	(Bynack)
	Derry Burn	(Glen Derry)
	Lui Water	(Glen Lui)
	Ey Burn	(Inverey)
	Corriemulzie Burn	(Linn of Corriemulzie)
	Quoich Water	(Glen Quoich)
	Clunie Water	Braemar
	Callater Burn	(Glen Callater)

Catchment	Watercourse	Settlement (or district)
	Feardar Burn	(Inver)
	Gelder Burn	Invergelder
	Girnock Burn	Littlemill
	River Gairn	(Glen Gairn)
	River Muick	(Glen Muick)
	Tullich Burn	Milton of Tullich
	Pollagach Burn	(Dinnet)
	Water of Tanar	(Glen Tanar)
	Burn of Canny	Bridge of Canny
	Water of Feugh	(Feughside)
		Strachan
	Bo Burn	(Crathes)
	Burn of Sheeoch	Kirkton of Durris
Kincardine Streams	Bervie Water	Glenbervie
		Drumlithie
		Inverbervie
	West Burn of Builg	Drumtochy Forest
	Burn of Luchray	Drumtochy Forest
	East Burn of Builg	Drumtochy Forest
	Maxie Burn	Drumtochy Forest
	Forthie Water	(Candy)
	Cowie Water	Rickarton
		Stonehaven
	Cowton Burn	(Cowton)
	Carron Water	Kirkton of Fetteresso
		Stonehaven
	Burn of Muchalls	Bridge of Muchalls
		Muchalls
North Esk	River North Esk	Northwater Bridge
		Marykirk
	Luther Water	(Howe of the Mearns)
	Dowrie Burn	(Howe of the Mearns)
	Cauldcots Burn	Fettercairn
	Black Burn	(Howe of the Mearns)
	Devilly Burn	(Howe of the Mearns)
	Ducat Water	(Howe of the Mearns)
	Burn of Balmakelly	(Howe of the Mearns)