



## Local Flood Risk Management Plan 2016 – 2022

### Abstract

*This is the first Local Flood Risk Management Plan for the North East Local Plan District, describing the actions which will contribute to managing the risk of flooding and recovering from any future flood events. The task for local authorities, Scottish Water, the Scottish Environment Protection Agency (SEPA), the Scottish Government and all other responsible authorities and public bodies is to deliver this plan.*

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## Foreword

The impacts of flooding experienced by individuals, communities and businesses can be devastating and long lasting. It is vital that we continue to reduce the risk of any such future events and improve the area's ability to manage and recover from any events which do occur.

The publication of this Plan is an important milestone in implementing the Flood Risk Management (Scotland) Act 2009 and improving how we cope with and manage floods in the North East Local Plan District. The Plan translates this legislation into actions over the first planning cycle from 2016 to 2022 to reduce the risk of damage and distress caused by flooding.

The North East Local Plan District is led and is published by Aberdeenshire Council on behalf of a partnership comprising three local authorities: Aberdeenshire Council, Aberdeen City Council and The Moray Council together with SEPA and the following Responsible Authorities: Scottish Water; SEPA; Forestry Commission Scotland; and Cairngorms National Park Authority.

In summary, there are 23 areas that have been identified as being potentially vulnerable to flood risk across the North East Local Plan District and these have been designated as Potentially Vulnerable Areas (PVAs). The North East Local Plan District contains approximately 13,000 residential and 3,600 non-residential properties at risk with an estimated Annual Average Damages of £29 million.

This Plan presents actions to avoid and reduce the risk of flooding and prepare and protect ourselves and our communities within these PVAs and across the Local Plan District (LPD). These actions include three local authority-led flood protection schemes or works; 9 local authority-led flood protection studies; as well as flood warning schemes, 13 Surface Water Management Plans, and a natural flood management study. The delivery of many of these actions may be dependent on the availability of funding. However, we can all play our part in managing flood risk.

Individuals are the first line of defence against flooding and have responsibilities to protect themselves from flooding. The publication of this Plan shows that the coordinated and collaborative efforts of public bodies can be brought together to deliver sustainable outcomes. However, the actions in this Plan can only be delivered with the support of all the public bodies, The Scottish Government, and most importantly you and your community.

This Plan, therefore, provides the blueprint upon which SEPA, local authorities and Scottish Water and any other responsible authorities will deliver their flood risk management duties under the Flood Risk Management (Scotland) Act 2009.

## Acknowledgements

With thanks to the following who contributed to the development of this Plan which will help shape the way in which floods and their impacts are managed across the North East Local Plan District:

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Will Burnish	Aberdeen City Council
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Iris Krammer	SEPA
Ben Bickle	Scottish Water
David Berry, Gavin Miles	Cairngorms National Park Authority

### North East Local Flood Risk Management Plan Steering Group elected members



Councillor Bryan Stuart  
North East LPD Steering Group Chair  
(Aberdeenshire Council)



Councillor Andrew Finlayson  
LPD Elected Member Representative  
(Aberdeen City Council)



Councillor Stewart Cree  
LPD Elected Member Representative  
(The Moray Council)

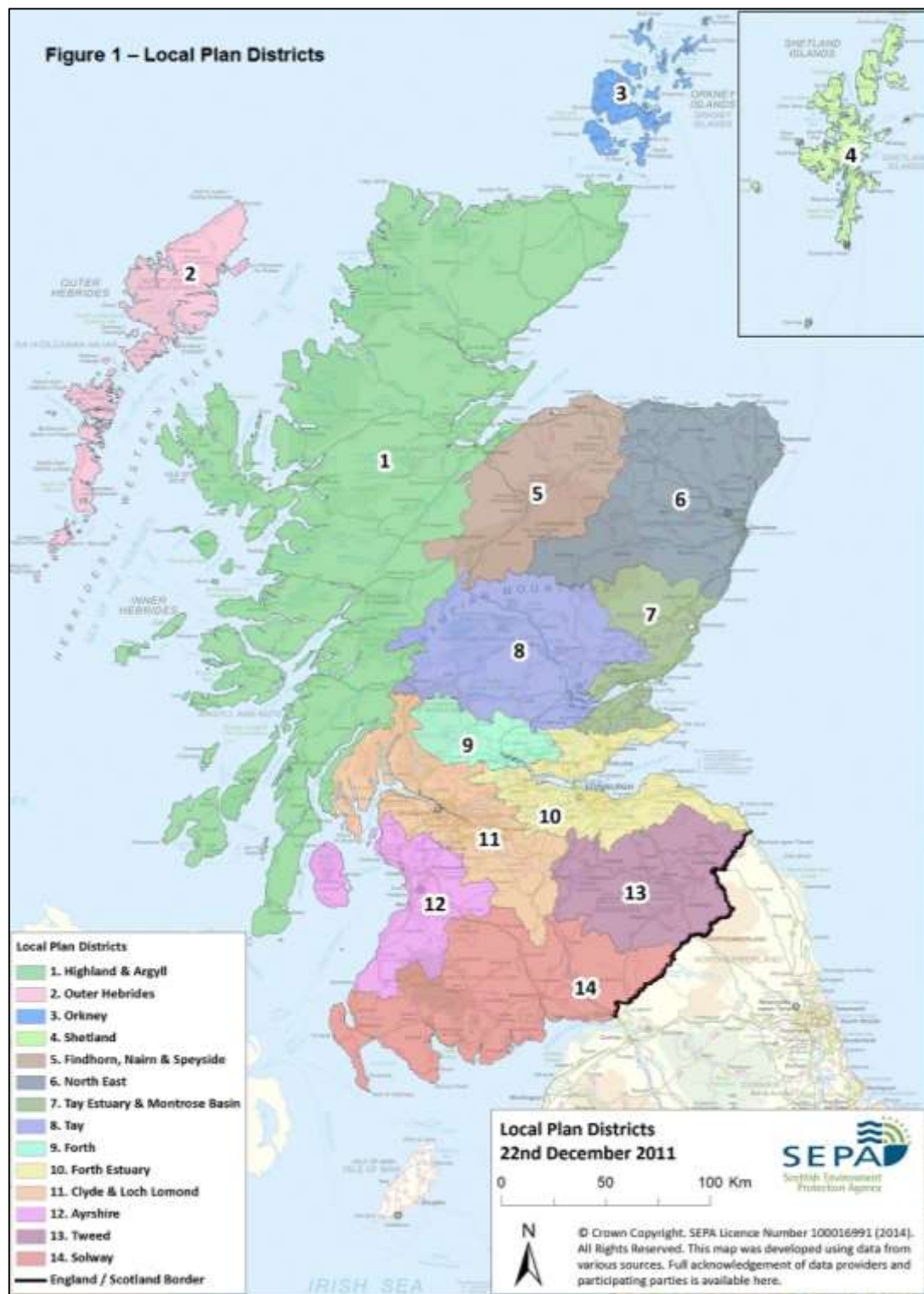
## List of Acronyms and Abbreviations

CoSLA	Convention of Scottish Local Authorities
FRM	Flood Risk Management
ICS	Integrated Catchment Study
LA	Local Authority
LFRMP	Local Flood Risk Management Plan
LLA	Lead Local Authority
LPD	Local Plan District
NFRA	National Flood Risk Assessment
NFM	Natural Flood Management
PVA	Potentially Vulnerable Area
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
SEPA	Scottish Environmental Protection Agency
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SPA	Special Protection Area
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan





## Chapter 1: Flood Risk Management in the North East Local Plan District



*Reproduced from Flood Risk Management Strategy, SEPA (December 2015)*

**Figure 1: Local Plan Districts**

## **1.0 What is a Local Flood Risk Management Plan?**

This Local Flood Risk Management Plan (the 'Plan') has been developed to detail the actions adopted to reduce the devastating and costly impact of flooding in the North East Local Plan District. The Plan supplements the North East Flood Risk Management Strategy (the 'Strategy'), which coordinates the efforts of all organisations that tackle flooding, be it in urban or rural areas and be it from rivers, the sea or from surface water. The Strategy identifies where the risk of flooding and benefits of investment are greatest. The Plan details the prioritised actions that will be delivered with this investment. There are 13 other Strategies and Plans for the other Local Plan Districts in Scotland.

Individuals and communities have the information to manage their own responsibilities within the published Plan. Everyone can take action with the confidence of what others are doing and with the clear knowledge when they are doing it.

In compliance with the Flood Risk Management (Scotland) Act 2009, these descriptions include:

1. A detailed timetable for the completion of the action currently being implemented, and the implementation of measures yet to be commenced;
2. Who is, or is to be, responsible for implementing the action and the arrangements for funding the action; and
3. A description of the coordination arrangement to implement the actions.

It is through this risk-based and plan-led approach that flood management will improve for the individuals, communities and businesses at risk in the North East Local Plan District.

The contents of the Plan have been agreed with the lead authority and every other Responsible Authority which has flood risk related functions exercisable in or in relation to the Local Plan District and SEPA.

The Plan is published by Aberdeenshire Council, Lead Local Authority for the North East Local Plan District. The Plan has been prepared in collaboration with Aberdeen City Council, The Moray Council, Scottish Water and other organisations with a responsibility or interest in managing flooding. The Plan is a requirement under the Flood Risk Management (Scotland) Act 2009 and fulfils requirements within the European Commission Floods Directive.



## **1.1 How to read this Plan**

The Local Flood Risk Management Plan has three sections:

Chapter 1 contains background information on the approach taken in Scotland to manage flooding. It explains the duties and aims of relevant organisations, including how they work together and how flood risk management planning is linked to other government policies and initiatives; and, most importantly, how flood risk management planning is delivered locally to each Local Plan District through a Local Flood Risk Management Plan.

Chapter 2 is the most important section for those individuals and communities seeking to understand their flood risk and its management. For areas identified as being at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal (Potentially Vulnerable Areas there is a short description of the causes and consequences of flooding and the agreed objectives for flood risk management are clearly set out. And, most importantly, the actions that will deliver progress against these objectives over the first six-year planning cycle from 2016 and 2022 are described, including when they will be implemented, which organisation is responsible, and how they are to be funded.

Chapter 3 contains Annexes to the Plan, providing supporting documents and references and presents more detailed information in various formats. A glossary of terms is included.

The Plan should be read alongside the Strategy for the North East Local Plan District which has been developed in parallel and provides additional background information and national context. SEPA published the Strategy in December 2015. Both the Plan and the Strategy will be updated every six years. SEPA's Flood Risk Management Strategy can be found at: <http://apps.sepa.org.uk/FRMStrategies/>

## **1.2 How we have developed the Plan?**

### **Coordination, collaboration and partnership working**

Many organisations and individuals are involved in helping to improve flood management in Scotland. It is recognised that a piecemeal approach to management of flooding does not work. Flooding can be a complex mechanism, and the causes and impacts are too complicated for any single organisation to address alone. Flooding disregards local authority boundaries and similarly cuts across the responsibilities of organisations such as SEPA, Scottish Water and emergency responders. Successful and sustainable flood management requires the coordination set out in this Plan (and parallel Strategy) to be successful. A willingness to collaborate by those responsible for flood management is essential for its success and this collaborative approach has been instrumental in delivering the Plan.

The Plan has been developed in partnership. These partner organisations are working more closely together than ever before. In local partnerships, here and throughout Scotland, SEPA has provided the technical analysis and ensured a consistent national approach is taken. It has provided the evidence upon which to make sensible, informed decisions. Local authorities and Scottish Water have made sure that local knowledge and expertise has informed the decision-making process and where appropriate, they have also contributed. The Plan has been developed by:

Aberdeenshire Council (Lead Local Authority); Aberdeen City Council; The Moray Council, Scottish Water, SEPA, Forestry Commission Scotland and the Cairngorms National Park Authority.

### **Roles and responsibilities for flood risk management**

Local authorities have no statutory duty to prevent properties from flooding, but will help residents and communities as much as we can. The responsibility for protecting individual properties lies with the property owner. However, public bodies have responsibilities too and are working together to reduce the impacts of flooding in Scotland. Responsibility for flood risk management planning falls mainly to SEPA, local authorities and Scottish Water. However, individuals have a personal responsibility to protect themselves and their property.

Some of the key roles are outlined below and more information is available from the SEPA website. <http://www.sepa.org.uk/environment/water/flooding/responsibilities-for-flooding>

## **Your responsibilities**

The local authorities have no statutory duty to prevent properties from flooding, but will help residents and communities as much as they can. The responsibility for protecting individual properties lies with the property owner.

Being prepared by knowing what to do and who to contact if flooding happens can help you reduce the damage and disruption flooding can have on your life.

The first step to being prepared is [signing up to Floodline](#) so you can receive messages to let you know where and when flooding is likely to happen. Other useful tools and advice on how to be prepared are available on the [Floodline](#) website including a quick guide to who to contact in the event of a flood. You can also check how your area could be affected by flooding by looking at SEPA's [flood maps](#)

## **SEPA**

SEPA is Scotland's national flood forecasting, flood warning and strategic flood risk management authority. SEPA has a statutory duty to produce Scotland's Flood Risk Management Strategies. As described above, SEPA works closely with other organisations responsible for managing flood risk through a network of partnerships and stakeholder groups to ensure that a nationally consistent approach to flood risk management is adopted.

SEPA also has a responsibility to identify where in Scotland there is the potential for natural flood management techniques to be introduced. Natural flood management is the use of the natural features of the land to store and slow down the flow of water.

In running Floodline, SEPA provides live flooding information and advice on how to prepare for or cope with the impacts of flooding 24 hours a day, seven days a week. SEPA works closely with the [Met Office](#) to help forecast flooding.

To raise awareness of flooding at a national level SEPA runs education initiatives, community engagement programmes and an annual campaign to promote the useful advice and information available through Floodline. This work is done in partnership with local authorities, Neighbourhood Watch Scotland, Ready Scotland and others to share resources and help to promote preparedness and understanding of how flood risk is managed.

## **Local authorities**

In terms of the Flood Risk Management (Scotland) Act 2009, the local authorities must exercise their general functions with a view to reducing its overall flood risk. More specific detail of each relevant section of the Act is outlined below:

### Section 1: General Duties

This requires all responsible authorities (including local authorities) when exercising their flood risk related functions to manage flood risk in a sustainable way and to cooperate with all responsible authorities.

### Sections 34-39: Local Flood Risk Management Plans

Local authorities must assist SEPA in preparing the national flood risk assessment, flood hazard and risk maps and Flood Risk Management Strategies. Lead Local Authorities must also prepare Local Flood Risk Management Plans for relevant Local Plan Districts by June 2016. Lead Local Authorities are required to publish an interim report within 2-3 years of the publication of the local flood risk management plan and a final report 5-6 years after publication.

### Section 56: General power to manage flood risk

This section gives local authorities general powers to manage flood risk (from all sources including surface water flooding) in their area, including implementation of measures described in the Local Flood Risk Management Plans, carry out flood protection schemes and any other flood protection work.

These powers are permissive; local authorities do not have a duty to use these powers. This enables a local authority to do anything which it considers will contribute in a positive way to the implementation of current measures described in the LFRMP. This could include supporting or contributing to activities carried out by others, including other responsible authorities. This may include for example: preventative actions, emergency repairs or other flood avoidance activities.

In addition to emergency measures and those in a Plan, local authorities may carry out other flood protection work to manage flood risk, so long as it does not affect the implementation of measures in the Plan. This could include works identified as beneficial since the Plan was published, or circumstances where funding has become available for flood protection work.

Section 56 enables local authorities to enter into agreements with other people or organisations such as land managers, other responsible authorities including Scottish Water and other local authorities, community groups, charitable organisations and private businesses to carry out works or to manage the flow of water.

Local authorities can contribute towards the cost of the other body or receive contributions from any other body towards costs incurred. For example, a local authority could contribute towards the development of a flood warning scheme by SEPA or to Scottish Water for a joint project to improve surface water management. A local authority could also receive contributions towards works, for example, from a developer wishing to increase flood protection to support a development proposal.

Section 56 also enables local authorities to enter into agreements relating to the management of land in a way which can assist with slowing the flow or retaining flood water. These activities are generally known as natural flood management (NFM). The local authority can compensate the land manager for income lost as a result of entering into such arrangements.

#### Section 57: Limits of general power

Local authorities are prevented from doing anything under section 56 which it would be otherwise unable to do as a result of other Acts or forms of legislation e.g. the Water Environment and Water Services (Scotland) Act 2003. In considering actions under Section 56, local authorities should determine what they are unable to do as a result of other legislative restrictions and satisfy themselves that these restrictions have been adhered to.

#### Section 17 & 18: Local authorities to prepare maps and assess of bodies of water

Section 17 and 18 require local authorities to map bodies of water and SUDS, assess bodies of water and prepare a schedule of clearance and repair works. Where bodies of water are assessed as giving rise to a risk of flooding to land and the authority considers works of clearance and repair would substantially reduce that risk, a schedule of clearance and repair works must be prepared.

Clearance and repair works are works that consist of any or all of the following:

- (a) removing obstructions from a body of water,
- (b) removing things that are at significant risk of becoming such obstructions,
- (c) repairing artificial structures which form part of the bed or banks of a body of water.

This schedule must be made available for public inspection and should indicate when the local authority next intends to carry out an assessment of this body of water.

#### Section 59: Duty to carry out clearance and repair works

Local authorities are required to carry out the clearance and repair works described in the schedule prepared under Section 18 if the Act, as long as the works contribute to the implementation of measures described in the relevant Plan or do not affect the implementation of those measures.

Many clearance and repair works will not require an authorisation under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) and can be completed under a General Binding Rule. However, the level of authorisation required under CAR depends not only on the extent of the planned works but also on the sensitivity of the water body to ecological status deterioration.

### Roads (Scotland) Act 1984

Local authorities have a duty in terms of the Roads (Scotland) Act 1984 to provide drainage of public roads (for normal circumstances) and for road safety which may only involve signing and diversion of traffic in the event of flooding. In particular, Section 31 provides powers to the roads authority to drain a public road or proposed public road or otherwise prevent surface water from flowing onto it. Section 99 allows roads authorities to carry out works to prevent flows of water onto roads, where the owner or occupier of any land has failed to prevent the flow or percolation of water, from the land onto the road.

Importantly, in terms of the prevention of flow of water onto roads, under the Roads (Scotland) Act 1984 there is no requirement for this to have been as a result of an 'action'. For example, if through a lack of maintenance water is flowing onto a road, then a notice can be served on the owner or occupier to prevent this. It should be noted that a proper assessment of what can be done to prevent the flow should have been undertaken by the roads authority – it is not merely the case of the owner or occupier preventing the flow of water onto a road if this is not possible or practical.

### Water Environment and Water Services (Scotland) Act 2003

According to the Act, local authorities should exercise their flood related functions with view to reducing overall flood risk. They should act in the best way calculated to promote and manage flood risk in a sustainable way, with a view to raising public awareness of this risk. Local authorities should be seeking to contribute to the achievement of sustainable development and look to adopt an integrated approach by cooperating with SEPA and other Responsible Authorities.

### **Scottish Water**

Scottish Water is a responsible authority for flood risk management and is working closely with SEPA, local authorities and others to coordinate plans to manage flood risk.

Scottish Water has the public drainage duty and is responsible for foul drainage and the drainage of rainwater run-off from roofs and any paved ground surface from the boundary of properties. Additionally, Scottish Water helps to protect homes from flooding caused by sewers either overflowing or becoming blocked. Scottish Water is not responsible for private pipework or guttering within the property boundary.

### **National Parks**

The two National Park Authorities, Loch Lomond and Trossachs National Park and Cairngorms National Park, were designated as responsible authorities for flood risk management purposes in 2012. Both have worked with SEPA, local authorities and Scottish Water to help develop Flood Risk Management Strategies and Plans.

They also fulfil an important role in land use planning, carrying out or granting permission for activities that can play a key role in managing and reducing flood risk.

The Cairngorms National Park Authority is a Responsible Authority for the North East Local Plan District.

### **Other organisations**

The **Scottish Government** oversees the implementation of the Flood Risk Management (Scotland) Act 2009 which requires the production of Flood Risk Management Strategies and Local Flood Risk Management Plans. Scottish Ministers are responsible for setting the policy framework for how organisations collectively manage flooding in Scotland and approving Strategies.

**Scottish Natural Heritage** has provided general and local advice in the development of Flood Risk Management Strategies. Flooding is seen as a natural process that can maintain the features of interest at many designated sites, so Scottish Natural Heritage helps to ensure that any changes to patterns of flooding do not adversely affect the environment. Scottish Natural Heritage also provides advice on the impact of Flood Protection Schemes and other land use development on designated sites and species.

**Forestry Commission Scotland** was designated in 2012 as a Responsible Authority for flood risk management planning purposes and has engaged in the development of the Flood Risk Management Strategies through national and local advisory groups. This reflects the widely held view that forestry can play a significant role in managing flooding.

During the preparation of the first flood risk management plans **Network Rail** and **Transport Scotland** have undertaken works to address flooding at a number of frequently flooded sites. Further engagement is planned with SEPA and local authorities to identify areas of future work. There is the opportunity for further works to be undertaken during the first flood risk management planning cycle although locations for these works are yet to be confirmed.

**Utility companies** have undertaken site specific flood risk studies for their primary assets and have management plans in place to mitigate the effects of flooding to their assets and also minimise the impacts on customers.

The **Met Office** provides a wide range of forecasts and weather warnings. SEPA and the Met Office work together through the [Scottish Flood Forecasting Service](#).

The **emergency services** provide emergency relief when flooding occurs and can coordinate evacuations. You should call the emergency services on 999 if you are concerned about your safety or the safety of others and act immediately on any advice provided.

**Historic Environment Scotland** considers flooding as part of their regular site assessments. As such, flooding is considered as one of the many factors which inform the development and delivery of its management and maintenance programmes.

### **Consultation, engagement and advice**

Local authorities and SEPA have been keen to hear from people and communities that live under the threat of flooding, to ensure that our technical analysis of the risks is accurate and that efforts to manage flooding are targeted to where most can be achieved. Two statutory public consultations were held during the development of the Strategies and Plans. The first, by SEPA, was on the general approach to flood risk management planning and the identification of priority areas (2011); the second, held jointly with SEPA and local authorities, was on the understanding of flooding in these priority areas and on the objectives and actions to manage flooding (2015). The views and representations of the respondents to the second consultation were taken account of in developing and finalising the Plan.

Further advice has been sought from relevant organisations at key stages. The Strategies (and Plans) have benefitted from input from Local Advisory Groups, providing important area-based knowledge on both the causes and consequences of flooding and on the appropriate actions for future management. Advice was also taken from a National Flood Management Advisory Group consisting of over 50 member organisations, reflecting the national importance and impact of flooding on our communities, economy, environment and cultural heritage.

Some of the work carried out has been complex and technical in nature for which professional advice was sought from across Scotland and beyond. Working together, SEPA, Scottish Government, local authorities, Scottish Water, Forestry Commission Scotland, the National Park Authorities and other key interested organisations have assisted each other and developed industry best practice guidance for flood risk management planning.

### **Identification of objectives, appraisal and prioritisation of actions**

The identification of objectives and appraisal of actions to reduce flood risk has been led by SEPA with significant local input from local authorities and Scottish Water. The setting of objectives and selecting the most sustainable actions to reduce flood risk in each Local Plan District will provide the long-term vision for Flood Risk Management in Scotland. Objectives set focus on the main sources and impacts of flooding identified for each Potentially Vulnerable Area in every Local Plan District. A wide range of actions were appraised, including flood protection works and schemes, flood protection studies, flood warning schemes, Surface Water Management Plans, and natural flood management studies and works.

To prioritise future actions across Scotland as required in flood risk management planning, SEPA separated the technical, risk-based assessment of priorities from aspects



of local, practical deliverability. In this way the data on the costs and impacts of actions is used alongside information from delivery and funding bodies to jointly agree priorities and identify indicative delivery dates for actions. A National Prioritisation Advisory Group was established to provide guidance to SEPA on the priority of flood risk management actions, having considered both the technical ranking prepared by SEPA and issues of local priority. This group was made up of representatives from SEPA, local authorities, Scottish Water and CoSLA.

The Strategy provides the list of prioritised actions for the first six-year flood risk management planning cycle, 2016 to 2022. The Plan identifies who will be responsible for the action, a timetable of when it will be undertaken and the funding arrangements – see Chapter 2.

The lists of prioritised actions to meet agreed goals and objectives in the first six-year cycle considered what would be achievable assuming a similar level of funding for flood risk management activities from The Scottish Government. However, given the timing of spending reviews and annualised financial settlements for local government, the actual ability to deliver all the actions set in the Strategies in December 2015 and detailed in this Plan will be dependent on the availability of the necessary funding in each year of the six-year Plan.

### **1.3 Links with other plans, policies, strategies and legislative requirements**

The Plan does not stand in isolation. As far as is practicable, an integrated approach to land and water management has been pursued. When developing the Strategy and Plan, early links were made with other relevant aspects of water and land management including local development plans, river basin management plans and emergency plans. In turn, the responsible authorities will work proactively to ensure the findings from these flood risk management plans and strategies will influence other planning initiatives in an interactive and iterative cycle. Making these links has helped identify opportunities to deliver multiple benefits from flood risk management goals, objectives and actions.

#### **River basin management planning**

River basin management aims to protect and improve the condition of our rivers, lochs, estuaries and coastal waters. Taking action to reduce flood risk in Scotland provides an opportunity to connect with plans to improve the quality of Scotland's water environment at the same time. For example, coordination between river basin management and flood risk management can reduce flood risk, whilst improving water quality and biodiversity.

SEPA is leading the delivery of River Basin Management Plans and Flood Risk Management Strategies and has worked to ensure that there is integration and coordination between them. This coordination, particularly in regard to consultation and engagement, will be important for stakeholders many of whom have an interest in the objectives of both plans.

#### **Land use and spatial planning**

Land use planning decisions are one of the most powerful tools available to manage flood risk. The alignment of flood risk management and land use planning policy is pivotal to achieving sustainable flood risk management. Decisions relating to flood risk management can have significant implications for the location of development and, likewise, decisions relating to the location of development can impact on flood risk. Land use planning has the potential to contribute to sustainable flood risk management through the location, use and design of new development and the redevelopment of existing areas. Actions that deliver national level land use planning policies are summarised in Annex 5.

SEPA is a statutory consultee providing advice on planning applications with regards to flood risk. Guidance aims to minimise flood risk to development and ensure no adverse effects occur elsewhere.

Land use planning objectives and actions have been agreed with responsible authorities, which will ensure that flood risk is adequately taken into account throughout the planning process.

## **Emergency planning and response**

Emergency plans are prepared under the Civil Contingencies Act 2004. They are in place across Scotland and are prepared by Category 1 and 2 Responders, such as Police Scotland and the Scottish Ambulance Service. Emergency plans ensure the effective management of response to emergencies. Emergency plans can either be generic and deal with all emergencies OR specific to deal with, for example, flooding. The information contained in the Flood Risk Management Strategies can be used to inform wider emergency response plans for flooding.

Many organisations have specific roles and responsibilities during an emergency response to a flood for example, local authorities, the Scottish Fire and Rescue Services, Police Scotland and SEPA. In many cases, this response is augmented by the work of voluntary organisations, communities and individuals. During an emergency, the response by these agencies will be coordinated through regional and local resilience partnerships.

## **Strategic Environmental Assessment and Habitats Regulation Appraisal (SEA)**

Aberdeenshire Council submitted a screening report to the strategic environmental assessment Gateway to assess the significant environmental effects of the Plan.

As there were no additional actions within the Local Flood Risk Management Plan that have not been identified within the previously assessed Flood Risk Management Strategy undertaken by SEPA it was accepted that no further SEA work was required.

SEPA's assessment from the SEA of the Flood Risk Management Strategy was published in an environmental report, and SEPA consulted the public on the findings. SEPA also published a post-adoption statement, which describes how it has taken account of the environmental assessment and the consultation responses, and how it will monitor any significant environmental effects of the Flood Risk Management Strategies.

Aberdeenshire Council also undertook a Habitats Regulations Appraisal to ensure that the Plan will not adversely affect the integrity of Special Areas of Conservation and Special Protection Areas. The Council consulted Scottish Natural Heritage and Natural England on the appraisal method and took their views into account. The Council has applied mitigation measures where required.

## **S18 Schedule of Clearance and Repair**

Local authorities have a duty under Section 18 of the Flood Risk Management Scotland Act to assess bodies of water and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection.

Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.

## **Scottish Water Business Plan 2015-2021**

Scottish Water's investment programme is set out in their business plan 2015-2021, which can be found in their website: <https://www.scottishwater.co.uk/about-us/publications/strategic-projections>

Scottish Water's customers have told them that reducing internal property flooding from sewers is a high priority and this is reflected in Scottish Water's Business Plan commitments for the period 2015-21. Addressing sewer flooding is of the highest importance to Scottish Water, as highlighted by our customers who have helped shape the investment plans for 2015-21.

In recognition of this high priority, within the period 2015-2021, Scottish Water will invest c£115m to improve the hydraulic capability of the sewer network so that they can remove all customers from the high risk internal sewer flooding register (greater than 10% chance per annum) as quickly as possible, typically within four years of their problem being confirmed. However Scottish Water has made a commitment to those customers on the register on 31 March 2015 that they will no longer be on the register by 31 March 2021.

Scottish Water's Customers have also highlighted external flooding is an important issue. As a result, within the period 2015-2021, they are investing c£40m to develop and to begin to implement solutions to reduce the flood risk for 400 high priority external sewer flooding areas suffering from frequent repeat flooding events.

As a responsible authority under the Flood Risk Management (Scotland) Act 2009, Scottish Water is also working collaboratively with third parties such as SEPA and Local Authorities through the Flood Risk Management Planning process which will assess the risk of flooding into the future.

As part of that work, Scottish Water has allocated investment to undertake further modelling and assessment in sewer catchments within PVA's to improve knowledge and understanding of flood risk from the sewers in these areas, as required under Section 16 of the Flood Risk Management (Scotland) Act 2009. Scottish Water is also working in partnership with SEPA and Local Authorities, to lead on the production of Integrated Catchment Studies across key catchments. Work carried out under these Flood Risk Management (Scotland) Act 2009 duties will continue to inform future investment requirements for Scottish Water.

## **Surface Water Management Planning**

Surface water flooding is experienced in all Plan areas and therefore there is a need for surface water management planning. Surface water flooding is a key component of the flood risk assessment that has led to the development of this Plan. However, not all surface water management planning will require a surface water management plan or specific study or other action which are described in Chapter 2 of this Plan. Responsible authorities in each LPD may therefore undertake broader surface water management planning over the period of the first Flood Risk Management (FRM) cycle. Such additional surface water management planning is described in Chapter 2.4 of the Plan 'Other flood risk activities by local authorities in the North East Local Plan District'.

## **Integrated Catchment Studies**

Integrated Catchment Studies (ICS) are led by Scottish Water in partnership with local authorities and SEPA. These studies will improve knowledge and understanding of the interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and (where appropriate) the sea. This will improve the understanding of contributions these drainage networks play in local surface water flood risk.

Five ICS's were undertaken in Scotland during SR10 (2010-2015), to Modelling and Flood Risk assessment stage, which have provided a fuller understanding of the sources and mechanisms of flooding across these catchments. These studies are expected to undertake an Optioneering phase between 2015-2021. This will identify the actions to reduce flood risk across the catchments, with the outputs feeding into the Local Authority lead surface water management planning process.

Fifteen ICS's will begin in Scotland during SR15 (2015-2021). These studies will go through the Scoping and Modelling phases, which culminates in defining the sources and mechanisms of flooding in the catchment, and an understanding of the impacts of that flooding. It is expected that the ICS partnerships will remain and it is anticipated that the Optioneering phase for these studies will be initiated directly after the preceding phases.

Within this Local Plan District, an ICS is being carried out in the Aberdeen catchment which covers Aberdeen City, parts of Westhill and Portlethen and Stonehaven to the south.

## **1.4 Next steps and monitoring progress**

The Plan runs for six years from June 2016. Over this period the North East LPD partnership will continue to meet periodically to monitor progress towards implementing the actions detailed in Chapter 2.

Between years 2 and 3 of the FRM cycle (i.e. before June 2019), Aberdeenshire Council, as Lead Local Authority will publish a report on the conclusions of a review of the Plan, including information on the progress that has been made towards implementing the measures identified in the implementation part of the Plan.

Between years 5 and 6 of the FRM cycle (i.e. before June 2022), Aberdeenshire Council, as Lead Local Authority will publish a report on the Plan containing an assessment of the progress made towards implementing the current measures, a summary of the current measures which were not implemented, with reasons for their non-implementation, and a description of any other measures implemented since the Plan was finalised which the Lead Local Authority considers have contributed to the achievement of the objectives summarised in the Plan.

The Lead Local Authority will make these reports available for public inspection.

## **Chapter 2: Managing Flood Risk in the North East Local Plan District**

This chapter presents the summaries of flooding for the North East Local Plan District and for the 23 Potentially Vulnerable Areas (PVAs). Planned actions to manage flooding that have been prioritised for delivery between 2016 and 2022 across the whole of the LPD area and in each PVA are detailed. It identifies who will be responsible for the delivery and implementation of the actions, along with a timetable of when the actions will be undertaken and the funding arrangements.

Annexes 1, 2 & 3 summarise the characteristics and impacts of flooding from river, coastal and surface water sources on the North East Local Plan District and how flooding from these mechanisms is to be managed.

Section 2.1 presents a summary for the Local Plan District

Section 2.2 presents a Local Plan District overview.

Sections 2.3.1 – 2.3.23 presents actions by PVA.

Section 2.4 describes other flood risk activities undertaken by local authorities in the North East Local Plan District so as to provide as full a picture as possible of how flood risk is managed.

## 2.1 Local Plan District summary

There are 23 PVAs across the North East Local Plan District

### **The Moray Council**

06/01 Portgordon

06/06 Newmill

### **Aberdeenshire Council**

06/02 Portsoy

06/03 Banff

06/04 Macduff

06/05 Fraserburgh and Rosehearty

06/07 Turriff

06/08 Peterhead

06/09 Methlick

06/10 Huntly

06/11 Inch

06/12 Ellon

06/13 Inverurie and Kintore

06/21 Banchory and Torphins

06/23 Stonehaven

### **Aberdeen City Council / Aberdeenshire Council**

06/15 Aberdeen City - Bridge of Don

06/17 Westhill

06/19 Peterculter

### **Aberdeen City Council**

06/16 Aberdeen City - Denmore

06/18 Aberdeen City - Deeside

### **Cairngorms National Park / Aberdeenshire Council**

06/14 Heugh-head

06/20 Aboyne

06/22 Ballater

The PVAs represent 87% of the 13,000 residential and 3,600 non-residential properties at flood risk in the North East Local Plan District. The PVAs cover just over £20 million Annual Average Damages across the North East Local Plan District, which represents 69% of the Annual Average Damages for the whole LPD.

Figure 2 below illustrates the locations of PVAs in the North East Local Plan District.



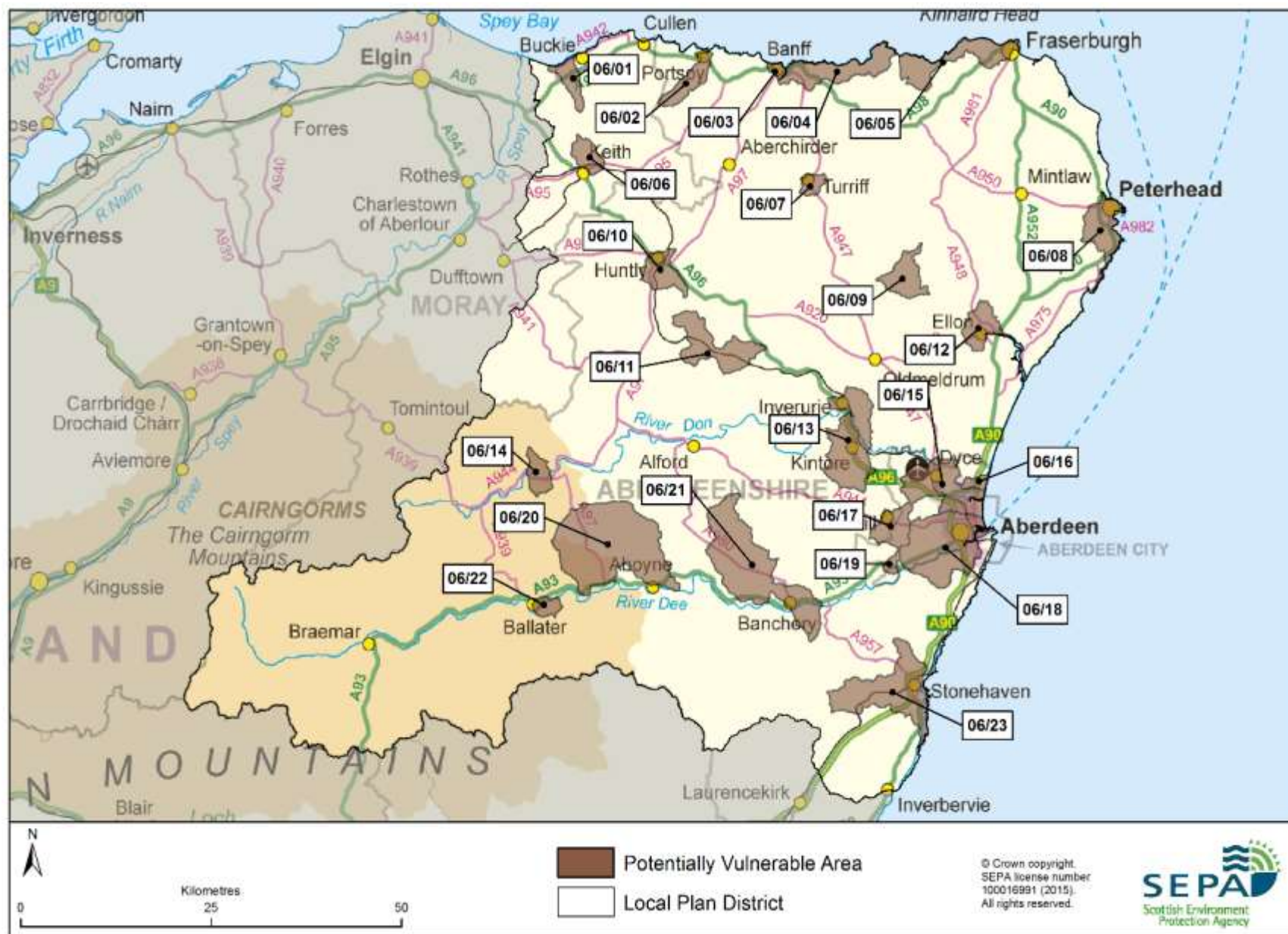


Figure 2: The North East Local Plan District with Potentially Vulnerable Areas identified (Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015))

Table 1 summarises the headline actions to manage flood risk over the six-year plan period.

A full list of actions to manage flood risk over the six-year plan period including details of the standard of protection, costs and benefits, and coordination and funding arrangements are provided for the LPD and each PVA in sections 2.2 and 2.3.1 to 2.3.23 respectively.

Figures 7, 19 and 25 present the Annual Average Damages from river flooding, coastal flooding and surface water flooding across the North East Local Plan District.

PVA	Flood protection scheme/works	Natural flood management works	New flood warning	Flood protection study	Natural flood management study	Surface water plan/study	Strategic mapping and modelling	Maintain flood protection scheme*	Maintain flood warning*	Flood forecasting	Property level protection scheme	Community flood action groups	Self help	Awareness raising	Maintenance	Site protection plans	Emergency plans/ response	Planning policies
06/01				✓		✓	✓		✓	✓			✓	✓	✓		✓	✓
06/02							✓		N/A	✓			✓	✓	✓		✓	✓
06/03							✓		✓	✓			✓	✓	✓		✓	✓
06/04							✓		✓	✓			✓	✓	✓		✓	✓
06/05						✓	✓		✓	✓			✓	✓	✓		✓	✓
06/06	✓					✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
06/07							✓		✓	✓			✓	✓	✓		✓	✓
06/08			✓			✓	✓			✓			✓	✓	✓		✓	✓
06/09										✓			✓	✓	✓		✓	✓
06/10	✓					✓	✓	✓	✓	✓			✓	✓	✓		✓	✓
06/11				✓			✓			✓			✓	✓	✓		✓	✓
06/12				✓			✓			✓			✓	✓	✓		✓	✓
06/13				✓		✓	✓		✓	✓			✓	✓	✓		✓	✓
06/14										✓			✓	✓	✓	✓	✓	✓
06/15			✓	✓		✓	✓		✓	✓			✓	✓	✓		✓	✓
06/16				✓		✓	✓	✓		✓			✓	✓	✓		✓	✓
06/17						✓	✓			✓			✓	✓	✓		✓	✓
06/18			✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
06/19	✓				✓	✓	✓			✓			✓	✓	✓		✓	✓
06/20						✓	✓		✓	✓			✓	✓	✓		✓	✓
06/21							✓		✓	✓			✓	✓	✓		✓	✓
06/22							✓		✓	✓		✓	✓	✓	✓		✓	✓
06/23	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓

\*Note: N/A is used where there is no formal Flood Protection Scheme or flood warning scheme present.

Table 1: Summary of actions by LPD

Responsible Authorities have several obligations that will be provided regardless of whether the area in question is located within a PVA. These are as follows:

Responsible Authorities have an obligation under Section 1 of the Act to raise awareness regarding flood risk. Activities are to be pursued both nationally and locally over the first cycle to fulfil this obligation.

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA.

Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website.

National planning policies set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, development in areas with medium to high likelihood of flooding should be avoided.

In the following section the proposed actions for the first cycle are outlined with the two main actions being flood protection schemes and flood protection studies.

Schemes are physical works to prevent an area flooding, these can take the form of walls and embankments, upstream storage, bypass channels or other engineered options to reduce flood risk. The types of proposals proposed for each area are outlined under the specific actions.

Flood protection studies are intended to develop our understanding of flood risk in a specific area and develop options for reducing the risk. A flood protection study takes a catchment-based multi discipline approach to developing our understanding of flood risk. It is intended that the studies will examine all options including the use of natural flood management, development of Surface Water Management Plans, construction of direct defences or utilising community based approaches such as developing flood groups, emergency action plans or using property level protection.

## 2.2 Local Plan District Overview

The following section takes the information detailed in the Strategy and summarises the flood risk, objectives, actions and prioritisation for the whole of the North East Local Plan District. In addition, it identifies who will be responsible for the delivery and implementation of the actions, along with a timetable of when the actions will be undertaken and the funding arrangements.

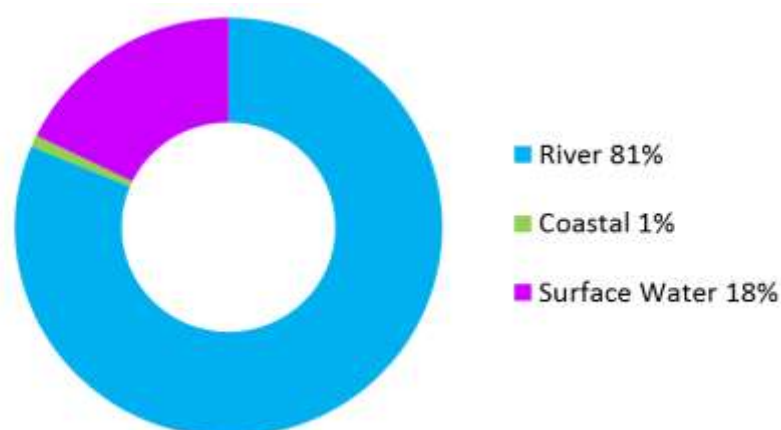
The North East Local Plan District extends from the Outer Moray Firth in the north to the central and eastern Grampians in the south. It has an area of approximately 6,500km<sup>2</sup> and a coastline with a length of approximately 220km. There are 23 Potentially Vulnerable Areas in the North East Local Plan District.

### Flood Risk in the North East

There are approximately 13,000 residential properties and 3,600 non-residential properties at risk of flooding within the Local Plan District. This is approximately 5% of all residential properties and 10% of all non-residential properties. It is estimated that 87% of these properties at risk of flooding are located within Potentially Vulnerable Areas.

The Annual Average Damages from flooding are approximately £29 million with an estimated 69% of the total damages for the entire Local Plan District accounted for in the Potentially Vulnerable Areas.

The main source of flooding is from rivers which accounts for approximately 81% of the Annual Average Damages (Figure 3). The Annual Average Damages caused by river floods are £24.5 million with those caused by surface water and coastal floods being approximately £5.2 million and £270,000 respectively. Note however that flooding from wave overtopping is not fully represented in the general assessment of flood risk. The number of properties at risk of flooding and the Annual Average Damages from coastal flooding may be underestimated.



**Figure 3: Annual Average Damages by flood source**

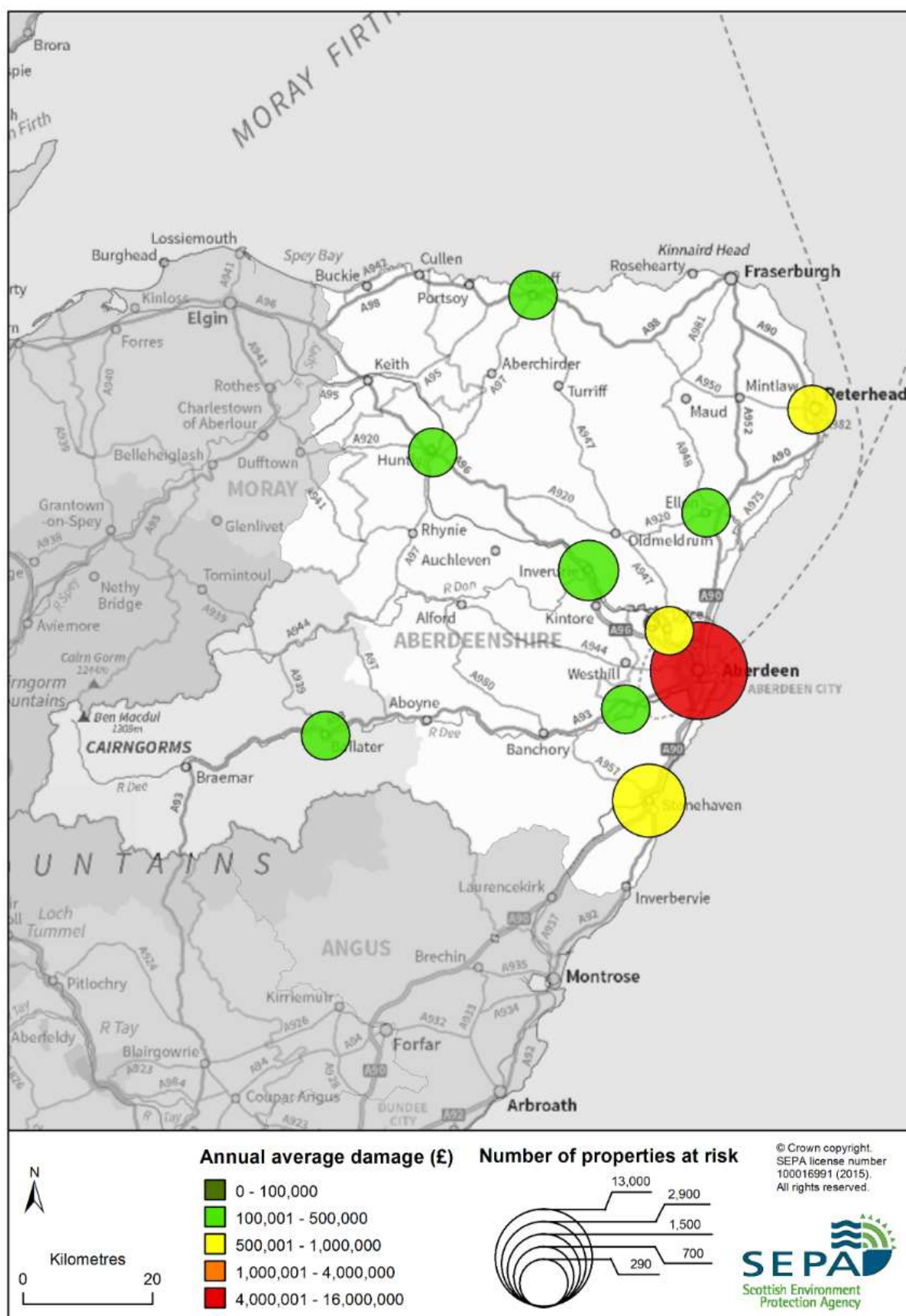
Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

Table 2 and Figure 4 show the number of properties at risk and the Annual Average Damages caused by flooding in the main towns and cities within the Local Plan District. This includes damages to residential properties, non-residential properties, transport and agriculture. Please note that economic damages to airports and rail infrastructure are not included as information on damages at this scale is not available.

Settlement	Residential and non-residential properties at risk of flooding	Annual Average Damages
Aberdeen City	8,500	£15 million
Stonehaven	860	£980,000
Inverurie and Port Elphinstone	340	£460,000
Ballater	230	£220,000
Peterculter	200	£310,000
Dyce	190	£2.6 million
Huntly	150	£440,000
Ellon	110	£290,000
Banff and Macduff	100	£280,000
Peterhead	90	£580,000

**Table 2: Main areas at risk of flooding**





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 4: The North East Local Plan District areas with most properties at risk of flooding and associated damages**

## Background Information on the North East Local Plan District

The extent of the North East Local Plan District and the location of the Potentially Vulnerable Areas are shown previously in Figure 2.

The population of the Local Plan District is approximately 500,000. The largest urban area is Aberdeen with a population of approximately 220,000 people. The Local Plan District contains three local authorities (Aberdeen City Council, Aberdeenshire Council and The Moray Council) and parts of the Cairngorms National Park.

Approximately 3% of the area of the North East Local Plan District is classified as urban. The two main types of land cover are arable and horticulture, and improved grassland. Each covers approximately 23% of the area. Coniferous woodland, heather and montane habitats are also present, each covering between 9% and 12% of the area.

## Objectives and actions in the North East Local Plan District

The objectives are the shared aims for managing flooding. Actions describe where and how flood risk will be managed. Objectives and actions have been set by SEPA and agreed by flood risk management responsible authorities following consultation.

These objectives and actions apply to all areas of the Local Plan District, including the Potentially Vulnerable Areas. There are more specific actions that apply within Potentially Vulnerable Areas, in addition to those listed below. Further detail can be found in the relevant Potentially Vulnerable Area chapter.

Target area	Objective(s)	ID	Indicators
Applies across the North East Local Plan District	Avoid an overall increase in flood risk	600001	<ul style="list-style-type: none"> <li>• 13,000 residential properties</li> <li>• 3,600 non-residential properties</li> <li>• 28,000 people</li> </ul>
Applies across the North East Local Plan District	Reduce overall flood risk	600002	<ul style="list-style-type: none"> <li>• 13,000 residential properties</li> <li>• 3,600 non-residential properties</li> <li>• 28,000 people</li> </ul>

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	<b>Reduce overall flood risk. (600002)</b>		
<b>Delivery lead:</b>	<b>SEPA</b>		
<b>Status:</b>	<b>Existing</b>	<b>Indicative delivery:</b>	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders.</p> <p>The flood guidance statements provide an assessment of the risk of flooding for a five-day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>For more information, please visit SEPA's website.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation.</p> <p>The Met Office receives funding from the UK Government.</p>			



<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	<b>Reduce overall flood risk. (600002)</b>		
<b>Delivery lead:</b>	-		
<b>Status:</b>	<b>Existing</b>	<b>Indicative delivery:</b>	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>The Moray Council provides advice to members of the public regarding flood risk and resilience. The Council also holds information events from time to time in collaboration with Scottish Water, SEPA and the Scottish Flood Forum which are funded from the FRM Revenue budget.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p> <p>Aberdeen City Council will be promoting self-help through work with the community which will include the creation of a Flood Guard Grant Scheme to assist people with putting in Property Level Protection. This will be coordinated through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme. The scheme will be funded via the ACC Capital works Programme.</p>			

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	<b>Reduce overall flood risk. (600002)</b>		
<b>Delivery lead:</b>	<b>Responsible Authorities</b>		
<b>Status:</b>	<b>Existing</b>	<b>Indicative delivery:</b>	<b>Ongoing</b>
<b>Description:</b>			
<p><u>Aberdeenshire Council</u></p> <p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding. More general information and flooding guidance will be available on the website at: <a href="https://www.aberdeenshire.gov.uk/environment/flooding/">https://www.aberdeenshire.gov.uk/environment/flooding/</a></p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p><u>The Moray Council</u></p> <p>The Moray Council will seek opportunities to raise awareness of flood risk and actions that prepare individuals, homes and businesses as described in the Act. They will support community resilience groups working with SEPA, responsible authorities, Crown Estates and the Scottish Flood Forum. During the development of the flood protection study The Moray Council will hold at least one event in Portgordon to consult residents on the proposed flood protection measures identified and advise them on how the study is progressing.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p><u>Aberdeen City Council</u></p> <p>Aberdeen City Council will be undertaking a number of community events to promote awareness to the risk of flooding and what can be done to reduce the impact of flooding. As part of this we will be looking to create flood action groups and community resilience groups with regards to flooding. These groups will help promote the risk that flooding presents as well as provide practical advice to the community they serve.</p> <p><i>(continued)</i></p>			

Aberdeen City Council will be working with the flooding groups as a minimum to promote awareness to flood risk:-

- Community Councils
- Local residents
- Education Scotland
- Aberdeen Education Department
- SEPA

Activities undertaken by Aberdeen City Council will be funded by existing revenue budgets.

### SEPA

From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.

Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.

SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.

### Scottish Water

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	<b>Reduce overall flood risk. (600002)</b>		
<b>Delivery lead:</b>	<b>local authority, asset / land managers</b>		
<b>Status:</b>	<b>Existing</b>	<b>Indicative delivery:</b>	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection.</p> <p><u>The Moray Council</u></p> <p>The Moray Council has a schedule of clearance and repair, which identifies routine maintenance and repairs to address areas known to be at risk. It may include small improvement works. This schedule is reviewed and updated regularly. This review is based on inspections and information provided by the public and other organisations. Works identified in the Council's clearance and repair schedule are funded from the FRM Revenue budget.</p> <p><u>Aberdeenshire Council</u></p> <p>Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p><u>Aberdeen City Council</u></p> <p>Aberdeen City Council will produce schedules of clearance and repair works and make these available for public inspection. Delivery of the clearance and repair Schedule will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>• ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>• SEPA</li> <li>• Scottish water</li> <li>• Land Owners</li> <li>• Aberdeenshire Council</li> </ul> <p>Funding to come from existing ACC Flood revenue budget, for works which are defined to be ACC responsibility or pose a significant flood risk.</p> <p><u>Scottish Water</u></p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p> <p><b>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flooding.</b></p>			

<b>Action (ID):</b>	<b>EMERGENCY PLANS / RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	<b>Reduce overall flood risk. (600002)</b>		
<b>Delivery lead:</b>	<b>Category 1 and 2 Responders</b>		
<b>Status:</b>	<b>Existing</b>	<b>Indicative delivery:</b>	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p><u>The Moray Council</u></p> <p>Emergency response in the Moray area is coordinated by the Grampian Emergency Planning Unit, which is part of the Grampian Local Resilience Partnership covering Moray Aberdeenshire and Aberdeen City. This partnership is made up of Police Scotland, Scottish Fire and Rescue Service, The NHS, The Moray Council, SEPA and the Met Office. This unit coordinates the emergency response to flood events, such as road closures, evacuations and temporary accommodation. Emergency response and development of the Emergency Plan is funded from the Council's revenue budget.</p> <p><u>Scottish Water</u></p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders.</p> <p>The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.</p> <p>Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.</p> <p><i>(continued)</i></p>			

### Aberdeen City Council

Aberdeen City Council will work with all CAT 1 and CAT 2 responders to deliver the emergency response plan for Aberdeen City. All Cat 1 and Cat 2 responders are to work together for decision making and to identify solutions at the time of emergency response and for emergency planning.

Funding will be sourced through existing emergency response Budgets for the ACC elements of this objective.

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	<b>Avoid an overall increase in flood risk. (600001)</b>		
<b>Delivery lead:</b>	<b>Planning authority</b>		
<b>Status:</b>	<b>Existing</b>	<b>Indicative delivery:</b>	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p>			
<u>The Moray Council</u>			
<p>The Moray Council develops and adopts a revised Local Plan every five years. This plan sets out the strategy for delivering appropriate development throughout Moray and takes into consideration a number of potential constraints including flood risk. The Council's Flood Risk Management team provides advice regarding flood risk that informs this plan. The current plan was adopted in 2015 and consultation on the new plan started in 2016.</p>			
<u>Aberdeenshire Council</u>			
<p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p>			

Aberdeen City Council

Aberdeen City Council (ACC) will be applying a catchment-scale approach to sustainable flood risk management and aims to build the resilience of the city.

They will be working with all relevant bodies to coordinate the activities that are highlighted within Planning Policy.

SEPA

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

**Other areas**

There will be other flood risk management actions being undertaken in the Local Plan District outside of Potentially Vulnerable Areas.

## **2.3 Flood risk, objectives & actions for the North East Potentially Vulnerable Areas**

The following section sets out the background, flooding impacts, history of flooding, the objectives to manage flooding and the actions and planned delivery of these actions to reduce flood risk in the North East PVAs



### 2.3.1 Portgordon (Potentially Vulnerable Area 06/01)

Local Plan District	local authority	Main catchment
North East	The Moray Council	Banff coastal

#### Background

This Potentially Vulnerable Area is located on the Moray Firth, covering approximately 13km<sup>2</sup>.

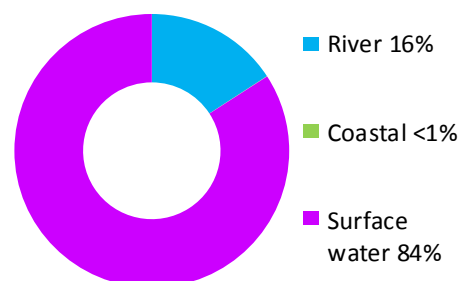
The area covers the coastline from Seatown, Buckie to the outfall of the Burn of Tynet in the west, together with the mainly rural areas to the south.



The A98 and A990 pass through this Potentially Vulnerable Area.

There are fewer than 10 residential and non-residential properties at risk of flooding.

The Annual Average Damages are approximately £8,500. The majority of these are attributed to surface water flooding, however it is recognised that wave overtopping causes flooding to a number of properties in Portgordon and Buckie.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

## **Summary of flooding impacts**

Flooding from wave action is not fully represented in the assessment of flood risk in this Potentially Vulnerable Area and it is known that the number of properties at risk and the damages from coastal flooding are currently underestimated. Coastal flooding from overtopping waves is known to occur at Portgordon and Buckie and this has been taken into account in the setting of objectives and evaluating of actions.

The A98 and A990 are at risk of flooding in addition to small areas of agricultural land and a designated environmental site.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to roads.

## **History of flooding**

The highest impact flood on record is the January 1953 North Sea flood which resulted in evacuation of residents, flooding to properties and collapse of the harbour wall. The majority of properties in Lennox Place and Stewart Street were flooded. When flood waters retreated many properties were disinfected to eradicate colonies of sea lice, which had accompanied the flooding.


In January 1978, storms caused wave overtopping which flooded Stewart Street and Lennox Place in Portgordon. Coastal flooding of properties in the Portgordon area also occurred in 1983 and 1985. In September 1999 a heavy downpour overwhelmed gullies and water flowed onto the A990 and into Portgordon. In 2002 and 2004 there were various instances of flooding to gardens and garages in Richmond Place, Portgordon due to a piped watercourse becoming blocked.

Some properties in Buckie are also subject to coastal flooding from wave action.

## **Objectives to manage flooding in Potentially Vulnerable Area 06/01**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Portgordon Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Portgordon (Potentially Vulnerable Area 06/01)**

Reduce risk in Portgordon from Coastal Flooding	
Indicators:	Target area:
<p>80 People</p> <p>£25,000 Annual Average Damages from residential properties</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 600101	

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Target area	Objective	ID	Indicators within PVA
Portgordon	Reduce risk from surface water flooding in Portgordon and Buckie	600102	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<10 residential properties £8,500 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	<10 residential properties £8,500 Annual Average Damages
Applies across North East Local Plan District	Organisations such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

**\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/01 there are <10 residential properties at risk and Annual Average Damages of £8,500.**

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Portgordon (Potentially Vulnerable Area 06/01)****Actions to manage flooding in Potentially Vulnerable Area 06/01**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Portgordon Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection study					
Maintain flood warning					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Strategic mapping and modelling (SEPA)					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Portgordon (Potentially Vulnerable Area 06/01)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6001010005)</b>		
<b>Objective (ID):</b>	Reduce risk in Portgordon from coastal flooding (600101)		
<b>Delivery lead:</b>	The Moray Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>150 of 168</b>	<b>2 of 2</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>A flood protection study is proposed for Portgordon. This study will assess the damages caused by tidal and wave action to properties along the frontage at Portgordon. The study will also appraise structural measures to protect these properties from flooding. The preferred solution will be the action that delivers the most economic, environmental and social benefit to Portgordon.</p> <p>The Moray Council will work with SEPA to ensure that any new information about flood risk resulting from the proposed flood protection study is provided to enable the existing flood warning system and flood risk maps to be updated as appropriate.</p> <p>This study is funded through the Moray Council's Capital Plan.</p>			
<b>Potential impacts</b>			
<b>Economic:</b>	The study could benefit 37 residential and three non-residential properties at risk of flooding from wave overtopping in this location, with potential damages avoided of up to £790,000. It is thought that risk to properties is underestimated. With further information on the impact of wave overtopping and flood depths the number of properties at risk and damages avoided could change.		
<b>Social:</b>	The development of flood protection works following the study would potentially reduce flood risk to 80 people. Stewart Street would also benefit from reduced risk, improving access to the properties along the frontage. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Negative impacts through disturbance to the local community during the construction phase should be considered.		

**Portgordon (Potentially Vulnerable Area 06/01)**

<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Opportunities to mitigate any environmental impacts may include design and timing of works. The flood protection study should ensure the actions avoid or minimise the potential loss of natural habitat, do not interfere with coastal processes and ensure no negative effects to the Spey Bay Site of Special Scientific Interest. To be in accord with the FRM Strategy, the responsible authority should seek to ensure as part of the study that the action will not have an adverse effect on the integrity of the Spey Bay Special Area of Conservation.
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<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
Continue to maintain the 'Portgordon to Cullen' flood warning area which is part of the Moray Firth coastal flood warning scheme.			
A flood protection study is proposed for Portgordon. SEPA will work with the local authority to ensure that any new information about flood risk resulting from the proposed flood protection study is considered in the existing flood warning system.			
When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.			
The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.			

**Portgordon (Potentially Vulnerable Area 06/01)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Moray Council will seek opportunities to raise awareness of flood risk and actions that prepare individuals, homes and businesses as described in the Act. They will support community resilience groups working with SEPA, responsible authorities, Crown Estates and the Scottish Flood Forum. During the development of the flood protection study The Moray Council will hold at least one event in Portgordon to consult residents on the proposed flood protection measures identified and advise them on how the study is progressing.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p> <p>Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.</p> <p>More general information and flooding guidance will be available on the website at: <a href="https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information">https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information</a></p> <p>Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Portgordon (Potentially Vulnerable Area 06/01)**

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<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6001020018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Portgordon and Buckie (600102)		
<b>Delivery lead:</b>	The Moray Council		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>A Surface Water Management Plan for the Portgordon/Buckie area will be developed by the Moray Council in partnership with Scottish Water and other responsible authorities as required</p> <p>The development of this plan will be funded from the Council's FRM Revenue budget.</p> <p>Scottish Water will work with The Moray Council and support surface water management planning through ensuring that best available knowledge and data is used to input into the Surface Water Management Plans</p>			



**Portgordon (Potentially Vulnerable Area 06/01)**

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>Emergency response in the Moray area is coordinated by the Grampian Emergency Planning Unit, which is part of the Grampian Local Resilience Partnership covering Moray Aberdeenshire and Aberdeen City. This partnership is made up of Police Scotland, Scottish Fire and Rescue Service, The NHS, The Moray Council, SEPA and the Met Office. This unit coordinates the emergency response to flood events, such as road closures, evacuations and temporary accommodation.</p> <p>Emergency response and development of the Emergency Plan is funded from the Council's revenue budget.</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6001010016)</b>		
<b>Objective (ID):</b>	Reduce risk in Portgordon from coastal flooding (600101)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017-2018</b>
<b>Description:</b>			

**Portgordon (Potentially Vulnerable Area 06/01)**

SEPA will be seeking to develop the flood hazard mapping in the Banff to Lossiemouth area to improve understanding of the coastal flood risk. The extent and timing of the completed improvements will be dependent on detailed scoping and data availability. A flood protection study is proposed for Portgordon. SEPA will work with The Moray Council to ensure that new information about flood risk resulting from the proposed flood protection study is considered in SEPA's strategic mapping and modelling developments where appropriate and relevant.

SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Buckie sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>

**Portgordon (Potentially Vulnerable Area 06/01)****Description:**

The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five-day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.

Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.

SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>The Moray Council provides advice to members of the public regarding flood risk and resilience. The Council also holds information events from time to time in collaboration with Scottish Water, SEPA and the Scottish Flood Forum.</p> <p>Events hosted by the Council are funded from the FRM Revenue budget.</p>			

**Portgordon (Potentially Vulnerable Area 06/01)**

<b>Action (ID):</b>	<b>MAINTENANCE</b> (6000020007)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	The Moray Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection.</p> <p>The Moray Council has a schedule of clearance and repair, which identifies routine maintenance and repairs to address areas known to be at risk. It may include small improvement works. This schedule is reviewed and updated regularly. This review is based on inspections and information provided by the public and other organisations.</p> <p>Works identified in the Council's clearance and repair schedule are funded from the FRM Revenue budget.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for coordination.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Portgordon (Potentially Vulnerable Area 06/01)**

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<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.

For further information on the application of national planning policies see Annex 5. The Moray Council develops and adopts a revised Local Plan every five years. This plan sets out the strategy for delivering appropriate development throughout Moray and takes into consideration a number of potential constraints including flood risk. The Council's Flood Risk Management team provides advice regarding flood risk that informs this plan. The current plan was adopted in 2015 and consultation on the new plan started in 2016.

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

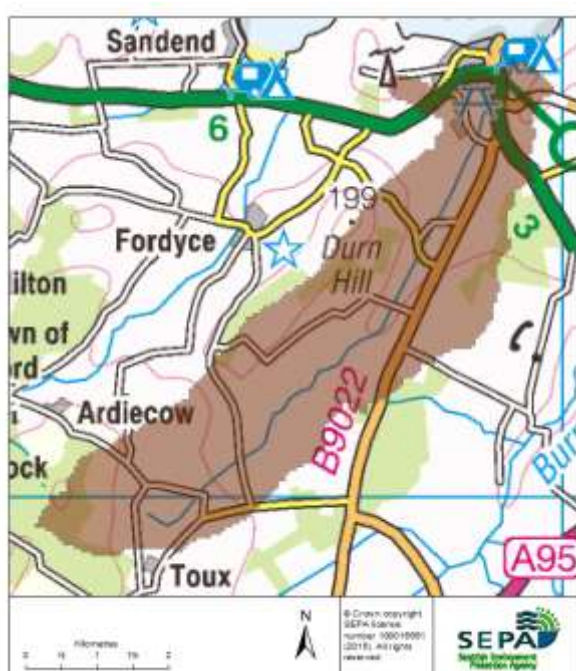
Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

**Portsoy (Potentially Vulnerable Area 06/02)****2.3.2 Portsoy (Potentially Vulnerable Area 06/02)**

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	Banff coastal

**Background**

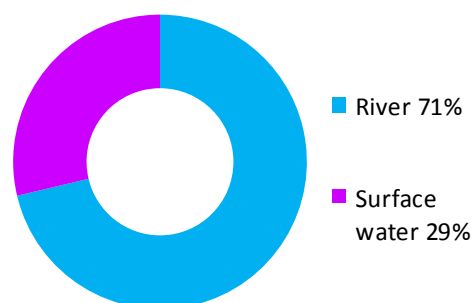
This Potentially Vulnerable Area includes the south east of Portsoy and rural areas along the Burn of Durn to the south west. It is approximately 17km<sup>2</sup>.



The Burn of Durn and Soy Burn flow through the area.

There are approximately 10 residential and fewer than 10 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £53,000 with the majority of these from river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Summary of flooding impacts**

Flood risk in this area is from the Burn of Durn and from the Soy Burn which is a small watercourse flowing to the south of the A98 and draining into Loch Soy.

The damages associated with floods of different likelihood includes damages to the transport network notably the A98, B9022 and the B9139. For this Potentially Vulnerable Area the highest damages are to residential properties.



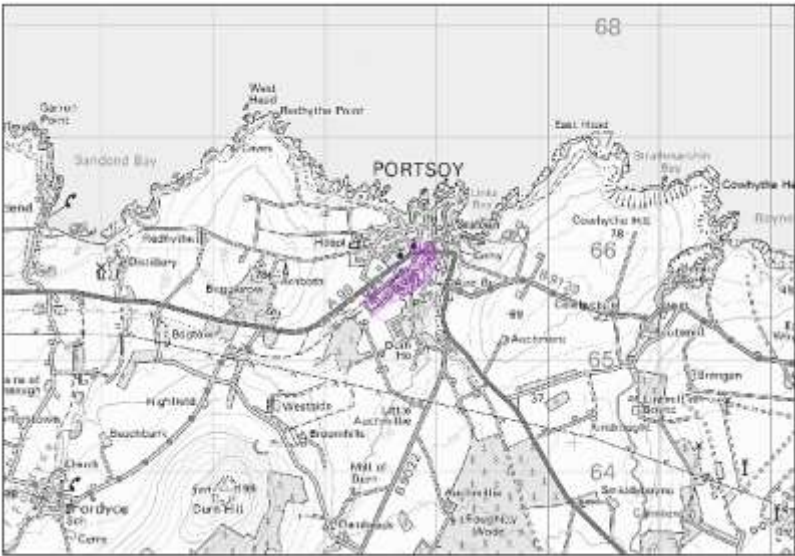
## History of flooding

The Soy Burn and Loch Soy are known sources of flood risk with a number of properties having been repeatedly flooded. For example, the Soy Burn caused flooding of properties in Soy Avenue, Portsoy in 2001, 2008, and 2009.

Just outside of this Potentially Vulnerable Area, there are issues with coastal erosion and flooding around the mouth of the Burn of Durn. A graveyard is affected by erosion and in the past, a landslip near the mouth of the Burn of Durn caused a blockage in the burn, resulting in the flooding of a listed building.

## Objectives to manage flooding in Potentially Vulnerable Area 06/02

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Portsoy Potentially Vulnerable Area.

Reduce flood risk in the vicinity of Loch Soy and Soy Avenue from the Soy Burn	
Indicators:	Target area:
<p>20 people</p> <p>£4,700 Annual Average Damages from residential properties</p>	
Objective ID: 600201	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)



**Portsoy (Potentially Vulnerable Area 06/02)**

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	10 residential properties £53,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	10 residential properties £53,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/02**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Portsoy Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

**Portsoy (Potentially Vulnerable Area 06/02)**

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

Delivery of selected actions
<b>Portsoy Flood Protection Study - Cycle 2 (2022 – 2027)</b>
<p>A further Flood Protection Study is planned for this PVA in the next cycle of the Flood Risk Management Plan (2022 – 2027). The study will look to reduce flood risk in the vicinity of Loch Soy and Soy Avenue.</p> <p>A flood protection study is recommended to consider flood protection works to reduce the likelihood of flooding to Soy Avenue, this should build on a previous study on Soy Burn. The study should firstly confirm the existing flood risk prior to developing actions within the study. The flood protection study should then primarily focus on storage, sediment management, runoff control, river/floodplain restoration, modification of conveyance, property level protection and relocation to reduce the likelihood of flooding from the Soy Burn, but other actions may also be considered in order to develop the most sustainable range of options.</p>

**Portsoy (Potentially Vulnerable Area 06/02)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues. Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Portsoy (Potentially Vulnerable Area 06/02)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at: <https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Portsoy (Potentially Vulnerable Area 06/02)**

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

There is a level gauge and camera at the upstream end of Soy Burn culvert to provide an early warning of high water levels for properties on Soy Avenue.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			

**Portsoy (Potentially Vulnerable Area 06/02)**

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Scottish Water will undertake further investigation and modelling in the Portsoy sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.

Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.

Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.

**Portsoy (Potentially Vulnerable Area 06/02)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five-day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Portsoy (Potentially Vulnerable Area 06/02)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			



**Portsoy (Potentially Vulnerable Area 06/02)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p>			

**Portsoy (Potentially Vulnerable Area 06/02)**

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website

<http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

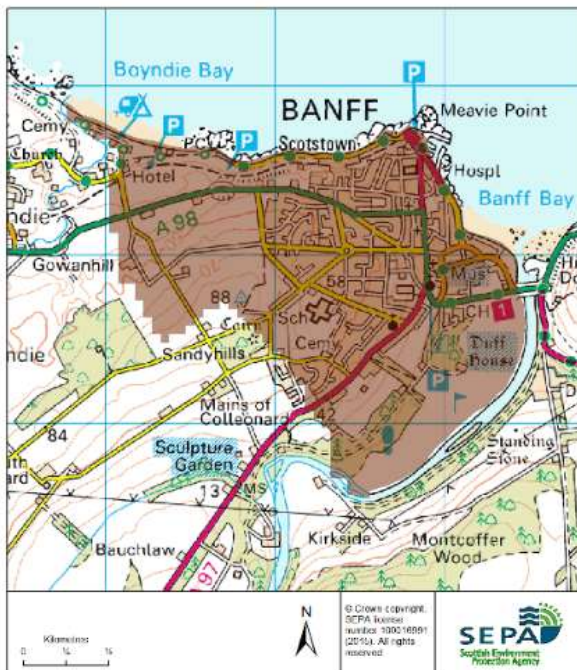
Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.3 Banff (Potentially Vulnerable Area 06/03)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	Banff coastal

#### Background

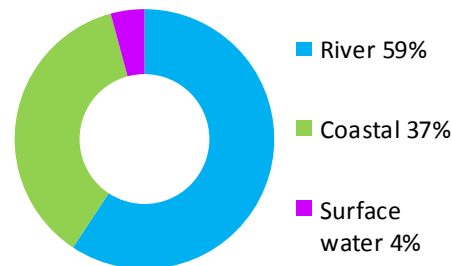
This Potentially Vulnerable Area covers the town of Banff. The area is on the west bank of the River Deveron and extends to the Burn of Boyndie. It is approximately 3km<sup>2</sup>.



The A97 and A98 pass through the area and the River Deveron is the main river.

There are approximately 40 residential and 30 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £50,000 with the majority due to river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

#### Summary of flooding impacts

Coastal flood risk is mainly limited to properties immediately adjacent to the seafront in Scotstown and Banff Bay. Flooding from wave action is not fully represented in the assessment of flood risk in this Potentially Vulnerable Area and the number of properties at risk and the damages from coastal flooding are thought to currently be underestimated.

The risk of river flooding is associated with the River Deveron and mainly affects the Duff House Royal Golf Course. River flooding is also shown to extend north and east from the A98. However, there is some uncertainty as to whether this would actually occur due to the damming effect of the A98 embankment.

Five designated cultural heritage sites and a small area of designated environmental sites are at risk of flooding within this area. This includes the Whitehills to Melrose Coast Site of Special Scientific Interest.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

### **History of flooding**

There is a long history of flooding in Banff from the River Deveron. The earliest recorded flood was in 1768 when the Deveron flooded and destroyed an important bridge. The Deveron has also flooded at Banff in 1835, 1855, 1859, 1873, 1875 and 1882 affecting property, farmland and the railway line. The golf course was badly flooded in 2009 however the flooding did not extend to Duff House or the town.

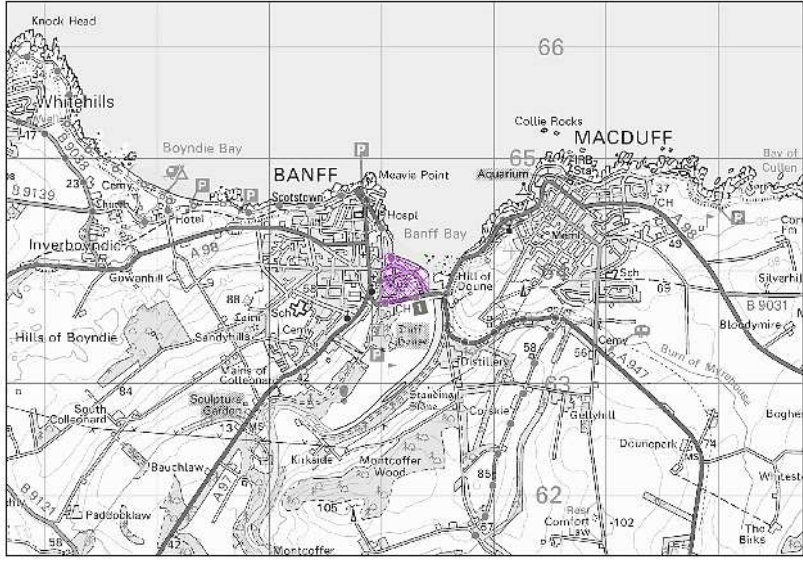
The most damaging flood on record is the 1953 North Sea flood. A gasworks was washed into the sea, buildings and their protective wall were destroyed and many properties inundated with floodwater. In December 2013 there was localised coastal flooding of five properties and significant wave damage in the inner part of Banff Bay. Coastal flooding from overtopping waves is also known to impact on some local access roads including the road to the community centre.

Surface water flooding affected Low Street, Banff in August 2006.

### **Objectives to manage flooding in Potentially Vulnerable Area 06/03**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Banff Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Banff (Potentially Vulnerable Area 06/03)**

Reduce risk in Banff from the River Deveron and coastal flooding	
Indicators:	Target area:
<p>100 people</p> <p>£18,000 Annual Average Damages from residential properties</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 600301	

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	40 residential properties £50,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	40 residential properties £50,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Banff (Potentially Vulnerable Area 06/03)****Actions to manage flooding in Potentially Vulnerable Area 06/03**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Banff Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Maintain flood warning					
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling (SEPA)					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Banff (Potentially Vulnerable Area 06/03)**

<b>Delivery of selected actions</b>
<b>Banff Flood Protection Study - Cycle 2 (2022 – 2027)</b>
<p>A further Flood Protection Study is planned for this PVA in the next cycle of the Flood Risk Management Plan (2022 – 2027). The study will look to reduce flood risk in Banff from the River Deveron and coastal flooding.</p> <p>A flood protection study is recommended to consider flood protection works to reduce the likelihood of flooding to Banff from coastal flooding. The flood protection study should primarily focus on coastal management actions, direct defences, relocation and property level protection, but other actions may also be considered in order to develop the most sustainable range of options. The study should assess the impact from wave overtopping to confirm the existing risk and define the height and extent of flood protection works required</p>

**Banff (Potentially Vulnerable Area 06/03)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain both the 'Banff' flood warning area which is part of the Deveron river flood warning scheme and the Portsoy to Macduff' flood warning area which is part of the Moray Firth coastal flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p>			



*(continued)*

Awareness raising will be funded from existing local authority flood revenue budgets.

From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.

Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.

SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

**Banff (Potentially Vulnerable Area 06/03)**

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.</p> <p>Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.</p>			

**Banff (Potentially Vulnerable Area 06/03)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6003010016)</b>		
<b>Objective (ID):</b>	Reduce risk in Banff from the River Deveron and coastal flooding (600301) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>600301 - SEPA will be seeking to develop the flood hazard mapping in the Banff area to improve understanding of the coastal flood risk. The extent and timing of the completed improvements will be dependent on detailed scoping and data availability.</p> <p>Indicative delivery 2017 – 2018</p> <p>600002 – The road embankment potentially provides some protection to the properties at risk, however this needs to be investigated to confirm the standard of protection provided by the embankment and any residual risk. SEPA will review existing modelling for this area in partnership with Aberdeenshire Council to determine if any improvements can be made to the flood maps. SEPA will support the local authority if further work beyond a strategic scale is required.</p> <p>Indicative delivery 2016 – 2017</p> <p>SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required and will be funded by Scottish Government through SEPA's grant in aid settlement.</p>			

**Banff (Potentially Vulnerable Area 06/03)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Macduff sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

**Banff (Potentially Vulnerable Area 06/03)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five-day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation.</p> <p>The Met Office receives funding from the UK Government.</p>			

**Banff (Potentially Vulnerable Area 06/03)**

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act.</p>			

**Banff (Potentially Vulnerable Area 06/03)**

Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website

<http://www.sepa.org.uk/environment/land/planning/>

*(continued)*

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.



### 2.3.4 Macduff (Potentially Vulnerable Area 06/04)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	Banff coastal

#### Background

This Potentially Vulnerable Area is located in the Moray Firth to the east of Banff. It is approximately 36km<sup>2</sup> and extends from the River Deveron at Banff Bay to the Tore Burn east of Troup Head.

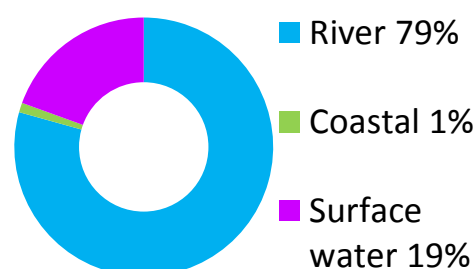
The A98 passes through the area.



The River Deveron is the main river in this area with smaller burns draining northwards into the Moray Firth.

There are approximately 40 residential and 20 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £240,000 with the majority from river flooding. It is recognised however that wave overtopping contributes to coastal flooding which is not fully represented in this analysis.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of flooding impacts

Flooding from wave action is not fully represented in the assessment of flood risk. It is likely that the number of properties at risk of coastal flooding and the associated damages are underestimated. For example, coastal flooding from overtopping waves is known to occur at Macduff, Gardenstown and Crovie.

River flood risk is associated with the Burn of Myrehouse, particularly adjacent to its confluence with the Deveron.

**Macduff (Potentially Vulnerable Area 06/04)**

Several road locations are at risk of flooding including sections of the A947, B9026 and B9031. There are ten designated cultural heritage sites and a small area of designated environmental sites at risk.

Non-residential properties experience the greatest economic impact. Note that there is some uncertainty around the high level of damages estimated for river flooding, which is mostly attributed to a single site and which will require further investigation.

**History of flooding**

The earliest recorded flood was in 1880, when waves overtopped the sea wall in Macduff causing damage to the harbour and boats. The 1953 North Sea flood undermined and washed away sections of seawall and damaged the slipway and boat launching beach. In addition, wave overtopping caused flooding to properties in Macduff and Gardenstown. In Crovie the flooding was so severe the village was abandoned after the 1953 storm event.

In 1957 coastal flooding affected properties on the sea front, washed away the cliff road, and required the evacuation of families. In August 2008 surface water flooding in Macduff affected properties in Duff Street, Commercial Street, and George Street. Old Gamrie Road in Macduff flooded in 2009 following a heavy rainstorm.

**Objectives to manage flooding in Potentially Vulnerable Area 06/04**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Macduff Potentially Vulnerable Area.

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	40 residential properties £240,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	40 residential properties £240,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

**Macduff (Potentially Vulnerable Area 06/04)****Actions to manage flooding in Potentially Vulnerable Area 06/04**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation.

Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Macduff Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Maintain flood warning					
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling (SEPA)					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

North East Local Plan District – Local Flood Risk Management Plan  
**Macduff (Potentially Vulnerable Area 06/04)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain the 'Banff' flood warning area which is part of the Deveron river flood warning scheme.</p> <p>They will also continue to maintain the 'Gardenstown to Pennan' and 'Portsoy to Macduff' flood warning areas which are part of the Moray Firth coastal flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p>			

*(continued)*

Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.

Awareness raising will be funded from existing local authority flood revenue budgets.

From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.

Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.

SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.</p> <p>Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.</p>			



**Macduff (Potentially Vulnerable Area 06/04)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020016)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017-2018</b>
<b>Description:</b>			
<p>SEPA will be seeking to develop the flood hazard mapping in the Banff area to improve understanding of the coastal flood risk. The extent and timing of the completed improvements will be dependent on detailed scoping and data availability.</p> <p>SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Macduff sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			



**Macduff (Potentially Vulnerable Area 06/04)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five-day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Macduff (Potentially Vulnerable Area 06/04)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.

For further information on the application of national planning policies see Annex 5.

Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.

*(continued)*

As a consultee on planning applications, Aberdeenshire Council's Flood & Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.



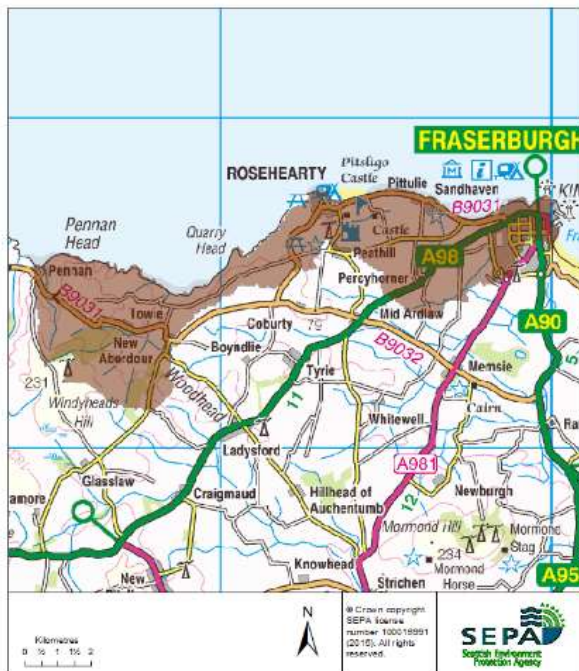
### 2.3.5 Fraserburgh and Rosehearty (Potentially Vulnerable Area 06/05)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	Buchan coastal

#### Background

This Potentially Vulnerable Area is located in the Moray Firth from Pennan to Fraserburgh. It is approximately 37km<sup>2</sup>.

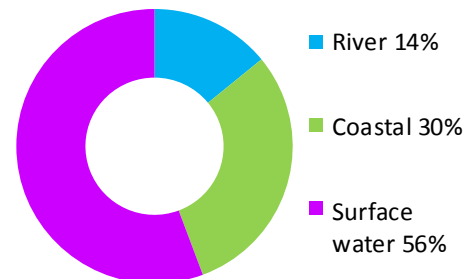
The main urban areas are Fraserburgh, Rosehearty, New Aberdour and Sandhaven.



There are several small watercourses within the area including The Dour.

There are approximately 60 residential and 80 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £84,000 with the majority from surface water flooding. It is recognised that wave overtopping contributes to coastal flooding which is not fully represented in this analysis.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of flooding impacts

The main areas of coastal flood risk are Rosehearty, Sandhaven and the Broadsea and harbour areas of Fraserburgh. Rosehearty benefits from protection against coastal flooding by the Port Rae breakwater. Provided that the original 200m section of the breakwater remains intact, the threat of erosion and flooding from the sea should not be significant. Surface water flood risk is scattered across the area, most notably in the urban areas of Fraserburgh and Rosehearty.

A nursing home, Westfield School in Fraserburgh and sections of the A98 are at risk of flooding. Five designated cultural heritage and small areas of designated environmental sites are also at risk.

For this Potentially Vulnerable Area the highest damages are to non-residential properties followed by damages to residential properties.

### **History of flooding**

Fraserburgh suffered from flooding in 1863 and 1895. Between 2002 and 2012 there were seven floods caused by various small burns including the Kessock Burn, and surface water runoff. These floods were generally due to heavy rainfall overwhelming road drainage and the small burns. In August 2006, the road and public park flooded due to water backing up behind a trash screen on the Kessock Burn and overtopping the culvert entrance.

Properties at Murison Drive in Rosehearty have also flooded several times in the last few years including in 2002 and 2009 due to excess surface water runoff and overflow from a small watercourse.

During the 1953 North Sea flood properties were destroyed by coastal flooding in Rosehearty and flooding occurred in various locations across the area, including Sandhaven and Pennan. Rosehearty and Sandhaven harbours both suffered damage from the coastal storms in December 2012 and 2013. Coastal storms also caused erosion at Kinnaird Head in Fraserburgh affecting a public footpath.

Five properties were damaged as a result of flooding events in December 2015

### **Objectives to manage flooding in Potentially Vulnerable Area 06/05**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Fraserburgh and Rosehearty Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Fraserburgh and Rosehearty (Potentially Vulnerable Area 06/05)**

Target area	Objective	ID	Indicators within PVA
Fraserburgh	Reduce risk from surface water flooding in Fraserburgh	600501	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	60 residential properties £84,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	60 residential properties £84,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/05 there are 60 residential properties at risk and Annual Average Damages of £47,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

### **Actions to manage flooding in Potentially Vulnerable Area 06/05**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Fraserburgh and Rosehearty Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Maintain flood warning					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
	Strategic mapping and modelling (SEPA)				
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					



North East Local Plan District – Local Flood Risk Management Plan  
**Fraserburgh and Rosehearty (Potentially Vulnerable Area 06/05)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain both the 'Gardenstown to Pennan' and 'Rosehearty to Fraserburgh' flood warning areas which are part of the Moray Firth coastal flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate."</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6005010018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Fraserburgh (600501)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a study to prepare Surface Water Management Plan (SWMP) to generate increased understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management in Fraserburgh and Rosehearty. The study will help in preparing a coordinated action plan, supported by an understanding of the costs and benefits, to identify measures to mitigate surface water flooding, identifying opportunities where SuDS and similar sustainable measures can play a more significant role in managing surface water flood risk and generate improved public engagement and understanding of surface water flooding as well as inform future developments.</p> <p>The study has the potential to benefit 33 residential properties, 45 non-residential properties and sections of road network at risk of flooding in this location, with potential average annual damages avoided of up to £47,000. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will consider interactions with drainage system, water bodies and the sea. Additional data and information will be procured or surveys commissioned to generate data to inform the study. The study will take a sustainable and integrated approach by</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Fraserburgh and Rosehearty (Potentially Vulnerable Area 06/05)**

coordinating with the river basin management plan. It will explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.

Aberdeenshire Council will coordinate with Scottish Water, SEPA and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020016)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2018-2019</b>
<b>Description:</b>			
<p>SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 1,700km<sup>2</sup> of improved data is currently available within this Local Plan District.</p> <p>SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2018-2020</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Fraserburgh sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Fraserburgh and Rosehearty (Potentially Vulnerable Area 06/05)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five-day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			



<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <a href="http://www.sepa.org.uk/environment/land/planning/">http://www.sepa.org.uk/environment/land/planning/</a></p>			

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

## 2.3.6 Newmill (Potentially Vulnerable Area 06/06)

Local Planning District	local authority	Main catchment
North East	The Moray Council	River Deveron

### Background

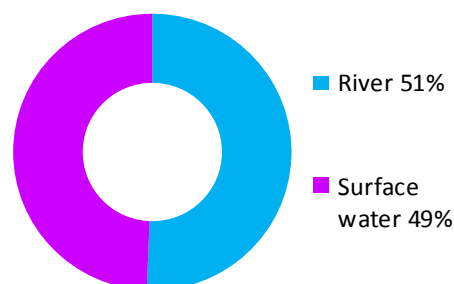
This Potentially Vulnerable Area is located to the north of Keith. It is approximately 13km<sup>2</sup> and includes the Newmill and Glen of Newmill areas. The A95, B9017 and B911 roads, a railway line and railway station are all within the area.



The largest river in the area is the River Isla.

There are approximately 13 residential and fewer than 10 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £24,000. These are evenly distributed between surface water and river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

### Summary of flooding impacts

River flood risk is associated with the River Isla as it flows to the north of Keith notably in the vicinity of the railway line and A95 at Montgrew. There are areas of surface water flood risk in Newmill and within Keith itself, although most of the areas at risk in Keith are outside the southern boundary of this Potentially Vulnerable Area.

Roads potentially affected by flooding include the A95, B9017 and B911. Sections of the Aberdeen to Inverness railway are also at risk of flooding.

For this Potentially Vulnerable Area the highest damages are to residential properties.

**Newmill (Potentially Vulnerable Area 06/06)****History of flooding**

There was flooding of residential and non-residential properties in Newmill and at the Isla Bank Mills by the River Isla in 2009. Surface water flooding affected Soutar's Lane, Newmill in 2005. A further surface water flood occurred in 2009, prompting The Moray Council to instigate improvement works in the area.

**Objectives to manage flooding in Potentially Vulnerable Area 06/06**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Newmill Potentially Vulnerable Area.

Target area	Objective	ID	Indicators within PVA
Newmill	Reduce risk from surface water flooding in Keith (Newmill)	600601	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	13 residential properties £24,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	13 residential properties £24,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/06 there are <10 residential properties at risk and Annual Average Damages of £12,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Newmill (Potentially Vulnerable Area 06/06)****Actions to manage flooding in Potentially Vulnerable Area 06/06**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Newmill Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection scheme/works					
Community flood action groups					
Maintain flood warning					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Maintain flood protection scheme					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Newmill (Potentially Vulnerable Area 06/06)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION SCHEME/WORKS (6006010006)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Newmill (600601)		
<b>Delivery lead:</b>	The Moray Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>38 of 42</b>	<b>1 of 1</b>	
<b>Status:</b>	<b>Under development</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>A flood protection scheme has been confirmed and is being progressed to construction on site.</p> <p>The scheme includes a network of ditches to the north of Newmill, a cascade, flood walls and a replacement bridge.</p> <p>It has been designed to a 1 in 200 year standard of protection including an allowance for climate change.</p> <p>This scheme was developed in consultation with local residents, SEPA, SNH, Deveron, Bogie and Isla Rivers Charitable Trust, and relevant utility companies. The Council will continue to communicate with these groups / organisations during construction.</p> <p>This scheme will be funded through the Moray Council's Capital Plan.</p>			
<b>Potential impacts</b>			
<b>Economic:</b>	The flood protection scheme will reduce flood risk to 13 residential and five non-residential properties. Damages of £1.9 million are avoided, with a benefit cost ratio of 1.32.		
<b>Social:</b>	The flood protection scheme will reduce risk to an estimated 29 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people.		
<b>Environmental:</b>	There are no designated habitat sites close to the area.		

**Newmill (Potentially Vulnerable Area 06/06)**

<b>Action (ID):</b>	<b>COMMUNITY FLOOD ACTION GROUPS (6000020012)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Community		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
Newmill Community Association has worked with The Moray Council, and tenants to reduce the impact of surface water flooding. This relationship will be maintained throughout the construction of the scheme.			

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
SEPA will continue to maintain the 'Keith' flood warning area which is on the River Isla and forms part of the Deveron river flood warning scheme.			
A flood protection scheme is proposed for Newmill. SEPA will work with The Moray Council to ensure that changes to hydrology and flood risk as a result of the proposed flood protection scheme are fully considered in the existing flood warning system.			
The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.			

**Newmill (Potentially Vulnerable Area 06/06)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Moray Council will seek opportunities to raise awareness of flood risk and actions that prepare individuals, homes and businesses as described in the Act. They will support community resilience groups working with SEPA, responsible authorities and the Scottish Flood Forum. Most recently The Moray Council held an event in Keith to inform residents of the objectives and actions included in this plan and how the plan may affect them in the future.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>SEPA and the responsible authorities have a duty to raise public awareness of flood risk. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact. SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible. Local authorities will be undertaking additional awareness raising activities. Further details will be set out in the Plan.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>For the new flood protection scheme at Newmill, SEPA will support the local authority's communications and engagement activities with media activity, local public awareness events and education engagement with the schools. SEPA will also deliver joint communications with local authorities for Floodline customers in any newly protected flood warning area.</p>			



**Newmill (Potentially Vulnerable Area 06/06)**

SEPA's awareness raising activities are funded through Scottish Government's grant in aid allocation.

*(continued)*

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at: <https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6006010018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Keith (Newmill) (600601)		
<b>Delivery lead:</b>	The Moray Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>A Surface Water Management Plan for the Keith/Newmill area will be developed by The Moray Council in collaboration with Scottish Water which will set objectives for the management of surface water flood risk and identify the most sustainable actions to achieve the objectives.</p> <p>The development of this plan will be funded from the Council's FRM Revenue budget.</p> <p>Scottish Water will work with The Moray Council and support surface water management planning through ensuring that best available knowledge and data is used to input into the Surface Water Management Plans.</p>			

**Newmill (Potentially Vulnerable Area 06/06)**

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of organisations, including local authorities, the emergency services and SEPA. Emergency response in the Moray area is co-ordinated by the Grampian Emergency Planning Unit, which is part of the Grampian Local Resilience Partnership covering Moray Aberdeenshire and Aberdeen City. This partnership is made up of Police Scotland, Scottish Fire and Rescue Service, The NHS, The Moray Council, SEPA and the Met Office. This unit coordinates the emergency response to flood events, such as road closures, evacuations and temporary accommodation.</p> <p>Emergency response and development of the Emergency Plan is funded from the Council's revenue budget.</p> <p>Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>			

<b>Action (ID):</b>	<b>MAINTAIN FLOOD PROTECTION SCHEME (6000020017)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	The Moray Council		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Newmill (Potentially Vulnerable Area 06/06)**

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The Moray Council will continue to maintain the Newmill Flood Protection Scheme, including phase 2, once completed.

Maintenance of this scheme is included in the Council's schedule of clearance and repair

Works identified in the Council's clearance and repair schedule are funded from the FRM Revenue budget.

**Newmill (Potentially Vulnerable Area 06/06)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2020</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Keith sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p>			

**Newmill (Potentially Vulnerable Area 06/06)**

Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.

SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>The Moray Council provides advice to members of the public regarding flood risk and resilience. The Council also holds information events from time to time in collaboration with Scottish Water, SEPA and the Scottish Flood Forum.</p> <p>Events hosted by the Council are funded from the FRM Revenue budget.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	The Moray Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. They produce schedules of clearance and repair works and make these available for public inspection.</p>			

**Newmill (Potentially Vulnerable Area 06/06)**

Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.

The Moray Council has a schedule of clearance and repair, which identifies routine maintenance and repairs to address areas known to be at risk. It may include small improvement works. This schedule is reviewed and updated. This review is based on inspections and information provided by the public and other organisations.

*(continued)*

Works identified in the Council's clearance and repair schedule are funded from the FRM Revenue budget.

Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>The Moray Council develops and adopts a revised Local Plan every five years. This plan sets out the strategy for delivering appropriate development throughout Moray and takes into consideration a number of potential constraints including flood risk. The Council's Flood Risk Management team provides advice regarding flood risk that informs this plan. The current plan was adopted in 2015 and consultation on the new plan started in 2016.</p>			

**Newmill (Potentially Vulnerable Area 06/06)**

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

*(continued)*

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

## 2.3.7 Turriff (Potentially Vulnerable Area 06/07)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Deveron

### Background

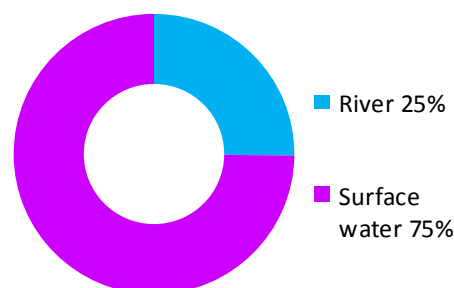
This Potentially Vulnerable Area includes the south and west of Turriff and surrounding rural areas. It is approximately 7km<sup>2</sup>. The A947 passes through the middle of the area.



The main river is the Burn of Turriff which flows into the Deveron just to the north west of the area.

There are approximately 20 non-residential and fewer than 10 residential properties at risk of flooding.

The Annual Average Damages are estimated to be £24,000 with the majority caused by surface water flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

### Summary of flooding impacts

River flood risk in Turriff is associated with the Burn of Turriff, the flood plain of which extends along the south west edge of the town towards its confluence with the River Deveron. Surface water flood risk occurs in localised areas across the town often associated with smaller watercourses.

Roads at risk of flooding include sections of the A947 and B9024. Flooding also affects the area that hosts the annual Turriff Show which is an important economic event for the local community. This has, however, been mitigated through improvements to the drainage upstream of the bridge on the A947.



**Turriff (Potentially Vulnerable Area 06/07)**

For this Potentially Vulnerable Area the highest damages are to non-residential properties followed by damages to residential properties.

**History of flooding**

The Burn of Turriff flooded in 1829 and 1859; the latter destroying several bridges including a railway bridge. In 1999, heavy rainfall overwhelmed the sewer causing flooding in Crooked Lane, Turriff.

10 properties were damaged as a result of flooding events in December 2015

Turriff United football ground has flooded on a number of occasions from the Burn of Turriff and Gassie Burn including in 2000 and 2002. Surface water flooding also occurred in Turriff in 2004, 2005, and 2008 due to the drainage infrastructure being unable to cope with runoff from heavy rainfall. This resulted in the flooding of properties and roads.

**Objectives to manage flooding in Potentially Vulnerable Area 06/07**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Turriff Potentially Vulnerable Area.

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<10 residential properties  £24,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	<10 residential properties  £24,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Turriff (Potentially Vulnerable Area 06/07)****Actions to manage flooding in Potentially Vulnerable Area 06/07**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation.

Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Turriff Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Maintain flood warning					
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Turriff (Potentially Vulnerable Area 06/07)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain the 'Turriff' flood warning area which is part of the Deveron river flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate."</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

**Turriff (Potentially Vulnerable Area 06/07)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Turriff (Potentially Vulnerable Area 06/07)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at: <https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.</p>			

**Turriff (Potentially Vulnerable Area 06/07)**

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Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

**Turriff (Potentially Vulnerable Area 06/07)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Turriff sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p>			

**Turriff (Potentially Vulnerable Area 06/07)**

SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.

SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			



**Turriff (Potentially Vulnerable Area 06/07)**

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Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.

Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.

**Turriff (Potentially Vulnerable Area 06/07)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <a href="http://www.sepa.org.uk/environment/land/planning/">http://www.sepa.org.uk/environment/land/planning/</a></p>			

**Turriff (Potentially Vulnerable Area 06/07)**

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SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.8 Peterhead (Potentially Vulnerable Area 06/08)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	Buchan coastal

#### Background

This Potentially Vulnerable Area includes Peterhead, Stirling and Boddam. It is approximately 28km<sup>2</sup>.

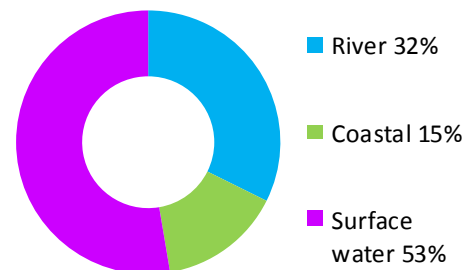
The A90, A950, and A982 pass through the area.



The main river in the area is the River Ugie.

There are approximately 40 residential and 80 non-residential properties at risk of flooding.

The Annual Average Damages are estimated to be £580,000 with the majority attributed to surface water flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

#### Summary of flooding impacts

Parts of the area, for example Roanheads, are vulnerable to coastal flooding from wave overtopping. Flooding from wave action is not fully represented in the general assessment of flood risk in this area and both the number of properties at risk and the damages from coastal flooding are likely to be underestimated. Wave overtopping has been taken into account in the setting of objectives and actions.

River flooding is associated with the Ugie and its tributary, the Collie Burn, as well as from the Millbank Burn. There are widespread areas of surface water flood risk notably affecting the A90 at Stirling village and Boddam.

Transport links at risk of flooding include significant lengths of the A90, the A980 and A950. One designated cultural heritage site and small areas of designated environmental sites are also at risk.

For this Potentially Vulnerable Area the highest damages are to non-residential properties.

### **History of flooding**

Peterhead was flooded in 1881 and 1882 by the River Ugie. There have been 15 floods since 2002, with the majority being related to surface water. The areas affected include Wood End House, Upperton Industrial Estate, Howe of Buchan, Lendrum Terrace, Station Road/A90 junction, Queen Street, Mallard Drive, central Peterhead, Braehead Crescent, Balmoor Terrace, Springbank, River View, A90 bypass, A950, Forman Drive, Schivas Road, Petergrange Road, Hawthorn Road, Geary Place and Crossfolds Crescent.

4 properties were affected as a result of flooding events in December 2015


Properties on Catto Drive, Collieburn Crescent, Golf Road, Riverside Drive and York Street experienced surface water flooding in August 2012; several properties were evacuated during this event.

In the 1953 North Sea flood, Peterhead was badly affected with many cottages being washed away. More recently, in December 2012, around 30 people were evacuated from the Roanheads area of the town due to coastal flooding, which was exacerbated by wave overtopping.

### **Objectives to manage flooding in Potentially Vulnerable Area 06/08**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Peterhead Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Peterhead (Potentially Vulnerable Area 06/08)**

Reduce risk in Peterhead from coastal flooding	
Indicators:	Target area:
<p>10 people</p> <p>£2.800 Annual Average Damages from residential properties</p>	
Objective ID: 600801	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Target area	Objective	ID	Indicators within PVA
Peterhead	Reduce risk from surface water flooding in Peterhead	600804	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<p>40 residential properties</p> <p>£580,000 Annual Average Damages</p>
Applies across North East Local Plan District	Reduce overall flood risk	600002	<p>40 residential properties</p> <p>£580,000 Annual Average Damages</p>
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/08 there are 40 residential properties at risk and Annual Average Damages of £300,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Peterhead (Potentially Vulnerable Area 06/08)****Actions to manage flooding in Potentially Vulnerable Area 06/08**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation.

Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Peterhead Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
New flood warning					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

Delivery of selected actions
Peterhead Flood Protection Study - Cycle 2 (2022 – 2027)
<p>A further Flood Protection Study is planned for this PVA in the next cycle of the Flood Risk Management Plan (2022 – 2027). The study will look to reduce flood risk in Peterhead from coastal flooding.</p> <p>A flood protection study is currently under development by Peterhead Port Authority to consider flood protection works to reduce the likelihood of flooding to Roanheads in Peterhead from coastal flooding. If flood protection works are not carried out by the Port Authority, the flood protection study should be developed to consider the impact from wave overtopping and primarily focus on coastal management actions, direct defences, relocation and property level protection, but other actions may also be considered in order to develop the most sustainable range of options.</p>



**Peterhead (Potentially Vulnerable Area 06/08)**

<b>Action (ID):</b>	<b>NEW FLOOD WARNING</b> (6000020010)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017 - 2018</b>
<b>Description:</b>			
<p>Flood warning is required for communities at risk of coastal flooding along the Aberdeenshire coast from Peterhead to Montrose. A flood warning system will be developed and implemented. The geographical extent of specific flood warning areas will be developed as part of this process.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement. In addition, Scottish Government provides grant funding to enable SEPA to implement new flood warning schemes.</p>			

**Peterhead (Potentially Vulnerable Area 06/08)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Peterhead (Potentially Vulnerable Area 06/08)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at: <https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6008040018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Peterhead (600804)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a study to prepare Surface Water Management Plan (SWMP) to generate increased understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management in Peterhead. The study will help in preparing a coordinated action plan, supported by an understanding of the costs and benefits, to identify measures to mitigate surface water flooding, identifying opportunities where SuDS and similar sustainable measures can play a more significant role in managing surface water flood risk and generate improved public engagement and understanding of surface water flooding as well as inform future developments.</p> <p>The study has the potential to benefit 40 residential properties and sections of road network at risk of flooding in this location, with potential average annual damages avoided of up to £300,000. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will consider interactions with drainage system, water bodies and the sea. Additional data and information will be procured or surveys commissioned to generate data to inform the study. The study will take a sustainable and integrated approach by</p>			

**Peterhead (Potentially Vulnerable Area 06/08)**

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coordinating with the river basin management plan. It will explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.

Aberdeenshire Council will coordinate with Scottish Water, SEPA and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

**Peterhead (Potentially Vulnerable Area 06/08)**

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.</p> <p>Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.</p>			

**Peterhead (Potentially Vulnerable Area 06/08)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Peterhead sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

**Peterhead (Potentially Vulnerable Area 06/08)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders.</p> <p>The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business.</p> <p>For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation.</p> <p>The Met Office receives funding from the UK Government.</p>			

**Peterhead (Potentially Vulnerable Area 06/08)**

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.</p>			



<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act.</p>			

**Peterhead (Potentially Vulnerable Area 06/08)**

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Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website

<http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

## 2.3.9 Methlick (Potentially Vulnerable Area 06/09)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Ythan

### Background

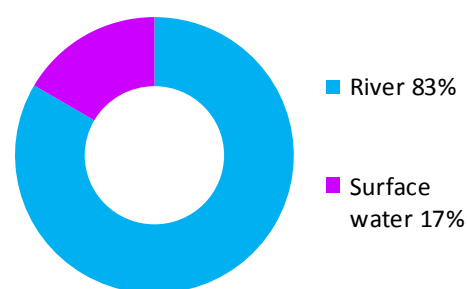
This Potentially Vulnerable Area is located northeast of Inverurie and covers Methlick and the surrounding rural area. It is approximately 21km<sup>2</sup>. The B9005 and B9170 roads run through the area.



The main water course is the River Ythan.

There are approximately 20 non-residential and fewer than 10 residential properties at risk of flooding.

The Annual Average Damages are approximately £71,000. The majority of these are attributed to river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

### Summary of flooding impacts

River flood risk in this area is attributed to the River Ythan and its tributary the Burn of Sauchentree although this is mainly limited to the largely undeveloped floodplain of the Ythan itself.

Roads affected by flooding include the B9005. One designated cultural heritage site is also at risk.

For this Potentially Vulnerable Area the highest damages are to residential, non-residential properties and roads.

**History of flooding**

There was a flood on the River Ythan in January 2003 affecting Woodhead Road in Methlick; seven properties were flooded. Flooding of the River Ythan was reported again in 2012 and in January 2016.

**Objectives to manage flooding in Potentially Vulnerable Area 06/09**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Methlick Potentially Vulnerable Area.

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<10 residential properties  £71,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	<10 residential properties  £71,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Methlick (Potentially Vulnerable Area 06/09)****Actions to manage flooding in Potentially Vulnerable Area 06/09**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation.

Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Methlick Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Awareness raising					
Emergency plans/response					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Methlick (Potentially Vulnerable Area 06/09)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Methlick (Potentially Vulnerable Area 06/09)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at: <https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Methlick (Potentially Vulnerable Area 06/09)**

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.



**Methlick (Potentially Vulnerable Area 06/09)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Methlick (Potentially Vulnerable Area 06/09)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.

For further information on the application of national planning policies see Annex 5. Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.

*(continued)*

As a consultee on planning applications, Aberdeenshire Council's Flood & Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.



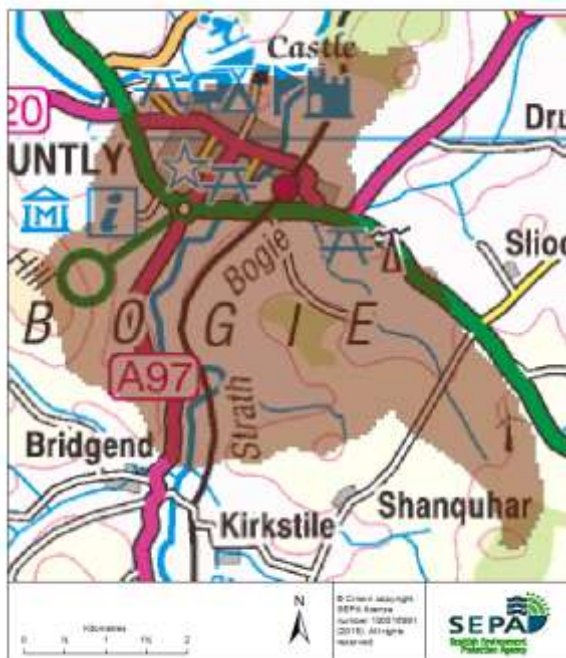
### 2.3.10 Huntly (Potentially Vulnerable Area 06/10)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Deveron

#### Background

This Potentially Vulnerable Area includes Huntly and the rural area to the south. It is approximately 20km<sup>2</sup>.

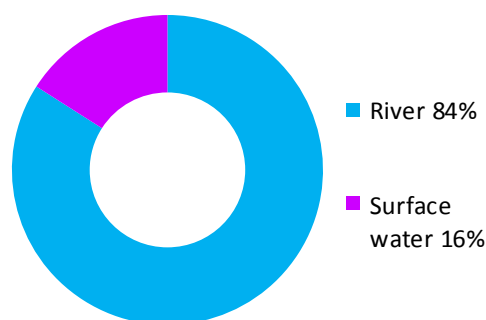
The A96, A97 and A920 pass through the area.



The River Deveron and the River Bogie are the main rivers in this area.

There are approximately 110 residential and 50 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £450,000 with the majority due to river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

#### Summary of flooding impacts

River flood risk is primarily focused on the Meadows area in the north of Huntly. This coincides with the floodplain of the Deveron and the Meadow Burn. There are localised areas of surface water flood risk throughout Huntly.

A nursing home, roads including the A96 A97 and A920, and the Aberdeen to Inverness railway line are at risk of flooding. Four designated cultural heritage sites are also at risk within this area.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

## **History of flooding**

Huntly has flooded from the River Deveron, River Bogie and Meadow Burn. Residents in the Meadows area have been evacuated on several occasions in recent years.

The earliest recorded flood was in 1829 when the town was surrounded by water and bridges destroyed by the Bogie and Deveron. There are also floods recorded from the Bogie in 1865, 1872, 1878 and 1881. The Deveron caused flooding in 1839, 1865, 1869, 1874 and 1881.

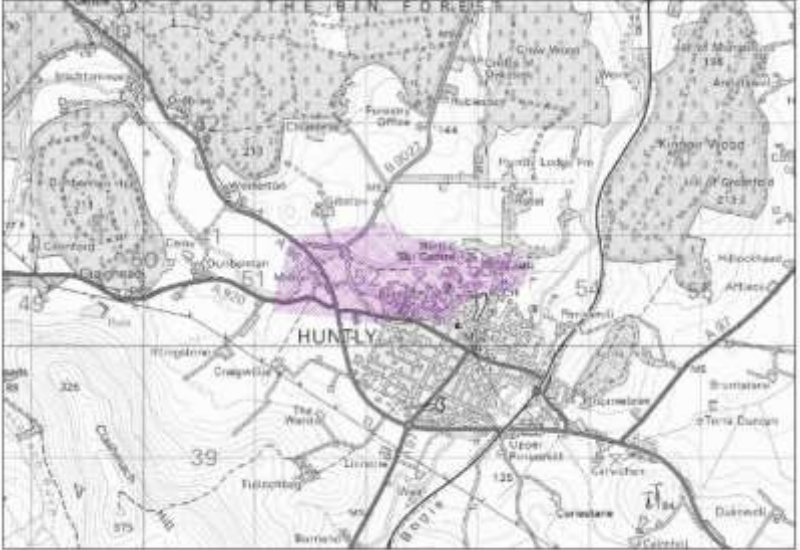
More recently, there was flooding of the Meadows area in 1995 and a further 12 floods have been recorded since 1997 from various sources including the Ittingstone Burn, Meadows Burn (2009), the Bogie (2002, 2003, 2005, and 2006) and the Deveron (2009). The highest impact flood on record occurred in November 2009 when over 100 people had to be evacuated from the Meadows area, including from a nursing home, due to flooding from the Meadows Burn.

Flooding from surface water runoff has also been recorded at various locations in Huntly. These floods have affected properties, roads, caravan parks, car parks and a care home. The areas of Huntly which have been affected include central, south east, and east Huntly, including Bleachfield Street, Burnside Road, Green Road and Glamourhaugh, George Street, and the Meadows area.

## **Objectives to manage flooding in Potentially Vulnerable Area 06/10**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Huntly Potentially Vulnerable Area

**Reduce flood risk in the Meadows area of Huntly (including A96 and A920, Ski Centre and caravan park) from the River Deveron and Meadows Burn**

Indicators:	Target area:
<p>110 people  £180,000 Annual Average Damages  1 nursing home  A96  A920</p>	
Objective ID: 601001	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Target area	Objective	ID	Indicators within PVA
Huntly	Reduce the physical risk, or disruption risk, related to areas of the A96 at risk of flooding	6300	10 locations on the A96 with a total length of 220m
Huntly	Reduce risk from surface water flooding in Huntly	601004	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	110 residential properties £450,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	110 residential properties £450,000 Annual Average Damages
Applies across North East Local Plan District	Organisations such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/10 there are 60 residential properties at risk and Annual Average Damages of £72,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

## Actions to manage flooding in Potentially Vulnerable Area 06/10

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Huntly Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection scheme/works					
Maintain flood warning					
Awareness raising					
		Maintain Flood Protection Scheme			
Surface water plan/study					
Emergency plans/response					
	Strategic mapping and modelling				
Flood forecasting					
Self help					
Maintenance					
Planning Policy					



<b>Action (ID):</b>	<b>FLOOD PROTECTION SCHEME/WORKS (6010010006)</b>		
<b>Objective (ID):</b>	Reduce flood risk in the Meadows area of Huntly (including A96 and A920, Ski Centre and caravan park) from the River Deveron and Meadows Burn (601001)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>33 of 42</b>	<b>2 of 2</b>	
<b>Status:</b>	<b>Under development</b>	Indicative delivery:	<b>2016-2017</b>
<b>Description:</b>			
<p>The detailed modelling has shown that a combination of raised defences on the River Deveron, increasing the conveyance on selected culverts on the Ittingstone and Meadow Burns and the provision of storage on the Meadow Burn are the most effective methods of providing flood risk mitigation for the community of Huntly. The scheme will provide a defence standard of 1 in 200 years, which will reduce the flood risk to 0.5% chance of flooding in any given year. The works broadly comprise of the following elements:</p> <p>Raised defences on the right bank of the River Deveron from Arnhall Cottages to Milton Farm (either next to the river or set back against the A920)</p> <p>Increasing the size of the culvert on the Ittingstone Burn below the A920 and constructing raised defences adjacent to the road and on the right bank of the burn</p> <ul style="list-style-type: none"> <li>• Raising and strengthening the existing defences on the river Deveron between the Bridge of Gibston and the Hill of Haugh</li> <li>• Constructing raised defences to the east and south of the caravan park</li> <li>• Replacing one undersize culvert on the Meadow Burn with a timber footbridge</li> <li>• Creating local storage to the west of the Meadows estate by constricting the flow in the Meadow Burn to a figure that can be accommodated by the downstream channel and culvert systems</li> <li>• Various headwalls, culverts and drainage improvements</li> </ul> <p>Construction will commence in Summer 2016 for a duration of around 9 months.</p> <p>It is anticipated that the Huntly Flood Protection Scheme will be eligible for 80% funding from the Scottish Government's Flooding Component of the General Capital Grant. The remaining funding will be met from the Harbours, Coast &amp; Flooding line from Aberdeenshire Council's Capital Plan 2015-2031</p>			

<i>(continued)</i>
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Potential impacts	
<b>Economic:</b>	The flood protection scheme will reduce flood risk to 50 residential properties and 13 non-residential properties, with estimated damages avoided of £3.4 million. The benefit cost ratio of the proposed works is 1.1.
<b>Social:</b>	The flood protection scheme will reduce risk to an estimated 110 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. There are a higher than average number of vulnerable people in the area who will benefit from the works. The nursing home, A96 and A920, ski centre and caravan park would also benefit from reduced flood risk.
<b>Environmental:</b>	Flood protection works can have both positive and negative impacts on the ecological quality of the environment depending on how they are designed. In Huntly, the embankments are set back from the river and are likely to improve the ecological quality. One scheduled monument would benefit from reduced risk of flooding. Actions taken to minimise the impacts to the environment include use of shallow sloping defences to reduce the visual impacts. There are no designated habitat sites close to the area.

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

SEPA will continue to maintain the 'Huntly (Bogie)' flood warning area which is on the River Bogie and the 'Milton and The Meadows' flood warning area. Both form part of the Deveron river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.

A flood protection scheme is proposed for Huntly. SEPA will work with the local authority to ensure that changes to hydrology and flood risk as a result of the proposed flood protection scheme are fully considered in the existing flood warning system.

The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>A flood protection scheme is proposed for Huntly. For the new flood protection scheme, SEPA will support the local authority's communications and engagement activities with media activity, local public awareness events and education engagement with schools. SEPA will also deliver joint communications with local authorities for Floodline customers in any newly protected flood warning area.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising</p>			

activities will be coordinated with the activities of other responsible authorities as required.

*(continued)*

SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>MAINTAIN FLOOD PROTECTION SCHEME (6010010017)</b>		
<b>Objective (ID):</b>	Reduce flood risk in the Meadows area of Huntly (including A96 and A920, Ski Centre and caravan park) from the River Deveron and Meadows Burn (601001)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Proposed</b>	Indicative delivery:	<b>2017 onwards</b>
<b>Description:</b>			
<p>Once constructed, Aberdeenshire Council will maintain the Huntly Flood Protection Scheme ensuring works are coordinated and infrastructure is fully assessed. This will be done by undertaking routine, reactive, programmed, regulatory and emergency response inspections. This work will be carried out by Aberdeenshire Council staff on a priority needs basis as resource allows.</p> <p>Elements of the scheme which will be subject to particular attention are:</p> <ul style="list-style-type: none"> <li>• Debris screens will receive routine/programmed inspections as well as reactive and emergency response.</li> <li>• The Reservoirs (Scotland) Act 2011 requires all reservoirs above the capacity of 10,000m<sup>3</sup> to be included on a SEPA register. The scheme includes temporary storage above this capacity and therefore as Reservoir Manager, Aberdeenshire</li> </ul>			

Council will comply with the inspection, maintenance and certification requirements of the Reservoirs (Scotland) Act 2011

Where required Aberdeenshire Council will coordinate required maintenance works with the Scottish Environment Protection Agency (SEPA); Scottish Natural Heritage (SNH); landowners etc.

Aberdeenshire Council funding for maintaining flood protection schemes will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6010040018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Huntly (601004)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a study to prepare Surface Water Management Plan (SWMP) to generate increased understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management in Huntly. The study will help in preparing a coordinated action plan, supported by an understanding of the costs and benefits, to identify measures to mitigate surface water flooding, identifying opportunities where SuDS and similar sustainable measures can play a more significant role in managing surface water flood risk and generate improved public engagement and understanding of surface water flooding as well as inform future developments.</p> <p>The study has the potential to benefit 60 residential properties, caravan parks, car parks, a care home and sections of road network at risk of flooding in this location, with potential Average Annual Damages avoided of up to £72,000. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will consider interactions with drainage system and water bodies. Additional data and information will be procured or surveys commissioned to generate data to inform the study. The study will take a sustainable and integrated approach by coordinating with the river basin management plan. It will explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.</p>			

Aberdeenshire Council will coordinate with Scottish Water, SEPA and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and, where available, outputs of Section 16 or integrated catchment studies, to assist with the surface water management planning process

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.



<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>There are two containers of sand bags, which can be accessed by members of the community for deployment in the event of a flood warning, within the Meadows area in Huntly. Aberdeenshire Council also operates a flood monitor on the Meadows Burn to provide early warning of potential flooding.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.</p> <p>Scottish will support regional and local resilience partnerships as required. Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2018-2020</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Huntly sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p>			

Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.

SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property from flooding.</p> <p>Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.

Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <a href="http://www.sepa.org.uk/environment/land/planning/">http://www.sepa.org.uk/environment/land/planning/</a></p>			

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.11 Insch (Potentially Vulnerable Area 06/11)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Don

## Background

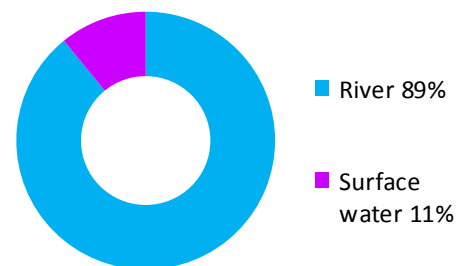
This Potentially Vulnerable Area is based around Inch and Oldtown. It is approximately 40km<sup>2</sup>. The B9002 and B992 and the Aberdeen to Inverness railway line pass through the area.



The main watercourse is The Shevock which is a tributary of the River Urie.

There are approximately 80 residential and 30 non-residential properties at risk of flooding.

The Annual Average Damages are estimated to be £250,000 with the majority caused by river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

## Summary of flooding impacts

River flood risk in this area is mainly associated with the Shevock Burn where it flows through the southern part of town of Inch.

A hospital, one nursing home, sections of road and railway are all identified as being at risk of flooding.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

## **History of flooding**

The earliest recorded floods occurred in 1864 from The Shevock and in 1879, when the railway flooded from a burn in Insch. There were floods in 1903 and 1930 from The Shevock, resulting in minor damage.

The highest impact flood on record within this Potentially Vulnerable Area occurred in November 2002, when a nursing home had to be evacuated due to flooding by The Shevock; residential properties were also affected. Local knowledge also refers to the nursing home being affected by flooding in 1995, however SEPA have no records to confirm this event or its impacts.

There have been seven floods since 2002 coming variously from the Valentine Burn, The Shevock and surface water runoff. There were two floods in 2004; one in June from The Shevock, which affected properties in southwest Insch, and the other from the Valentine Burn in August which affected property in North West Insch. Both floods were exacerbated by drainage systems being unable to cope with the heavy rainfall. Roads are often affected by surface water flooding, for example in 2008 the B9002 was flooded.

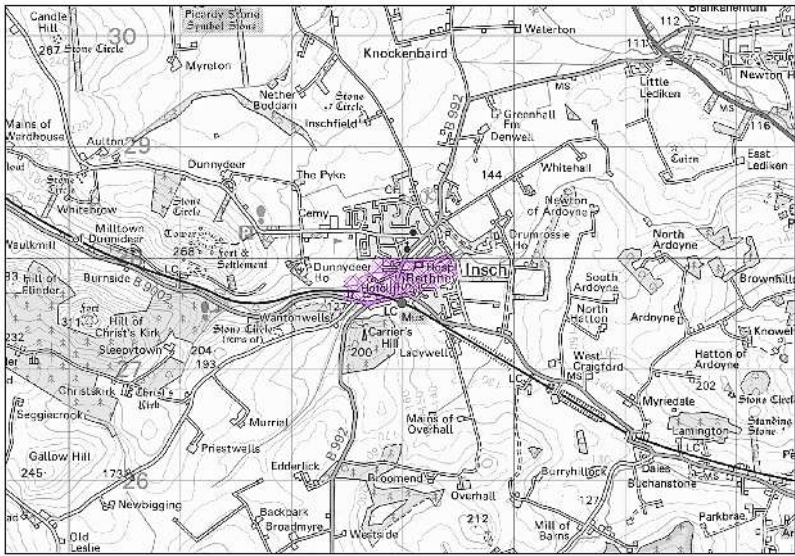
26 properties were damaged as a result of flooding events in December 2015

## **Objectives to manage flooding in Potentially Vulnerable Area 06/11**


Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Insch Potentially Vulnerable Area.



North East Local Plan District – Local Flood Risk Management Plan  
**Insch (Potentially Vulnerable Area 06/11)**

Reduce flood risk in Insch from The Shevock	
Indicators:	Target area:
<p>100 people</p> <p>£110,000 Annual Average Damages from residential properties</p> <p>£54,000 Annual Average Damages from non-residential properties</p> <p>1 hospital</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 601101	

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

Reduce flood risk in Insch from the Valentine Burn	
Indicators:	Target area:
<p>40 people</p> <p>£30,000 Annual Average Damages from residential properties</p> <p>£160 Annual Average Damages from non-residential properties</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 601102	

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Insch (Potentially Vulnerable Area 06/11)**

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	80 residential properties £250,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	80 residential properties £250,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/11**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Insch Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

North East Local Plan District – Local Flood Risk Management Plan  
**Insch (Potentially Vulnerable Area 06/11)**

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The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection study					
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling (Scottish Water)					
	Strategic mapping and modelling (SEPA)				
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Insch (Potentially Vulnerable Area 06/11)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6011010005)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Insch from the Valentine Burn (601102) Reduce flood risk in Insch from The Shevock (601101)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>61 of 168</b>	<b>3 of 12</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a flood protection study to evaluate options for flood management to reduce the risk of flooding in Insch from the Shevock and Valentine Burn. It is currently estimated that the study will be completed by Summer 2019.</p> <p>The study has the potential to benefit 52 residential properties, 20 non-residential properties, sections of road network and a healthcare facility at risk of flooding in this location, with potential damages avoided of up to £6.3 million. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will take a sustainable and integrated approach by coordinating with the river basin management plan. It will be undertaken with due consideration to internationally, nationally and locally designated sites including listed buildings. It will also explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.</p> <p>The study will consider natural flood management measures along with traditional flood defences by exploring opportunities for online and offline flood storage, flow control structures, modification to conveyance capacity of watercourses by sediment and channel management, modifications to the bridges to improve conveyance, the construction of direct defences, river / floodplain restoration, runoff control through catchment and riparian tree planting, land-use and land-management changes, etc. Additionally, the study will also consider property level protection and property relocation. It is expected that the recommended flood protection scheme will comprise a combination of such measures to ensure a sustainable and integrated approach to flood risk management by due consideration of impacts on economy, society, environment and cultural heritage.</p> <p>Aberdeenshire Council will coordinate with SEPA, Scottish Water, SNH, The Crown Estate, landowners and community groups as well as other relevant agencies and</p>			

**Insch (Potentially Vulnerable Area 06/11)**

organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

Potential impacts	
<b>Economic:</b>	The study could benefit 52 residential and 20 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £6.3 million.
<b>Social:</b>	The development of flood protection works following the study would potentially reduce risk to 141 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. One healthcare facility would benefit from reduced likelihood of flooding if flood protection works provided protection to risk floods. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism. Negative impacts through disturbance to the local community during the construction phase should be considered.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Natural flood management actions can have a positive impact by restoring and enhancing natural habitats. Opportunities to mitigate any environmental impacts may include design and timing of works. The flood protection study should consider how to avoid or minimise potential negative effects such as loss or disturbance of sediment.

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Insch (Potentially Vulnerable Area 06/11)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at:

<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			



**Insch (Potentially Vulnerable Area 06/11)**

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Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.



**Insch (Potentially Vulnerable Area 06/11)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017-2020</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Insch sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress.</p> <p>Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020016)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2018-2019</b>
<b>Description:</b>			
<p>SEPA will be seeking to incorporate additional surface water hazard mapping information into the flood maps to improve understanding of flood risk. Approximately 1,700km<sup>2</sup> of improved data is currently available within this Local Plan District.</p> <p>SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement</p>			



**Insch (Potentially Vulnerable Area 06/11)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Insch (Potentially Vulnerable Area 06/11)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act.</p>			

**Insch (Potentially Vulnerable Area 06/11)**

Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website

<http://www.sepa.org.uk/environment/land/planning/>

(continued)

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

**Ellon (Potentially Vulnerable Area 06/12)****2.3.12 Ellon (Potentially Vulnerable Area 06/12)**

Local Plan District	local authority	Main catchments
North East	Aberdeenshire Council	River Ythan Buchan coastal

**Background**

This Potentially Vulnerable Area is centred on Ellon. It is approximately 19km<sup>2</sup>.

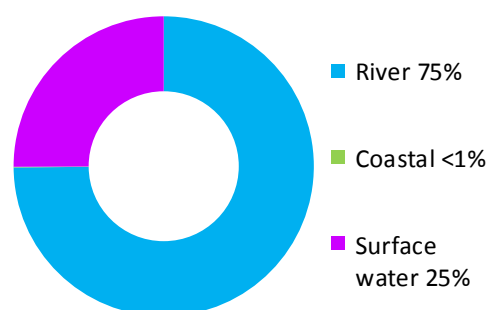
The A920, A948, B9005 and a short section of the A90 pass through the area.



The main river in the area is the Ythan, which is tidally influenced downstream of Ellon.

There are approximately 110 residential and 40 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £300,000 with the majority due to river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Summary of flooding impacts**

The river flood risk comes from the River Ythan and its smaller tributaries, including Modley Burn and Broomies Burn.

Roads at risk of flooding include the A920, A948 and A90. One school is at risk of flooding. Three designated cultural heritage sites and small areas of designated environmental sites are shown to be at risk.

**Ellon (Potentially Vulnerable Area 06/12)**

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

**History of flooding**

There are two recorded floods from the Modley Burn in Ellon. In 2000 a wall collapsed, causing flooding. In 2002 the basements of property located on the culverted section of the burn flooded due to water backing up.

In 2004, two properties in Findhorn Gardens flooded due to runoff from the adjacent housing development.

In 2009 there was a flood from Broomies Burn, which affected Castle Way Industrial Estate, Ellon and damaged two bridges. Two industrial units and a school were affected.

Flooding in December 2015 resulted in damage to over 80 Properties within Ellon. 18 homes evacuated in the Meadows area and an electricity substation flooded causing power cuts to 150 homes. 37 people attended rest centre in Ellon. The road between Ythanbank and Methlick was closed.


**Objectives to manage flooding in Potentially Vulnerable Area 06/12**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Ellon Potentially Vulnerable Area.


Reduce flood risk in Ellon from the River Ythan	
Indicators:	Target area:



**Ellon (Potentially Vulnerable Area 06/12)**

<p>80 people</p> <p>£58,000 Annual Average Damages from residential properties</p> <p>£6,200 Annual Average Damages from non-residential properties</p> <p>Objective ID: 601201</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
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Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

Reduce flood risk in Ellon from the Modley Burn	
Indicators:	Target area:
<p>80 people</p> <p>£80,000 Annual Average Damages from residential properties</p> <p>£20,000 Annual Average Damages from non-residential properties</p> <p>Objective ID: 601202</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

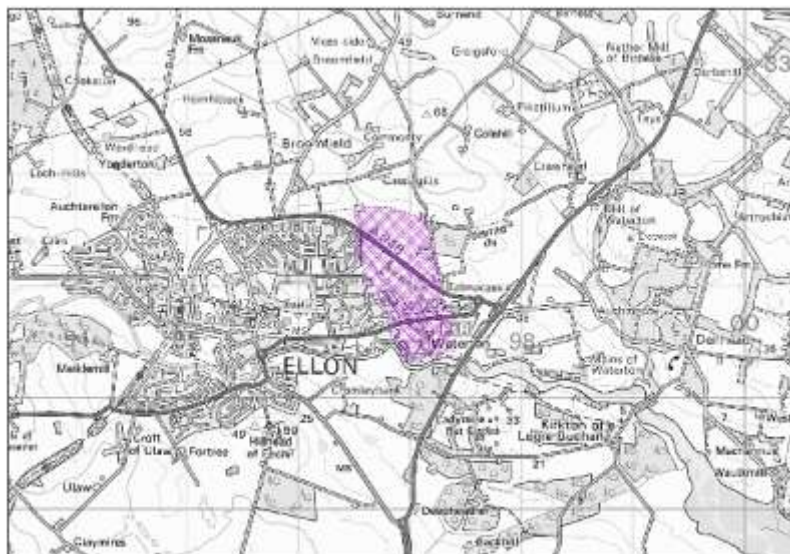
Reduce flood risk in Ellon from the Broomies / Bronie Burn	
Indicators:	Target area:

**Ellon (Potentially Vulnerable Area 06/12)**

£4,100 Annual Average  
Damages from residential  
properties

£37,000 Annual Average  
Damages from non-  
residential properties

Objective ID: 601203



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*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Ellon (Potentially Vulnerable Area 06/12)**

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	110 residential properties £300,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	110 residential properties £300,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/12**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Ellon Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

North East Local Plan District – Local Flood Risk Management Plan  
**Ellon (Potentially Vulnerable Area 06/12)**

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The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection study					
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Ellon (Potentially Vulnerable Area 06/12)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6012010005)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Ellon from the Broomies / Bronie Burn (601203) Reduce flood risk in Ellon from the Modley Burn (601202) Reduce flood risk in Ellon from the River Ythan (601201)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>55 of 168</b>	<b>1 of 12</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a flood protection study to evaluate options for flood management to reduce the risk of flooding in Ellon from the River Ythan, Modley Burn and Broomies / Bronie Burn. The study will be completed by the Summer 2019</p> <p>The study has the potential to benefit 77 residential properties, 18 non-residential properties, sections of road network and a school at risk of flooding in this location, with potential damages avoided of up to £6.1 million. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will take a sustainable and integrated approach by coordinating with the river basin management plan. It will be undertaken with due consideration to internationally, nationally and locally designated sites including listed buildings. It will also explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.</p> <p>The study will consider natural flood management measures along with traditional flood defences by exploring opportunities for online and offline flood storage, flow control structures, modification to conveyance capacity of watercourses by sediment and channel management, modifications to the bridges to improve conveyance, the construction of direct defences, river / floodplain restoration, runoff control through catchment and riparian tree planting, land-use and land-management changes, etc. Additionally, the study will also consider property level protection and property relocation. It is expected that the recommended flood protection scheme will comprise a combination of such measures to ensure a sustainable and integrated approach to flood risk management by due consideration of impacts on economy, society, environment and cultural heritage.</p>			

**Ellon (Potentially Vulnerable Area 06/12)***(continued)*

Aberdeenshire Council will coordinate with SEPA, Scottish Water, SNH, The Crown Estate, landowners and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

Potential impacts	
<b>Economic:</b>	The study could benefit 77 residential and 18 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £6.1 million.
<b>Social:</b>	The development of flood protection works following the study would potentially reduce risk to 169 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. One school may benefit from any works. Three utility sites (energy/electricity) could also benefit from the flood protection works identified in the study depending on the location and extent of works. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism. Negative impacts through disturbance to the local community during the construction phase should be considered.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Natural flood management actions can have a positive impact by restoring and enhancing natural habitats. Opportunities to mitigate any environmental impacts may include design and timing of works. The flood protection study should consider how to avoid or minimise potential negative effects such as loss or disturbance of sediment, disruption to natural processes and loss of habitat. To be in accord with the FRM Strategy, the Responsible Authority should seek to ensure as part of the study that the action will not have an adverse effect on the integrity of the Ythan Estuary, Sands of Forvie and Meikle Loch Special Protection Area. The study should ensure the actions do not impact the downstream Sands of Forvie and Ythan Estuary Site of Special Scientific Interest.



**Ellon (Potentially Vulnerable Area 06/12)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Ellon (Potentially Vulnerable Area 06/12)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at:

<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			



**Ellon (Potentially Vulnerable Area 06/12)**

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

**Ellon (Potentially Vulnerable Area 06/12)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2020</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Ellon sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p>			

**Ellon (Potentially Vulnerable Area 06/12)**

SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.

SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Ellon (Potentially Vulnerable Area 06/12)**

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Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.

Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.

**Ellon (Potentially Vulnerable Area 06/12)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <a href="http://www.sepa.org.uk/environment/land/planning/">http://www.sepa.org.uk/environment/land/planning/</a></p>			

**Ellon (Potentially Vulnerable Area 06/12)**

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SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.13 Inverurie and Kintore (Potentially Vulnerable Area 06/13)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Don

#### Background

This Potentially Vulnerable Area includes Inverurie and Kintore. It is approximately 60km<sup>2</sup>.

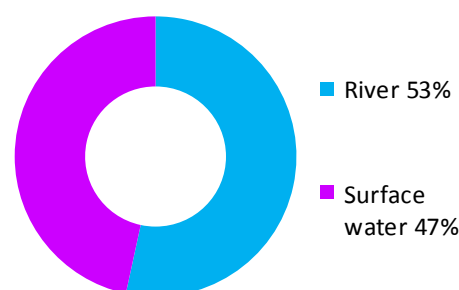
The A96 and the Aberdeen to Inverness railway pass through the area.



The main watercourses are the River Don and the River Urie. There are several smaller watercourses including the Strath Burn which is mainly culverted through Inverurie.

There are approximately 230 residential and 190 non-residential properties at risk of flooding.

The Annual Average Damages are estimated to be £510,000 with the majority caused by river flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of impacts from all sources of flooding

River flood risk in Inverurie is concentrated at the southern end of the town at the confluence of the River Don and River Urie, with an additional flood risk area around the confluence of the Over Burn with the River Urie. The flood risk in Kintore is concentrated around the Loch Burn and the Tuach Burn.

Surface water flood risk in Inverurie is mainly associated with the culverted sections of the Strath Burn / Over Burn and is concentrated along the B9170.

Several road locations, including the A96 and parts of the Aberdeen to Inverness railway line are at risk of flooding. Thirteen designated cultural heritage sites and an extensive area of agricultural land are also at risk of flooding.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties and roads.

### **History of flooding**

The earliest recorded flood was in 1768 when flooding on the Don destroyed most of the agricultural crops in affected areas. Similar floods were recorded on the Don in 1828, 1838, 1872, 1903, 1905, 1928, 1948, and 1951. The River Don also caused flooding in 1995, 2002, 2003, 2004, and 2009.

The 2002 flood had the highest water level recorded at the Bridge of Don and flooding from the canal affected Canal Road. In 2003, the flood barrier at Keithhall Road, Inverurie was breached and residential properties were flooded.

The Gas Burn flooded Blackall Road in Inverurie in 1924. The Strath Burn caused flooding to properties in central Inverurie in 2002, 2005, 2006, 2008, 2009, and 2010 due to the culvert backing up and blockage of the trash screen.

In 2009 Oldmeldrum Road and Souterford Road flooded due to overtopping of the River Urie. Other floods in this location were recorded in 1995 and 2002.

There was flooding in Kintore from the Tuach Burn in 2002, 2003, 2006, and 2009, when water backed up the burn from the River Don. Properties in south east Kintore, including Kingsfield Road, were flooded. Water levels backing up from the River Don caused flooding on the Loch Burn in the eastern areas of Kintore in 2002, 2005, and 2009 affecting commercial property in the area between the two railway culverts and properties on Northern Road.

Over 2 events in January 2016 there were reports of 56 properties damaged by flooding in Kintore and over 80 properties in Inverurie.

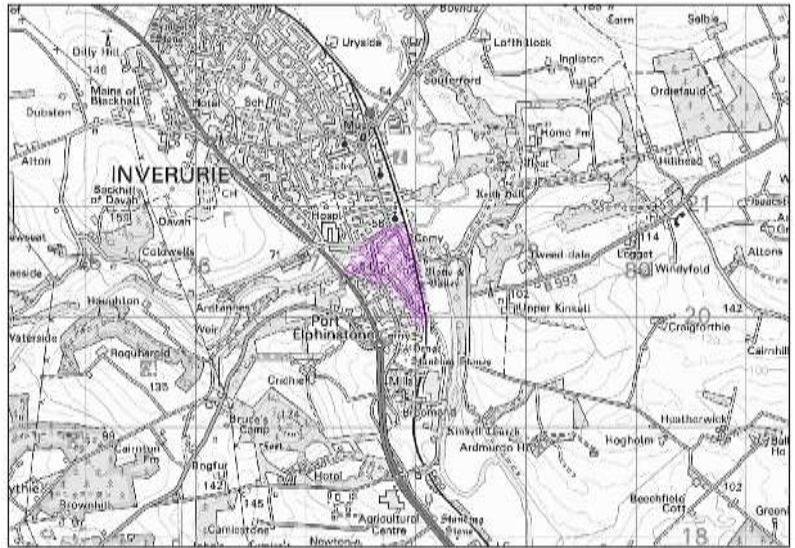
The fire brigade and the coast guard conducted rescue efforts to evacuate residents from Canal Road, Canal Crescent, Riverside Park where houses were inundated by several feet of water. Inverurie Academy was opened as temporary accommodation and the Port Elphinstone Bridge on Elphinstone Road was closed.



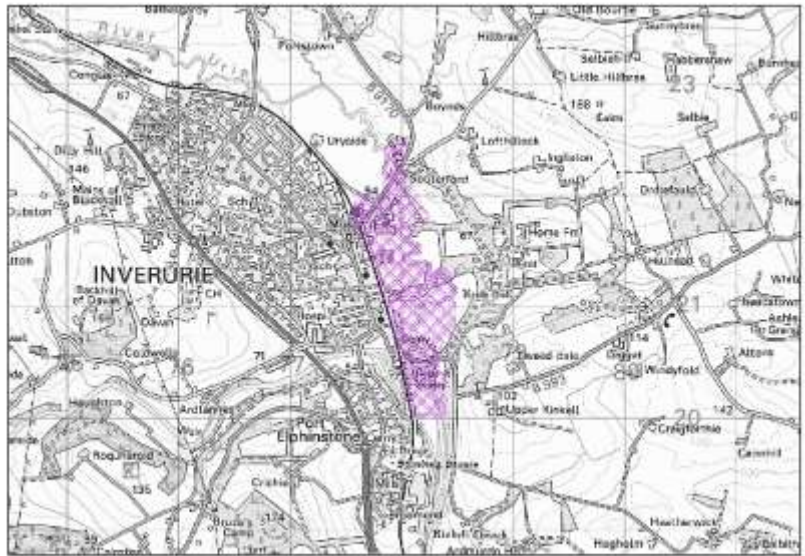
### **Objectives to manage flooding in Potentially Vulnerable Area 06/13**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Inverurie and Kintore Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

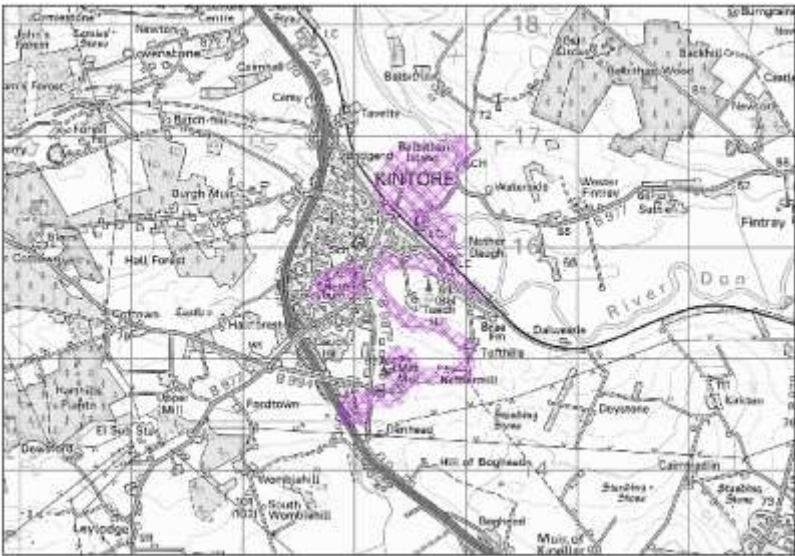
Reduce flood risk in Inverurie and Port Elphinstone from the River Don	
Indicators:	Target area:
<p>240 people</p> <p>£120,000 Annual Average Damages from residential properties</p> <p>£84,000 Annual Average Damages from non-residential properties</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 601301	

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Reduce flood risk in Inverurie and Port Elphinstone from the River Urie	
Indicators:	Target area:
<p>30 people</p> <p>£18,000 Annual Average Damages from residential properties</p> <p>£21,000 Annual Average Damages from non-residential properties</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 601302	

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

Reduce flood risk in Kintore from all watercourses (River Don, Torry Burn, Tuach Burn and Loch Burn)	
Indicators:	Target area:
<p>60 people</p> <p>£51,000 Annual Average Damages from residential properties</p> <p>£19,000 Annual Average Damages from non-residential properties</p> <p>B977</p>	
Objective ID: 601303	© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)

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Target area	Objective	ID	Indicators within PVA
Inverurie and Kintore	Reduce the physical risk, or disruption risk, related to areas of the A96 at risk of flooding	6301	23 locations on the A96 with a total length of 820m
Inverurie and Kintore	Reduce risk from surface water flooding in Inverurie and Kintore	601307	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	230 residential properties £510,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	230 residential properties £510,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/13 there are 90 residential properties at risk and Annual Average Damages of £240,000.

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)****Actions to manage flooding in Potentially Vulnerable Area 06/13**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Inverurie and Kintore Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection study					
Maintain flood warning					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Strategic mapping and modelling (SEPA)					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

Delivery of selected actions
Kintore Flood Protection Study - Cycle 2 (2022 – 2027)
<p>A further Flood Protection Study is planned for this PVA in the next cycle of the Flood Risk Management Plan (2022 – 2027). The study will look to reduce flood risk in Kintore from all watercourses (River Don, Torry Burn, Tuach Burn and Loch Burn).</p> <p>A hydraulic study should be taken forward to assess the culverted sections of watercourses and the alignment of the watercourses following the A96 works. This will allow locations of risk to be confirmed within the modelling and against historic flood locations. The improved understanding of risk will increase the understanding of flood mechanisms and focus the area of further study, confirming the risk from all four watercourses; the River Don, Torry Burn, Tuach Burn and Loch Burn. The study should then progress to identify the most sustainable actions to manage flood risk.</p>

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6013010005)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Inverurie and Port Elphinstone from the River Urie (601302) Reduce flood risk in Inverurie and Port Elphinstone from the River Don (601301)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>57 of 168</b>	<b>2 of 12</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2019</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a flood protection study to evaluate options for flood management to reduce the risk of flooding in Inverurie and Port Elphinstone from the River Don and River Urie. The study will build upon previous studies and it is currently estimated that the study will be completed by Summer 2019.</p> <p>The study has the potential to benefit 120 residential properties and 35 non-residential properties and sections of road network at risk of flooding in this location, with potential damages avoided of up to £6.8 million. Additionally, three utility sites (energy/electricity sites) could benefit from the study. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will take a sustainable and integrated approach by coordinating with the river basin management plan. It will be undertaken with due consideration to internationally, nationally and locally designated sites including listed buildings. It will also explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.</p> <p>The study will consider natural flood management measures along with traditional flood defences by exploring opportunities for online and offline flood storage, flow control structures, modification to conveyance capacity of watercourses by sediment and channel management, modifications to the bridges to improve conveyance, the construction of direct defences, river / floodplain restoration, runoff control through catchment and riparian tree planting, land-use and land-management changes, etc. Additionally, the study will also consider property level protection and property relocation. It is expected that the recommended flood protection scheme will comprise a combination of such measures to ensure a sustainable and integrated approach to flood</p>			



risk management by due consideration of impacts on economy, society, environment and cultural heritage.

*(continued)*

Aberdeenshire Council will coordinate with SEPA, Scottish Water, SNH, The Crown Estate, landowners and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

Potential impacts	
<b>Economic:</b>	The study could benefit 120 residential and 35 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £6.8 million.
<b>Social:</b>	The development of flood protection works following the study would potentially reduce risk to 264 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Three utility sites (energy/electricity sites), roads (including the B9170) and the railway line could benefit from flood protection works. Negative impacts through disturbance to the local community during the construction phase should be considered.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Opportunities to mitigate any environmental impacts may include design and timing of works. The flood protection study should consider how to avoid or minimise potential negative effects such as loss or disturbance of sediment, disruption to natural processes and loss of habitat. Six cultural heritage sites could benefit from the flood protection works identified in the study, however this will depend on the final location and extent of the works.

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Continue to maintain the 'Inverurie' and 'Kintore' flood warning areas which are part of the Don river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>A flood protection study is proposed for Inverurie and Port Elphinstone. SEPA will work with the local authority to ensure that any new information about flood risk resulting from the proposed flood protection study is considered in the existing flood warning system.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			



North East Local Plan District – Local Flood Risk Management Plan  
**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

(continued)

More general information and flooding guidance will be available on the website at: <https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6013070018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Inverurie and Kintore (601307)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a study to prepare Surface Water Management Plan (SWMP) to generate increased understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management in Inverurie and Kintore. The study will help in preparing a coordinated action plan, supported by an understanding of the costs and benefits, to identify measures to mitigate surface water flooding, identifying opportunities where SuDS and similar sustainable measures can play a more significant role in managing surface water flood risk and generate improved public engagement and understanding of surface water flooding as well as inform future developments.</p> <p>The study has the potential to benefit 90 residential properties and sections of road network at risk of flooding in this location, with potential average annual damages avoided of up to £240,000. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will consider interactions with drainage system and water bodies. Additional data and information will be procured or surveys commissioned to generate data to inform the study. The study will take a sustainable and integrated approach by coordinating with the river basin management plan. It will explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.</p>			

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

Aberdeenshire Council will coordinate with Scottish Water, SEPA and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Scottish Water will provide local knowledge and understanding of the sewer network. This includes Scottish Water corporate data (as applicable) and, where available, outputs of Section 16 or integrated catchment studies, to assist with the surface water management planning process.

*(continued)*

Scottish Water will work with Aberdeenshire Council and support surface water management planning through ensuring that best available knowledge and data is used to input into the Surface Water Management Plans.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>			

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council operates a water level sensor on the Strath Burn to provide early warning of potential flooding. Additional debris clearance on the trash screen is undertaken when water levels are high or weather forecasts suggest heightened risk of flooding.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

North East Local Plan District – Local Flood Risk Management Plan  
**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020016)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017 - 2018</b>
<b>Description:</b>			
<p>SEPA will be seeking to develop the flood hazard mapping in the Upper Don area (from Pitcaple to Kintore) to improve understanding of the flood risk.</p> <p>The extent and timing of the completed improvements will be dependent on detailed scoping and data availability.</p> <p>SEPA's strategic mapping activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's strategic mapping and modelling activities are funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017-2020</b>
<b>Description:</b>			

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

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Scottish Water will undertake further investigation and modelling in the Inverurie sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.

Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.

Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.

North East Local Plan District – Local Flood Risk Management Plan  
**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE</b> (6000020007)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			



North East Local Plan District – Local Flood Risk Management Plan  
**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <a href="http://www.sepa.org.uk/environment/land/planning/">http://www.sepa.org.uk/environment/land/planning/</a></p>			

**Inverurie and Kintore (Potentially Vulnerable Area 06/13)**

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SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

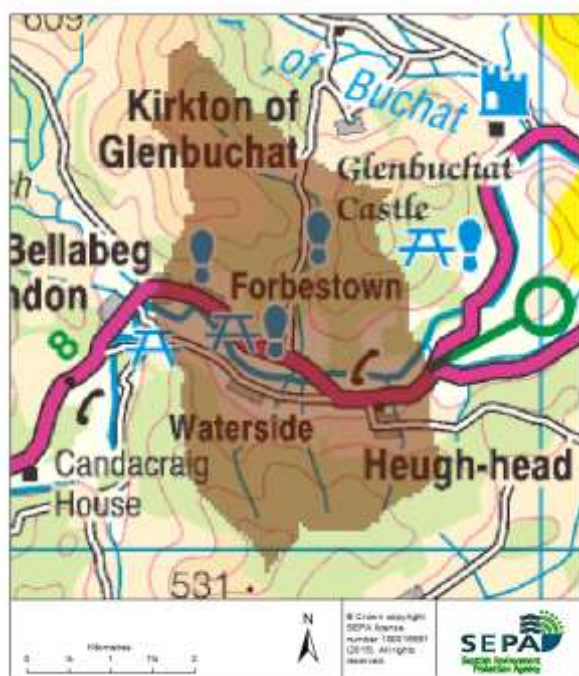
Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.14 Heugh-head (Potentially Vulnerable Area 06/14)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Don

#### Background

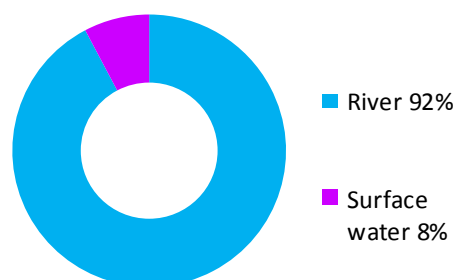
This Potentially Vulnerable Area includes the villages of Heugh-head, Forbestown, Bellabeg and Waterside. It is approximately 13km<sup>2</sup> and located within the Cairngorms National Park.



The main water course is the River Don.

There are approximately 10 residential and 10 non-residential properties at risk of flooding.

The Annual Average Damages are estimated to be £95,000 with the majority of these from river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

#### Summary of flooding impacts

River flood risk is mainly limited to the River Don around Bellabeg and Heugh-head.

Roads at risk of flooding include the A944 in several locations. The fire station at Bellabeg is also at risk.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties and roads.

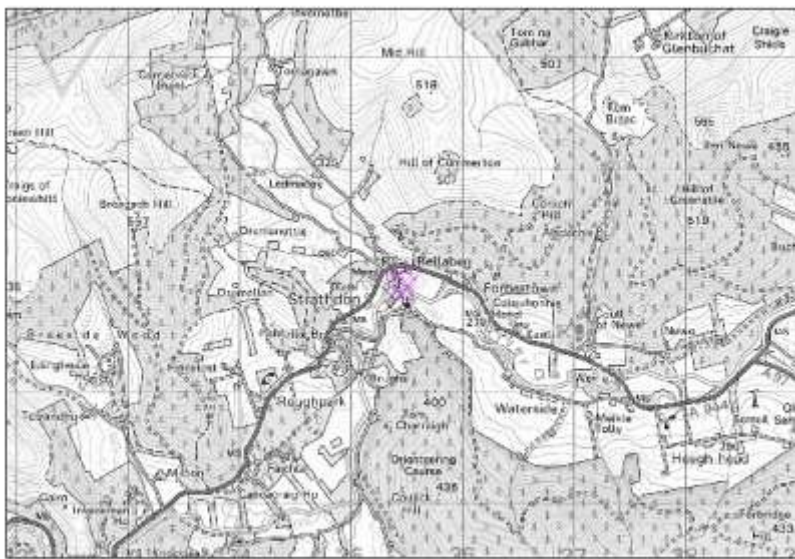
North East Local Plan District – Local Flood Risk Management Plan  
**Heugh-head (Potentially Vulnerable Area 06/14)**

## History of flooding

There was a surface water flood in August 2006 affecting Strathdon, Waterside and Bellabeg when water ponded in low points of the road. Heavy rainfall falling on steep sloping fields to the south resulted in significant amounts of flood water on the road.

## Objectives to manage flooding in Potentially Vulnerable Area 06/14

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Heugh-head Potentially Vulnerable Area.

Reduce flood risk in Strathdon from the River Don	
Indicators:	Target area:
<p>1 emergency service</p> <p>1 healthcare facility</p>	
Objective ID: 601401	

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Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Heugh-head (Potentially Vulnerable Area 06/14)**

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	10 residential properties  £95,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	10 residential properties  £95,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/14**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Heugh-head Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response

**Heugh-head (Potentially Vulnerable Area 06/14)**

Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies
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The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Site protection plans					
Awareness raising					
Emergency plans/response					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

Action (ID):	SITE PROTECTION PLANS (6014010015)		
Objective (ID):	Reduce flood risk in Strathdon from the River Don (601401)		
Delivery lead:	Asset managers		
Status:	Scheduled	Indicative delivery:	2016-2018
Description:			
Site protection plans are developed to identify whether normal operation of a facility can be maintained during a flood. This may be due to existing protection or resilience of the facility or the network.			
Aberdeenshire Council will engage with the asset managers for the fire station and a doctor's surgery to advise on the requirements to develop their own site protection plans.			

**Heugh-head (Potentially Vulnerable Area 06/14)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Heugh-head (Potentially Vulnerable Area 06/14)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at:

<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			



**Heugh-head (Potentially Vulnerable Area 06/14)**

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

**Heugh-head (Potentially Vulnerable Area 06/14)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Heugh-head (Potentially Vulnerable Area 06/14)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

**Heugh-head (Potentially Vulnerable Area 06/14)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided. Planning authorities are responsible for implementing this policy guidance when producing Local Development Plans and when considering individual planning applications.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system,</p>			

including guidance on flood risk and planning is available on SEPA's website  
<http://www.sepa.org.uk/environment/land/planning/>

*(continued)*

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority. Scottish Water is also defined as a key agency within development plan legislation, and therefore plays a key role in providing advice to planning authorities during the production of Local Development Plans.

### 2.3.15 Aberdeen City – Bridge of Don (Potentially Vulnerable Area 06/15)

Local Plan District	local authority	Main catchments
North East	Aberdeen City Council Aberdeenshire Council	River Don Aberdeen North Coastal

#### Background

This Potentially Vulnerable Area covers the northern areas of the City of Aberdeen, extending along the River Don from Bridge of Don to Dyce. It is approximately 46km<sup>2</sup> and includes the airport and Aberdeen to Inverness railway

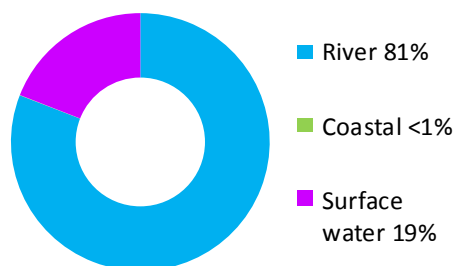


line.

The main river is the River Don and there are also a number of small watercourses, most of which are culverted for all or part of their route through the city.

There are approximately 2,200 residential properties and 470 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £4.5 million with the majority caused by river flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of flooding impacts

Flood risk in Aberdeen City is complex due to the interaction between the main rivers, small often culverted watercourses, sewerage systems, patterns of surface water runoff and tide levels. In order to better understand these complex interactions, a more detailed

flood model has been developed which has helped to inform the assessment of flood risk reported below.

A number of schools, healthcare facilities and an emergency services site are at risk of flooding. Transport links affected by flooding include the A956, A90, A947 and A96 roads and the Aberdeen to Inverness railway line. Flooding also affects a small number of designated cultural heritage sites, utilities and buildings at the University of Aberdeen.

For this Potentially Vulnerable Area the highest damages are to non-residential properties followed by damages to residential properties.

### **History of flooding**

The earliest recorded flood was in 1916 when the River Don submerged land in the Dyce area.

There was groundwater flooding in 2001, when the high water table flooded basements in Hilton Avenue, Hilton. Heavy rain resulted in surface water on the A947 Parkhill Bridge in February 2009, which caused a road traffic accident at the Newmachar to Parkhill Crossroads.

Flooding from the Silverburn due to a blockage of the watercourse was reported at Burnside Drive, Kingswell Park and Ride facility, Broadfold Drive and Cloverhill Road. Incidents have been reported due to inadequate culvert capacity, affecting Farburn Terrace and industrial units on Airport Commerce. There are reports of blockages causing flooding in the University grounds, Hilton Avenue and Cummings Park Circle. Flood incidents have also been reported at Kettock's Mill, Polo Gardens in Stoneywood and Laurel Place, Whitestripes Road, Muggiemoss Road, A96 Inverurie Road, Lade Crescent, Union Road, North Kirkhill, and Manor Drive.

The only coastal flood on record was in 1921, when there was a particularly high tide.

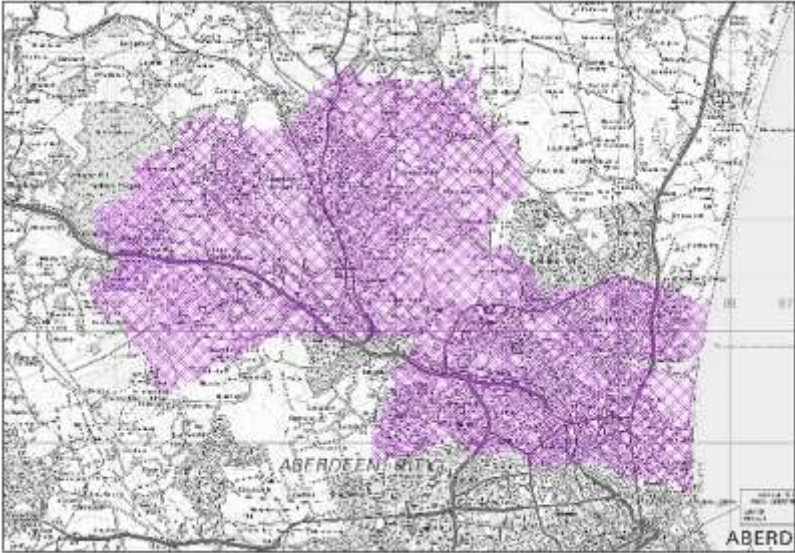
Large parts of Aberdeen were affected by surface water flooding in July 2015. Many manhole covers became dislodged, roads were submerged and Aberdeen Airport's terminal building was flooded.

### **Objectives to manage flooding in Potentially Vulnerable Area 06/15**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The

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objectives below have been set for Aberdeen City - Bridge of Don Potentially Vulnerable Area.

Reduce flood risk in Aberdeen (Bridge of Don) from the River Don and small watercourses including open and culverted lengths	
Indicators:	Target area:
<p>4,500 people</p> <p>£1.1 million Annual Average Damages from residential properties</p> <p>£2.3 million Annual Average Damages from non-residential properties</p>	 <p>A map of Aberdeen City with a large area in the center and east highlighted in purple, representing the Bridge of Don Potentially Vulnerable Area (PVA). The map shows the River Don and surrounding urban areas. The text 'ABERDEEN CITY' is visible at the bottom of the map area.</p>
Objective ID: 601502	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Target area	Objective	ID	Indicators within PVA
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Aberdeen	Reduce risk from surface water flooding in Aberdeen	601507	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	2,200 residential properties £4.5 million Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	2,200 residential properties £4.5 million Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/15 there are 130 residential properties at risk and Annual Average Damages of £870,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

### **Actions to manage flooding in Potentially Vulnerable Area 06/15**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Aberdeen City - Bridge of Don Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response

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Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies
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The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
New flood warning					
Flood protection study					
Maintain flood warning					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Strategic mapping and modelling (SEPA)					
Strategic mapping and modelling (Scottish Water)					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

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<b>Action (ID):</b>	<b>NEW FLOOD WARNING (6000020010)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017 - 2018</b>
<b>Description:</b>			
<p>Flood warning is required for communities at risk of coastal flooding along the Aberdeenshire coast from Peterhead to Montrose. A flood warning system will be developed and implemented. The geographical extent of specific flood warning areas will be developed as part of this process.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p> <p>In addition, Scottish Government provides grant funding to enable SEPA to implement new flood warning schemes.</p>			

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6015020005)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Aberdeen (601507) Reduce flood risk in Aberdeen (Bridge of Don) from the River Don and small watercourses including open and culverted lengths (601502)		
<b>Delivery lead:</b>	Aberdeen City Council (ACC)		
<b>Priority:</b>	National:	Within local authority:	
	<b>1 and 5 of 168</b>	<b>1 and 2 of 4</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>The Bridge of Don Flood protection studies will look at the flood risk from small watercourses and surface water in this area and define type of solutions that may be applicable these areas to prevent or reduce the flood risk.</p> <p>For small watercourses and surface water flooding, the studies will be based on the outputs from the Aberdeen Integrated Catchment study and coordinated with the surface</p>			

water management plan to take a comprehensive approach to flood risk management in Aberdeen

*(continued)*

Delivery of the Flood Studies will be undertaken working with the following partners as a minimum:-

- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC
- SEPA
- Local Residents
- Scottish Water

Funding for the Delivery of the Flood Studies is from ACC Capital Work Programme.

Potential impacts	
<b>Economic:</b>	Considering all three study areas in Aberdeen City, a total of 10,500 residential and 1,800 non-residential properties could benefit, with potential damages avoided of up to £520 million. In reality the studies should look to identify flooding hotspots, where actions should be targeted. Further study will identify the true benefits of these actions.
<b>Social:</b>	Thirteen educational buildings, 14 health care facilities, 33 utilities, and one emergency service could benefit from any actions taken. Around 23,000 people could benefit from flood protection works. However, this will depend on locations identified for actions. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people.
<b>Environmental:</b>	To be in accord with the FRM Strategy, the Responsible Authority should seek to ensure, as part of the studies, that the action will not have an adverse effect on the integrity of the River Dee Special Area of Conservation. Cultural heritage sites, including one garden and designed landscape site, could benefit from flood protection works identified in the studies. However, this will depend on the final location and extent of the works. The flood protection studies should consider how to avoid/minimise potential impacts through good design and timing of works and consider how to avoid or minimise potential negative effects such as loss or disturbance of sediment, disruption to natural processes and loss of habitat. The physical condition of the River Don, River Dee and Bucks Burn (water body IDs 23265, 23315 and 23266) are identified by river basin management planning to be at less than good status. Future works could improve the condition of the

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	rivers or degrade them. Opportunities to improve the condition of the rivers should be considered by coordinating with river basin management planning.
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<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Continue to maintain the 'Aberdeen (Don)' flood warning area which is part of the Don river flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>A flood protection study is proposed for Aberdeen. SEPA will work with the local authority to ensure that any new information about flood risk resulting from the proposed flood protection study is considered in the existing flood warning system.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
ACC will be undertaking a number of community events to promote awareness to the risk of flooding and what can be done to reduce the impact of flooding. As part of this we will			

be looking to create flood action groups and community resilience groups with regards to flooding. These groups will help promote the risk that flooding presents as well as provide practical advice to the community they serve.

ACC will be working with the flooding groups as a minimum to promote awareness to flood risk:-

- Community Councils
- Local residents
- Education Scotland
- Aberdeen Education Department
- SEPA

*(continued)*

A new flood warning scheme is proposed for the Aberdeenshire coast. To support the delivery of the new SEPA flood warning scheme, we will carry out communications and engagement activities. SEPA's awareness raising activities will be coordinated with activities of other responsible authorities as required.

From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible. Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.

To support the delivery of the new SEPA flood warning scheme, SEPA will carry out a local launch event and engage directly with residents in the area. This will be supported by local and national media communications. SEPA will also support and participate in local public awareness events, in partnership with the local authority, community council or other local representative organisations, including schools.

Activities undertaken by ACC will be funded by existing revenue budgets.

SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.

Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009. Over the six-year planning cycle, Aberdeenshire Council will seek opportunities to raise awareness of flood risk and actions that prepare individuals, homes and businesses to reduce the overall impact of flooding.

Aberdeenshire Council will also develop emergency plans/response and work with any community flood action groups.

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.



<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6015070018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Aberdeen (601507)		
<b>Delivery lead:</b>	Aberdeen City Council (ACC)		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>ACC are creating a surface water management plan (SWMP). The plan will assess all of the current data available with regards to flood risk from historical records of flooding/ maintenance records and existing flood schemes.</p> <p>Once the detailed assessment has been completed the SWMP will be undertaken and will cover the following items:-</p> <ul style="list-style-type: none"> <li>- Catchment assessment</li> <li>- Maintenance regime</li> <li>- Objectives to be achieved in that SWMP area</li> <li>- Long list of all works required</li> <li>- Short list of works for the plan area in 2016-2021</li> </ul> <p>The surface water management plan will be delivered via the Surface Water Management partnership.</p> <p>An integrated catchment study covering the Aberdeen catchment was carried out in SR10 (2010-2015) to support the surface water management planning process in Aberdeen, Westhill, and Stonehaven. The study has improved knowledge and understanding of surface water flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and the sea. The Option appraisal phase of this study will be carried out in SR15 (2015-2021).</p> <p>Delivery of the SWMP will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Scottish Water</li> <li>- Local Residents where applicable</li> <li>- Community council and elected Members</li> </ul> <p>Funding for the Delivery of the Surface Water Management Plans is from ACC Capital Programme and Revenue Budgets.</p>			

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeen City Council will work with all CAT 1 and CAT 2 responders to deliver the emergency response plan for Aberdeen City. Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is coordinated through regional and local resilience partnerships.</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020016)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>SEPA will be seeking to develop the flood hazard mapping in the Green Burn (right hand tributary at Dyce) and in the Middle Don (from Kintore to Dyce) areas to improve understanding of the flood risk. The extent and timing of the completed improvements will be dependent on detailed scoping and data availability.</p> <p>Flood protection studies are proposed for Aberdeen. SEPA will work with the responsible authorities to ensure that new information about flood risk resulting from the proposed studies are considered in SEPA's strategic mapping and modelling developments where appropriate and relevant.</p> <p>SEPA's strategic mapping and modelling activities are funded by the Scottish Government through SEPA's grant in aid settlement.</p>			

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<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Nigg and Persley sewer catchment areas to improve knowledge and understanding of flood risk in these areas as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office.</p> <p>SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding.</p> <p>The service also provides information which allows SEPA to issue flood alerts, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation.</p> <p>The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>2016 -2021</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>ACC will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people with putting in Property Level Protection.</p> <p>ACC will coordinate this through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.</p> <p>Funding of the scheme will be via the ACC Capital works Programme.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE</b> (6000020007)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeen City Council and asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>ACC has a duty to assess designated water bodies and carry out clearance and repair works where such works would substantially reduce flood risk. ACC will produce schedules of clearance and repair works and make these available for public inspection.</p> <p>Delivery of the clearance and repair Schedule will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Scottish water</li> <li>- Land Owners</li> <li>- Aberdeenshire Council</li> </ul> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flooding.</p> <p>Funding to come from existing ACC Flood revenue budget, for works which are defined to be ACC responsibility or pose a significant flood risk.</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>National planning policies set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, development in areas with medium to high likelihood of flooding should be avoided.</p> <p>ACC will be applying a catchment-scale approach to sustainable flood risk management and aims to build the resilience of the city. We will encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts. Under this approach, development in areas with medium to high likelihood of flooding should be avoided.</p> <p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable</p>			

for planning purposes. It will also be in line with the principles and duties set out in the FRM Act.

Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website:

<http://www.sepa.org.uk/environment/land/planning/>

*(continued)*

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

ACC will be working with all relevant bodies to coordinate the activities that are highlighted within Planning Policy.

ACC will be funding the works associated with Planning Policy via its existing revenue budget. SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement.



### 2.3.16 Aberdeen City – Denmore (Potentially Vulnerable Area 06/16)

Local Plan District	local authority	Main catchment
North East	Aberdeen City council	Buchan coastal

#### Background

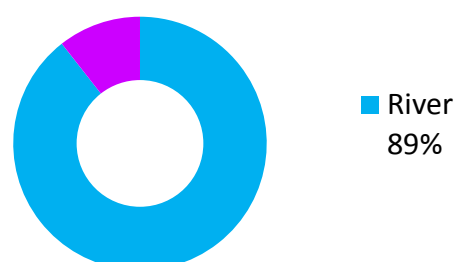
This Potentially Vulnerable Area is located on the northern edge of Aberdeen City. It includes the Denmore and Middleton Park areas of Aberdeen City and covers an area of approximately 5km<sup>2</sup>.



There are no major rivers, however the Glashieburn and Silverburn both pass through culverts in the urban areas.

There are approximately 140 residential and 40 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £570,000 with the majority caused by river flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

#### Summary of flooding impacts

Flood risk in Aberdeen City is complex due to the interaction between the main rivers, small often culverted watercourses, sewerage systems, patterns of surface water runoff and tide levels. In order to better understand these complex interactions, a more detailed flood model has been developed which has helped to inform the assessment of flood risk reported below.

A number of schools and an emergency services facility are at risk of flooding. Transport links affected by flooding in several locations include the A90 and B997.

For this Potentially Vulnerable Area the highest damages are to non-residential properties followed by damages to residential properties.

## **History of flooding**

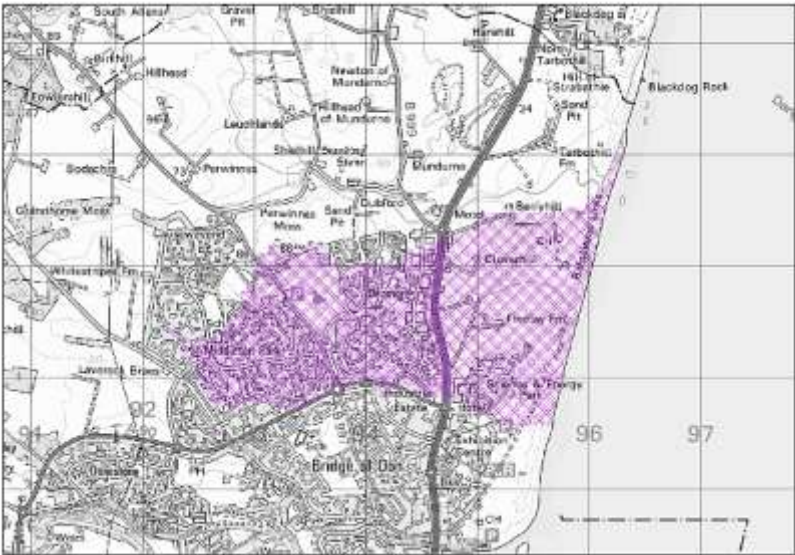
The Bridge of Don area experienced flooding in 2000 and 2001, when problems with the drainage system resulted in ponding. This was exacerbated by gullies unable to function due to the high water level in the Glashieburn. Properties in Lochside Drive, Jesmond Drive and Brook Crescent were affected. Regular flooding of the combined sewer in Jesmond Drive has been reported. Flooding has also been reported at Ellon Road due to debris building up and blocking the watercourse.

Large parts of Aberdeen were affected by surface water flooding in July 2015. Manhole covers were dislodged by the force of the water. Many roads were affected by flooding, including Ellon Road.

## **Objectives to manage flooding in Potentially Vulnerable Area 06/16**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Aberdeen City - Denmore Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City – Denmore (Potentially Vulnerable Area 06/16)**

Reduce the risk of flooding from surface water and burns in Aberdeen (Denmore)	
Indicators:	Target area:
<p>300 people</p> <p>£250,000 Annual Average Damages from residential properties</p> <p>£280,000 Annual Average Damages from non-residential properties</p>	
Objective ID: 601601	© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<p>140 residential properties</p> <p>£570,000 Annual Average Damages</p>
Applies across North East Local Plan District	Reduce overall flood risk	600002	<p>140 residential properties</p> <p>£570,000 Annual Average Damages</p>
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

## Actions to manage flooding in Potentially Vulnerable Area 06/16

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Aberdeen City - Denmore Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection study					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Maintain flood protection scheme					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City – Denmore (Potentially Vulnerable Area 06/16)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6016010005)</b>		
<b>Objective (ID):</b>	Reduce the risk of flooding from surface water and burns in Aberdeen (Denmore) (601601)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>5 of 168</b>	<b>2 of 4</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>The Bridge of Don Flood Protection Studies will look at the flood risk from small watercourses and surface water in this area and define type of solutions that may be applicable these areas to prevent or reduce the flood risk.</p> <p>For small watercourses and surface water flooding, the studies will be based on the outputs from the Aberdeen Integrated Catchment Study and coordinated with the surface water management plan to take a comprehensive approach to flood risk management in Aberdeen</p> <p>Delivery the Flood Studies will be undertaken working with the following partners as a minimum:-</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Local residents</li> <li>- Scottish Water</li> </ul> <p>Funding for the Delivery of the Flood Studies is from ACC Capital Work Programme</p>			
<b>Potential impacts</b>			
<b>Economic:</b>	Considering all three study areas in Aberdeen City, a total of 10,500 residential and 1,800 non-residential properties could benefit, with potential damages avoided of up to £520 million. In reality the studies should look to identify flooding hotspots, where actions should be targeted. Further study will identify the true benefits of these actions.		
<b>Social:</b>	Thirteen educational buildings, 14 health care facilities, 33 utilities, and one emergency service could benefit from any actions taken. However, this will depend on locations identified for actions. Around 23,000 people could benefit from flood protection works. However, this will depend on locations identified for actions. A reduction in flood risk		

	would have a positive benefit to the health and wellbeing of the community and socially vulnerable people.
<b>Environmental:</b>	To be in accord with the FRM Strategy, the Responsible Authority should seek to ensure, as part of the studies, that the action will not have an adverse effect on the integrity of the River Dee Special Area of Conservation. Cultural heritage sites, including one garden and designed landscape site, could benefit from flood protection works identified in the studies. However, this will depend on the final location and extent of the works. The flood protection studies should consider how to avoid/minimise potential impacts through good design and timing of works and consider how to avoid or minimise potential negative effects such as loss or disturbance of sediment, disruption to natural processes and loss of habitat. The following rivers are identified by river basin management planning to be at less than good status for their physical condition: River Don, River Dee and Bucks Burn (water body IDs 23265, 23315 and 23266). Future works could improve the condition of the rivers or degrade them. Opportunities to improve the condition of the rivers should be considered by coordinating with river basin management planning.

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City – Denmore (Potentially Vulnerable Area 06/16)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>ACC will be undertaking a number of community events to promote awareness to the risk of flooding and what can be done to reduce the impact of flooding. As part of this we will be looking to create flood action groups and community resilience groups with regards to flooding. These groups will help promote the risk that flooding presents as well as provide practical advice to the community they serve.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>To support the delivery of the new SEPA flood warning scheme, SEPA will carry out a local launch event and engage directly with residents in the area. This will be supported by local and national media communications. SEPA will also support and participate in local public awareness events, in partnership with the local authority, community council or other local representative organisations, including schools.</p> <p>ACC will be working with the flooding groups as a minimum to promote awareness to flood risk:-</p> <ul style="list-style-type: none"> <li>- Community Councils</li> <li>- Local residents</li> <li>- Education Scotland</li> <li>- Aberdeen Education Department</li> <li>- SEPA</li> </ul> <p>Activities undertaken by ACC will be funded by existing revenue budgets</p>			



SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.

*(continued)*

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6016010018)</b>		
<b>Objective (ID):</b>	Reduce the risk of flooding from surface water and burns in Aberdeen (Denmore) (601601)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>ACC are creating a surface water management plan (SWMP). The plan will assess all of the current data available with regards to flood risk from historical records of flooding/ maintenance records and existing flood schemes.</p> <p>Once the detailed assessment has been completed the SWMP will be undertaken and will cover the following items:-</p> <ul style="list-style-type: none"> <li>- Catchment assessment</li> <li>- Maintenance regime</li> <li>- Objectives to be achieved in that SWMP area</li> <li>- Long list of all works required</li> <li>- Short list of works for the plan area in 2016-2021</li> </ul> <p>The surface water management plan will be delivered via the Surface Water Management partnership.</p> <p>An integrated catchment study covering the Aberdeen catchment was carried out in SR10 (2010-2015) to support the surface water management planning process in Aberdeen, Westhill, and Stonehaven. The study has improved knowledge and understanding of surface water flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and the sea. The Option appraisal phase of this study will be carried out in SR15 (2015-2021).</p> <p>Delivery of the SWMP will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Scottish Water</li> <li>- Local Residents where applicable</li> <li>- Community council and elected Members</li> </ul> <p>Funding for the Delivery of the Surface Water Management Plans is from ACC Capital Programme and Revenue Budgets.</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City – Denmore (Potentially Vulnerable Area 06/16)**

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeen City Council will work with all CAT 1 and CAT 2 responders to deliver the emergency response plan for Aberdeen City. Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is coordinated through regional and local resilience partnerships.</p> <p>All Cat 1 and Cat 2 responders are to work together for decision making and to identify solutions at the time of emergency response and for emergency planning.</p> <p>Funding will be sourced through existing emergency response Budgets for the ACC elements of this objective.</p>			

<b>Action (ID):</b>	<b>MAINTAIN FLOOD PROTECTION SCHEME (6016010017)</b>		
<b>Objective (ID):</b>	Reduce the risk of flooding from surface water and burns in Aberdeen (Denmore) (601601)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>ACC will continue to maintain the Glashie Burn Flood Protection Scheme (attenuation pond and culverts) which reduce the risk of flooding to Lochside Drive from the Glashie Burn.</p> <p>ACC will continue to work with local residents to maintain the scheme.</p> <p>Activities undertaken by ACC will be funded by existing revenue budgets.</p>			

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Nigg and Persley sewer catchment areas to improve knowledge and understanding of flood risk in these areas as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding.</p> <p>The service also provides information which allows SEPA to issue flood alerts, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation.</p> <p>The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City – Denmore (Potentially Vulnerable Area 06/16)**

ACC will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people with putting in Property Level Protection.

ACC will Coordinate this through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.

Funding of the scheme will be via the ACC Capital works Programme.

<b>Action (ID):</b>	<b>MAINTENANCE</b> (6000020007)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeen City Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

ACC has a duty to assess designated water bodies and carry out clearance and repair works where such works would substantially reduce flood risk. ACC will produce schedules of clearance and repair works and make these available for public inspection.

Delivery of the clearance and repair Schedule will be undertaken working with the following partners as a minimum: -

- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC
- SEPA
- Scottish water
- Land Owners
- Aberdeenshire Council

Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network.

Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk. They will keep responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.

Funding will come from existing ACC flood revenue budget, for works which are defined to be ACC responsibility or pose a significant flood risk

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

ACC will be applying a catchment-scale approach to sustainable flood risk management and aims to build the resilience of the city. We will encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts. Under this approach, development in areas with medium to high likelihood of flooding should be avoided.

Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.

For further information on the application of national planning policies see Annex 5.

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act.

Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website  
<http://www.sepa.org.uk/environment/land/planning/>

ACC will be working with all relevant bodies to coordinate the activities that are highlighted with in Planning Policy.

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

*(continued)*



ACC will be funding the works associated with Planning policy via its existing revenue budget. SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.17 Westhill (Potentially Vulnerable Area 06/17)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council Aberdeen City Council	River Dee (Grampian)

#### Background

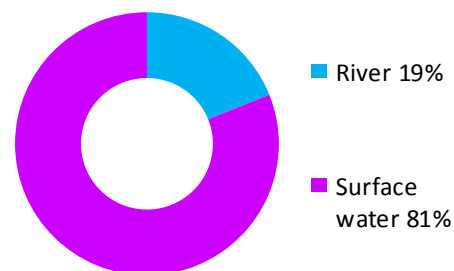
This Potentially Vulnerable Area is based around Westhill. It is approximately 20km<sup>2</sup>. The A944, B119, and the B979 pass through the area.



The main watercourse is the Ord Burn, which is a tributary of the River Dee.

There are approximately 90 residential and 10 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £77,000 with the majority caused by surface water flooding.



Annual Average Damages by flood source

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

#### Summary of flooding impacts

Surface water flood risk affects properties in the centre of Westhill, primarily to the north of the A944 with further areas of surface water flood risk scattered around the area.

Roads potentially affected by flooding include the A944, B9119 and minor roads.

For this Potentially Vulnerable Area the highest damages are to residential properties.

**Westhill (Potentially Vulnerable Area 06/17)****History of flooding**

Surface water runoff has caused flooding in parts of Westhill in the past. Flooding has also been reported at Brodiach Road near Cairdhilllock and at Rotten of Gairn due to blocked gully outlets. Locally, issues with ground water flooding have also been reported.

10 properties were affected as a result of flooding events in December 2015

**Objectives to manage flooding in Potentially Vulnerable Area 06/17**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Westhill Potentially Vulnerable Area.

Target area	Objective	ID	Indicators within PVA
Westhill	Reduce risk from surface water flooding in Westhill	601701	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	90 residential properties  £77,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	90 residential properties  £77,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/17 there are 80 residential properties at risk and Annual Average Damages of £63,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*



**Westhill (Potentially Vulnerable Area 06/17)****Actions to manage flooding in Potentially Vulnerable Area 06/17**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Westhill Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Westhill (Potentially Vulnerable Area 06/17)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Both Aberdeen City and Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues. Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p> <p>Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish</p>			

**Westhill (Potentially Vulnerable Area 06/17)**

Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6017010018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Westhill (601701)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a study to prepare a Surface Water Management Plan (SWMP) to generate increased understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management in Westhill.</p> <p>The SWMP will build upon the Integrated Catchment Study and will help in preparing a coordinated action plan, supported by an understanding of the costs and benefits, to identify measures to mitigate surface water flooding, identifying opportunities where SuDS and similar sustainable measures can play a more significant role in managing surface water flood risk and generate improved public engagement and understanding of surface water flooding as well as inform future developments. The SWMP will be completed to coincide with the Option appraisal phase of the Integrated Catchment Study which is planned to be carried out from 2015 to 2021.</p> <p>The SWMP has the potential to benefit 80 residential properties and sections of road network at risk of flooding in this location, with potential Average Annual Damages avoided of up to £63,000. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>An Integrated Catchment Study covering the Aberdeen catchment was carried out in SR10 (2010-2015) to support the surface water management planning process in Westhill. The study has improved knowledge and understanding of surface water flood risk and interactions between the above ground and below ground drainage network e.g.</p>			

**Westhill (Potentially Vulnerable Area 06/17)**

with the sewer network, watercourses and the sea. The Option appraisal phase of this study will be carried out in SR15 (2015-2021).

This project is being funded by Scottish Water in partnership with Aberdeen City and Aberdeenshire Councils.

Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.

The SWMP will consider interactions with drainage system and water bodies and additional data and information will be procured or surveys commissioned to generate data to inform the plan. The SWMP will take a sustainable and integrated approach by coordinating with the River Basin Management Plan. It will explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.

Aberdeenshire Council will coordinate with Aberdeen City Council, Scottish Water, SEPA and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the SWMP through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the SWMP will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at</p>			



**Westhill (Potentially Vulnerable Area 06/17)**

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known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

**Westhill (Potentially Vulnerable Area 06/17)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Nigg sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Westhill (Potentially Vulnerable Area 06/17)**

The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.

SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.

SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p> <p>Aberdeen City Council provides grants towards the fitting of flood guards on individual properties.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		

**Westhill (Potentially Vulnerable Area 06/17)**

<b>Delivery lead:</b>	Aberdeenshire and Aberdeen City Councils, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Both Local Authorities will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network. They will also keep responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Westhill (Potentially Vulnerable Area 06/17)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.

For further information on the application of national planning policies see Annex 5.

Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.

As a consultee on planning applications, Aberdeenshire Council's Flood & Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.18 Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)

Local Plan District	local authority	Main catchments
North East	Aberdeen City Council	River Dee (Grampian) Aberdeen South Coastal

#### Background

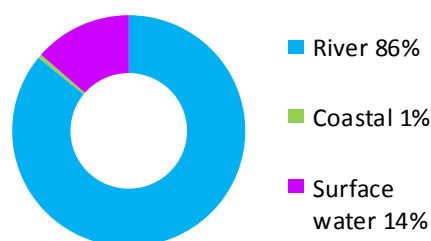
This Potentially Vulnerable Area includes the centre and west of the city of Aberdeen. It is approximately 75km<sup>2</sup> and includes the centre of Aberdeen City and several vital transport routes which pass through it.



The main river is the River Dee and there are also a number of small watercourses, most of which are culverted for all or part of their route through the city.

There are approximately 8,100 residential and 2,000 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £12 million with the majority caused by river flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of flooding impacts

Flood risk in Aberdeen City is complex due to the interaction between the main rivers, small often culverted watercourses, sewerage systems, patterns of surface water runoff and tide levels. In order to better understand these complex interactions, a more detailed flood model has been developed which has helped to inform the assessment of flood risk reported below.

A number of schools and healthcare facilities are at risk of flooding. Transport links affected by flooding include the A90, A93, A96, A944, A956, A978 and the Aberdeen to

Dundee / Aberdeen to Inverness railway lines. The River Dee Special Area of Conservation and one cultural heritage site are also at risk.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

### **History of flooding**

Floods on the River Dee are reported in 1768, 1789, 1790, 1829, 1873, 1876, 1881, 1882, 1892, 1894, 1909, 1920, 1922, 1926, 1927, 1928, 1929, 1938 and 1946. The Denburn is reported to have flooded in 1869, 1872, and 1874. In 1873 the Broadford Burn flooded and surface water floods were reported in 1869, 1873, 1882, 1896, 1897, and 1940. These historic floods affected property, agriculture, railway lines, roads, and a golf course. Fatalities occurred in 1876, when a ferry sank during a high spate on the River Dee.

In October 2001 there was a surface water flood, which exceeded the capacity of the drainage systems and subsequently affected properties at Berryden Road in Ashgrove, Culter House Road in Milltimber, Hazeldene Road in Hazelhead, and Broomhill Avenue. The high water table during this flood also led to groundwater flooding at Craigbuckler Church in Springfield Road.

Further areas within Aberdeen City that have been affected from flooding include Links Road, Frederick Street, Culter House Road, Bellenden Walk, Inchgarth Road, Boyd Orr Avenue, Cranford Terrace, Craigton Road, Craigieburn Park, Springfield Place, Albyn School playing fields, Countesswells Road, Hazelhead Policies, Kirk Brae, Baird's Brae, Manse Road, West Cults Farm, Deeside Gardens, Contlaw Brae, Baillieswells Road, Abbotshall Road, Burnieboozle Crescent, Riverside Drive, and Polmuir Road. The causes of the reported flooding include blocked or inadequate drainage systems, blockages and overtopping of watercourses including the West Burn of Rubuslaw and the Cults Burn, and choked drainage ditches.

Flooding has been reported from the North Burn of Rubislaw and the Gilcomstoun Burn, as well as surface water incidents due to blocked or inadequate drainage. The areas reported as being affected include Carden Place, Jack's Brae, Fraser Street, Blenheim Lane, Trinity Quay, Forest Road, Angusfield Avenue, Cornhill Gardens, Berryden Road, Westburn Road and Springhall Road. The Polmuir Burn is reported to have caused flooding to basements due to blockages at Brighton Place.

The Cults Burn is reported to have caused flooding at Inchgarth Road due to backing up from the River Dee and blockages. Flooding has been reported at Milltimber Farm and North Deeside Road in the Guttrie catchment and at Wellington Circle in the Tullos catchment. There were three flood events at Fountain Hall, Albert Lane from the Denburn and two sewer flood events in the Merchant Quarter in 2012.

Large parts of Aberdeen were affected by flooding in July 2015, when heavy rainfall caused the drainage system to overflow, dislodging manhole covers. Many roads were



**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

affected by flooding, including Market Street, Guild Street and Holburn Street. Cars on Polmuir Road started to float due to the depth of the water. A nursery had to be evacuated due to flooding in its basement.

The largest coastal event reported was a large storm surge event in 1949. Fittie / Footdee has also been affected by overtopping of the sea wall.

**Objectives to manage flooding in Potentially Vulnerable Area 06/18**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Aberdeen City - Deeside Potentially Vulnerable Area.

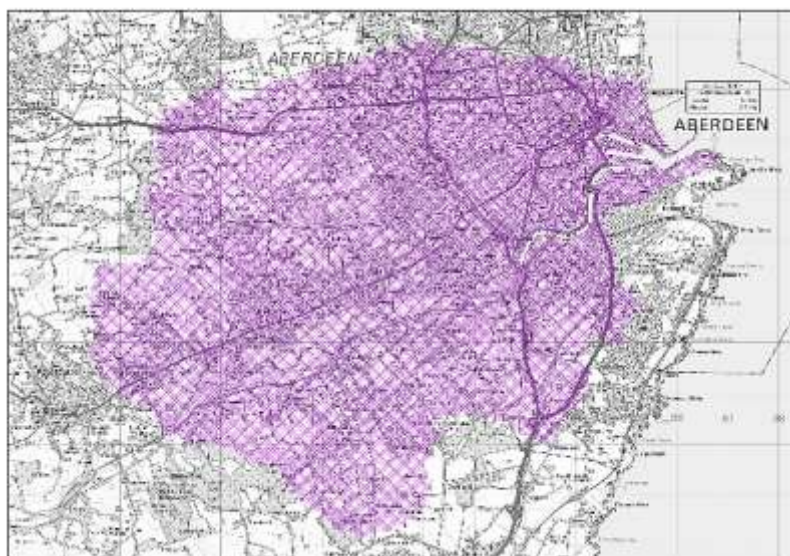
**Reduce flood risk in Aberdeen (Deeside) from the River Dee and from small watercourses including open and culverted lengths**
**Indicators:**

15,000 people

£6.0 million Annual  
Average Damages from  
residential properties

£3.8 million Annual  
Average Damages from  
non-residential properties


Objective ID: 601801

**Target area:**

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Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

Reduce risk from coastal flooding in the Footdee area of Aberdeen	
Indicators:	Target area:
<p>210 people</p> <p>£45,000 Annual Average Damages from residential properties</p> <p>£11,000 Annual Average Damages from non-residential properties</p>	 <p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>
Objective ID: 601802	

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

Target area	Objective	ID	Indicators within PVA
Aberdeen	Reduce risk from surface water flooding in Aberdeen (Deeside)	601810	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	8,100 residential properties £12 million Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	8,100 residential properties £12 million Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/18 there are 1,200 residential properties at risk and Annual Average Damages of £1.7 million.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/18**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Aberdeen City - Deeside Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
New flood warning					
Community flood action groups					
			Flood protection study (Footdee)		
Flood protection study (Deeside)					
Maintain flood warning					
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Maintain flood protection scheme					
Strategic mapping and modelling					
Flood forecasting					

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

Self help
Maintenance
Planning Policy

<b>Action (ID):</b>	<b>NEW FLOOD WARNING (6000020010)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017 - 2018</b>
<b>Description:</b>			
<p>Flood warning is required for communities at risk of coastal flooding along the Aberdeenshire coast from Peterhead to Montrose. A flood warning system will be developed and implemented. The geographical extent of specific flood warning areas will be developed as part of this process.</p> <p>A flood protection study is proposed for Fittie. SEPA will work with the local authority to ensure that new information about flood risk resulting from the proposed flood protection study is considered in developing the new flood warning system.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement. In addition, Scottish Government provides grant funding to enable SEPA to implement new flood warning schemes.</p>			

<b>Action (ID):</b>	<b>COMMUNITY FLOOD ACTION GROUPS (6000020012)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Community		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeen City Council will create flood action groups in the Merchant Quarter and in the Eday Court and Summerhill area of Aberdeen.</p> <p>ACC will be working with the following groups as a minim to promote awareness to flood risk: -</p> <ul style="list-style-type: none"> <li>- Community Councils</li> </ul>			

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

- Local residents
- SEPA
- Scottish Flood Forum

Funding will be sourced through existing emergency response Budgets for the ACC elements of this objective.

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6018010005)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Aberdeen (Deeside) from the River Dee and from small watercourses including open and culverted lengths (601801)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>5 of 168</b>	<b>2 of 4</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			

The Aberdeen City flood protection studies will look at the flood risk from the River Dee, small watercourses and surface water in this area and define the type of solutions that may be applicable in these areas to prevent or reduce the flood risk.

For flood risk from the River Dee, particular focus will be on the following areas: -

- Inchgarth Road
- Bridge of Dee
- Riverside Drive (near Bon Accord Glass)

For flood risk from small watercourses and surface water flooding, the studies will be based on the outputs from the Aberdeen Integrated Catchment Study and coordinated with the surface water management plan to take a comprehensive approach to flood risk management in Aberdeen.

Delivery of the Flood Studies will be undertaken working with the following partners as a minimum: -

- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC
- SEPA
- Local Residents
- Scottish Water

Funding for the Delivery of the Flood Studies is from ACC Capital Work Programme

Potential impacts	
<b>Economic:</b>	Considering all three study areas in Aberdeen City, a total of 10,500 residential and 1,800 non-residential properties could benefit, with potential damages avoided of up to £520 million. In reality the studies should look to identify flooding hotspots, where actions should be targeted. Further study will identify the true benefits of these actions.
<b>Social:</b>	Thirteen educational buildings, 14 health care facilities, 33 utilities, and one emergency service could benefit from any actions taken. Around 23,000 people could benefit from flood protections works. However, this will depend on locations identified for actions. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people.
<b>Environmental:</b>	To be in accord with the FRM Strategy, the Responsible Authority should seek to ensure, as part of the studies, that the action will not have an adverse effect on the integrity of the River Dee Special Area of Conservation. Cultural heritage sites, including one garden and designed landscape site, could benefit from flood protection works identified in the studies. However, this will depend on the final location and extent of the works. The flood protection studies should consider how to avoid/minimise potential impacts through good design and timing of works and consider how to avoid or minimise potential



**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

	negative effects such as loss or disturbance of sediment, disruption to natural processes and loss of habitat. The physical conditions of the River Don and River Dee (water body IDs 23265 and 23315) are identified by river basin management planning to be at less than good status. Future works could improve the condition of the rivers or degrade them. Opportunities to improve the condition of the rivers should be considered by coordinating with river basin management planning.
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<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6018020005)</b>		
<b>Objective (ID):</b>	Reduce risk from coastal flooding in the Footdee area of Aberdeen (601802)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>131 of 168</b>	<b>4 of 4</b>	
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2019-2021</b>
<b>Description:</b>			
<p>The current SEPA national coastal flood maps do not identify properties to be at flood risk. However, there is a history of flooding due to wave overtopping. Therefore, a hydraulic study should be undertaken to establish the risk of coastal flooding including wave overtopping. Once the flood risk has been defined, the study should progress to find the most sustainable combination of actions to manage the risk.</p> <p>The Flood Studies will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Local Residents</li> <li>- Scottish Water</li> </ul> <p>Funding for the Delivery of the Flood Studies is from ACC Capital Work Programme</p>			
<b>Potential impacts</b>			
<b>Economic:</b>	The study should confirm the number of properties at risk of coastal flooding and the potential damages avoided, which are currently estimated at over £1.5 million.		

**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

<b>Social:</b>	The social impacts of potential actions will be considered when there is improved understanding of the current flood risk. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Negative impacts through disturbance to the local community during the construction phase should be considered.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Opportunities to mitigate any environmental impacts may include design and timing of works. To be in accord with the FRM Strategy, the Responsible Authority should seek to ensure as part of the study that the action will not have an adverse effect on the integrity of the River Dee Special Area of Conservation (SAC) or the Moray Firth SAC. The physical condition of the Dee (Aberdeen) Estuary (water body ID 200103) is identified by river basin management planning to be at less than good status. Future works could improve the condition of the estuary or degrade it. Opportunities to improve the condition of the estuary should be considered by coordinating with river basin management planning.

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Continue to maintain the 'Aberdeen (Dee)' and 'Maryculter' flood warning areas which are part of the Dee river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>A flood protection study is proposed for Aberdeen. SEPA will work with the local authority to ensure that any new information about flood risk resulting from the proposed flood protection study is considered in the existing flood warning system.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement</p>			



<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>ACC will be undertaking a number of community events to promote awareness to the risk of flooding and what can be done to reduce the impact of flooding. As part of this we will be looking to create flood action groups and community resilience groups with regards to flooding. These groups will help promote the risk that flooding presents as well as provide practical advice to the community they serve.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>To support the delivery of the new SEPA flood warning scheme, SEPA will carry out a local launch event and engage directly with residents in the area. This will be supported by local and national media communications. SEPA will also support and participate in local public awareness events, in partnership with the local authority, community council or other local representative organisations, including schools.</p> <p>ACC will be working with the flooding groups as a minimum to promote awareness to flood risk:-</p> <ul style="list-style-type: none"> <li>- Community Councils</li> <li>- Local residents</li> <li>- Education Scotland</li> <li>- Aberdeen Education Department</li> <li>- SEPA</li> </ul> <p>A new flood warning scheme is proposed for the Aberdeenshire coast. To support the delivery of the new SEPA flood warning scheme, we will carry out communications and</p>			

engagement activities. SEPA's awareness raising activities will be coordinated with activities of other responsible authorities as required.

Activities undertaken by ACC will be funded by existing revenue budgets

*(continued)*

SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6018100018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Aberdeen (Deeside) (601810)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			

ACC are creating a surface water management plan (SWMP). The plan will assess all of the current data available with regards to flood risk from historical records of flooding/ maintenance records and existing flood schemes.

Once the detailed assessment has been completed the SWMP will be undertaken and will cover the following items: -

- Catchment assessment
- Maintenance regime
- Objectives to be achieved in that SWMP area
- Long list of all works required
- Short List of works for the plan area in 2016-2021

The surface water management plan will be delivered via the Surface Water Management partnership.

An integrated catchment study covering the Aberdeen catchment was carried out in SR10 (2010-2015) to support the surface water management planning process in Aberdeen, Westhill, and Stonehaven. The study has improved knowledge and understanding of surface water flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and the sea. The Option appraisal phase of this study will be carried out in SR15 (2015-2021).

Delivery of the SWMP will be undertaken working with the following partners as a minimum: -

- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC
- SEPA
- Scottish Water
- Local Residents where applicable
- Community council and elected Members

Funding for the Delivery of the Surface Water Management Plans is from ACC Capital Programme and Revenue Budgets.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>
<b>Objective (ID):</b>	Reduce overall flood risk (600002)
<b>Delivery lead:</b>	Category 1 and 2 Responders

**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description</b>			
<p>Providing an emergency response to flooding is the responsibility of organisations, including local authorities, the emergency services and SEPA.</p> <p>Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>The emergency response by these organisations is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p>			

<b>Action (ID):</b>	<b>MAINTAIN FLOOD PROTECTION SCHEME (6018030017)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Aberdeen (Deeside) from the River Dee and from small watercourses including open and culverted lengths (601801)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeen City Council will maintain the Fraser Road Flood Protection Scheme which reduces the risk of flooding from the Gilcomston Burn, Stronsay Park Flood Protection works which prevents flooding from the Denburn and the beach revetments.</p> <p>Activities undertaken by ACC will be funded by existing revenue budgets.</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Nigg sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office.</p> <p>SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding.</p> <p>The service also provides information which allows SEPA to issue flood alerts, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation.</p> <p>The Met Office receives funding from the UK Government.</p>			

North East Local Plan District – Local Flood Risk Management Plan  
**Aberdeen City - Deeside (Potentially Vulnerable Area 06/18)**

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>ACC will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people in putting in Property Level Protection.</p> <p>ACC will coordinate this through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.</p> <p>Funding of the scheme will be via the ACC Capital works Programme.</p>			



<b>Action (ID):</b>	<b>MAINTENANCE</b> (6000020007)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeen City Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeen City Council (ACC) has a duty to assess designated water bodies and carry out clearance and repair works where such works would substantially reduce flood risk. ACC will produce schedules of clearance and repair works and make these available for public inspection.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood risk.</p> <p>Delivery of the clearance and repair Schedule will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Scottish Water</li> <li>- Land Owners</li> <li>- Aberdeenshire Council</li> </ul> <p>Scottish Water will keep responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p> <p>Funding to come from existing ACC Flood revenue budget, for works which are defined to be ACC responsibility or pose a significant flood risk</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeen City Council (ACC) will be applying a catchment-scale approach to sustainable flood risk management and aims to build the resilience of the city. We will encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts. Under this approach, development in areas with medium to high likelihood of flooding should be avoided.</p> <p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <a href="http://www.sepa.org.uk/environment/land/planning/">http://www.sepa.org.uk/environment/land/planning/</a></p> <p>SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.</p>			

ACC will be working with all relevant bodies to coordinate the activities that are highlighted within Planning Policy.

*(continued)*

ACC will be funding the works associated with Planning policy via its existing revenue budget. SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

### 2.3.19 Peterculter (Potentially Vulnerable Area 06/19)

Local Plan District	local authority	Main catchment
North East	Aberdeen City Council	River Dee (Grampian)

#### Background

This Potentially Vulnerable Area covers the west of Peterculter and is approximately 4km<sup>2</sup>. The A93, North

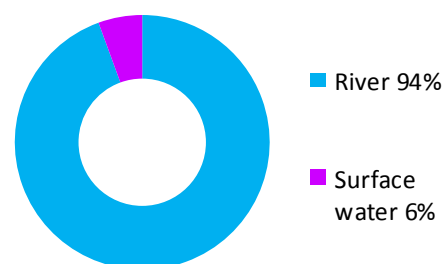


Deeside road, passes through the area.

The main river is the Culter Burn which flows through the south west of Peterculter before discharging into the River Dee.

There are approximately 380 residential and 20 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £300,000 with the majority caused by river flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of flooding impacts

The main source of flood risk in the area is from the Culter Burn. This affects properties in the west and south west of Peterculter.

Roads affected by flooding include the A93.

For this Potentially Vulnerable Area the highest damages are to residential properties.

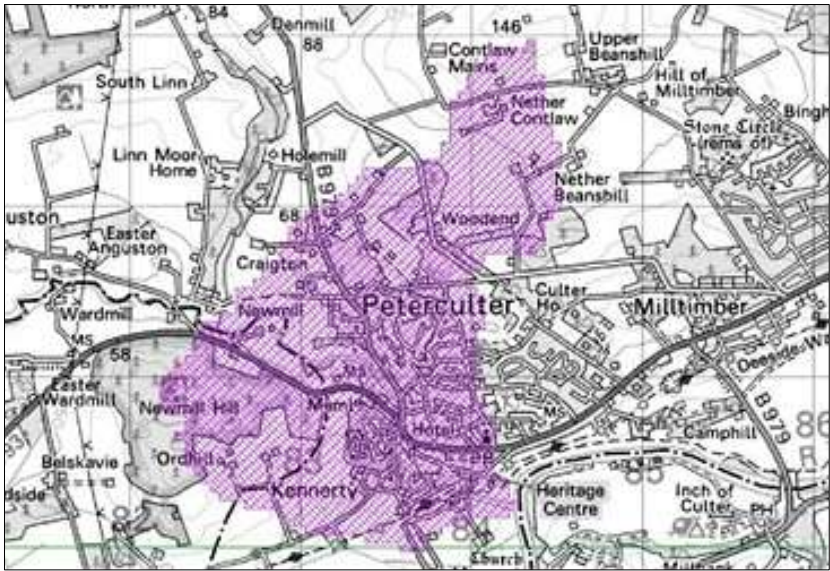
## History of flooding

In 1827, heavy rainfall caused the failure of several small dams associated with paper milling on the Burn of Culter. This caused extensive damage to agricultural crops and the paper mill.

More recently, flooding occurred at North Deeside Road, Craigton Crescent and Buckleburn Place. These incidents were caused by blocked and inadequate drainage systems. On 23 December 2012 around 50 properties were affected by flooding from the Culter Burn.

## Objectives to manage flooding in Potentially Vulnerable Area 06/19

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Peterculter Potentially Vulnerable Area.

Reduce flood risk in Peterculter from the Culter Burn	
Indicators:	Target area:
<p>720 people</p> <p>£180,000 Annual Average Damages from residential properties</p> <p>£71,000 Annual Average Damages from non-residential properties</p>	
Objective ID: 601901	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Peterculter (Potentially Vulnerable Area 06/19)**

Target area	Objective	ID	Indicators within PVA
Aberdeen	Reduce risk from surface water flooding in Peterculter	601906	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	380 residential properties  £300,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	380 residential properties  £300,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/19 there are 50 residential properties at risk and Annual Average Damages of £17,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/19**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Peterculter Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Peterculter (Potentially Vulnerable Area 06/19)**

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection scheme/works					
	Natural flood management study				
Awareness raising					
Surface water plan/study					
Emergency plans/response					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					



**Peterculter (Potentially Vulnerable Area 06/19)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION SCHEME/WORKS (6019010005)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Peterculter from the Culter Burn (601901)		
<b>Delivery lead:</b>	Aberdeen City Council		
<b>Status:</b>	<b>Under development</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>Flood protection works are currently under development for the Culter Burn. The works are likely to be designed to a 1 in 200 year standard of protection, including an allowance for climate change and are will include direct defences to retain flood flows in the channel together with improvements to conveyance at points of restriction. The scheme will be complemented by further investigations into the potential for natural flood management on the burn and its tributaries upstream of Peterculter.</p> <p>These works will provide protection to the following areas in Peterculter: Millside Street, Millside Road and Millside Terrace and The Paddock.</p> <p>Delivery the Flood Scheme will be undertaken working with the following partners as a minimum:-</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Culter Community Council</li> <li>- Scottish Water</li> <li>- Local Residents</li> </ul> <p>Funding of the scheme will be via the ACC Capital works Programme.</p>			
<b>Potential impacts</b>			
<b>Economic:</b>	Flood protection works could benefit over 300 residential properties at risk of flooding in this location, with estimated damages avoided of over £8 million achieved.		
<b>Social:</b>	The development of flood protection works could potentially reduce risk to over 700 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Two energy production/electricity utility sites could benefit from flood protection works. However, this will depend on the final location and extent of the works.		
<b>Environmental:</b>	Flood protection works can have both positive and negative impacts on the ecological quality of the environment depending on how they are designed. To be in accord with the FRM Strategy, the Responsible		



**Peterculter (Potentially Vulnerable Area 06/19)**

	Authority (and where applicable, the licensing authority) should seek to ensure as part of the scheme that the action will not have an adverse effect on the integrity of the River Dee Special Area of Conservation. This should include considering how to avoid/minimise potential impacts through good design and timing of works and consider how to avoid or minimise potential negative effects such as loss or disturbance of sediment.
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<b>Action (ID):</b>	<b>NATURAL FLOOD MANAGEMENT STUDY (6019010003)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Peterculter from the Culter Burn (601901)		
<b>Delivery lead:</b>	Various		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017-2021</b>
<b>Description:</b>			
<p>Aberdeen City Council will work with the Dee Catchment Partnership/SEPA and Aberdeenshire Council to identify potential for natural flood management (NFM) works on the Gormack and Leuchar Burns. These will be a trial with the anticipation to roll out further works in the future.</p> <p>Delivery of the NFM studies and works will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- Deeside Catchment Partnership who have an active interest in improving the water biodiversity and water quality in the City</li> <li>- SEPA</li> <li>- Aberdeenshire Council</li> </ul> <p>Funding for the Delivery of the NFM study and works is from ACC capital grant allocated by Scottish Government to support the delivery of flood risk management.</p>			
<b>Potential impacts</b>			
<b>Economic:</b>	Natural flood management actions could reduce risk to properties at risk from the Culter Burn. The benefits provided by the actions should be defined in the study. Any natural flood management works identified by the study will complement the proposed flood protection scheme on the Culter Burn in Peterculter		
<b>Social:</b>	Natural flood management actions have the potential to reduce flood risk from the Culter Burn to people during a high likelihood flood. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism. A		

**Peterculter (Potentially Vulnerable Area 06/19)**

	reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Negative impacts through disturbance to the local community during the construction phase should be considered.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Natural flood management actions can have a positive impact by restoring and enhancing natural habitats. Opportunities to mitigate any environmental impacts may include design and timing of works. To be in accord with the FRM Strategy, the Responsible Authority should seek to ensure as part of the study that the action will not have an adverse effect on the integrity of the River Dee Special Area of Conservation.

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activity and promotion of SEPA's flood forecasting and warning services (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships.</p> <p>ACC will be undertaking a number of community events to promote awareness to the risk of flooding and what can be done to reduce the impact of flooding. As part of this we will be looking to create flood action groups and community resilience groups with regards to flooding. These groups will help promote the risk that flooding presents as well as provide practical advice to the community they serve.</p> <p>ACC will be working with the flowing groups as a minim to promote awareness to flood risk: -</p> <ul style="list-style-type: none"> <li>- Community Councils</li> </ul>			

**Peterculter (Potentially Vulnerable Area 06/19)**

- Local residents
- Education Scotland
- Aberdeen Education Department
- SEPA

Activities undertaken by ACC will be funded by existing revenue budgets

SEPA's awareness raising activities are funded by Scottish Government through SEPA's grant in aid settlement.

*(continued)*

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6019060018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Peterculter (601906)		
<b>Delivery lead:</b>	Aberdeen City Council (ACC)		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>ACC are creating a surface water management plan (SWMP). The plan will assess all of the current data available with regards to flood risk from historical records of flooding/ maintenance records and existing flood schemes.</p> <p>Once the detailed assessment has been completed the SWMP will be undertaken and will cover the following items: -</p> <ul style="list-style-type: none"> <li>- Catchment assessment</li> <li>- Maintenance regime</li> <li>- Objectives to be achieved in that SWMP area</li> <li>- Long list of all works required</li> <li>- Short List of works for the plan area in 2016-2021</li> </ul> <p>The surface water management plan will be delivered via the Surface Water Management partnership.</p> <p>An integrated catchment study covering the Aberdeen catchment was carried out in SR10 (2010-2015) to support the surface water management planning process in Aberdeen, Westhill, and Stonehaven. The study has improved knowledge and understanding of surface water flood risk and interactions between the above ground and below ground drainage network e.g. with the sewer network, watercourses and the sea. The Option appraisal phase of this study will be carried out in SR15 (2015-2021).</p>			

**Peterculter (Potentially Vulnerable Area 06/19)**

Delivery of the SWMP will be undertaken working with the following partners as a minimum: -

- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC
- SEPA
- Scottish Water
- Local Residents where applicable
- Community council and elected Members

Funding for the Delivery of the Surface Water Management Plans is from ACC Capital Programme and Revenue Budgets.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Peterculter (Potentially Vulnerable Area 06/19)**

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ACC will Work with All CAT 1 and CAT 2 responders to deliver the emergency response plan for Aberdeen City. Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders. The emergency response by these organisations is coordinated through regional and local resilience partnerships.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Funding will be sourced through existing emergency response Budgets for the ACC elements of this objective.

North East Local Plan District – Local Flood Risk Management Plan  
**Peterculter (Potentially Vulnerable Area 06/19)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Nigg sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

**Peterculter (Potentially Vulnerable Area 06/19)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding.</p> <p>The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation.</p> <p>The Met Office receives funding from the UK Government.</p>			



**Peterculter (Potentially Vulnerable Area 06/19)**

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property from flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>ACC will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people in putting in Property Level Protection.</p> <p>ACC will coordinate this through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.</p> <p>Funding of the scheme will be via the ACC Capital works Programme.</p>			

**Peterculter (Potentially Vulnerable Area 06/19)**

<b>Action (ID):</b>	<b>MAINTENANCE</b> (6000020007)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeen City Council and Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>ACC has a duty to assess designated water bodies and carry out clearance and repair works where such works would substantially reduce flood risk. ACC will produce schedules of clearance and repair works and make these available for public inspection.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network.</p> <p>Asset owners and riparian landowners are responsible for the maintenance and management of their own assets including those which help to reduce flood</p> <p>Delivery of the clearance and repair Schedule will be undertaken working with the following partners as a minimum: -</p> <ul style="list-style-type: none"> <li>- ACC Community, Housing and Infrastructure Directorate who are responsible for Roads and Planning within ACC</li> <li>- SEPA</li> <li>- Scottish Water</li> <li>- Land Owners</li> <li>- Aberdeenshire Council</li> </ul> <p>Scottish Water will keep responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p> <p>Funding to come from existing ACC Flood revenue budget, for works which are defined to be ACC responsibility or pose a significant flood risk</p>			

**Peterculter (Potentially Vulnerable Area 06/19)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>ACC will be applying a catchment-scale approach to sustainable flood risk management and aims to build the resilience of the city. We will encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts. Under this approach, development in areas with medium to high likelihood of flooding should be avoided.</p> <p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to</p>			

**Peterculter (Potentially Vulnerable Area 06/19)**

the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

*(continued)*

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

ACC will be working with all relevant bodies to coordinate the activities that are highlighted within Planning Policy.

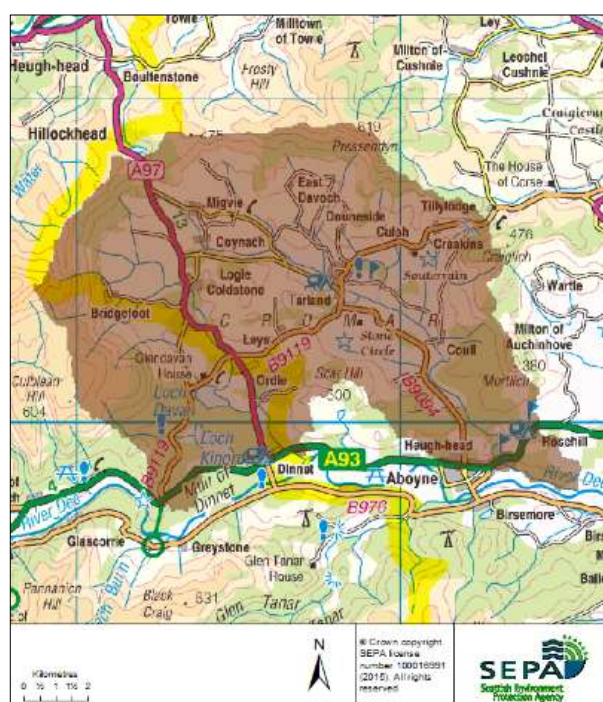
ACC will be funding the works associated with Planning policy via its existing revenue budget. SEPA's land use planning activities are funded by Scottish Government through SEPA's grant in aid settlement.

**Aboyne (Potentially Vulnerable Area 06/20)****2.3.20 Aboyne (Potentially Vulnerable Area 06/20)**

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Dee (Grampian)

**Background**

This Potentially Vulnerable Area includes Tarland and Logie Coldstone, as well as the northern part of the town of Aboyne. It is approximately 125km<sup>2</sup> and located on the eastern edge of the Cairngorms National Park. The A93 and the A97 pass

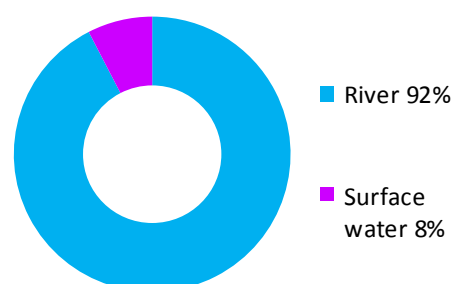


through the area.

The River Dee flows just to the south of the Potentially Vulnerable Area. Several tributaries of the Dee including the Tarland Burn flow through the area.

There are approximately 60 residential and 20 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £240,000 with the majority from river flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Summary of flooding impacts**

The main areas at risk of river flooding are along the Tarland Burn. This floods mainly agricultural land south east of Tarland village and north east of Coull. Tarland Burn also floods property in eastern Aboyne including Low Road and the A93 close to where it joins the River Dee.

**Aboyne (Potentially Vulnerable Area 06/20)**

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Logie Coldstone Primary School, several roads and 10 designated cultural heritage sites are also at risk of flooding.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

**History of flooding**

In 2000 and 2002 the Tarland Burn caused flooding in Aboyne and Tarland when it overtopped its banks, flooding properties and roads. Flooding has occurred at Burnside Road, Tarland, due to the Tarland Burn in March 2006 and again in February and November 2009. In December 2005 and July 2009, surface water flooding impacted residential properties in Tarland.

In June 2005 the Logie Burn overtopped its banks causing localised flooding. Surface water flooding has also affected parts of Aboyne, south of the A93 which is just outside the southern boundary of the Potentially Vulnerable Area.

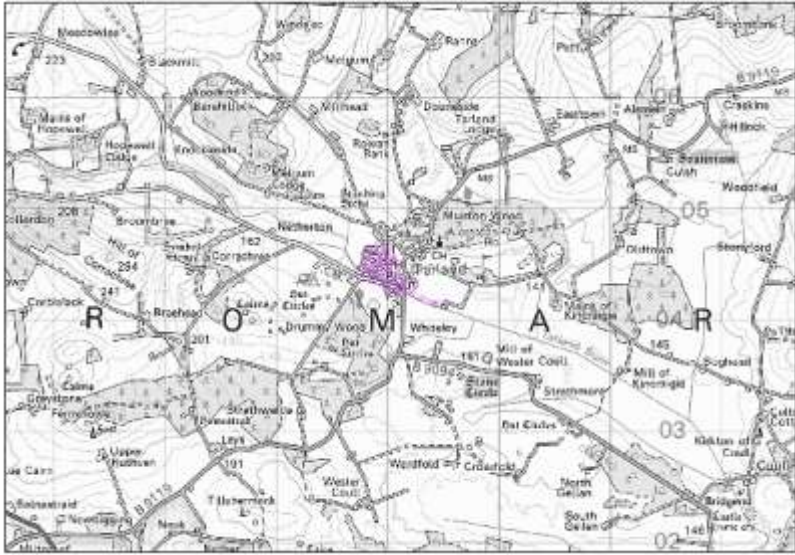
Flooding in December 2015 resulted in damage to over 20 residential properties. This event also resulted in Bonty Court care home being evacuated as precautionary measure, residential properties on Low Road evacuated and roads flooded from the Dee in Aboyne

**Objectives to manage flooding in Potentially Vulnerable Area 06/20**

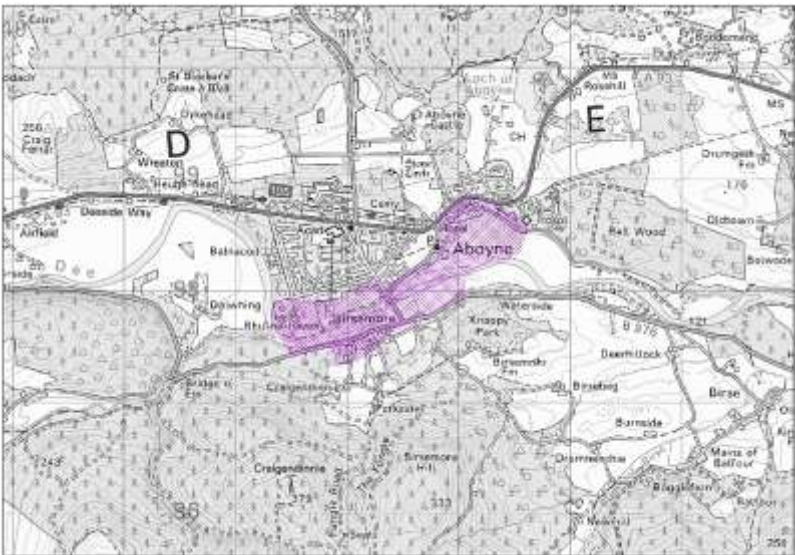
Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Aboyne Potentially Vulnerable Area.



North East Local Plan District – Local Flood Risk Management Plan  
**Aboyne (Potentially Vulnerable Area 06/20)**

Reduce flood risk in Tarland from the Tarland Burn	
Indicators:	Target area:
<p>70 people</p> <p>£27,000 Annual Average Damages from residential properties</p>	
Objective ID: 600201	© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Reduce flood risk in Aboyne from Tarland Burn and River Dee	
Indicators:	Target area:
<p>220 people</p> <p>£114,000 Annual Average Damages</p> <p>1 educational building</p>	
Objective ID: 602002	© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Aboyne (Potentially Vulnerable Area 06/20)**

Target area	Objective	ID	Indicators within PVA
Aboyne	Reduce risk from surface water flooding in Aboyne	602005	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	60 residential properties  £240,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	60 residential properties  £240,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/20 there are 10 residential properties at risk and Annual Average Damages of £18,000.

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/20**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Aboyne Potentially Vulnerable Area.



North East Local Plan District – Local Flood Risk Management Plan  
**Aboyne (Potentially Vulnerable Area 06/20)**

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Maintain flood warning					
Awareness raising					
	Surface water plan/study				
Emergency plans/response					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

Delivery of selected actions
<p align="center"><b>Aboyne Flood Protection Study - Cycle 2 (2022 – 2027)</b></p>
<p>A further Flood Protection Study is planned for this PVA in the next cycle of the Flood Risk Management Plan (2022 – 2027). The study will look to reduce flood risk in Aboyne from Tarland Burn and River Dee.</p> <p>A flood study should be carried out to address flooding from the Tarland Burn and River Dee in Aboyne. To reduce flood risk from the Tarland Burn it is recommended previous work carried out by Aberdeenshire Council is developed further. The flood protection study should primarily focus on direct defences, relocation of properties, runoff reduction, river or floodplain restoration, sediment management and property level protection. Other actions may also be considered to develop the most sustainable range of options.</p>
<p align="center"><b>Tarland Flood Protection Study - Cycle 2 (2022 – 2027)</b></p>
<p>A further Flood Protection Study is planned for this PVA in the next cycle of the Flood Risk Management Plan (2022 – 2027). The study will look to reduce flood risk in Tarland from the Tarland Burn.</p> <p>A flood protection study is recommended to develop the previous work carried out by Aberdeenshire Council to consider flood protection works to reduce the likelihood of flooding in Tarland from the Tarland Burn. Development of the previous work should consider a combination of actions to reduce risk from medium likelihood floods. The flood protection study should primarily focus on modification of conveyance, construction of direct defences, relocation of properties and property level protection, to compare against the previously identified online storage options. Other actions may also be considered in order to develop the most sustainable range of options.</p>

**Aboyne (Potentially Vulnerable Area 06/20)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain the 'Aboyne' flood warning area which is part of the Dee river flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

**Aboyne (Potentially Vulnerable Area 06/20)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Aboyne (Potentially Vulnerable Area 06/20)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies

*(continued)*

More general information and flooding guidance will be available on the website at: <https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6020050018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Aboyne (602005)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2018-2019</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a study to prepare Surface Water Management Plan (SWMP) to generate increased understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management in Aboyne. The study will help in preparing a coordinated action plan, supported by an understanding of the costs and benefits, to identify actions to mitigate surface water flooding, identifying opportunities where SuDS and similar sustainable actions can play a more significant role in managing surface water flood risk and generate improved public engagement and understanding of surface water flooding as well as inform future developments. The study will be completed by Summer 2019</p> <p>The study has the potential to benefit 10 residential properties and sections of road network at risk of flooding in this location, with potential Average Annual Damages avoided of up to £18,000. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will consider interactions with drainage system and water bodies. Additional data and information will be procured or surveys commissioned to generate data to inform the study. The study will take a sustainable and integrated approach by</p>			

**Aboyne (Potentially Vulnerable Area 06/20)**

coordinating with the river basin management plan. It will explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.

Aberdeenshire Council will coordinate with Scottish Water, SEPA and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Aboyne (Potentially Vulnerable Area 06/20)**

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council and the James Hutton Institute operate river level gauges on the Tarland Burn which the Council use to assist with emergency response.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

**Aboyne (Potentially Vulnerable Area 06/20)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2017</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Aboyne sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers</p>			



**Aboyne (Potentially Vulnerable Area 06/20)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Aboyne (Potentially Vulnerable Area 06/20)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

**Aboyne (Potentially Vulnerable Area 06/20)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided. Planning authorities are responsible for implementing this policy guidance when producing Local Development Plans and when considering individual planning applications.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system,</p>			

**Aboyne (Potentially Vulnerable Area 06/20)**

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including guidance on flood risk and planning is available on SEPA's website  
<http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

*(continued)*

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority. Scottish Water is also defined as a key agency within development plan legislation, and therefore plays a key role in providing advice to planning authorities during the production of Local Development Plans.

### 2.3.21 Banchory and Torphins (Potentially Vulnerable Area 06/21)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Dee (Grampian)

#### Background

This Potentially Vulnerable Area is based around Banchory and Torphins. It is approximately 97km<sup>2</sup>.

The A93 and A980 pass through the

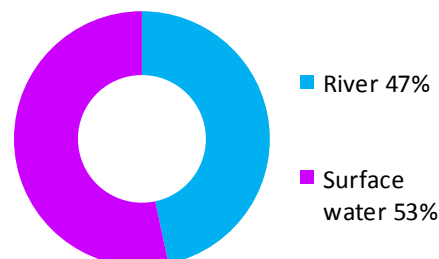


area.

The main rivers are the River Dee and its tributaries, the Burn of Canny and the Beltie Burn.

There are approximately 30 residential and 50 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £200,000 with the majority due to surface water flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of flooding impacts

River flood risk is associated with the River Dee in Banchory and the Beltie Burn around Torphins.

Five designated cultural heritage sites are at risk of flooding within this area. Roads potentially affected by flooding include sections of the A980, A93, B9119 and B993.

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

For this Potentially Vulnerable Area the highest damages are to non-residential properties followed by damages to residential properties.

**History of flooding**

The Beltie Burn flooded in 1799, 1829, 1872, and 1876 affecting the railway (now abandoned) and damaging bridges. Flooding on the River Dee occurred in 1876 and 1902, which affected the railway at Glassel and Banchory. In 1998 and 2000 the Burn of Canny overtopped its banks in several places causing flooding to properties at Millbank and Inchmarlo.

More recently, there was flooding in Torphins at Craigour Avenue in 2000, Craigmyle Road in 2002 from a small spring, Waulkmill Farm in 2002 from the Beltie Burn, Grove Cottage in 2002 from ground water, Grove Terrace in 2003 and Kincardine Road in 2009. There was surface water flooding reported at Briarwood, Upper Lochton at Banchory in 2002. Flooding due to the Burn of Canny overtopping and surface water runoff occurred in Brathens in 2003. Following this flood, the river was realigned and rock armour used to improve flows.

**Objectives to manage flooding in Potentially Vulnerable Area 06/21**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Banchory and Torphins Potentially Vulnerable Area.

Target area	Objective	ID	Indicators within PVA
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**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	30 residential properties  £200,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	30 residential properties  £200,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Actions to manage flooding in Potentially Vulnerable Area 06/21**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Banchory and Torphins Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

North East Local Plan District – Local Flood Risk Management Plan

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Maintain flood warning					
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					



**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain the 'Banchory' flood warning area which is part of the Dee river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at:

<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

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Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Banchory and Torphins sewer catchment areas to improve knowledge and understanding of flood risk in these areas as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Banchory and Torphins (Potentially Vulnerable Area 06/21)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and</p>			

use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.

For further information on the application of national planning policies see Annex 5.

Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.

*(continued)*

As a consultee on planning applications, Aberdeenshire Council's Flood & Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act.

Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website <http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.



### 2.3.22 Ballater (Potentially Vulnerable Area 06/22)

Local Plan District	local authority	Main catchment
North East	Aberdeenshire Council	River Dee (Grampian)

#### Background

This Potentially Vulnerable Area is based around Ballater and is approximately 7km<sup>2</sup>.

The area is located within the Cairngorms National Park and the A93 passes

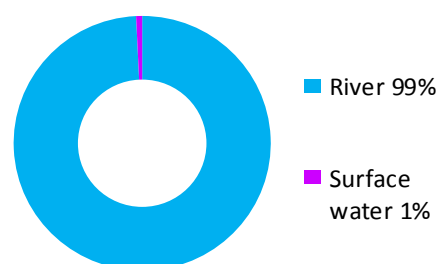


through it.

The main river is the River Dee, which is a Special Area of Conservation for salmon, otters and freshwater pearl mussels.

There are approximately 200 residential and 40 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £230,000. Almost all the damages are caused by river flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

#### Summary of flooding impacts

The main areas at risk of river flooding are along the River Dee in south and east Ballater around Salisbury Road, Braichlie Road and Dee Street. Further areas of risk include Tullich Road and Craigview Road.

The caravan site and the fire station are at risk of flooding as are a number of roads, notably the A93, B972 and B976. Small areas of designated environmental sites are also at risk of flooding including the River Dee Special Area of Conservation.

**Ballater (Potentially Vulnerable Area 06/22)**

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For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

**History of flooding**

Flooding occurred on the River Dee in 1829, destroying the Ballater Bridge and in 1839, the bridge at Tullich was damaged. In 1877, cellars in the lower part of Ballater were flooded, and in 1920 and 1929 the town and roads were flooded.

Local reports are that in the late 1980s the bottom part of the village was badly flooded with water coming up through the drains. Deebank Road, Bridge Street Richmond Place, Braichlie Road were all affected. In 2008, surface runoff entered the Netherley Guest House at Netherley Place.

In August 2014, the caravan park and a number of roads were closed due to flooding from the River Dee. As a result, 150 people were evacuated from the caravan site.

Large areas of Ballater were affected by flooding from the River Dee in December 2015.

More than 100 residents had to be evacuated from Anderson Road, Deebank Road and Albert Road. Over 300 Properties were flooded. A section of the A93 between Ballater and Balmoral Castle (near Braemar) was washed away and the Cambus O'May Bridge was extensively damaged.

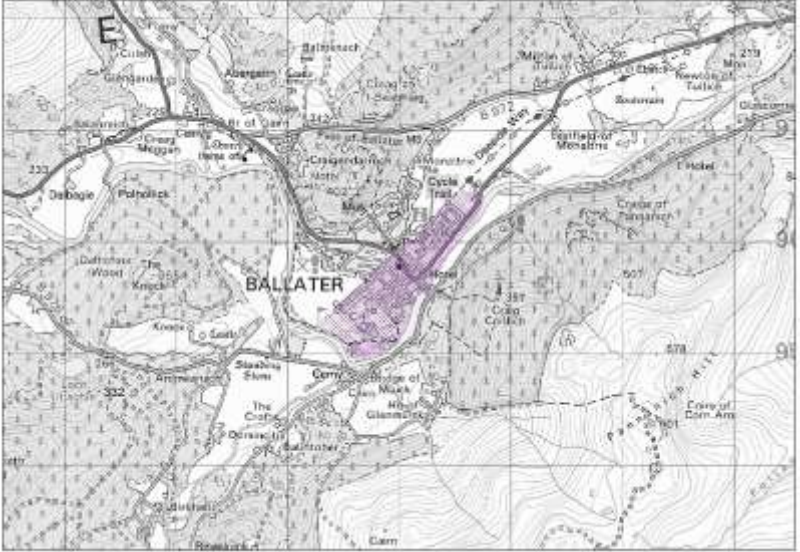
The police station flooded and suffered substantial damage, leading it to operate mobile surgeries a few days per week.

Victoria Barracks were used as emergency care centre and subsequent flood relief centre.

**Objectives to manage flooding in Potentially Vulnerable Area 06/22**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Ballater Potentially Vulnerable Area.

North East Local Plan District – Local Flood Risk Management Plan  
**Ballater (Potentially Vulnerable Area 06/22)**

Reduce flood risk in Ballater from the River Dee	
Indicators:	Target area:
<p>420 people</p> <p>£170,000 Annual Average Damages from residential properties</p> <p>£16,000 Annual Average Damages from non-residential properties</p> <p>2 emergency services</p>	
Objective ID: 602201	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

Target area	Objective	ID	Indicators within PVA
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	<p>200 residential properties</p> <p>£230,000 Annual Average Damages</p>
Applies across North East Local Plan District	Reduce overall flood risk	600002	<p>200 residential properties</p> <p>£230,000 Annual Average Damages</p>
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*



**Ballater (Potentially Vulnerable Area 06/22)****Actions to manage flooding in Potentially Vulnerable Area 06/22**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation.

Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Ballater Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Community flood action groups					
Maintain flood warning					
Awareness raising					
Emergency plans/response					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Ballater (Potentially Vulnerable Area 06/22)**

Delivery of selected actions
Ballater Flood Protection Study - Outwith Local Flood Risk Management Plan
<p>A further Flood Protection Study is planned for this PVA in the current cycle of the Flood Risk Management Plan, but this will be undertaken outwith this Plan. The study will look to reduce flood risk in Ballater from the River Dee.</p> <p>A flood protection study is recommended to consider flood protection works to reduce the likelihood of flooding in Ballater from the River Dee. The flood protection study should primarily focus on direct defences, relocation of properties and property level protection, but other actions may also be considered in order to develop the most sustainable range of options.</p>

**Ballater (Potentially Vulnerable Area 06/22)**

<b>Action (ID):</b>	<b>COMMUNITY FLOOD ACTION GROUPS (6000020012)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Community		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council will work with the Ballater Flood Resilience Group to reduce flood risk, improve preparedness and increase resilience against flooding.</p> <p>Aberdeenshire Council will coordinate with the Group throughout the next 6 years on a priority needs basis where resources allow.</p> <p>Funding for Aberdeenshire Council's own activities to support the Ballater Flood Resilience Group will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan.</p>			

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain the 'Ballater' flood warning area which is part of the Dee river flood warning scheme.</p> <p>When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

**Ballater (Potentially Vulnerable Area 06/22)**

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.</p> <p>Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.</p> <p>In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.</p> <p>Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.</p> <p>Awareness raising will be funded from existing local authority flood revenue budgets.</p> <p>From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.</p> <p>Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising activities will be coordinated with the activities of other responsible authorities as required.</p> <p>SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.</p>			



**Ballater (Potentially Vulnerable Area 06/22)**

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

*(continued)*

More general information and flooding guidance will be available on the website at:

<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Ballater (Potentially Vulnerable Area 06/22)**

Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.

Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2017</b>
<b>Description:</b>			

**Ballater (Potentially Vulnerable Area 06/22)**

Scottish Water will undertake further investigation and modelling in the Ballater sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.

Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.

Scottish Water funding is committed in its capital programme through Q&S 4a (2015-2021) which is approved by its regulators and customers.

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>SEPA / Met Office joint initiative. Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		

**Ballater (Potentially Vulnerable Area 06/22)**

<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.</p> <p>Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.</p>			

<b>Action (ID):</b>	<b>MAINTENANCE</b> (6000020007)		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

**Ballater (Potentially Vulnerable Area 06/22)**

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001) Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided. Planning authorities are responsible for implementing this policy guidance when producing Local Development Plans and when considering individual planning applications.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p> <p>SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act. Further information about how SEPA engages in the planning system,</p>			

including guidance on flood risk and planning is available on SEPA's website  
<http://www.sepa.org.uk/environment/land/planning/>

*(continued)*

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

Scottish Water is also defined as a key agency within development plan legislation, and therefore plays a key role in providing advice to planning authorities during the production of Local Development Plans.

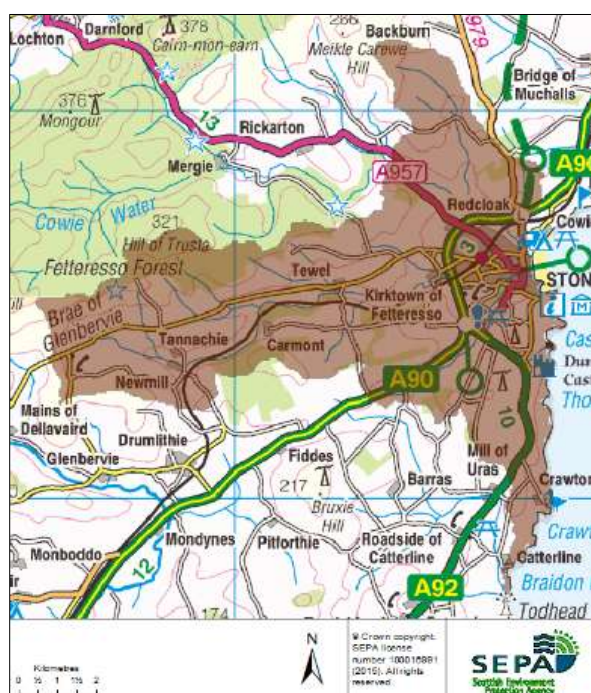
**Stonehaven (Potentially Vulnerable Area 06/23)****2.3.23 Stonehaven (Potentially Vulnerable Area 06/23)**

Local Plan District	local authority	Main catchments
North East	Aberdeenshire Council	Kincardine and Angus coastal

**Background**

This Potentially Vulnerable Area covers Stonehaven and the surrounding rural area. It is approximately 68km<sup>2</sup>.

The Aberdeen to Dundee railway line, and the A90, A957 and A92 pass through

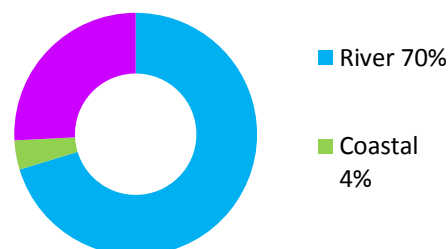


the area.

The main rivers in the area are Carron and the Cowie. Stonehaven has suffered from major flooding in recent years from the River Carron and from the sea.

There are approximately 860 residential and 240 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £890,000, with the majority due to river flooding.



Annual Average Damages by flood source

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Summary of flooding impacts**

River flood risk is mainly from the River Carron and the Glaslaw Burn. Floods from the Carron can extend along Low Wood Road and Dunnottar Avenue in the south, and throughout the low-lying parts of town along Barclay Street in the north. Flooding also extends to the south east along High Street and Arbuthnott Court into the Old Town. Surface water flooding also impacts on the town, particularly around the leisure centre and in the Old Town. Flooding from wave overtopping is not fully represented in the general assessment of flood risk and the number of properties at risk and the damages from

**Stonehaven (Potentially Vulnerable Area 06/23)**

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coastal flooding are known to currently be underestimated. Flooding from wave overtopping has been included in the setting of objectives and selection of actions.

Dunnottar School, the police station and the main supermarket are at risk of flooding. Transport routes affected by flooding include the A90, A92, A957 and the Aberdeen to Dundee railway in several locations. Six designated cultural heritage sites and a small area of designated environmental sites are at risk.

For this Potentially Vulnerable Area the highest damages are to residential properties followed by damages to non-residential properties.

### **History of flooding**

There is a long record of flooding in Stonehaven dating back to the early 1800s, with flooding affecting property, agriculture, bridges and roads. A number of these floods resulted in several feet of water in the town.

There is extensive and valuable local knowledge of historic flooding and further work is required to fully reconcile this knowledge with existing recorded events listed below.

The earliest recorded flood on Carron Water was in 1829, with additional floods recorded in 1835 (when large areas of the town were submerged by several feet of water) 1836, 1878 (when one fatality occurred), 1881, and 1895. There are floods recorded on Cowie in 1878, 1881, 1882, 1884, 1895, 1896 and 1949. In December 1985 there was a flood on both the Carron and Cowie rivers, which affected Arduthie Street, Carron Terrace, and Cameron Street. In 2002, the Carron flooded Low Wood Road.

In November 2009, the Carron burst its banks at the green bridge and flooded 97 properties in Stonehaven with 50 people needing to be evacuated. The River Carron and its tributary, the Glaslaw Burn, flooded again in December 2012 when 40 properties were evacuated and suffered significant damage. Surface water also contributed significantly to this flood.

In 1998, the Farrochie Burn flooded Arduthie Gardens in Stonehaven affecting three properties; it flooded again in 2002. In 2006, a trash screen became blocked with debris and caused Farrochie Burn to flood a public park and road. In 2006, Victoria Street was flooded from an unnamed watercourse, with a culvert blockage causing the water to back up. In 2008 the gardens of Touck Cottages were affected by surface runoff from agricultural land.

On 15 December 2012, a coastal storm overtopped the sea defences and around 20 properties were flooded internally. Around 25 vulnerable residents had to be evacuated and there was significant structural damage to further seafront properties from wave action. Seafront properties were again affected in October 2014 by wave overtopping and many vulnerable people were evacuated from their homes.



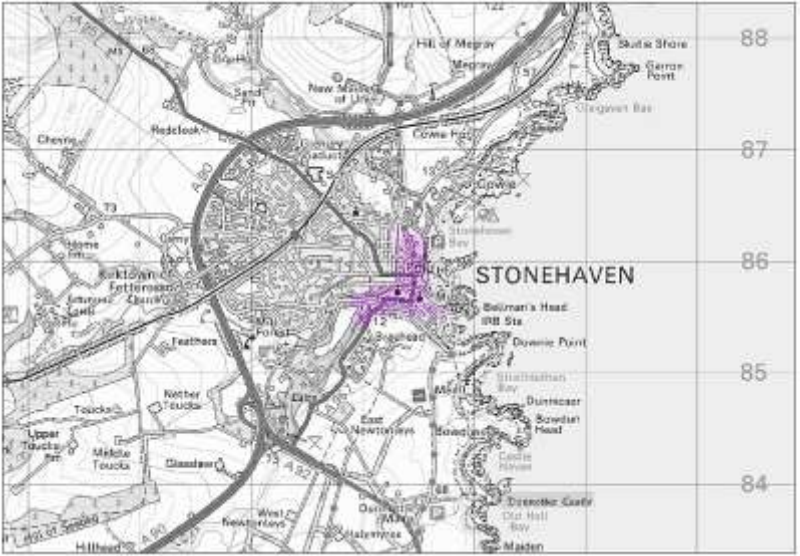
North East Local Plan District – Local Flood Risk Management Plan  
**Stonehaven (Potentially Vulnerable Area 06/23)**

Wave overtopping frequently impacts seafront businesses to the north of the River Cowie. Residential properties in Cowie village are also affected during periods of high water levels and wave activity.

The village of Catterline is affected by surface water flooding. Erosion of the toe of the coastal slopes by wave action, combined with the impact of surface water and springs on slope stability, have contributed to coastal landslips in the village. This erosion threatens a significant proportion of the property in the village and the access road to the harbour. The neighbouring village of Crawton has also suffered from flooding.


**Objectives to manage flooding in Potentially Vulnerable Area 06/23**

Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target areas have been set to focus actions; they do not necessarily correspond to areas at risk in SEPA's flood map. The objectives below have been set for Stonehaven Potentially Vulnerable Area.

Reduce flood risk in Stonehaven from the River Carron and Glaslaw Burn	
Indicators:	Target area:
820 people  £450,000 Annual Average Damages from residential properties  1 educational building  1 emergency service	
Objective ID: 602301	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

North East Local Plan District – Local Flood Risk Management Plan  
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Reduce flood risk in Stonehaven from coastal flooding	
Indicators:	Target area:
<p>110 people</p> <p>£27,000 Annual Average Damages from residential properties</p> <p>£3,100 Annual Average Damages from non-residential properties</p>	
Objective ID: 602302	<p>© Crown Copyright. All rights reserved. SEPA lic.no. 100016991 (2015)</p>

Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

Target area	Objective	ID	Indicators within PVA
Stonehaven	Reduce risk from surface water flooding in Stonehaven	602307	* See note below
Applies across North East Local Plan District	Avoid an overall increase in flood risk	600001	860 residential properties £890,000 Annual Average Damages
Applies across North East Local Plan District	Reduce overall flood risk	600002	860 residential properties £890,000 Annual Average Damages
Applies across North East Local Plan District	Organisation such as utility companies and Historic Environment Scotland actively maintain and manage their own assets, including the risk of flooding. These actions are not detailed further in the Flood Risk Management Strategies.		

\* This objective will be monitored using surface water flood risk across the Potentially Vulnerable Area. For 06/23 there are 180 residential properties at risk and Annual Average Damages of £230,000.

North East Local Plan District – Local Flood Risk Management Plan  
**Stonehaven (Potentially Vulnerable Area 06/23)**

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*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Stonehaven (Potentially Vulnerable Area 06/23)**

Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives was based on a detailed assessment and comparison of economic, social and environmental criteria. The actions shaded and then described below have been selected as the most appropriate for Stonehaven Potentially Vulnerable Area.

Selected actions					
Flood protection scheme/works	Natural flood management works	New flood warning	Community flood action groups	Property level protection scheme	Site protection plans
Flood protection study	Natural flood management study	Maintain flood warning	Awareness raising	Surface water plan/study	Emergency plans/response
Maintain flood protection scheme	Strategic mapping and modelling	Flood forecasting	Self Help	Maintenance	Planning policies

The delivery of selected actions by year over the six-year plan cycle is summarised below.

Delivery of selected actions					
Year 1 (2016/17)	Year 2 (2017/18)	Year 3 (2018/19)	Year 4 (2019/20)	Year 5 (2020/21)	Year 6 (2021/22)
Flood protection scheme/works					
New flood warning					
Community flood action groups					
Flood protection study					
Maintain flood warning					
Awareness raising					
Surface water plan/study					
			Maintain flood protection scheme		
Emergency plans/response					
Strategic mapping and modelling					
Flood forecasting					
Self help					
Maintenance					
Planning Policy					

**Stonehaven (Potentially Vulnerable Area 06/23)**

<b>Action (ID):</b>	<b>FLOOD PROTECTION SCHEME/WORKS (6023010006)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Stonehaven from the River Carron and Glaslaw Burn (602301)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>32 of 42</b>	<b>1 of 2</b>	
<b>Status:</b>	<b>Under development</b>	Indicative delivery:	<b>2016-2019</b>
<b>Description:</b>			
<p>The proposed Stonehaven Flood Protection Scheme includes the following:</p> <ul style="list-style-type: none"> <li>- Direct flood defences on both banks of the River Carron from immediately upstream of the Red Bridge to the coast</li> <li>- Modifications to the River Carron channel between the Green Bridge and Bridgefield Bridge</li> <li>- Raising of the Red Bridge</li> <li>- Direct flood defences on the Glaslaw Burn from upstream of Carron Gardens to the upstream face of Low Wood Road</li> <li>- Raising and relocation of the Green Bridge</li> <li>- Raising of the White Bridge</li> <li>- Replacing the culvert under the Woodview Court Bridge with a box culvert</li> <li>- Provision of pumping stations in low lying areas to alleviate surface water flooding from overland flows</li> <li>- Infilling of the parapets on Bridgefield Bridge to provide freeboard</li> </ul> <p>Infrastructure Services Committee, on 28 January 2016, agreed to make the preliminary decision that the proposed scheme should be progressed with modification; and to notify Scottish Ministers of that decision.</p> <p>It is anticipated that the Stonehaven Flood Protection Scheme will be eligible for 80% funding from the Scottish Government's Flooding Component of the general Capital Grant. The remaining funding will be met from the Harbours, Coast &amp; Flooding line from Aberdeenshire Council's Capital Plan 2015-2031.</p>			



**Stonehaven (Potentially Vulnerable Area 06/23)**

Potential impacts	
<b>Economic:</b>	A flood protection scheme could reduce flood risk to 372 residential properties at risk of flooding in this location, with estimated damages avoided of £20 million. The benefit-cost ratio of the proposed works is 1.23.
<b>Social:</b>	A flood protection scheme could reduce risk to an estimated 818 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Two utility sites (energy production/electricity), a school, an emergency service site and the A957 could benefit from flood protection works.
<b>Environmental:</b>	Flood protection works can have both positive and negative impacts on the ecological quality of the environment depending on how they are designed. Direct defences will be set back from the river where possible to reduce potential negative impacts on the ecological quality of the rivers and minimise tree loss. The removal of the weir will improve fish passage along the river which is important for salmon, trout and otter. The development of the design should look to maintain and enhance the attractive build environment along the riverside where possible, incorporating finishes, materials and details that complement this.

<b>Action (ID):</b>	<b>NEW FLOOD WARNING (6000020010)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2017- 2018</b>
<b>Description:</b>			

**Stonehaven (Potentially Vulnerable Area 06/23)**

Flood warning is required for communities at risk of coastal flooding along the Aberdeenshire coast from Peterhead to Montrose. A flood warning system will be developed and implemented. The geographical extent of specific flood warning areas will be developed as part of this process.

A flood protection study is proposed for Stonehaven. SEPA will work with the local authority to ensure that new information about flood risk resulting from the proposed flood protection study is considered in developing the new flood warning system.

The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement. In addition, Scottish Government provides grant funding to enable SEPA to implement new flood warning schemes.

<b>Action (ID):</b>	<b>COMMUNITY FLOOD ACTION GROUPS (6000020012)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Community		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Stonehaven Flood Action Group vigorously represent the local community on flood risk issues and have been actively involved in working with Aberdeenshire Council and SEPA in seeking and implementing solutions to flood risk in Stonehaven. Aberdeenshire Council will work with the Stonehaven Flood Action Group to reduce flood risk, improve preparedness and increase resilience against flooding. Aberdeenshire Council will coordinate with the Group throughout the next 6 years on a priority needs basis where resources allow. Funding for Aberdeenshire Council's own activities to support the Stonehaven Flood Action Group will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.</p>			

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (6023020005)</b>	
<b>Objective (ID):</b>	Reduce risk in Stonehaven from coastal flooding (602302)	
<b>Delivery lead:</b>	Aberdeenshire Council	
<b>Priority:</b>	National:	Within local authority:
	<b>86 of 168</b>	<b>4 of 12</b>



**Stonehaven (Potentially Vulnerable Area 06/23)**

Status:	Scheduled	Indicative delivery:	2016-2019
Description:			
<p>Aberdeenshire Council will undertake a flood protection study to evaluate options to reduce the risk of flooding in Stonehaven from coastal flooding. It is currently estimated that the study will be completed by Summer 2019.</p> <p>The study has the potential to benefit 47 residential properties, seven non-residential properties and sections of road network at risk of flooding in this location, with potential damages avoided of up to £4 million. The number of properties at risk of flooding from wave overtopping will be confirmed as part of the study. The estuary of the River Cowie up to the A957 road bridge will be included in this study. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p><i>(continued)</i></p> <p>The study will take a sustainable and integrated approach by coordinating with the river basin management plan and the planned surface water management plan/study. It will be undertaken with due consideration to internationally, nationally and locally designated sites including listed buildings. It will also explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.</p> <p>The interactions between actions and effects on coastal processes along the shoreline will also be considered. The study will consider wave attenuation (beach management / recharge), coastal management actions (revetments), the construction of direct defences, relocation of properties and property level protection. Beach recharge will very often involve proposals to obtain the donor sediment from the low intertidal or shallow sub tidal zone in the vicinity. There are potential adverse effects on biodiversity, active coastal processes and even coastal flood risk if sediment extraction allows greater wave attack inshore. The flood protection study will ensure the proposed actions avoid or minimise the potential loss of natural habitat and detrimental interference with coastal processes. The flood protection study will consider how to avoid or minimise potential negative effects on the Garron Point Site of Special Scientific Interest to the north. It is expected that the recommended flood protection scheme will comprise a combination of such measures to ensure a sustainable and integrated approach to flood risk management by due consideration of impacts on economy, society, environment and cultural heritage.</p> <p>Aberdeenshire Council will coordinate with SEPA, Scottish Water, SNH, The Crown Estate, Marine Scotland, Stonehaven Harbour and community groups as well as other</p>			

**Stonehaven (Potentially Vulnerable Area 06/23)**

relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.

Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.

Potential impacts	
<b>Economic:</b>	The study could benefit 47 residential and seven non-residential properties at risk of flooding in this location, with potential damages avoided of up to £4 million. Flood protection works would have additional benefits of reducing structural damage from direct wave action to property along the seafront.
<b>Social:</b>	The development of flood protection works following the study would potentially reduce risk to 106 people. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people. Natural flood management actions can restore and enhance natural environments and create opportunities for recreation and tourism. Negative impacts through disturbance to the local community during the construction phase should be considered.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment. Natural flood management actions can have a positive impact by restoring and enhancing natural habitats. Opportunities to mitigate any environmental impacts may include design and timing of works. Beach recharge will very often involve proposals to obtain the donor sediment from the low intertidal or shallow sub tidal zone in the vicinity. There are potential adverse effects on biodiversity, active coastal processes, and even coastal flood risk if sediment extraction allows greater wave attack inshore. The flood protection study should ensure the actions avoid or minimise the potential loss of natural habitat and do not interfere with coastal processes. The flood protection study should consider how to avoid or minimise potential negative effects on the Garron Point Site of Special Scientific Interest to the north.

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (6000020030)</b>
<b>Objective (ID):</b>	Reduce overall flood risk (600002)

**Stonehaven (Potentially Vulnerable Area 06/23)**

<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>SEPA will continue to maintain the 'Stonehaven' flood warning area which is on the Carron Water and is part of the Stonehaven river flood warning scheme. When flood events occur in an area with an existing flood warning service, SEPA will seek to verify the flood forecasts and warnings. SEPA will use feedback and post-event data to ensure that our flood warning service is timely and accurate.</p> <p>A flood protection scheme is proposed for Stonehaven. SEPA will work with the local authority to ensure that changes to hydrology and flood risk as a result of the proposed flood protection scheme are fully considered in the existing flood warning system.</p> <p>The maintenance of SEPA's flood warning service is funded by Scottish Government through SEPA's grant in aid settlement.</p>			

<b>Action (ID):</b>	<b>AWARENESS RAISING (6000020013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

Aberdeenshire Council have a duty to raise public awareness of flood risk under the Flood Risk Management (Scotland) Act 2009 and to plan and inform of risks to communities under the Civil Contingencies Act 2004.

Over the six years of the Plan, 2016-2022, Aberdeenshire Council will seek opportunities to raise awareness of both flood risk and actions that enable individuals, homes and businesses to reduce the overall impact of flooding.

In partnership with Education Scotland Aberdeenshire Council will look to engage schools in activities relating to flooding, extreme weather, climate change and other community resilience issues.

Aberdeenshire Council will also develop emergency response plans and work with community flood action groups where these exist.

Awareness raising will be funded from existing local authority flood revenue budgets.

From 2016 SEPA will engage with the community through local participation in national initiatives, including partnership working with Neighbourhood Watch Scotland. In addition, SEPA will engage with local authorities and community resilience groups where possible.

A flood protection scheme is proposed for Stonehaven. SEPA will support the local authority's communications and engagement activities with media activity, local public awareness events and education engagement with schools. SEPA will also deliver joint communications with local authorities for Floodline customers in any newly protected flood warning area.

A new flood warning scheme is under consideration for Stonehaven. To support the delivery of the new SEPA flood warning scheme, SEPA will carry out a local launch event and engage directly with residents in the area. This will be supported by local and national media communications. SEPA will also support and participate in local public awareness events, in partnership with the local authority, community council or other local representative organisations, including schools.

*(continued)*

Across Scotland, SEPA will create and share communication and education resources with other responsible authorities. These resources will include awareness campaigns, media and marketing activities and promotion of SEPA's flood forecasting and warning service (Floodline). Where they exist, SEPA will engage with community resilience groups and community safety partnerships. Additionally, SEPA's awareness raising

activities will be coordinated with the activities of other responsible authorities as required.

SEPA's awareness raising activities are funded by Scottish Government through their grant in aid settlement and will be coordinated with the activities of other responsible authorities as required.

Scottish Water will support SEPA and responsible authorities with their awareness raising activities as required and provide targeted flooding communications for Scottish Water specific activities. Scottish Water will raise awareness by producing and supplying targeted information to the public on large capital projects and detailed local studies.

More general information and flooding guidance will be available on the website at:  
<https://www.scottishwater.co.uk/you-and-your-home/your-home/flooding-information>

Scottish Water will keep responsible authorities informed of its awareness raising activities through the Local Plan District partnerships.

**Stonehaven (Potentially Vulnerable Area 06/23)**

<b>Action (ID):</b>	<b>SURFACE WATER PLAN/STUDY (6023070018)</b>		
<b>Objective (ID):</b>	Reduce risk from surface water flooding in Stonehaven (602307)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Ongoing</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>			
<p>Aberdeenshire Council will undertake a study to prepare Surface Water Management Plan (SWMP) to generate increased understanding of the causes, probability and consequences of surface water flooding and to evaluate options for surface water flood management in Stonehaven. The study parameters will be likely to extend to Portlethen which is within the same sewer catchment. The study will build upon the Integrated Catchment Study which was carried out in from 2010 to 2015 to support the surface water management planning process in Aberdeen, Westhill and Stonehaven.</p> <p>The study will help in preparing a coordinated action plan, supported by an understanding of the costs and benefits, to identify measures to mitigate surface water flooding, identifying opportunities where SuDS and similar sustainable measures can play a more significant role in managing surface water flood risk and generate improved public engagement and understanding of surface water flooding as well as inform future developments. The study will be completed to coincide with the Option appraisal phase of the Integrated Catchment Study which is planned to be carried out from 2015 to 2021.</p> <p>The study has the potential to benefit residential properties, non-residential properties and sections of road network at risk of flooding in this location. A reduction in flood risk would have a positive benefit to the health and wellbeing of the community and socially vulnerable people located within the study area and may also contribute to enhanced biodiversity and economic activity.</p> <p>The study will consider interactions with drainage system, water bodies and the sea. Additional data and information will be procured or surveys commissioned to generate data to inform the study. The study will take a sustainable and integrated approach by coordinating with the river basin management plan. It will explore opportunities for enhancing biodiversity and for promoting economic activity and social wellbeing.</p> <p>Aberdeenshire Council will coordinate with Aberdeen City Council, Scottish Water, SEPA and community groups as well as other relevant agencies and organisations. Aberdeenshire Council will undertake the study through the Local Planning District (LPD) partnership and / or through separate agreements.</p> <p>Funding for the study will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022.</p>			



**Stonehaven (Potentially Vulnerable Area 06/23)**

<b>Action (ID):</b>	<b>MAINTAIN FLOOD PROTECTION SCHEME (6023010017)</b>		
<b>Objective (ID):</b>	Reduce flood risk in Stonehaven from the River Carron and Glaslaw Burn (602301)		
<b>Delivery lead:</b>	Aberdeenshire Council		
<b>Status:</b>	<b>Proposed</b>	Indicative delivery:	<b>2019 onwards</b>
<b>Description:</b>			
<p>Subject to the outcome of the statutory process, and assuming the Stonehaven Flood Protection Scheme is completed within the first six-year flood risk management plan cycle 2016-2022, the following maintenance measures will be undertaken:</p> <ul style="list-style-type: none"> <li>- Hydraulic Flood Walls - Pressure testing / operation</li> <li>- Walls Surface finishes - Repointing / re-facing</li> <li>- Rock Armour - Replacement when required</li> </ul>			

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (6000020014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Category 1 and 2 Responders		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Providing an emergency response to flooding is the responsibility of many organisations, including local authorities, the emergency services and SEPA. Effective management of an emergency response relies on emergency plans that are prepared under the Civil Contingencies Act 2004 by Category 1 and 2 Responders.</p> <p>Aberdeenshire Council currently provides sandbags at pre-arranged locations in the town when forecast conditions indicate that the likelihood of need is very high. Aberdeenshire Council also deploys flood barriers in these conditions to help divert flood water away from properties and back into the river channel where possible. Aberdeenshire Council operates a water level monitor on the River Carron.</p> <p>Aberdeenshire Council has an overarching Flood Response Plan, which is coordinated through the Responders identified under the Civil Contingencies Act 2004. The aim of the plan is to set out arrangements to deal effectively with flood risk. At predetermined trigger levels flood alerts and warnings will be issued through SEPA's flood forecasting and warning service (Floodline) and Aberdeenshire Council will conduct assessments at known hotspots and prepare resources as required. Aberdeenshire Council will also coordinate measures in conjunction with the other Responders. The emergency</p>			



**Stonehaven (Potentially Vulnerable Area 06/23)**

response process is coordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.

The Operational Flood Response Plan will undergo review on an annual basis to reflect operational or responsibility changes. A debrief and plan review will also be carried out after the Plan is activated during emergencies.

Aberdeenshire Council funding for emergency plans/response will be shared with other organisations, emergency services and Responders, as appropriate, and will be subject to Scottish Government's block grant and capital support, and budget allocations over the six years of the Plan, 2016-2022. SEPA's emergency plans/response are funded by Scottish Government through SEPA's grant in aid settlement.

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (6000020019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Scheduled</b>	Indicative delivery:	<b>2016-2018</b>
<b>Description:</b>			
<p>Scottish Water will undertake further investigation and modelling in the Cowie sewer catchment to improve knowledge and understanding of flood risk in this area as required under Section 16 of the Flood Risk Management (Scotland) Act 2009.</p> <p>Scottish Water will work with responsible authorities to incorporate relevant information into these studies by regularly keeping the responsible authorities informed of their progress. Scottish Water will provide responsible authorities with the outputs of the Section 16 assessment which, where relevant, may be used to inform Surface Water Management Plans and SEPA flood hazard and risk maps.</p> <p>Scottish Water funding is committed in its capital programme through Q&amp;S 4a (2015-2021) which is approved by its regulators and customers.</p>			

**Stonehaven (Potentially Vulnerable Area 06/23)**

<b>Action (ID):</b>	<b>FLOOD FORECASTING (6000020009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>The Scottish Flood Forecasting Service is a joint initiative between SEPA and the Met Office that produces daily, national flood guidance statements which are issued to Category 1 and 2 Responders. The flood guidance statements provide an assessment of the risk of flooding for a five day period allowing responders time to put preparations in place to reduce the impact of flooding. The service also provides information which allows SEPA to issue flood warnings, giving people a better chance of reducing the impact of flooding on their home or business. For more information, please visit SEPA's website. The Potentially Vulnerable Area is within the 'Aberdeenshire and Aberdeen City' flood alert area.</p> <p>Hydrological information is provided by SEPA and meteorological information is provided by the Met Office. SEPA uses the information to predict the likelihood and timing of river, coastal and surface water flooding.</p> <p>SEPA's flood forecasting service is funded through Scottish Government's grant in aid allocation. The Met Office receives funding from the UK Government.</p>			

<b>Action (ID):</b>	<b>SELF HELP (6000020011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	—		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			

**Stonehaven (Potentially Vulnerable Area 06/23)**

Everyone is responsible for protecting themselves and their property flooding. Property and business owners can take simple steps to reduce damage and disruption to their homes and businesses should flooding happen. This includes preparing a flood plan and flood kit, installing property level protection, signing up to Floodline and Resilient Communities initiatives, and ensuring that properties and businesses are insured against flood damage.

Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

<b>Action (ID):</b>	<b>MAINTENANCE (6000020007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (600002)		
<b>Delivery lead:</b>	Aberdeenshire Council, asset / land managers		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Local authorities have a duty to assess watercourses and carry out clearance and repair works where such works would substantially reduce flood risk. Aberdeenshire Council will produce schedules of clearance and repair works and make these available for public inspection. Maintenance will be funded from existing Flood revenue budgets, for works which are defined to pose a significant flood risk.</p> <p>Scottish Water undertake risk based inspection, maintenance and repair on the public sewer network together with keeping responsible authorities informed of large scale capital maintenance work to identify opportunities for co-ordination.</p>			

<b>Action (ID):</b>	<b>PLANNING POLICIES (6000010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (600001)		
<b>Delivery lead:</b>	Planning authority		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>			
<p>Scottish Planning Policy and accompanying Planning Advice Notes set out Scottish Ministers' priorities for the operation of the planning system and for the development and use of land. In terms of flood risk management, the policy supports a catchment-scale approach to sustainable flood risk management and aims to build the resilience of our cities and towns, encourage sustainable land management in our rural areas, and to address the long-term vulnerability of parts of our coasts and islands. Under this approach, new development in areas with medium to high likelihood of flooding should be avoided.</p> <p>For further information on the application of national planning policies see Annex 5.</p> <p>Aberdeenshire Council is a local planning authority and will work with the regional planning authority, the Aberdeen City and Shire Strategic Development Planning Authority.</p> <p>As a consultee on planning applications, Aberdeenshire Council's Flood &amp; Coast Protection team will work directly with colleagues in the Planning Service to ensure that appropriate policies and measures are put in place to reduce flood risk. Planning applications are assessed against the flooding standards set out in the current Aberdeenshire Local Development Plan, and in future those in the proposed Aberdeenshire Local Development Plan 2016.</p>			

**Stonehaven (Potentially Vulnerable Area 06/23)**

SEPA has a statutory role in relation to the provision of flood risk advice to planning authorities. This role is expressed in Section 72 of the FRM Act, 2009. SEPA also has a duty to cooperate with planning authorities in the preparation of development plans. When consulted in relation to planning applications for development or site allocations in development plans, and where the planning authority considers there may be a risk of flooding, SEPA will provide advice. The advice provided by SEPA will be with respect to the risk of flooding and on the basis of the relevant information it holds which is suitable for planning purposes. It will also be in line with the principles and duties set out in the FRM Act.

Further information about how SEPA engages in the planning system, including guidance on flood risk and planning is available on SEPA's website

<http://www.sepa.org.uk/environment/land/planning/>

SEPA's land use planning activities will be coordinated with the activities of other responsible authorities as required and are funded by Scottish Government through SEPA's grant in aid settlement.

Scottish Water is a statutory consultee within the planning legislation and is required to comment on all outline or full planning applications which are referred by a local authority.

## **2.4 Other flood risk activities by local authorities in the North East Local Plan District**

The Plan presents the actions to manage flood risk in The North East Local Plan District. These actions are at a LPD-wide scale or are targeted at specific PVA. In addition to the actions in this Plan, responsible authorities are undertaking other activities to manage flood risk. There are activities included in the Flood Risk Management (Scotland) Act 2009 that are undertaken by each local authority in the LPD. The main activities that have a significant effect and should be considered in conjunction with the Plan are summarised as follows:

### **Section 18 & 59: Works of Clearance and Repair**

Based on an assessment of the condition of a body of water, local authorities must prepare a schedule of clearance and repair works that would substantially reduce the risk of flooding of land. This is commonly referred to as a Schedule 18, which is made available by each local authority within the LPD for public inspection. Under Section 59 of the Act, the local authority must carry out the works in the Schedule 18 if it considers that this will contribute to the implementation of actions in the Plan, but that these works will not affect the implementation of actions in this Plan.

### **Section 56: General Power to manage flood risk**

Without affecting the implementation of actions in this Plan, a local authority may do anything which it considers will contribute to the implementation of actions in the Plan or is necessary to reduce the risk of a flood which is likely to occur imminently and have serious adverse consequences for human health, the environment, cultural heritage or economic activity in its area.

This may include carrying out flood protection works, which may not be identified as actions in the Plan.

## Chapter 3: Annexes

### Annex 1: River Flooding

This chapter provides supplementary information on river flooding at the catchment level. It provides an overview of the catchment's natural characteristics, flood risk and the existing actions to manage flooding. It outlines the likely impact of climate change and the potential for natural flood management.

Detailed information about the objectives and actions to manage flooding are provided in Section 2.3

In the North East Local Plan District, river flooding is reported across four river catchment groups (Figure 5).



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 5: River catchment groups in the North East Local Plan District**

## A1.1 Deveron Catchment Group

### Catchment Overview

The Deveron river catchment group covers an area in the north west of the Local Plan District from Buckie along the coast to Pennan, and south to Rhynie. It has an area of approximately 1,600km<sup>2</sup> (Figure 6). The largest river is the River Deveron. Tributaries of the Deveron include the Burn of Turriff, River Isla and River Bogie with their confluences close to the towns of Turriff, Keith, and Huntly respectively. In the north and west of the area, smaller watercourses including Burn of Boyne, Burn of Buckie and Burn of Durn flow north straight out to the coast.

The predominant land covers are arable, horticulture and improved grassland, which together cover 55% of the area. Heather and heather grassland in the south west of the catchment and coniferous woodland are also important. The area has a highly variable annual rainfall of between 400mm and 1200mm with the wettest areas being inland.

The catchment contains seven Potentially Vulnerable Areas:

- Portgordon (06/01)
- Portsoy (06/02)
- Banff (06/03)
- Macduff (06/04)
- Newmill (06/06)
- Turriff (06/07)
- Huntly (06/10)

### Flood Risk in The Catchment

There are approximately 220 residential properties and 140 non-residential properties at risk of river flooding. Around 46% of the residential and 32% of the non-residential properties at risk are located within the Potentially Vulnerable Areas.

### Main areas at risk

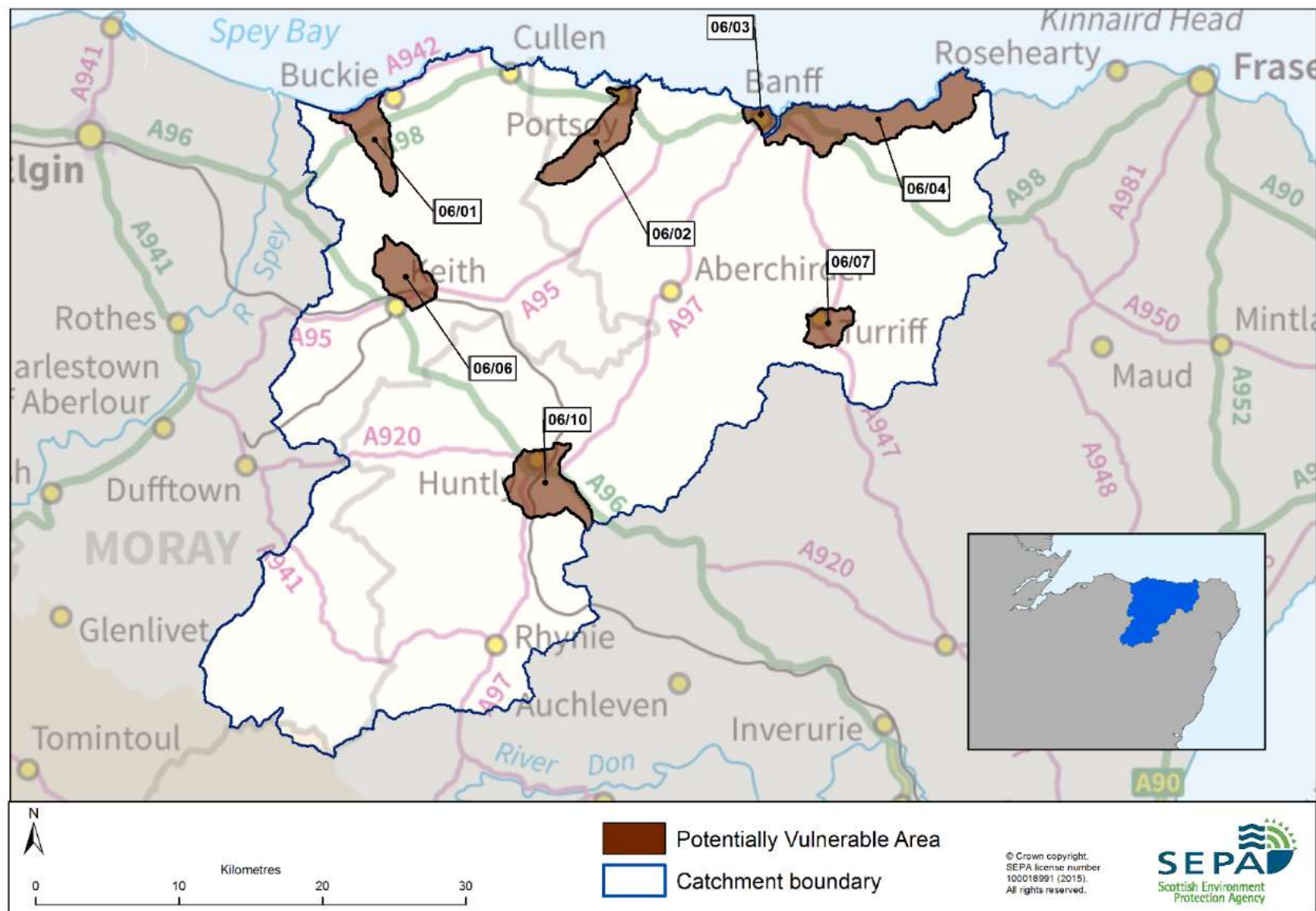
The main areas that have greater than 20 residential properties at risk of river flooding are shown in Table 3.

	Residential and non-residential properties at risk of river flooding	Annual Average Damages
Huntly	80	£370,000
Banff and Macduff	60	£220,000

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 3: Main areas at risk of river flooding**





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 6: Deveron river catchment group and Potentially Vulnerable Areas**

## Economic activity and infrastructure at risk

The Annual Average Damages from river flooding in the Deveron catchment area are estimated to be £1.3 million. This accounts for around 5% of the total Annual Average Damages for the North East Local Plan District. The damages are distributed as follows:

- 49% non-residential properties (£660,000)
- 28% residential properties (£380,000)
- 7% emergency services (£99,000)
- 7% roads (£89,000)
- 6% agriculture (£84,000)
- 3% vehicles (£35,000).

Figure 7 shows the location of Annual Average Damages from river flooding across the area. The areas of highest damage are in Banff and Huntly.

Table 4 shows the approximate numbers of further infrastructure assets which are at risk of flooding within this catchment.

	Number at risk	Further detail
Community facilities	<10	Includes healthcare facilities.
Utility assets	<10	Includes fuel extraction sites.
Roads (excluding minor roads)	390 locations	Notably the A96, A97 and A98
Railway routes	50 locations	Inverness to Aberdeen
Agricultural land (km <sup>2</sup> )	38	n/a

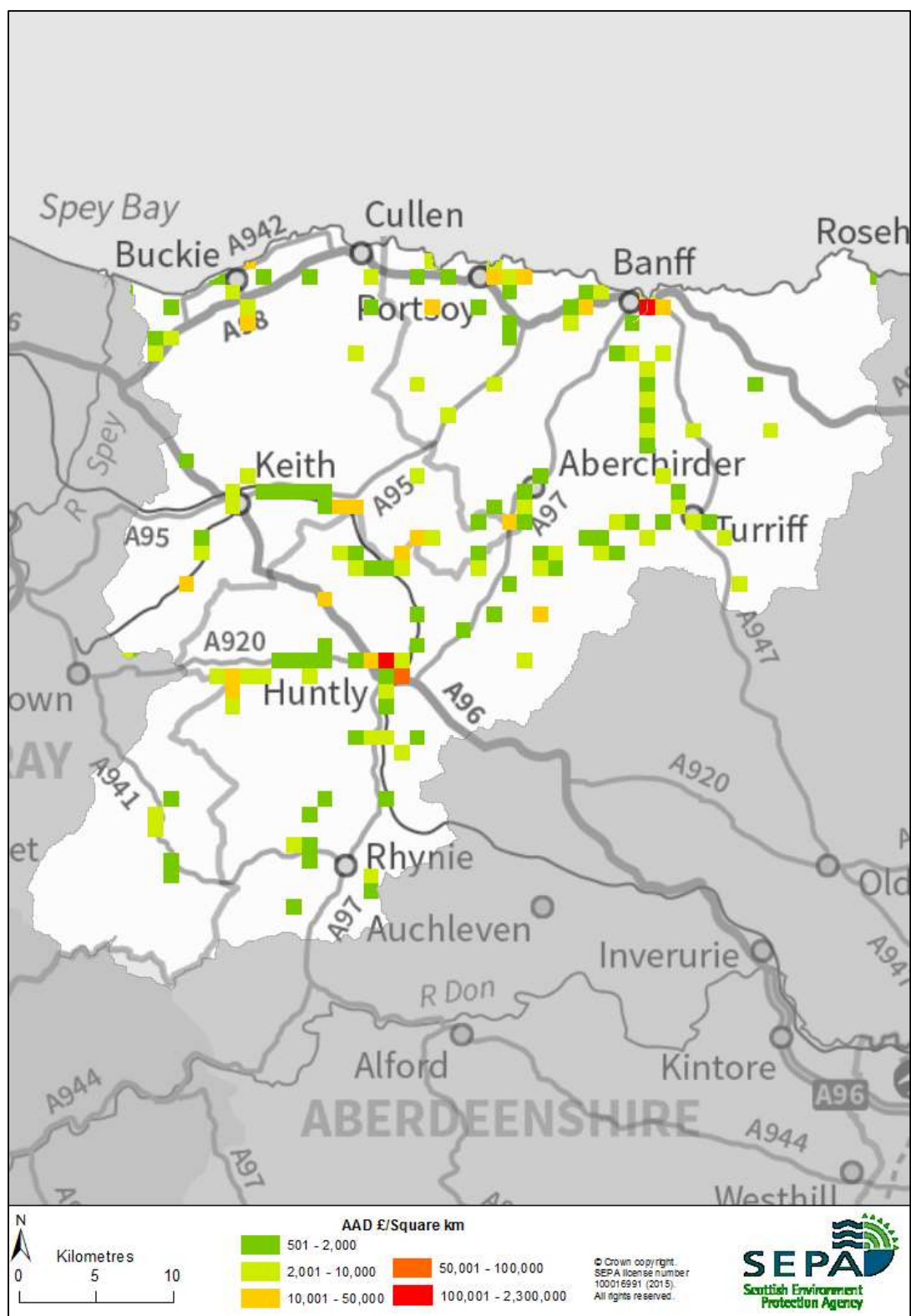
*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 4: Infrastructure at risk of river flooding**

## Designated environmental and cultural heritage sites at risk

There are approximately 30 designated cultural heritage sites at risk of river flooding. These sites include scheduled monuments, gardens and designed landscapes and listed buildings.

Less than 1km<sup>2</sup> of designated environmental area is at risk of river flooding, including Special Areas of Conservation and Sites of Special Scientific Interest.



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 7: Annual Average Damages from river flooding in the Deveron river catchment**

## Managing Flood Risk

A range of public bodies have responsibility for managing flood risk in Scotland and they are working closer than ever before to target action in the areas where the greatest benefit can be gained. Members of the public also have a role to play and are the first line of defence against flooding by taking action to protect themselves and their property from flooding.

### River Flood Warning Schemes

There are five flood warning areas for river flooding in the Deveron group river catchment, which are listed in Table 5. These are the areas where SEPA has detailed models set up to predict flooding on specific rivers. There are flood warning areas on the River Deveron and Burn of Turriff at Turriff, the River Deveron and River Bogie at Huntly, the River Isla at Keith, and the River Deveron at Banff (Figure 8).

Flood warning area	Residential properties within flood warning area	% of properties registered (January 2014)
Banff	329	15%
Huntly (Bogie)	13	38%
Keith	34	32%
Milltown and The Meadows	68	100%
Turriff	11	27%

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 5: Flood warning areas**



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 8: Flood warning areas in the Deveron river catchment**



## **Property Level Protection**

Each local authority has its own incentives or subsidies to help property owners with property level protection. In this area:

- The Moray Council provides advice to members of the public regarding flood risk and resilience. The Council also holds information events from time to time in collaboration with Scottish Water, SEPA and the Scottish Flood Forum.
- Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

## **Climate Change and Future Flood Risk**

The UK Climate Projections (UKCP09) predicts that climate change may lead to warmer and drier summers, warmer and wetter winters with less snow, and more extreme temperature and rainfall. The predicted increase in rainfall and river flows may increase the potential for river flooding.

Under the UKCP09 high emissions scenario for 2080, average peak river flows for the Deveron catchment may increase by 24%<sup>1</sup>. This would potentially increase in the number of residential properties at risk of river flooding from approximately 220 to 310 and the number of non-residential properties from 140 to 170.

## **Potential for Natural Flood Management**

The assessment of the potential for natural flood management is shown on SEPA's flood maps (<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>). The maps indicate the potential for runoff reduction, floodplain storage and sediment management. They show areas where natural flood management could be effective and where further detailed assessment should take place. This information was used to identify where local authorities could include natural flood management as part of flood risk management schemes and studies. The proposed schemes and studies are listed in the relevant Potentially Vulnerable Area chapters of this document.

## **Runoff Reduction**

The areas of potential for runoff reduction in the Deveron catchment group tend to be small and scattered, with the only significant continuous area of potential in the south west of the catchment. There is very little potential of runoff reduction either within or immediately upstream of any of the Potentially Vulnerable Areas within the catchment, with the exception of Portsoy (06/02). Therefore, it is unlikely that runoff reduction

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<sup>1</sup> From the study 'An assessment of the vulnerability of Scotland's river catchments and coasts to the impacts of climate change' (CEH, 2011)

measures would have any significant impact on flood risk within the majority of the Potentially Vulnerable Areas.

### **Floodplain Storage**

The most significant continuous areas of potential for floodplain storage are along the valleys of the River Deveron, River Bogie and River Isla. All of the Potentially Vulnerable Areas in the North East Local Plan District show potential for floodplain storage, particularly Banff (06/03), Keith (06/06), Turriff (06/07), and Huntly (06/10).

### **Sediment Management**

The majority of the river systems have substantial reaches that are either in approximate balance or moderately eroding. However, there are also significant lengths of river that are predominantly highly eroding or depositing, which can contribute to flood risk. The Potentially Vulnerable Areas showing the largest amount of erosion or deposition are Portsoy (06/02), Keith (06/06), and Huntly (06/10).

## A1.2 Dee Catchment Group

### Catchment Overview

The Dee river catchment group covers the southern part of the North East Local Plan District (Figure 9) and has an area of approximately 2,200km<sup>2</sup>. The largest river in the catchment is the River Dee, which flows in a generally eastwards direction to the coast at Aberdeen where it discharges to the sea. The catchment area also includes coastal rivers to the south, including the River Carron and River Cowie in Stonehaven.

The predominant land cover in the upland areas in the west is montane habitat, which covers 23% of the catchment. Coniferous woodland, heather and improved grassland each cover around 15% of the area. Improved grassland, arable and horticulture dominate the east of the catchment. The bulk of the catchment area has an annual rainfall of between 400-900mm with the more mountainous areas in the west receiving between 900mm-1,200mm per annum.

The catchment includes seven Potentially Vulnerable Areas as follows:

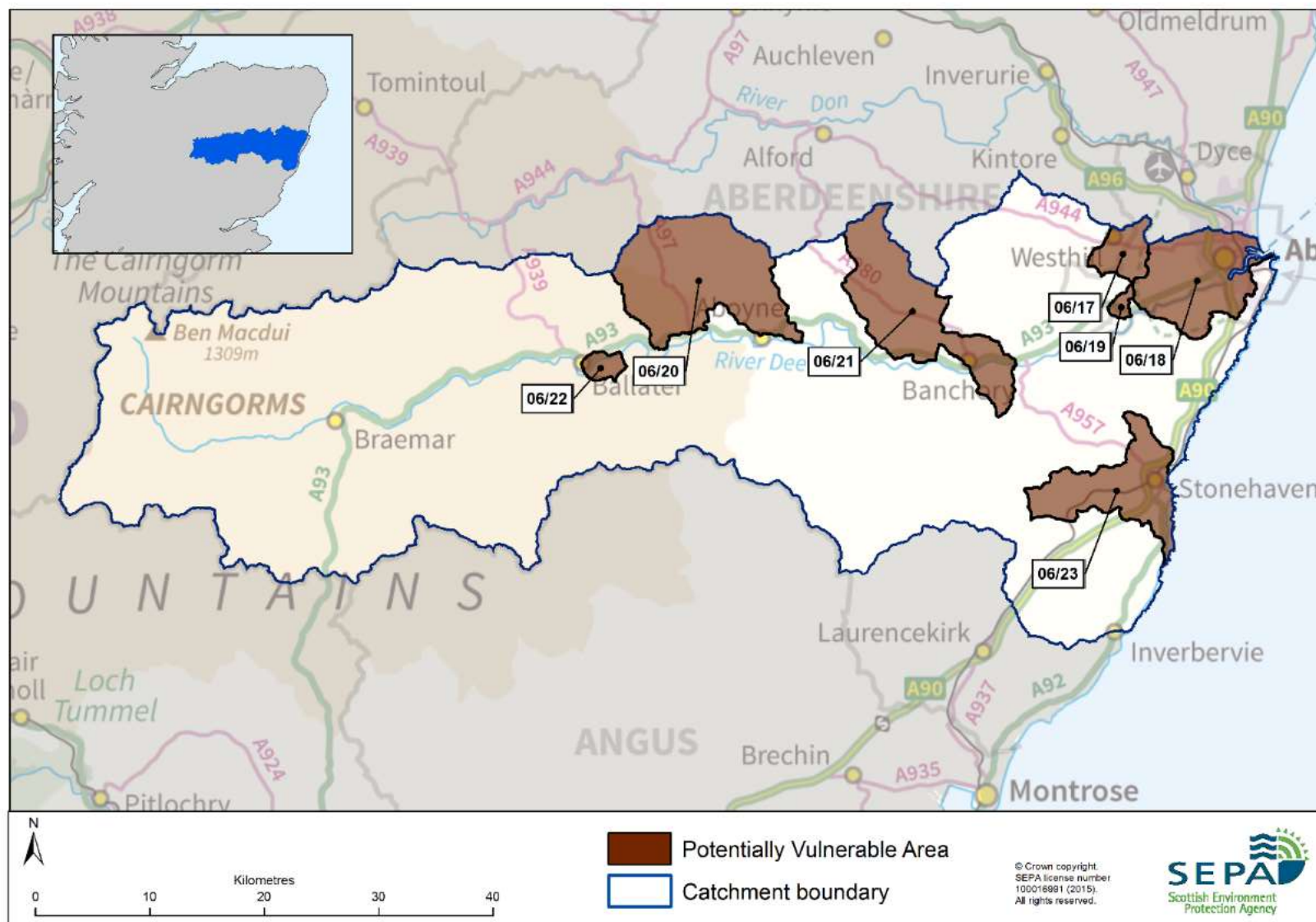
- Aberdeen – Westhill (06/17)
- Aberdeen City – Deeside (06/18)
- Peterculter (06/19)
- Aboyne (06/20)
- Banchory and Torphins (06/21)
- Ballater (06/22)
- Stonehaven (06/23).

### Flood Risk in the Catchment

**Note:** The assessment of river flood risk in Aberdeen City and Peterculter is based on more detailed modelling derived from the Aberdeen Integrated Catchment Study.

There are approximately 8,400 residential properties and 1,800 non-residential properties at risk of river flooding in the River Dee catchment area. Approximately 97% of residential and 91% of non-residential properties at risk of flooding are located within Potentially Vulnerable Areas, with the majority in Aberdeen City Deeside (06/18).





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 9: Dee river catchment group and Potentially Vulnerable Areas**

## Main Areas at Risk

The main areas that have greater than 20 residential properties at risk of river flooding are shown in Table 6.

Area	Residential and non-residential properties at risk of river flooding	Annual Average Damages
Aberdeen City - South	8,100	£10.5 million
Stonehaven	630	£620,000
Peterculter	200	£310,000
Ballater	190	£220,000
Aboyne and Tarland	90	£240,000
Banchory and Torphins	20	£60,000

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 6: Main areas at risk of river flooding**

## Economic Activity and Infrastructure at Risk

The Annual Average Damages from river flooding in this catchment area are approximately £13.5 million. This accounts for 46% of the Annual Average Damages for the North East Local Plan District. The damages are distributed as follows:

- 57% residential properties (£7.7 million)
- 33% non-residential properties (£4.5 million)
- 5% emergency services (£670,000)
- 2% agriculture (£330,000)
- 2% vehicles (£210,000)
- 1% roads (£110,000)

Figure 10 shows the location of Annual Average Damages from river flooding. The areas of highest damage are in Aberdeen City.

There are also significant damages shown in Stonehaven, Peterculter, Ballater, Aboyne and Tarland.

Table 7 shows the approximate numbers of further infrastructure assets that are at risk of flooding within this catchment.

	Number at risk	Further detail
Community facilities	10	Includes; healthcare facilities, educational buildings and emergency services.
Utility assets	40	Includes; electricity sub-stations, telecommunications and fuel extraction sites.
Roads (excluding minor roads)	550 locations	Notably the A93
Railway routes	30 locations	Inverness to Aberdeen Aberdeen to Dundee
Agricultural land (km <sup>2</sup> )	71km <sup>2</sup>	n/a

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 7: Infrastructure and agricultural land at risk of river flooding**



## Designated Environmental and Cultural Heritage Sites at Risk

There are 63 cultural heritage sites at risk of river flooding, including A-listed buildings, scheduled monuments, gardens and designed landscapes.

There are 63km<sup>2</sup> of designated environmental sites at risk of flooding. These include Sites of Special Scientific Interest, Special Protection Areas and Special Areas of Conservation, including the River Dee Special Area of Conservation (SAC).

## Managing Flood Risk

A range of public bodies have responsibility for managing flood risk in Scotland and they are working closer than ever before to target action in the areas where the greatest benefit can be gained. Members of the public also have a role to play and are the first line of defence against flooding by taking action to protect themselves and their property from flooding.

## River Flood Warning Schemes

There are six flood warning areas for river flooding in the Dee (Aberdeenshire) river catchment, listed in Table 8. These are the areas where SEPA has detailed models set up to predict flooding on specific rivers. The locations of the flood warning areas are shown in Figure 11.

Flood warning area	Number of properties within flood warning area	% of properties registered (January 2014)
Aberdeen (Dee)	45	13%
Aboyne	92	22%
Ballater	218	35%
Banchory	49	29%
Maryculter	10	100%
Stonehaven	878	36%

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

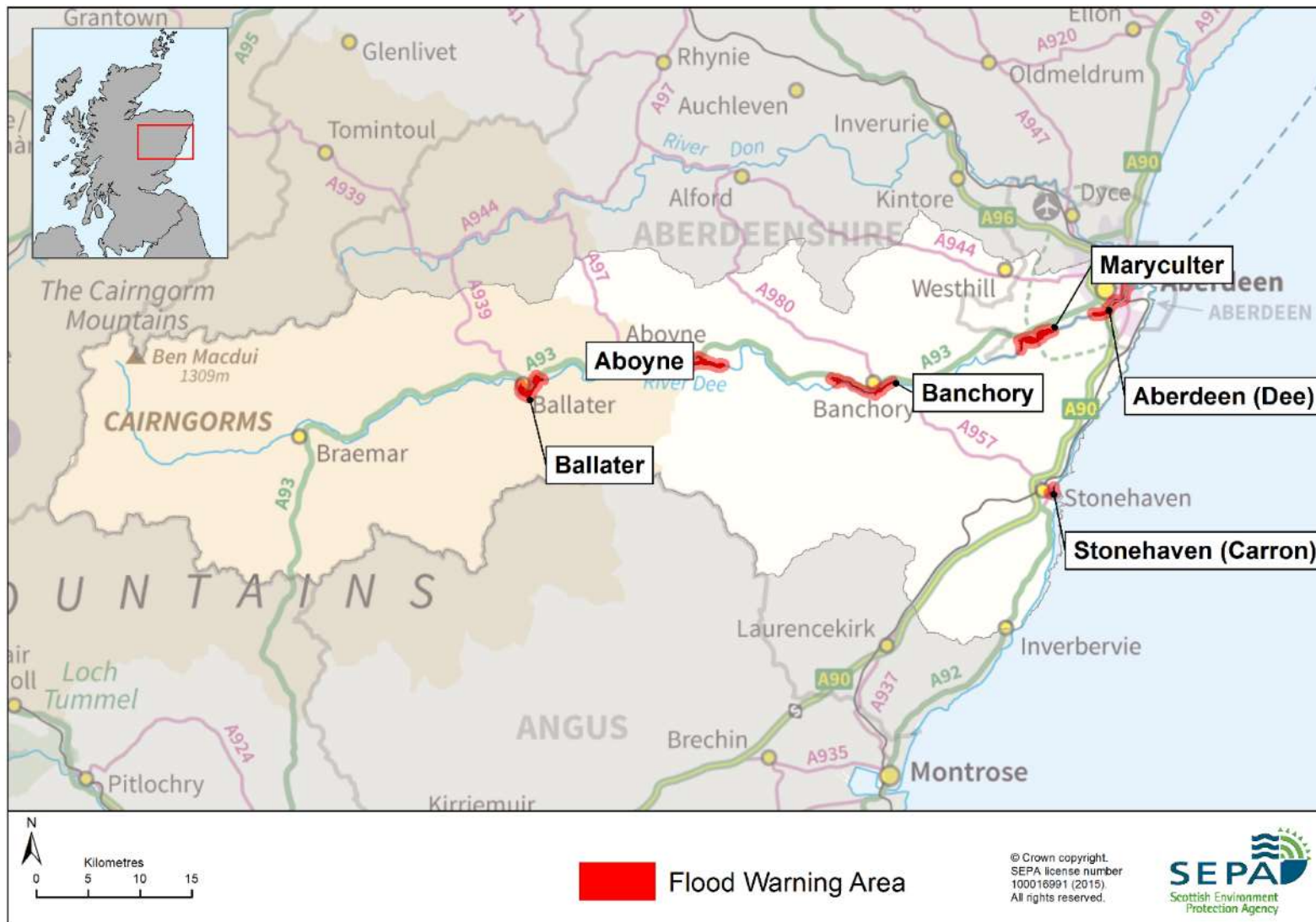
**Table 8: Flood warning areas**

## **Property Level Protection**

Each local authority has its own incentives or subsidies to help property owners with property level protection. In this area:

- Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.
- Aberdeen City Council will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people with putting in Property Level Protection. This will be coordinated through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 11: Flood warning areas in the Dee river catchment**

The UK Climate Projections (UKCP09) predicts that climate change may lead to warmer and drier summers, warmer and wetter winters with less snow, and more extreme temperature and rainfall. The predicted increase in rainfall and river flows may increase the potential for river flooding.

Under the UKCP09 high emissions scenario for 2080, average peak river flows for the Dee catchment by 2080 may increase by 24%<sup>2</sup>. This would potentially increase in the number of residential properties at risk of river flooding from approximately 8,400 to 11,000 and the number of non-residential properties from 1,800 to 2,100.

### **Potential for Natural Flood Management**

The assessment of the potential for natural flood management is shown on SEPA's flood maps (<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>). The maps indicate the potential for runoff reduction, floodplain storage and sediment management. They show areas where natural flood management could be effective and where further detailed assessment should take place. This information was used to identify where local authorities could include natural flood management as part of flood risk management schemes and studies. The proposed schemes and studies are listed in the relevant Potentially Vulnerable Area chapters of this document.

### **Runoff Reduction**

There are significant areas of potential for runoff reduction in the south and west of the Dee catchment. However, these are a significant distance from the Potentially Vulnerable Areas. None of the Potentially Vulnerable Areas themselves show any significant areas of runoff reduction potential either within or immediately upstream of their boundaries. Therefore, it is unlikely that runoff reduction measures would have any significant impact on flood risk in the Dee catchment area. Runoff reduction may however be effective in the case of localised flooding.

### **Floodplain Storage**

There are significant areas of high potential for floodplain storage within the Dee catchment area. All of the Potentially Vulnerable Areas show some areas of high potential for floodplain storage.

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<sup>2</sup> From the study 'An assessment of the vulnerability of Scotland's river catchments and coasts to the impacts of climate change' (CEH, 2011)



## **Sediment Management**

The majority of the river systems in the Dee catchment area have substantial reaches that are either in approximate balance or moderately eroding. However, there are also significant lengths of river that are predominantly highly eroding or depositing, which can contribute to flood risk. The Potentially Vulnerable Areas showing the largest amount of erosion or deposition are Aberdeen – Westhill (06/17), Aberdeen City - Deeside (06/18), Aboyne (06/20), and Banchory and Torphins (06/21).

## **A 1.3 Don Catchment Group**

### **Catchment Overview**

The River Don flows eastwards from the Cairngorm Mountains towards Aberdeen where it flows into the North Sea. It has a catchment area of approximately 1,300km<sup>2</sup> (Figure 12).

The predominant land covers are arable, horticulture, and improved grassland, which together cover approximately half of the catchment, predominantly in the east. Coniferous woodland is also significant in the east, with heather and montane habitats dominant in the west. The catchment has an annual rainfall of between 400-900mm with the wettest areas being in the west.

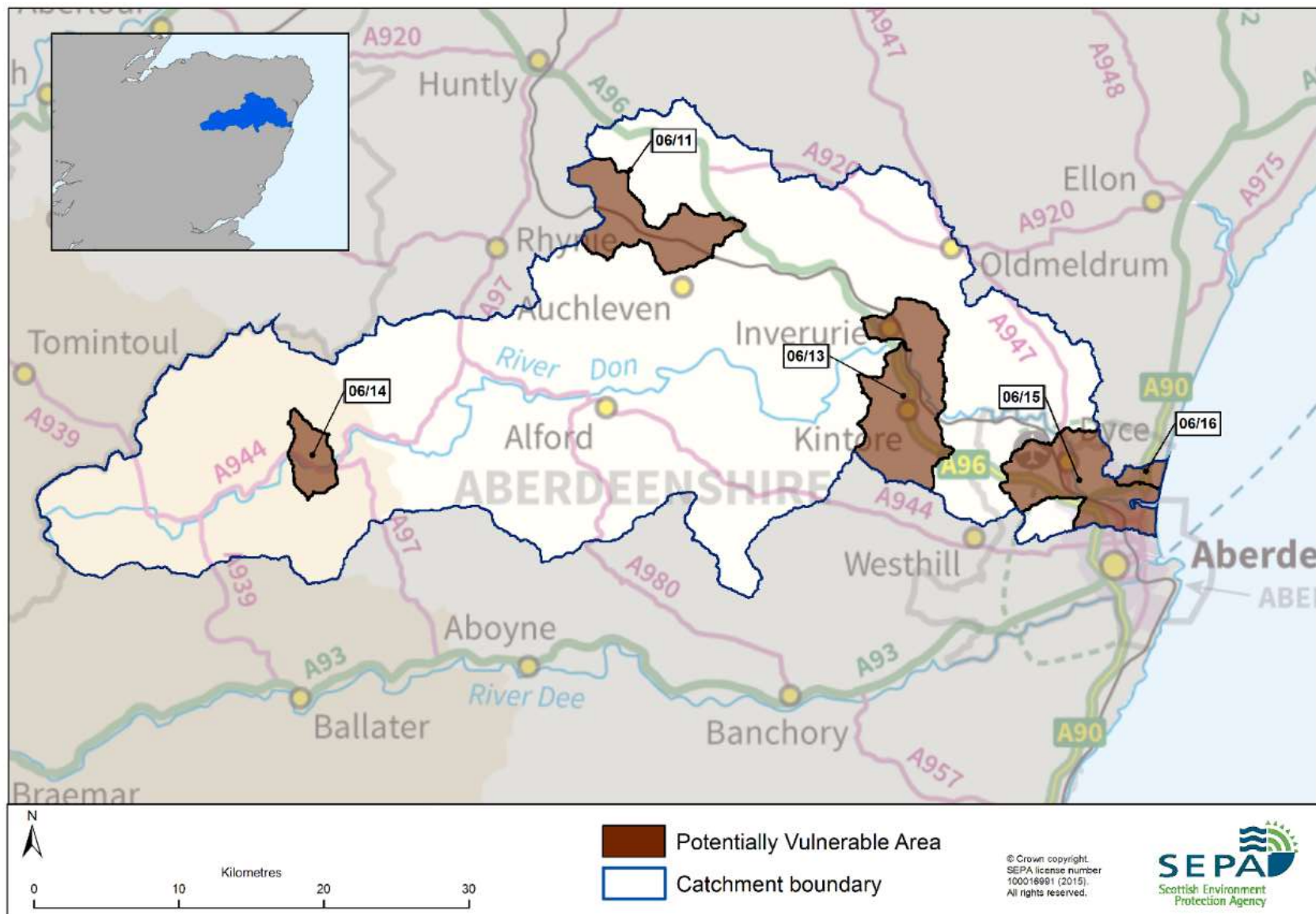
There are five Potentially Vulnerable Areas:

- Inch (06/11)
- Inverurie and Kintore (06/13)
- Heugh-head (06/14)
- Aberdeen City – Bridge of Don (06/15)
- Aberdeen City – Denmore (06/16).

### **Flood Risk in the Catchment**

**Note:** The assessment of river flood risk in Aberdeen City is based on more detailed modelling derived from the Aberdeen Integrated Catchment Study.

There are approximately 2,600 residential properties and 530 non-residential properties at risk of river flooding in the River Don catchment area. Approximately 96% of residential properties and 82% of non-residential properties at risk of river flooding are located within the Potentially Vulnerable Areas.



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 12: Don river catchment group and Potentially Vulnerable Areas**

## Main Areas at Risk

The main urban areas that have greater than 20 residential properties at risk of river flooding are shown in Table 9. Aberdeen City (North) is the area with the greatest number of properties at risk in the River Don catchment group. It includes properties at risk of flooding from smaller, often culverted, watercourses in the north of the city.

	Residential and non-residential properties at risk of river flooding	Annual Average Damages
Aberdeen City North	2,100	£2.1 million
Dyce	270	£2.0 million
Insch	80	£220,000
Inverurie and Port Elphinstone	160	£270,000
Kintore	30	£87,000

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 9: Main urban areas at risk of river flooding**

## Economic Activity and Infrastructure at Risk

The Annual Average Damages from river flooding for this catchment area are estimated to be approximately £5.9 million. This accounts for around 21% of the Annual Average Damages for the North East Local Plan District. The damages are distributed as follows:

- 53% non-residential properties (£3.2 million)
- 36% residential properties (£2.1 million)
- 5% emergency services (£330,000)
- 2% roads (£130,000)
- 2% agriculture (£120,000)
- 1% vehicles (£48,000).

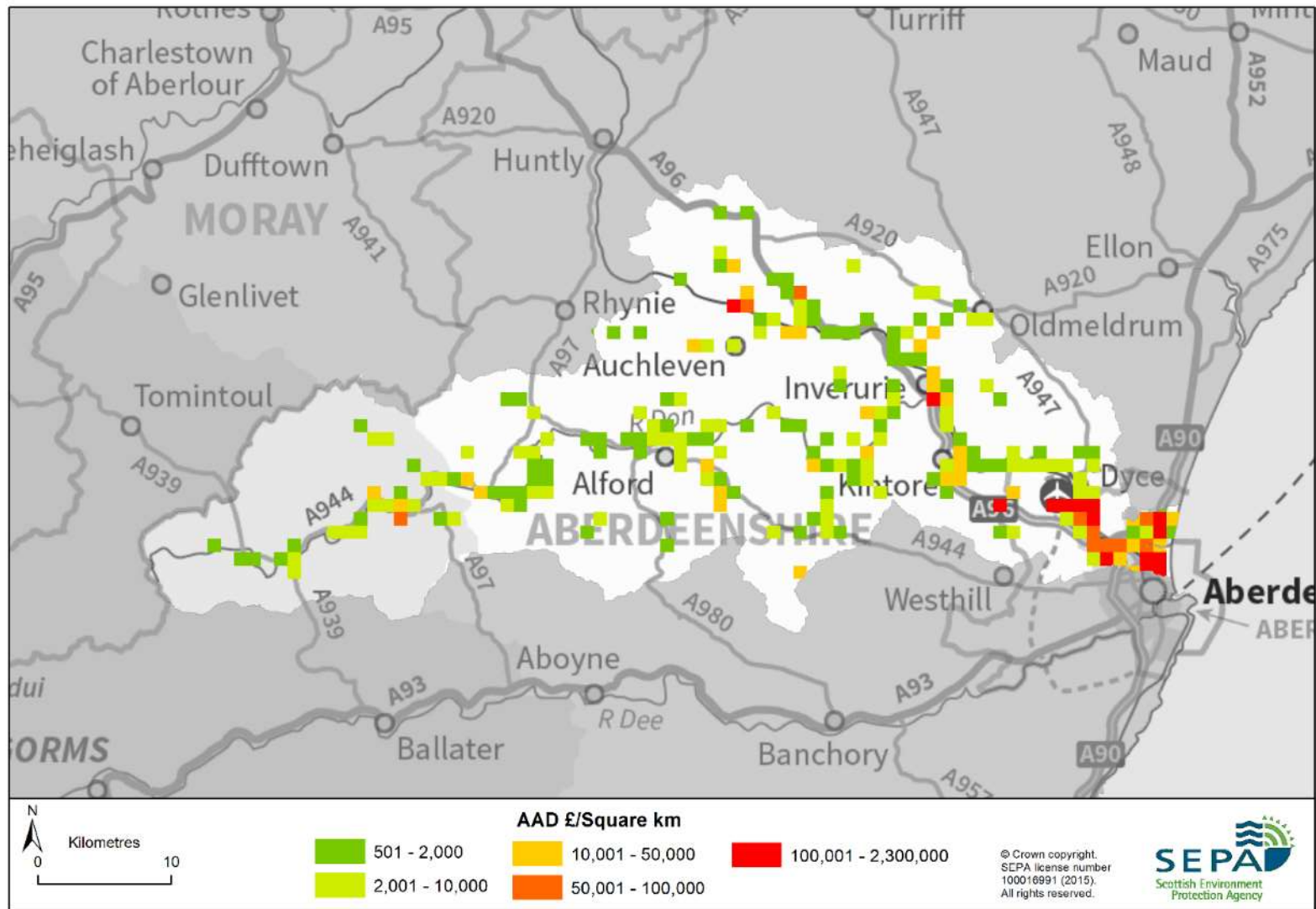
Figure 13 shows the location of Annual Average Damages from river flooding across the area. The areas of highest damage are in Aberdeen City (North) and Dyce.

Table 10 shows the approximate numbers of further infrastructure assets which are at risk of flooding within this catchment.

	Number at risk	Further detail
<b>Community facilities</b>	30	Includes; healthcare facilities, educational buildings, emergency services.
<b>Utility assets</b>	60	Includes; electricity sub-stations, telecommunications and fuel extraction sites.
<b>Roads (excluding minor roads)</b>	390 locations	Notably the A96, A947 and A944
<b>Railway routes</b>	50 locations	Inverness to Aberdeen
<b>Agricultural land (km<sup>2</sup>)</b>	45km <sup>2</sup>	n/a

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 10: Infrastructure and agricultural land at risk of river flooding**



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 13: Annual Average Damages from river flooding in the Don River catchment**

## **Designated Environmental and Cultural Heritage Sites at Risk**

There are approximately 40 cultural heritage sites at risk of river flooding in this catchment, including A-listed buildings, scheduled monuments, gardens and designed landscapes. Less than 1km<sup>2</sup> of designated environmental area is at risk of river flooding.

## **Managing Flood Risk**

A range of public bodies have responsibility for managing flood risk in Scotland and they are working closer than ever before to target action in the areas where the greatest benefit can be gained. Members of the public also have a role to play and are the first line of defence against flooding by taking action to protect themselves and their property from flooding.

## **River flood warning schemes**

There are four flood warning areas for river flooding on the River Don catchment, which are listed in Table 11. These are the areas where SEPA has detailed models set up to predict flooding on specific rivers. The majority of the flood warning areas are associated with the River Don. The locations of the flood warning areas are shown in Figure 14.

Flood warning area	Number of properties within flood warning area	% of properties registered (January 2014)
Aberdeen City (Don)	442	18%
Inverurie	213	29%
Kemnay	48	46%
Kintore	64	33%

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 11: Flood warning areas**

### Property Level Protection

Each local authority has its own incentives or subsidies to help property owners with property level protection. In this area:

- Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.
- Aberdeen City Council will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people with putting in Property Level Protection. This will be coordinated through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.

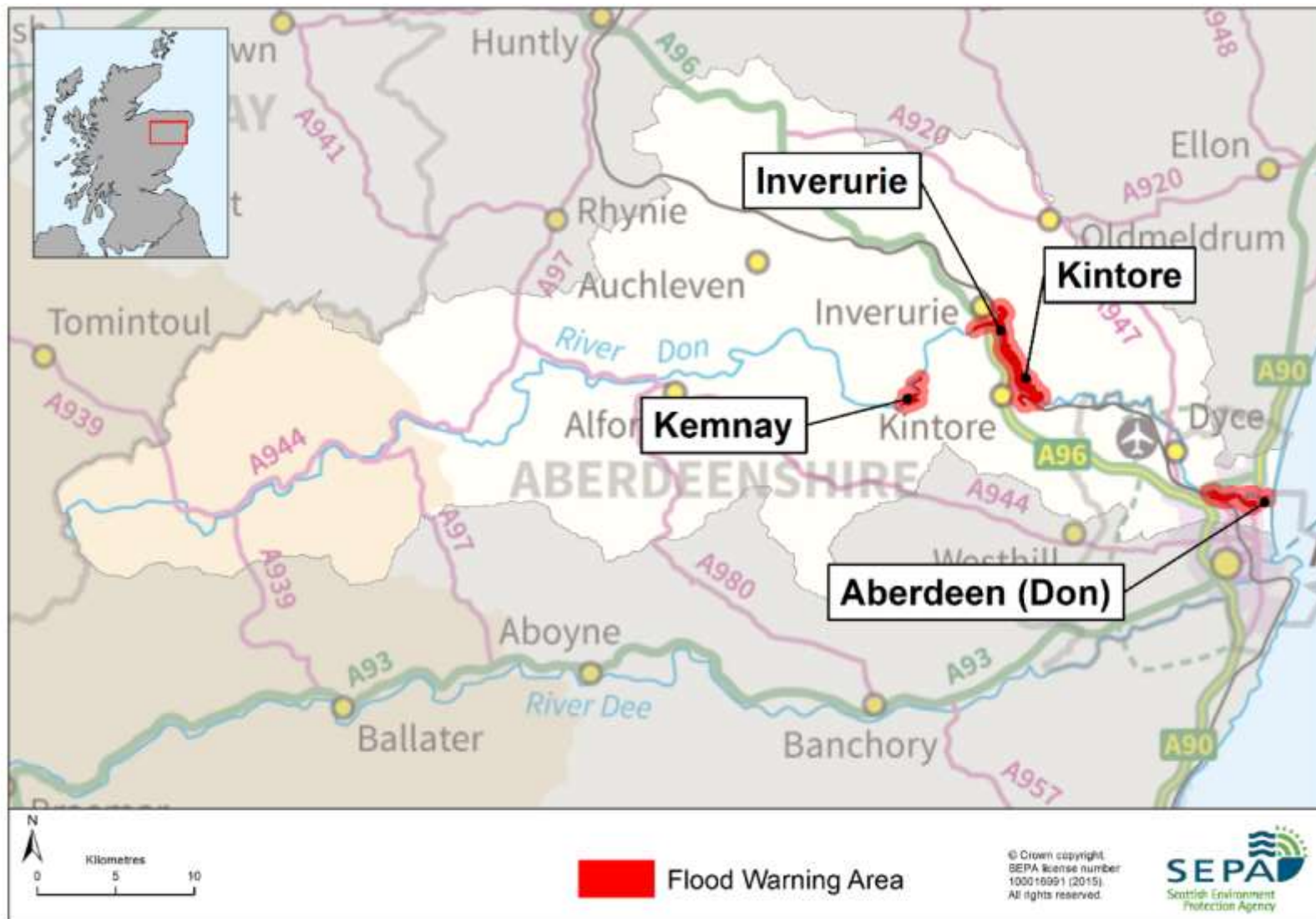
### Climate Change and Future Flood Risk

The UK Climate Projections (UKCP09) predicts that climate change may lead to warmer and drier summers, warmer and wetter winters with less snow, and more extreme temperature and rainfall. The predicted increase in rainfall and river flows may increase the potential for river flooding.

Under the UKCP09 high emissions scenario for 2080, average peak river flows for the Don catchment may increase by 24%<sup>3</sup>. This would potentially increase in the number of residential properties at risk of river flooding from approximately 2,600 to 4,200 and the number of non-residential properties from 530 to 680.

<sup>3</sup> From the study 'An assessment of the vulnerability of Scotland's river catchments and coasts to the impacts of climate change' (CEH, 2011)





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 14: Flood warning areas in the Don River catchment**

The assessment of the potential for natural flood management is shown on SEPA's flood maps (<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>). The maps indicate the potential for runoff reduction, floodplain storage and sediment management. They show areas where natural flood management could be effective and where further detailed assessment should take place. This information was used to identify where local authorities could include natural flood management as part of flood risk management schemes and studies. The proposed schemes and studies are listed in the relevant Potentially Vulnerable Area chapters of this document.

### **Runoff Reduction**

The main area with potential for runoff reduction in the River Don catchment group is located in the west. Other areas of potential tend to be small and scattered. None of the Potentially Vulnerable Areas show any significant areas of runoff reduction potential either within or immediately upstream. Therefore, it is unlikely that runoff reduction measures would have any significant impact on flood risk on the River Don although runoff reduction may be effective on the smaller tributaries.

### **Floodplain Storage**

There are significant areas of potential for floodplain storage within the River Don catchment. All of the Potentially Vulnerable Areas show some areas of high potential for floodplain storage. In particular, Inverurie and Kintore (06/13) and Aberdeen City Bridge of Don (06/15) show significant potential and this is more evident when considered in conjunction with Aberdeen City Denmore (06-16). It is likely that floodplain storage could improve flood risk and should be considered further for these Potentially Vulnerable Areas.

### **Sediment Management**

The majority of the catchment is either in approximate balance or undergoing moderate erosion. The reaches through Heugh-head (06/14) include areas of deposition and high erosion. There are also long reaches of depositional areas through Inverurie and Kintore (06/13). Therefore, measures to manage sediment in these Potentially Vulnerable Areas could potentially reduce flood risk. Through Inch (06/11) and Aberdeen City Bridge of Don (06/15) the rivers are either in approximate balance or undergoing moderate erosion and consequently there is not as much opportunity to reduce flood risk through sediment management measures in these Potentially Vulnerable Areas.

## A1.4 Ythan catchment Group

### Catchment Overview

The Ythan river catchment group (Figure 15) covers the north eastern corner of the Local Plan District, from north of Aberdeen to west of Rosehearty. It has an area of approximately 1,400km<sup>2</sup>. The largest rivers are the River Ugie and the River Ythan, which flow south-eastwards to the coast at Peterhead and Newburgh respectively. The River Ugie drains the central area, whilst the River Ythan drains the southern area to the west of Ellon. There are also numerous smaller watercourses that drain the area and flow straight out to the coast.

The predominant land covers are arable and horticulture, and improved grassland, which together cover 78% of the area. Annual rainfall is between 400-900mm with the wettest areas being inland.

The catchment contains four Potentially Vulnerable Areas as follows:

- Fraserburgh and Rosehearty (06/05)
- Peterhead (06/08)
- Methlick (06/09)
- Ellon (06/12)

### Flood Risk in the Community

There are an estimated 230 residential properties and 100 non-residential properties at risk of river flooding. Approximately 36% of residential and non-residential properties at risk are located within the Potentially Vulnerable Areas

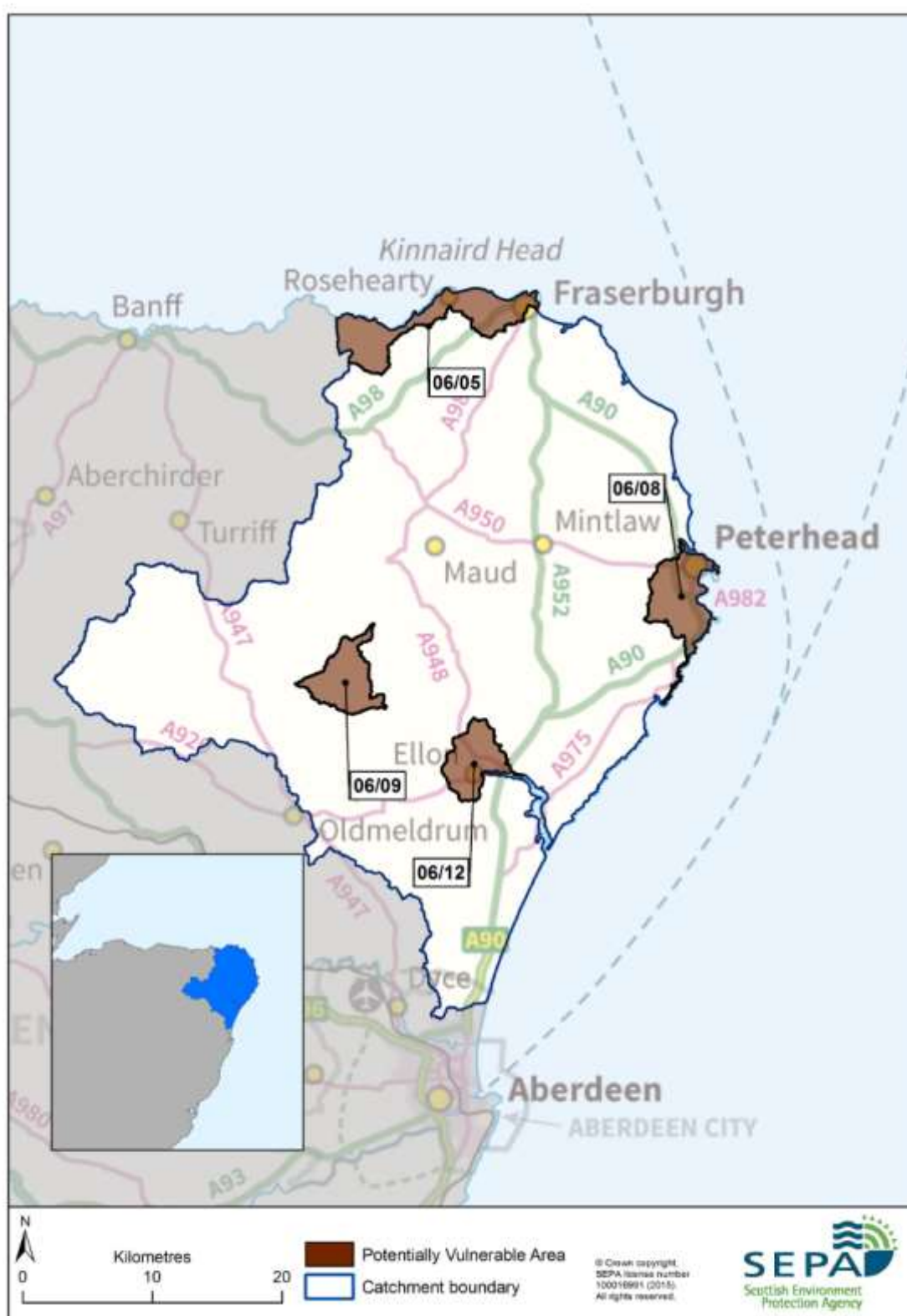
### Main areas at risk

The only urban area that has greater than 20 residential properties at risk of river flooding is Ellon (Table 12).

Location	Residential and non-residential properties at risk of flooding	Annual Average Damages
Ellon	80	£220,000

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 12: Main areas at risk of river flooding**



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 15: Ythan river catchment group and Potentially Vulnerable Areas**

## Economic Activity and Infrastructure at Risk

The Annual Average Damages from river flooding in the River Ythan catchment area are estimated to be £2.9 million. This accounts for 10% of the total for the Local Plan District. The damages are distributed as follows:

- 65% non-residential properties (£1.9 million)
- 23% residential properties (£670,000)
- 6% emergency services (£180,000)
- 3% agriculture (£93,000)
- 2% roads (£62,000)
- 1% vehicles (£25,000)

Figure 16 shows the location of Annual Average Damages from river flooding. The areas of highest damage are in Ellon and Peterhead.

Table 13 shows the approximate numbers of further infrastructure assets that are at risk of flooding within this catchment.

	Number at risk	Further detail
<b>Community facilities</b>	0	n/a
<b>Utility assets</b>	10	Includes electricity substations and fuel/mineral extraction sites
<b>Roads (excluding minor roads)</b>	400 locations	Notably the A90 and A920
<b>Railway routes</b>	n/a	n/a
<b>Agricultural land (km<sup>2</sup>)</b>	37	n/a

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 13: Infrastructure at risk of river flooding**

## Designated Environmental and Cultural Heritage Sites at Risk

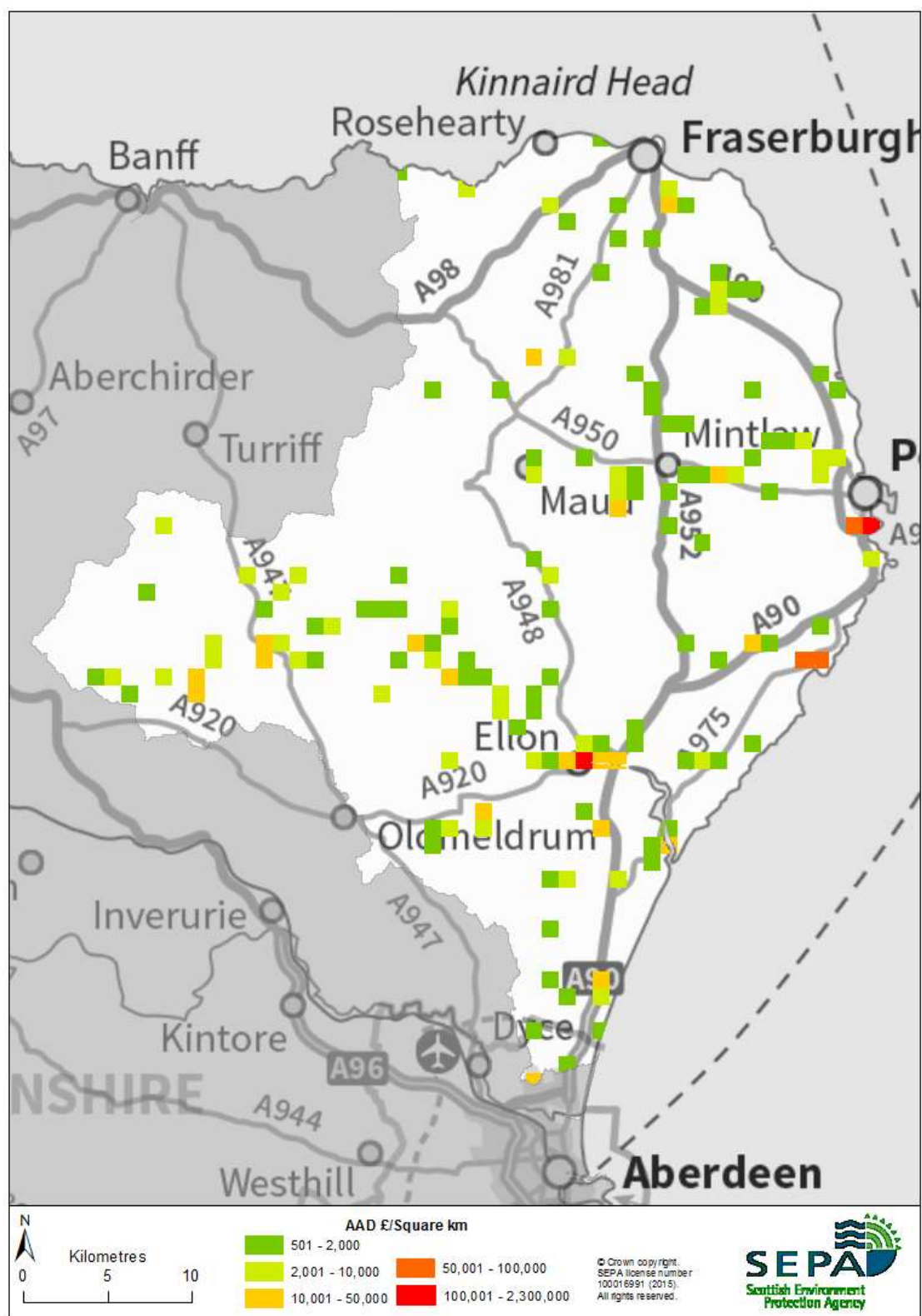
There are 20 cultural heritage sites, including scheduled monuments, listed buildings and gardens and designed landscapes, at risk of river flooding.

Approximately 10km<sup>2</sup> of designated environmental area is at risk of river flooding. These include Special Areas of Conservation, Special Protection Areas, and Sites of Special Scientific Interest.

## History of Flooding

There have been several localised floods from the River Ythan and from the River Ugie. Smaller watercourses have also caused localised flooding.





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 16: Annual Average Damages from river flooding in the Ythan River catchment**

## **Managing Flood Risk**

A range of public bodies have responsibility for managing flood risk in Scotland and they are working closer than ever before to target action in the areas where the greatest benefit can be gained. Members of the public also have a role to play and are the first line of defence against flooding by taking action to protect themselves and their property from flooding.

## **Property Level Protection**

Each local authority has its own incentives or subsidies to help property owners with property level protection. In this area Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.

## **Climate Change and Future Flood Risk**

The UK Climate Projections (UKCP09) predicts that climate change may lead to warmer and drier summers, warmer and wetter winters with less snow, and more extreme temperature and rainfall. The predicted increase in rainfall and river flows may increase the potential for river flooding.

Under the UKCP09 high emissions scenario for 2080, average peak river flows for the Ythan catchment may increase by 24%<sup>4</sup>. This would potentially increase in the number of residential properties at risk of river flooding from approximately 230 to 280, while the number of non-residential properties at risk does not change.

## **Potential for Natural Flood Management**

The assessment of the potential for natural flood management is shown on SEPA's flood maps (<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>). The maps indicate the potential for runoff reduction, floodplain storage and sediment management. They show areas where natural flood management could be effective and where further detailed assessment should take place. This information was used to identify where local authorities could include natural flood management as part of flood risk management schemes and studies. The proposed schemes and studies are listed in the relevant Potentially Vulnerable Area chapters of this document.

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<sup>4</sup> From the study 'An assessment of the vulnerability of Scotland's river catchments and coasts to the impacts of climate change' (CEH, 2011)

## **Runoff Reduction**

There is limited potential for runoff reduction in the Ythan catchment group and what does exist tends to be small scattered areas. None of the Potentially Vulnerable Areas show any significant potential of runoff reduction either within or immediately upstream. Runoff reduction measures would not have any significant impact on flood risk in the Ythan catchment group, however may provide local benefits.

## **Floodplain Storage**

There are significant areas of high potential for floodplain storage within the Ythan catchment group. The most significant continuous areas of high potential are along the valleys of the major rivers, including the River Ugie and its tributaries, and the River Ythan. The Potentially Vulnerable Areas covering Peterhead (06/08), Methlick (06/09), and Ellon (06/12) all show potential for floodplain storage. It is likely that floodplain storage could reduce flood risk and may be considered further for these areas. The Potentially Vulnerable Area covering Fraserburgh (06/05) shows less potential though and floodplain storage may not provide as great an impact on flood risk here.

## **Sediment Management**

The River Ugie system is predominantly in balance, therefore measures to manage sediment is unlikely to reduce flood risk in the Peterhead (06/08). The River Ythan system is more varied and has significant lengths of predominantly eroding or depositing reaches, in particular through Methlick (06/09). The reaches through Ellon (06/12) include areas of moderate erosion and deposition. Therefore, measures to manage sediment in these Potentially Vulnerable Areas could potentially reduce flood risk.



## Annex 2: Coastal Flooding

This chapter provides supplementary information on coastal flooding at a coastal area level. It provides an overview of the natural characteristics of the coast, a summary of flood risk within the coastal area and a brief history of flooding. It further explains the potential climate change effects on future flood risk and summarises the potential for natural flood management.

Information about the objectives and actions to manage flood risk are provided in the relevant Potentially Vulnerable Area chapters in Section 2.3.

In the North East Local Plan District, coastal flooding is reported in three coastal areas.



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 17: Coastal areas within the North East Local Plan District**

## **A2.1 Cairnbulg Point to Portgordon**

### **Coastal Overview**

The Cairnbulg Point to Portgordon coastal area covers approximately 88km of mainly north facing coastline along the outer Moray Firth (Figure 17). There are several towns and villages close to the coastline including Fraserburgh, Rosehearty, Macduff, Banff, Portsoy, Portknockie, Findochty, and Buckie. The coastal area contains two local authorities; The Moray Council and Aberdeenshire Council.

The coastal area is characterised by a sequence of small bays between rocky headlands and cliffs. There are a few relatively short sections of sand and shingle beaches along the coastline for example to the east of Fraserburgh. The nearshore bathymetry is variable and the coastline indented, therefore the wave conditions at the coastline are highly variable.

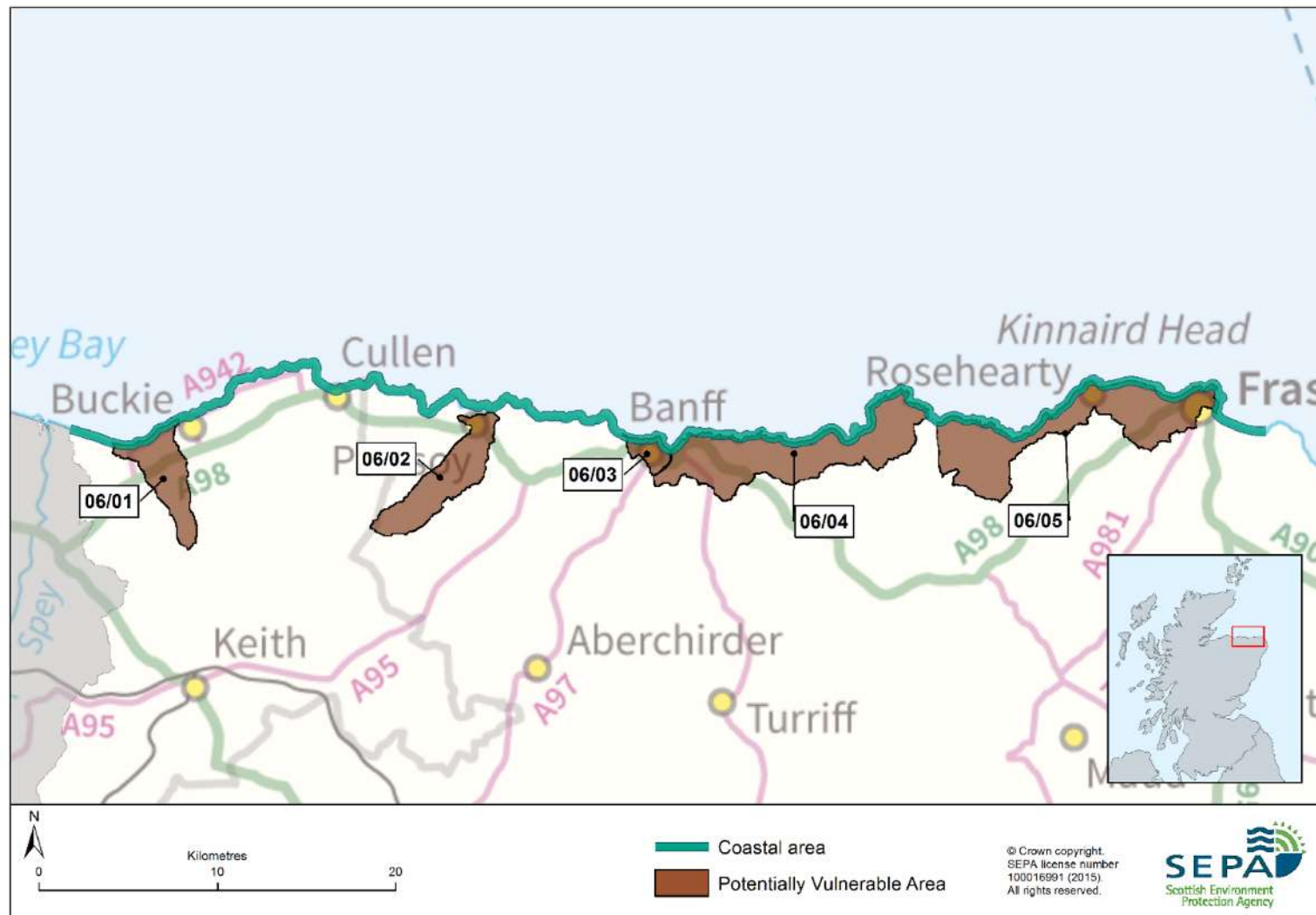
The River Deveron, which outfalls at Banff Bay, is the only major river which discharges to the sea along this section of coast. However there are several smaller rivers and burns which outfall to the Moray Firth.

There are five Potentially Vulnerable Areas:

- Portgordon (06/01)
- Portsoy (06/02)
- Banff (06/03)
- Macduff (06/04)
- Fraserburgh and Rosehearty (06/05)

### **Flood Risk in the Coastal Area - Main Areas at Risk**

Within the Cairnbulg Point to Portgordon coastal area there are approximately 30 non-residential properties at risk of coastal flooding. An estimated 56% of these are located within Potentially Vulnerable Areas, with the majority located in Fraserburgh and Rosehearty (06/05). Although there are no residential properties identified to be at risk of flooding, historically properties have been subject to flooding due to wave overtopping.



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 18: Cairnbulg Point to Portgordon coastal area and Potentially Vulnerable Areas**

## Economic Activity and Infrastructure at Risk

The Annual Average Damages from coastal flooding in the Cairnbulg to Portgordon coastal area are estimated to be approximately £66,000. The Annual Average Damages are distributed as follows:

- 74% non-residential properties (£49,000)
- 10% residential properties (£6,400)
- 7% emergency services (£4,800)
- 7% roads (£4,700)
- 1% vehicles (£690)
- 1% agriculture (£560)

Flooding from wave overtopping is not fully represented in the general assessment of flood risk. The number of properties at risk of flooding and the Annual Average Damages from coastal flooding may be underestimated. Figure 19 shows the location of Annual Average Damages from coastal flooding across the area.

Table 14 shows further information about infrastructure and agricultural land at risk of coastal flooding.

	Number at risk	Further detail
<b>Community facilities</b>	0	n/a
<b>Utility assets</b>	0	n/a
<b>Roads (excluding minor roads)</b>	10 sections	Including A98 and the B9033
<b>Railway routes</b>	0	n/a
<b>Agricultural land (km<sup>2</sup>)</b>	0.4	n/a

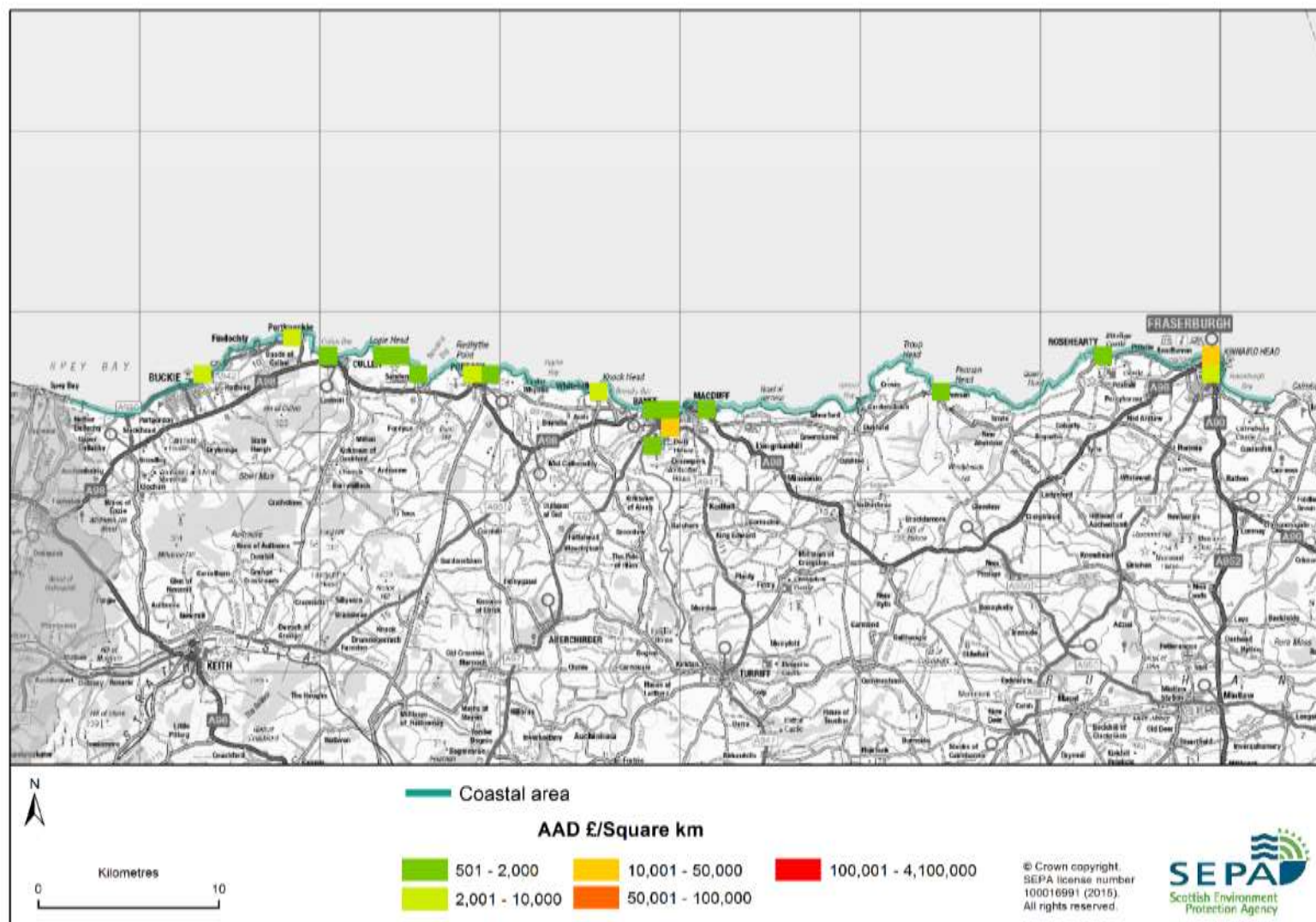
*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 14: Infrastructure and agricultural land at risk of coastal flooding**

## Designated Environmental and Cultural Heritage Sites at Risk

There are 14 cultural heritage sites at risk of coastal flooding in this area including garden and designed landscapes, scheduled monuments and listed buildings.

Approximately 2km<sup>2</sup> of environmental designated area is at risk of coastal flooding including Special Protection Areas and Sites of Special Scientific Interest. The sites affected include Troup Head, Pennan Head, and Lion's Head, Gamrie, together with Pennan Coast, Whitehills to Melrose Coast, Rosehearty to Fraserburgh Coast, Spey Bay and Cullen to Stake Ness Coast.



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

Figure 19: Annual Average Damages from coastal flooding in the Cairnbulg Point to Portgordon coastal area

## **History of Flooding**

The North Sea flood of 1953 had a significant impact on this stretch of coastline, with properties and seawalls destroyed in Buckie, Portsoy, Crovie, Banff and Rosehearty. The village of Crovie was effectively abandoned after the event. In Macduff, properties were damaged and the cliff road destroyed in 1957.

There have been numerous smaller coastal floods recorded right across this coastal area impacting locally on property and infrastructure, for example in Portgordon where properties are flooded on a frequent basis.

Further detail about the history of flooding in this area is available in the relevant Potentially Vulnerable Area chapter in section 2.3 of this document.

## **Managing Coastal Floor Risk**

A range of public bodies have responsibility for managing flood risk in Scotland and they are working closer than ever before to target action in the areas where the greatest benefit can be gained. Members of the public also have a role to play and are the first line of defence against flooding by taking action to protect themselves and their property from flooding.

## **Coastal Flood Warning Schemes**

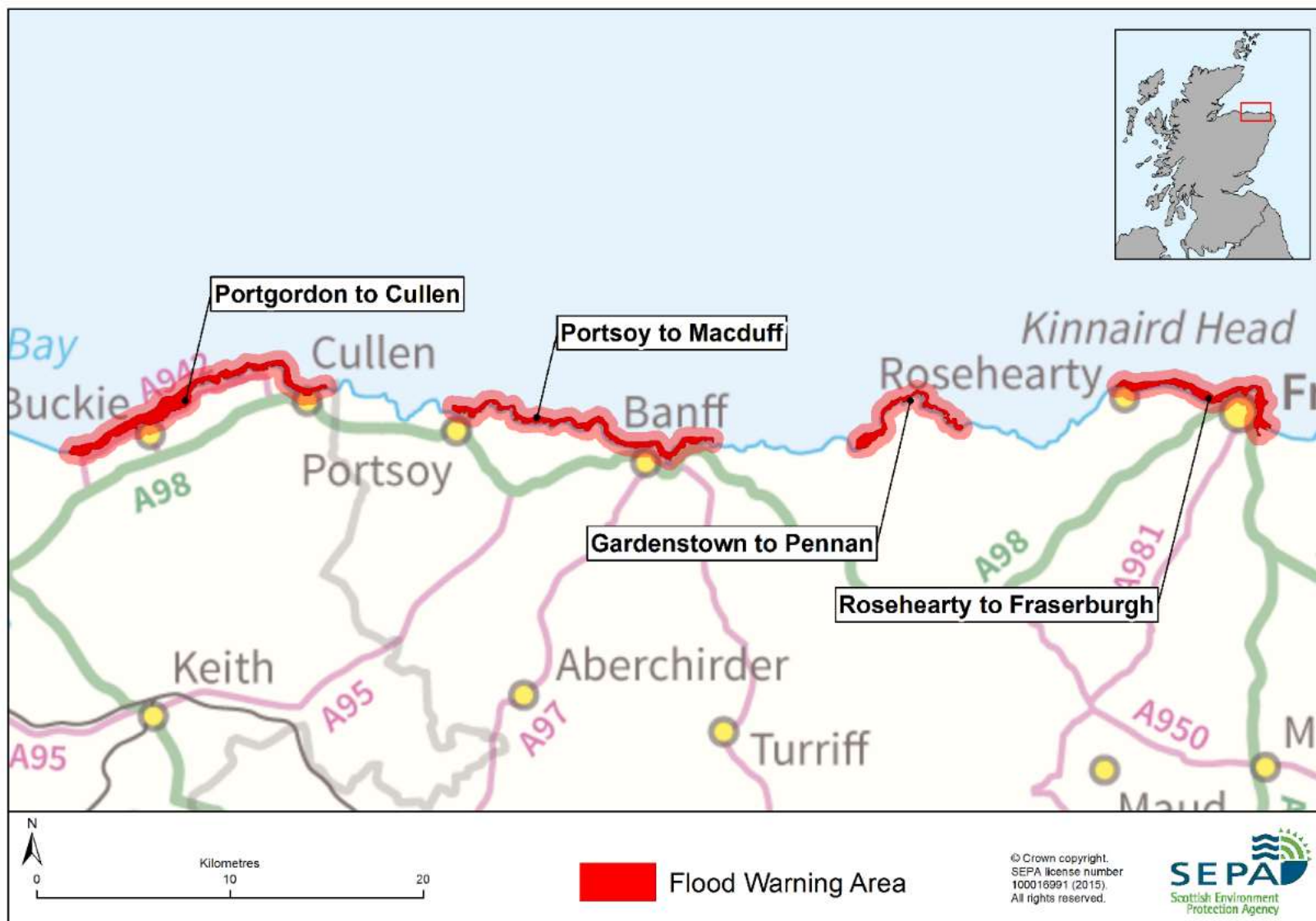
This coastal area benefits from the Moray Firth Coastal Flood Warning Scheme. There are four coastal flood warning areas, namely Portgordon to Cullen, Portsoy to Macduff, Gardenstown to Pennan and Roseharty to Fraserburgh (Figure 20).

## **Property Level Protection**

Each local authority has its own incentives or subsidies to help property owners with property level protection. In this coastal area:

- The Moray Council provides advice to members of the public regarding flood risk and resilience. The Council also holds information events from time to time in collaboration with Scottish Water, SEPA and the Scottish Flood Forum.
- Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 20: Flood warning areas in the Cairnbulg Point to Portgordon coastal area**

## **Climate Change and Future Flood Risk**

UK Climate Projections (UKCP09) predicts that climate change may increase sea levels. The magnitude of sea level rise varies around the coastline.

For the UKCP09 high emissions scenario, the predicted average sea level increase for the Cairnbulg Point to Portgordon coastline is 0.5m by 2080. This may increase the number of residential properties at risk of coastal flooding to approximately 390 and the number of non-residential from 30 to approximately 280. Coastal flood modelling by SEPA has not taken into account the impacts of a future climate on wave overtopping or storminess, which could increase the number of people affected by coastal flooding.

## **Potential for Natural Flood Management**

The assessment of the potential for natural flood management is shown on SEPA's flood maps (<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>). The maps indicate the potential for wave attenuation and estuarine surge attenuation. They show areas where natural flood management could be effective and where further detailed assessment should take place.

This information was used to identify where local authorities could include natural flood management as part of flood risk management schemes and studies. The proposed schemes and studies are listed in the relevant Potentially Vulnerable Area chapters of this document.

## **Estuarine Surge**

There is limited opportunity for estuarine surge attenuation in the Cairnbulg Point to Portgordon Coastal Area. The only area which has any potential is in Banff Bay where potential attenuation occurs between Macduff and Banff around the perimeter of Banff Bay extending up the River Deveron to Banff Bridge.

## **Wave Energy**

There are several areas along this section of coastline which have potential for wave energy dissipation. There are significant areas of potential for dissipation around the urban areas of Fraserburgh, Banff and Buckie with several of the bays also showing potential including Cullen Bay, Sandend Bay, Gamrie Bay and Fraserburgh Bay.



## **A2.2 Girdle Ness to Cairnbulg Point**

The Girdle Ness to Cairnbulg Point coastal area covers approximately 80km of coastline from Girdle Ness, Aberdeen in the south to the eastern end of the Moray Firth in the north (Figure 21). There are several towns and villages located close to the coastline including Aberdeen, Balmedie, Cruden Bay, Boddam, Peterhead and Inverallochy. The coastal area contains two local authorities; Aberdeen City Council and Aberdeenshire Council.

The coastal area is characterised by wide sandy bays such as at Balmedie and Cruden Bay and rocky cliffs with small bays enclosed by headlands. The nearshore bathymetry is variable and the coastline indented, therefore the wave conditions at the coastline are highly variable.

There are several large rivers which outfall along this stretch of coastline including the River Dee and River Don in Aberdeen, the River Ythan at Newburgh and the River Ugie at Peterhead.

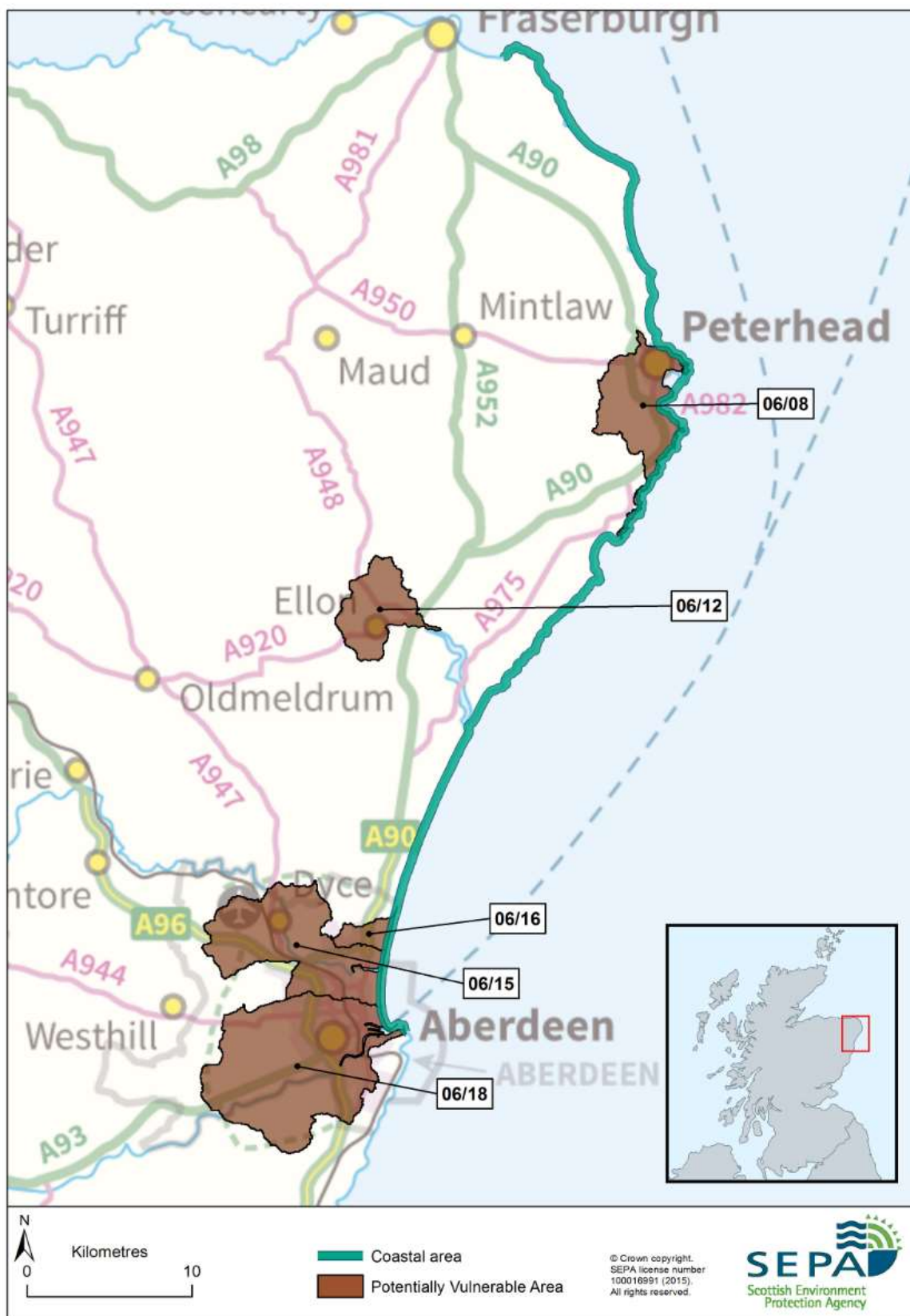
There are five Potentially Vulnerable Areas:

- Peterhead (06/08)
- Ellon (06/12)
- Aberdeen City – Bridge of Don (06/15)
- Aberdeen City – Denmore (06/16)
- Aberdeen City – Deeside (06/18).

### **Flood Risk in the Coastal Area - Main Areas at Risk**

Within the Girdle Ness to Cairnbulg Point coastal area there are fewer than ten residential properties and approximately 20 non-residential properties at risk of coastal flooding. None of the residential properties and an estimated 83% of the non-residential properties are located within Potentially Vulnerable Areas.

The majority of non-residential properties at risk are in Peterhead and Aberdeen City. The residential properties at risk are all located in the Newburgh area where the River Ythan flows into the sea. Although no residential properties were identified as being at risk of coastal flooding in any of the Potentially Vulnerable Areas it is evident from historical events that a number of residential properties in Potentially Vulnerable Areas are affected by overtopping waves including in Peterhead and at Footdee in Aberdeen.



**Figure 21: Girdle Ness to Cairnbulg Point coastal area and Potentially Vulnerable Areas**

## Economic Activity and Infrastructure at Risk

The Annual Average Damages from coastal flooding in the Girdle Ness to Cairnbulg Point coastal area are estimated to be £160,000. The Annual Average Damages are distributed as follows:

- 79% non-residential properties (£130,000)
- 13% roads (£22,000)
- 5% emergency services (£7,700)
- 1% residential properties (£2,600)
- 1% agriculture (£2,000)

Figure 22 shows the location of Annual Average Damages from coastal flooding across the area. Table 15 shows further information about infrastructure and agricultural land at risk of coastal flooding

	Number at risk	Further detail
Community facilities	0	n/a
Utility assets	<10	Electricity sub-station
Roads (excluding minor roads)	30 sections	Including A90, A920, A948, A975 and A982
Railway routes	5 locations	Aberdeen to Inverness
Agricultural land (km <sup>2</sup> )	1.2	n/a

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

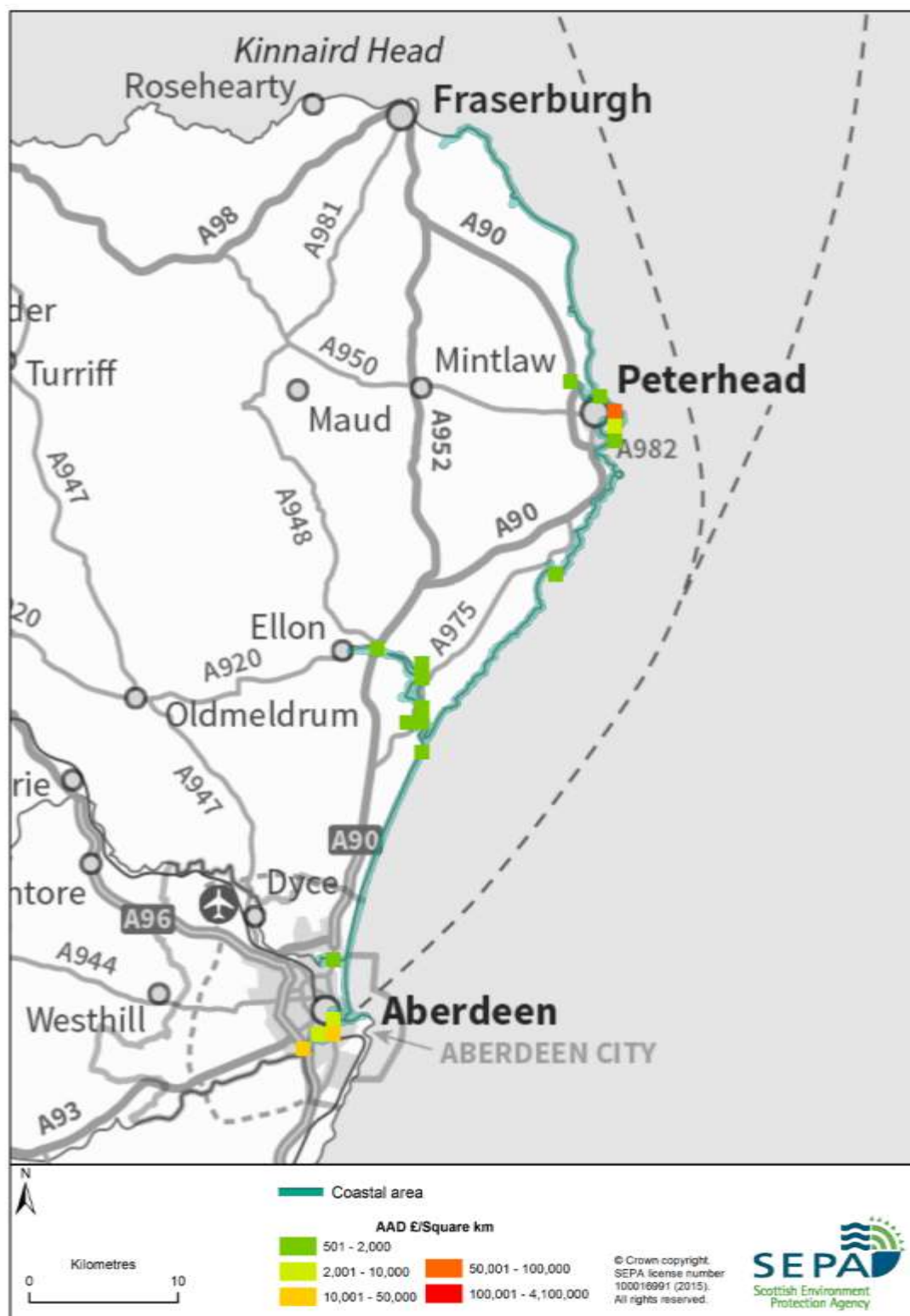
**Table 15: Infrastructure and agricultural land at risk of coastal flooding**

## Designated Environmental and Cultural Heritage Sites at Risk

There are four cultural heritage sites at risk of coastal flooding in this area including garden and designed landscapes, scheduled monuments and listed buildings. Approximately 10km<sup>2</sup> of environmentally designated area is at risk of coastal flooding including Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Sites of Special Scientific Interest (SSSI). The sites affected include the River Dee, Bullers of Buchan Coast and Buchan Ness to Collieston Coast.

## History of Flooding

The North Sea flood of 1953 resulted in flooding along the east coast, notably in Peterhead where cottages were destroyed. There have also been a number of localised floods, including storm surges in 1921 and 1949, which affected Aberdeen City. In December 2012 there were a number of houses evacuated and some were flooded in Peterhead with significant damage to the harbour-side businesses from wave overtopping during a coastal storm.



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 22:**  
Annual Average Damages from coastal flooding in the Girdle Ness to Cairnbulg Point coastal area

## **Managing Flood Risk**

A range of public bodies have responsibility for managing flood risk in Scotland and they are working closer than ever before to target action in the areas where the greatest benefit can be gained. Members of the public also have a role to play and are the first line of defence against flooding by taking action to protect themselves and their property from flooding.

## **Flood Protection Schemes**

A coastal protection scheme was completed in Aberdeen in 2006. This scheme comprises beach recharge and rock groynes to reduce the risk of failure of the existing seawalls, which provide erosion and flood protection to Aberdeen City.

## **Property Level Protection**

Each local authority has its own incentives or subsidies to help property owners with property level protection. In this coastal area:

- Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.
- Aberdeen City Council will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people with putting in Property Level Protection. This will be coordinated through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.

## **Climate Change and Future Flood Risk**

UK Climate Projections (UKCP09) predicts that climate change may increase sea levels. The magnitude of sea level rise varies around the coastline.

For the UKCP09 high emissions scenario, the predicted average increase for the Girdle Ness to Cairnbulg Point coastline is 0.5m by 2080. This may increase the number of residential properties at risk of coastal flooding from fewer than 10 to 60 and the number of non-residential from approximately 20 to 30. Coastal flood modelling by SEPA has not taken into account the impacts of a future climate on wave overtopping or storminess, which could increase the number of properties affected by coastal flooding.

## **Potential for Natural Flood Management**

The assessment of the potential for natural flood management is shown on SEPA's flood maps (<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>). The maps indicate the potential for wave attenuation and estuarine surge attenuation. They show areas where natural flood management could be effective and where further detailed assessment should take place.

This information was used to identify where local authorities could include natural flood management as part of flood risk management schemes and studies. The proposed schemes and studies are listed in the relevant Potentially Vulnerable Area chapters of this document.

## **Estuarine Surge**

The assessment shows there is limited opportunity for estuarine surge attenuation in the Girdle Ness to Cairnbulg Point coastal area. The areas of potential are relatively small and not continuous.

Along the River Don in Aberdeen there is a limited amount of potential for estuarine surge attenuation located between the A956 and Seaton Park. There are also some small areas of potential on the River Ythan, mainly in the vicinity of Newburgh downstream of the A975 road crossing and small isolated sections of potential for estuarine surge attenuation close to Loch of Strathbeg and South Inch (south of St Combs).

## **Wave Energy**

There is potential for wave energy dissipation along most of the coastline between Girdle Ness and Cairnbulg Point. There are areas of potential along the Aberdeen City frontage (where wave energy dissipation work in the form of beach replenishment has been carried out previously), in the centre of Newburgh Bay, in the Bay of Cruden, along the Peterhead frontage and between Rattray Head and Inverallochy.

## **A2.3 Inverbervie to Girdle Ness**

### **Coastal Overview**

The Inverbervie to Girdle Ness coastal area covers approximately 55km of coastline from Inverbervie in the south, to Girdle Ness, Aberdeen in the north (Figure 23). There are several towns and villages located close to the coastline including the southern areas of Aberdeen and the towns of Portlethen, Newtonhill, Stonehaven and Inverbervie. The coastal area contains two local authorities; Aberdeen City Council and Aberdeenshire Council.

The coastal area is characterised by cliffs with numerous headlands enclosing small bays. There are few beaches along this section of coast and these tend to be pocket or bay head type beaches bounded by headlands or rock abrasion platforms. The nearshore bathymetry is variable and the coastline indented, therefore the wave conditions at the coastline are highly variable.

The Bervie Water in Inverbervie and the Carron and Cowie rivers in Stonehaven are the main rivers which outfall to the sea along this stretch of coastline. There is one Potentially Vulnerable Area in this coastal area; Stonehaven (06/23).

### **Flood Risk in the Coastal Area - Main Areas at Risk**

Within the Inverbervie to Girdle Ness coastal area, there are approximately 50 residential properties and 20 non-residential properties at risk of coastal flooding. All of the residential properties and an estimated 91% of the non-residential properties at risk of coastal flooding are located within the Stonehaven Potentially Vulnerable Area.

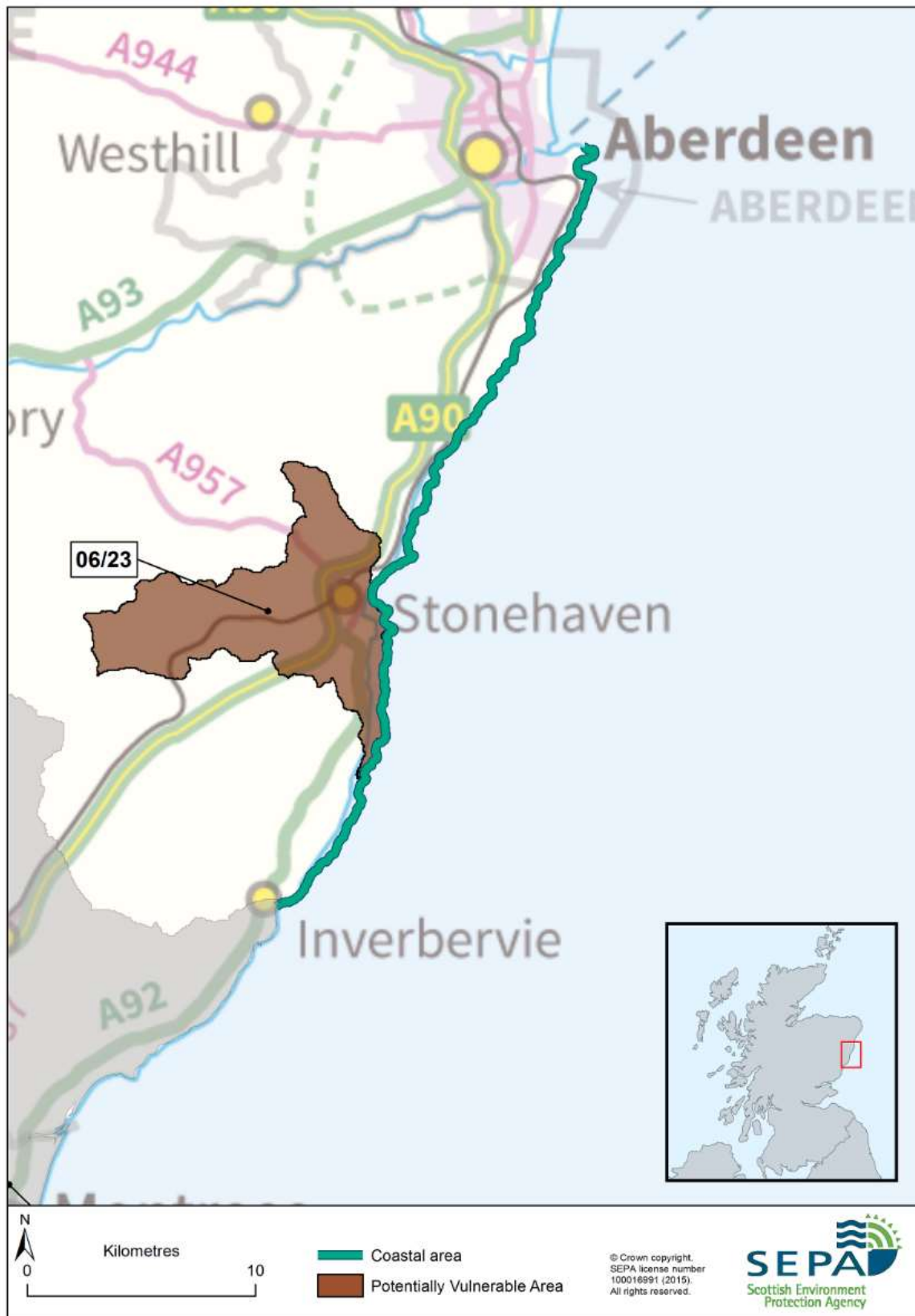
### **Economic Activity and Infrastructure at Risk**

The Annual Average Damages from coastal flooding in the Inverbervie to Girdle Ness coastal area are approximately £40,000. The Annual Average Damages are distributed as follows:

- 70% residential properties (£28,000)
- 16% non-residential properties (£6,300)
- 8% roads (£3,200)
- 4% emergency services (£1,600)
- 1% vehicles (£400)
- <1% agriculture (£120)

Flooding from wave overtopping is not fully represented in the general assessment of flood risk and the Annual Average Damages from coastal flooding are known to be significantly underestimated. The number of properties at risk of flooding may also be underestimated. In addition, some properties have suffered from structural damage due to wave overtopping even if the properties themselves have not been flooded internally.





*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Figure 23: Inverbervie to Girdle Ness coastal area and Potentially Vulnerable Areas**



Figure 24 shows the location of Annual Average Damages from coastal flooding across the area. Most of the economic damages from coastal flooding are attributed to flooding in Stonehaven. The main road affected by coastal flooding is the A957, but a number of minor roads are also impacted.

Table 16 shows further information about infrastructure and agricultural land at risk of coastal flooding.

	Number at risk	Further detail
Community facilities	0	n/a
Utility assets	0	n/a
Roads (excluding minor roads)	3	Including A957
Railway routes	0	n/a
Airports	0	n/a
Agricultural land (km <sup>2</sup> )	0.04	n/a

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 16: Infrastructure and agricultural land at risk of coastal flooding**

## Designated Environmental and Cultural Heritage Sites at Risk

There are five designated cultural heritage sites at risk of coastal flooding in this area. Two are scheduled monuments and three are listed buildings.

Less than 1km<sup>2</sup> of environmental designated area is at risk of coastal flooding including Special Protection Areas and Sites of Special Scientific Interest.

## History of Coastal Flooding

In December 2012 Stonehaven was affected by significant coastal flooding. This was caused by high tide levels combined with strong onshore easterly winds which generated large waves. There was extensive damage to properties, local amenities, vehicles and seafront businesses. Two sheltered housing complexes on David Street had to be evacuated and some businesses were closed down as a result of the damages incurred. The town's only supermarket was also affected. Wave overtopping is a regular occurrence which causes flooding to seafront businesses at Cowie. Less severe flooding and damage to structures occurred in October 2014 as a direct result of wave overtopping.



Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 24:**  
**Annual Average Damages from coastal flooding in the Inverberrie to Girdle Ness coastal area**

## **Managing Flood Risk**

A range of public bodies have responsibility for managing flood risk in Scotland and they are working closer than ever before to target action in the areas where the greatest benefit can be gained. Members of the public also have a role to play and are the first line of defence against flooding by taking action to protect themselves and their property from flooding.

### **Property Level Protection**

Each local authority has its own incentives or subsidies to help property owners with property level protection. In this coastal area:

- Aberdeenshire Council currently provide a small range of flood protection products for individual property protection, which are available for all types of flooding, at cost price with free delivery across Aberdeenshire.
- Aberdeen City Council will be promoting self-help through work with the community. This will include the creation of a Flood Guard Grant Scheme to assist people with putting in Property Level Protection. This will be coordinated through its Flood Team and seek advice from appropriate bodies such as the Scottish Flood Forum when setting up the Grant scheme.

## **Climate Change and Future Flood Risk**

UK Climate Projections (UKCP09) predicts that climate change may increase sea levels. The magnitude of sea level rise varies around the coastline.

For the UKCP09 high emissions scenario, the predicted average sea level increase for the Inverbervie to Girdle Ness coastline is 0.5m by 2080. This may increase the number of residential properties at risk of coastal flooding from approximately 50 to 130 and for non-residential properties from 20 to 60. Coastal flood modelling by SEPA has not taken into account the impacts of a future climate on wave overtopping or storminess, which could increase the number of properties affected by coastal flooding.

### **Potential for Natural Flood Management**

The assessment of the potential for natural flood management is shown on SEPA's flood maps (<http://www.sepa.org.uk/environment/water/flooding/flood-maps/>). The maps indicate the potential for wave attenuation and estuarine surge attenuation. They show areas where natural flood management could be effective and where further detailed assessment should take place.

This information was used to identify where local authorities could include natural flood management as part of flood risk management schemes and studies. The proposed

schemes and studies are listed in the relevant Potentially Vulnerable Area chapters of this document.

### **Estuarine Surge**

The assessment shows that there are no opportunities for estuarine surge attenuation in the Inverbervie to Girdle Ness coastal area.

### **Wave Energy**

There are several areas in this coastal area which have potential for wave energy dissipation. The main area of potential is around Stonehaven. There are also smaller areas of potential at Nigg Bay near Aberdeen, Braidon Bay and Bervie Bay, Crawton, Doonie Point, and Cove Bay.

## Annex 3: Surface Water Flooding

This chapter provides supplementary information on surface water flooding across the Local Plan District. It provides an overview of the main areas at risk and the history of surface water flooding. The predicted impacts on infrastructure are also identified. The impacts on environmental sites and agricultural land have not been assessed.

Information about the objectives and actions to manage flood risk are provided in Section 2.3

### Flood Risk

Within the North East Local Plan District, there are approximately 2,400 residential properties and 1,700 non-residential properties at risk of surface water flooding. 80% of the residential properties at risk of surface water flooding in the Local Plan District are located within Potentially Vulnerable Areas.

### Main Areas at Risk

The areas which have greater than 50 properties at risk of surface water flooding are shown in Table 17. Table 17 also shows the estimated economic impact of surface water flooding in each area expressed as Annual Average Damages.

	Residential and non-residential properties at risk of surface water flooding	Annual Average Damages
Aberdeen City	1,900	£2.2 million
Stonehaven	260	£320,000
Inverurie and Kintore	210	£200,000
Fraserburgh and Rosehearty	130	£49,000
Dyce	120	£570,000
Westhill	100	£89,000
Peterhead	80	£280,000
Huntly	80	£73,000

*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 17: Main areas at risk of surface water flooding**

## Economic Activity and Infrastructure at Risk

The Annual Average Damages in the North East Local Plan District from surface water flooding are estimated to be £5.2 million. This accounts for 16% of the total flood damages for the Local Plan District. The damages are distributed as follows:

- 54% non-residential properties (£2.8 million)
- 36% residential properties (£1.9 million)
- 5% emergency services (£270,000)
- 4% roads (£220,000)
- 1% vehicles (£46,000)

Figure 25 shows the location of Annual Average Damages from surface water flooding across the Local Plan District. The area with the largest Annual Average Damages is Aberdeen City. Table 18 shows the approximate numbers of further infrastructure assets which are at risk of flooding within this catchment.

	Number at risk	Further detail
<b>Community facilities</b>	20	Includes educational buildings, healthcare facilities and emergency services.
<b>Utility assets</b>	190	Includes electricity substations, fuel extraction sites and telephone exchanges.
<b>Roads (excluding minor roads)</b>	3,800 locations	Notably parts of the A9
<b>Railway routes</b>	300 locations	Aberdeen to Inverness, Aberdeen to Dundee.
<b>Airports</b>	1	Aberdeen (Dyce) airport.

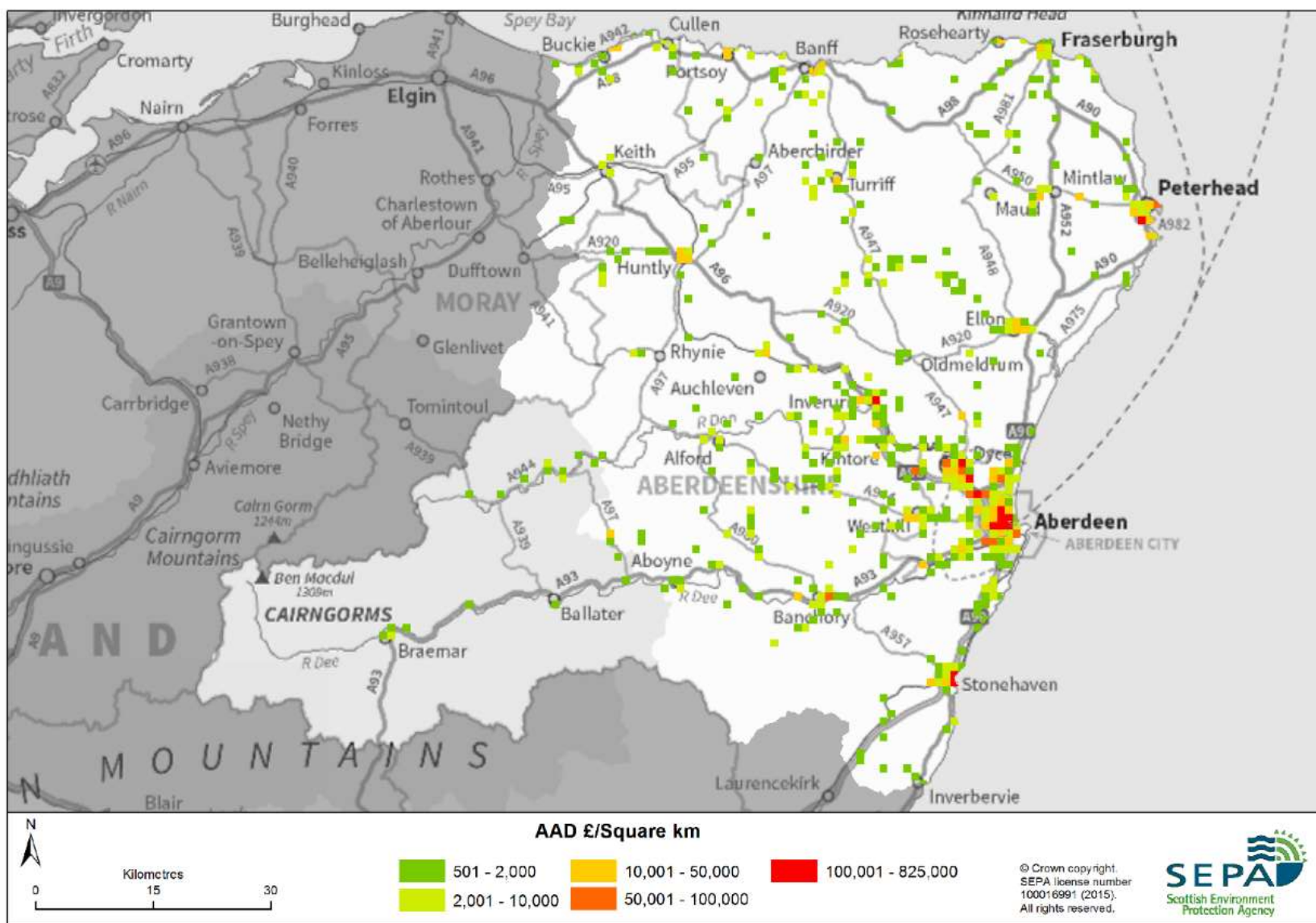
*Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)*

**Table 18: Infrastructure at risk of surface water flooding**

## Designated Environmental and Cultural Heritage Sites at Risk

Within the North East Local Plan District, it is estimated that approximately 180 cultural heritage sites are at risk of surface water flooding. The sites at risk include scheduled monuments, designed gardens and landscapes, battlefields and listed buildings. The impact of surface water flooding on environmental sites has not been assessed and is assumed to be relatively low.





Reproduced from North East Flood Risk Management Strategy, SEPA (December 2015)

**Figure 25: Annual Average Damages from surface water flooding**

## Annex 4: Supporting information

### Sources of flooding described in this plan

The Plan addresses the risk of flooding from rivers, the coast and surface water. The risk of flooding from rivers is usually due to rainfall causing a river to rise above bank level spreading out and inundating adjacent areas. Coastal flooding is where the risk is from the sea. Sea levels can change in response to tidal cycles or atmospheric conditions. Over the longer term sea levels and coastal flood risk may change due to climate change. Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

There can be interactions between these sources of flooding, but for the purposes of this plan they are dealt with independently unless covered by the Aberdeen ICS.

### *The following aspects of flooding have not been incorporated to this plan:*

- Groundwater is generally a contributing factor to flooding rather than the primary source. It is caused by water rising up from underlying rocks or flowing from springs.
- Reservoir breaches have been assessed under separate legislation. Further information and maps can be found on SEPA's website.
- The Flood Risk Management Act (Scotland) 2009 does not include powers for SEPA or responsible authorities to assess or manage coastal erosion. SEPA have included consideration of erosion in the Flood Risk Management Strategies by identifying areas that are likely to be vulnerable to erosion and therefore where erosion can exacerbate flood risk. As part of considering where actions might deliver multiple benefits, they have looked to see where the focus of coastal flood risk management studies coincides with areas of high susceptibility to coastal erosion. Subsequent detailed studies and scheme design will need to consider how coastal actions interact with coastal erosion.
- Wave overtopping. The information on coastal flooding in this plan is based on SEPA modelling using still water level predictions. The method used simplifies the coastal processes and flooding mechanisms at work during a storm. Wave overtopping cannot be accurately modelled at a national scale due to the importance of local factors such as prevailing wind conditions, the depth and profile of the near-shore sea bed or the influence of any existing defences or management structures. As a result, they may an underestimate of coastal flood risk in some areas. In locations with wide and flat floodplains, the modelling may overestimate flood risk because the volumes of water able to inundate an area over a tidal cycle are not taken into account. To address this, in a number of locations where more detailed local models were available they have been incorporated into the development of the Flood Risk Management Strategies. Where wave overtopping



has been specifically identified as a concern – but where no further detailed modelling is available – particular compensation has been made in the selection of appropriate actions to address coastal flood risk.

Below are explanatory notes for the approach taken in this plan and commonly used terms in flood risk management. A glossary of terms is also available.

### Reference to flood risk

During the development of this Plan flood risk has been assessed over a range of likelihoods. For consistency in reporting information within the Strategies, unless otherwise stated, all references to properties or other receptors being ‘at risk of flooding’ refer to a medium likelihood flood (up to a 1 in 200 chance of flooding in any given year). By exception, references will be made to high or low risk flooding, which should be taken to mean a 1 in 10 chance/likelihood or 1 in 1000 chance/likelihood of flooding in any given year respectively.

Likelihood of flooding	Return period
High	10 year
Medium	200 year
Low	1000 year

### Annual Average Damages

have been used to assess the potential economic impact of flooding within an area. These are the average economic damages per year when assessed over a very long period of time. They are derived from the estimated economic damages from all sources of flooding to the following receptors: agriculture, residential properties (direct and indirect), non-residential properties, vehicles, emergency services and roads within the area.

### National Flood Risk Assessment

SEPA published a National Flood Risk Assessment 2011. It significantly improved our understanding of the causes and consequences of flooding, and identified areas most vulnerable to floods. It was the first step to delivering a risk-based, sustainable and planned approach to flood risk management.

The assessment considered the likelihood of flooding from rivers, groundwater and the sea, as well as flooding caused when heavy rainfall is unable to enter drainage systems or

the river network. The likelihood of flooding was examined alongside the estimated impact on people, the economy, cultural heritage and the environment. This combined understanding of where flooding is likely to occur, and the impact when it does, helped target the efforts of organisations managing flood risk to people, the economy and the environment.

### **Potentially Vulnerable Areas and Local Plan Districts**

Based on the National Flood Risk Assessment, SEPA identified where the estimated impact of flooding was considered to be nationally significant. These areas are based on catchment units as it is within the context of the wider catchment that flooding can be best understood and managed. These nationally significant catchments (or parts of catchments) are referred to as Potentially Vulnerable Areas.

In Scotland, 243 Potentially Vulnerable Areas were identified. They are estimated to contain 92% of the total number of properties at risk within Scotland.

For flood risk management purposes, Scotland was divided into 14 Local Plan Districts. Each Local Plan District will have a Flood Risk Management Strategy and a Local Flood Risk Management Plan.

### **Lead Local Authority**

The FRM Act requires a Lead Local Authority to be identified for each Local Plan District. The Lead Local Authority is crucial to the successful implementation of the FRM Act and, as such, must perform several important functions over and above the general duties and powers given to local authorities elsewhere in the FRM Act.

The Lead Local Authority, having contributed with other local authorities to the production of the Flood Risk Management Strategy, must prepare a Local Flood Risk Management Plan of coordinated actions to reduce flood risk within the Local Plan District. Although the Lead Local Authority is responsible for the production of the plan, its content will be drawn from and agreed by all local authorities, other responsible authorities and SEPA within the Local Plan District.

### **Natural flood management assessment and mapping of artificial and natural features**

The new approach to Flood Risk Management requires SEPA to consider whether techniques that restore, enhance or alter natural features and characteristics can contribute to managing flood risk. This means looking at the potential to work with natural hydrological and morphological processes.

Because the National Flood Risk Assessment provides only a strategic assessment of flood risk, further refined assessments may be required in Potentially Vulnerable Areas, including the mapping of artificial and natural features whose removal could increase flood risk.

SEPA developed catchment characteristics and methodologies, to assess the potential for natural flood management as part of the appraisal process. The information was then collated and published in 2013. The assessment of natural flood management was a consideration in the setting of objectives and actions in the Flood Risk Management Strategies.

### **Flood hazard and flood risk maps**

The production of flood hazard and flood risk maps improved our understanding of flooding and helped inform the selection of actions required to manage flood risk in Potentially Vulnerable Areas. Work on production of these maps will begin in January 2012. These maps will show details of flood events for a range of probabilities and will cover flooding from rivers, the sea, sewers, surface water run-off and groundwater.

The flood hazard maps will show information that describes the nature of a flood, such as the extent of flooding, water level, depth and velocity where appropriate.

A flood risk map provides detail on the impacts on people, the economy, cultural heritage and the environment.

## Annex 5: Land use planning

### Flood risk management actions from national planning policies

#### Avoid development in medium to high risk areas

- a) Planning authorities work in partnership undertaking catchment-wide Strategic Flood Risk Assessments to inform their development plan allocations in line with SEPA's guidance and Land Use Vulnerability.
- b) Planning authorities and SEPA require the submission of flood risk assessments that accord with SEPA's *Technical Flood Risk Guidance for Stakeholders*, to support planning applications where there is a potential flood risk. The flood risk assessment should be used to demonstrate as far as possible that the development will be safe for its lifetime, without increasing flood risk elsewhere and, where possible, takes opportunities to reduce flood risk overall.
- c) SEPA ensures that its flood risk advice to planning authorities is clear and appropriate. SEPA, in consultation with planning authorities, undertakes an annual assessment of planning advice and its contribution to flood risk.
- d) SEPA and planning authorities engage at an early stage of the development plan process to agree appropriate forms of development to help inform the preparation and implementation of Strategic Flood Risk Assessments.

#### Reduce impacts to existing buildings

SEPA, planning authorities and local communities are required to engage at an early stage of the development plan process to agree the best long term land uses for areas where relocation, abandonment and/or change of use have been identified to deliver sustainable flood risk management. Where possible, new land uses should aim to achieve multiple benefits for local communities such as the creation of blue / green infrastructure and increased resilience to climate change.

#### Protect and enhance natural features that have a positive impact on reducing overall flood risk

**SEPA and planning authorities** are required to engage early in the development plan process to identify opportunities for the restoration and protection of natural features which help manage flood risk. Opportunities should be maximised to achieve multiple benefits such as the development of green / blue infrastructure and improved place making. Areas of land that may contribute to flood management should be identified and protected.

**New developments are designed to ensure that surface water drainage does not increase flood risk on or off site**

- a) SEPA prepares guidance for planning authorities and developers on the use of surface water hazard maps for land use planning purposes.
- b) Planning authorities support the implementation of Surface Water Management Plans, developed by the local authorities, through development plan allocations and policies. Surface Water Management Plans should take account of development opportunities that could contribute to the reduction of surface water flood risk.
- c) SEPA engages at an early stage of the development plan process to progress exemplar projects that demonstrate the potential for land use planning to mitigate surface water flooding and contribute to wider environmental benefits.

**New development is resilient to predicted future changes in climate**

Planning authorities ensure that climate change is considered in Strategic Flood Risk Assessments and Flood Risk Assessments, based upon the best scientific evidence and the information requirements of planners to make informed decisions.

## **Annex 6: Licensing acknowledgements**

### **Ordnance Survey**

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### **Scottish Water**

SEPA acknowledges the inclusion of surface water flooding data generated by Scottish Water in preparation of flood risk information.

## Annex 7: Glossary

Term	Definition
Actions	Actions describe where and how flood risk will be managed. These actions have been set by SEPA and agreed with flood risk management authorities following consultation. Selection of actions to deliver the agreed objectives has been based on a detailed assessment and comparison of economic, social and environmental criteria.
Annual Average Damages (AAD)	Depending on its size or severity each flood will cause a different amount of damage to a given area. Annual Average Damages are the theoretical average economic damages caused by flooding when considered over a very long period of time. It does not mean that damage will occur every year: in many years there will be no damages, in some years minor damages and in a few years major damages may occur. High likelihood events, which occur more regularly, contribute proportionally more to AADs than rarer events. Within the Flood Risk Management Strategies AADs incorporate economic damages to the following receptors: residential properties, non-residential properties, vehicles, emergency services, agriculture and roads. They have been calculated based on the principles set out in the Flood Hazard Research Centre Multi-Coloured Handbook (2010).
Appraisal	Appraisal is the process of defining objectives, examining options and weighing up the costs, benefits, risks and uncertainties before a decision is made. The FRM Strategy appraisal method is designed to set objectives and identify the most sustainable combination of actions to tackle flooding from rivers, sea and surface water.
Appraisal baseline	Defines the existing level of flood risk under the current flood risk management regime.
Awareness raising	Public awareness, participation and community support are essential components of sustainable flood risk management. SEPA and the responsible authorities have a duty to raise public awareness of flood risk. This is undertaken both individually and collaboratively by a range of organisations. Improved awareness of flood risk and actions that prepare individuals, homes and businesses for flooding can reduce the overall impact.
Benefit cost ratio (BCR)	A benefit cost ratio summarises the overall value for money of an action or project. It is expressed as the ratio of benefits to costs (both expressed as present value monetary values). A ratio of greater than 1:1 indicates that the economic benefits associated with an action are greater than the economic costs of implementation; therefore, this is taken as the threshold of economic viability. It should be acknowledged that it is not always possible to accurately estimate economic values for all elements of benefit, and BCR is just one a number of techniques used in appraisal.
Blue infrastructure	Blue infrastructure is often complementary to 'green infrastructure' and includes sustainable drainage systems, swales (shallow, broad and vegetated channels designed to store and/or convey runoff and remove

Term	Definition
	pollutants), wetlands, rivers, canals (and their banks) and other watercourses
Catchment	All the land drained by a river and its tributaries.
Channel improvement	Where work has been carried out on a river channel allowing an increase in the volume of water it can carry.
Characterisation	Provides a description of the natural characteristics of catchments, coastlines and urban areas in terms of hydrology, geomorphology, topography and land use. It also includes the characterisation of existing levels of flood risk and existing flood risk management activity.
Coastal flooding	Flooding that results from high sea levels or a combination of high sea levels and stormy conditions. The term coastal flooding is used under the Flood Risk Management (Scotland) Act 2009, but in some areas it is also referred to as tidal flooding and covers areas such as estuaries and river channels that are influenced by tidal flows.
Combined sewer	Combined sewers transport sewage from homes and industry as well as carrying surface water runoff from gutters, drains and some highways. Heavy or prolonged rainfall can rapidly increase the flow in a combined sewer until the amount of water exceeds sewer capacity.
Combined sewer (overflow) (CSO)	Combined sewer overflows are purposely designed structures to ensure any excess water from sewerage systems is discharged in a controlled way and at a specific managed location.
Community facility	Within the FRM Strategies this term includes: Emergency Services (Police, Fire, Ambulance, Coastguard, Mountain Rescue) Educational Buildings (crèche, nursery, primary, secondary, further, higher and special education premises) Healthcare facilities: hospitals, health centres and residential care homes
Community flood action groups	Community flood action groups are community based resilience groups which, on behalf of local residents and business, help to prepare for and minimise the effects of flooding. They reflect the interests of their local communities and may differ in composition and remit. There are over 60 groups already established in Scotland. The Scottish Flood Forum provides support for both new and existing groups.
Confluence	Where two or more rivers meet.
Conveyance	Conveyance is a measure of the carrying capacity of a watercourse. Increasing conveyance enables flow to pass more rapidly and reducing conveyance slows flow down. Both actions can be effective in managing flood risk depending on local conditions.
Cultural heritage site	Historic Environment Scotland maintains lists of buildings of special architectural or historic interest; these buildings are referred to as 'listed buildings'. The highest level of designation is a World Heritage Site. Other designations included in this assessment are scheduled monuments, gardens and designed landscapes, and battlefields.
Culvert	A pipe, channel or tunnel used for the conveyance of a watercourse or surface drainage water under a road, railway, canal or other obstacle.
Damages	Flood damages are categorised as direct or indirect i.e. as a result of the flood water itself, or subsequent knock on effects. Damage to buildings and contents caused by flood water are an example of direct damages,



Term	Definition
	<p>whilst loss of industrial production, travel disruption or stress and anxiety are indirect. Some damages can be quantified in monetary terms, and others can only be described.</p> <p>The potential damages avoided by implementation of a flood risk management action are commonly referred to as the benefits of that action. When comparing the effectiveness of different actions, it is useful to consider estimated damages and damages avoided across the lifespan of the action. Within the FRM Strategies, a 100 year appraisal period has been used as standard. This allows costs, damages and benefits across this time frame to be compared in present value terms. See also 'Annual Average Damages'</p>
Deposition	A natural process leading to an accumulation of sediment on a river bed, floodplain or coastline.
Economic impact	An assessment of the economic value of the positive and negative effects of flooding and / or the actions taken to manage floods.
Embankment	Flood embankments are engineered earth fill structures designed to contain high river levels or protect against coastal flooding. They are commonly grass-covered, but may need additional protection against erosion by swiftly flowing water, waves or overtopping.
Emergency plans / response	Emergency response plans are applicable for all types of flooding. They set out the steps to be taken during flooding in order to maximise safety and minimise impacts where possible. Under the Civil Contingencies Act, Category 1 Responders have a duty to maintain emergency plans. Emergency plans may also be prepared by individuals, businesses, organisations or communities.
Environmental impact	A change in the environment as a result of an action or activity. Impacts can be positive or negative and may vary in significance, scale and duration.
Environmental Impact Assessment (EIA)	Environmental Impact Assessment (EIA) is a process which identifies the potential environmental impacts, both negative and positive, of a proposal.
Environmental sites / environmental designated areas/ environmentally designated sites	Areas formally designated for environmental importance, such as Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA) or Special Areas of Conservation (SAC).
Erosion	A natural process leading to the removal of sediment from a river bed, bank or floodplain or coastline.
Estuarine surge attenuation	A reduction in the wave energy caused by storm surge. Breakwaters (barriers built out into the sea to protect a coast or harbour from the force of waves) or habitats such as saltmarsh can slow down and reduce the inland impact of storm surges (the rising of the sea due to wind and atmospheric pressure changes associated with storms), thereby reducing coastal flood risk.
Estuary	A coastal body of water usually found where a river meets the sea; the part of the river that is affected by tides.

Term	Definition
Flash flood	A flood that occurs a short period of time after high intensity rainfall or a sudden snow melt. A sudden increase in the level and velocity of the water body is often characteristic of these events, leaving a short time for warning or actions.
Flashy watercourse	A 'flashy' river or watercourse has a short lag time (the delay between peak rainfall intensity and peak river discharge), high peak discharge, and quickly returns to average flow. Rivers with these characteristics can be prone to flooding and leave a short time for warning or actions.
Flood	In the terms of the FRM Act, 'flood' means a temporary covering by water, from any source, of land not normally covered by water. This does not include a flood solely from a sewerage system, as a result of normal weather or infrastructure drainage. A flood can cause significant adverse impacts on people, property and the environment.
Flood bund	A constructed retaining wall, embankment or dyke designed to protect against flooding to a specified standard of protection.
Flood defence	Infrastructure, such as flood walls, embankments or flood storage intended to protect an area against flooding to a specified standard of protection.
Flood extent	The area that has been affected by flooding, or is at risk of flooding from one or more sources for a particular likelihood.
Flood forecasting	SEPA operates a network of over 250 rainfall, river and coastal monitoring stations throughout Scotland that generate data 24 hours a day. This hydrological information is combined with meteorological information from the Met Office. A team of experts then predict the likelihood and timing of river, coastal and surface water flooding. This joint initiative between SEPA and the Met Office forms the Scottish Flood Forecasting Service.
Flood frequency	The probability that a particular size/severity of flood will occur in a given year (see likelihood).
Flood gate	An adjustable, sometimes temporary, barrier used as a flood defence to control the flow of water within a water system or during a flood. Flood gates can also be part of operational flood defences or protect individual buildings or sites.
Flood guard	Flood guards cover a variety of types of door and window barriers that can be fitted to individual properties and operated by the owners / occupiers prior to a flood event. They act as a physical barrier to water entering the property and can provide protection against frequent and relatively shallow flooding.
Flood hazard	In terms of the FRM Act, hazard refers to the characteristics (extent, depth, velocity) of a flood.
Flood hazard map	Flood hazard maps are required by the FRM Act to show information that describes the nature of a flood in terms of the source, extent, water level or depth and, where appropriate, velocity of water. Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.
Flood Prevention Scheme / Flood	A flood protection scheme, as defined by the FRM Act, is a scheme by a local authority for the management of flood risk within the authority area.

Term	Definition
Protection Scheme (FPS)	This includes defence measures (flood prevention schemes) formerly promoted under the Flood Prevention (Scotland) Act 1961.
Flood protection study	Flood protection studies aim to refine understanding of the hazard and risk associated with flooding in a particular area, catchment or coastline. They will involve detailed assessment of flood hazard and / or risk and may develop options for managing flood risk.
Flood protection works	Flood protection works can include the same flood defence measures that would make up a formal Flood Protection Scheme but without the legal process, protections and requirements that would come by delivering the works as a scheme.
Flood risk	A measure of the combination of the likelihood of flooding occurring and the associated impacts on people, the economy and the environment.
Flood Risk Assessment (FRA)	Flood Risk Assessments are detailed studies of an area where flood risk may be present. These are often used to inform planning decisions, may help to develop flood schemes and have also contributed to the National Flood Risk Assessment.
Flood Risk Management (Scotland) Act 2009 (FRM Act)	The flood risk management legislation for Scotland. It transposes the EC Floods Directive into Scots Law and aims to reduce the adverse consequences of flooding on communities, the environment, cultural heritage and economic activity.
Flood risk management cycle	Under the FRM Act flood risk management planning is undertaken in six year cycles. The first planning cycle is 2015 – 2021. The first delivery cycle is lagged by approximately 6 months and is from 2016 - 2022.
Flood Prevention (Scotland) Act 1961	The Flood Prevention (Scotland) Act 1961 gave local authorities discretionary powers to make and build flood prevention schemes. It was superseded by the Flood Risk Management (Scotland) Act 2009.
Flood Risk Management Local Advisory Groups	FRM Local Advisory Groups are stakeholder groups convened to advise SEPA and Lead Local Authorities in the preparation of Flood Risk Management Plans. SEPA and Lead Local Authorities must have regard to the advice they provide.
Flood Risk Management Plans (FRM Plans)	A term used in the FRM Act. FRM Plans set out the actions that will be taken to reduce flood risk in a Local Plan District. They comprise Flood Risk Management Strategies, developed by SEPA, and Local Flood Risk Management Plans produced by Lead Local Authorities.
Flood Risk Management Strategy (FRM Strategy)	Sets out a long-term vision for the overall reduction of flood risk. They contain a summary of flood risk in each Local Plan District, together with information on catchment characteristics and a summary of objectives and actions for Potentially Vulnerable Areas.
Flood risk map	Complements the flood hazard maps published on the SEPA website providing detail on the impacts of flooding on people, the economy and the environment. Flood hazard and risk maps are referred to collectively as flood maps and are available on the SEPA website.
Flood wall	A flood defence feature used to defend an area from flood water to a specified standard of protection.
Flood Warning area (FWA)	A Flood Warning area is where SEPA operates a formal Flood Monitoring Scheme to issue targeted Flood Warning messages for properties located in the <a href="#">area</a> .

Term	Definition
Flood warning scheme	A flood warning scheme is the network of monitoring on a coastal stretch or river, which provides SEPA with the ability to issue Flood Warnings.
Floods Directive	European Directive 2007/60/EC on the Assessment and Management of Flood Risks builds on and is closely related to the Water Framework Directive (see river basin management planning). It was transposed into Scots Law by the Flood Risk Management (Scotland) Act 2009. The Directive requires Member States to assess if all watercourses and coastlines are at risk from flooding, to map the flood extent, assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk.
Floodplain	Area of land that borders a watercourse, an estuary or the sea, over which water flows in time of flood, or would naturally flow but for the presence of flood defences and other structures where they exist.
Floodplain storage	Floodplains naturally store water during high flows. Storage can be increased through natural or man-made features to increase flood depth or slow flows in order to reduce flooding elsewhere.
Gabion	A metal cage filled with rocks often used in river bank protection.
Green infrastructure	The European Commission defines green infrastructure as “the use of ecosystems, green spaces and water in strategic land use planning to deliver environmental and quality of life benefits. It includes parks, open spaces, playing fields, woodlands, wetlands, road verges, allotments and private gardens. Green infrastructure can contribute to climate change mitigation and adaptation, natural disaster risk mitigation, protection against flooding and erosion as well as biodiversity conservation.” See also ‘blue infrastructure’
Groundwater flooding	This type of flooding is caused by water rising up from underlying rocks or flowing from springs. In Scotland groundwater is generally a contributing factor to flooding rather than the primary source.
Integrated catchment study (ICS)	In urban areas, the causes of flooding are complex because of the interactions between rivers, surface water drainage and combined sewer systems and tidal waters. Scottish Water works with SEPA and local authorities to assess these interactions through detailed studies.
Land use planning (LUP)	The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups.
Lead local Authority	A local authority responsible for leading the production, consultation, publication and review of a Local Flood Risk Management Plan.
Likelihood of flooding	The chance of flooding occurring. <b>High likelihood:</b> A flood is likely to occur in the defined area on average once in every ten years (1:10). Or a 10% chance of happening in any one year. <b>Medium likelihood:</b> A flood is likely to occur in the defined area on average once in every two hundred years (1:200). Or a 0.5% chance of happening in any one year.

Term	Definition
	<b>Low likelihood:</b> A flood is likely to occur in the defined area on average once in every thousand years (1:1000). Or a 0.1% chance of happening in any one year.
Local Flood Risk Management Plans (Local FRM Plan)	Local Flood Risk Management Plans, produced by Lead Local Authorities, will take forward the objectives and actions set out in Flood Risk Management Strategies. They will provide detail on the funding, timeline of delivery, arrangements and co-ordination of actions at the local level during each six year FRM planning cycle.
Local Nature Reserve (LNR)	A Local Nature Reserve is a protected area of land designated by a local authority because of its local special natural interest and / or educational value. Local authorities select and designate local nature reserves using their powers under the National Parks and Access to the Countryside Act 1949 <sup>ix</sup> .
Local Plan District	Geographical areas for the purposes of flood risk management planning. There are 14 Local Plan Districts in Scotland.
Local Plan District Partnerships	Each LPD has established a local partnership comprised of local authorities, SEPA, Scottish Water and others as appropriate. These partnerships are distinct from the FRM Local Advisory Groups and they retain clear responsibility for delivery of the FRM actions set out in the Local Flood Risk Management Plans. It is the local partnership that makes decisions and supports the delivery of these plans.
Maintenance	Sections 18 and 59 of the Flood Risk Management (Scotland) Act 2009 put duties of watercourse inspection, clearance and repair on local authorities. In addition, local authorities may also be responsible for maintenance of existing flood protection schemes or defences.
Montane habitat	This habitat encompasses a range of natural or near-natural vegetation occurring in the montane zone, lying above or beyond the natural tree-line.
National Flood Management Advisory Group (NFMAG)	The National Flood Management Advisory Group provides advice and support to SEPA and, where required, Scottish Water, local authorities and other responsible authorities on the production of FRM Strategies and Local FRM Plans.
National Flood Risk Assessment (NFRA)	A national analysis of flood risk from all sources of flooding which also considers climate change impacts. Completed in December 2011 this provides the information required to undertake a strategic approach to flood management that identifies areas at flood risk that require further appraisal. The NFRA will be reviewed and updated for the second cycle of FRM Planning by December 2018.
Natural flood management (NFM)	A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk.
Non-residential properties	Properties that are not used for people to live in, such as shops or other public, commercial or industrial buildings.
Objectives	Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding.

Term	Definition
One in 200 year flood	See 'likelihood of flooding' and 'return period'.
Planning policies	Current national planning policies, Scottish Planning Policy and accompanying Planning Advice notes restrict development within the floodplain and limit exposure of new receptors to flood risk. In addition to national policies, local planning policies may place further requirements within their area of operation to restrict inappropriate development and prevent unacceptable risk.
Potentially Vulnerable Areas (PVA)	Catchments identified as being at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal. There were 243 PVAs identified by SEPA in the National Flood Risk Assessment and these are the focus of the first FRM planning cycle.
Property level protection	Property level protection includes flood gates, sandbags and other temporary barriers that can be used to prevent water from entering individual properties during a flood.
Property level protection scheme	Some responsible authorities may have a formal scheme to provide, install and maintain property level protection for properties.
Ramsar sites	Ramsar sites are wetlands of international importance designated under the Ramsar Convention.
Receptor	Refers to the entity that may be impacted by flooding (a person, property, infrastructure or habitat). The vulnerability of a receptor can be reduced by increasing its resilience to flooding.
Residual risk	The risk that remains after risk management and mitigation. This may include risk due to very severe (above design standard) storms or risks from unforeseen hazards.
Resilience	The ability of an individual, community or system to recover from flooding.
Responsible authority	Designated under the FRM (Scotland) Act 2009 and associated legislation as local authorities, Scottish Water and, from 21 December 2013, the National Park Authorities and Forestry Commission Scotland. Responsible authorities, along with SEPA and Scottish Ministers, have specific duties in relation to their flood risk related functions.
Return period	A measure of the rarity of a flood event. It is the statistical average length of time separating flood events of a similar size. (see likelihood)
Revetment	Sloping structures placed on banks or at the foot of cliffs in such a way as to deflect the energy of incoming water.
Riparian	The riparian area is the interface between land and a river or stream. For the purposes of FRM this commonly refers to the riparian owner, which denotes ownership of the land area beside a river or stream.
River basin management planning (RBMP)	The Water Environment and Water Services (Scotland) Act 2003 transposed the European Water Framework Directive into Scots law. The Act created the River Basin Management Planning process to achieve environmental improvements to protect and improve our water environment. It also provided the framework for regulations to control the negative impacts of all activities likely to have an impact on the water environment.



Term	Definition
Runoff reduction	Actions within a catchment or sub-catchment to reduce the amount of runoff during rainfall events. This can include intercepting rainfall, storing water, diverting flows or encouraging infiltration.
Scottish Advisory and Implementation Forum for Flooding (SAIFF)	The stakeholder forum on flooding set up by the Scottish Government to ensure legislative and policy aims are met and to provide a platform for sharing expertise and developing common aspirations and approaches to reducing the impact of flooding on Scotland's communities, environment, cultural heritage and economy.
Scottish Flood Forum	The Scottish Flood Forum is a Scottish charitable organisation that provides support for those who are affected by, or are at risk of, flooding. It provides flood advice, information, awareness, education and training to individuals and communities to help reduce the risk of flooding; in partnership with the local authority, provides support during the recovery process following a flood incident and aims to support the development of resilient communities.
Sediment balance	Within a river where erosion and deposition processes are equal over the medium to long-term resulting in channel dimensions (width, depth, and slope) that are relatively stable.
Sediment management	Sediment management covers a wide range of activities that includes anything from the small scale removal of dry gravels to the dredging of whole river channels and the reintroduction of removed sediment into the water environment. Historically, sediment management has been carried out for several reasons, including reducing flood risk, reducing bank erosion, for use as aggregate and to improve land drainage.
Self help	Self-help actions can be undertaken by any individuals, businesses, organisations or communities at risk of flooding. They are applicable to all sources, frequency and scales of flooding. They focus on awareness raising and understanding of flood risk.
Sewer flooding (and other artificial drainage system flooding)	Flooding as a result of the sewer or other artificial drainage system (e.g. road drainage) capacity being exceeded by rainfall runoff or when the drainage system cannot discharge water at the outfall due to high water levels (river and sea levels) in receiving waters.
Site protection plans	Site protection plans are developed to identify whether normal operation of a facility can be maintained during a flood. This may be due to existing protection or resilience of the facility or the network.
Shoreline Management Plan (SMP)	A Shoreline Management Plan is a large scale assessment of the coastal flood and erosion risks to people and the developed, historic and natural environment. It sets out a long-term framework for the management of these risks in a sustainable manner.
Site of Special Scientific Interest (SSSI)	Sites of Special Scientific Interest are protected by law under the Nature Conservation (Scotland) Act 2004 to conserve their plants, animals and habitats, rocks and landforms.
Source of flooding	The type of flooding. This can be coastal, river, surface water or groundwater.
Special Area of Conservation (SAC)	Special Areas of Conservation are strictly protected sites designated under the European Habitats Directive. The Directive requires the establishment

Term	Definition
	of a European network of protected areas which are internationally important for threatened habitats and species.
Special Protection Areas (SPA)	Special Protection Areas are strictly protected sites classified in accordance with the European Birds Directive. They are classified for rare and vulnerable birds (as listed in the Directive), and for regularly occurring migratory species.
Standard of protection (SoP)	All flood protection structures are designed to be effective up to a specified flood likelihood (Standard of Protection). For events beyond this standard, flooding will occur. The chosen Standard of Protection will determine the required defence height and / or capacity.
Storage area	A feature that can be used to store floodwater, this can be natural in the form of low lying land or manmade such as a reservoir or modified landform.
Strategic Environmental Assessment (SEA)	A process for the early identification and assessment of the likely significant environmental effects, positive and negative, of activities. Often considered before actions are approved or adopted.
Strategic Flood Risk Assessment (SFRA)	A Strategic Flood Risk Assessment is designed for the purposes of specifically informing the Development Plan Process. A SFRA involves the collection, analysis and presentation of all existing and readily available flood risk information (from any source) for the area of interest. It constitutes a strategic overview of flood risk.
Strategic mapping and modelling	Strategic mapping and modelling actions have been identified in locations where SEPA is planning to undertake additional modelling or analysis of catchments and coastlines, working collaboratively with local authorities where appropriate, to improve the national understanding of flood risk.
Surcharge	Watercourses and culverts can carry a limited amount of water. When they can no longer cope, they overflow, or 'surcharge'.
Surface water flooding	Flooding that occurs when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.
Surface water management plan (SWMP)	A plan that takes an integrated approach to drainage accounting for all aspects of urban drainage systems and produces long term and sustainable actions. The aim is to ensure that during a flood the flows created can be managed in a way that will cause minimum harm to people, buildings, the environment and business.
Surface water plan/study	The management of flooding from surface water sewers, drains, small watercourses and ditches that occurs, primarily in urban areas, during heavy rainfall. FRM Strategy actions in this category include: Surface Water Management Plans, Integrated Catchment Studies and assessment of flood risk from sewerage systems (FRM Act Section 16) by Scottish Water. These have been selected as appropriate for each Potentially Vulnerable Area.
Sustainable flood risk management	The sustainable flood risk management approach aims to meet human needs, whilst preserving the environment so that these needs can be met not only in the present, but also for future generations. The delivery of



Term	Definition
	sustainable development is generally recognised to reconcile three pillars of sustainability – environmental, social and economic.
Sustainable drainage systems (SuDS)	A set of techniques designed to slow the flow of water. They can contribute to reducing flood risk by absorbing some of the initial rainfall and then releasing it gradually, thereby reducing the flood peak and helping to mitigate downstream problems. SuDS encourage us to take account of quality, quantity and amenity / biodiversity.
UK Climate Change Projections (UKCP09)	The leading source of climate change information for the UK. It can help users to assess their climate risks and plan how to adapt to a changing climate. The high emissions scenario refers to the SRES A1F1 emission scenario. See Annex 1 of the UKCP09 Climate Change Projections report for details
Utility assets	Within the FRM Strategies this refers to electricity sub stations, mineral and fuel extraction sites, telephone assets, television and radio assets.
Vulnerability	A measure of how likely someone or something is to suffer long-term damage as a result of flooding. It is a combination of the likelihood of suffering harm or damage during a flood (susceptibility) and the ability to recover following a flood (resilience).
Wave energy dissipation	Process by which a wave loses its energy.
Wave overtopping	Wave overtopping occurs when water passes over a flood wall or other structure as a result of wave action. Wave overtopping may lead to flooding particularly in exposed coastal locations.