

The Moray Council



The Moray Council
protecting the community



Forres
(Burn of Mosset)
Flood Prevention Scheme 2005



Project Cost £20million
Funded by
The Moray Council
and
The Scottish Government

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Biennial Report - November 2007
Flood Prevention and Mitigation
in Moray

CONTENTS

1.	Executive Summary	3
2.	Introduction And Context	6
3.	Rivers in Moray	7
4.	Council Policy on Flooding and Interpretation of the Acts	10
5.	Known Flooding Problems	11
6.	Flooding Events November 2005-October 2007	15
7.	Measures Taken Since Previous Biennial Report	
	7.1 Maintenance Work	16
	7.2 Emergency Works (July 2007 Flood Incident)	17
	7.3 Funding	17
	7.4 Flood Mitigation Measures	18
	7.5 Flood Prevention Management	19
8.	Proposals To Mitigate	
	8.1 Mitigation Measures	21
	8.2 Inspection & Maintenance Work	22
	8.3 Procurement	24
9.	Moray Flood Alleviation Schemes	
	9.1 Introduction	25
	9.2 Lhanbryde Flood Alleviation Scheme	25
	9.3 Elgin Flood Alleviation Scheme	26
	9.4 Forres (Burn of Mosset) Flood Alleviation Scheme	26
	9.5 Forres (River Findhorn & Pilmuir) Flood Alleviation Scheme	27
	9.6 Rothes Flood Alleviation Scheme	27
	9.7 Garmouth Flood Alleviation Scheme	27
10.	Coastal Protection	
	10.1 Responsibilities	28
	10.2 Inspection/Monitoring	28
	10.3 Problems And Issues	28
	10.4 Schemes	29
11.	Environmental And Sustainability Issues	30
12.	Insurance Issues	31
13.	Water Framework Directive	32
14.	Appendix I – Typical Flood Report	34
15.	Appendix II – Flow Chart for Reports of Flooding Problems	36
16.	Appendix III – Moray Flood Alleviation Group – Mission Statement	37
17.	Appendix IV – Programme For Moray Flood Alleviation Schemes	38

1. EXECUTIVE SUMMARY

The Moray Council is a Unitary Authority in the north east of Scotland. There is a wide variety of land-uses in Moray, although the primary ones are agriculture and forestry. Numerous rivers flow in, out and through the region and the map on page 5 shows the main rivers in the Moray Area. The main risk of flooding is adjacent to the river courses, although flooding can happen at any location.

The Local Government in Scotland Act 2003 sets out the principles of best value and duties to promote sustainable development. The latter is reinforced by the Water Environment and Water Services (Scotland) Act 2003 that requires councils towards sustainable flood management.

One of The Moray Council's corporate priorities is delivering effective flood alleviation schemes in response to several severe flooding events in the last decade, affecting many communities. The Environmental Services Department has placed flood alleviation at the forefront. The Council's Flood Alleviation Sub-Committee scrutinises progress of the schemes. The Council also maintains the efficiency of watercourses that might cause flooding, and assesses watercourses regularly. The inspections and assessments feed into the programme of maintenance works which is drawn up each year.

Through reports from stakeholders and the inspection regime there is a developing knowledge of potential flooding problems allowing our engineers and technicians to analyse the issues and, where appropriate, devise mitigation measures.

During the period covered by this report there were no instances of severe flooding, but there were a number of localised problems. Flooding events occurred in Rothes on 3 July 2007 and in Aberlour the following day, both caused by short duration intense rainfall.

To mitigate flooding the Council has allocated funds and a number of projects have been completed over the past two years, ranging from regular cleansing of grilles, pipes, culverts and minor watercourses to modifications to drainage systems. The works have mostly been carried out by Moray Flood Alleviation (MFA) partners Morrison Construction, based on their contract for major schemes that contains a provision for minor works such as these.

The most significant investment by far is the programme of flood alleviation schemes. Resourcing issues have impacted on progress but measures have been taken to address these and new programmes involve firm but achievable targets. It is very difficult to assess how long, or how much effort it might take to overcome objections to statutory procedures so programmes are initially drawn up assuming that there will not be serious objections.

Lhanbryde Flood Alleviation scheme is now operational. To date the dam has not impounded water and the burn levels have remained in bank. The scheme is regularly inspected by the Supervising Engineer in line with the Reservoirs Act 1975. Further inspections are carried out by the Moray Council as part of the Council's asset management regime.

Elgin Flood Alleviation Scheme's Flood Prevention Order has been published and a Planning Application is due for submission.

Burn of Mosset Flood Alleviation Scheme has been confirmed by the Scottish Government and is due to start on site in November 2007 with a 100-week construction period.

Pilmuir Flood Alleviation Scheme is now combined with the River Findhorn Flood Alleviation Scheme and currently the Flood Prevention Order Submission is scheduled for March 2008, with an early construction start date of March 2009.

Roths Flood Alleviation Scheme planning application has been approved and a construction start date is programmed for April 2008. However, there remain two objections to the Flood Prevention Order and a Public Local Inquiry is scheduled for early 2008. Efforts continue towards resolving the objections before then.

There are several smaller schemes in the Capital Plan.

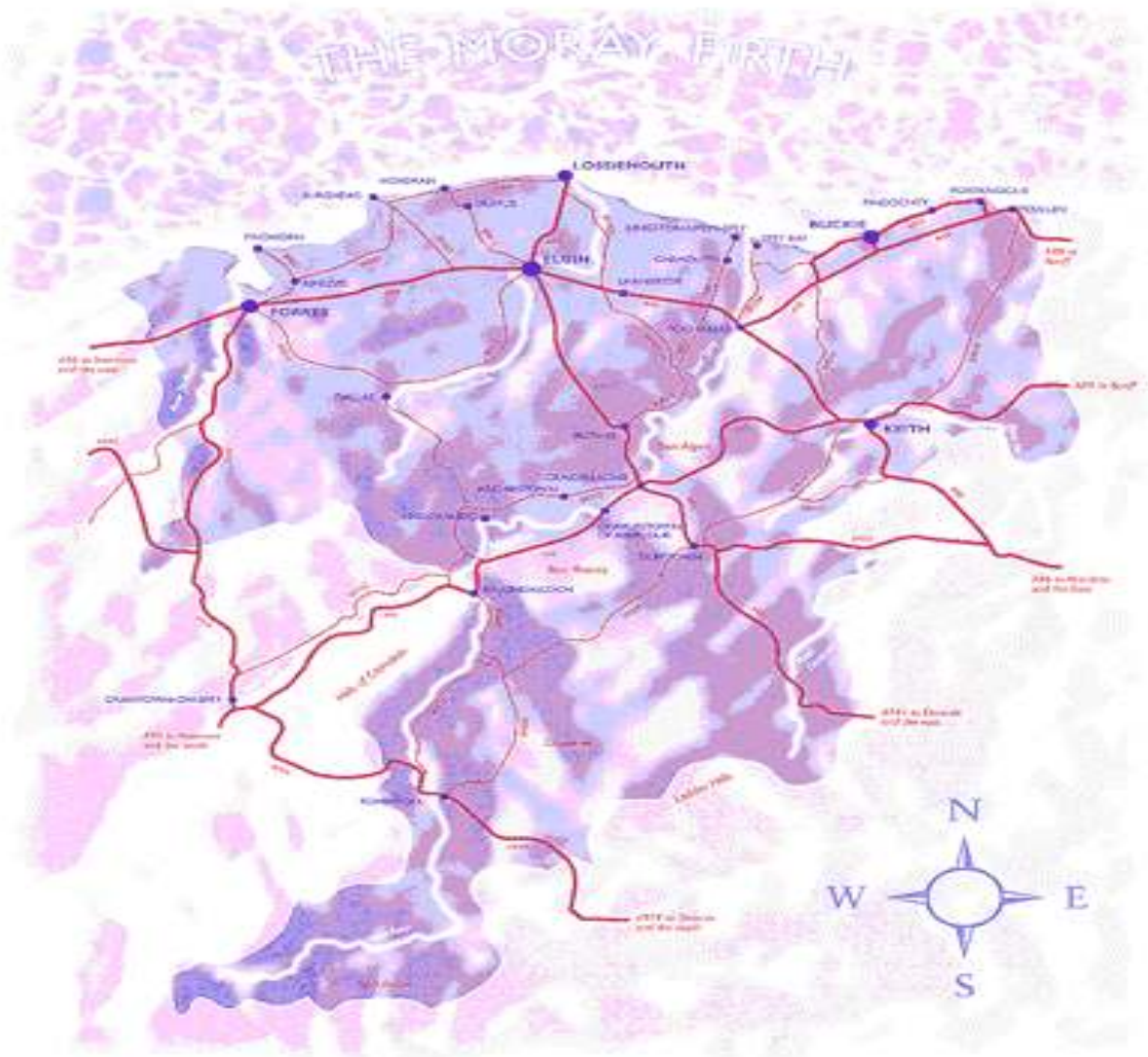
Coastal flooding may become an increasing threat to low lying settlements and the Council inspects and monitors the most vulnerable parts of the natural coastline and the engineered defences. The most "at risk" community is Kingston, where a shingle bank that encloses a lagoon protects homes. The shingle bank could be breached by the sea, but a study into the economic case for a scheme to protect the settlement has shown it unlikely to meet Government criteria. A number of smaller schemes have been completed or are programmed for completion soon.

Ensuring that our work has minimal detrimental impact on the environment is fundamental. New statutory requirements will impact further on our flood alleviation activities as we strive to reduce flood risk using a variety of methods, including land use planning, sustainable drainage systems, maintenance on watercourses and major capital investments in schemes. Each scheme is appraised on environmental and sustainable development criteria.

The Water Environment and Water Services (Scotland) Act 2003 Controlled Activities Regulations (2005) mean that licences are required for works to watercourses, increasing administrative effort and attracting charges. The precise impact is not fully known because more experience is required on the process for complying with this legislation. Currently we are trying to build up a good working relationship with SEPA and SNH to establish a library of approved method statements for the more common activities that we undertake as part of the Flooding and Coastal revenue budget. The legislation provides benefits too, because it helps prevent individual landowner flood prevention works increasing risk elsewhere.

For those at risk of flooding, the fear of flooding is constant. The Council is taking robust measures to reduce flood risk through major schemes. It is also taking measures to improve flood warning and people's access to insurance for flooding. The Council has produced an Emergency Flood Plan for Moray that aims to provide a strategic guide in the event of severe flooding and the measures to be taken on site. This plan is constantly under review, as more information becomes available.

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THE MORAY COUNCIL AREA

2. INTRODUCTION AND CONTEXT

This report represents The Moray Council's compliance with the requirement of the Flood Prevention and Land Drainage (Scotland) Act 1997 to publish a report on flooding every two years. Moray has suffered acutely from severe flooding over the past decade resulting in the Council declaring flood alleviation a key corporate priority. Indeed, delivering effective flood alleviation schemes is the first of the eight priorities listed for the period of the current Corporate Development Plan (2004 –2007), and it features in the Community Plan.

Flood alleviation schemes must be considered in the overall context of the Council's programme of change which will transform the Council into a modern accessible organisation that provides effective responsive public services that meet the needs of the people of Moray.

Services are delivered according to the Council's working principles of providing Best Value, responsiveness and consultation, sound governance and management of resources and by continually reviewing how these services are delivered, and seeking to innovate and improve

A key element of the working principles that impact on flood alleviation is sustainable development. Beyond the Corporate Development Plan, the Water Environment and Water Services (Scotland) Act 2003 places a duty on local authorities to promote sustainable flood management. Sustainable flood management is not just about developing sustainable flood alleviation schemes, it applies to all of our inspection and maintenance work and other functions of the Council that impact on flood risk.

The Environmental Services Department has taken the Corporate Development Plan and developed the theme of flood alleviation by setting specific measurable targets for inspection of watercourses and carrying out works to reduce flood risk. Performance indicators for inspection and maintenance are reported quarterly as part of the overall commitment to inform stakeholders about the quality of services being delivered and what they can expect in the future. Targets have been exceeded.

Delivering effective flood alleviation schemes is the greatest challenge facing the Council. One scheme, protecting Lhanbryde, is now operational, while others for Rothes, Elgin and two Forres are at various stages of preparation. Detailed, resourced programmes are in place and the Flood Alleviation Sub-Committee scrutinises progress. These schemes face considerable legal and statutory obstacles that may disrupt and delay progress. The Council strives to ensure that delays are not attributable to things under its control.

This Biennial Report describes The Moray Council's approach to flood alleviation together with background information on flooding and flood risk in Moray. Coastal flooding and insurance against flooding is included in the report.

Feedback on this report can help us improve future publications. Please send any comments to Dave Gowans, Consultancy Manager, Moray Flood Alleviation, The Wards, Elgin, IV30 6AA – dave.gowans@moray.gov.uk.

3. RIVERS IN MORAY

Moray covers an area of 233,823 hectares stretching from the North Sea coast into the Cairngorm Mountains. It incorporates settlements such as Elgin, Forres, Keith, Aberlour, Buckie, Dufftown and Lossiemouth as well as numerous smaller settlements and has a population of 86,940 (2001 Census). Land use is primarily forestry and agricultural with small industrial areas nearby or in the urban areas. The hydrology of the area ranges from high mountain streams through to tidal estuaries.

There are four main river catchments in Moray, namely the Lossie, Spey, Findhorn and Deveron. The catchments are classified by the Scottish Environment Protection Agency and the rivers named are the main watercourses within each catchment. Table 2.1 details the catchments and their watercourses and which settlements they flow through.

Table 3.1: Catchments and their watercourses in Moray

Catchment	Watercourse	Settlement
River Deveron	River Deveron	Cabrach Milltown of Rothiemay
	River Isla	Keith Towiemore Drummuir
	Black Water	Cabrach
River Findhorn	River Findhorn	Broom of Moy Forres Findhorn Mundole Relugas Logie
	Muckle Burn	Brodie Dyke Moy Whitemire
	Mosset Burn	Forres Rafford
	River Divie	Glenernie
River Lossie	River Lossie	Lossiemouth Elgin Kellas Dallas Birnie
	Black Burn	Miltoduff
	Tyock Burn	Elgin
	Lhanbryde Burn	Lhanbryde

Table 3.1: Catchments and their watercourses in Moray

Catchment	Watercourse	Settlement
River Lossie (Continued)	Linkwood Burn	Fogwatt Longmorn Linkwood Thomshill
River Spey	River Spey	Kingston Garmouth Fochabers Mosstodloch Inchberry Rothes Craigellachie Aberlour Carron Knockando Cragganmore
	Fochabers Burn	Fochabers
	Burn of Mulben	Mulben
	River Fiddich	Craigellachie Dufftown Auchindoun
	Dullan Water	Dufftown
	River Avon	Bridge of Avon Tomintoul
	Conglass Water	Tomintoul
	Back Burn	Rothes
	Burn of Rothes	Rothes
	Broad Burn	Rothes
	Black Burn	Rothes
	River Livet	Glenlivet Tomnavoulin
	Burn of Aberlour	Aberlour
Burn of Buckie	Burn of Buckie	Buckie Drybridge
	Rathven Burn	Rathven Buckie
Burn of Cullen	Burn of Cullen	Cullen
	Burn of Deskford	Lintmill Deskford
Burn of Tynet	Burn of Tynet	Tynet

These represent the main rivers but flooding often emanates from less obvious sources, such as blocked drains, poor drainage systems and disrepair. There are regular reports from stakeholders and Council inspectors of problems with small drains, culverts and ditches.



4. COUNCIL POLICY ON FLOODING AND LEGISLATION AND ITS INTERPRETATION

Under the Flood Prevention (Scotland) Act 1961, a local authority has the power to carry out measures for the prevention or mitigation of flooding of non-agricultural land. These measures include cleansing, repairing or maintenance of any watercourse or embankment for defence against flooding. This Act also empowers a Local Authority to improve, alter and reinstate a watercourse under a Flood Prevention Scheme authorised by Scottish Ministers.

The powers under the 1961 Act were extended in May and June 1997 by new duties contained within the Flood Prevention and Land Drainage (Scotland) Act 1997 including: -

- Carrying out watercourse assessments (to ascertain whether it is in such a condition which is likely to cause flooding of non-agricultural land);
- Cleanse, repair and otherwise maintain the watercourses and ancillary structures (where a failure to maintain is likely to result in flooding); and,
- Prepare and publish reports (a biennial report detailing measures taken and proposed to prevent or mitigate flooding, and details of incidents of flooding).

A programme of revenue works is drawn up annually and work is prioritised by a risk assessment based on probability and impact for approval of the Environmental Services Committee.

The Council is committed to the implementation of flood prevention schemes for the main settlements. The scheme for Lhanbryde is now operational and others for Forres, Elgin and two at Forres are at various stages of preparation. Section 9 of this report provides more detailed information. The Council adopts a cautious attitude in its planning policy based on managing the threat from flooding and requiring flood risk assessments for development proposals in risk areas. The Council has a watercourse maintenance programme and inspection regime, which is carried out through the year to mitigate flooding. Details can be found in Section 7 of this report.

The Council policy on flood management states that:

‘The Council will work closely with the Scottish Environment Protection Agency and Scottish Water Authority in the appraisal of areas liable to coastal or river flooding and will be guided by the precautionary principle’¹.

The Council’s Local Plan will identify proposals for new flood prevention. Within the Council’s Capital Expenditure Plan 2005-2008, flood alleviation is included as a Council priority. The longer term budgetary implications are reported regularly to the Flood Alleviation Sub-Committee.

The Water Environment and Water Services (Scotland) Act 2003 places a broad duty on the Council, as a “responsible authority” to promote sustainable flood management and act in a way best calculated to contribute to the achievement of sustainable development. Under the Controlled Activities Regulations that apply to works and infrastructure in and around the water bodies and licences will be required for much of the Council’s flood alleviation work. SEPA charge for licences. More detail is contained in Section 13 of this report.

¹ Structure Plan 2000, Moray Council

5. KNOWN FLOODING PROBLEMS

5.1 Aberlour

Frequent intense rainfall events have resulted in runoff overtopping the existing Flood Prevention Scheme, comprising grilles, ditches, drainage channels and the like, and flowing down the road. Improvement works have been carried out in the area, however it is likely that a supplementary scheme is needed in conjunction with Scottish Water. This is currently being investigated.

Several properties located in High Street and The Square have flooded following various rainfall events. Currently runoff discharges into the public combined sewer that has insufficient capacity. A solution will be investigated and possibly carried out by The Moray Council and Scottish Water.

5.2 Buckie

Rathven Burn runs through Buckie in a narrow channel. This stretch of the burn is under capacity and during high flows overtops and floods property near Rathven Street. A review of the business case for the Buckie South Flood Alleviation Scheme is required.

5.4 Dallas

Insufficient channel and bridge capacity at Black Burn Bridge on the road between Branchill and Black Hillock causes high flows to flow out of the bank and flood two nearby properties. In the village of Dallas, the River Lossie overtops its banks during high flows and floods property in Dallas on the Hatton to Dallas road. Resolution would require a Flood Prevention Scheme.

5.5 Darkland, near Lhanbryde

Annual maintenance of the 600mm-diameter culvert and catchpits mitigates repetition of the previous problems.

5.6 Drybridge

Localised flooding has occurred in Drybridge when the Burn of Buckie is in spate and exceeds the hydraulic capacity of the channel downstream of the bridge at the old Post Office. Floodwater flows northwards, parallel to the burn and floods two adjacent properties. The Council carries out routine maintenance to remove debris and vegetation from the burn to keep the bridge span clear. A minor Flood Prevention Scheme is programmed to be carried out in 2008-09, and improvement works have been carried out to remove a possible restriction located upstream of the bridge.

5.7 Dyke

Maintenance of the improvement works carried out along the Muckle Burn's banks, mitigates repetition of floodwater flowing over agricultural land and into the village from the west side and flooding low-lying properties. This is complemented by regular inspection and maintenance of the Little Burn that runs through Dyke.

5.8 Elgin/New Elgin

The Tyock Burn is piped in two sections through New Elgin and the road drainage discharges into it at various locations. During high flow, debris and vegetation block the culvert inlets and water in the burn backs up. This causes the road drainage to back up and flood surrounding roads and properties during extreme conditions. The debris and vegetation is cleared from the burn through routine maintenance and monthly inspections of the culvert inlets are carried out to mitigate this flooding risk. The culvert starting at ASDA was cleaned out in 2007 and this has helped to reduce the frequency of flooding on Edgar Road and surrounding areas. The residual problem is flash flooding surcharging Scottish Water's drainage system.

The River Lossie through Elgin has, in the past, burst its banks in several places during very high flows and this has caused flooding of property. The main areas at risk are 3 Rivers Walk, Chanonry, Grampian Road

and Boroughbriggs, although there has been no further instances of this during the period covered by this report.

Jock Inkson's Brae's watercourse has, in the past, flooded Oldmills Road during high flows in the River Lossie. No properties were flooded, however, this did restrict vehicular access. The culverted stretch of watercourse will be reviewed at the detailed design stage of the Elgin Flood Prevention Scheme.

5.9 Earlsmill

Maintenance of the improvement works carried out along the Muckle Burn's banks and at Millburn Cottage mitigates repetition of floodwater surrounding low-lying land and inundating properties.

5.10 Findochty – Strype Burn

The headwall was replaced and a new outfall built. The new outfall was extended to the foreshore to prevent build up of shingle. Annual maintenance mitigates repetition of previous problems. A detailed inspection using CCTV survey has been carried out with the resulting works given a low priority and placed on the waiting list for future years.

5.11 Fochabers

During high flows, Fochabers Burn blocked at West Road Bridge culvert and overflowed onto Spey Street. The floodwater then flowed down into Lower Spey Street and flooded several properties. Routine inspections and maintenance are carried out to mitigate this flood risk.

5.12 Fogwatt

The culvert on the Fogwatt to Lhanbryde Road had insufficient capacity during flood flows and combined with a tendency to block the Longmorn Burn flooded properties. A new culvert was built and maintenance will be carried out according to the Council's duties under the 1997 Act. There have been no further instances of flooding since this work was carried out. Inspections are carried out regularly to monitor the situation.

5.13 Forres

Several sections of the Burn of Mosset through Forres are very narrow and at high flows it overtops and floods properties. The Burn of Mosset Flood Alleviation scheme has been confirmed by the Scottish Ministers and construction is programmed to start late in 2007 with a 100-week construction period.

An existing piped watercourse, located through the Pilmuir area, has flooded off Balnaferry Road and several properties in Balnaferry Road and Pilmuir Road West. The piped watercourse consists of old field drains that are too small, in poor structural condition and have inadequate gradients. Maintenance and improvement works are carried out to try to alleviate known problems, but a solution will depend on the Forres (River Findhorn and Pilmuir) Flood Alleviation Scheme.

5.14 Garmouth

During high tides, the level in the Black Burn causes water to rise through the gullies and flood the B9015 Rothes – Garmouth road. If high tide and high flows in the River Spey coincide, then the road is flooded by the Black Burn and properties in Garmouth flooded from the River Spey. Deterioration of the left bank of the River Spey at Queenshaugh has resulted in increased frequency of flooding to the Garmouth and Kingston Golf Club and flooding to Willow Cottage, and threatens other properties. The breach in the riverbank is being assessed by the riparian owner. Work to replace an inadequately sized culvert is to be carried out to alleviate flooding. A pre-feasibility study is currently being carried out to establish whether there may be a business case for a Scheme.



5.15 Grange Crossroads

Heavy rain has caused three houses at Gallowhill Terrace (on the road from Keith to Cullen) to almost flood. Improvement works have been carried out to stabilise the road to prevent the burn undermining the road and causing the road to collapse into the burn.

5.16 Keith

Runoff from a field above Keith Builders Merchants floods the adjacent access road and then surrounding properties. Investigation into this problem has continued but no suitable, economic scheme has been identified.

5.17 Lhanbryde

Lhanbryde Burn has a history of flooding within the village. Ongoing maintenance problems include debris and sediment building up in the burn. Routine inspections and maintenance mitigates this flooding risk but the situation is much less serious following the Lhanbryde Flood Alleviation Scheme.

5.18 Newmill

Properties in Newmill have a history of flooding from runoff from land above the village and poor drainage. In previous years, drainage ditches were enlarged and cleaned out and routine inspections and maintenance of these ditches helps prevent properties from being flooded. An inspection of the existing piped watercourse in Soutar's Lane is required to try to establish further flood mitigation works.

5.19 Portgordon

An inadequate existing piped watercourse in Richmond Place has caused flooding of gardens and properties. To prevent the old railway line ditch overtopping and flooding Gordon Street, a 150mm diameter culvert (under the A990 at the east end of the village) has been replaced with a 600mm-diameter culvert. In addition, improvement works have been constructed in Richmond Place to upgrade an existing pipe.

Stewart Street floods when there are high tides and large sea swells, threatening a number of properties. Seawater entered a property once in the period covered by this report. The main problem is with the wave action caused by cars driving along the flooded street. The Council is considering ways to close the road earlier to minimise this risk.



5.20 Rafford North

The burn through Rafford has a history of flooding properties downstream of the B9010 Rafford culvert. During high flow, the 1.2m diameter culvert runs at full bore and the downstream channel does not have the capacity for this and the surrounding low lying properties flood. This problem will be resolved by the Forres (Burn of Mosset) Flood Alleviation Scheme.

5.21 Rothes

Several sections of the Burn of Rothes have little protection from flooding and at high flows the burns overtop and flood property. Maintenance works have been carried out to reinstate floodbanks.

Properties south of Rothes and in High Street / Land Street area have a history of flooding as a result of high runoff from land above the village and poor drainage. Drainage ditches have been enlarged and cleaned out.

Routine inspections and maintenance of these ditches and the various watercourses in Rothes mitigate flooding, and the Council is progressing a Flood Alleviation Scheme for Rothes.

6. FLOODING EVENTS NOVEMBER 2005 – OCTOBER 2007

The main flood events, based on the information available through reports to the Council, are detailed below, beginning with the most serious event that affected Rothes in July 2007. There might have been minor instances of flooding that went unreported.

3 July 2007, Rothes

Heavy rainfall/flash flood conditions caused the ground to be saturated on the hill above Rothes, causing a significant overland flow. The Scottish Water combined sewers could not cope with the volume of water, resulting in localised flooding of roads and properties. The burn at the rear of the Old Toll house (South of Rothes) brought down debris that blocked a culvert and led to flooding that required closure of the A941 for over 24 hours. Council workmen and contractors were deployed to locations in Rothes to provide sandbags at key locations and install flood guards to Council properties. In all, a small number of homes and out-houses flooded.



A941 South of Rothes

Aberlour

Flooding has occurred in Aberlour on a number of occasions during 2006 and 2007, caused by short, intense storms. The existing flood defences have been assessed for the Scottish Government and found to be sufficient for 1 in 200 year events. However, reports from local residents suggest otherwise. These events prompted Richard Lochhead MSP to call a public meeting on the 27 August, where various issues were discussed among the various authorities and local residents, resulting in agreed actions.

Work to replace the existing culvert grilles, with an improved design has been placed on the waiting list for inclusion in the 2008/09 Flooding Revenue Programme. This will reduce blockage risk.

Garmouth

Flooding occurred in Garmouth on several occasions during 2006 and 2007. These events were mainly caused by deterioration of the west bank of the River Spey (see page 12).

Note: This section covers specific flooding incidents. Other flooding problems are covered in section 7 and dealt with under the flooding revenue budget.

7. MEASURES TAKEN SINCE PREVIOUS BIENNIAL REPORT

7.1 Maintenance Work

Most of the flood problems occurred in the rivers, burns and piped watercourses that flow through urban areas. Routine maintenance between November 2005 and October 2007 was carried out as listed below: -

Watercourse	Work
Garmouth South Road Drain	Installation of a new soakaway at South Road.
Freuchny Burn, Buckie	Removal of overgrown vegetation from grille
Burn of Rothes	Removal of alluvial deposits. General clearance of debris.
Rear of Old Toll House, Rothes	Clearance of silt traps and installation of new grille to existing headwall.
Burn of Buckie	General clearance of debris from watercourse
Burn of Letterfourie, Drybridge	Removal of fallen tree branches and debris from burn
Black Burn (Garmouth)	Removal of debris and potential blockages.
Rathven Burn, Buckie	General clearance of overhanging vegetation and debris
Muckle Burn, Dyke	Removal of fallen trees
Dufftown Land Drainage	Clearance of outlets and grille and removal of overgrown vegetation
Loch Oire's Channel	Removal of debris and potential blockages.
Burn of Mosset	General clearance of shopping trolleys, fallen trees and potential blockages
Aberlour	General maintenance of Flood Prevention Scheme and removal of fallen trees and overgrown vegetation from watercourses. Repair to slipped banks on Hatton Road.
Burn of Cullen	Repositioned shingle bank of foreshore to avoid burn backing up.
Drainer Burn, Kingston	General clearance of debris and overgrown vegetation.
Regent Court, Keith	General clearance of debris and overgrown vegetation. Repairs to headwall and piped section.
Strype Burn	Removal of debris and potential blockages from watercourse.
Tyock Burn, Elgin	General clearance of debris and overgrown vegetation.
Lhanbryde Burn	Removal of debris, trees and overgrown vegetation.
Portgordon Watercourse	Clearance of build-up of shingle from outfall
Craigellachie Watercourse	Clearance of overgrown vegetation
Longmorn Burn	Removal of alluvial deposits from culverts and general clearance of debris
The Poopie	Clearance of debris from grille
Little Burn, Dyke	General clearance of overhanging vegetation and debris
Fochabers Burn	General clearance of vegetation and debris
Blairnamarrow near Tomintoul	Installed galvanised steel baffles to aid the passage of migratory fish to upstream spawning grounds.
Newmill	General clearance of ditches and grills, excavated collapsed ditch and cleared field inlets
River Isla	General clearance of fallen branches, trees and debris etc
River Lossie	Clearance of overhanging vegetation, debris, shopping trolleys, fallen trees, broken branches and blockages on various occasions. Removal of alluvial deposits at Bishopmill Bridge. Spraying of invasive species in catchment.



River Lossie Bank Strengthening



Headwall repairs in Keith

7.2 Emergency Works (June 2007 Flood Incident)

Additional emergency and maintenance work was carried out during and following the July 2007 event as follows: -

Watercourse	Work
Aberlour FAS	Repairs to existing grilles after flood of July 2007
Rear of Old Toll House, Rothes	Removal of deposits from silt traps and headwall after flood of July 2007.



Rear of Old Toll House, Rothes

7.3 Funding

The Council was provided with additional funding from the Scottish Government for expenditure on Quality of Life projects. During the financial year 2005-06 there was an additional £52,000 from Quality of Life funding, allocated to flood prevention work. Projects funded during this period are not specifically identified but are included in the section that follows.

7.4 Flood Mitigation Measures

Work carried out on rivers for flood mitigation measures from November 2005 to October 2007 is outlined in table 6.1. The projects stem from known flooding problems and represent works of more significance nature rather than minor works.

Watercourse	Location	Work	Reason
Longmorn Burn	Longmorn	Construction of new Flood wall upstream of Cottages Total expenditure = £49.7k.	Previous work had reduced risk of flooding, however a floodwall was required to ensure floodwater did not get on road and flood properties from the roadside.
River Lossie	Rear of Johnstons Mill	Installation of soil anchors to stabilise riverbank. Cost: £57,000.	Instability of bank caused by erosion to toe.
Mosset Burn	Marcassie Cottages	Installation of new flood bypass channel. Total expenditure = £16.9k.	Property at threat of flooding
Land Drainage	Victoria Terrace, Aberlour	Installation of new Linear drainage channel outside Parish Church Total expenditure = £17.8k.	Prevent floodwater entering Church. Provide drainage for future roads drainage works.
Back Burn	Garmouth	New twin box culvert construction started in October 2007. Estimated cost = £55,000	Existing pipe culvert caused constriction to flow during low return period flooding, and causes flooding to Garmouth and Kingston Golf course and surrounding properties.
Tyock Burn Culvert	Elgin	Removed 600 tonnes of contaminated sediment and debris from culvert and carried out CCTV Survey/Inspection. Total expenditure = £238.4k	Structural assessment and frequent flooding of Edgar Road.



Tyock Burn culvert cleaning



Longmorn Flood Wall

7.5 Flood Prevention Management

Assessment of Watercourses by Risk Assessment

Revenue works are prioritised using a method of assessing watercourses by risk assessment. Risk is assessed as the probability of an event occurring and the consequences of such an event. If works are necessary, they are prioritised based upon risk and estimated cost. Works costing up to £5,000 are often carried out within the existing financial year from funds reserved for reactive work. Works costing between £5,000 and £20,000 are placed on a reserve list for revenue works and would normally be carried out the following financial year. Works in excess of £20,000 may require a Capital funding and might be included in year three of the Capital Plan depending on risk and available resources.

Flooding Advice – Flood Risk and Project Information

Flood Reports (89 No.) were issued giving advice to home owners and potential purchasers regarding flood history; flood risk; and proposed flood prevention schemes and their programme. An example of a Flood Report is shown at Appendix I.

Flooding Advice – Developer’s Proposals and Advice on Planning Applications

Advice was given to the Transportation Manager on (141 No.) planning applications regarding sustainable urban drainage proposals (SuDS); drainage and/or flood impact assessment; and, flood history and flood risk.

Flooding Advice – Flooding Problems

A total of 104 flooding problems were investigated. An assessment is carried out to identify if the problem is the Council’s responsibility and actions follow as set out below.

If the matter is the Council’s responsibility, an assessment is made. Minor works are allocated a priority and dealt with as ad-hoc maintenance work. Problems that were more serious are considered as schemes for potential inclusion in the Council’s Capital Plan. Responses are sent to the person(s) reporting a problem, indicating that either:

- The problem is not the Council’s duty, reasons given and advising on what action may be taken;
or
- The problem is the Council’s duty and explaining the council’s proposals.

PROPOSALS TO MITIGATE

8.1 Mitigation Measures

Aberlour

General maintenance of the Flood Prevention Scheme (made up of grilles, ditches, drainage channels etc). Further to this, new grilles are required which are designed to reduce blockage risk.

Drybridge

The Burn of Buckie has a history of flooding through Drybridge. It overtops downstream of the Post Office. A capital works Flood Prevention Scheme is programmed for 2008-09.

Garmouth

It is proposed to include investigation of the drainage system through the village in the Garmouth Flood Alleviation Scheme A preliminary economic assessment is underway to establish whether a business case exists for a Scheme for Garmouth and Kingston

Keith

Historically, runoff discharges from a field above Keith Builders Merchants and floods the adjacent access road and surrounding properties. To date no design solution, affordable under the Revenue budget, has been established that is acceptable to affected landowners and does not have a detrimental effect downstream.

Keith

Runoff from the golf course discharges into a ditch at the rear of Regent Court. The ditch overtops during heavy rainfall events and floods several properties in Regent Court. A Capital scheme has been promoted to investigate and design a solution to alleviate this problem.

Longmorn

It is proposed to divert the existing BT cable downstream of Longmorn culvert into the deck of the culvert. Currently the cable is not structurally supported and is at risk of failure during high flows.

Newmill

An investigation is planned to identify improvement works on the existing drainage system in Soutars Lane

Forres

Further works including CCTV surveys, jetting, repairs and improvements, to the existing drainage system in Pilmuir are required, however this problem will be reviewed in conjunction with the Forres (River Findhorn and Pilmuir) Flood Alleviation Scheme.

Rafford North

The volume of water coming into the village through the B9010/110 Rafford culvert needs to be reduced or the channel capacity downstream needs to be increased. Works to divert excess flow into a new culvert are included in the Forres (Burn of Mosset) Flood Alleviation Scheme.

River Findhorn

Along the River Findhorn between the railway bridge and the A96 Findhorn Bridge there are several sections of the flood bank which are lower than the upstream and downstream flood bank levels. These sections pose a threat to low-lying property on the west of Forres. The works will be carried out as part of the Forres (River Findhorn and Pilmuir) Flood Alleviation Scheme.

Portgordon

Supplementary road drainage works are required to compliment the work carried out in previous years.

CCTV Contract

Approximately 15 culverts require inspection to establish their structural condition and to identify any blockage risks. A term contract for a continuous programme of CCTV is being considered.

River Lossie

Several erosion problems are currently being monitored pending the Elgin Flood Alleviation Scheme.

8.2 Inspection and Maintenance Work

Maintenance work is carried out throughout the year. Watercourse inspections are used to identify whether maintenance work is needed and where. Rivers and burns flowing through urban areas, which have a high potential for flood damage, are prioritised in the maintenance and inspection regime. Grille inspections and cleansing throughout the year mitigate flooding where blockage causes a flood risk. The watercourse and grille inspection regimes are detailed below:

Table 8.1: Watercourse Inspection Regime

Watercourse	Settlement	O.S. Ref. U/S End	O.S. Ref. D/S End	Length (km)	Frequency of Inspection
River Lossie	Elgin	202618	235627	11.60	Annual
	Dallas	126526	120517	1.30	Annual
Tyock Burn	Elgin	210616	235627	2.76	One Month
Linkwood Burn	Elgin	229621	236625	0.82	Annual
Lhanbryde Burn	Lhanbryde	273609	271620	1.51	3-6 Months
Black Burn	Miltoduff	185602	178598	0.90	Annual
Longmorn Burn	Longmorn	237582	232582	0.52	3 Months
	Fogwatt	236568	238573	0.58	3 Months
Land Drainage	Fogwatt	236567	237574	0.63	3 Months
Burn of Mosset	Forres	039580	034594	1.99	6 Months
Rafford Burn	Rafford	060562	061561	0.25	Annual
Little Burn	Dyke	985579	991583	0.70	Annual
Kinloss Burn	Kinloss	074618	061617	1.72	Annual
Burn of Rothes	Rothes	272490	282499	1.52	6 Months
Back Burn	Rothes	274495	282499	0.77	6 Months
Land Street Drain	Rothes	278487	279485	0.19	6 Months
Mill Burn	Rothes	279485	281486	0.25	6 Months
Black Burn	Rothes	278483	279485	0.22	6 Months
Land Drainage	Rothes	271487	278483	1.24	6 Months

Table 8.1: Watercourse Inspection Regime

Watercourse	Settlement	O.S. Ref. U/S End	O.S. Ref. D/S End	Length (km)	Frequency of Inspection
Aberlour Flood Prevention Scheme	Aberlour	267426	267426	various	3 Months
Drainer Burn	Kingston	334654	340653	0.58	Annual
Black Burn	Garmouth	342645	341560	0.53	Annual
Fochabers Burn	Fochabers	350580	341588	1.27	6 Months
Loch Oire Drainage Channel	Lhanbryde	283616	281614	0.26	6 Months
Muckle Burn	Earlsmill	969558	970562	0.42	Annual
	Dyke	984574	989577	0.60	Annual
Richmond Place Watercourse	Portgordon	398641	400644	0.36	6 Months
Slack Burn	Portknockie	486682	493681	0.71	6 Months
The Poopie	Findochty	463678	463679	0.06	4 Months
Burn of Cullen	Cullen	506672	506673	0.09	Annual
Land Drain	Kingston	335654	340653	0.45	Annual
Burn of Rathven	Buckie	446654	433662	1.85	6 Months
Burn of Buckie	Buckie	421647	419656	1.46	Annual
Burn of Letterfourie	Drybridge	436624	434625	0.31	Annual
River Isla	Keith	425504	426512	1.42	Annual
Pottie Burn	Bogmoor	335658	335588	0.41	Annual

Table 8.2: Grille or Outlet Inspection Regime

Watercourse	Grille or Outlet	O.S. Reference	Frequency of Inspection
Freuchny Burn	Opposite Freuchny Depot, Buckie	434656	Annual
Strype Burn	Broad Hythe, Findochty	461678	2 Months
Darklands Culverts	Catchpit and culvert at Darklands	268621	3 Months
Land Drainage	Playing field, Newmill	435528	3 Months
Playing field drainage	Dufftown	321402	Annual
Tyock Burn	Grilles along Tyock in New Elgin	214618	One Month
Land Drainage	Ditch, Garmouth	335641	6 Months
Foths Burn	Glenlossie Distillery, Thomshill	212572	Annual

Where the watercourse and land at risk of flooding is owned by the same person it is the riparian owner's responsibility to carry out maintenance work on the watercourse. The Council can issue a request for the work to be carried out but cannot enforce it.

8.3 Procurement

It is planned, for Best Value and Efficient Government reasons, to review procurement. A term contract for maintenance works is under consideration. It would include improvement schemes, emergency works and specialised works such as CCTV surveys, jetting and the like. To ensure urgent works can be attended at short notice response times will be set.

Currently the contractor carrying out maintenance works, Morrison Construction Ltd, is a partner in Moray Flood Alleviation. They were awarded the Construction Contract in November 2003. When specialist works such as tree trimming or removal is required separate quotations are sought.

9. MORAY FLOOD ALLEVIATION SCHEMES

9.1 Introduction

Major floods in July 1997 prompted The Moray Council to promote flood alleviation schemes for Elgin, Forres and Lhanbryde.

Previous Biennial Reports described the background to procurement of the services of a consultant and contractor to assist in delivery of flood alleviation schemes. The team in place now includes the Council together with consultants Royal Haskoning and contractors Morrison Construction. The team is known as "Moray Flood Alleviation" and they work together in an integrated way, co-located at offices in The Wards, Elgin, but with most staff in other offices of the consultant and contractor

The team is supported by a number of other organisations providing specialist services such as ground investigation work, cost consultants and laboratory services. As well as the Council's Consultancy Service, which leads the project, several other parts of the Council are involved closely in the team. These include the Planning, Economic Development, Environmental Health (contaminated land), Roads, Estates, Health and Safety, Legal and Finance Services. Many other parts of the Council are engaged as consultees.

By engaging this wide range of expertise the Council aims to reduce difficulties that can be foreseen, by, for example, designing out construction problems early by utilising the contractor's expertise at an early stage in the process. This is very helpful in dealing with new health and safety regulations.

The project initially envisaged the three schemes as mentioned above, but the contracts were written to enable flexibility that allowed other schemes to be added. Following the severe flooding of Rothes in November 2002 and an outline assessment of the business case, the Council approved progressing a major scheme for the town. There are other small capital schemes in the programme being delivered with by Council staff.

Progress on each of the major schemes is described below.

9.2 Lhanbryde Flood Alleviation Scheme

The Lhanbryde scheme is complete and operational, providing security for those previously at significant flood risk in the village.

9.3 Elgin Flood Alleviation Scheme

Since November 2005, when a detailed programme was approved by the Flood Alleviation Sub-Committee, there has been very good progress on this, the largest of all of the schemes. A number of key strategic decisions led to reducing the scope of the scheme to reduce cost and improve the business case. Scheme proposals were placed on show at a 2-day public exhibition in Elgin in April 2007 and the Council approved the Flood Prevention Order in July 2007, subject to consultation with the Scottish Government.

The Council held back publishing the Order until some technical issues were resolved and the Scottish Government accepted the business case, on which grant funding depends. The first notice appeared in the press on 26 October 2007, commencing a three-month period for objections.

A planning application is scheduled to follow within one month of the Flood Prevention Order. Detailed design will commence soon afterwards so that there are no undue delays should the statutory processes go smoothly.

The scheme involves creating a sustainable flood corridor through Elgin by providing the river with more space while protecting properties as far as practicable. It requires removal of some homes and businesses and the Council is working with affected parties to minimise cost and disruption.

A programme for detailed design will be submitted to the Flood Alleviation Sub-Committee.

The scheme is estimated to cost around £84million and the Scottish Government provides a grant of up to 80% for this and other eligible schemes.

9.4 Forres (Burn Of Mosset) Flood Alleviation Scheme

Since the previous Biennial Report, this scheme has progressed through the statutory processes, including planning hearing and Public Local Inquiry (for the Flood Prevention Order). Detailed design is complete and contractual and construction management arrangements and budget costs concluded for approval by the Council. Cost information was submitted to the Scottish Government and award of grant anticipated during November 2007.

The scheme comprises three elements:-

- Flood relief channel at Rafford
- Flood storage reservoir at Chapelton
- Bank works in Forres

It protects around 800 homes and businesses from flooding from the Mosset Burn and tributaries and will cost around £21million in total, of which construction is estimated at £13.5million, including risk.

Construction is scheduled to start in late November 2007 and the 100-week contract planned for completion in October 2009.

9.5 Forres (River Findhorn & Pilmuir) Flood Alleviation Scheme

The level of flood protection from the River Findhorn is around one in 25 years – much higher than for the other study areas in Moray. However flooding from the River Findhorn is potentially more severe and life threatening. Flood flows on the River Findhorn are among the highest of UK rivers.

The Council approved a preferred strategy early in 2005 that is broadly similar to the Elgin model – a series of set-back embankments. A number of sub-options have been evaluated and it is planned to promote a Flood Prevention Order and planning application in spring 2008.

The embankments, set back where possible while protecting around 800 homes and businesses, will require raising the A96 trunk road. There are a number of environmentally sensitive issues and the scheme has to manage groundwater flows. Some small communities such as Broom of Moy cannot be protected by the scheme because it is not economically viable to do so, even if it were to be practicable. Nevertheless, the scheme is being designed so that flood risk to these communities is slightly reduced, so that they are no worse off than at present.

The scheme includes measures to deal with the long-standing fluvial/pluvial and groundwater flooding problems in Pilmuir.

The cost of the scheme is currently estimated at around £30million.

9.6 Rothes Flood Alleviation Scheme

Three burns that flow through or very close to the town threaten Rothes. All of the burns are very steep, so there is little opportunity for flood storage and no great potential for diverting floodwaters. Hence, floodwaters will have to be contained within improved watercourses by floodwalls and channel improvements, set back where possible so that burns can spread out over the floodplain. This also helps reduce wall and embankment heights.

The scheme is now at detailed design stage with a construction start scheduled for April 2008, with construction to be let as three distinct phases (Back Burn, Black Burn and Rothes Burn). Statutory processes, however, have not been concluded and while a major effort is being made to resolve objections to the Flood Prevention Order, a Public Local Inquiry early in 2008 might be required. This would delay a start to construction.

Overall, this scheme has made remarkable progress since initial studies in 2003, following the November 2002 flood. The estimated cost is in the order of £21million.

9.7 Garmouth Flood Alleviation Scheme

A pre-feasibility Study is currently being undertaken by consultants Royal Haskoning to establish if further work can be taken forward economically.

10. COASTAL PROTECTION

10.1 Responsibilities

Coast protection works are often required to prevent or mitigate flooding of non-agricultural land where there is a risk of flooding due to inundation by the sea. The flooding can be the result of waves overtopping or bypassing existing sea defences during storm events or a breach in the defences due to erosion damage. The worst effects occur when a storm surge coincides with unusually high tides. Climate change predictions also state that such events will occur more often and become more severe in the future.

The coast protection works are normally carried out under powers given by the Coast Protection Act 1949. This is an enabling act giving the Council, as coast protection authority, the power to carry out such coast protection work as necessary for the protection of the coastline. Coastal protection schemes have to be promoted under flooding legislation and funding arrangements are identical.

The Moray Council also has a duty to assess and maintain watercourses in accordance with the Flood Prevention and Drainage (Scotland) Act 1997). The duties under this act can apply to tidal/coastal flooding as well as fluvial flooding and Sea Defences are provided where necessary to prevent or mitigate flooding.

10.2 Inspection/Monitoring

Moray's coastline is approximately 89km long and various sea defences have been constructed at towns, villages and harbours over a combined length of 14km. The remaining frontage has natural defences consisting of around 17km of cliff and rocky foreshores, shingle ridges, 49km of sand dunes and earth embankments and 9km of salt marsh make up the rest.

Monitoring of the coastline is carried out by regular inspections of the existing "hard" sea defence structures together with the natural "soft" defences such as sand dunes, shingle banks and earth embankments. A programme of monitoring the condition of the existing sea defence structures is in operation.

Regular inspections are also carried out at specific locations that have been identified as being at risk from erosion or flooding. Examples of this are at the end of the existing sea defences at Buckie, Portgordon and Burghead, at the mouth of the River Spey at Kingston and Tugnet, and at Findhorn.

10.3 Problems and Issues

Coastal erosion is a natural process of the shoreline and the natural defences are constantly changing, including eroding cliffs, longshore transport of beach material and corresponding recession or accretion of the shingle ridges and sand dunes. Erosion rates are variable depending on type of material and exposure of the coastline and new material is supplied to the beaches from erosion of the cliffs, dunes and ridges and the deposition of fluvial sand and gravel from river outlets. Some sections of coastline have highly mobile natural defences, which if they were to be breached would present a high risk of flooding. The shingle ridges at Kingston and the sand dunes at Findhorn are good examples of this. Extensive works have been carried out in the past at these sections of coastline by the provision of groynes and revetments at Findhorn and protection works at the mouth of the River Spey, including new revetments on the Tugnet side and shingle realignment to the Kingston side.

Maintenance of the existing sea defence structures forms a large element of the annual revenue budget. These works are necessary to extend the life of these assets and ensure the appropriate level of protection is maintained.

10.4 Schemes

Kingston Coastal Protection Scheme

Consultants Jacobs reported that there was a business case for constructing an offshore reef at Kingston to protect the village from coastal flooding in storms. The Council considered that the report, which recommended further studies, was unduly optimistic, having failed to consider environmental risks sufficiently, and having overestimated flood damages. Following consultation with key environmental regulatory bodies, the Flood Alleviation Sub-Committee agreed to recommend to Environmental Services Committee that the scheme should be taken no further. This was because the costs involved were high and the chance of success were limited.

The beach is regularly monitored and has been relatively stable in recent years. Monitoring every three months and after storm events will continue, and if the situation changes, it will be reported to Council Committees.

Shore Street, Lossiemouth

Improvement works are planned for the rock revetment at Shore Street, Lossiemouth. There have been problems of flooding to businesses at the east end of the revetment where substantial wave overtopping has occurred in the past. The general condition of the revetment needs to be upgraded to provide protection to businesses nearby. Preliminary works to improve the profile of the revetment were completed in June 2005. It was anticipated that works would start to the main revetment in 2009/10.

11. ENVIRONMENTAL AND SUSTAINABILITY ISSUES

Sustainability and sustainable development is all about making sensible use of resources. It is about development, which meets the needs of the present without compromising the ability of future generations to meet their own needs, looking at social, economic, environmental and quality of life factors.

The Local Government in Scotland Act 2003 places a duty on local authorities to promote sustainable development. In relation to the water environment, local authorities have a duty to promote sustainable flood management and to act in a way best calculated to contribute to the achievement of sustainable development (Water Environment and Water Services (Scotland) Act 2003).

Flooding, environmental and sustainability issues are high up on the agenda whether it be carrying out work on a watercourse or developing a major scheme. The Council works closely with SEPA and SNH to achieve the best environmental protection and to help mitigate any conflicts with the environment. When work is being prepared consideration is given to SEPA's Controlled Activities Regulations 2005, and early stage discussions are held with a local SEPA representative to discuss the best solution. Special requirements of SEPA and Scottish Water are included in contracts, and SEPA must now licence many works affecting water bodies under the Controlled Activities Regulations 2005. This applies to all Schemes and many maintenance activities and is referred to in more detail in Section 13 of this report.

Further guidance from the Scottish Government is awaited on sustainable flood management.

To manage better the effect of development on the aquatic environment, the Council encourages the use of Sustainable Urban Drainage systems (SUDS) at appropriate new developments by the incorporation of Best Management Practices (BMPs) for dealing with surface water run-off. The employment of BMPs will be of particular importance for developments within or affecting areas of flood risk.

The Council's policy on flood management has several main targets. The first is to avoid or manage the threat of flooding and to minimise land allocations at risk of flooding. The second is to safeguard floodplains and low lying land in settlement plans from inappropriate development and ensure, where possible, that they can flood naturally. Thirdly, the Council will embrace a preference for the use of soft engineering solutions to flood prevention where practicable and affordable. In doing so, the Council is mindful of social and economic sustainability, as well as environmental factors.

Developing major flood alleviation schemes in a sustainable manner has been a consideration for some years. Each scheme undergoes a sustainability assessment as part of the evaluation process. However it is simply not possible to alleviate flooding of communities such as Elgin, Forres and Rothes by what is often referred to as sustainable flood management – i.e., land use changes alone, without removal of communities from the flood plain. The Council aims to utilise all means of mitigating flooding of non-agricultural land including land use planning and opportunities to restore flood plain, while recognising that engineering solutions have a significant role to play.

Where possible the Council would like to meet local needs locally. The Council will give all sections of the community empowerment to participate in decision-making through public meetings. The Moray Flood Alleviation Schemes have involved public meetings and exhibitions to help inform the community of developments in the schemes and to allow the public to add input into the decision-making process. Ultimately flood alleviation measures carried out in a way that protects and enhances the environment contributes to the economic and social wellbeing of the community, and therefore to the quality of life of the people of Moray.

12. INSURANCE

With many parts of Moray subject to flood risk, people and businesses face the prospect of being unable to obtain insurance for their home and contents, or having to pay very high premiums and excesses. This adds to the already considerable anxiety that flood risk creates.

The Council tries to help residents and businesses in several ways.

Flood Risk Assessments

Insurance companies now have fairly detailed flood risk maps for England and Wales, but there is no equivalent for Scotland. That means that they take a very conservative, broad brush approach to flood risk areas rather than the individual postcode assessment they can do south of the border.

The Council often receives telephone calls, letters and e-mails from people who know that they have a very low flood risk but find their postcode means that premiums are high or insurance difficult to obtain. We reply to these enquiries stating the level of flood risk so that our letter can be copied to insurance companies.

Even those who are at flood risk may find it worthwhile contacting the Council if they are having difficulties with home insurance. We cannot promise you will get cover, but we can quantify the risk and let insurers know what we are doing about it, for example, by carrying out maintenance works or constructing a flood alleviation scheme. That way insurers can take a view and reconsider their decision.

Insurance companies do not normally withdraw cover from existing customers. The difficulty is often when there are new occupants. At that stage, insurance companies have been known to refuse to cover properties at flood risk or impose high premiums and/or excesses. The Council is contacted regularly by prospective home buyers and sellers and we are happy to write to them indicating the level of risk to the property, and indeed what we think future risk will be.

Working with the Insurance Industry

The Council has contacted the insurance industry representative body, the Association of British Insurers (ABI) to keep them informed of developments to alleviate flooding in Moray. For example, we have advised them that the Lhanbryde Flood Alleviation Scheme is now operational, providing a protection level of at least one in 100 year flood event, plus an allowance for climate change. This is well above the insurance industry's threshold of one in 75 years so people should see reductions in premiums, as well as peace of mind.

Once we have finalised programmes for schemes we will be preparing an information pack for ABI that tells them what we intend to do about flood risk and when we hope to do it.

13. WATER FRAMEWORK DIRECTIVE

The European Parliament and Council made the Water Framework Directive (WFD) in 2000. Such directives need to be incorporated into each Member country's legislation and in due course, the Scottish Parliament passed the Water Environment and Water Services (Scotland) Act 2003. Its implementation is staged over a number of years and increasingly its provisions will impact on flood alleviation schemes and maintenance of watercourses.

The legislation is in two parts, and Part 1 – Protection of the Water Environment is the more relevant to flood alleviation. The Act deals with water supply and use, water quality, including groundwater, protection of coastal waters and estuaries. Protecting and enhancing the water environment means considering aquatic ecosystems and associated terrestrial ecosystems depending upon them. The Act requires local authorities, as well as other bodies, to promote sustainable water use, including sustainable flood management. It also promotes contributing to mitigating the effects of floods and droughts.

This section of the Biennial Report does not go into every aspect of the Act. It concentrates on the more immediately foreseeable effects it will have on flood management, including maintenance works and construction and operation of flood alleviation schemes.

One of the key aspects of the legislation is the Controlled Activities Regulations 2005 (CAR) that affects many of the Council's activities, and virtually all flood alleviation works. Activities are categorised according to the level of authorisation required from SEPA, the regulatory authority. These levels are:-

- General Binding Rules
- Registration
- Licence
 - Simple Licence
 - Complex Licence

Activities fit into categories depending on what type and scale they are. There will be charges applied and a consultation period for the charging regime ends on 30 December 2005.

General Binding Rules (GBR) describes good practice for low risk activities. There is no need to consult SEPA beforehand and SEPA would only act if they identify problems during monitoring. No charges apply. The sorts of activities covered by GBR are some small ditch clearing or dredging operations, minor bridge works outwith the channel, boring under watercourses and protecting short lengths of banks.

For activities with predictable risks SEPA need only basic information about their location and nature. These activities require **Registration**. SEPA will assess only the cumulative impacts in the normal course rather than monitoring. There will be a registration charge. These activities include cleaning culverts, larger bank protection works and crossings over watercourses not involving in-channel or bank works.

A **Simple Licence** is adequate for larger scale works with higher risk, but where standard rules can be applied. There will be an application fee and in some cases subsistence charges. Examples are short lengths of sediment management, bank protection (short lengths only for "grey" banks), crossings involving no bed work and in-stream bridge works or other short length works such as walls.

A **Complex Licence** will be required for more complex, larger scale or higher risk operations, including construction, operation and maintenance of impounding structures other than small weirs and the like. Fees apply as above. Complex licences require detailed environmental assessments and the activities will be subjected to monitoring by SEPA.

Where a site contains several activities requiring licences it will be possible to apply for a combined licence and charges may be adjusted accordingly. Consultation documents on charging explain that charges are there to cover the costs of administering the system. The charges will represent an additional cost to the Council in flood alleviation schemes (capital cost) and operations and maintenance of schemes, as well as works on other watercourses. The Council will face further costs in the administration and preparation of applications for licences, including producing impact assessments and the like, and for ongoing monitoring. Quantification is difficult because only indicative charges for consultation purposes have been released.

There are, of course, many positive aspects of the WFD. It applies to everyone, so other individuals or organisations building flood banks or affecting flooding of others will now require licences where previously they had no restrictions. The principles of the WFD will help the Council promote sustainable development and ecological diversity – issues included specifically or by implication in the Corporate Development Plan 2004 – 2007.

Initial indications are that licences are very costly, and preparing applications and providing further supporting information even more so. CAR introduces a third major statutory process to developing Schemes. Hopefully CAR licences will become less bureaucratic, costly and time-consuming once SEPA gathers more experience in processing them.

For more information on the wider aspects of the WFD, including water quality classifications, river basin categorisation and management planning, visit SEPA's web site at www.sepa.org.uk.

APPENDIX I – TYPICAL FLOOD REPORT

The Moray Council

Environmental Services Department

Direct Services, Consultancy

FLOOD REPORT ON PROPERTY, Date

Address

1. HISTORICAL INFORMATION

The nearest watercourse to this property is the, which is about metres away. According to the inundation maps prepared after the floods of 1997 and 2002, this property was affected by the flooding. The depth of the flooding on the A96, which is adjacent, was around metres deep in

2. PRESENT FLOOD RISK

This property is at risk of flooding and, the studies carried out by Moray Flood Alleviation Group indicate a risk of fluvial flooding between once in and years.

This information is based on 2002 existing conditions in terms of hydrology and river defences. The risk of flooding is variable as conditions change with time. Furthermore, this does not include for other risks of flooding such as drainage/sewerage inadequacies and localised ponding of water.

3. WORKS THAT MAY AFFECT THIS PROPERTY

The Moray Council is promoting Flood Alleviation Scheme, which is programmed to commence construction in and should take around to complete. The project must satisfy the following criteria to qualify for a grant from the Scottish Government:

- the minimum level of protection against flooding provided by the project must be 1 in 100 years including an allowance for climate change;
- the project must have a positive economic assessment (benefits must be greater than damages);
- a successful Flood Prevention Order must be made (there should not be any substantiated objections to the proposals); and,
- the project will need Planning Consent.

While it is believed that the above criteria will be satisfied, no absolute guarantee can be given with respect to the project viability or its start date.

The Flood Prevention and Land Drainage (Scotland) Act 1997 placed the following duties on Local Authorities:

- Carry out watercourse inspections (to ascertain whether it is in such a condition which is likely to cause flooding of non-agricultural land);
- Cleanse, repair and otherwise maintain the watercourses and ancillary structures (where a failure to maintain is likely to result in flooding); and,
- Prepare and Publish Reports (a biennial report detailing measures taken and proposed to prevent or mitigate flooding, and details of incidents of flooding).

A programme of revenue works is drawn up annually and work is prioritised by risk assessment.

APPENDIX I – TYPICAL FLOOD REPORT**The Moray Council****Environmental Services Department****Direct Services, Consultancy****4. DISCLAIMER**

While every attempt has been made to ensure that the information provided is accurate, the following should be noted:

The records held by The Moray Council are not comprehensive and if there are no records available of flooding of a property, it does not mean that there is no risk of flooding,

Flood Risk Maps are created from information gathered on hydrology and mathematical hydraulic modelling. The models may then be calibrated against information such as the level of flooding known at a point or information from river gauging stations. There is therefore, a significant amount of unknown information, which could not be gathered in this process. It is believed, however, that the information that has been gathered was adequate to give enough confidence for the development of the flood prevention scheme.

Any persons relying on any information in this report do so at their own risk.

The records collected by The Moray Council are for Council purposes, to meet the Council's statutory obligations under flood prevention legislation. The public should not rely solely on these records in property and insurance issues.

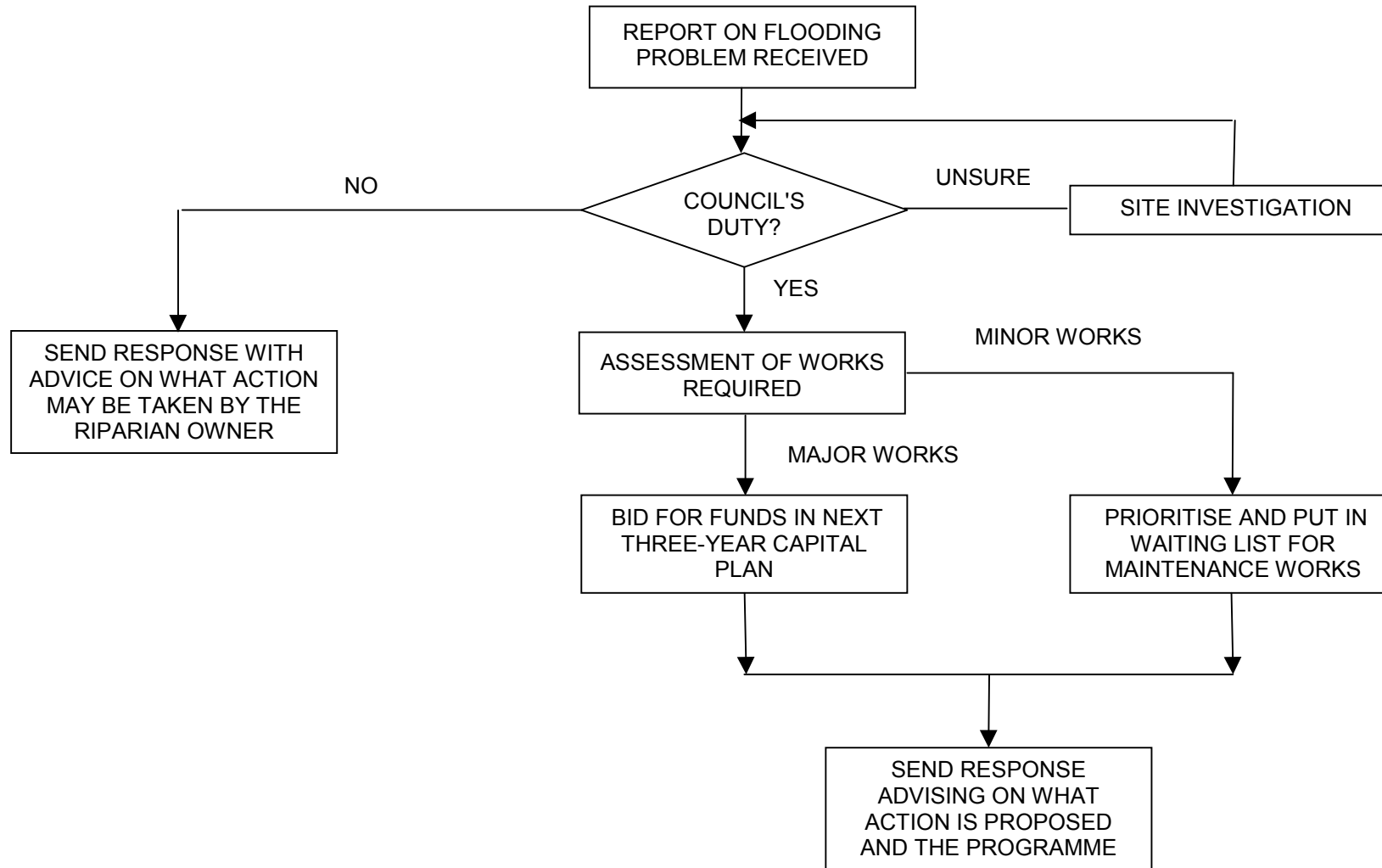
Peter A Haslam

Project Sponsor

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APPENDIX II – FLOW CHART FOR REPORTS OF FLOODING PROBLEMS



APPENDIX III – MORAY FLOOD ALLEVIATION – MISSION STATEMENT

MORAY FLOOD ALLEVIATION

MISSION STATEMENT

To alleviate flooding for the communities of Moray

- Statement of Objectives -

To have no major accidents or incidents

To have a satisfied client and community

To deliver effective flood alleviation as soon as possible

To make most effective use of the team's resources

To develop demonstrable sustainable solutions

To ensure that the project is commercially viable for all partners



Moray Flood Alleviation aims to provide flood alleviation schemes for Moray's communities.
It includes The Moray Council, Royal Haskoning and Morrison Construction Services

APPENDIX IV – PROGRAMME FOR MORAY FLOOD ALLEVIATION SCHEMES

The Council's Flood Alleviation Sub-Committee monitors progress for the major schemes. It meets approximately every two months and receives progress reports including monitoring specific milestones for each scheme.

It was agreed that a major review of these programmes should take place so that the Sub-Committee could consider fully detailed, resourced and costed project execution plans for each of the main schemes being undertaken by the team, i.e., Elgin, Forres (Burn of Mosset), Forres (River Findhorn), Forres (Pilmuir) and Rothes.

The latest approved milestone event dates are detailed below:

Elgin

Flood Prevention Order Submission	October 2007
Planning Application Submission	November 2007
Construction Start	August 2008

Rothes

Flood Prevention Order Submission	November 2006
Planning Application Submission	February 2007
Construction Start	April 2008

Forres (River Findhorn & Pilmuir)

Flood Prevention Order Submission	March 2008
Planning Application Submission	May 2008
Construction Start	March 2009

Forres (Burn of Mosset)

Public Local Inquiry	September 2006
Detailed Design Complete	February 2007
Construction Start	November 2007
Construction Completion	October 2009