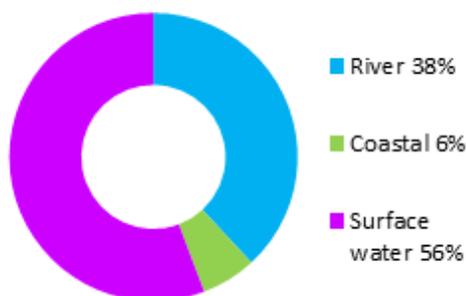


## Cockenzie, Port Seton, Longniddry and Prestonpans (Potentially Vulnerable Area 10/23)

Local Plan District	Local authority	Main catchment
Forth Estuary	East Lothian Council	East Lothian coastal

### Summary of flooding impacts



#### At risk of flooding

- 120 residential properties
- 60 non-residential properties
- £740,000 Annual Average Damages

(damages by flood source shown left)

Summary of flooding impacts

### Summary of objectives to manage flooding

Objectives have been set by SEPA and agreed with flood risk management authorities. These are the aims for managing local flood risk. The objectives have been grouped in three main ways: by reducing risk, avoiding increasing risk or accepting risk by maintaining current levels of management.

Many organisations, such as Scottish Water and energy companies, actively maintain and manage their own assets including their risk from flooding. Where known, these actions are described here. Scottish Natural Heritage and Historic Environment Scotland work with site owners to manage flooding where appropriate at designated environmental and/or cultural heritage sites. These actions are not detailed further in the Flood Risk Management Strategies.

Objectives

### Summary of actions to manage flooding

The actions below have been selected to manage flood risk.

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

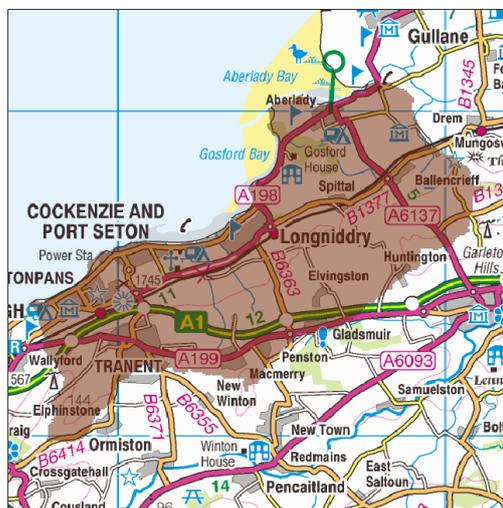
Actions

# Cockenzie, Port Seton, Longniddry and Prestonpans (Potentially Vulnerable Area 10/23)

Local Plan District	Local authority	Main catchment
Forth Estuary	East Lothian Council	East Lothian coastal

## Background

This Potentially Vulnerable Area is 65km<sup>2</sup> and part of the East Lothian and Berwickshire catchment (shown below). This is a moderately sized coastal area covering Cockenzie and Port Seton, Tranent, Prestonpans and Longniddry. The main watercourses are the Redhouse Burn and the Seton Dean.

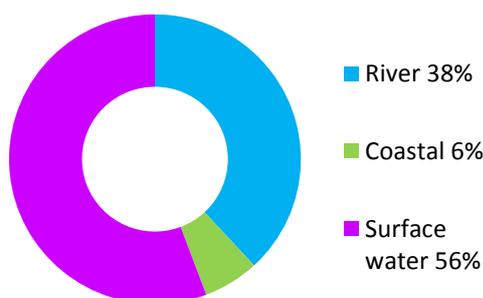


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The area has a risk of river, surface water and coastal flooding. The majority of damages are caused by surface water flooding.

There are approximately 120 residential properties and 60 non-residential properties at risk of flooding.

The Annual Average Damages are approximately £730,000.



**Figure 1: Annual Average Damages by flood source**

## Summary of flooding impacts

The highest risk of surface water flooding is in Tranent.

The risk of flooding to people, property, as well as community facilities, utilities, the transport network, designated sites and agricultural land is summarised in Table 1.

The damages associated with floods of different likelihood are shown in Figure 2. For this Potentially Vulnerable Area the highest damages are to roads, notably the A1 and A198, followed by damages to residential properties. The location of the impacts of flooding is shown in Figure 3.

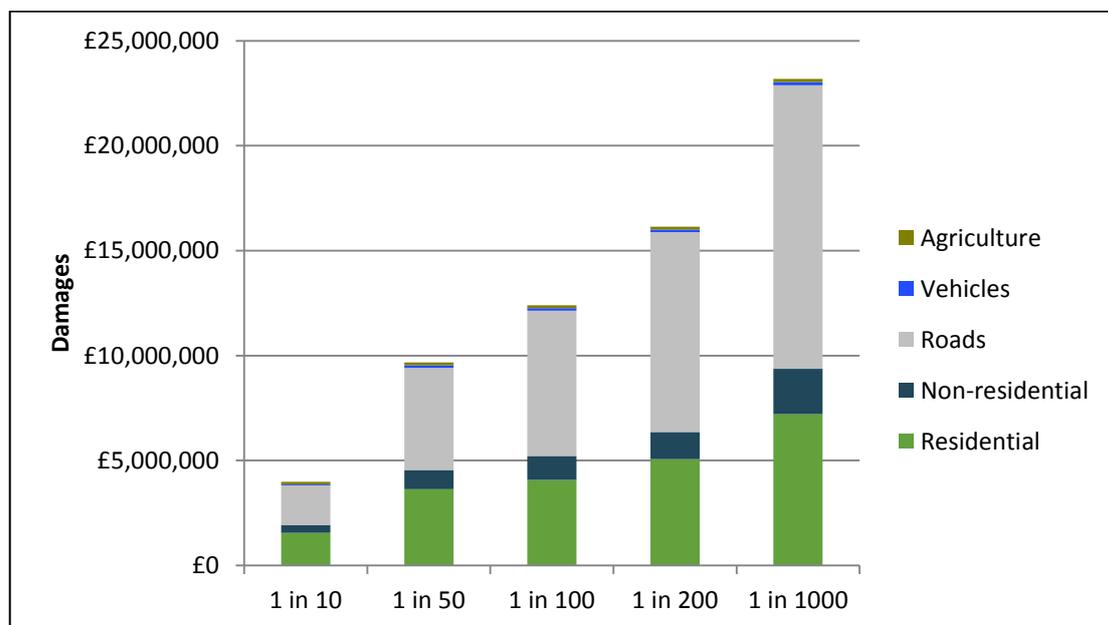
The figures presented for Annual Average Damages include damages to residential properties, non-residential properties, transport and agriculture.

The risk of flooding to utilities in Table 1 does not include Scottish Water data. Scottish Water undertook a national assessment of above ground assets at medium likelihood of flooding (including water treatment works, wastewater treatment works

and pumping stations). Within this Potentially Vulnerable Area there is one asset identified as being at risk of flooding.

	1 in 10 High likelihood	1 in 200 Medium likelihood	1 in 1000 Low likelihood
Residential properties (total 14,000)	50	120	180
Non-residential properties (total 1,100)	30	60	70
People	110	260	390
Community facilities	0	0	0
Utilities	<10	10	10
Transport links (excluding minor roads)	4 A roads, 7 B roads at 103 locations  1 Railway route at 23 locations: Berwick-upon-Tweed to Edinburgh	4 A roads, 7 B roads at 158 locations  1 Railway route at 28 locations: Berwick-upon-Tweed to Edinburgh	4 A roads, 7 B roads at 174 locations  1 Railway route at 29 locations: Berwick-upon-Tweed to Edinburgh
Environmental designated areas (km <sup>2</sup> )	0.5	0.5	0.6
Designated cultural heritage sites	19	24	25
Agricultural land (km <sup>2</sup> )	1.4	1.9	2.1

**Table 1:** Summary of flooding impacts



**Figure 2:** Damages by flood likelihood

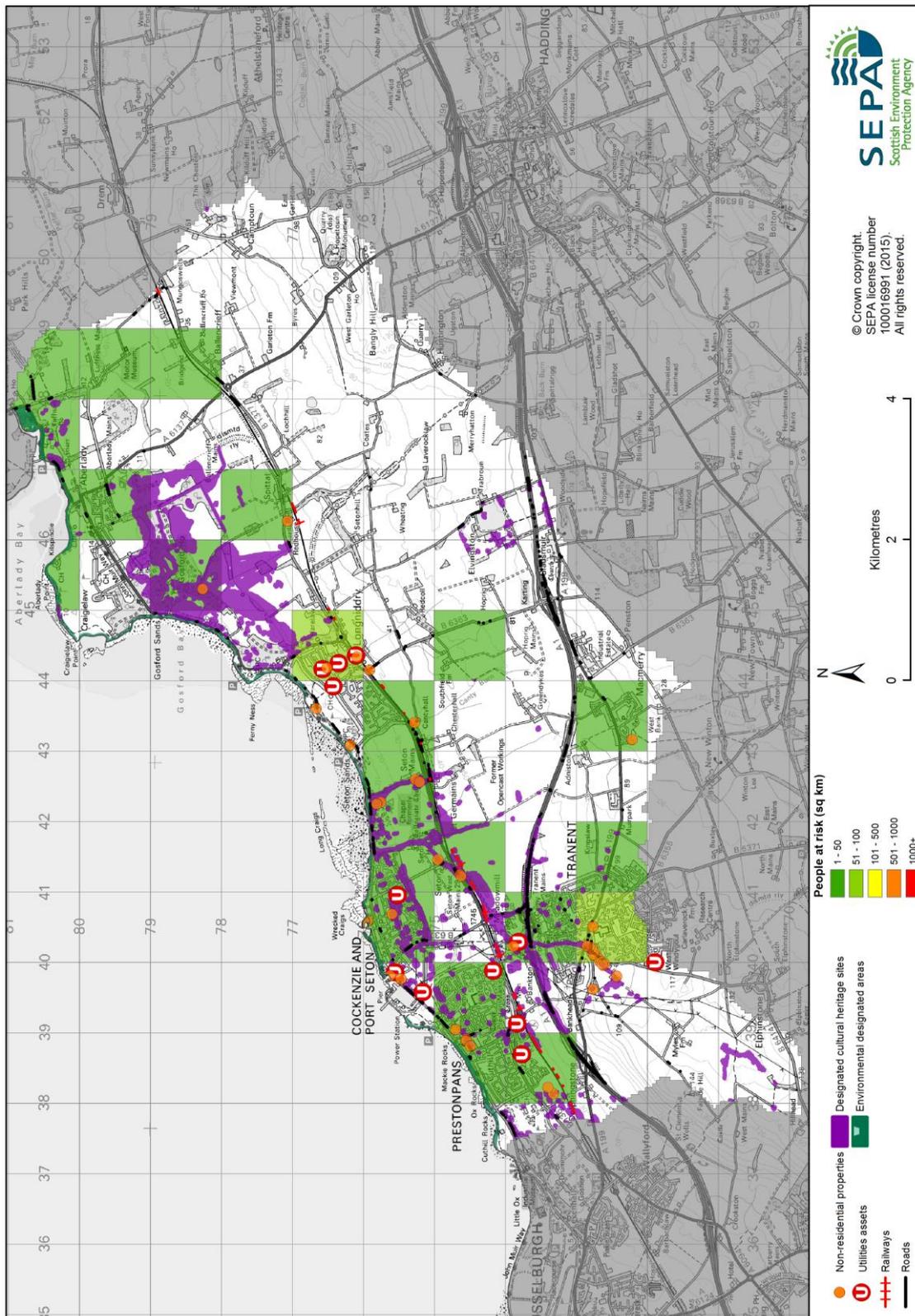


Figure 3: Impacts of flooding

## History of flooding

One significant coastal flood has been recorded in this area. On 30 March 2010, a tidal surge coincided with the highest mean tides of the year and caused extensive flooding along the east coast of Scotland. The Firth of Forth, notably Leith, Musselburgh, Prestonpans, Port Seton, Dunbar and North Berwick were badly affected. Impacts included flooding of properties, damage to harbours, seawalls and roads.

## Objectives to manage flooding in Potentially Vulnerable Area 10/23

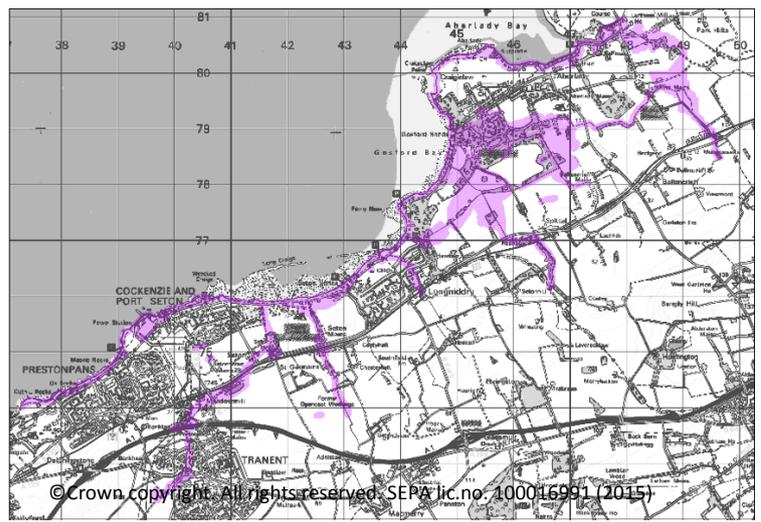
Objectives provide a common goal and shared ambition for managing floods. These objectives have been set by SEPA and agreed with flood risk management authorities following consultation. They were identified through an assessment of the underlying evidence of the causes and impacts of flooding. Target 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 Cockenzie, Port Seton, Longniddry and Prestonpans Potentially Vulnerable Area.

### Reduce economic damages to residential and non-residential properties in the Cockenzie, Port Seton, Longniddry and Prestonpans Potentially Vulnerable Area caused by river and coastal flooding

Indicators:

Target area:

- £230,000 Annual Average Damages from residential properties
- £40,000 Annual Average Damages from non-residential properties



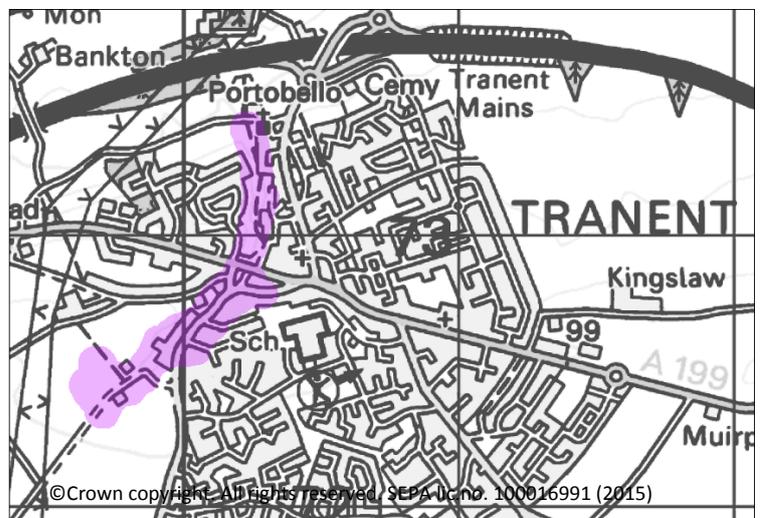
Objective ID: 10080

### Reduce risk to people in Tranent from river flooding

Indicators:

Target area:

- 90 people



Objective ID: 10081

Target area	Objective	ID	Indicators within PVA
Applies across Forth Estuary Local Plan District	Avoid an overall increase in flood risk	10001	<ul style="list-style-type: none"> <li>• 120 residential properties</li> <li>• £730,000 Annual Average Damages</li> </ul>
Applies across Forth Estuary Local Plan District	Reduce overall flood risk	10099	<ul style="list-style-type: none"> <li>• 120 residential properties</li> <li>• £730,000 Annual Average Damages</li> </ul>
Applies across Forth Estuary Local Plan District	Organisations such as Scottish Water, energy 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.		

## Actions to manage flooding in Potentially Vulnerable Area 10/23

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 Cockenzie, Port Seton, Longniddry and Prestonpans Potentially Vulnerable Area.

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

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (100800005)</b>		
<b>Objective (ID):</b>	Reduce economic damages to residential and non-residential properties in the Cockenzie, Port Seton, Longniddry and Prestonpans Potentially Vulnerable Area caused by river and coastal flooding (10080)		
<b>Delivery lead:</b>	East Lothian Council		
<b>Priority:</b>	National:		Within local authority:
	<b>61 of 168</b>		<b>1 of 3</b>
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	A flood protection study has been recommended for Cockenzie, Port Seton and Prestonpans to assess whether modification of conveyance, installation/ modification of fluvial control structures, flood defences, sediment management and natural flood management could reduce flood risk. The study should also consider the viability of property level protection. Natural flood management options that should be considered include wave attenuation. The study should take a sustainable approach and consider the interaction between actions upstream and downstream and potential effects on coastal processes along the shoreline.		
<b>Potential impacts</b>			
<b>Economic:</b>	The study could benefit 63 residential properties and 14 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £6.2 million.		
<b>Social:</b>	Social impacts will depend on the outcome of the study and recommended actions. 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. Natural flood management actions can restore and enhance natural environments		

<b>Social:</b>	and create opportunities for recreation and tourism.
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Where possible opportunities to enhance and restore the environment should be sought, for example through natural flood management. 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 Firth of Forth Special Protection Area. Conservation areas, scheduled monuments, gardens and designed landscapes and battlefields are also present in the study area and could be positively or negatively impacted.

<b>Action (ID):</b>	<b>FLOOD PROTECTION STUDY (100810005)</b>		
<b>Objective (ID):</b>	Reduce risk to people in Tranent from river flooding (10081)		
<b>Delivery lead:</b>	East Lothian Council		
<b>Priority:</b>	National:	Within local authority:	
	<b>79 of 168</b>	<b>2 of 3</b>	
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	A flood protection study has been recommended for Tranent to assess whether modification of conveyance, installation/ modification of fluvial control structures, direct flood defences and sediment management could reduce flood risk. The study should take a catchment approach and consider the potential benefits and disbenefits and interaction between actions upstream and downstream.		
<b>Potential impacts</b>			
<b>Economic:</b>	The study could benefit 29 residential properties and 46 non-residential properties at risk of flooding in this location, with potential damages avoided of up to £4.6 million.		
<b>Social:</b>	Social impacts will depend on the outcome of the study and recommended actions. 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.		
<b>Environmental:</b>	Flood protection studies should consider the positive and negative impacts of proposed actions on the ecological quality of the environment and designated sites. Where possible opportunities to enhance and restore the environment should be sought, for example through natural flood management. Conservation areas and battlefields are also present in the study area and could be positively or negatively impacted.		

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (100990016)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<b>Delivery lead:</b>	SEPA		

<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	SEPA will seek to incorporate additional surface water data into the flood maps to improve understanding of flood risk. Approximately 2,600km <sup>2</sup> of improved surface water data is currently available within this Local Plan District. The inclusion of additional surface water hazard data resulting from the completion of local authority surface water management plans and Scottish Water integrated catchment studies will be considered when these projects are completed.		

<b>Action (ID):</b>	<b>STRATEGIC MAPPING AND MODELLING (100990019)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<b>Delivery lead:</b>	Scottish Water		
<b>Status:</b>	<b>Not started</b>	Indicative delivery:	<b>2016-2021</b>
<b>Description:</b>	Scottish Water will review the assessment of flood risk within the highest risk sewer catchments to improve knowledge and understanding of surface water flood risk.		

<b>Action (ID):</b>	<b>MAINTAIN FLOOD PROTECTION SCHEME (100800017)</b>		
<b>Objective (ID):</b>	Reduce economic damages to residential and non-residential properties in the Cockenzie, Port Seton, Longniddry and Prestonpans Potentially Vulnerable Area caused by river and coastal flooding (10080)		
<b>Delivery lead:</b>	East Lothian Council		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	Continue to maintain the existing flood defences along the coast.		

<b>Action (ID):</b>	<b>MAINTAIN FLOOD WARNING (100990030)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	Continue to maintain the Prestonpans and Port Seton flood warning area which is part of the Firth of Forth and Tay coastal flood warning scheme.		

<b>Action (ID):</b>	<b>FLOOD FORECASTING (100990009)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<b>Delivery lead:</b>	SEPA		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	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.		

<b>Action (ID):</b>	<b>COMMUNITY FLOOD ACTION GROUPS (100800012)</b>		
<b>Objective (ID):</b>	Reduce economic damages to residential and non-residential properties in the Cockenzie, Port Seton, Longniddry and Prestonpans Potentially Vulnerable Area caused by river and coastal flooding (10080)		
<b>Delivery lead:</b>	Community		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	East Lothian Tenants and Residents Panel and Port Seton and Cockenzie Coastal Regeneration Group operate in this area. The groups could help increase community resilience to flooding.		

<b>Action (ID):</b>	<b>SELF HELP (100990011)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<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 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.		

<b>Action (ID):</b>	<b>AWARENESS RAISING (100990013)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<b>Delivery lead:</b>	Responsible authorities		
<b>Status:</b>	<b>Existing</b>	Indicative delivery:	<b>Ongoing</b>
<b>Description:</b>	<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.</p> <p>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>Local authorities will be undertaking additional awareness raising activities. Further details will be set out in the Local FRM Plan.</p>		

<b>Action (ID):</b>	<b>MAINTENANCE (100990007)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<b>Delivery lead:</b>	East Lothian 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. Scottish Water undertake inspection 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.</p>		

<b>Action (ID):</b>	<b>EMERGENCY PLANS/RESPONSE (100990014)</b>		
<b>Objective (ID):</b>	Reduce overall flood risk (10099)		
<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 co-ordinated through regional and local resilience partnerships. This response may be supported by the work of voluntary organisations.</p> <p>East Lothian Council strategically deploys temporary flood barriers and sandbags when properties are threatened by flooding.</p>		

<b>Action (ID):</b>	<b>PLANNING POLICIES (100010001)</b>		
<b>Objective (ID):</b>	Avoid an overall increase in flood risk (10001) Reduce overall flood risk (10099)		
<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. For further information on the application of national planning policies see Annex 2.</p>		