

**REPORT TO:** Cabinet

**MEETING DATE:** 21 October 2014

**BY:** Depute Chief Executive (Partnerships and Community Services)

**SUBJECT:** Flood Risk Management Strategy

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## **1 PURPOSE**

- 1.1 To update Cabinet on the Flood Risk Management Strategy process and to seek approval of the draft Strategy including the Short List of Actions prior to a period of public consultation.

## **2 RECOMMENDATIONS**

- 2.1 That Cabinet note the Characterisation Reports lodged within the Members' Library and approve the Objectives and Short List of Measures attached to this report as part of the ongoing Flood Risk Management Strategy process.

## **3 BACKGROUND**

- 3.1 A report to the May 2014 Cabinet meeting outlined the requirements of the Flood Risk Management (Scotland) Act 2009 and recommended approval of the Coastal Characterisation Report as part of the ongoing Flood Risk Management Strategy process.
- 3.2 The Flood Risk Management Strategy process has produced further Characterisation Reports for River (Fluvial) Flooding and Surface Water (Pluvial) Flooding; Characterisation Summary Reports for the 5 Potentially Vulnerable Areas (PVA) in East Lothian (PVA 10/21 – 10/25); Objectives for the management of flood risk within the PVAs; and a Short List of Actions that will ensure the most sustainable combination of actions is selected to manage the identified flood risk.
- 3.3 These papers were tabled at the SEPA Briefing held on 7 October 2014 and have been lodged in the Members' Library.

- 3.4 The LPD Overview, Objectives and the Short List of Actions for the East Lothian PVAs are attached to this report.
- 3.5 Phase 1 (Characterisation Reports) of the Flood Risk Management Strategy Public Consultation will commence on 22 December 2014 with Phase 2 (Characterisation Reports, Objectives, Actions and Local Flood Risk Management Plan delivery plans) running from March to June 2015.
- 3.6 The Final Flood Risk Management Strategy will be published in December 2015 and the Final Local Flood Risk Management Plans will be published in June 2016.

#### **4 POLICY IMPLICATIONS**

- 4.1 The Flood Risk Management (Scotland) Act 2009 places a statutory responsibility on the local authority to exercise their flood risk related functions with a view to reducing overall flood risk and complying with the EC Floods Directive. A key responsibility is the preparation of a Flood Risk Management Strategy and Local Flood Risk Management Plan in accordance with the Directive.

#### **5 EQUALITIES IMPACT ASSESSMENT**

- 5.1 This report is not applicable to the well being of equalities groups and an Equalities Impact Assessment is not required.

#### **6 RESOURCE IMPLICATIONS**

- 6.1 Financial - The financial provision for the preparation of the Flood Risk Management Strategy and Plans will be allocated from the 2014/15 Flooding and Coastal Protection budgets.

Provision for Flood Protection Schemes identified in the Flood Risk Management Plan will be required in future years and will be influenced by future settlements from the Scottish Government

- 6.2 Personnel - None
- 6.3 Other - None

#### **7 BACKGROUND PAPERS**

- 7.1 Appendix 1 – Local Plan District Overview
- 7.2 Appendix 2 – Flood Risk Management Initial Objectives for East Lothian Council area (October 2014)

7.3 Appendix 3 – Flood Risk Management Short List of Actions for East Lothian Council area (October 2014)

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## SECTION 2:

# FORTH ESTUARY LOCAL PLAN DISTRICT

## CHAPTER 3: LOCAL PLAN DISTRICT OVERVIEW

### 3.1 Forth Estuary Local Plan District

The Forth Estuary Local Plan District (LPD) has an area of 3,256km<sup>2</sup> with a population of approximately 1.4 million and includes Edinburgh, Livingston, Cumbernauld, Falkirk, Dunfermline, Kirkcaldy and Glenrothes (Figure 1).

The main river catchments in the LPD include the River Leven, River Carron, River Avon, River Almond, Water of Leith, River Esk, River Tyne and the Eye Water.

The Largest Lochs in the LPD include the Carron Valley and Loch Coulter reservoirs that are in the River Carron catchment. Loch Leven in the River Leven Catchment, Cobbinshaw Reservoir in the River Almond Catchment and Harperrig, Threipmuir and Harlaw Reservoirs in the Water of Leith Catchment.

The LPD has 375km of coastline that includes the Firth of Forth and the Berwickshire coast. The Firth of Forth is the largest estuary on the East coast of Scotland and extends 95km from Stirling in the West, where the River Forth flows into estuary, to Fife Ness in the East where it meets the North Sea.

The Forth Estuary LPD includes part of the Scotland central belt and is relatively urbanised. The areas in the North of the Firth of Forth in Fife, and along the Berwickshire coast in East Lothian and the Borders are more rural in nature. The main types of land cover in the LPD are:

- 10% Urban
- 35% Arable and Horticulture
- 31% Grassland
- 13% Woodland
- 6% Heather and heather grassland
- 5% Other



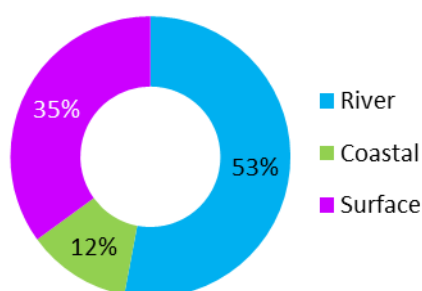
## Flood Risk in the Forth Estuary Local Plan District

The National Flood Risk Assessment (2011) identified 27 Potentially Vulnerable Areas (PVAs) in the Forth Estuary LPD, where flood risk is considered nationally significant. Subsequently, a review of flood risk identified two further PVAs for further analysis. The location of the 29 areas is shown in Figure 1. It is estimated that 87% of residential and non-residential properties at a medium likelihood of flooding from all sources are located within these PVAs.

Approximately 14,000 residential properties and 3,700 non-residential properties are at a medium likelihood of flooding from all sources.

The total Annual Average Damages (AADs) caused by all sources of flooding are approximately £34 million (this includes damages to residential properties, non-residential properties, transport and agriculture).

River flooding is the main source of flooding in the LPD, followed by surface water flooding (Figure 2). The damages caused by river flooding are approximately £18 million AADs, damages caused by surface water flooding are approximately £12 million AADs and damages caused by coastal flooding<sup>1</sup> are approximately £4 million AADs.



**Figure 2: Sources of flooding in the Forth Estuary Local Plan District (based on contribution to Annual Average Damages)**

The main urban areas with a medium likelihood of flooding from all sources can be seen in Table 1. Table 1 shows the number of residential properties at risk and the total Annual Average Damages (AADs) caused by flooding, which includes damages to residential properties, non-residential properties, transport and agriculture.

**Table 1 – Main urban areas with a risk of flooding from all sources<sup>2</sup>**

Locations	No of residential properties at a medium likelihood of flooding	Total Annual Average Damages
Edinburgh	6,500	£8,500,000
Musselburgh	1,400	£3,300,000
Dunfermline	270	£1,300,000
Buckhaven-Methil-Leven	200	£860,000
Grangemouth	720	£782,000
Linlithgow	310	£750,000
Airth	100	£670,000
Falkirk	310	£650,000
Glenrothes-Markinch-Leslie	140	£600,000
Haddington	230	£560,000

<sup>1</sup> 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 cover areas such as estuaries and river channels that are influenced by tidal flows.

<sup>2</sup> Table 1 does not show properties at risk if they are protected by a formal Flood Protection / Prevention Scheme with a known standard of protection of 1 in 200 years.

## 3.2 Administrative arrangements within the Local Plan District

### Roles and responsibilities

SEPA is responsible for producing the Flood Risk Management Strategy for the LPD. The City of Edinburgh Council is the lead local authority responsible for producing the Local Flood Risk Management Plan for the LPD.

A Local Plan District Partnership has been set up that includes the responsible authorities, to develop the Flood Risk Management Strategies and Local Flood Risk Management Plans. The members of the LPD partnership are:

- SEPA
- Scottish Water
- City of Edinburgh Council
- Clackmannanshire Council
- East Lothian Council
- Falkirk Council
- Fife Council
- Midlothian Council
- North Lanarkshire Council
- Perth and Kinross Council
- Scottish Borders Council
- Stirling Council
- West Lothian Council

### Stakeholder engagement

A National Flood Management Advisory Group (NFMAG) is in place to provide advice to SEPA on the preparation of the Flood Risk Management Strategies. NFMAG has a wide variety of members reflecting the impact of flooding on communities, the environment, cultural heritage, the economy and human health. This group also includes representation from national transport and utilities providers.

Local Advisory Groups are in place to provide advice to SEPA and the Lead Local Authority on the production of the Flood Risk Management Strategies (FRM Strategies) and Local Flood Risk Management Plans (LFRMPs).

The Forth Local Advisory Group provides advice on the FRM Strategies and LFRMP's for the Forth LPD and Forth Estuary LPD. Membership of the Local Advisory Group comprises stakeholders representing organisations who have an interest in flood risk management and how it is delivered. Organisations invited to attend include Scottish Natural Heritage, Royal Society for the Protection of Birds and the main land managers.

The Local Advisory Groups work closely with the River Basin Management Plan, Area Advisory Groups. It is important that the activities of these two groups are coordinated so that improvements in water quality can be achieved in conjunction with managing flood risk in a sustainable manner.

Wider engagement with the public is through a statutory consultation process for the Draft Flood Risk Management Strategies and Local Flood Risk Management Plans due to run from late December 2014. Comments received will be considered by the Partnership in the preparation of the final Flood Risk Management Strategies in December 2015 and final Local Flood Risk Management Plans in June 2016.



### Flood risk management initial objectives for East Lothian council area (October 2014)

PVA Description (PVA ref)	Objective type	Source	Scale	Objective description	Indicator	Baseline
Forth Estuary	Avoid	All	LPD	Avoid an overall increase in flood risk	-	-
Musselburgh (10/21)	Reduce	Surface Water	PVA	Reduce number of residential properties at risk of surface water flooding as far as practical	No. RP at risk 1 in 200 Surface Water	50
Musselburgh (10/21)	Reduce	Surface Water	PVA	Reduce economic damages from surface water flooding as far as practical	Total AAD Surface Water	£149,370
Musselburgh (10/21)	Reduce	River and coastal	PVA	Reduce economic damages to residential and non-residential properties in Musselburgh caused by flooding from the River Esk and coastal flooding	AAD RP	£1,574,382
					AAD NRP	£1,228,273
					Type and No. of Community Facilities 1 in 200	1 x Care Home, 1 x Educational Building
Musselburgh (10/21)	Reduce	River	PVA	Reduce risk to people in Musselburgh from flooding from the River Esk	No. of People at Risk 1 in 200	2844
Lasswade, Penicuik, Dalkeith, Musselburgh (10/22)	Reduce	River	PVA	Reduce economic damages to residential and non-residential properties caused by river flooding	AAD RP	£65,151
					AAD NRP	£38,917
Lasswade, Penicuik, Dalkeith, Musselburgh	Reduce	River	PVA	Reduce economic damages to residential and non-residential properties in Musselburgh caused by flooding from the River Esk	AAD RP	£95,939
					AAD NRP	£392,846

(10/22)						
Lasswade, Penicuik, Dalkeith, Musselburgh (10/22)	Reduce	River	PVA	Reduce risk to people in Bilston, Dalkeith and Musselburgh from river flooding	No. of People at Risk 1 in 200	366
Cockenzie & Port Seton, Longniddry, Prestonpans (10/23)	Reduce	River and Coastal	PVA	Reduce economic damages to residential and non-residential properties caused by river and coastal flooding	AAD RP	£225,705
					AAD NRP	£40,262
Cockenzie & Port Seton, Longniddry, Prestonpans (10/23)	Reduce	River	PVA	Reduce risk to people in Tranent from river flooding	No. of People at Risk 1 in 200	85
Haddington (10/24)	Reduce	River	PVA	Reduce economic damages to residential and non-residential properties in Haddington caused by flooding from the River Tyne	AAD RP	£373,576
					AAD NRP	£183,265
Dunbar, West Barns (10/25)	Reduce	River and Coastal	PVA	Reduce economic damages to residential and non-residential properties caused by river and coastal flooding	AAD RP	£65,625
					AAD NRP	£32,490

### Flood risk management short list of actions for East Lothian council area (October 2014)

Measure Category	PVA 10/21 Source: Fluvial	PVA 10/21 Source: Coastal	PVA 10/22 Source: Fluvial	PVA 10/22 Source: Fluvial	PVA 10/23: Source: Fluvial	PVA 10/23 Source: Coastal	PVA 10/24 Source: Fluvial	PVA 10/25 Source: Fluvial	PVA 10/25 Source: Coastal
Maintenance of existing flood protection schemes	N	N	Y	N	N	Y	N	N	N
Relocation	Y	Y	Y	Y	Y	Y	Y	Y	Y
Application of National Planning Policies	Y	Y	Y	Y	Y	Y	Y	Y	Y
Application of Local Planning Policies	Y	Y	Y	Y	Y	Y	Y	Y	Y
Runoff control	N	N	Y	N	N	N	Y	Y	N
River/floodplain restoration	N	N	N	N	N	N	Y	Y	N
Sediment management	Y	N	Y	Y	Y	N	Y	Y	N
Wave attenuation	N	Y	N	N	N	Y	N	N	Y
Surge attenuation	N	N	N	N	N	N	N	N	N
Construction of Online and Offline storage	N	N	N	N	N	N	N	N	N
Modification of Conveyance	N	N	N	N	Y	N	Y	Y	N
Installation / modification of fluvial control structures	N	N	N	N	Y	N	Y	N	N
Installation / modification of coastal control structures	N	N	N	N	N	N	N	N	N
Construction of Direct flood Defences	Y	Y	Y	Y	Y	N	Y	Y	Y
Sustainable Urban Drainage	N	N	N	N	N	N	N	N	N
Watercourse Maintenance	Y	N	Y	Y	Y	N	Y	Y	N
Property level protection	Y	Y	Y	Y	Y	Y	Y	Y	Y
Flood Forecasting & Warning	Y	Y	N	Y	N	Y	Y	N	Y
Self Help	Y	Y	Y	Y	Y	Y	Y	Y	Y
Emergency Plans	Y	Y	Y	Y	Y	Y	Y	Y	Y
Site Protection Plans	Y	Y	Y	Y	Y	Y	Y	Y	Y
Improved Understanding through modelling and assessment	Y	Y	Y	Y	Y	Y	Y	Y	Y
No. of Actions	12	11	13	12	13	11	16	14	11

