



## The Water Environment

West Lothian Local Development Plan: background paper

---

*The purpose of this background paper is to provide an overview of issues the council has to have regard to in terms of our water environment when producing a land use development plan for West Lothian, in this instance the West Lothian Local Development Plan (LDP). It provides a background on the importance of protecting the best of our water environment, i.e. our rivers, streams, canals and reservoirs in biodiversity as well as amenity terms in what our watercourses and water bodies provide for us, as well as ensuring no new developments are at risk from flooding or would detrimentally impact upon the amenity and biodiversity of them for future generations*



## Contents

---

<b>1</b>	Introduction and purpose	3
<b>2</b>	Overview of Flood Risk Management (Scotland) Act 2009 and Flood Risk Management Planning Process	4
<b>3</b>	Flood Risk Management Plans and Flood Risk Management	6
<b>4</b>	River Basin management planning	7
<b>5</b>	Strategic Flood Risk Assessment (SFRA)	10
<b>6</b>	Land use and vulnerability guidance	13
<b>7</b>	SESplan requirements	17
<b>8</b>	Local works in West Lothian to alleviate flooding	18
<b>9</b>	Building the Hydro Nation – Scottish Government Consultation Paper 2011	20
<b>10</b>	Protection and improvement of the water environment	21
<b>11</b>	Assessment of existing site allocations and emerging sites	21





## 1 Introduction and purpose

The purpose of this background paper is to provide an overview of issues the council has to have regard to in terms of the water environment when producing a land use development plan for West Lothian, in this instance to produce the *West Lothian Local Development Plan* (LDP) to replace the adopted *West Lothian Local Plan 2009*.

As well as this background paper, the council has also produced a *Strategic Flood Risk Assessment* in respect of potential development sites that may be included in the plan. The *Strategic Environmental Assessment* (SEA) to accompany the LDP also assesses the impact on the water environment in terms of individual sites as well as in terms of preferred and alternative strategies. In terms of sites, an assessment is made of whether a site would be at a risk of flooding or would increase a risk of flooding on other sites or existing developments and also in terms of at least maintaining the baseline status of 'water bodies' (refer to SEPA [Water Body Data Sheets](#) in West Lothian) in terms of their quality, which also supports biodiversity and the environment.

Flooding will continue to be a major issue that development plans should continue to consider when producing development plans and is referred to in both *National Planning Framework 2* (NPF2) and *Scottish Planning Policy* (SPP). Flooding is also mentioned in the emerging NPF3. The NPF states that future climate scenarios suggest wetter winters and warmer average temperatures. Scotland is likely to experience an increase in the frequency of severe weather, a rise in sea level, stronger tidal surges and less snow. Climate change also poses challenges for the water environment and water infrastructure.



## 2 Overview of Flood Risk Management (Scotland) Act 2009 and Flood Risk Management Planning Process

As introduced by the Flood Risk (Scotland) 2009 (FRM Act), SEPA, Scottish Government, local authorities and Scottish Water are working closely to implement a co-ordinated and plan-led approach to how we manage flood risk. There is now a requirement for a greater understanding of the sources and impacts of all sources of flooding (rivers, the sea or from surface water) so plans can be better prepared to manage flood risk in Scotland.

This leads to a selection of actions that will meet the needs of present and future generations whilst also helping to protect the environment. The new approach will encourage Scotland and indeed West Lothian to take action where the greatest risks and benefits have been identified. A catchment based approach will be adopted to identify a range of actions that can reduce the impact and likelihood of flooding.

The range of actions that will be considered will include structural measures (such as flood defences, clearance and repair works) and non structural measures (such as flood warning, land use and planning) which, in combination, will be used to manage flood risk sustainably. The FRM Act sets out a flood risk management planning process that balances national consistency and strategic decisions with local knowledge and accountability.

The hierarchy and key stages are listed:

### [National Flood Risk Assessment \(NFRA\)](#)

SEPA published Scotland's first [NFRA](#) in December 2011.

The assessment, which showed that one in 22 residential properties and one in 13 non-residential properties are at risk of flooding, represents a significant step forward in our understanding and ability to manage flood risk. The NFRA is the foundation upon which the risk-based sustainable and plan-led approach to FRM in Scotland will be built.

### Local Plan Districts (LPD)

For Flood Risk Management purposes, Scotland is divided into 14 LPDs. LPDs are geographical areas for the production of *Flood Risk Management Plans*. They include whole river catchments and cross local authority boundaries. For each LPD, a *Flood Risk Management Strategy* will be produced by SEPA and a *Local Flood Risk Management Plan* and *Surface Water Management Plan* will be produced by a lead local authority. The plans will be produced in partnership with other responsible authorities and in consultation with Local Advisory Groups.

### Potentially Vulnerable Areas (PVAs)

Using the NFRA, SEPA identified areas where the potential impact of flooding justifies further assessment and appraisal of Flood Risk Management Actions. These areas are based on catchments and are called **Potentially Vulnerable Areas (PVAs)**. 243 PVAs were identified by SEPA and approximately 92% of the total number of properties at risk within Scotland falls within these areas. This does not mean that people at risk from flooding outside of these areas are excluded from the Flood Risk Management Planning process.

### Flood Risk Management Strategies and Local Flood Risk Management Plans

For each LPD, two sets of complementary plans will be produced by lead local authorities. The Flood Risk Management Strategies will identify the main hazards and impacts, setting out objectives for reducing risk and the best combination of actions to achieve this. The 14 Flood Risk Management Strategies, taken together, will comprise a national flood risk management plan for Scotland. The *Local Flood Risk Management Plans* will take these objectives and set out specific actions that will be taken, by whom and at what time, to deliver them within a six year planning cycle. The first cycle will run from 2015 to 2021.

### Planning Advice Note – Flooding and Drainage

The Scottish Government has commenced work to produce a consolidated Planning Advice Note (PAN) on *Flooding, Water and Drainage*. The consolidated PAN will replace:

PAN 61 – *Planning and SUDS*

PAN 69 – *Planning and Building Standards Advice on Flooding*

PAN 79 – *Water and Drainage*

The Consolidated PAN presents the opportunity to develop a co-ordinated approach to flood risk, water and drainage. The PAN, which will be published in due course will convey the expectations and responsibilities placed upon planning authorities by SPP, the FRM Act 2009, and other relevant legislation and guidance including delivering sustainable flood risk management and the Climate Change (Scotland) Act 2009.

The PAN will provide advice rather than amend existing national policy i.e. provide guidance, good practice and relevant information. It will not amend the SPP. This may be reviewed again following the review of SPP which may be concluded in 2013.

The PAN, will be shorter and more focused on key planning principles, to reflect *Delivering Planning Reform*

Sustainable Flood Risk Management will be the overarching theme. The PAN will refer to and build upon existing guidance produced by a variety of organisations including the Scottish Government, SEPA, Scottish Water, Society of Chief Officers in Transportation in Scotland (SCOTS) and the SUDS Scotland Working Party (SSWP).



### 3 Flood Risk Management Plans

The Flood Risk Management (Scotland) Act 2009 requires Flood Risk Management Plans to be prepared by councils in conjunction with SEPA to manage flood risk. The plans will provide a framework for co-ordinating actions across catchments to deal with all forms of flooding and its impacts and can also be used to inform land use development plans, such as SESplan and the *West Lothian Local Development Plan*. They will also ensure flood management decisions balance local and national priorities and provide a basis for long term planning.

- SEPA will prepare district flood risk management plans that will establish the District Plans and will ensure that the objectives and measures set out in District Plans are based on locally targeted and co-ordinated actions to manage flood risks.
- SEPA is the competent authority for the flood directive, however LPAs will be expected to make a significant contribution to the preparation of assessments, maps and plans to comply with directive requirements.
- SEPA will co-ordinate flood risk management efforts.
- SEPA will facilitate good decision making through co-ordinating and acquiring information.
- SEPA will provide the necessary level of strategic national planning guidance and prioritisation.
- councils will be responsible for preparing 'Local Flood Risk Management Plans'. These will supplement the District Plans and ensure that the objectives and measures set out in District Plans are based on locally targeted and co-ordinated actions to manage flood risks.
- the 'Local Flood Risk Management Plans' must be consistent with 'District Plans' i.e. they must be based upon the same objectives and measures – equally, all local flood risk management planning will need to reflect national and strategic objectives set out in District Plans.
- Flood Risk Management Plans (FRMP) will also include a 'supplemental' part and an 'implementation' part
- the implementation part will describe when measures will take place and who will be responsible for funding and undertaking each measure. Where agreement cannot be reached on the content of a Local Flood Risk Management Plan (FRMP), including the implementation strategy, the FRM Act provides that Scottish Ministers can intervene to determine the content of the FRMP.
- where FRMP boundaries cross a local authority boundary, a lead local authority must be identified for preparing the plan.



#### 4 River Basin management planning

The nFRA is derived from an assessment of the adverse consequences of 'future' floods and consideration of other information including climate change, historical flood information, catchment hydrological and geomorphological characteristics and existing flood defence structures. The main driver, however, is considered to be the assessment of adverse consequences arising from future floods.

The nFRA output will be a set of Inter Confluence Catchments (ICCs)<sup>1</sup>, categorised according to a quantitative grid assessment output and a thorough qualitative review process. The ICC review process has been designed to take account of the uncertainties within the nFRA. During the review process it is possible for areas to be upgraded or downgraded based on further national or local information. The review process includes an assessment based on historical flooding records; catchment characteristics; review of flood protection schemes and identified infrastructure.



## Flood Risk and Management

Increased flood risk is perhaps one of the most serious potential consequences of climate change that West Lothian faces, with sea level rise and a wetter, stormier climate exacerbating existing risk from coastal, fluvial (river) and pluvial (surface water) flooding. West Lothian only has a small coastline in terms of any flood risk from the estuarial Forth, no significant risk has been identified by either the council or SEPA to the small number of properties closest to the river at Society.

Like many other parts of the United Kingdom, West Lothian is experiencing the effects of changing climate and an increased incidence of flooding affecting homes and businesses. Research predicts that these trends will continue.

West Lothian Council has a dedicated Flood Risk Management team which is responsible for evaluating the causes of flooding within the area and putting in place measures to reduce flood risk. The council aims to reduce the risk of flooding to homes and businesses in its area. At present, the council:

- assesses watercourses, including culverted watercourses, on a prioritised basis to determine the need for maintenance to reduce the risk of flooding;
- maintains watercourses, to ensure they do not cause flooding in our communities;
- provides advice and guidance on matters relating to flood prevention, sustainable drainage and the water environment;
- investigates the causes of serious flooding and the feasibility of reducing the risk of occurrence, including the possible promotion of Flood Protection Schemes, such as those implemented historically at Broxburn and Linlithgow; and
- assists in helping to protect the property and reduce the effects of damage.

SEPA's indicative flood mapping shows that some parts of some settlements in West Lothian may be subject to flood risk from more extreme events as set out below including:

- parts of Broxburn and Uphall from the Brox Burn;
- small parts of Linlithgow Bridge from the Mains Burn;
- part of Bathgate from the Bog Burn;
- a small part of the southern end of Blackburn from the River Almond;
- small parts of Whitburn from the White Burn;
- small parts of Polbeth from the Harwood Water; and
- small parts of Livingston from the River Almond the West Calder Burn and Murieston Water.

There are also likely to be individual properties in the countryside that may be at risk from the watercourses listed above and other water courses such as the River Avon.

A number of communities are, and could be affected to a greater or lesser degree by the floodplains of watercourses flowing through them. There is also a widespread risk of flooding across West Lothian from a number of different causal factors.

Planning has a major role to play in mitigating flood risk. Scottish Planning Policy provides a risk framework as a basis for decision making relating to flood risk, whilst the Flood Risk Management (Scotland) Act 2009 introduces further legislative

provisions including a requirement for local authorities to prepare flood risk management plans by 2015. Development plans are required to take account of flood risk management plans, although it is unlikely that a FRMP will be in place for West Lothian early enough to influence the LDP.

In terms of new development, the risk of flooding from all sources needs to be taken into account. Flood risk is a key factor within the site assessments carried out to inform the development strategies identified in the LDP *Main Issues Report* (MIR) and determine the suitability of development sites. This assessment has utilised the SEPA flood mapping, supplemented by more localised studies where available.

Existing policies and supplementary guidance on flood risk and sustainable urban drainage systems will be carried through into the LDP where appropriate and updated to refer to the new legislation and guidance as required.

In terms of addressing flood risk to existing development, the biggest challenge remains predicting where fluvial flooding from extreme rainfall events will take place and is a challenge moving forward due to the issue of climate change. The council seeks to minimise flood risk by assessing past trends and having appropriate buffers and mitigation in place in terms of appropriate 1:100 and 1:200 year requirements.





## 5 River Basin Management Planning

Scotland's water is amongst the best in Europe, with 63% of water bodies already of "good" or "better" status. Scottish Ministers have now approved River Basin Management Plans (RBMPs) with a target of 97% of Scotland's water bodies to achieve good or better status by 2027. The RBMPs set out how SEPA, the Scottish Government and local authorities and public bodies can enhance the environmental quality of rivers, lochs and seas, delivering greater benefits for the environment, and safeguarding them for future generations.

In 2009, SEPA published RBMPs for the Scotland River Basin District and the Solway Tweed River Basin District - the latter jointly developed with the Environment Agency. The RBMP consultation process involved many sectors, public bodies and non-governmental organisations, as well as the public, all contributing to the development of these plans.

The new measures set out in the RBMPs will help ensure the right balance is struck between the protection of our water environment and wildlife and the interests of those who depend upon it for their prosperity. Agencies, local

authorities, businesses, land managers and the public will work in partnership to deliver a healthy and sustainable future for Scotland's water environment.

### Water Body Data Sheets

SEPA also retain 'water body data sheets' for areas of significant water bodies in West Lothian which can help inform decisions in allocating sites for development. The data sheets contain information on the current status of the water body in terms of ecology, targets for its future status, and pressures and measures on its potential future status as well as work to identify pressures and to develop and implement measures to mitigate their impacts. These will continue over subsequent river basin cycles. Water bodies in West Lothian are:

1. River Avon (Source to Jawhills)
2. River Avon (Logie Water Confluence to Estuary)
3. River Avon (Jawhills to Logie Water Confluence)
4. Union Canal (Falkirk Wheel to Greenbank)
5. River Carron (Avon Burn to Bonny Water Confluences)
6. Union Canal (Craigton to Murray Burn)

7. Union Canal (Greenbank to Kirk Bridge)
8. Union Canal (Kirk Bridge to Park Farm)
9. Union Canal (Park Farm to Craigton)
10. Upper Forth Estuary
11. Water of Leith (Harperrig Reservoir to Poets Burn Confluence)
12. Boghead Burn/Bog Burn/Couston Water
13. Breich Water / Darmead Linn
14. Brox Burn (by Wester Tartraven to Ryal Burn Confluence)
15. Brox Burn (Ryal Burn Confluence to River Almond)
16. Cobbinshaw Reservoir
17. Drainage ditch upstream to Cobbinshaw
18. Drumtassie Burn
19. Foulshiels & Bickerton Burns.
20. Foulshiels Burn & Bickerton Burns
21. Foulshiels Burn to Breich Water
22. Harperrig Reservoir
23. Linhouse Water / Camilty Water / Green Burn
24. Linlithgow Sand and Gravel
25. Lower Forth Estuary
26. Middle Forth Estuary

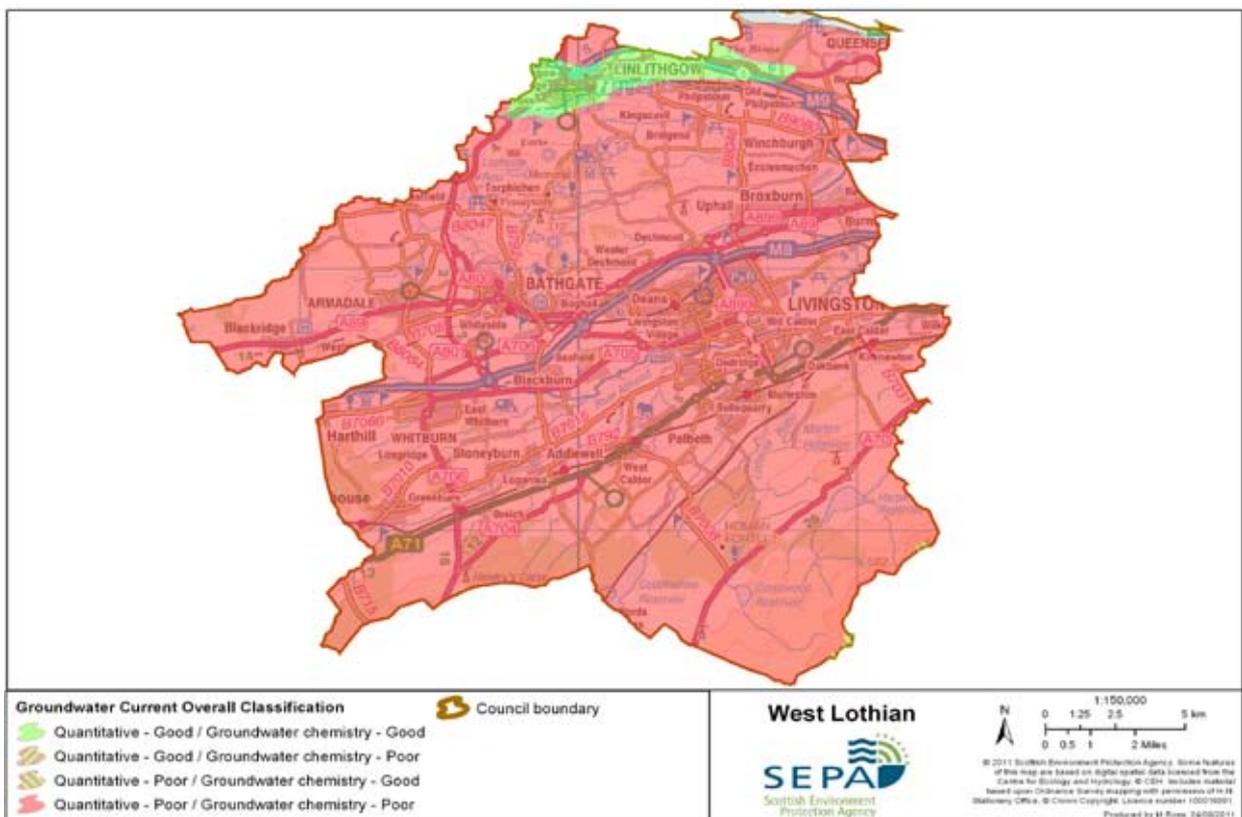
27. Pardovan Burn (Bridgend to Estuary)
28. Pardovan Burn / Haugh Burn / Riccarton Burn / Source to d/s Bridgend)
29. River Almond (Source to Foulshiels Burn Confluences)
30. River Carron (Carron Valley Reservoir to Avon Burn Confluences)
31. River Carron (Source to Carron Valley Reservoir)

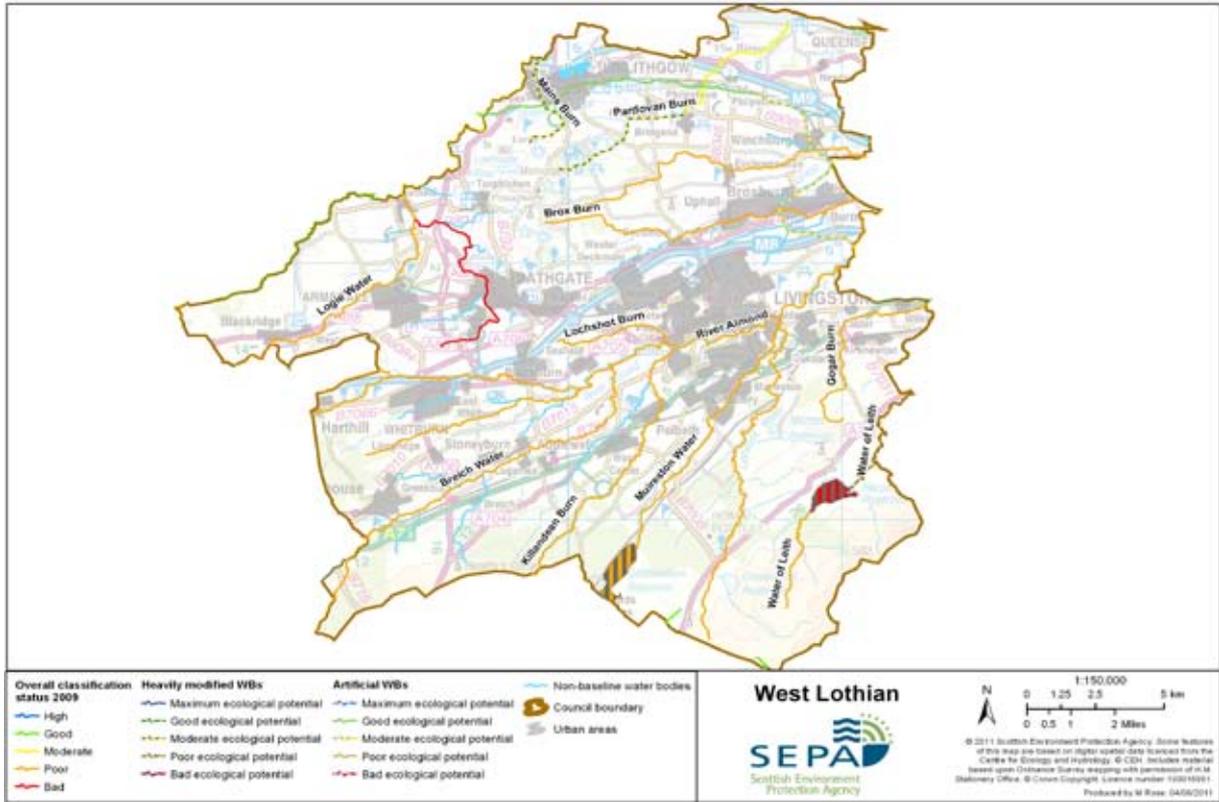
The council can provide more information on these water body data sheets on request.

The plans on the next two pages show the following information:

**GROUNDWATER CURRENT OVERALL CLASSIFICATION (Source, SEPA):** The first plan indicates the groundwater quality of chemistry for the overall area of West Lothian.

**OVERALL CLASSIFICATION STATUS 2009 (Source, SEPA):** This plan shows the overall classification status of water bodies, both artificial and natural in terms of their quality from bad (low), up to high (good).







## 6 Strategic Flood Risk Assessment

### Advice on Strategic Flood Risk Assessment for the SEA

SEPA recommend that the *Main Issues Report* (MIR) and the *West Lothian Local Development Plan* (LDP) preparation process are informed and supported by a strategic overview of flood risk management issues in the form of a Strategic Flood Risk Assessment (SFRA).

#### Purpose

A SFRA is designed for the purposes of specifically informing the development planning process and to assist in achieving flood risk reduction by avoiding areas at significant risk of flooding. A draft SFRA accompanies the MIR in terms of the 'preferred', 'alternative' and 'dismissed' sites that the council has assessed as part of the MIR. The council has also reviewed *West Lothian Local Plan* 2009 sites.

It constitutes a strategic overview of flood risk in the development plan area and should involve the collection, analysis and presentation of all existing available and readily deliverable information on flood risk from all sources.

It should be used to apply the risk based approach to the identification of land for development and for the development of policies for flood risk management, including promotion of surface water management.

Planning authorities, which includes West Lothian Council, are required to prepare a SFRA in consultation with SEPA and other stakeholders and that is what we have done. This is a separate document in its own right that accompanies the MIR to the LDP.

#### Key Elements of the SFRA

The SFRA contains the following:

- information on all potential sources of flooding;
- information on climate change impacts;
- information on existing flood distances;
- identifies the functional flood plain (built up areas and sparsely developed);
- identifies sites or areas constrained by flood risk.



#### Benefits of the SFRA

- compatibility with the precautionary approach of SPP to development decisions where flood risk may be an issue.
- consistency with the duties on SEPA (and responsible authorities) under the FRM Act to reduce overall flood risk and promote sustainable flood risk management.
- alignment with the principle of avoiding flood risk in line with SPP and the Scottish Government's Flood Risk Management Guidance.
- frontloading the planning system to create development management efficiencies.

A SFRA provides a strategic overview of flood risk in the local development plan area and supports the identification of the areas most suitable for development and areas that should be safeguarded for sustainable flood management.

The SFRA had involved the collection, analysis and presentation of all existing and readily available and readily derivable flood risk information for the area in a desktop study. There are several sources of flooding which have been considered: fluvial, coastal, pluvial or surface water flooding, sewer flooding and groundwater flooding. Some of the sources of information which are relevant for the SFRA are provided below:

- the Indicative River and Coastal Flood Map (Scotland) which provides an indication of areas that may be at risk of flooding from watercourses and tidal surge and provides an indication of fluvial and coastal flooding with an annual probability of 0.5% (1:200). (The map is an initial source of information for identifying areas that might be at a fluvial or tidal flood risk).
- this information is supported and complemented by other easily derived or readily available information in relation to flood risk.
- SEPA also recommend that contact is made with the council's Flood Risk Management Team has also contributed to the SFRA whilst SEPA also provided further advice on the scope and development of the SFRA.

In summary the SFRA provides information on issues such as:

- whether flood risk is a significant issue in the area; summary of flooding incidences and problem areas where there have been significant or frequent flood events (historical information); list of sources of information which are available for review at a more detailed stage;
- where areas may need to be safeguarded due to flood risk;
- where flood risk needs to be considered in more detail;
- where new development is likely to add risk, areas to avoid and where development may be constrained;
- some principles that will guide the approach to flood risk - these principles will guide the allocation of areas for development or growth and can also inform LDP policies;

SEPA recommend that this information forms part of the baseline data to support the SEA and it can be presented in a Technical Paper and summarised in the Environmental Report. The SEA process can provide a clear audit trail to how flood risk has been taken into account in the preparation of the MIR and the LDP, contributing to meet the requirements of the Flood Risk Management (Scotland) Act (2009).

A SFRA provides a strategic overview of flood risk in the development plan area and should support the environmental assessment process in identifying allocations where significant environmental effects are likely in relation to flood risk. The LDP may also be able to contribute to sustainable flood management (e.g. promoting flood storage areas) offering opportunities to use more natural approaches to managing flood waters across catchments and the SFRA will underpin these decisions.





## Land use and Vulnerability Guidance

### Overview

This guidance provides a framework to assist the assessment of the vulnerability of different types of land use to the impact of flooding. A classification of the relative vulnerability of land uses has been devised which groups a range of land uses into five categories (from the most vulnerable uses to water compatible uses). Guidelines for planning responses for each set of land uses are provided, based on the risk framework in the Scottish Planning Policy. The land use classification differentiates between a range of land uses by generally taking account of flooding impacts on land uses in terms of their relative susceptibility and resilience to flooding and any wider community impacts caused by their damage or loss.

### Definition of Vulnerability

Components of the Definition of Flood Risk:

Probability = Likelihood of Flood Hazard (hazard = extent, depth, velocity, debris)

X -> FLOOD RISK

Consequences := Impacts due to Receptor Characteristics (Characteristics = vulnerability, exposure, value)

NB: Land use Vulnerability is a function of resilience, susceptibility and community impacts.

### Application of the Vulnerability Classification

- the guidance is intended only to guide the consideration of the flood risk element of vulnerability in the provision of SEPA advice to planning authorities.
- the approach is intended to support more robust consideration of the impacts of flooding and is considered in line with the Flood Risk Management Act duties and Scottish Planning Policy principles.
- it does not set out new policy positions that go beyond SPP. The classification should assist the interpretation of SPP risk framework by refining the range of uses identified. Guidance should assist in the consideration of the appropriateness of a proposed use.
- SEPA use the formula above in forming advisory comments on particular developments and sites in terms of flood risk and this can also be used to inform planning applications.
- this formula provides the basis for an agreed understanding about the vulnerability element of flood risk.



## 7 SESplan requirements

The strategic development plan, SESPlan, advises that:

*“Management of water resources is a key infrastructure issue and is fundamental to the programmed delivery of development. The Flood Risk Management (Scotland) Act 2009 promotes sustainable flood risk management and designates Local Planning Authorities, SEPA and Scottish Water as responsible authorities required to work collaboratively and sustainably to reduce overall flood risk. The cornerstone of sustainable flood management is the avoidance of flood risk in the first instance”*

*“LDPs will consider flood risk at the catchment-scale, identify areas where there is a degree of flood risk, and include policies to reduce that overall risk by avoiding new allocations which are at risk of flooding. Strain on existing water management infrastructure may be exacerbated by new development. The SDP seeks to ensure a high quality water environment where water quality, quantity and ecology are protected.”*

POLICY 15 of the SDP states:

### WATER AND FLOODING

Local Development Plans will:

- a. Identify areas of flood risk and priority flood schemes to assist in the reduction of overall flood risk;
- b. Avoid any new development in areas at medium to high flood risk and safeguard areas which will help contribute to reducing overall flood risk; and
- c. Make provision to prevent deterioration of the water environment resulting from new development and, where appropriate, promote enhancement of the water environment.”

The LDP is required to accord with the approved strategic development plan.



## 8 Local works in West Lothian to alleviate flooding

The type of work the council has been involved in in the last few years to alleviate and deal with the issues of food risk and flooding events are shown in the table:

Commissioning a further study of the hydrology at East Burnside, Broxburn following the post-flood review and installation of debris traps across the burn.

Commissioning the design of a replacement bridge where Newhouses Road crosses the Brox Burn at East Burnside.

Working with members of the Dedridge Environment & Ecology Project (DEEP) and contributing to proposals to restore the ponds at Dedridge.

Building a new headwall and trash screen and upgrading the culverted watercourse leading from Bughtknowes Farm, Bathgate beneath Torphichen Road to Balbardie Park to reduce the risk of flooding to Torphichen Road.

Working with householders and replacing the trash screen located at The Glen, Bathgate with a new one to reduce the risk of flooding and enhance the safety of those inspecting and cleaning the structure.

Putting in place further measures in Fauldhouse to intercept and temporarily store surface water, storing it temporarily before releasing it at a more controlled rate into the receiving drainage systems and watercourses.

Investment in maintenance and works in the interests of safety at both Beecraigs and Eliburn Reservoirs.

Commissioning a study into flooding, seriously impaired drainage, damp and condensation affecting social housing at Mayfield, Armadale.

Undertaking further site work to reduce the incidence of flooding to properties at Bowyett, Torphichen.

Investing in two high-volume pumps to improve the support that the council can give to its customers affected by flooding, reduce the time that public roads are closed due to flooding and enabling the council to respond more quickly to pollution incidents.

Working with a house builder to help resolve flooding caused by an accumulation of surface water at Nelson Park, Armadale which was adversely affecting the nearby filling station premises.

*Source: West Lothian Council Flood Prevention Team*



The measures which in the last few years the council undertook to prevent or mitigate the flooding of land in the council area are shown in the below table:

Continuing to inspect watercourses, including culverted watercourses, headwalls and trash screens and carry out maintenance to reduce the risk of flooding.

Constructing a floodwall and spillway at the lower end of the small pond at the Lanthorn Community Centre, Dedridge.

Carrying out essential repairs and upgrading to the Boghead Burn Flood Alleviation Scheme in Bathgate.

Taking forward recommendations arising from the study into flooding, seriously impaired drainage, damp and condensation affecting social housing in Mayfield, Armadale.

Working with adjacent landowners to realign boundaries and reform the ditch network to the rear of Ennis Park, Polbeth to reduce the risk of flooding and seriously impaired drainage.

Constructing an outfall to enable an effective drainage system to be installed at Bellsquarry Playing Field leading to the Dedridge Burn beneath the old Calder Road.

Acquiring a number of steel containers in which to store sandbags to speed up mobilisation before and during flood events and help protect sandbag stocks from theft and vandalism.

Contributing to a project to restore the large ponds at Dedridge, take the burn off-line and create a new smaller pond and wetland to improve the landscape and habitat value of the area.

Carrying out essential repairs to the headwall of the Dedridge Burn at Burnvale Place, Almondvale, Livingston in the interests of safety.

Commissioning a study into flooding, seriously impaired drainage, condensation and damp affecting properties at Parkhead, East Calder.

Working together with SEPA, Scottish Water and other local authorities to develop Local Flood Risk Management Plans under the Flood Risk Management (Scotland) Act 2009.

Working with landowners to install new drainage schemes to reduce the risk of flooding and seriously impaired drainage at both Park View and Church Place, Fauldhouse.

Carrying out work to protect social housing stock from flooding at North Reeves Place, Whitburn.

Working cooperatively with other stakeholders to help reduce the risk of flooding to the Edinburgh to Bathgate railway at Tailend Moss Local Nature Reserve, Bathgate to prevent delays and cancellations to this vital public transport link.

Investigating the cause of flooding affecting the Fauldhouse Partnership Centre and put in place measures to help lessen the risk.

Working with our partners to rationalise the number council-owned structures on the River Almond whilst improving the accessibility of the upper reaches of the river to migrating fish.

*Source: West Lothian Council Flood Prevention Team*

### National Planning Guidance

The council will monitor the potential impact any new national guidance, such as an update to PAN61 Planning and Sustainable Urban Drainage Systems would have on our existing approved supplementary planning guidance *West Lothian Flood Risk and Drainage*.



## 9 Building the Hydro Nation – Scottish Government Consultation Paper 2011

In December 2010, the Scottish Government launched a consultation on “Building a Hydro Nation”. The purpose of the consultation is to set out and seek a wide range of views on Scottish Government proposals for Scottish Water.

Central to developing a “Hydro Nation” will be the publicly owned water utility Scottish Water. The Government considers Scottish Water should have a leadership role in this process. This consultation therefore examines how the further development of Scottish Water and its functions will ensure this is achieved.

The Scottish Government is of the view that “Scotland’s public water supply should never be privatised: nor should any future arrangement for the governance or financing of Scottish Water have the effect of removing Scotland’s water resources from the control of the Scottish people, as exercised through the Scottish Parliament.”

The management of Scottish Water, and the regulatory structure for the industry, should be designed to build upon the proven success of the public sector ownership model, in order:

- a. to provide water for the Scottish people at fair, sustainable, and socially equitable prices;

- b. to enable Scotland’s water resources to be used for the maximum benefit of industry in Scotland, and the Scottish economy generally; and
- c. that Scottish Water, acting in partnership with publicly funded research agencies, and with private industry as appropriate, can become a leader in sustainable water technology, for the benefit of both Scotland, and the wider world community.

The proposed LDP will take cognisance, where applicable, of the requirement of this policy document.

The Scottish Government published its strategy for developing a Low Carbon Economy on 15 November 2010. The government believes that its aspiration to build a hydro economy is fully consistent with and can become an integral part of that Low Carbon Economy. A hydro nation is one which recognises that the wise management of its water resource is crucial to its future success. It manages its water to drive its economy, improve its society, protect its environment and contribute to its international obligations.



## 10 Protection and improvement of the water environment

The Water Framework Directive (2000/60/EC) (WFD) provides the major driver in Scotland to protect, improve and promote the sustainable use of our water environment, which includes wetlands, rivers, lochs, transitional waters (estuaries), coastal waters and groundwater. Successful implementation of the Directive can also bring wider benefits for developers, communities and for the environment generally, by increasing ecological interest, recreation and amenity, tourism, resilience to flood risk, and regeneration opportunities. River basin management plans are at the heart of the legislation, and represent a huge step forward in the way in which we safeguard and improve the quality of our water environment. Planning authorities are legally designated responsible authorities in respect of WFD interests, and as such “must exercise their designated functions so as to secure compliance with the requirements of the Directive” (Section 2(2), Water Environment and Water Services (Scotland) Act 2003 (WEWS)). The Town and Country Planning (Development Planning) (Scotland) Regulations 2008 state that “in preparing a LDP the planning authority are to have regard to any river basin management plan relating to the LDP area” (Regulation 10 (f)). The council has had regard of the following documents when preparing the MIR and will continue to do so for the proposed plan stage.

A table is attached as Appendix 1 outlining key documents for the development plan and developments in West Lothian in general required for protection and improvement of the water environment.

## 11 Assessment of existing site allocations and emerging sites

A range of sites have been assessed by relevant parties to determine any flood risk. Assessments have been undertaken with regard to all current relevant policies and guidance. An over-arching SFRA has also been developed to accompany the *Main Issues Report* for the *West Lothian Local Development Plan*

## Appendix 1: Protection and improvement of the water environment

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>A positive policy framework to protect and improve the water environment which refers to the requirements of the Water Framework Directive and to the protection and enhancement measures set out in the Scotland and Solway Tweed River Basin Management Plans and associated Area Plans.</p>	<p>Baseline Information Bathing Water Annual Reports <a href="http://www.sepa.org.uk/water/bathing_waters.aspx">http://www.sepa.org.uk/water/bathing_waters.aspx</a></p>	<p><i>Scotland River Basin Management Plan</i> <i>Forth Basin Management Plan</i></p>	<p><i>Water Framework Directive 2000/60/EC (or WFD)</i> <i>Water Environment and Water Services (Scotland) Act 2003</i> <i>Water Environment (Controlled Activities) (Scotland) Regulations 2011</i></p>	<p>The council will ensure that any policies and supporting text take account of this document. The council will ensure that any policies and supporting text take account of this document.</p>
<p>The overall aim of river basin planning is for all Scotland's waters to be in good ecological condition by 2015. The LDP has an important role in ensuring that environmental objectives are met through its influence on the location, layout and design of new development. The RBMPs contain measures to maintain and improve water bodies in order to reach good ecological status, and are a material planning consideration.</p>	<p>Water monitoring and classification <a href="http://www.sepa.org.uk/water/monitoring_and_classification.aspx">www.sepa.org.uk/water/monitoring_and_classification.aspx</a> Details of protected areas <a href="http://www.sepa.org.uk/water/protected_areas.aspx">www.sepa.org.uk/water/protected_areas.aspx</a> River level data <a href="http://www.sepa.org.uk/water/river_levels.aspx">www.sepa.org.uk/water/river_levels.aspx</a></p>	<p>The <i>Area Management Plans</i> contain more detailed information for specific river catchments. <i>The Water Environment (Controlled Activities) (Scotland) Regulations 2005: A Practical Guide</i></p>	<p>The <i>Nature Conservation (Scotland) Act 2004</i> introduces a duty on all public bodies to further the interests of biodiversity. NPF2 Paragraphs 101-102 174 SPP Paragraphs 37, 77, 98-109, 209-211</p>	<p>The council will ensure that any policies and supporting text take account of this document and will seek to ensure that ecological status and environmental quality of water bodies is not significantly effected and can indeed be enhanced.</p>
<p>Require the council to contribute to measures delivery through the policies in the plan, with an aim to reinforcing positive improvements and avoiding adverse impacts.</p>	<p>River basin planning <a href="http://www.sepa.org.uk/water/river_basin_planning.aspx">interactive map application</a> <a href="http://www.sepa.org.uk/water/river_basin_planning.aspx">www.sepa.org.uk/water/river_basin_planning.aspx</a></p>		<p><i>Planning Advice Note 51 Planning, Environmental Protection and Regulation</i></p>	<p>The council will ensure that any policies and supporting text take account of this document and will seek to ensure that ecological status and environmental quality of water bodies is not significantly effected and can indeed be enhanced.</p>
<p>Impacts on flood management that can be positively effected by River Basin Management Plans and Flood Risk Management.</p>	<p>Advice on the links between River Basin Management Planning measures and flood risk management. SEPA river restoration funding Advice on suitable policy wording.</p>	<p>There are many opportunities to promote good practice and both protect and enhance Scotland's aquatic habitats. The <i>Habitat Enhancement Initiative</i> aims to help us and partner organisations to realise these opportunities.</p>	<p>River Restoration Centre <i>Manual of River Restoration Techniques</i></p>	<p>The council will ensure that any policies and supporting text take account of this document and will seek to ensure that ecological status and environmental quality of water bodies is not significantly effected and can indeed be enhanced. The council will ensure that any policies and supporting text take account of this document and will seek to ensure that ecological status and environmental quality of water bodies is not significantly effected and can indeed be enhanced and in particular water habitats.</p>

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>Consideration given to existing pressures and potential impacts on water bodies and water dependent ecological interests relevant to SEPA.</p>	<p>Advice on waterbody pressures in the LDP area and the River Basin Management Planning measures put in place to address these.</p>	<p><i>Watercourses in the Community: A guide to sustainable watercourse management in the urban environment</i></p>	<p>N/A</p>	<p>The council will ensure that any policies and supporting text take account of this document and will seek to ensure that ecological status and environmental quality of water bodies is not significantly effected and can indeed be enhanced and in particular water habitats.</p>
<p>The development plan is an important mechanism in addressing existing pressures on the water environment, and new development can also provide opportunities to deal with historic impacts. The RBMPs have identified the following key pressures on the water environment in Scotland:</p> <ul style="list-style-type: none"> <li>• Engineering works (eg modifications to beds, banks and shores as the result of historical engineering, electricity generation, urban development, land claim);</li> <li>• Diffuse source pollution (eg forestry, urban development);</li> <li>• Point source pollution (eg the collection and treatment of sewage, aquaculture, manufacturing, mining and quarrying);</li> <li>• Abstraction and flow regulation (eg alterations to water flows and levels as the result of electricity generation, public water supplies);</li> <li>• Non-native invasive species</li> </ul> <p>Require allocations to be informed by the capacity of the water environment to support development, including the identification of existing and potential pressures. Encourage where appropriate, specific requirements for allocations to identify opportunities for ecological network improvements and the restoration of watercourses within any development area.</p>	<p>The river basin planning <a href="#">interactive map</a> application provides information on current waterbody classification status, groundwater classification status, pressures and mitigation measures and protected areas.</p> <p>Water body data sheets contain information on classification and objectives for particular rivers, lochs and groundwater bodies in Scotland. The data sheets form part of the Scotland and Solway Tweed River Basin Management Plans. They can be accessed through the river basin planning <a href="#">interactive map</a> or at <a href="http://www.sepa.org.uk/water/river_basin_planning/waterbody_data_sheets.aspx">www.sepa.org.uk/water/river_basin_planning/waterbody_data_sheets.aspx</a></p>	<p><i>River Basin Planning</i> leaflet</p>	<p>European Commission RBMP information</p> <p>Scottish Government RBMP information</p>	<p>We will require allocations to be informed by the capacity of the water environment to support development, including the identification of existing and potential pressures.</p> <p>Policies and appendices to the plan will where appropriate, be established for specific requirements for allocations to identify opportunities for ecological network improvements and the restoration of watercourses within any development area.</p> <p>We will ensure policies in the plan cover specific requirements for all new development to protect and improve water bodies. For example, policies should cover engineering works in the water environment, water and drainage infrastructure including SUDS, and development specific requirements as detailed below.</p>

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>Require policies in the plan to cover specific requirements for all new development to protect and improve water bodies. For example, policies should cover engineering works in the water environment, water and drainage infrastructure including SUDS, and development specific requirements as detailed below.</p> <p>For allocations encourage retaining an appropriately sized buffer strip around still water (ie lochs and ponds), or on either side of watercourses or ditches. Buffer strips help to control soil and water quality amongst other environmental benefits and can also contribute to open space allocations.</p>	<p>SEPA can provide geo-referenced PDF maps on request showing overall classification status of water bodies in the LDP area.</p> <p>Planning authorities have access to the SEPA GIS layer showing areas where there is a cumulative environmental impact on water bodies from a proliferation of private septic tanks (this layer was forwarded to all planning authorities; however the information can also be provided in a different format if requested).</p> <p>SEPA are currently working to try and make additional environmental data available for planning authority use on Geographical Information Systems (GIS).</p> <p>SEPA and Scottish Water will also continue to work together to identify where there are currently constraints on how much new development can be accommodated in an area given:</p> <ul style="list-style-type: none"> <li>• the capacity of Scottish Water’s abstraction, treatment and distribution network facilities;</li> <li>• the capacity of the water environment to provide more water without deteriorating.</li> <li>• Advice on the River Basin Management Planning measures to prevent engineering works from causing deterioration of status, including flood risk management measures.</li> </ul>	<p>The SEPA Position Statement on the <i>Culverting of Watercourses</i> provides a definition of culverts and details of environmental impacts.</p> <p><i>Culverting: an Agenda for Action</i> outlines water quality impacts of culverting including flooding and habitat loss and the need for planning authorities to have a policy framework in development plans which addresses culverting and good watercourse management generally.</p> <p><i>SEPA’s Good Practice Guide WAT-SG-44 Riparian Vegetation Management</i> provides advice on sustainable engineering solutions that minimise harm to the water environment.</p> <p><i>SEPA’s Good Practice Guide WAT-SG-25 Construction of River Crossings</i> provides advice on the environmental aspects that should be considered when undertaking a project.</p> <p><i>SEPA Pollution Prevention Guidelines PPG 5 Works and maintenance in or near water.</i></p> <p><i>Guidance for applicants on supporting information requirements for hydropower applications</i></p>	<p>Scottish Executive (2000) River Crossings and Migratory Fish: Design Guidance</p>	<p>Specific requirements for each housing and employment allocation will be set out in the appendices to the proposed plan in terms of any specific buffer strip requirements.</p> <p>The council will be reviewing its SPG on Flood Risk and Drainage and will refer to the key documents in this table as listed. The SPG review will begin when the Scottish Government have published the forthcoming consolidated Planning Advice Note ‘Flooding, Water and Drainage’ which will supercede PAN 61 (Planning and Sustainable Urban Drainage Systems) PAN 69 (Planning and Building Standards Advice on Flooding) and PAN 79 Water and Drainage.</p> <p>We will provide text and links to all these key documents within our proposed plan either within the body of the text or as part of an Appendix.</p> <p>The council will, as it has done previously, support the principle of avoiding unnecessary engineering activity in the water environment.</p>

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>Policy presumption against the culverting of watercourses and unnecessary engineering activities in the water environment</p> <p>In order to meet Water Framework Directive objectives and in line with Scottish Planning Policy (paragraph 211) it is important that developments are designed to leave the water environment in its natural state, with engineering activities such as culverts, bridges, watercourse diversions, bank modifications or dams avoided wherever possible. These engineering impacts have been identified in the RBMPs as a significant pressure on the water environment in Scotland.</p>	<p>The RBMPs require SEPA and planning authorities to work together to identify opportunities for improving beds, banks and shores through sustainable flood management approaches. These may include removing man-made structures that can exacerbate flooding and allowing flooding of undeveloped floodplains to reduce peak water levels in downstream urban areas.</p>	<p>SEPA's forthcoming guidance for developers of small hydropower schemes sets out how SEPA will apply the principles set out in Scottish Ministers' policy statement on balancing the benefits of renewables generation and protection of the water environment</p>	<p><a href="#">SEPA Hydropower guidance</a></p>	<p>The council will, as it has been done previously, support the principle of avoiding unnecessary culverting of watercourses and unnecessary engineering activity in the water environment.</p> <p>It is likely that River Basin Management Plans (RBMP) will be available after the proposed plan is published, however if this occurs before then, the council will take account of these in preparing the proposed plan.</p>
<p>Require the plan to ensure that culverting and unnecessary engineering activities in the water environment are avoided through the policies in the plan and associated supplementary guidance. Where these activities are unavoidable, appropriate mitigation measures must be required. Encourage where possible, opportunities to identify the removal of redundant structures and return water bodies to their natural state, including through developer requirements. The SEA should be used to assess potential impacts of proposed allocations.</p>	<p>Advice on suitable policy wording, to be supplied by SEPA</p>	<p>SEPA's <i>Policy and supporting guidance on provision of waste water drainage in settlements</i> sets out our policy principles on the provision of waste water drainage within and outwith settlements served by a strategic sewerage system. The document also provides supporting guidance for the implementation of these policy principles.</p> <p><i>Drainage Assessment: A Guidance for Scotland</i> provides guidance on the design of foul and surface water drainage facilities and the requirement for the preparation and submission of a Drainage Assessment (DA) at the development management stage.</p>	<p><a href="#">Urban Waste Water Directive 91/271/EEC</a></p> <p><a href="#">Planning Advice Note 79 Water and Drainage</a></p> <p><a href="#">Scottish Water's Strategic Asset Capacity and Development Plan 2009</a></p> <p>Is updated annually and provides a description of Scottish Water's processes and systems for calculating capacity available at the 1981 waste water treatment works and 294 water treatment works serving Scotland.</p>	<p>The council is assessing possible site allocations for flood risk and this will be reflected in a <i>Strategic Flood Risk Assessment</i> for the MIR and proposed plan stage and takes account of SEPA and the councils Flood Prevention Teams comments.</p> <p>The council will be reviewing its SPG on <i>Flood Risk and Drainage</i> and will refer to the key documents in this table as listed. The SPG review will begin when the Scottish Government have published the forthcoming consolidated Planning Advice Note <i>Flooding, Water and Drainage</i> which will supercede <a href="#">Planning Advice Note 61 Planning and Sustainable Urban Drainage Systems</a>, <a href="#">Planning Advice Note 69 Planning and Building Standards</a> <a href="#">Advice on Flooding</a> and <a href="#">Planning Advice Note 79 Water and Drainage</a>.</p>

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>Identification of suitable and unsuitable areas of search for hydropower proposals and/or criteria based policy providing guidance on where hydro power proposals can be located.</p> <p>Hydropower proposals can have significant adverse impacts on the water environment and are identified as a pressure in the RBMPs. It is important that the correct balance is struck between the protection of the water environment and renewable energy generation. The approach sought by Ministers is described in a policy statement issued in January 2010.</p> <p><i>Scottish Planning Policy states, "the scope for major new hydro-electric schemes is likely to be limited but there may be an increasing number of proposals for small run-of-river projects. Development plans should identify the issues which will be taken into account in decision making on hydro-electric schemes such as impacts on the natural and cultural heritage, water environment, fisheries, aquatic habitats and amenity, and relevant environmental and transport issues"</i> (Paragraph 194).</p> <p>The plan should support hydropower developments which can make a significant contribution to Scotland's renewables targets whilst minimising any adverse impacts on the water environment. Require broad map based areas of search or criteria based policy to facilitate the appropriate siting of small schemes to avoid any individual or cumulative deterioration of waterbodies in line with the Scottish Government policy statement.</p>	<p>This aspect could be linked to a positive policy framework to facilitate renewable energy developments.</p> <p>We can provide guidance on the types of proposals that are likely to be acceptable.</p> <p>SEPA and Scottish Water will also continue to work together to identify where there are currently constraints on how much new development can be accommodated in an area given:</p> <ul style="list-style-type: none"> <li>• the capacity of Scottish Water's abstraction, treatment and distribution network facilities;</li> <li>• the capacity of the water environment to provide more water without deteriorating.</li> </ul> <p>Advice on suitable policy wording. to be supplied by SEPA</p>	<p><i>SEPA Planning advice on sustainable drainage systems (SUDS)</i></p>	<p>Scottish Water Waste water treatment asset capacity tables</p> <p>Scottish Water Water treatment asset capacity tables</p>	<p>The LDP MIR will support the principle of renewable energy developments in appropriate locations and circumstances as has been the case in the previous development plans, subject to detailed site, environmental and biodiversity assessments. SUDs systems that are appropriately designed and justified will continue to be supported.</p>

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>Consideration of waste water drainage in line with SEPA's Policy and Supporting Guidance on Provision of Waste Water</p> <p>Drainage in Settlements.</p> <p>Drainage is a material planning consideration and should be considered during the formulation of development plans in line with Scottish Planning Policy and guidance, including <a href="#">Planning Advice Note 79 Water and Drainage</a> (paragraphs 26-29).</p> <p>Require a policy in the plan to require connection to the public sewer as defined in the Sewerage (Scotland) Act 1968 for all new development proposals either in settlements identified in the plan with a population equivalent of more than 2000 or wherever single developments of greater than 25 houses and large scale business and industrial units are proposed.</p>	<p>Planning authorities have access to the SEPA GIS layer showing areas where there is a cumulative environmental impact on water bodies from a proliferation of private waste water treatment systems (this layer was forwarded to all planning authorities; however the information can also be provided in a different format if requested).</p>	<p><a href="#">SUDS Advice Note: Brownfield Sites</a> (use PDF link at top of browser) details how SUDS can ensure that pollution and flood risk are not increased by new development and how SUDS can help reduce these risks where appropriate.</p> <p><a href="#">Sustainable Urban Drainage Systems: Setting the Scene in Scotland</a> (use PDF link at top of browser)</p> <p>Habitat Enhancement Initiative: <a href="#">Enhancing Sustainable Urban Drainage Systems (SUDS) for Wildlife</a> (use top PDF link in browser)</p>		<p>As per the previous adopted WLLP, the council will not normally support private waste water systems and there are likely to be policies in place in the adopted plan that refer to this.</p> <p>It is likely that at the proposed plan stage there will be a policy to require connection to the public sewer as defined in the <i>Sewerage (Scotland) Act 1968</i> for all new development proposals either in settlements identified in the plan with a population equivalent of more than 2000 or wherever single developments of greater than 25 houses and large scale business and industrial units are proposed.</p>
<p>In all other cases a connection to the public sewer will be required, unless the applicant can demonstrate that the development is unable to connect to public sewer for technical or economic reasons, and that the proposal is not likely to result in or add to significant environmental or health problems.</p>	<p>The river basin planning interactive map application provides information on current waterbody classification status, groundwater classification status, pressures and mitigation measures and protected areas.</p> <p>Advice on suitable policy wording from SEPA.</p> <p>Advice on shellfish waters, bathing beaches and bathing water standards which may influence the potential for sewage discharges and infrastructure requirements.</p>	<p>SEPA webpage <a href="#">Monitoring and Classification of Water Bodies</a></p>	<p><a href="#">Planning Advice Note 61 Planning and Sustainable Urban Drainage Systems</a></p> <p>CIRIA manual C697 <a href="#">The SUDS Manual</a></p>	<p>The policies in the proposed plan and updates SPG on Flood Risk and Drainage will seek to ensure that at the very least the quality of existing 'water bodies' in terms of their classification will not lead to a deterioration in quality and in most circumstances could lead to an improvement in water quality.</p> <p>The council will also ensure any policies in the proposed plan and SPG reflect up-to-date advice on SUDS systems requirements.</p>

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>Consideration of the impact of proposed allocations on the capacity of existing water management infrastructure and of the need for new water management infrastructure to meet additional water demand/treatment requirements.</p> <p><i>Planning Advice Note 79 Water and Drainage</i> highlights that “<i>Planning authorities, Scottish Water and SEPA should not wait until the formal consultation stages of the development plan preparation process to discuss water and drainage issues. Working together is important throughout the process to ensure that, as they are prepared, development plans reflect an up to-date and accurate picture of water supply and drainage capacity and are informed by a shared understanding of how new development can be accommodated</i>” (Paragraph 28).</p>	<p>Advice on drainage and water resource constraints and acceptable mitigation.</p> <p>Our preferred approach is an informal round table meeting with Scottish Water and the local authority development plan team during the formulation of the <i>Main Issues Report</i>. This way any constraints can be highlighted early in the process and realistic solutions identified at the same time.</p>	<p><a href="#">SEPA waste water drainage webpage</a></p>	<p>The <i>SUDS for Roads</i> manual supplements <i>Designing Streets</i> and provides detailed information on designing SUDS and the required levels of surface water treatment.</p> <p><i>Designing Streets: A Policy Statement for Scotland</i></p>	<p>Throughout the preparation of the development plan to MIR stage, the council has been in dialogue and consultation with Scottish Water and other key agencies (in particular SEPA) and stakeholders with regard to water and drainage infrastructure requirements to support new allocations in the development plan in line with any new programmed developments Scottish Water have to enhance their infrastructure and support new allocations in the development plan. The SEA to support the MIR and proposed plan to be used to assess the capacity of the existing water management infrastructure to support allocations and also the potential requirements for new water management infrastructure including waste water treatment works, water treatment works, pumping stations and reservoirs to meet the extra water demand.</p>
<p>Require SEA to be used to assess the capacity of the existing water management infrastructure to support allocations and also the potential requirements for new water management infrastructure including waste water treatment works, water treatment works, pumping stations and reservoirs to meet the extra water demand.</p>	<p>The MoU between Scottish Water and SEPA, which sets out a programme for the continuous review of waste water capacity across Scotland for all local authority areas, is currently being revised. This will give planning authorities current information on where development should be located to make best use of existing and programmed waste water capacity and water resources. In the interim, information on waste water capacity can be found on the Scottish Water website.</p>	<p><a href="#">SEPA's role in SEA</a></p>	<p>Scottish Government information – <a href="#">SEA guidance</a></p>	<p>The council is undertaking an Environmental Report and SEA as well as all sites being assessed in conjunction with Scottish Water and SEPA regular waste water impacts from development and capacity within relevant waste water networks.</p>

Issues SEPA would expect to be covered in the LDP	Assistance SEPA can provide	Useful SEPA documents	Other sources of information	How West Lothian has or will comply with these requirements.
<p>Consideration given to the impact of surface water drainage on water bodies and the requirement for SUDS.</p> <p>SUDS help to protect water quality, free up capacity in water management infrastructure and reduce potential for flood risk. <i>Scottish Planning Policy</i> states that <i>"local development plans should incorporate the legal requirement for SUDS, promote a coordinated approach to SUDS between new developments and set out expectations in relation to the long term maintenance of SUDS"</i> (Paragraph 209).</p> <p>Require policies in the plan to cover the requirement for SUDS for all new development. Encourage the plan to promote SUDS as an important measure to reduce diffuse pollution from surface water run-off, to free up capacity in water management infrastructure, and to ensure efficient water management in light of predicted changes to climate. For these reasons we would also encourage the allocation of land for strategic SUDS in larger urban areas.</p>	<p>SUDS are identified in the River Basin Management Plans as an important measure to prevent and reduce pollution from diffuse urban sources. The Scotland River Basin Plan states <i>"Local authorities, Scottish Water and SEPA will continue to work together to co-ordinate their efforts to tackle pollution from diffuse urban sources. This will include incorporating sustainable urban drainage systems into local plans and programmes"</i></p> <p>Advice on suitable policy wording.</p>	<p>SEPA Diffuse Pollution</p>	<p>SEPA diffuse pollution audit</p>	<p>The council will continue to support through policies in the proposed plan SUDs as an important measure to reduce diffuse pollution from surface water run-off, to free up capacity in water management infrastructure, and to ensure efficient water management in light of predicted changes to climate. Detailed guidance on SUDs requirements will be provided within an updated SPG on Flood Risk and Drainage.</p> <p>The council will liase with Scottish Water, SEPA and other key stakeholders to ensure that the policies have appropriate wording.</p>

## Glossary of terms

### Climate Change

Both natural and human actions causing long term variations in global temperature and weather patterns.

### Culvert

A channel or pipe that carries water below the level of the ground.

### Drainage Assessment

This is a site specific assessment that addresses foul and surface water drainage, and should consider flood risk where appropriate relative to the site and normally accompanies a planning application where drainage is seen as an issue.

### European Water Framework Directives 2000 & 2008

This establishes a legal framework for the protection, improvement and sustainable use of all water bodies in the environment across Europe. That is, all rivers, canals, lochs, estuaries, wetlands and coastal waters as well as water under the ground.

The main environmental objectives are to protect and improve Scotland's water environment. This will include preventing deterioration of aquatic ecosystems and, where possible, restoring surface waters and groundwater damaged by pollution, water abstraction, dams and engineering activities to 'good status' by 2015.

### FRM Act

This is the short reference for the Flood Risk Management (Scotland) Act 2009.

### Floodplain

An area of land which borders a watercourse, estuary or sea which covers with water in times of flood.

### Flood defence

Infrastructure used to protect an area against floods as floodwalls and embankments; they are designed to be of a specific standard of protection (design standard)

### Flood map

A map that delineates the areas that have been predicted to be at risk of being flooded during an event of specified probability.

### Flood risk

The combination of the probability of a flood and of the potential adverse consequences associated with a flood for communities, the environment, cultural heritage and economic activity.

### Flood Risk Management Strategy

Sets out a long-term vision for the overall reduction of flood risk. They will contain a summary of flood risk in each Local Plan District, together with information on catchment characteristics and a summary of objectives and measures for Potentially Vulnerable Areas. Taken together, the Strategies will satisfy the requirement for National Flood Risk Management Plans, set out in Section 27 of the FRM Act.

### Flood storage

A temporary area that stores excess runoff or river flow, often ponds or reservoirs.

### Fluvial flooding

Flooding by a river or other watercourse.

### Functional Floodplain

This comprises land where water has to flow or be stored in times of flood. SFRA's should identify the functional floodplain, i.e. land which would flood with an annual probability of 1 in 200 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood.

### Groundwater

Water that is in the ground, this is usually referring to water in the saturated zone below the water table.

### Inundation

Flooding.

### Local Flood Risk Management Plans

They will contain details on the funding, timing and responsibility for actions to reduce flood risk. They will set out how the Flood Risk Management Strategies will be implemented in each Local Plan District and any other locally relevant information. They satisfy the requirements set out in Section 34 of the Flood Act.

### Local Plan District (LPD)

Geographical areas for which local flood risk management plans will be produced.

### Mitigation Measure

An element of development design which may be used to manage flood risk or avoid an increase in flood risk elsewhere.

### National Flood Risk Assessment (NFRA)

A national assessment of the impacts of flooding on communities, the economy and the environment. Taking into account catchment characteristics, climate change and long term developments.

### Natural flood management

A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk.

### One in 200 year flood

A flood that has a probability of being exceeded once every 200 years. Also expressed as a flood, which has a 0.5% probability of being exceeded in the space of one year.

### Planning Advice Note (PAN)

Advice published by The Scottish Government in the form of a policy document that includes best practice and other relevant information.

### Pluvial

Relating to or caused by rainfall.

### Potentially Vulnerable Areas (PVAs)

Catchment units in which the National Flood Risk Assessment has identified significant impacts from flooding either now, or in the future as a result of climate change. They will be used as the basis for producing Flood Risk Management Strategies.

### River Basin Management Plan (RBMP)

Most of Scotland is within the Scotland river basin district, which is covered by the Scotland river basin management plan ("the Scotland RBMP"). Following its approval by the Scottish Ministers, SEPA adopted and published the Scotland RBMP on 22 December 2009.

### Risk

The probability or likelihood of an event occurring.

### River catchments

Upstream areas of land which drain into a river.

### Scottish Planning Policy

This document, published by the Scottish Government in 2010, is the statement of the Scottish Government's policy on nationally important land use planning matters.

### Sewer Flooding

Flooding caused by a blockage or overflowing in a sewer or urban drainage system.

### Strategic Flood Risk Assessment (SFRA)

A Strategic Flood Risk Assessment (SFRA) is developed to inform and guide the location for new development and minimise the risk of flooding. In summary, the primary aim of Strategic Flood Risk Management is to avoid locating new development in areas of flood risk.

### Tributary

A small stream or body of water that flows into a larger body of water.

### WEWS ACT

This is the [Water Environment and Water Services \(Scotland\) Act \(WEWS\) 2003](#). This transposes the EU Water Framework Directive 2003 into Scots Law.

### 1 in 100 Year event

Event that on average will occur once every 100 years. Also expressed as an event, which has a 1% probability of occurring in any one year.

### 1 in 200 Year event

Event that on average will occur once every 200 years. Also expressed as an event, which has a 0.5% probability of occurring in any one year.

### 1 in 1000 Year event

Event that on average will occur once every 1000 years. Also expressed as an event, which has a 0.1% probability of occurring in any one year.

## List of background papers and links

Flood Risk Management (Scotland) Act 2009  
<http://www.scotland.gov.uk/Topics/Environment/Water/Flooding/FRMAct>

National Flood Risk Assessment (NFRA)  
[http://www.sepa.org.uk/flooding/flood\\_risk\\_management/national\\_flood\\_risk\\_assessment.aspx](http://www.sepa.org.uk/flooding/flood_risk_management/national_flood_risk_assessment.aspx)

Potentially Vulnerable Areas to Flooding (SEPA)  
[http://www.sepa.org.uk/flooding/flood\\_risk\\_management/consultations/flooding\\_in\\_scotland.aspx](http://www.sepa.org.uk/flooding/flood_risk_management/consultations/flooding_in_scotland.aspx)

Planning Advice Note 51 - Planning Environmental Protection and Regulation  
<http://www.scotland.gov.uk/Publications/2006/10/20095106/0>

Planning Advice Note 61  
 'Planning and SUDs' - <http://www.scotland.gov.uk/Publications/2001/07/pan61>

Planning Advice Note 69 - 'Planning & Building Standards Advice on Flooding'  
<http://www.scotland.gov.uk/Resource/Doc/17002/0026290.pdf>

Planning Advice Note 79 - 'Water and Drainage'  
<http://www.scotland.gov.uk/Resource/Doc/149784/0039881.pdf>

Delivering Planning Reform  
<http://www.scotland.gov.uk/Resource/Doc/243444/0067748.pdf>

Indicative River and Coastal Flood Map (Scotland)  
[http://www.sepa.org.uk/flooding/flood\\_extent\\_maps.aspx](http://www.sepa.org.uk/flooding/flood_extent_maps.aspx)

National Planning Framework 2  
<http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/npf/Background>

Scottish Planning Policy  
<http://www.scotland.gov.uk/Resource/Doc/300760/0093908.pdf>

SESplan  
<http://www.sesplan.gov.uk/index.html>

Building the Hydro Nation, Scottish Government Consultation Paper 2011  
<http://www.scotland.gov.uk/Resource/Doc/335029/0109551.pdf>

Water Environment and Water Services (Scotland) Act (WEWS) 2003  
<http://www.legislation.gov.uk/asp/2003/3/contents>

The Water Environment (Controlled Activities) (Scotland) Regulations 2005: A Practical Guide  
<http://www.legislation.gov.uk/ssi/2011/209/contents/made>

West Lothian Flood Risk and Drainage Supplementary Planning Guidance  
[http://www.westlothian.gov.uk/media/download/doc/1799514/1841832/1875738/spg\\_floodrisk\\_drainage](http://www.westlothian.gov.uk/media/download/doc/1799514/1841832/1875738/spg_floodrisk_drainage)

Designing Streets, A Policy Statement for Scotland  
<http://www.scotland.gov.uk/Publications/2010/03/22120652/0>

Enhancing Sustainable Urban Drainage Systems for Wildlife  
[http://www.google.co.uk/search?hl=en-GB&source=hp&q=Enhancing+Sustainable+Urban+Drainage+Systems+for+Wildlife+&gbv=2&oq=Enhancing+Sustainable+Urban+Drainage+Systems+for+Wildlife+&gs\\_l=heirloom-hp.12...2593.2593.0.3359.1.1.0.0.0.188.188.0j1.1.0...0.0...1ac..15.heirloom-hp.UVf51p75fmg&safe=active](http://www.google.co.uk/search?hl=en-GB&source=hp&q=Enhancing+Sustainable+Urban+Drainage+Systems+for+Wildlife+&gbv=2&oq=Enhancing+Sustainable+Urban+Drainage+Systems+for+Wildlife+&gs_l=heirloom-hp.12...2593.2593.0.3359.1.1.0.0.0.188.188.0j1.1.0...0.0...1ac..15.heirloom-hp.UVf51p75fmg&safe=active)