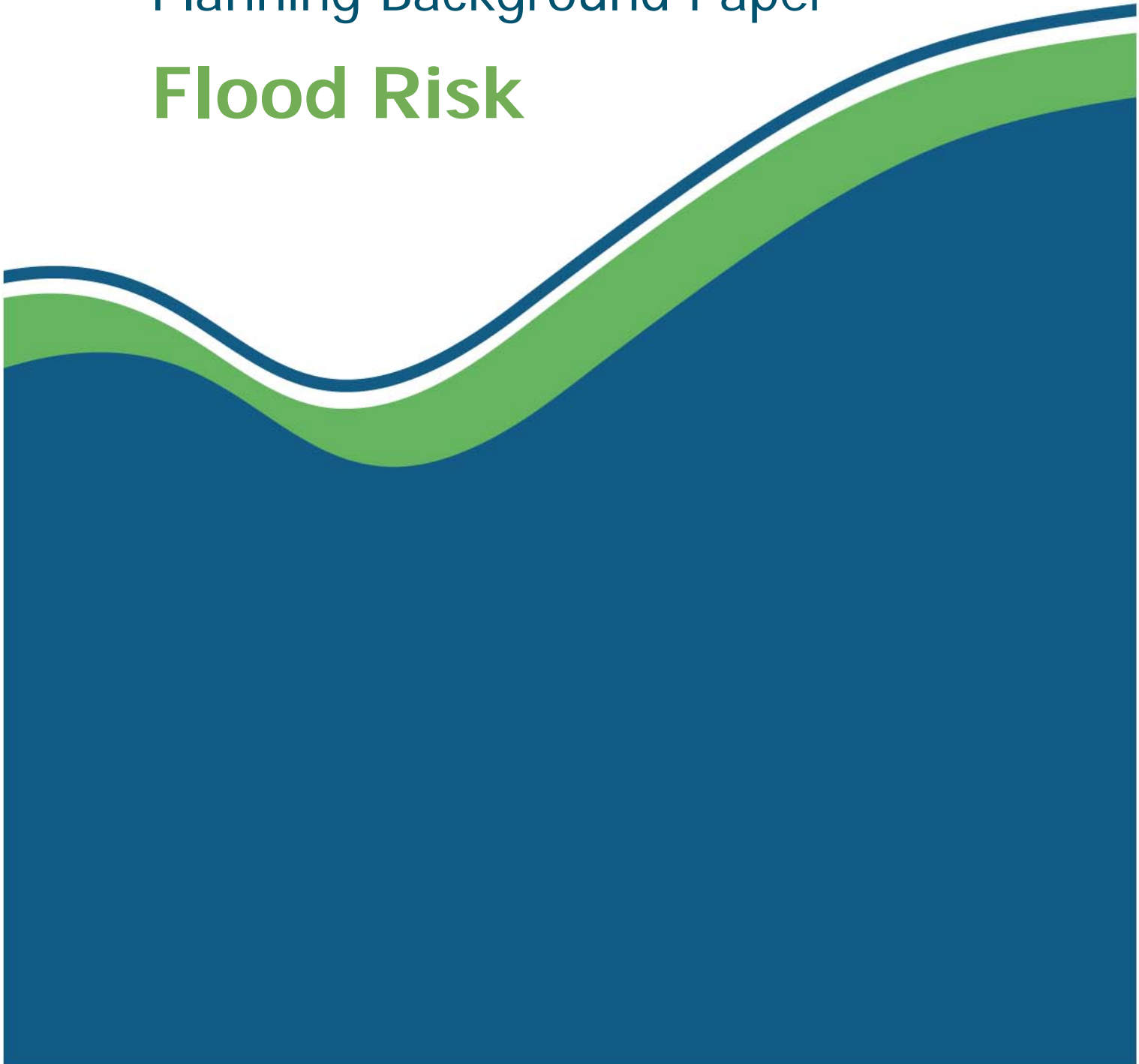


Scotland's 4th National Planning Framework has recently been published. This document is therefore being reviewed and updated to reflect the new policies. You can still find useful and relevant information here but be aware that some parts may be out of date and our responses to planning applications may not match the information set out here.

Planning Background Paper

Flood Risk



SEPA Planning Background Paper: Flood Risk

SCOTTISH ENVIRONMENT PROTECTION AGENCY	Identifier:	LUPS-BP-GU2a
Land Use Planning System SEPA Guidance	Pages:	71
	Issue no:	Version 3
	Issue date:	10 July 2018
Background Paper on Flood Risk		

Update Summary

<i>Version</i>	<i>Description</i>
Version 1	First issue – only covers development plan considerations
Version 2	Minor revisions to the text supporting the development plan considerations, inclusion of development management considerations, explanation of flood risk and glossary.
Version 3	Minor changes to development management section following 6 month review of the guidance. This includes (but is not limited to) clarifying our position on most vulnerable uses, land raising at the coast and climate change allowances. Minor updates to development plan section to align with development management advice, in particular LDP Requirement 2.

Notes

This document provides SEPA guidance on land use planning and flood risk. It is based on SEPA's interpretation of national planning policy and duties and requirements under relevant legislation.

This document is uncontrolled if printed. Always refer to the online document for accurate and up-to-date information.

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SEPA Planning Background Paper: Flood Risk

Why we comment on this topic

DI.1 [Delivering Sustainable Flood Risk Management](#) (Scottish Government, June 2011) sets the framework for flood management in Scotland. The main principles of flood management are identified as avoid, protect, prepare and accept. It identifies the land use planning system as one of the most powerful tools available to manage flood risk sustainability (pg 21). This concept is supported by the National Planning Framework and Scottish Planning Policy, which promote a precautionary approach to flood risk management through avoidance, reduction and sustainable drainage. The principle of flood avoidance is the cornerstone of sustainable flood risk management.

Table 1: Policy hierarchy

Scottish Government National Outcomes					
Sustainable Flood Risk Management					
Overarching Principles	Avoid (the risk)	Protect (to reduce hazard)	Prepare (to reduce impacts)	Accept (all or part of the risk)	
National Planning	Outcomes (most relevant to flooding)	 A natural, resilient place - helping to protect and enhance our natural and cultural assets, and facilitating their sustainable use	 A low carbon place – reducing our carbon emissions and adapting to climate change	 A successful sustainable place – supporting sustainable economic growth and regeneration, and the creation of well-designed sustainable places	
	Policy Principles	Precautionary approach	Avoidance	Reduction	Sustainable drainage
SEPA	Purpose	To protect and improve the environment in ways that, as far as possible, also help create health and well-being benefits and sustainable economic growth.			
	Strategic Outcomes (most relevant to flooding)	The impact of flooding is reducing – the likelihood and potential impact of flooding across Scotland is understood, and robust advice is given to ensure planning decisions are well informed and new developments are not located in high risk areas.		People benefit from Scotland's improving environment – people have the information they need, when they need it to help them make good decisions that improve the environment, society and the economy.	
	Strategic Action	Flood risk management - we will work with the sectors we regulate, planning authorities and other sectors, to minimise future disruption to people and businesses caused by flooding.			
	Planning Objectives	Effectively contribute to sustainable flood management by (1) ensuring development is avoided in areas at medium to high flood risk, from any source, unless it accords with the SPP risk framework, and (2) exercising our planning functions with a view to reducing overall flood risk.	Support delivery of Flood Risk Management strategies and local Flood Risk Management Plans	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk	
	Core Planning Guidance	Flood Risk Development Plan Guidance	Flood Risk Development Management Guidance	Flood Risk Background Paper	Standing Advice (Appendix 2)
	Supporting Planning Guidance	SEPA-Planning Authority Protocol (Policy 41)	Land use Vulnerability Guidance	Strategic Flood Risk Assessment Guidance	

DI.2 The application of these policy principles in plan making, planning decisions and development design helps to create safe and resilient communities and businesses and contributes to achieving the Scottish Governments national and planning outcomes. We assist the delivery of these outcomes by providing environmental advice in relation to development plans and proposals across Scotland on flood risk. In doing so, we focus on enabling sustainable development that is free from unacceptable flood risk, is adaptable and resilient to future changes in climate and maximises opportunities to deliver multiple benefits for society, the economy and environment. Modernising the ways Scotland manages flooding like this can also make a large contribution to achieving our regulatory strategy [One Planet Prosperity](#). As set out in table 1, the advice we provide also directly contributes to achieving two of our corporate outcomes (SEPA's Corporate Plan 2012-17, pg 14 and 27).

Statutory Context

DI.3 The provision of flood risk advice through our planning service accords with our duties under a range of legislation. Our development plan and development management requirements and recommendations are based on our interpretation of these duties.

DI.4 A key piece of legislation is the Flood Risk Management (Scotland) Act 2009 (FRM Act) which introduces a more integrated and sustainable approach to flood risk management, with the aim of reducing the adverse consequences of flooding from all sources. The FRM Act sets the overall context for the management of flood risk in Scotland (reflected in National Planning Policy) and is complemented by other legislation set out in the table 2.

DI.5 In particular, the Act places a duty on SEPA to produce flood risk management plans which set objectives and measures to manage flood risk in the most sustainable way. SEPA and flood risk functions in local authorities are responsible for drafting local flood risk management plans and implementing the measures to ensure that the objectives are met. Land use planning is identified as a key delivery mechanism in helping to achieve the main objectives of the plans. Integration of the land use planning and the flood risk management processes will therefore become increasingly important.

Table 2: Flood risk duties that relate to planning

Statue	Relevant Sections	How this is applied
Flood Risk Management (Scotland) Act 2009	<u>Section 1. General Duty</u> – SEPA must exercise its flood risk related functions [as per Part 1, Section 4 (b)(i) this is taken to include our planning service] with a view to reducing overall flood risk. And in accordance with Section 1(2) act with a view to achieving the objectives in approved flood risk management plans, promote sustainable flood risk management, raise public awareness and contribute to sustainable development.	Provides context for all aspects of our planning engagement on flood risk. Flood risk related functions will be designated by Order and may include local authority planning functions.
	<u>Part 5. Section 72</u> – SEPA must, provide on request by a planning authority or National Park Authority, flood risk advice based on the information we hold.	Provides the context for our input into the development plan process (including site and policy review) and commenting on planning applications. We have a duty to provide advice to the planning authorities based on the information we hold on flood risk in their area.
	<u>Part 3. Section 27</u> – SEPA must prepare flood risk management plans, that [under subsection (4)], must set objectives for the management of flood risk and identify	The provision of planning advice is a measure in the flood risk management plans which we have a duty to implement.

	measures to achieve the objectives in a way it considers most sustainable.	
Planning etc. (Scotland) Act 2006	<u>Part 2, Section 3E</u> – Development Plans – planning authorities must exercise their functions with the objective of contributing to sustainable development.	Provides context for promoting sustainable flood management, as it contributes to achieving wider sustainable development.
Town and Country Planning (Development Planning) (Scotland) Regulations 2008 (as amended 2011)	<u>Regulation 10 (1) (d)</u> – Information and Considerations – Development Plans are required to have regard to any approved flood risk management plan and finalised local flood risk management plan related to the local development plan area.	Provides the context for requiring development plans to support the delivery of objectives and actions in relevant flood risk management plans.
Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008	<u>Schedule 5.1</u> – planning authorities, must, before determining an application for planning permission for development, consult with SEPA where the development is likely to result in a material increase in the number of buildings at risk of being damaged by flooding; and where the development consists or includes carrying out of works or operations in the bed or on the banks of a river or stream.	Provides the context for us being consulted and commenting on certain development management applications. Including those where engineering works are proposed within the vicinity of a watercourses.
The Regulatory Reform (Scotland) Act 2014	<u>Part 51 - General Purpose of SEPA</u> – introduces a new general purpose to be inserted into the Environment Act 1995; (1) SEPA is to carry functions conferred on it by or under this Act or any other enactment for the purpose of protecting and improving the environment (including managing natural resources in a sustainable way). In doing so, SEPA must contribute to (2)(a) improving the health and well-being of people in Scotland.	Provides context for promoting sustainable flood management, as it contributes to the sustainable management of resources. The provision of flood risk advice also helps improve the health and wellbeing of people exposed to risk.
Water Environment and Water Services (Scotland) Act 2003	<u>Part 2 - The General Duties</u> – SEPA must exercise its functions to secure compliance with the requirements of the Directive. This includes, the promotion of sustainable flood management and sustainable development.	Provides the context for promoting sustainable flood risk management in relation to the potential impacts of flooding or flood management measures on the water environment e.g. where it may lead to chemical, biological or physical damage.
	The Water Environment (Relevant Enactments and Designations of Responsible Authorities and Functions) Order 2011 <u>Specification of relevant enactments</u> – Town and Country Planning (Scotland) Act 1997 specified as a relevant enactment for the purpose of section 2 of the Act.	
Climate Change (Scotland) Act 2009	<u>Section 44</u> – Public bodies must, act in a sustainable way and contribute towards the delivery of the Adaptation programme.	Provides the context for commenting on flood risk policy issues in development plans.
	The Climate Change Adaptation Programme (May 2014) identifies the integration of climate change adaptation into existing risk management and planning process decisions as one of the six strategic	SEPA is defined as an agency to help deliver a number of objectives. In particular Objective B3-3 requires climate change to be taken into account throughout the planning

	principles.	system.
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Policy Context

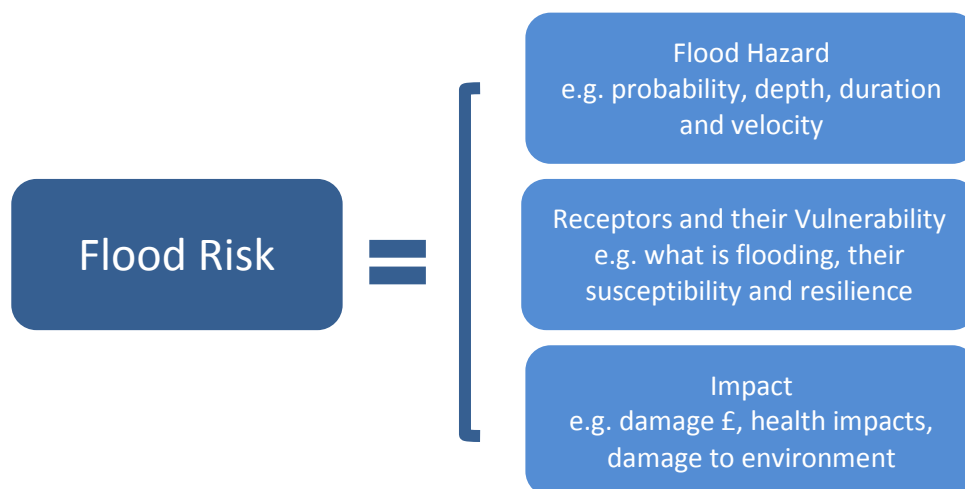
- DI.6 Flood risk is a matter of national interest and is a material consideration for planning decisions.
- DI.7 The National Planning Framework 3 (NPF 3) and Scottish Planning Policy (SPP) place a strong focus on creating better places and sustainable development. To achieve more sustainable and resilient patterns of development the consideration of flood risk issues by planning authorities will become increasingly important as we adapt to the impacts of a changing climate (NPF3, para 4.16). A catchment-scale approach to flood risk management will also be required, with flood risk management plans expected to become an integral part of strategic and local development planning (NPF3, para 4.25).
- DI.8 To help deliver sustainable development, policies and decisions should be guided by the high level policy principles in paragraph 29 of SPP. These include supporting climate change adaptation by taking account of flood risk, having regard to the principles of sustainable land use set out in the Land Use Strategy (which advocates sustainable flood management) and considering the implications of development for water.
- DI.9 Paragraphs 254 – 268 of SPP set out the policy position for managing flood risk and drainage. The overarching policy principles state that the planning system should promote a precautionary approach to flood risk from all sources, flood avoidance, flood reduction and avoidance of increased surface water flooding. To achieve this, the planning system should prevent development which would have a significant probability of being affected by flooding or would increase the probability of flooding elsewhere (SPP, para 256).
- DI.10 SPP also recognises that coastal and island areas could be significantly impacted by rising sea levels and extreme weather events. A precautionary approach to flood risk should be taken in these areas. Development requiring new defences against coastal erosion or flooding will generally not be supported (SPP, para 88).
- DI.11 The protection of flood management areas (e.g. flood plains and river corridors) from built development and land raising can also contribute positively to green infrastructure networks and open space provision. Paragraph 222 of SPP states that development plans should be based upon a holistic, integrated and cross-sectoral approach to green infrastructure and should be informed by relevant, up-to-date audits, strategies and action plans relating to a range of issues including flood management, river basins and coastal zone.
- DI.12 To support SPP the Scottish Government has recently published [online planning advice on flood risk](#). This document supersedes Planning Advice Note 69: Planning and Building Standards Advice on Flooding.

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What is flood risk?

- DI.13 The Flood Risk Management (Scotland) Act 2009 defines flood risk as the combination of the probability of a flood occurring and of the potential adverse consequences associated with a flood for human health, the environment, cultural heritage and economic activity.
- DI.14 Flood risk can be therefore be thought of as a combination of the following elements (see Figure 1):
- Flood hazard – the characteristics of a flood e.g. the probability of flooding, depth and duration of flooding and velocity;
 - Receptors – what will be flooded e.g. people, homes, businesses, environment, cultural heritage, infrastructure and the vulnerability (susceptibility and resilience) of the receptors;
 - Impact – what is the adverse impact of the flood on the receptors e.g. impacts may be tangible or intangible (i.e. monetised or non-monetised), economic damages caused (£ values), impact on human health due to the stress of flooding, damage to the environment.
- DI.15 Changes to the flood hazard and receptors that are flooded will change flood risk. For example:
- Increasing the probability, depth, duration or velocity of flooding to receptors would increase flood risk;
 - Increasing the vulnerability of receptors would increase flood risk;
 - Increasing the number of receptors that are flooded would increase flood risk;
 - Increasing resilience of receptors would decrease their vulnerability and therefore decrease flood risk.

Figure 1: The elements of flood risk



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How we comment on this topic

DI.16 Our role is to serve as an independent advisor on flood risk within the context of National Planning Policy. This includes a duty as a key agency to co-operate in the preparation of development plans and a statutory role to provide flood advice for certain development management applications. Our advice is based on our specialist knowledge and understanding of the water environment and flooding mechanisms. It takes into account all the information available to us including SEPA's Flood Maps, other flood related information we hold, and information provided to us by planning authorities, developers and third parties. We aim to provide proportionate, concise, objective, timely and helpful advice based upon the risk of flooding within national planning policy. Lower impact proposals in flood risk areas are dealt with by our standing advice.

SEPA's overarching objectives in providing advice to planning authorities on flood risk related matters are to:

- Effectively contribute to sustainable flood management by:
 - Ensuring development is avoided in areas at medium to high flood risk, from any source, unless it accords with the SPP risk framework
 - Exercising our planning functions with a view to reducing overall flood risk;
- Support delivery of Flood Risk Management strategies and local Flood Risk Management Plans (once published)
- Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

DI.17 Our approach to flood risk is set out in the following documents. This background paper provides the context and justification for the advice contained in the guidance notes. It also explains how our requirements and recommendations can be achieved.

- [Planning Information Note 4: SEPA position on development protected by a Flood Protection Scheme](#)
- [LUPS-DP-GU2a: Development plan guidance on flood risk](#)
- [LUPS-DM-GU2a: Development management guidance on flood risk](#)
- [LUPS-GU8 \(Appendix 2\): Standing advice for low impact proposals in flood risk areas](#)
- [LUPS-GU24: Land use vulnerability guidance](#)

DI.18 This is supported by two technical guidance notes:

- [LUPS-GU22: Strategic Flood Risk Assessment – technical guidance](#)
- [SS-NFR-P-002: Technical flood risk guidance for stakeholders](#)

DI.19 The [SEPA - Planning Authority Protocol](#) (Policy 41) contains principles to be followed by SEPA and planning authorities regarding advice and consultation on flood risk issues. The assessment of flood risk is a specialist subject and the Protocol is intended to enable planning authorities and SEPA to work together effectively on planning matters where there is a potential flood risk.

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Development Plans

- DP.1 Development plans have a crucial role to play in delivering sustainable flood risk management including the delivery of relevant objectives within the Flood Risk Management Plans. The Flood Risk Management Plan for the development plan area will constitute the relevant Flood Risk Management Strategy (published, December 2015) and the Local Flood Risk Management Plan (published, June 2016). We work jointly with planning authorities to ensure that flood risk has been afforded due weight throughout the plan preparation. This includes all potential development allocations (including those that have been included in previous plans), the policy framework and supplementary guidance.
- DP.2 To help achieve this, we have clarified the requirements and recommendations relating to flood risk that we consider should be addressed through strategic and local development plans. These are based on our interpretation of national planning policies and duties and requirements under relevant legislation. In accordance with our [development planning guidance](#), we expect development plans to satisfy all of the requirements and may object if the plan is deficient. Planning authorities are encouraged to take forward the recommendations as good practice.
- DP.3 Our flood risk management expectations are complemented by the [Water Environment development plan topic guidance](#) which is best considered alongside the flood risk development plan guidance. This will ensure that development plans help deliver the objectives of both the flood risk management and river basin management plans in an effective and coordinated manner.
- DP.4 It should be noted that many of our flood risk requirements and recommendations are also included as land use planning actions in flood risk management plans. SEPA and designated flood risk functions within local authorities have a responsibility to implement these measures. Where appropriate this can be used as further justification to support our position.

Strategic Flood Risk Assessment

- DP.5 To ensure that flood risk is adequately considered and development directed away from medium to high risk areas, development plans should be underpinned by a strategic flood risk assessment (SFRA). This approach is supported by National Planning Framework 3 which promotes a catchment-scale approach to flood risk management and Scottish Planning Policy (para 260) which states that development plans should use SFRA to inform choices about the location of development and policies for flood risk management.
- DP.6 The SFRA should be used as a practical tool to help deliver a more integrated and sustainable approach to flood risk management by considering flood risk early on in the development plan process. It enables a catchment wide approach to the development of the spatial strategy, site allocations and policies, as well as improving the efficiency of subsequent planning applications where flood risk may be an issue. It should provide an evidence base for the assessment of significant effects for flooding in the Environmental Report (SEA) and assist the consideration of alternatives as part of the main issues report.
- DP.7 As set out in our [SFRA guidance](#) the appraisal should be used to apply a risk based approach to the identification of:
- development areas/sites, including any mitigation that may be required;
 - policies and supplementary guidance needed to guide flood risk management;
 - land that could be used for flood water management;
 - relevant Flood Risk Management Plan actions.

- DP.8 In practice, this means considering the flood probability of given locations and then identifying appropriate land uses. This should also include the identification of areas where more information may be required to inform development potential.
- DP.9 An SFRA can also provide a useful evidence base for the delivery of other aspects of planning such as climate change adaptation, delivery of River Basin Management Planning objectives, sustainable drainage, provision of open space requirements and green/blue infrastructure and sustainable place making.
- DP.10 A catchment based approach to identifying flood risk in the plan area will also help planning authorities address cross boundary issues. Joint SFRAs should be considered when the local authority is part of a larger catchment to ensure that actions are complimentary and a planned approach is taken by all relevant authorities.
- DP.11 In accordance with SPP (para 260) we expect planning authorities to use SFRA to inform choices about the location of development and policies for flood risk management. As set out in [SDP Requirement 2](#), [SDP Requirement 3](#), [LDP Requirements 2](#), [LDP Requirement 3](#) and [LDP Requirement 4](#) and [SDP/LDP Recommendation 1](#) the SFRA should be used as part of the evidence base to assist planning authorities in meeting these requirements. Where appropriate, we will use the findings of the SFRA to support representations on site allocations e.g. if the SFRA shows the site is at risk and should not be allocated or identifies mitigation that has not been included in the plan (similar to how we use the SEA findings to support our position). If a planning authority fails to undertake a SFRA, we will explain in any representations to site allocations that this process should have been used to inform site selection and would have identified that the site in question may not be appropriate for development or that an FRA is required as a site requirement.

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SDP Requirement 1: Flood Risk Management Strategies and Plans

LDP Requirement 1: Flood Risk Management Strategies and Plans

Strategic Development Plans and Local Development Plans: Flood Risk Management Strategies and Plans Requirement

Policy coverage and strategic land allocations support the delivery of relevant objectives and actions within Flood Risk Management Strategies and Local Flood Risk Management Plans that affect the plan area.

Context

National	Planning outcome(s)	A natural, resilient place		A low carbon place	
	Planning principle(s)	Precaution	Avoidance	Reduction	Drainage
SEPA	Planning objective(s)	Exercising our planning functions with a view to reducing overall flood risk		Support delivery of Flood Risk Management strategies and local Flood Risk Management Plans (once published)	

How this can be achieved

- DP.12 The Flood Risk Management (FRM) Strategies and Local Flood Risk Management (LFRM) Plans identify actions that achieve the Plan objectives in a way it considers is most sustainable and ultimately seek to avoid an increase in flood risk and reduce overall flood risk across Scotland.
- DP.13 [FRM Strategies](#) have been published for each of the 14 local plan districts. Together these strategies make up the national flood risk management plan for Scotland. Local Flood Risk Management (LFRM) Plans have been prepared for each district to complement the strategies. The Flood Risk Management Plan for the development plan area will therefore constitute the relevant FRM Strategy and the LFRM Plan.
- DP.14 Land use planning related actions form a critical element of the suite of actions needed to achieve the plan objectives and should help guide the management of flood risk within the development plan area. These include generic land use planning actions applicable to all areas within the local plan districts and actions specific to Potentially Vulnerable Areas (PVAs) that may have influence on land use matters.
- DP.15 Generic land use planning actions – designed to help to deliver national level land use planning policy are included in Annex 2 in each of the [FRM Strategies](#). These are shown in the table below. The development plan process is the mechanism identified for delivering these actions.

Generic Land Use Planning Actions (reproduction of Annex 2, FRM Strategies, 2016)

<p>Flood risk management actions from national planning policy</p> <p>AVOID DEVELOPMENT IN MEDIUM TO HIGH RISK AREAS</p> <p>a) Planning authorities work in partnership undertaking catchment-wide Strategic Flood Risk Assessments to inform their development plan allocations in line with SEPA's guidance and Land Use Vulnerability.</p> <p>b) Planning authorities and SEPA require the submission of flood risk assessments that accord with SEPA's <i>Technical Flood Risk Guidance for Stakeholders</i>, to support planning applications where there is potential flood risk. The flood risk assessment should be used to demonstrate as far as possible that the development will be safe for its lifetime, without increasing flood risk elsewhere and, where possible, takes opportunities to reduce flood risk overall.</p> <p>c) SEPA ensure that its flood risk advice to planning authorities is clear and appropriate. SEPA and</p>

<p>planning authorities engage at an early stage of the development plan process to agree appropriate forms of development to help inform the preparation and implementation of Strategic Flood Risk Assessments.</p>
<p>REDUCE IMPACTS TO EXISTING BUILDINGS</p> <p>a) SEPA, planning authorities and local communities are required to engage at an early stage of the development plan process to agree the best long term land uses for areas where relocation, abandonment and/or change of use have been identified to deliver sustainable flood risk management. Where possible, new land uses should aim to achieve multiple benefits for local communities such as the creation of blue/green infrastructure and increase resilience to climate change.</p>
<p>PROTECT AND ENHANCE NATURAL FEATURES THAT HAVE A POSITIVE IMPACT ON REDUCING OVERALL FLOOD RISK</p> <p>a) SEPA and planning authorities are required to engage early in the development plan process to identify opportunities for the restoration and protection of natural features which help manage flood risk. Opportunities should be maximised to achieve multiple benefits such as the development of green/blue infrastructure and improved place making. Areas of land that may contribute to flood management should be identified and protected.</p>
<p>NEW DEVELOPMENTS ARE DESIGNED TO ENSURE THAT SURFACE WATER DRAINAGE DOES NOT INCREASE FLOOD RISK ON OR OFF SITE</p> <p>a) SEPA prepares guidance for planning authorities and developers on the use of surface water hazard maps for land use planning purposes.</p> <p>b) Planning authorities support the implementation of Surface Water Management policies. Surface Water Management Plans should take account of development opportunities that could contribute to the reduction of surface water flood risk.</p> <p>c) SEPA engages at an early stage of the development plan process to progress exemplar projects that demonstrate the potential for land use planning to mitigate surface water flooding and contribute to wider environmental benefits.</p>
<p>NEW DEVELOPMENT IS RESILIENT TO PREDICTED FUTURE CHANGES IN CLIMATE</p> <p>a) Planning authorities ensure that climate change is considered in Strategic Flood Risk Assessments and Flood Risk Assessments, based upon the best scientific evidence and the information requirements of planners to make informed decisions.</p>

DP.16 PVA specific actions – in addition to the generic actions there may be actions that are specific to a PVA which have land use planning implications. Planning authorities should review the actions in each of the PVAs in the development plan area to identify any relevant actions. These are most likely to be structural actions e.g. flood protection schemes or the sites of natural flood management (NFM) actions. The table at the beginning of section 2.2 in each of the FRM Strategies can be used to help identify the PVAs where these types of actions have been identified. The relevant Local FRM Plan provides more detailed information to support the delivery of the actions and should also be reviewed. However, in many situations the information in the FRM Strategies and Local FRM Plans is unlikely to be detailed enough to use in development plans. Additional information on where the actions are likely to be located and the timeframes and mechanisms under which they will be delivered should be available from local authority flood teams. Our Flood Risk Management Planning team (email FRMplanning) may also be able to help.

DP.17 The spatial strategy, proposed allocations and policy framework should complement the objectives in the FRM Strategies and Local FRM Plans and help enable the land use actions to be implemented. This could be achieved as follows:

Spatial Strategy:

DP.18 Strategic and local development plans should safeguard areas of land identified in the FRM Strategies and Local FRM Plans for flood risk management measures. This should only be done where the specific location and extent of the required area is known. The planning authority should liaise with the persons responsible for delivering the measure to gauge the level of certainty. As there is likely to be uncertainty surrounding the specific location of NFM areas it may not be appropriate to safeguard these areas until proposals are at an advanced stage.

Policy framework:

DP.19 Policies in strategic and local development plans should promote sustainable flood management and help deliver the objectives and measures in the relevant Flood Risk Management Strategy and Plan. In local development plans this should include the types of development that may be acceptable in areas associated with the measures e.g. behind flood protection schemes (see [LDP Requirement 5](#)) or ensuring that any complementary benefits of NFM measures are incorporated into development proposals (see [LDP Recommendation 1](#)). However, it should be noted that some of the measures will not necessarily require planning permission and will be delivered by other mechanisms (e.g. the Scottish Rural Development Programme).

Other:

DP.20 Similar to other infrastructure provision, there may be scope to include some of the flood management measures coming forward in the development plan area in the action programme and/or monitoring report e.g. delivery of flood protection measures, NFM studies etc. The development of supplementary planning guidance could also be used to clarify planning considerations associated with NFM measures (especially where the certainty of the measures is not established until after the development plan is published) and how the multiple benefits of some actions could contribute positively to other planning areas (i.e. forestry and blue/green infrastructure or networks).

DP.21 Some of the flood risk management actions identified in the FRM Strategies and Local FRM Plans may also help mitigate the potential environmental effects of the development plan. Relevant actions could therefore be included as mitigation measures in the SEA.

Justification

DP.22 The Flood Risk Management (Scotland) Act 2009 (FRM Act) introduced an integrated and sustainable approach to flood risk management, with the aim of reducing overall flood risk. The Act imposes a duty on local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. Flood risk related functions will be designated by Order and may include land use planning functions.

DP.23 This is supported by the publication of [Delivering Sustainable Flood Risk Management](#) (Scottish Government, June 2011), which sets out statutory guidance to SEPA, local authorities and Scottish Water on fulfilling their responsibilities under the Act. In particular, it identifies the steps that should be taken to manage flooding in a sustainable manner with the planning system identified as a key non-structural measure/action. The Scottish Government's [online planning advice on flood risk](#) recognises that land use planning has a pivotal role to play in the implementation of the Flood Risk Management Strategies and Local Flood Risk Management Plans (para 23).

DP.24 The interdependencies between land use planning and flood risk planning are reflected in legislation. Sections 28 and 29 of the FRM Act require Flood Risk Management Strategies to take account of development plans relating to the district and anything else done under or in pursuance of the planning Acts. The need for development plans to take account of FRM Strategies and Plans is reflected in Section 10 (1) (d) of the Town and Country Planning (Development Planning) (Scotland) Regulations 2008 (as amended 2011).

DP.25 This is reiterated in Planning Circular 6/13: Development Planning (para 32 and 57) and Scottish Planning Policy (para 260), which require development plans to take account of finalised and approved FRM Strategies and Plans. In particular, the National Planning Framework (para 4.25) highlights that flood risk management plans are likely to become an integral part of strategic and local development planning.

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SDP Requirement 2: Strategic Development Areas

Strategic Development Plans: Strategic Development Areas Requirement

Identification of strategic development areas should accord with the principles of sustainable flood risk management by avoiding development in areas at flood risk, unless they accord with risk framework in paragraph 263 of SPP.

Context

National	Planning outcome(s)	A natural, resilient place	A low carbon place
	Planning principle(s)	Precaution	Avoidance
SEPA	Planning objective(s)	Ensuring development is avoided in areas at medium to high flood risk, from any source, unless it accords with the SPP risk framework	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

- DP.26 A Strategic Flood Risk Assessment (SFRA) should be used to inform choices about the location of strategic development areas (SPP, para 260). A precautionary approach should be adopted by avoiding inappropriate development in medium to high risk areas (guided by the flood risk framework in SPP). We have prepared [guidance for planning authorities on producing an SFRA](#) to assist them in this undertaking.
- DP.27 The SEA process can also be used to compare the likely significant effects of the reasonable alternatives of the plan on flood risk, and identify viable mitigation measures to avoid and reduce flood risk.
- DP.28 If the strategic development plan authority wants to promote development areas where flood risk may constrain the amount of land available, it should:
- direct local development plans to identify appropriate land within the development areas that is free from medium to high flood risk. This can be included as an action in the action programme;
 - ensure that the scale of development (i.e. capacity, number of units to be delivered, developable area) can be realistically delivered when areas at medium to high flood risk are avoided;
 - ensure that the proposed land use is appropriate for the location. The framework in our [Land Use Vulnerability Guidance](#) can aid this decision making. This point also applies to development areas being promoted behind formal flood protection schemes.
- DP.29 If the strategic development plan authority wants to promote development in coastal areas, it should comply with the principles set out in paragraph 88 of SPP. As flood risk is more likely to increase at the coast, the consideration of climate change is particularly important for these locations. The [Dynamic Coast: Scotland's Coastal Change Assessment](#) website may help planning authorities consider this issue.

Justification

- DP.30 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006 to ensure that development plans contribute to sustainable development. The Flood Risk Management

(Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. The avoidance of flood risk, by not locating development in areas at risk of flooding is recognised as a key part of delivering sustainable flood risk management which positively contributes to the creation of sustainable places. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.

- DP.31 In accordance with paragraph 255 of SPP the planning system should take a precautionary approach to flood risk and promote flood avoidance. Paragraph 13 of the Scottish Government's [online planning advice on flood risk](#) recognises that the avoidance of flood risk, by not locating development in areas at risk of flooding, is a key part of delivering sustainable flood risk management. Development plans should therefore safeguard flood storage and conveyancing capacity and direct development away from functional flood plains and medium to high flood risk areas (SPP, para 255). This includes identifying major areas of the flood plain and storage capacity which should be protected from inappropriate development (SPP, para 261).
- DP.32 In particular, paragraph 256 of SPP specifically states that development which would have a significant probability of being affected by flooding should not be permitted. This principle is reflected in the risk framework (SPP, para 263) which states that medium to high risk areas are generally not suitable for additional development in undeveloped and sparsely developed areas.
- DP.33 In accordance with Planning Circular 6/2013: Development Planning, SDPs should set clear parameters for LDPs to follow (para 18).

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SDP Requirement 3: Policy Coverage

Strategic Development Plans: Policy Coverage Requirement

Policy coverage to ensure that:

- a precautionary approach is taken to flood risk from all sources taking account of the predicted impacts of climate change;
- development is avoided in locations at medium to high flood risk (unless it accords with the risk framework in SPP, paragraph 263) or it would increase the probability of flooding elsewhere.

Context

National	Planning outcome(s)	A natural, resilient place	A low carbon place
	Planning principle(s)	Precaution	Avoidance
SEPA	Planning objective(s)	Ensuring development is avoided in areas at medium to high flood risk, from any source, unless it accords with the SPP risk framework	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

DP.34 Policies should direct local development plans to take a sustainable approach to flood management by promoting patterns of development that are resilient to a changing climate through the avoidance of flood risk in the first instance. This should include encouraging LDPs to:

- consider flood risk from all sources that includes the predicted impacts of climate change. The impacts of climate change could be addressed through the specification of a suitable climate change allowance for fluvial and coastal locations¹;
- include a presumption against inappropriate development in areas at medium to high flood risk (0.5% annual probability event) or areas that would increase the probability of flooding elsewhere;
- use a Strategic Flood Risk Assessment (SFRA) to identify; a) areas important for flood management which should be protected from inappropriate development; and b) locations which can be promoted for development.

DP.35 The SEA and SFRA should be used to inform the policy development (SPP, para 260). Mitigation measures to avoid and reduce flood risk identified through the assessment process should be reflected in the policy framework.

DP.36 The plan, supplementary guidance (if relevant) and action programme should also clarify how any outstanding risks will be mitigated and delivered.

Justification

DP.37 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006, to ensure that development plans contribute to sustainable development. The Flood Risk Management

¹Further advice can be found in sections 3.3 and 6.3 of SEPA's [Technical Flood Risk Guidance for Stakeholders](#).

(Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. Paragraph 13 of the Scottish Government's [online planning advice on flood risk](#) recognises that the avoidance of flood risk, by not locating development in areas at risk of flooding, is a key part of delivering sustainable flood risk management. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.

- DP.38 The National Policy Framework 3 identifies sustainable flood risk management as an issue that is becoming increasingly important, both in terms of climate change adaptation and the creation of sustainable healthy places. As the sustainable management of flood risk is pivotal to achieving sustainable development and the crucial role that development plans play, it is an issue that warrants strategic direction. In accordance with Planning Circular 1/09: Development Planning, SDPs should therefore set clear parameters for LDPs to follow (para 14).
- DP.39 This approach is supported by the inclusion of flood risk (in relation to climate change) as a high level principle that guides sustainable development (SPP, para 29). It is also in accordance with paragraph 255 of SPP that promotes a precautionary approach to flood risk from all sources, and flood avoidance as overriding policy principles that contribute to achieving sustainable flood management. Paragraph 37 of the Scottish Government's [online planning advice on flood risk](#) states that the assessment of the effectiveness of sites in strategic development plans should take flood risk into account.

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LDP Requirement 2: Allocations

Local Development Plans: Allocation Requirement

Allocated sites accord with the principles of sustainable flood risk management by avoiding areas at flood risk.

This means that a) sites should not be promoted in areas at medium to high risk from fluvial or coastal flooding; b) any sites that are being promoted for civil infrastructure should not be allocated in low to medium risk areas; and c) any sites that are being promoted in low to medium risk areas that fall within the *most vulnerable* uses category are only allocated if there is potential for the hazard to be alleviated through appropriate mitigation. In this situation the need for mitigation from the 0.1%AP event should be included as a site requirement.

Where this is not possible, some types of development may be acceptable if it satisfies the requirements of the risk framework (SPP, paragraph 263). The risk framework should be applied within the context of the issues listed in paragraph 264 of SPP and our [Land Use Vulnerability Guidance](#) should be used to inform the vulnerability classification of the proposed land use and ensure that it is suitable for the location and degree of flood risk.

Context

National	Planning outcome(s)	A natural, resilient place	A low carbon place
	Planning principle(s)	Precaution	Avoidance
SEPA	Planning objective(s)	Ensuring development is avoided in areas at medium to high flood risk, from any source, unless it accords with the SPP risk framework	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

- DP.40 A Strategic Flood Risk Assessment (SFRA) should be used to identify the locations most suitable for development (SPP, para 260). A precautionary approach should be adopted by avoiding inappropriate development in medium to high risk areas (guided by the flood risk framework in SPP). This approach should be applied to all potential development allocations. We have prepared [guidance](#) for planning authorities on producing an SFRA to assist them in this undertaking.
- DP.41 In order for SEPA to help deliver a development plan-led system, and provide certainty to all stakeholders in the planning process, sites in the previous/existing LDP for the area (sometimes referred to as 'legacy sites') should not automatically be carried forward into the next plan on the basis that they are allocated in an existing plan. They will need to be re-assessed against any new information relating to the assessment of flood hazard or flood risk (which should be captured in the SFRA) and the most up-to-date policy and statutory framework. This principle is supported by paragraph 37 of the Scottish Government's [online planning advice on flood risk](#).
- DP.42 The SEA process can also be used to compare the likely significant effects of the reasonable alternatives of the plan on flood risk, and identify viable mitigation measures to avoid and reduce flood risk.
- DP.43 Based on the information we hold, we will review all potential site allocations (including legacy sites) and identify any sites unsuitable for development (this procedure is set out in

Appendix 4 of our [development plan process guidance](#)). If the planning authority wants to promote a site contrary to our advice, a Flood Risk Assessment (FRA) will be required to support the allocation as part of the plan preparation. This approach will enable all parties to reach a collective agreement on the principle of development and the nature of any mitigation required prior to the allocation of the site in the plan (i.e. prior to being consulted on the proposed plan). It will also confirm the developable extent of the site. In these situations, it is for the planning authority to determine who should commission the FRA (usually the site promoter). When commissioning an FRA, the planning authority and/or site promoter should accept that the findings may confirm that the site cannot meet the policy requirements of SPP and is therefore not suitable for development. In these cases, we will continue to object and ask for the site to be removed from the plan.

- DP.44 When assessing sites promoted in flood risk areas, we will apply the framework set out in Requirement 1 of our development management guidance to establish if the allocation is located in an appropriate location.
- DP.45 If the planning authority wants to promote a site that is at medium to high risk of flooding that is or will be behind a formal flood protection scheme (FPS), the advice in [LDP Requirement 5](#) should be applied.
- DP.46 There may be proposed allocations that are considered acceptable within the context of the risk framework in SPP but where there are still flood risk issues that require further consideration. In these instances site requirements may need to be applied as outlined in [LDP Requirement 3](#).
- DP.47 All planning authorities have been provided with a planning sub folder of the current [flood maps](#), inclusive of annual updates, which should be used to screen planning applications for potential fluvial and coastal flood risk. Planning authorities can find out if a proposed development may be affected by flood risk by viewing the planning sub folder of SEPA's flood maps in addition to the information collected from local authority flooding teams. A briefing note on how the planning sub folder can be used for screening purposes is available [here](#).

Justification

- DP.48 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006 to ensure that development plans contribute to sustainable development. The Flood Risk Management (Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. Paragraph 13 of the Scottish Government's [online planning advice on flood risk](#) recognises that the avoidance of flood risk, by not locating development in areas at risk of flooding, is a key part of delivering sustainable flood risk management. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.
- DP.49 In accordance with paragraph 255 of SPP the planning system should take a precautionary approach to flood risk and promote flood avoidance. Development plans should therefore safeguard flood storage and conveyance capacity and direct development away from functional flood plains and medium to high flood risk areas (SPP, para 255). This includes identifying major areas of the flood plain and storage capacity which should be protected from inappropriate development (SPP, para 261).
- DP.50 In particular, paragraph 256 of SPP specifically states that development which would have a significant probability of being affected by flooding should not be permitted. This principle is reflected in the risk framework (SPP, para 263) which states that medium to high risk areas

are generally not suitable for additional development in undeveloped and sparsely developed areas. In built up areas certain developments may only be suitable behind formal flood protection schemes which are designed to an appropriate standard. Paragraph 37 of the Scottish Government's [online planning advice on flood risk](#) states that development plans should ensure that any assessment of the effectiveness of sites, especially housing sites, takes flood risk into account.

DP.51 As explained under [LDP Requirement 5](#), to ensure that people and property are not exposed to unnecessary flood risk development behind flood protection schemes should not be built until the defences are operational.

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LDP Requirement 3: Site Requirements

Local Development Plans: Site Requirements

Site requirements are attached to allocations where a potential flood risk has been identified (from any source) to ensure that a site specific Flood Risk Assessment (FRA) is undertaken in advance of the development. This should be used to inform the siting, layout, design and capacity of development on the site in a way that avoids an increase in flood risk on and off site and ensures that there is safe dry pedestrian access and egress at times of flood.

Context

National	Planning outcome(s)	A natural, resilient place	A low carbon place
	Planning principle(s)	Precaution	Avoidance
SEPA	Planning objective(s)	Ensuring development is avoided in areas at medium to high flood risk, from any source, unless it accords with the SPP risk framework	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

- DP.52 The SFRA and SEA should be used to identify sites where flood risk may be an issue and further mitigation is required. These sites will normally be located partly in or adjacent to the functional flood plain or areas potentially at risk from other flood sources. As the developable area of these sites may be constrained by flood risk, the following mitigation should be actioned:
- Flood Risk Assessment (FRA) attached as a specific development requirement, to be undertaken prior to any development and used to inform the siting, layout, design and capacity of development on site and ensure the provision of pedestrian access/egress. The FRA also should be included in the action programme.
- DP.53 The planning authority should also ensure that the site specifications attached to the allocation reflect the potential risk in the following ways:
- Site capacity (e.g. number of units, ratio of flats to houses, area of developable land) can be realistically delivered when areas at medium to high risk are avoided. Areas at potential flood risk could be included as part of the open space provision;
 - The proposed land use is acceptable for the location. As outlined in [LDP Recommendation 2](#) the framework in our [Land Use Vulnerability Guidance](#) should be used to inform this.
- DP.54 It should be noted that in exceptional circumstances a future FRA undertaken to support the planning application for an allocated site may demonstrate that the site cannot meet the policy requirements of SPP. We therefore reserve our right to object to the principle of development at the detailed design stage.
- DP.55 When requesting site requirements the standard wording in Appendix 5 of our [development plan process guidance](#) can be used to help justify our response.

Justification

- DP.56 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006 to ensure that development plans contribute to sustainable development. The Flood Risk Management (Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. Paragraph 13 of the Scottish Government's [online planning advice on flood risk](#) recognises that the avoidance of flood risk, by not locating development in areas at risk of flooding, is a key part of delivering sustainable flood risk management. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.
- DP.57 Paragraph 255 of SPP advocates a precautionary approach to flood risk. It states that the planning system should promote flood avoidance by safeguarding flood storage and conveyance capacity and locate development away from functional flood plains and medium to high risk areas. Paragraph 37 of the Scottish Government's [online planning advice on flood risk](#) states that development plans should ensure that any assessment of the effectiveness of sites, especially housing sites, takes flood risk into account.
- DP.58 We have consistently advised planning authorities that addressing flood risk to sites allocated in development plans by means of a policy is not adequate. The inclusion of an FRA as a site specific development requirement is therefore required to ensure that flood risk is appropriately considered and directed away from medium to high flood risk areas (unless it accords with the risk framework in paragraph 263 of SPP). This requirement is supported by paragraph 266 of SPP states that an FRA may be required where factors indicate a heightened risk may be present. It will also ensure that developers are fully informed of the potential flood risk issues affecting the site, thereby preventing delay and frustration later in the planning process.
- DP.59 As set out in paragraph 29 of SPP, this approach will also contribute positively to the creation of sustainable places and support climate change adaptation.

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LDP Requirement 4: Policy Coverage

Local Development Plans: Policy Coverage Requirements

Policy coverage to ensure that:

- a precautionary approach is taken to flood risk from all sources taking account of the predicted impacts of climate change;
- development is avoided in locations at medium to high flood risk (unless it accords with the risk framework in paragraph 263 of SPP) or where it would lead to an increase in the probability of flooding elsewhere;
- a Flood Risk Assessment (FRA) is required for all developments at risk of flooding from any source in medium to high risk areas and developments in low to medium risk areas identified in the risk framework (i.e. developments located in an area at the upper end of the probability scale, essential infrastructure and the most vulnerable land uses). The flood risk assessment should be undertaken in accordance with SEPA technical guidance².

Context

National	Planning outcome(s)	A natural, resilient place	A low carbon place
	Planning principle(s)	Precaution	Avoidance
SEPA	Planning objective(s)	Ensuring development is avoided in areas at medium to high flood risk, from any source, unless it accords with the SPP risk framework	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

DP.60 Policies in the plan should accord with the principles of sustainable flood management by promoting patterns of development that are resilient to a changing climate through the avoidance of flood risk in the first instance. The flood risk framework (SPP, para 263) should be used as a guide to inform the policy framework. The primary outcome should be a clear understanding on all sides of where different types of development can and cannot take place. In doing so, the policy framework should cover the following:

- a requirement to consider flood risk from all sources that includes the predicted impacts of climate change. The impacts of climate change could be addressed through the specification of a suitable climate change allowance for fluvial and coastal locations³;
- a presumption against inappropriate development in areas at medium to high flood risk (0.5% annual probability event) or areas that would increase the probability of flooding elsewhere;
- clarify when a Flood Risk Assessment (FRA) will be required to inform development, and specify that it is to be undertaken in accordance with SEPAs [Technical Flood Risk Guidance for Stakeholders](#)².

²Further advice can be found in sections 3.3 and 6.3 of [SEPA's Technical Flood Risk Guidance for Stakeholders](#).

³We will not formally object to policy coverage if the only requirement missing is reference to our Technical Flood Risk Guidance.

- DP.61 The SEA and SFRA can be used to inform policy development and implementation (SPP, para 260). Mitigation measures to avoid and reduce flood risk identified through the assessment process should be reflected in the policy framework.
- DP.62 We also encourage policies, including associated supplementary guidance and action programmes, to ensure that any developments that are considered acceptable within the context of the SPP risk framework are designed to mitigate any residual risks. [LDP Requirement 5](#) relating to flood protection schemes and [LDP Recommendation 2](#) and [LDP Recommendation 3](#) relating to vulnerability and resilience are applicable.

Justification

- DP.63 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006 to ensure that development plans contribute to sustainable development. The Flood Risk Management (Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. Paragraph 13 of the Scottish Government's [online planning advice on flood risk](#) recognises that the avoidance of flood risk, by not locating development in areas at risk of flooding, is a key part of delivering sustainable flood risk management. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.
- DP.64 The National Policy Framework 3 identifies sustainable flood risk management as an issue that is becoming increasingly important, both in terms of climate change adaptation and the creation of sustainable healthy places. This approach is supported by the inclusion of flood risk (in relation to climate change) as a high level principle that guides sustainable development (SPP, para 29). It is also in accordance with paragraph 255 of SPP that promotes a precautionary approach to flood risk from all sources, and flood avoidance as overriding policy principles that contribute to achieving sustainable flood management.
- DP.65 In particular, SPP (para 256) states that development which would have a significant probability of being affected by flooding should not be permitted. Paragraph 37 of the Scottish Government's [online planning advice on flood risk](#) states that development plans should indicate the functional flood plain and any other relevant flooding constraints on the proposals map. This is important to assist with the implementation of flood risk policy. The location of development away from flood risk areas safeguards the storage and conveyance capacity of the functional flood plain. This principle is reflected in the risk framework (SPP, paragraph 263) which states that medium to high risk areas are generally not suitable for additional development in undeveloped and sparsely developed areas.
- DP.66 The requirement for an FRA to support development management applications is in keeping with paragraph 266 of SPP. SEPA's Technical Flood Risk Guidance outlines appropriate methodologies for modelling fluvial, pluvial and coastal flood risk and lists the information required to be submitted as part of a FRA. It is the most comprehensive guidance available and is continually updated to reflect new data sources and modelling techniques. Development plans should therefore require FRAs to be undertaken in accordance with the guidance as best practice⁴.

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⁴We will not formally object to policy coverage if the only requirement missing is reference to our Technical Flood Risk Guidance.

LDP Requirement 5: Flood Protection Schemes

Local Development Plans: Flood Protection Schemes Requirement

A precautionary approach should be taken to proposed allocations in areas protected by a flood protection scheme.

The following categories of development allocation would generally be acceptable when protected by an existing or planned formal flood protection scheme within a built up area. It is recommended that any allocation protected by a formal scheme is built to a water resilient design and has adequate evacuation procedures in place that are appropriate to the level of risk and use.

Standard of protection of the scheme at the time of development	Within a built up area, the defended area will generally be acceptable for:
Less than a 200 year standard of protection (i.e. greater than a 0.5% AEP standard of protection)	<ul style="list-style-type: none"> • Water compatible uses; or, • Essential infrastructure designed to remain operational during flood event; or, • the principle of the development allocation has been established in an up-to-date, adopted Strategic Development Plan or the National Planning Framework with due consideration of flood risk; or, • Any other development that does not increase overall risk
Equal or greater than a 200 year standard of protection (i.e. equal or less than a 0.5% AEP standard of protection)	<ul style="list-style-type: none"> • Water compatible uses; or, • Essential infrastructure designed to remain operational during flood event; or, • the principle of the development allocation has been established in an up-to-date, adopted Strategic Development Plan or the National Planning Framework with due consideration of flood risk; or, • Least vulnerable developments; or, • Any other development that does not increase overall risk
Equal or greater than a 200 year plus climate change standard of protection (i.e. equal or less than a 0.5% AEP plus climate change standard of protection)	<ul style="list-style-type: none"> • Water compatible uses; or, • Essential infrastructure designed to remain operational during flood event; or, • the principle of the development allocation has been established in an up-to-date or, adopted Strategic Development Plan or the National Planning Framework with due consideration of flood risk; or, • Least vulnerable developments; or, • Highly vulnerable developments.

New allocations for most vulnerable uses must be avoided in areas protected by a scheme.

Any protection offered by informal flood defences would not be taken into account when considering allocations behind or benefiting from them. Such allocations would be considered within the context of SPP as if the scheme did not exist.

Context

National	Planning outcome(s)	A low carbon place		A successful sustainable place
	Planning principle(s)	Precaution	Avoidance	Reduction
SEPA	Planning objective(s)	Exercising our planning functions with a view to reducing overall flood risk		Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

DP.67 The guidance in this section reflects the [SEPA position statement on development behind Flood Protection Schemes](#) and is supported by our [Land Use Vulnerability Guidance](#). Flood protection schemes (FPS) can reduce flood risk but cannot eliminate it entirely. Their primary purpose is to protect existing development from flood risk rather than to facilitate new development. For this reason the policy principle of avoidance should be promoted for proposed allocations behind such schemes. A precautionary approach should therefore be taken to proposed allocations in areas protected by a FPS, even those designed to the appropriate standard.

DP.68 Proposed allocations within a [built up area](#) (see glossary) may, however, be acceptable on land behind a formal flood protection scheme (FPS) if:

- The proposed development does not increase overall flood risk i.e. consists of redevelopment of an existing building, including change of use to an equal or less vulnerable use; or, involves the erection of new buildings on a site to an equal or less vulnerable use than the existing buildings, which do not increase overall flood risk (through, for example, a significant increase in the density or footprint of the built up area or increasing risk elsewhere); or,
- It constitutes a water compatible use or essential infrastructure that is designed to remain operational during a flood event; or,
- The principal of the proposed allocation has already been established in an up-to-date, adopted Strategic Development Plan or National Planning Framework. Note: any sites in previous or existing LDPs for the area will need to be re-assessed against any new information relating to flood risk for the area and the latest policy and statutory framework); or,
- The scheme is built to an appropriate design standard based upon the land use vulnerability classification of the proposed allocation. As shown in the following table, the minimum appropriate standard will vary according to the vulnerability of the proposed land use.

Minimum appropriate standard of FPS for each vulnerability class

Land use vulnerability classification	Minimum appropriate standard
Water compatible uses	No minimum standard
Essential infrastructure (designed and constructed to remain operational during a flood)	No minimum standard

Least vulnerable uses	0.5 % AEP (200 year) standard of protection
Highly vulnerable uses	0.5 % (200 year) plus climate change standard of protection

DP.69 Developments that introduce most vulnerable uses into areas protected by a scheme should be avoided. We will object to any such proposed development allocations.

DP.70 Any protection offered by *informal* flood defences would not be taken into account when considering development behind or benefitting from them. These sites would be considered within the context of the SPP risk framework as if the scheme did not exist. The structural condition and design standard of such schemes are unknown and they therefore pose a significant level of risk to any proposed development behind or benefitting from them.

Planned FPS and phasing of development

DP.71 In accordance with the risk framework (SPP, para 63) a FPS should already exist and be maintained, be under construction, or a planned measure (i.e. proposed formal flood protection scheme) in a current flood risk management plan. However, we will only support allocations behind a planned measure if there is certainty that the measure will be delivered prior to the occupation of the development (i.e. the contract for the scheme has been awarded). This would equally apply to schemes that are being promoted through the Flood Risk Management Planning process and any other formal schemes that are brought forward through other sections of the FRM Act.

DP.72 Allocations proposed behind formal FPS in built up areas that are considered to be acceptable in light of this requirement should not be occupied until the scheme is complete. As previously mentioned, where an allocation is proposed behind a planned FPS a site requirement must be required to ensure that development does not come forward until the FPS is operational.

DP.73 Planned flood protection measures should be included in the action programme. This should include any development constraints such as the need for the FPS to be operational before allocated sites can come forward and the associated timescales.

Site requirements

DP.74 If the planning authority allocates a site that is behind an existing or planned formal flood protection scheme the following site requirements should be attached:

- the incorporation of flood resilient design measures and use of water resistant or resilient materials and construction methods. For windfall sites the inclusion of the advice in [LDP Recommendation 3](#) in the plan will ensure that any development in these areas is designed to be resilient; and,
- adequate evacuation procedures are in place that are appropriate to the scale of the risk and proposed use; and, for allocations behind planned schemes only:
- ensure the development is not occupied until the FPS is operational.

What we mean by flood protection schemes

DM.1 The term ‘flood protection scheme’ covers all measures which are designed and implemented so as to reduce exposure of receptors to flood risk and include direct defences (walls and embankments), indirect defences (flood storage schemes), and other engineering works such as culverts and channel/floodplain engineering. Formal flood protection schemes are those

which have been/are being promoted through relevant legislation (i.e. Flood Prevention (Scotland) Act 1961 (as amended in 1997), the Flood Risk Management (Scotland) Act 2009 or Coast Protection Act 1949). Informal flood defences are proposals that have been/are being brought forward outwith this legislation.

Justification

- DP.75 As highlighted in the Scottish Governments [online planning advice on flood risk](#) (para 21), flood protection schemes can reduce flood risk but they cannot eliminate it entirely. The level of protection offered by a scheme will depend upon a number of factors including the design standard, the design life and condition of the infrastructure. Breaching or overtopping of flood defences is often unexpected and can lead to swift inundation of the protected area resulting in more damaging floods. Water trapped behind defences following a flood can also lead to greater overall damage.
- DP.76 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006, to ensure that development plans contribute to sustainable development. The Flood Risk Management (Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. Ensuring that development behind flood protection schemes is an appropriate land use for the location and designed to be resilient contributes to the delivery of sustainable flood risk management by reducing the number of sensitive receptors exposed to risk if the defences are breached or overtopped. This is particularly important if the flood protection scheme is not designed to offer protection during a 0.5% annual probability flood event. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.
- DP.77 Justification of the consideration of land use vulnerability is provided under [LDP Recommendation 2](#). As flood defences cannot entirely eliminate flood risk, the same justification applies for development behind formal flood protection schemes.
- DP.78 Justification for resilient design is provided under [LDP Recommendation 3](#). The inclusion of flood resilient design measures and the provision of adequate evacuation procedures will ensure that people are safe and minimise damage to property if the flood protection scheme is breached or overtopped.
- DP.79 In accordance with Scottish Planning Policy (para 256), development should not have a significant probability of being affected by flooding or increase flood risk elsewhere. To comply with this policy requirement, any development permitted behind a planned formal flood protection scheme should not be built until the defences are operational. This will ensure that people and property are not exposed to unnecessary flood risk and comply with principles of sustainable flood management.

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SDP Recommendation 1: Placemaking and blue/green infrastructure

LDP Recommendation 1: Placemaking and blue/green infrastructure

Strategic Development Plans and Local Development Plans: Placemaking and blue/green infrastructure Recommendation

The role of sustainable flood risk management should be recognised in the context of sustainable placemaking and blue/green infrastructure. This includes the policy framework for sustainable placemaking and blue/green infrastructure and the identification of existing and creation of new blue/green infrastructure in the spatial strategy.

Context

National	Planning outcome(s)	A natural, resilient place	A low carbon place	A successful sustainable place
	Planning principle(s)	Avoidance	Reduction	Drainage
SEPA	Planning objective(s)	Exercising our planning functions with a view to reducing overall flood risk	Support delivery of Flood Risk Management strategies and local Flood Risk Management Plans (once published)	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

- DP.80 Sustainable flood risk management can contribute positively to a range of policy agendas. This includes sustainable placemaking, blue/green infrastructure networks, biodiversity enhancement, climate change adaptation, access and recreation provision, active travel networks, public realm and streetscape improvements, economic investment and improved community cohesion and health and well-being. It is important that such opportunities are realised and where feasible, the delivery of complementary benefits maximised. For example, the following measures could have a positive impact on flood risk management whilst also delivering wider benefits.
- Source control SUDS e.g. green roofs and greening streets by introducing measures such as swales (including retro-fitting);
 - Greening watercourses e.g. de-culverting and re-naturalisation;
 - Habitat restoration e.g. re-naturalisation of watercourses, riparian planting and wetland restoration;
 - Designating areas of land within or adjacent to flood risk areas that could usefully be used for the storage and retention of flood water as part of the blue/green infrastructure (particularly brownfield sites in urban areas)
 - Protecting natural coastal flood defences e.g. dune systems and marshland.
- DP.81 The cumulative benefit of these measures applied across an urban catchment could significantly alleviate flood risk and reduce overall flood risk, thereby helping to deliver the objectives of the flood risk management plans. Although it should be noted that the appropriateness of each technique will be site specific and considered at the detailed design stage.
- DP.82 In terms of predicted sea level rise, the sustainable management of natural coastal features like dune systems and salt marsh could deliver significant benefit. In Scotland, 88% of the soft

coast is protected by natural defences. The management of these features is essential to protect people and property from coastal flood risk. The [Dynamic Coast: Scotland's Coastal Change Assessment](#) website may help planning authorities consider this issue.

Spatial strategy:

DP.83 Strategic and local development plans should seek opportunities to maximise the benefit of existing and new green infrastructure networks by incorporating features and areas of land that could contribute positively to flood water management. The strategic flood risk assessment (SFRA) and flood risk management plans should be used to identify these elements. This could include:

- natural features and areas that are important for flood risk management e.g. river corridors, wash-lands, wetlands (including upland peat deposits) and coastal zone areas (e.g. marshland, dune systems and low lying areas that store coastal flood water);
- areas of land within or adjacent to medium to high flood risk areas that could be usefully used for the storage and retention of flood water e.g. designating brownfield sites in built up areas as part of the blue corridor will help alleviate and reduce overall flood risk;
- opportunities to enhance flood water management through habitat restoration and greening of watercourses (e.g. de-culverting and re-naturalisation), particularly in relation to strategic development areas and site allocations (these measures should also be included in the action programme);
- any other measures identified in the flood risk management plans that could contribute positively to blue/green infrastructure.

Policy framework:

DP.84 Strategic development plans should promote a holistic approach to flood management by recognising the positive contribution it can make to shaping sustainable healthy places and creating multifunctional blue/green networks. Policies should direct local development plans to:

- recognise the contribution that sustainable flood management makes towards creating sustainable places that are resilient and adaptable to a changing climate. This should be reflected in the design, placemaking, and green infrastructure policies;
- identify opportunities to incorporate features and areas of land that could contribute positively to flood water management into green/blue networks and infrastructure;
- ensure that blue/green infrastructure is designed to maximise environmental benefits e.g. helps achieve the objectives of the flood risk management and river basin management plans, local biodiversity action plans, climate change adaptation programme etc.

DP.85 Local development plans should promote a holistic approach to flood management by recognising the positive contribution it can make to shaping sustainable healthy places and creating multifunctional blue/green networks. This will help create places that are resilient and adaptable to a changing climate and contribute to reducing overall flood risk. Policies should:

- promote the avoidance of flood risk and sustainable flood water management as a design and placemaking principle. This could include requiring developers to consider water at the start of the design process and identify opportunities to alleviate and reduce flood risk through site design and the provision of multifunctional blue/green infrastructure e.g. SUDS, watercourse greening (de-culverting) and habitat restoration; and,
- ensure that blue/green infrastructure is designed to maximise environmental benefits e.g. helps achieve the objectives of the flood risk management and river basin management plans, local biodiversity action plans, climate change adaptation programme etc.

- DP.86 [Green Infrastructure: Design and Placemaking](#) (Scottish Government, 2011) provides additional guidance on how development plans can promote green infrastructure that integrates flood management measures as a key design quality and placemaking principle.
- DP.87 This recommendation should be read in conjunction with LDP Recommendation 1 in our [Water Environment development plan topic guidance](#) which explains how sustainable placemaking and green infrastructure can also deliver improvements to the wider water environment.

Justification

- DP.88 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006 to ensure that development plans contribute to sustainable development. The Flood Risk Management (Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. The avoidance of flood risk, by not locating development in areas at risk of flooding is recognised as a key part of delivering sustainable flood risk management which positively contributes to the creation of sustainable places. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.
- DP.89 The National Policy Framework 3 identifies sustainable flood risk management as an issue that is becoming increasingly important, both in terms of climate change adaptation and the creation of sustainable healthy places. The principal policy on placemaking in SPP (para 38-46) highlights the importance of creating high quality places by taking a design-led approach; directing the right development to the right place; and development that is designed to satisfy the six qualities of successful place – including adaptable and resource efficient. The consideration of flood risk is identified as a high level principle that should guide sustainable development (SPP, para 29) and is therefore fundamental to achieving these aims.
- DP.90 Green infrastructure is an integral component of building well designed sustainable places. Paragraph 222 of SPP states that development plans should be based upon holistic, integrated and cross-sectoral approach to green infrastructure and should be informed by relevant, up-to-date audits, strategies and action plans relating to a range of issues including flood management, river basins and coastal zone. In particular, paragraph 262 states that local development plans should protect land with the potential to contribute to managing flood risk, citing the creation of green infrastructure as an example of how this could be achieved. The promotion of multifunctional green networks/infrastructure will therefore ensure that complementary environmental benefits are considered and delivered. This is supported by paragraph 37 of the Scottish Government's [online planning advice on flood risk](#) which states that development plans should take forward opportunities to deliver multiple benefits through flood risk management approaches by identifying opportunities to complement other relevant policy areas and to contribute to wider placemaking.
- DP.91 Paragraph 79 of SPP requires plans to set out a spatial strategy which considers the services provided by the natural environment, safeguarding land which is highly suitable for particular uses such as flood management. This is supported by the Scottish Government's [Land Use Strategy 2016 – 2021](#), which sets out key principles for the use and management of Scotland's land. It emphasises that land use should deliver multiple benefits, and encourages us to make best use of assets to support primary activities; including flood management (section 2.6).
- DP.92 Protecting and enhancing blue/green corridors to deliver sustainable flood management is an effective and cost effective way of increasing the resilience of our urban areas to flood risk and can bring many other benefits. They can provide space for water during times of flood, space

to maintain the conveyance capacity of channels and for potential future flood management measures that may be required in response to climate change.

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LDP Recommendation 2: Vulnerability

Local Development Plans: Vulnerability Recommendation

To ensure that proposed land uses are acceptable for the location and degree of flood risk, SEPA's Land Use Vulnerability guidance should be used to inform the spatial strategy, site allocations, and policy framework. A commitment should be made for development to accord with the guidance.

Context

National	Planning outcome(s)	A low carbon [and adapted] place	A successful sustainable place
	Planning principle(s)	Precaution	Avoidance
SEPA	Planning objective(s)	Exercising our planning functions with a view to reducing overall flood risk	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk

How this can be achieved

- DP.93 Our [Land Use Vulnerability Guidance](#) provides a framework to help establish the vulnerability of land uses to flood risk. The guidance builds on the risk framework (SPP, para 263) and considers the relative susceptibility and resilience of different land uses to flooding, including wider community impacts caused by their damage or loss. Land uses are classified into five groups, from most vulnerable to water compatible uses. The plan should actively seek to reduce the vulnerability (and increase the resilience) of future development to flooding by using the guidance to aid decision making. This is particularly important within the context of predicted climate change.
- DP.94 Spatial strategy and site allocations - the vulnerability of the proposed land use should be appropriate for the location and degree of flood risk to the site. If development is to be promoted in areas that may be at risk of flooding like-for-like or less vulnerable land uses should be favoured. This includes areas at medium to high risk and those immediately adjacent, as well as areas behind formal flood protection schemes. This is particularly relevant for the redevelopment of sites, which should be seen as an opportunity to reduce overall flood risk.
- DP.95 Policy framework (or supplementary guidance) – to assist the interpretation of the risk framework, development proposals should be required to consider the impacts of flooding on different land uses and the relative vulnerability of their users with a view to reducing overall risk. In particular:
- proposals should accord with the matrix of flood risk in the Land Use Vulnerability Guidance;
 - changes of use to a more vulnerable land use should generally not be permitted, especially where this would result in an increase in the number of people potentially exposed to flood risk.
- DP.96 The same principles should apply to development behind formal flood protection schemes. See [LDP Requirement 5](#).

Justification

- DP.97 Planning authorities have a duty under The Planning etc. (Scotland) Act 2006 to ensure that development plans contribute to sustainable development. The Flood Risk Management (Scotland) Act 2009 also places a duty on SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. The avoidance of flood risk, by not locating vulnerable land uses in areas at risk of flooding contributes to the delivery of sustainable flood risk management by reducing the number of people exposed to the risk. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include development planning.
- DP.98 The risk framework in SPP (para 263) makes direct reference to vulnerable land uses and suggests the most appropriate land use for each of the flood risk categories. Our Land Use Vulnerability Guidance is aligned with the risk framework and provides further clarity on the relative susceptibility and resilience of land uses to flooding, including consideration of wider community impacts caused by damage or loss. This is supported by the Scottish Government's [online planning advice on flood risk](#) (para 17) which states that the flood risk framework should be read in conjunction with SEPA's Land Use Vulnerability Guidance to aid decision making.
- DP.99 Ensuring that the vulnerability of the land use is appropriate for the location and degree of flood risk is also an adaptation measure that will help make future development resilient to a changing climate. This accords with the high level sustainability principle in SPP (para 29) that states policies and decisions should support climate change adaptation, including taking account of flood risk. Local authorities also have a duty under the Climate Change (Scotland) Act 2009 to contribute to the delivery of the Climate Change Adaptation Programme (May 2014). This programme identifies the integration of climate change adaptation into planning processes and decisions as a strategic principle.

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LDP Recommendation 3: Resilience

Local Development Plans: Resilience Recommendation

To limit the impact of potential flood risk any development permitted in medium to high risk areas (that accords with the exceptions in the risk framework) or is located in adjacent low to medium risk areas should be built to a water resilient design.

Context

National	Planning outcome(s)	A low carbon place	A successful, sustainable place
	Planning principle(s)	Precaution	
SEPA	Planning objective(s)	Promote the health and well-being of the people of Scotland by ensuring that proposed development does not place communities and businesses at unacceptable flood risk	

How this can be achieved

- DP.100 The spatial strategy and policy framework should be used to direct development to the most appropriate locations. [LDP Requirement 2](#), [Requirement 4](#), [Requirement 5](#) and [Recommendation 2](#) set out how this can be achieved. These principles are guided by the risk framework (SPP, para 263) and in certain situations make allowance for specific types of development in medium to high flood risk areas. When these exceptions are applied and built development is permitted in areas that may be at some risk of flooding it should be designed to minimise the damage done by flood water and ensure that people can be safely evacuated. This applies to areas at medium to high risk, including areas behind formal flood protection schemes. In these locations, the development will continue to be exposed to the same level of flood risk but there is an opportunity for the impacts to be reduced.
- DP.101 Where development is permitted adjacent to functional flood plains (in low to medium flood risk areas), a risk may remain if the impacts of climate change are more significant than currently predicted. In these locations built development should be designed to be resilient to future climates by minimising the potential damage that could be done by flood water and ensure that people can safely be evacuated.
- DP.102 The policy framework (or supplementary guidance) should therefore require the design of the development in low to medium and medium to high flood risk areas (including areas behind formal flood protection schemes) to incorporate flood resilient design measures and use water resistant or resilient materials and construction methods.
- DP.103 It should be noted that the use of water resilient materials and forms of construction can only minimise the damage done by flood water. Their use would not make development which does not accord with the risk framework suitable in areas at risk of flooding.

Justification

- DP.104 The creation of sustainable places that are resilient to changes in climate and contribute to the health and wellbeing of the people of Scotland is central to the purpose of the planning system. Flooding can impact on people and property and will increase in some parts of the country as a result of climate change. Planning can play an important part in reducing the vulnerability of existing and future development to flooding (SPP, para 254). Paragraph 37 of the Scottish Government's [online planning advice on flood risk](#) states that development plans should promote resilience through the design and construction of buildings.

- DP.105 To ensure that people are safe and minimise damage to property, development in areas that may be at risk of flooding should be designed and constructed to maximise resilience. This requirement is reflected in the flood risk framework (SPP, para 263) which states that where built development is permitted, measures to manage flood risk will be required. Where appropriate, this includes the use of water resilient materials and construction.
- DP.106 Increasing the resilience of development to changes in climate contributes to sustainable development, in accordance with planning authorities duties under The Planning etc. (Scotland) Act 2006. Supporting climate change adaptation is also included as a high level principle that guides sustainable development (SPP, para 29). In particular, local authorities have a duty under the Climate Change (Scotland) Act 2009 to contribute to the delivery of the Climate Change Adaptation Programme (May 2014). This programme identifies the integration of climate change adaptation into planning processes and decisions as a strategic principle.

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Development Management

- DM.1 We have clarified the requirements and recommendations relating to flood risk that we consider should be addressed through development management. These are based on our interpretation of national planning policies and duties and requirements under relevant legislation, and designed to ensure that people and property are not exposed to unacceptable flood risk. They will be used to inform our advice to planning authorities under Section 72(1) of the Flood Risk Management (Scotland) Act 2009.
- DM.2 Our development management flood risk requirements are hierarchy based and should be applied in the order as illustrated in [Flowchart 1](#). However, it is important to note that although the application of the requirements is sequential, all relevant requirements (i.e. that apply to the particular development type in question) will need to be satisfied before we are able to discharge relevant flood risk issues. We will encourage planning authorities and developers to consider the recommendations as good practice.
- DM.3 It should be noted that specific categories of development covered in Appendix 2 of our [standing advice](#) (LUPS-GU8) are not included in the scope of our development management flood risk guidance. This document should be looked at when a proposal is thought to potentially be low impact to ascertain whether or not it is covered by our standing advice.
- DM.4 Many of our flood risk requirements and recommendations are also reflected in land use planning actions in the [flood risk management strategies](#) and [local flood risk management plans](#). Where appropriate this can be used as further justification to support our position.
- Consultation triggers
- DM.5 Schedule 5 of the Town and Country Planning (General Management Procedure) (Scotland) Regulations 2013 sets out minimum statutory requirements for planning authorities to consult SEPA on flood risk issues. This covers all developments that are likely to result in a material increase in the number of buildings at risk of being damaged by flooding (Schedule 5.1(1)). This includes existing properties that may be impacted in terms of flood risk. When determining planning applications involving flood risk, this means that the planning authority must take any advice we provide into account alongside the development plan and other material considerations.
- DM.6 [Our How and When to Consult SEPA guidance](#) provides guidance to planning authorities on when to consult us on flood risk matters. This aligns with our duty under Section 72(1) of the Flood Risk Management (Scotland) Act 2009 to provide advice and information on flood risk to planning authorities, when requested.
- DM.7 Regardless of the specific trigger, our development management requirements and recommendations apply to all consultations received from planning authorities.
- DM.8 It should be noted that the Town and Country Planning (Notification of Applications) (Scotland) Direction 2009 restricts the ability of planning authorities to grant planning permission in certain situations without first notifying Scottish Ministers. In accordance with this direction when we are consulted under article 15(1)(h)(i) of the Town and Country Planning (General Development Procedure) (Scotland) Order 1992, planning authorities must notify Scottish Ministers if they are minded to grant planning permission contrary to our flood risk advice.

Flood Risk Assessment

- DM.9 To ensure that flood risk is adequately considered and development directed away from medium to high risk areas (or depending on the nature of the proposal - low to medium risk areas), planning applications in fluvial and coastal flood risk areas should be supported by a flood risk assessment (FRA). This is reflected in Scottish Planning Policy (para 266) which states that FRAs will generally be required for applications within areas identified at high or medium likelihood of flooding/flood risk in SEPA's flood maps. The risk framework (SPP, para 263) also indicates that an FRA may be required for some proposals in low to medium risk areas.
- DM.10 Although the SEPA Flood Maps are a good indicator of when a flood risk assessment is required, we may also recommend a flood risk assessment for developments in other areas that may be at risk e.g. areas immediately adjacent to the inundation areas on the flood map, where the catchment is smaller than 3km² and not modelled by our flood map or where we hold information on historical flooding. We will generally recommend a flood risk assessment (FRA) for proposed developments that may lead to an increase in the number of buildings or people at flood risk. This includes:
- developments in medium to high risk areas which are at risk from fluvial or coastal flooding, and areas at pluvial flood risk where the hazard is particularly complex. We may also recommend FRAs for developments immediately adjacent to the flood hazard extent as the inundation areas can be underestimated, or, for areas of past flooding where the event was less than the 0.5% AP (200-yr) flood;
 - developments in low to medium risk areas identified in the risk framework from fluvial or coastal (i.e. developments located in an area at the upper end of the probability scale, essential infrastructure and the most vulnerable land uses) or where other factors indicate a heightened risk;
 - developments that may increase the fluvial or coastal flood risk to buildings or people elsewhere e.g. applications for watercourse engineering, activities such as infilling on the functional flood plain, and other development types that may not necessarily be at risk themselves but due to the location or the alteration to flow paths, conveyance and storage volumes, could increase risk elsewhere.
- DM.11 The FRA can range from basic information such as a topographic survey and photographs to detailed hydrological and/or hydraulic modelling. Our [Technical Guidance for Stakeholders](#) provides advice on the scope of assessment required. In general, a FRA should:
- identify and assess the hazard from all sources of flooding to the proposed development;
 - demonstrate how the proposed development avoids the risk of flooding, or, how the overall risk of flooding will be mitigated without increasing risk elsewhere;
 - demonstrate how the proposal complies with national planning policy and guidance;
 - demonstrate that the proposal is sustainable over the life cycle of the development.
- DM.12 We have a [checklist](#) to help consultants ensure that all the necessary information is submitted to us as part of the FRA.
- DM.13 The FRA should be used to inform the layout, scale and design of development and demonstrate how our requirements and recommendations have been addressed. We will

review the FRA and provide advice to the planning authority on the appropriateness of the study, its conclusions, and acceptability of the proposed development in line with national planning policy and the Flood Risk Management (Scotland) Act 2009. We will object to an application on the grounds of insufficient information if no flood risk information has been submitted or the flood risk assessment is considered deficient or inaccurate.

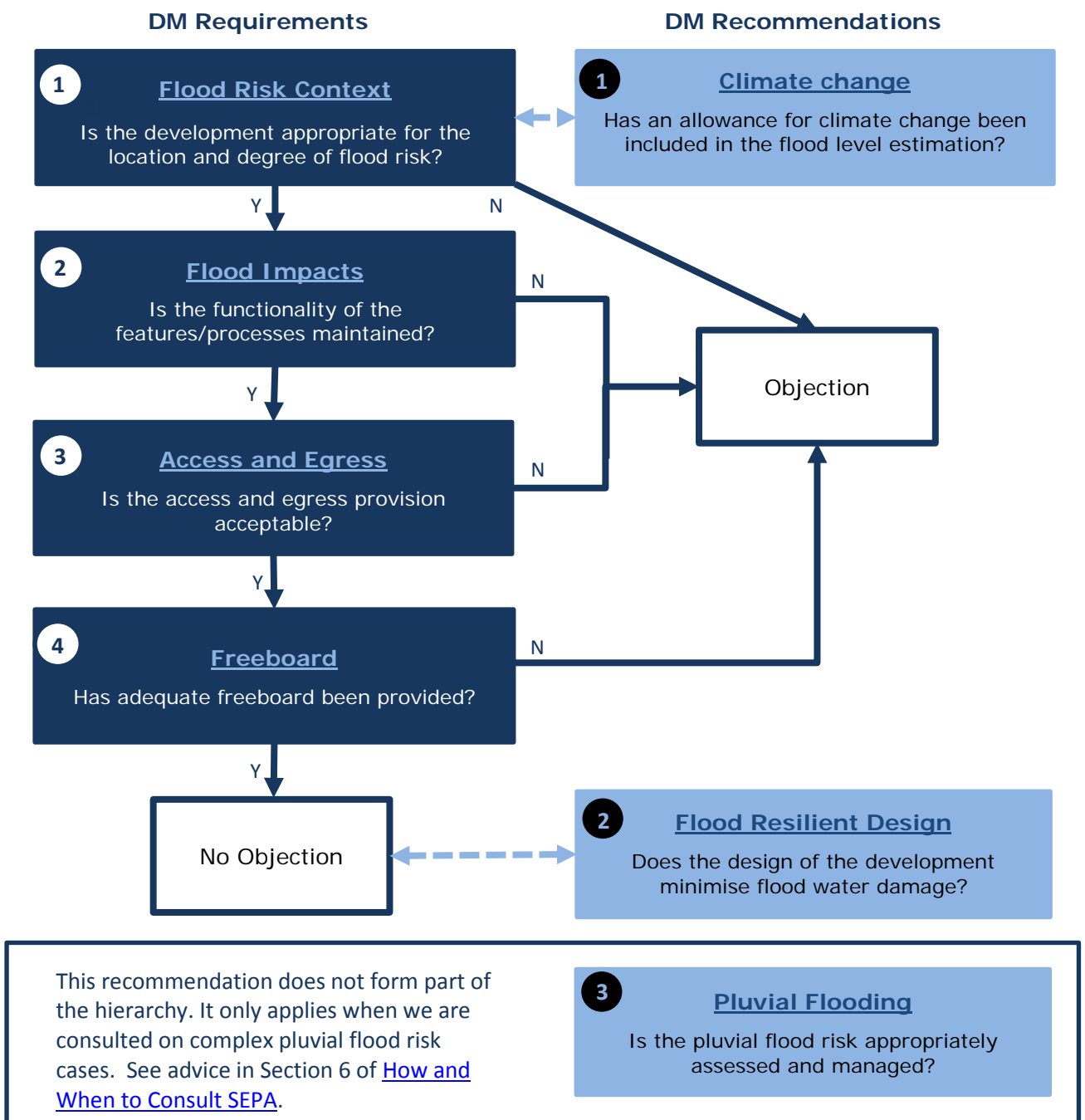
- DM.14 When objecting based on insufficient information we may want to remind planning authorities that they have powers under Part 4 Section 24 of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008 to request additional information and evidence, including FRA, for in principle and detailed planning applications.

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Our approach to development management (hierarchy of considerations)

DM.15 Our requirements and recommendations for proposed developments in fluvial and coastal flood risk areas have been written and designed as a hierarchy of considerations. This approach has been developed to help implement the flood risk policy provisions in Scottish Planning Policy. As illustrated in the flowchart our requirements should be applied in the prescribed order, not in isolation. The most appropriate stages in the process to consider our recommendations are also identified. All relevant requirements will need to be satisfied before we are able to discharge flood risk issues. To reduce the need for re-consultation, when requesting further information or suggesting modifications to a proposal we should consider all the requirements in the hierarchy.

Flowchart 1: Hierarchy of requirements and recommendations



DM Requirement 1: Flood Risk Context

Development in fluvial or coastal flood risk areas

Proposed developments should not be located in areas at medium to high risk from fluvial or coastal flooding (or low to medium risk areas for civil infrastructure). Other *most vulnerable* uses will only be acceptable in low to medium risk areas if the hazard can be alleviated through appropriate mitigation.

Where this is not possible, some types of development may be acceptable if they meet the requirements of the risk framework (SPP, paragraph 263). The risk framework should be applied within the context of the issues listed in paragraph 264 of SPP and our [Land Use Vulnerability Guidance](#) should be used to inform the vulnerability classification of the proposed land use and ensure that it is suitable for the location and degree of flood risk. In general, the following types of development may be acceptable in areas that are at risk of fluvial or coastal flooding:

- a) Developments classed as *water compatible* or that are considered to be *essential infrastructure* which require a flood risk location for operational reasons. The operational need for the development is for the planning authority to determine.
- b) Redevelopment of an existing building, including changes of use to an equal or less vulnerable use to the existing use.
- c) Redevelopment of a previously developed site where it involves the demolition of existing buildings and/or erection of additional buildings within a development site, and the proposed land use is equal or less vulnerable than the existing land use.
- d) Where the principle of development on the site has been established in an up-to-date, adopted development plan or the National Planning Framework and flood risk issues were given due consideration as part of the plan preparation process and our assessment of risk has not changed in the interim.
- e) Development in built up areas protected by an existing or planned flood protection scheme, where the standard of protection of the scheme is appropriate for the vulnerability of the land use. Further details are provided in the following section.

Development in areas protected by a flood protection scheme

A precautionary approach should be taken to proposed development in areas protected by a flood protection scheme.

The following categories of development would generally be acceptable when protected by an existing or planned formal flood protection scheme within a built up area. It is recommended that any development protected by a formal scheme is built to a water resilient design ([Recommendation 2](#)) and has adequate evacuation procedures in place that are appropriate to the level of risk and use.

Standard of protection of the scheme at the time of development	Within a built up area, the defended area will generally be acceptable for:
Less than a 200 year standard of protection (i.e. greater than a 0.5%	<ul style="list-style-type: none"> • Water compatible uses; or, • Essential infrastructure designed to remain operational during flood event; or,

AEP standard of protection)	<ul style="list-style-type: none"> the principle of the development has been established in an up-to-date, adopted development plan or the National Planning Framework with due consideration of flood risk; or, Any other development that does not increase overall risk (as defined in criterion b) and c) above).
Equal or greater than a 200 year standard of protection (i.e. equal or less than a 0.5% AEP standard of protection)	<ul style="list-style-type: none"> Water compatible uses; or, Essential infrastructure designed to remain operational during flood event; or, the principle of the development has been established in an up-to-date, adopted development plan or the National Planning Framework with due consideration of flood risk; or, Least vulnerable developments; or, Any other development that does not increase overall risk (as defined in criterion b) and c) above).
Equal or greater than a 200 year plus climate change standard of protection (i.e. equal or less than a 0.5% AEP plus climate change standard of protection)	<ul style="list-style-type: none"> Water compatible uses; or, Essential infrastructure designed to remain operational during flood event; or, the principle of the development has been established in an up-to-date or, adopted development plan or the National Planning Framework with due consideration of flood risk; or, Least vulnerable developments; or, Highly vulnerable developments.

Developments that introduce *most vulnerable* uses into areas protected by a scheme must be avoided.

Any protection offered by informal flood defences would not be taken into account when considering development behind or benefitting from them. Such proposals would be considered in accordance with criterion a – d above.

Information requirements

DM.16 The flood risk assessment (FRA) should determine the design flood extent and flood levels in order to inform the layout and design of the proposed development.

DM.17 The proposed land use should be clearly described and where the application is for a change of use or redevelopment of an existing building the existing/previous land use should be provided. If there is ambiguity about the existing land use, the planning authority should be asked to confirm the existing lawful land use.

What needs to be considered?

DM.18 Proposed developments should accord with the principles of sustainable flood management by avoiding flood risk areas. When consulted on a proposed development we will consider the potential impact of flooding on the land use and the relative vulnerability of their users with a view to reducing overall risk.

DM.19 The risk framework (SPP, para 263) identifies the appropriate flood probability for different types of development. When applying the risk framework, our [Land Use Vulnerability Guidance](#) should be used to inform the vulnerability classification of the proposed development and ensure that it is suitable for the location and degree of flood risk. In accordance with this, unless there is a locational need civil infrastructure should be located in areas at little or no risk of fluvial or coastal flooding (i.e. above the 0.1%AP flood level). Other developments in

the *most vulnerable* land use category that are proposed in the low to medium risk area, should be designed to be free from flooding during a 0.1%AP event by alleviating the risk through appropriate mitigation (provided [DM Requirement 2](#) is satisfied).

- DM.20 All other development (i.e. *highly vulnerable* and *least vulnerable* uses) should be located away from areas at medium to high risk of fluvial or coastal flooding (i.e. above the 0.5%AP flood extent). This can be achieved by ensuring that the siting, layout, design and capacity of developments proposed in fluvial and coastal flood risk areas are informed by an FRA. Within the application boundary the development footprint should be restricted to areas above the relevant flood probability extent. Where a site appears to be within the low to medium risk area, but close to the border of the medium to high risk area, we may require an FRA at the upper end of the probability range (i.e. close to 0.5% AP) in order to confirm whether the site is wholly outwith the medium to high risk area. In these situations the FRA should also to inform the siting of development to minimise risk, and to inform finished floor levels and other flood resilient design measures.
- DM.21 Where it is not possible to locate development away from areas at medium to high risk of flooding, the risk framework (SPP, para 263) makes allowances for specific types of development in medium to high flood risk areas. The risk framework should be applied within the context of the issues listed in paragraph 264 of SPP. In addition to the development types specified in the risk framework, we make allowances in relation redevelopments and sites allocated in development plans. As such, the following types of developments may be acceptable in areas that are at risk of fluvial or coastal flooding:
- a) Developments classed as *water compatible* or that are considered to be *essential infrastructure* which require a flood risk location for operational reasons. The operational need for the development is for the planning authority to determine.
 - b) Redevelopment of an existing building, including changes of use to an equal or less vulnerable use to the existing use.
 - c) Redevelopment of a previously developed site where it involves the demolition of existing buildings and/or erection of additional buildings within a development site, and the proposed land use is equal or less vulnerable than the existing land use.
 - d) Where the principle of development on the site has been established in an up-to-date, adopted development plan or the National Planning Framework and flood risk issues were given due consideration as part of the plan preparation process and our assessment of risk has not changed in the interim.
 - e) Development in built up areas protected by an existing or planned flood protection scheme, where the standard of protection of the scheme is appropriate for the vulnerability of the land use.
- DM.22 It is important to note that the developments permitted under criterion a), b), c) and d) above will be at risk of flooding, so in accordance with paragraph 258 of SPP it is important to remind the planning authority that a grant of planning permission does not imply the absence of flood risk. We also recommend that any sleeping accommodation included as part of the proposals is located above the relevant flood probability level and that access and egress provision ([DM Requirement 3](#)) and flood resilience and resistant materials are incorporated ([DM Recommendation 2](#))
- DM.23 Proposed developments that contain a variety of land uses (e.g. vehicle and pedestrian access routes, shops and other community facilities) should be sited and designed so that the most vulnerable uses are restricted to the higher ground at lower risk of flooding with development which has a lower vulnerability (parking, open space etc.) in the highest risk areas.

Consideration will need to be given to meeting DM Requirements 2-4 in achieving an acceptable layout and design.

DM.24 In exceptional circumstances, it may be possible to manage flood risk to help enable development in fluvial or coastal flood risk areas. The advice under [mitigating flood risk](#) in [DM Requirement 2](#) is therefore applicable.

DM.25 Further explanations of criterion a-d of [DM Requirement 1](#) are provided below.

Criterion a:

DM.26 When responding we should highlight that these types of development may introduce new receptors into the flood hazard area and therefore increase overall flood risk which is contrary to the objectives of the Flood Risk Management (Scotland) Act 2009, and the duty on all responsible authorities to reduce overall flood risk under that Act.

Criterion b and c:

DM.27 The redevelopment of a building or site provides a valuable opportunity to reduce the vulnerability of the site to flooding and therefore reduce overall flood risk. When responding to planning applications on previously developed sites we will therefore encourage planning authorities and developers to consider changes to less vulnerable land uses and improvements to the management of flood risk on site. Our requirements regarding the redevelopment of existing buildings and sites are explained in the table and accompanying paragraphs below. In all cases proposed redevelopments must not increase flood risk elsewhere (see [DM Requirement 2](#)).

Development on previously developed sites

DM Requirement 1	<i>b) Redevelopment of existing buildings</i>	<i>c) Redevelopment of sites</i>	
Type of development	Alterations/extensions to existing buildings and changes of use	Site with existing buildings where demolition is being proposed or additional buildings are to be erected	Vacant site (i.e. with no existing buildings) where new buildings are being proposed
What may be acceptable	Changes of use to equal or less vulnerable use to the existing use.	Land uses that are equal or less vulnerable to the existing land use.	Land uses classed as <i>water compatible or essential infrastructure</i> .

Redevelopment of existing buildings ([criterion b](#)):

DM.28 The redevelopment of an existing building, including a change of use to an equal or less vulnerable use to the existing use is likely to be acceptable. However, we may object if it leads to an unacceptable increase in flood risk on or off site through alterations to the footprint (see [DM Requirement 2](#)) or the number of people exposed to the hazard, such as an increase in the number of bedrooms.

Redevelopment of sites ([criterion c](#)):

DM.29 Proposals involving the introduction of new buildings on a previously developed site in a fluvial or coastal flood risk area may increase flood risk through the introduction of new receptors (e.g. buildings and people) into the hazard area. This type of redevelopment could be

considered acceptable if suitable mitigation measures are introduced that result in no net increase in flood risk on or off site. Factors to be considered include the specific flood risk characteristics for the site and the vulnerability of the proposed land use.

DM.30 Redevelopment involving the erection of new buildings may be acceptable where the demolition of existing buildings and/or erection of additional buildings within a development site are equal or less vulnerable than the existing land use (although we may object if it leads to an unacceptable increase in the number of people exposed to the hazard). A holistic approach should be taken to reducing overall flood risk as far as possible. This could include flood resilient design and/or reducing existing risk to adjacent properties. Further detail on mitigation options are outlined below:

- i). Flood resilient design – to mitigate the risk to the development and make it less vulnerable to flooding the best available flood resilient measures and construction techniques should be included as part of the design (see [DM Recommendation 2](#)). A freeboard of 600mm should also be applied to finished floor levels, as far as practicable (see [DM Requirement 4](#)). The developer will also need to accept the commercial risk of temporary disruption that may be caused during a flood event.
- ii). A reduction in flood risk to neighbouring properties – in some situations it may be possible to design the proposed development such that the flood risk to existing properties is reduced. You could therefore have a situation where the site remains at risk, but the off-site flood risk would be mitigated, resulting in an overall reduction in flood risk to the area. In these cases the developer would need to demonstrate how neighbouring properties would directly benefit in flood risk terms (in perpetuity) from the proposals.
- iii). Flood management measures – in some situations it may be possible to manage the flood risk on site through acceptable solutions, although options are usually limited.

DM.31 However, it should be noted that there may be some previously developed sites for which redevelopment will be unfeasible. This is because floods affect sites in different ways and due to site specific characteristics the best option may be to return them to their function as an area of flood plain. In urban centres, it may be possible for compatible uses like green space and blue/green infrastructure provision to be incorporated.

Criterion d:

DM.32 We reserve the right to object in principle at the development management stage to a site allocated for development in an adopted and up-to-date development plan if flood risk issues were not given due consideration during the plan preparation process or our understanding of the level of risk on site has changed significantly in the interim. This may apply if we were not consulted at the development plan stage, have an outstanding flood risk objection to the development plan, or new information shows the site cannot meet the policy requirements of national planning policy e.g. a flood has recently occurred on the site, the FRA shows that flooding on the site is more extensive than expected or the mitigation proposed in the development plan is not included or unworkable in practice.

Development behind flood protection schemes

DM.33 The guidance in this section reflects the [SEPA position statement on development behind Flood Protection Schemes](#). Flood protection schemes (FPS) can reduce flood risk but cannot eliminate it entirely. Their primary purpose is to protect existing development from flood risk rather than to facilitate new development. For this reason the policy principle of avoidance should be

promoted for development behind such schemes. A precautionary approach should therefore be taken to proposed development in areas covered by FPS, even those designed to the appropriate standard.

DM.34 Our approach to development within a [built up area](#) that may be acceptable on land behind an FPS is dependent upon two main factors:

1. Whether the proposed development does not increase overall flood risk; and,
2. Whether the scheme is built to an appropriate design standard based upon the land use vulnerability classification of the proposed development. As shown in the following table, the minimum [appropriate standard](#) will vary according to the vulnerability of the proposed land use. These have been used to inform the categories of development table [in DM Requirement 1](#).

Land use vulnerability classification	Minimum appropriate standard
Water compatible uses	No minimum standard
Essential infrastructure (designed and constructed to remain operational during a flood)	No minimum standard
Least vulnerable uses	0.5 % AEP (200 year) standard of protection
Highly vulnerable uses	0.5 % (200 year) plus climate change standard of protection

DM.35 Developments that introduce most vulnerable uses into areas protected by a scheme should be avoided. We will object to any such development proposals.

DM.36 Development may be appropriate behind any FPS (i.e. below the appropriate standard and outwith the built-up area) if it meets one of the criterion a-d as presented in [DM Requirement 1](#). Such proposals would be considered within the context of the SPP risk framework as if the scheme did not exist. Likewise, any protection offered by informal flood defences would not be taken into account when considering development behind or benefitting from them. Such proposals would also be considered within the context of the SPP risk framework as if the scheme did not exist (e.g. criterion a – d). The structural condition and design standard of such schemes are unknown and they therefore pose a significant level of risk to any proposed development behind or benefitting from them.

Built up areas

DM.37 There is no guidance on what is meant by ‘built up areas’ in Scottish Planning Policy and an element of judgement therefore needs to be used in its interpretation. To support a consistency of approach we will apply the following general guiding principles to help decide whether a site is within a built up area. It should be noted that each site will, however, present a unique set of circumstances that will need to be considered together with the views of the relevant local planning authority.

DM.38 A site would be considered to fall within a built up area if:

- i). It is within the settlement boundary of a village, town or city; *and*,

ii). The adjoining land uses are predominantly developed in nature i.e. most of the boundary is adjacent to existing development.

DM.39 A site would *not* be considered to fall within a built up areas if:

i). It is in a sparsely developed area characterised by isolated developments or no other development at all; and,

ii). It is outwith a settlement boundary; or,

iii). It is within a settlement boundary but is located on the periphery of the settlement and is predominantly or completely surrounded by undeveloped land.

DM.40 Settlement boundaries are defined in local development plans. It should, however, be noted that the approach to defining these can vary considerably between planning authorities. The above approach is intended to allow some discretion for sites on the boundary of settlements to allow for this.

Planned FPS and phasing of development

DM.41 In accordance with the risk framework (SPP, para 63) the scheme should already exist and be maintained, be under construction, or a planned measure (i.e. proposed formal flood protection scheme) in a current flood risk management plan. However, we will only accept developments behind a planned measure if there is certainty that the measure will be delivered prior to the occupation of the development (i.e. the contract for the scheme has been awarded). This would equally apply to schemes that are being promoted through the Flood Risk Management Planning process and any other formal schemes that are brought forward through other sections of the FRM Act.

DM.42 Developments proposed behind formal FPS in built up areas that are only acceptable because the scheme is designed to the appropriate standard should not be occupied until the scheme is complete. We will require this as part of our response, but the planning authority is responsible for determining the most appropriate form of control. However, a recent ministerial decision established that a negative condition could provide a mechanism for planning authorities to achieve this. This approach ensures that proposed developments accord with the policy principles and risk framework in SPP (paras 255 and 263) and would not therefore be placed at unacceptable risk.

DM.43 In applying this it should be noted that FPSs have a design life which may be shorter than the design life of the proposed development. The standard of flood protection they provide is also likely to change through the lifetime of the scheme as a result of future climate and modifications to the channel and flow estimates. As such, all formal schemes should have the ability to be modified in future to ensure the original standard of protection is maintained. We will highlight this potential mismatch in our planning responses and recommend that the planning authority seek advice from their flood protection colleagues.

What we mean by flood protection schemes

DM.44 The term 'flood protection scheme' covers all measures which are designed and implemented so as to reduce exposure of receptors to flood risk and include direct defences (walls and embankments), indirect defences (flood storage schemes), and other engineering works such as culverts and channel/floodplain engineering. Formal flood protection schemes are those which have been/are being promoted through relevant legislation (i.e. Flood Prevention (Scotland) Act 1961 (as amended in 1997), the Flood Risk Management (Scotland) Act 2009 or Coast Protection Act 1949). Informal flood defences are proposals that have been/are being brought forward outwith this legislation.

Development on top of culverts

- DM.45 The principle of avoidance also applies to positioning buildings over or immediately adjacent to culverts (i.e. buried watercourses and field drains) if it is located under the land/garden ground associated with the property. In terms of flooding, there is a risk to people and property from structural collapse during a flood event. If the culvert becomes blocked or its capacity is exceeded water may also flow overland, thus causing a risk elsewhere. If built development is on top of a culvert, this makes replacing (culverts have a finite lifespan), maintenance and inspecting difficult. We will therefore object to development on top of culverts on flood risk grounds. Our position statement on [The Culverting of Watercourses](#) is also relevant.
- DM.46 The construction of buildings over an active culvert is also controlled by the buildings standards system. [The Technical Handbooks](#) (Domestic and Non-domestic, 2015), Mandatory Standard 3.5 states that “every building must not be constructed over an existing drain (including a field drain) that is to remain active”. It is generally accepted that culverts are included within the scope of this standard.
- DM.47 Owners of properties built over culverts are likely to have responsibility for maintaining and repairing the section of culvert that the runs under their building and/or garden ground. Access to the length of culvert will therefore also be required for maintenance.
- DM.48 Developments on top of culverts may also have implications for the quality of the water environment by precluding the future improvement or restoration works. As such, consideration should also be given to impacts on the water environment.

Internal consultation

- DM.49 The planning casework system should be used to consult the Operational Flood Risk Team.

Justification

- DM.50 The Flood Risk Management (Scotland) Act 2009 places a shared duty on Scottish Ministers SEPA and responsible authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. By its very nature, any development in a flood risk area is likely to introduce new receptors into the hazard area and therefore increase overall flood risk, contrary to the provisions of the Act. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include land use planning.
- DM.51 In accordance with paragraph 255 of Scottish Planning Policy (SPP) the planning system should take a precautionary approach to flood risk and promote flood avoidance. The planning system should prevent development which would have a significant probability of being affected by flooding or would increase the probability of flooding elsewhere (SPP, para 256). As highlighted in the Scottish Government's [online planning advice on flood risk](#) (para 13) the principle of avoidance is recognised as a key part of delivering sustainable flood risk management.
- DM.52 In particular, paragraph 256 of SPP specifically states that development which would have a significant probability of being affected by flooding should not be permitted. This principle is reflected in the risk framework (SPP, para 263) which suggests the most appropriate land use for each of the flood risk categories. Our Land Use Vulnerability Guidance aligns with the risk framework and provides further clarity on the relative susceptibility and resilience of land uses to flooding, including consideration of wider community impacts caused by damage or loss. This is supported by the Scottish Government's [online planning advice on flood risk](#) (para 17) which states that the flood risk framework should be read in conjunction with SEPA's Land Use Vulnerability Guidance to aid decision making.

- DM.53 Ensuring that the vulnerability of the land use is suitable for the location and degree of flood risk is also an adaptation measure that will help make future development resilient to a changing climate. This accords with the high level sustainability principle in SPP (para 29) that states policies and decisions should support climate change adaptation, including taking account of flood risk. Local authorities also have a duty under the Climate Change (Scotland) Act 2009 to contribute to the delivery of the Climate Change Adaptation Programme (May 2014). This programme identifies the integration of climate change adaptation into planning processes and decisions as a strategic principle.
- DM.54 Ensuring that developments proposed behind flood protection schemes are suitable for the location and designed to be resilient contributes to the delivery of sustainable flood risk management. As highlighted in the Scottish Governments [online planning advice on flood risk](#) (para 21) flood protection schemes can reduce flood risk, but they cannot eliminate it entirely. Their primary purpose is to protect existing development from flood risk rather than to facilitate new development. For this reason the principle of avoidance should be promoted for any proposed development in areas protected by such schemes (SPP, para 255). This is particularly important if the flood protection scheme does not provide an acceptable standard of protection for the proposed land use.
- DM.55 The requirement for an FRA to support development management applications is in keeping with paragraph 266 of SPP. SEPA's Technical Guidance for Stakeholders outlines appropriate methodologies for modelling fluvial, pluvial and coastal flood risk and lists the information required to be submitted as part of a FRA.

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DM Requirement 2: Flood Impacts

Flood impacts

Proposed developments should not increase the risk of flooding elsewhere or adversely interrupt the following processes in fluvial and coastal areas:

- Fluvial flood risk areas – proposed development must not adversely affect the ability of the functional flood plain to store and/or convey flood water.
- Coastal flood risk areas – proposed development must not interrupt coastal processes or deflect wave energy in a way that could adversely affect coastal flood risk.

The functionality of the features or processes should be maintained for all flood probabilities up to and during the design flood event.

Information requirements

- DM.56 As set out in our [Technical Guidance for Stakeholders](#) the flood risk assessment (FRA) should demonstrate how:
- a) the flooding processes important at the site will be free from interruption up to and including the design flood event e.g. the ability of the functional flood plain to store and convey flood water or the ability of coastal features/processes to deflect and/or dissipate wave energy; and
 - b) the proposed development will not increase flood risk elsewhere.

What needs to be considered?

Proposed developments must first satisfy [DM Requirement 1](#). The requirements should not be read in isolation.

- DM.57 Proposed developments in flood risk areas that are acceptable in terms of [DM Requirement 1](#) must be designed to ensure that flood risk is not increased elsewhere, by ensuring that the development itself does not adversely affect the ability of the functional flood plain to store and/or convey floodwater. Such an approach benefits both on and off site flood risk.
- DM.58 Advice on how to consider the flood risk associated with small scale extensions is provided in Appendix 2 of our [standing advice](#) (LUPS-GU8). Although small scale extensions (both domestic and non-domestic) are generally outwith the scope of SPP (para 257), in some circumstances, alterations to the footprints of existing buildings may adversely affect the storage or conveyance capacity of the functional flood plain. In these cases we ask to be consulted and will review the proposal to ensure that it has no detrimental impact on flood risk. Where the purpose of the small scale extension is to create additional residential dwelling space for human habitation, we will advise planning authorities to consider their duties under the Flood Risk Management (Scotland) Act (2009) in relation to reducing the adverse impacts of flooding to human health.
- DM.59 Engineering activities and structures in the vicinity of watercourses, including on the functional flood plain, must be designed to ensure that existing flow conditions and storage capacity is not adversely affected. These types of applications may not be at flood risk themselves, but due to the location could increase risk elsewhere. The types of activities this could cover are vast, but most commonly include crossings, channel works, as well as land raising, informal flood embankments, walls and SuDS features. When consulted on a planning application that

includes an engineering activity or structure we need to be satisfied that they have a neutral or better effect on flood risk and/or their failure would not lead to unacceptable risk caused by rapid, high velocity inundation. [Compensatory storage](#) may be required for any engineering works that require planning permission and adversely affect the storage capacity of the functional flood plain.

- DM.60 It should be noted that authorisation under the Controlled Activities (Scotland) Regulations (CAR) is usually required for activities in the water environment. This includes activities like land raising, embankments and bunds that disconnect rivers from their flood plains ([see CAR Practical Guide](#)). The consentability of any application that includes engineering works must also be considered in accordance with our [Development management guidance in relation to SEPA regulated sites and processes](#). It should be noted that flood risk is no longer considered under the CAR application process unless the proposed works is deemed to be a derogation ([Regulatory Method WAT-RM-34](#)). Our flood risk advice on activities authorised by CAR is therefore restricted to those elements that are also covered by planning applications.

Mitigating flood risk

- DM.61 There are a limited number of measures that could be used to mitigate flood risk where development must be located in fluvial or coastal flood risk areas. Land raising in order to permanently raise a site above the estimated design flood is one such measure and should not be considered in isolation. In all cases, proposed development should seek to avoid flood risk areas in the first instance in line with [DM Requirement 1](#).
- DM.62 It should be noted that floating developments and elevating buildings on structures such as stilts are not an acceptable form of flood mitigation. Although these design solutions may be acceptable in other countries, there is no overriding reason for development such as this being acceptable in Scotland.
- DM.63 Floating developments include building structures that would be permanently located on water bodies (such as canals, harbours, old ship yards/basins and high energy environments such as estuaries or rivers) that are unable to move location like a boat.

Land raising:

- DM.64 Land raising in fluvial flood risk areas reduces the ability of the functional flood plain to store and/or convey water and can increase flood risk elsewhere. When land raising is proposed we will require compensatory storage, which often makes land raising unachievable as compensatory storage is both technically and legally difficult to provide. This is due to the availability of suitable land (i.e. land that is higher than the level of the flood plain to be raised and connected to it, and capable of being lowered to the flood plain level) and the need for it to be under the control of the applicant. In the rare situations where compensatory storage can be achieved, the planning authority will need to ensure that appropriate controls are in place to secure the use of land in perpetuity.
- DM.65 Situations where land raising proposals may be considered acceptable will be rare. In particular, proposals that involve land raising on undeveloped (and therefore more natural) flood plains are unlikely to be acceptable as they would have adverse impacts on the ability of the flood plain to store and convey water. The protection and enhancement of natural features that have a positive impact on flood risk is identified as a land use planning action in the published Flood Risk Management Strategies. In addition, the wider environmental and cultural benefits of undeveloped flood plains should be recognised e.g. the contribution they make to a healthy water environment, habitat provision and inclusion as part of blue/green networks etc. [Our Guidance on the Water Framework Directive including river basin planning](#) may therefore be applicable.

- DM.66 There may also be some previously developed sites where land raising is not suitable e.g. where it is impossible to provide compensatory storage and risk to neighbouring properties would be increased. As set out under [DM Requirement 1](#), the flood plains associated with these sites may be better kept as open space and used for the storage and retention of flood water as part of the blue/green infrastructure provision.
- DM.67 In exceptional circumstances a case for land raising may be considered where particular proposal characteristics warrant a more flexible approach. Each proposal will be considered on its own merit, with consideration given to the following:
- locational characteristics e.g. built up areas, previously developed sites and coastal areas (devoid of erosion) might be considered more favourably;
 - site design/layout – raised areas should be set back from the watercourse and not create islands of development e.g. should adjoin developed areas outwith the functional flood plain;
 - provision of suitable compensatory storage – the points set out under the [compensatory storage section](#) should be satisfied;
 - whether there is an opportunity to reduce overall flood risk as part of the development e.g. reducing the existing flood risk to neighbouring properties. The developer would need to demonstrate how neighbouring properties would directly benefit in flood risk terms (in perpetuity) from the proposal.
- DM.68 The potential consentability of any application that includes land raising (e.g. Controlled Activities Regulations and Waste Management Licencing) must also be considered in accordance with our [Development management guidance in relation to SEPA regulated sites and processes](#).

Compensatory Storage:

- DM.69 Our [Technical Guidance for Stakeholders](#) provides detailed advice on the provision of compensatory storage. Compensatory storage will be required for all proposals that reduce the ability of the flood plain to store flood water during a flood event. Whilst compensatory storage may offset the loss of storage resulting from land raising, the effects on floodwater conveyance must also be considered and additional mitigation may be required. This position applies to a) sites along river corridors that are subject to fluvial flooding; and b) coastal sites like estuaries and river mouths where both fluvial and coastal processes operate, and where the site characteristics are such, that the volume of water displaced by land raising could affect inundation and increase risk. Compensatory storage is generally not required for sites on open coasts that are not subject to fluvial processes. This is because the volume of water from coastal inundation is so significant that loss of adjacent land via land raising would not affect the depth or extent of inundation.

Sustainable drainage schemes

- DM.70 Sustainable Drainage Systems (SuDS) can be accommodated on the functional flood plain provided they do not affect the storage or conveyance capacity of that watercourse. A flood risk assessment would generally not be required to demonstrate this. This position and advice in the following paragraphs applies to both temporary construction SuDS and final SuDS features.
- DM.71 Although there are good reasons to locate SuDS features away from flood risk areas, issues related to maintenance and functionality of the SuDS during a flood event are the developer's

operational risks. Issues related to potential pollution of the water environment will be considered in relation to our Water Environment Guidance (see [relevant section below](#)).

- DM.72 In some cases developers may propose bunding around SUDS features to protect against inundation during flood events. From a flood risk perspective, this is problematic as it would impede water flow and reduce storage capacity during a flood event. Where bunding is proposed, to protect the functionality of the SuDS structure and prevent mobilisation of contaminants, compensatory storage will be required to replace the storage capacity lost by the bund.
- DM.73 It should be noted that the management of surface water drainage and exceedance of surface water drainage systems (i.e. surface water flooding) are matters for the local authority to consider in conjunction with Scottish Water. We do not expect to be routinely consulted on SuDS proposals from a pollution prevention or water attenuation perspective (see [DM Recommendation 3](#)). However, when consulted on a proposal that includes a SuDS feature in the functional flood plain or where SuDS are being proposed as the principal mechanism to reduce flood risk from a site, we will consider any flood risk implications and advise accordingly. We will only object to SuDS features in relation to flood risk if they are likely to materially increase surface water flooding due to under design i.e. not to a 200 year standard (see [DM Recommendation 3](#)) or increase fluvial flood risk by their presence and form reducing flood plain storage within a river system.

Pollutant sources in flood risk areas

- DM.74 Under the Water Environment Water Services (Scotland) Act 2003, responsible authorities are required to promote sustainable flood risk management. This relates specifically to the potential impact of flooding on the water environment e.g. chemical, biological and physical damage. In addition to this, the FRM Act also considers adverse impacts of flooding on risk receptors that include the environment and human health.
- DM.75 All issues relating to the location of potential pollution sources in flood risk areas are covered through our consideration of impacts on the water environment. [Our Guidance on the Water Framework Directive including river basin planning](#) should also be considered.

Internal consultation

- DM.76 The planning case work system should be used to consult the Operational Flood Risk Team.

Justification

- DM.77 The Flood Risk Management (Scotland) Act 2009 places a shared duty on Scottish Ministers, SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include land use planning.
- DM.78 Ensuring that new development will have a neutral or better effect on flood risk will contribute to not increasing overall flood risk. This requirement is reflected in Scottish Planning policy which states that the planning system should prevent development which would increase the probability of flooding elsewhere (para 256). This includes safeguarding the flood storage and conveying capacity of the functional flood plain (para 255), particularly the avoidance of piecemeal reduction due to the cumulative effects of reducing overall storage capacity (para 256).

- DM.79 In accordance with our duties under the Flood Risk Management (Scotland) Act 2009, Water Environment and Water Services (Scotland) Act 2003 and other environmental legislation, we do not consider land raising to be a sustainable approach to managing flood risk on a site. For this reason the policy principle of avoidance should be promoted for all development in flood risk areas thereby protecting the role of the functional flood plain to store and/or convey water (SPP, para 255). This aligns with our duty under s.19 of the FRM Act to protect natural features such as flood plains as they have a positive impact on flood risk (also identified as a land use planning action in the Flood Risk Management Strategies). In addition to this Scottish Planning Policy (para 194) states that the planning system should maintain healthy ecosystems, work with natural processes and protect and improve the water environment. The multiple benefits of safeguarding natural flood-related features (e.g. natural flood plains and natural levees) should therefore be considered in relation to land raising proposals.
- DM.80 Where land raising is proposed, Scottish Planning Policy (para 256) states that it should only be considered in exceptional circumstances, where it is shown to have a neutral or better impact on flood risk outside the raised area and that compensatory storage may be required. As land raising reduces the ability of functional flood plain to store and/or convey water and can increase flood risk elsewhere we will always require it to be linked to the provision of compensatory storage. The only exception to this is where development is located in an area which is only subject to coastal flooding and serves no significant storage function.

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DM Requirement 3: Access and Egress

Access and egress

Adequate access and egress provision must be included when the proposed development is:

- civil infrastructure or another land use that introduces overnight accommodation onto the site (i.e. new developments or redevelopments which include change of use) when compared to the existing use and are located in a medium to high fluvial or coastal flood risk area (or low to medium risk area for civil infrastructure and other *most vulnerable* uses), or
- on an undeveloped site where the buildings will be above the design flood level but surrounded by lower ground i.e. create an island of development.

Adequate access and egress involves the provision of a safe and flood free route during the relevant flood probability event that enables the free movement of people of all abilities (on foot or with assistance) both to and from a secure place that is connected to ground above the design flood level and/or wider area.

For all other development types, and where no new overnight accommodation is being introduced as part of a redevelopment, access and egress is recommended as good practice.

Information requirements

- DM.81 An access and egress route for pedestrians should be clearly marked on the relevant application drawings e.g. site layout and elevation plans (if applicable).

What needs to be considered?

Proposed developments must first satisfy DM [Requirement 1](#) and [Requirement 2](#). The requirements should not be read in isolation.

- DM.82 The consideration of access and egress may depend on the planning application stage. The site specific characteristics will dictate whether this is an in principle or detailed design issue. When consulted early in the planning process (e.g. pre-application consultations, EIA scoping, masterplans, planning briefs or frameworks) we will highlight access and egress issues as a requirement that must be satisfied. When consulted on applications for planning permission in principle we will ensure that the potential to provide safe access and egress is possible. In some situations it may be an in principle issue and result in objection. However, if we are satisfied that some form of safe access and egress can be provided we will request this as a detailed matter that will need to be specified in conditions. When consulted on the detailed design (i.e. full planning applications or applications approval of matters specified in condition) we will object if the proposed access and egress route is inadequate and request that the proposals are amended to demonstrate that the requirement can be achieved. As the provision of an appropriate route is likely to affect the design of the development we should avoid requesting that this issue be dealt with by condition at the detailed design stage.

- DM.83 In terms of our role, access and egress involves the provision of a safe and flood free route during the relevant flood probability event that enables the free movement of people of all abilities (on foot or with assistance) both to and from a secure place that is connected to ground above design flood level and/or wider area. Evacuation before a flood event and rescue by emergency services (see [glossary](#) for definitions) are separate issues.

- DM.84 The need to provide adequate access and egress will primarily be dependent on whether people will be exposed to flood risk overnight and site specific characteristics. We will require adequate access and egress in the following situations:
- i). The proposed development is considered civil infrastructure or another land use that introduces an element of overnight accommodation onto the site when compared to the existing use and are located in a medium to high fluvial or coastal flood risk area (or low to medium risk area for civil infrastructure and other *most vulnerable* land uses). These developments will generally fall within the land uses classified as the *most vulnerable* and *highly vulnerable* in our [Land Use Vulnerability Guidance](#). But could also include buildings in the other land use categories that contain sleeping accommodation. In applying this requirement, proposed developments on undeveloped sites that include overnight accommodation are considered to be introducing this use onto the site (it should be noted that these developments will generally not satisfy DM Requirement 1). Redevelopments (including change of use) will be considered in relation to the existing use. Where existing buildings or sites already contain overnight accommodation, redevelopment proposals will not be required to provide access and egress. This is because the location of the buildings is already determined and existing structure constraints may prohibit available options. In most cases, the nature of the developments also means that exposure of people to risk is not increasing.
 - ii). Development on an undeveloped site where the buildings will be above the design flood level but surrounded by lower ground i.e. create an island of development.
- DM.85 In the above situations we will provide advice to the planning authority on the potential viability of safe access and egress during the relevant flood probability events. We will only object where the access and egress would be significantly compromised. [Figure 2](#) illustrates the acceptability of common scenarios. The viability of the access and egress arrangements will depend on the specific local circumstances with consideration given to:
- i). The characteristics of a possible flood event e.g. the type and source of flooding, frequency, depth, velocity, speed of onset and duration of peak flood levels;
 - ii). Scale issues e.g. area of higher ground and wider area that the site connects to;
 - iii). The physical abilities of the building occupants e.g. the route should reflect the specific needs of the buildings residents and uses such as people who are less mobile or have a physical impairment. This will be informed by the vulnerability classification of the proposed development and a level of professional judgement will need to be applied.
- DM.86 It is important to note that developments not covered by this requirement will still expose people to risk. We will therefore recommend the provision of safe access and egress as good practice, but will not object to the application if not provided. This risk can be managed with a suitable evacuation plan and is an issue for the planning authority.
- DM.87 Evacuation before a flood event and rescue by emergency services and responders (see [glossary](#) for definitions) are separate issues and the responsibility of the local authority. The local authorities land use planning function should therefore work closely with the flood risk management, roads, building standards and emergency planning functions in relation to emergency access and egress.

Figure 2: Acceptability of pedestrian access and egress scenarios (assuming that DM Requirements 1 and 2 have been satisfied).

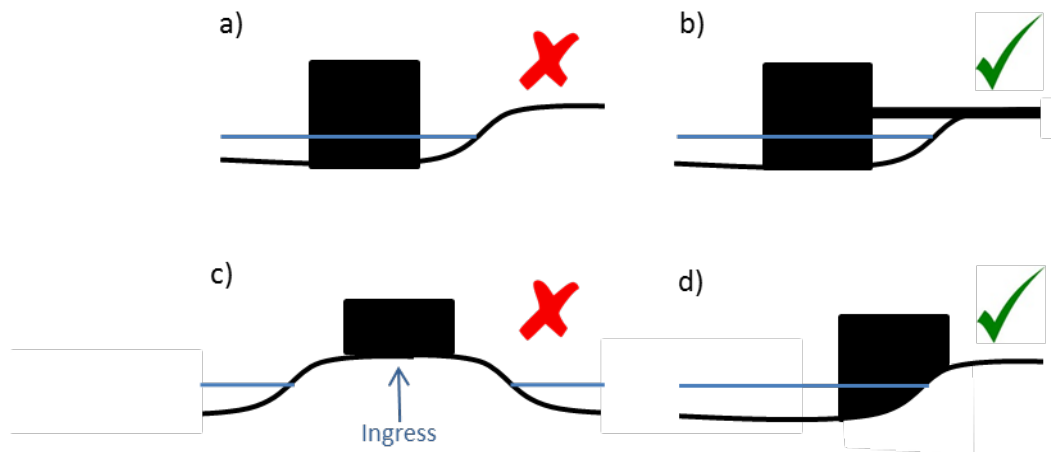


Figure 1: Exceptions – assuming DM Requirements 1 and 2 are satisfied

- a) acceptable for: i) developments that are equal or less vulnerable to the existing land use and do not introduce overnight accommodation onto the site; and ii) developments behind formal flood protection schemes, where the scheme is built to an [appropriate design standard](#) based upon the land use vulnerability.
- c) acceptable for: redevelopments or change of use applications that do not introduce overnight accommodation onto the site. Note – the reason new development in this scenario is not acceptable without adequate access and egress is because ingress of flood water may cause disruption to essential utilities such as water, sewerage and electricity which would leave the inhabitants stranded and in need of rescue (i.e. an island of development).

Internal consultation

DM.88 The planning case work system should be used to consult the Operational Flood Risk Team.

Justification

DM.89 The Flood Risk Management (Scotland) Act 2009 places a shared duty on Scottish Ministers, SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. In discharging these duties, the exposure of people to flood risk and their ability to stay safe during potential flood events are considerations. SEPA's planning role is considered to be one of our flood risk functions. Flood risk functions in local authorities will be designated by Order and may include land use planning.

DM.90 Scottish Planning Policy (SPP) recognises the need to reduce the vulnerability of future developments to flooding (para 254). The ability of people to safely access and egress buildings will reduce the overall vulnerability, increase resilience and aligns with the precautionary approach to flood risk management. This is particularly important for developments that include an element of overnight accommodation as they expose people to the hazard in more vulnerable circumstances. This is supported by SPP (para 264) and the Scottish Government's [online planning advice on flood risk](#) (para 19) which state that the effects of a flood on access including by emergency services should be taken into account when applying the risk framework.

DM.91 The provision of a safe access and egress route will also be important if the impacts of climate change are more significant than currently predicted and can therefore be considered a climate change adaptation measure. Increasing the resilience of development to changes in climate contributes to sustainable development, in accordance with planning authorities duties under The Planning etc. (Scotland) Act 2006. Supporting climate change adaptation is also included as a high level principle that guides sustainable development (SPP, para 29). In particular, local authorities have a duty under the Climate Change (Scotland) Act 2009 to contribute to the delivery of the Climate Change Adaptation Programme (May 2014). This programme identifies the integration of climate change adaptation into planning processes and decisions as a strategic principle.

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DM Requirement 4: Freeboard

Freeboard

Adequate freeboard must be provided for developments in fluvial or coastal flood risk areas involving the erection of new buildings in the *highly* and *most* vulnerable land use categories (as defined in our [Land Use Vulnerability Guidance](#)) and civil infrastructure projects. In the majority of cases an adequate freeboard allowance is considered to be 600mm above the design flood level.

For proposed developments involving the redevelopment of existing buildings, and all developments in the *least vulnerable*, *water compatible* and *essential infrastructure* categories the freeboard allowance is a recommendation and should be applied as far as practicable.

Information requirements

- DM.92 The ground level around the building(s) and finished ground floor level of the lowest room in the building(s) should be clearly marked on the relevant application drawings e.g. site layout and elevation plans (if applicable). All levels should be related to Ordnance Datum.
- DM.93 The flood risk assessment (FRA) should be used to establish the most appropriate freeboard allowance (depending on the physical processes involved at the site). In the majority of cases this should be a minimum of 600mm above the design flood level (this is separate to any climate change allowance that may be applied).

What needs to be considered?

Proposed developments must first satisfy DM [Requirement 1](#), [Requirement 2](#) and [Requirement 3](#). The requirements should not be read in isolation.

- DM.94 The consideration of this requirement will depend on the planning application stage. Freeboard is a detailed design matter that will generally not be covered in pre-application consultations or at planning permission in principle stage. When consulted early in the planning process (e.g. pre-application consultations, EIA scoping, masterplans, planning briefs or frameworks) for those types of development where this is a requirement we will request a minimum of 600 mm freeboard allowance and explain that we may object to the detailed planning application if this cannot be provided. As freeboard does not affect the principle of development on site, when consulted on applications for planning permission in principle (PPIP) we will request (i.e. object unless) it is covered as a detailed design matter specified in conditions. When consulted on the detailed design (i.e. full planning applications or applications approval of matters specified in condition) we will object if the proposed freeboard allowance is deemed to be inadequate and request that the plans are amended to show that the required freeboard can be achieved. As increasing the freeboard of the building is likely to affect the design of the building we should avoid requesting that this issue be dealt with by condition at the detailed design stage.
- DM.95 Freeboard is the difference between the design flood level and either the finished floor levels, solum level, or deck level of a specific development. It is a safety margin designed to allow for the uncertainties involved in flood estimation and physical factors that cannot be assessed and vary between sites e.g. post construction settlement and wave action. The freeboard allowance should be appropriate to the type of development, vulnerability of the proposed land use, physical characteristics of the site and modelling uncertainties.
- DM.96 New buildings in the *most* and *highly vulnerable* land use categories, and civil infrastructure – the most appropriate level of freeboard will be determined on a case by case basis. As a guide

we will expect finished floor levels to be set a minimum of 600mm above the design flood level, but in rare situations may accept reduced levels e.g. where site characteristics indicate that less would be suitable or where level access is required. In exceptional circumstances (i.e. where there is a high level of uncertainty in the flood estimation levels) we may require a freeboard in excess of 600mm. We will object if no freeboard is included.

- DM.97 Redevelopment of existing buildings - the nature of these types of applications means that the building platform and in most cases floor levels are already set. These existing structural constraints may limit whether a freeboard can be incorporated into the building. We will therefore recommend that finished floor levels are raised above the design flood level as far as practicable and flood resilient design incorporated (see [DM Recommendation 2](#)), but will not object (this applies to all vulnerability classes that are acceptable in terms of [DM Requirement 1](#)). An exception to this is coastal redevelopments, where freeboard may be required to account for waves, spray and local bathymetric effects.
- DM.98 Applications for least vulnerable uses, essential infrastructure and water compatible uses - as these types of development do not include habitable accommodation we would recommend a freeboard allowance, but not object if no freeboard is provided. We will highlight that the developer will need to accept the commercial risk of temporary disruption that may be caused during a flood event. Flood resilient design may reduce such disruption - see [DM Recommendation 2](#). An exception to this is coastal developments, where freeboard may be required to account for waves, spray and local bathymetric effects.
- DM.99 If the proposed development involves the storage of chemicals and hazardous materials, we may require freeboard as a mitigation measure to protect the water environment during a flood event. When considering whether this form of mitigation is appropriate we will consider the potential impacts on the water environment.
- DM.100 The same freeboard principles should be applied to proposed developments behind a formal flood protection scheme that is not designed to the appropriate standard (see [glossary](#) for definition).
- DM.101 It should be noted that the freeboard allowance is independent from the climate change allowance. Some local authorities have freeboard requirements in excess of 600mm. The applicant or agent should make sure that they are aware of what is stipulated locally.

Internal consultation

- DM.102 The planning case work system should be used to consult the Operational Flood Risk Team.

Justification

- DM.103 The Flood Risk Management (Scotland) Act 2009 places a shared duty on Scottish Ministers, SEPA and local authorities to reduce overall flood risk and promote sustainable flood risk management when exercising their flood risk related functions. SEPA's planning role is considered to be one of our flood risk functions, where flood risk functions in local authorities will be designated by Order and may include land use planning.
- DM.104 As set out in [Delivering Sustainable Flood Risk Management](#) (Scottish Government, June 2011) the main principles of flood management are identified as avoid, protect, prepare and accept. The application of a 600 mm freeboard allowance on top of the estimated design flood level will help make the building more resilient to flooding. This will contribute to reducing the risk and protecting the development by reducing the potential hazard.

DM.105 Although SPP does not require the application of a freeboard allowance, paragraph 264 states that it should be considered when applying the risk framework. A freeboard of 600 mm is recommended in [CIRIA Report C624 Development and Flood Risk – Guidance for the Construction Industry](#) and is widely accepted as the industry standard. We therefore consider the application of 600 mm freeboard to the most vulnerable types of development justified. Particularly as it will help contribute to reducing overall flood risk and aligns with the principles of the FRM Act.

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DM Recommendation 1: Climate change

Climate change

An allowance for climate change should be included when calculating estimated design flood level. This includes:

- Fluvial – the best available guidance should be used to identify an appropriate percentage uplift for the site. This should be added to the estimated design flood peak flow;
- Coastal - the best available guidance should be used to derive an allowance for climate change above the extreme still water design flood level.

Information recommendations

DM.106 The flood risk assessment (FRA) should clearly show how the predicted impacts of climate change on flood risk at the site have been taken into account.

What needs to be considered?

DM.107 The consideration of this recommendation will depend on whether a flood risk assessment (FRA) has been submitted as part of the consultation. When consulted prior to an FRA being undertaken we will recommend that a climate change allowance is included as good practice. This is particularly relevant for responses to pre-application consultations, EIA scoping, planning briefs or frameworks etc. If an FRA has already been undertaken and climate change has not been considered, we will only highlight this as a potential issue for the planning authority to consider if:

- We do not agree with the FRA findings and it needs to be updated. In this case we will recommend that a climate change allowance is also included as part of the revised flood level estimation.
- It affects the finished floor level i.e. the finished floor levels ([DM Requirement 4](#)) would be higher if a climate change allowance had been included.

DM.108 Climate change may increase flood risk in some parts of Scotland and increase the uncertainty in flood level prediction. Proposed development should therefore be designed to be resilient to future potential changes in climate by adding a suitable allowance onto the estimated design flood peak. This is independent of the freeboard allowance set out in [DM Requirement 4](#).

Recommended climate change allowances and summary of likely impacts

Source of flooding	Climate change allowance	Potential impact of climate change
Fluvial	Best available guidance should be used to identify an appropriate percentage uplift for the site. This should be added onto the estimated design flood peak flow.	Increased rainfall intensity and river flow may result in more frequent and severe flood events.
Coastal	Best available guidance should be used to derive sea level rise projections and added to the extreme still water design flood level.	Increased extreme still water levels through changes in mean sea level or changes in storm intensity which may affect the frequency and magnitude of waves and surges.

DM.109 We are preparing guidance on climate change allowances for flood risk assessment in land-use planning. When published (expected Summer 2018) this should be considered to constitute the best available guidance.

DM.110 National planning policy recommends that the effects of climate change should be considered when applying the risk framework (SPP, para 264), but does not specifically require an allowance. However, given the UK Climate Change Impact Projections (UKCIP) scenarios we consider that it is justified to encourage the inclusion of a climate change allowance as good practice. Especially as the predicted impacts of climate change may affect the type of development that may be acceptable (in terms of land use vulnerability) at a specific location. For example, depending on the flood plain characteristics, the depth of flood water or spatial extent of a flood event could be increased once climate change is considered. This will be particularly important if the impacts of climate change are more significant than currently predicted. In these situations it is up to the planning authority to decide if climate change is a material consideration and a requirement of planning permission.

Internal consultation

DM.111 The planning case work system should be used to consult the Operational Flood Risk Team.

Justification

DM.112 The Climate Change (Scotland) Act 2009 places duties on public bodies, in exercising their functions to act in a sustainable way and contribute towards the delivery of the Scottish Adaptation Programme. The Climate Change Adaptation Programme (May 2014) identifies the integration of climate change adaptation into existing risk management and planning process decisions as one of the six strategic principles. In particular, planning authorities are identified to deliver Objective B3-3 which requires climate change to be taken into account in all decisions throughout the planning system (Scottish Climate Change Adaptation Programme – Programme, p43). Consideration of climate change is also a key part of the Flood Risk Management (Scotland) Act 2009.

DM.113 Scottish planning policy recognises the need to take account of the predicted effects of climate change when considering flood risk (paras 29 and 264). In particular, it acknowledges that climate change will increase the risk of flooding in some parts of the country and that planning can play an important part in reducing the vulnerability of existing and future development to flooding (SPP, 254). The most effective climate change adaptation strategy is to avoid development in flood risk areas. But, where development cannot be avoided, the next best strategy is to add a suitable climate change allowance onto the estimated design flood peak to provide a level of resilience to future climates. Given the uncertainties associated with flood level estimation, this additional allowance will be particularly important if the impacts of climate change are higher than currently predicted.

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DM Recommendation 2: Flood Resilient Design

Flood resilient design

To reduce the vulnerability of buildings and their occupants/contents to flooding, proposed developments in fluvial and coastal flood risk areas should incorporate the use of water resilient or resistant materials and construction techniques.

Information recommendations

- DM.114 Details of the proposed flood resilience or resistance measures should be provided as part of the planning application e.g. annotated on the application drawings or included as part of the design statement. It is not sufficient to only refer to the measures in the flood risk assessment (FRA). However, it should be noted that we are not in a position to assess the specifics of such measures within our review of FRAs.

What needs to be considered?

- DM.115 The consideration of this recommendation will depend on the planning application stage. Flood resilience is a detailed design matter that will generally not be covered in pre-application consultations or at planning permission in principle stage. When consulted early in the planning process (e.g. pre-application consultations, EIA scoping, masterplans, planning briefs or frameworks etc.) we will recommend that flood resilient design is included as good practice. Similarly, when consulted on applications for planning permission in principle (PPIP) we recommend that the planning authority also considers the application of flood resilient design as good practice. We would not therefore *require* that this issue is covered by matters specified in conditions.
- DM.116 Where development is considered acceptable in a flood risk area (in line with DM Requirements 1 – 4) it should be designed to minimise any potential flood damage caused to the building and reduce the potential effects of flooding on the occupants. This applies to areas at medium to high risk, including areas behind flood protection schemes and for certain development types in low to medium areas (as permitted in the SPP risk framework). In these situations, the development will continue to be exposed to the same severity of flood hazard but there is an opportunity for the impacts (hence the overall risk) to be reduced through the use of water resilient or resistant materials and construction techniques.
- DM.117 We encourage the same approach for developments adjacent to medium to high risk areas (i.e. in low to medium flood risk areas), as a risk may remain if the impacts of climate change are more significant than currently predicted.
- DM.118 The use of flood resilient/resistant materials and construction techniques are especially relevant for *water compatible* and *less vulnerable* uses (where temporary disruption is deemed acceptable by the developer) and proposals for redevelopment or change of use that are acceptable in flood risk areas, particularly if the recommended freeboard of 600mm cannot be achieved.
- DM.119 Flood resilient buildings are designed to reduce the impact of flood water entering the building so that damage is minimised. In comparison, flood resistant buildings are designed to prevent or minimise the entry of water into the building in the first place. The appropriate flood resilience and resistance measures will depend on the characteristics of the design flood. This includes the estimated depth that flood water will reach in the building and the duration of the event. Additional guidance for developers can be found in [Improving the flood performance of](#)

[new buildings: Flood resilient construction](#) (Communities and Local Government, EA and Defra, 2007).

- DM.120 The building standards system complements the planning system. Its role is to protect the building from the area immediately below and adjoining it from harmful effects caused by flood water, ground water and existing drains. [The Technical Handbooks](#) (Domestic and Non-domestic, 2015) require precautions to be taken to protect the building fabric from flood damage. Mandatory Standard 3.3. states that “every building must be designed and constructed in such a way that there will not be a threat to the building or the health of the occupants as a result of flooding and the accumulation of groundwater”.
- DM.121 Water resilient materials and forms of construction may be a material planning consideration and a requirement of planning permission. However, flood resistant equipment such as door boards, air brick covers and building ‘skirts’ delay water ingress for only a short period and so are unlikely to be material considerations or make a proposal acceptable. However, this will be for the planning authority to decide in consultation with building standards. The planning system should not be used to secure objectives that are more properly achieved under other legislation, including the Building (Scotland) Act 2003.
- DM.122 It should be noted that the use of flood resilient or resistant materials and construction techniques would not be sufficient to make a development acceptable when it does not accord with the risk framework (or our requirements) and should not be approved in principle.

Internal consultation

- DM.123 The planning case work system should be used to consult the Operational Flood Risk Team.

Justification

- DM.124 The effects of flooding on a building can include significant damage to materials, services and structure. Where there is a risk that flooding can affect a building it is important that any proposed construction is designed to be more resistant or resilient.
- DM.125 To ensure that people are safe and minimise damage to property, development in areas that may be at risk of flooding should be designed and constructed to maximise resilience. This requirement is reflected in the flood risk framework (SPP, para 263) which states that where built development is permitted, measures to manage flood risk will be required. Where appropriate, this includes the use of water resilient materials and construction. This is further reflected in paragraph 18 of the Scottish Government’s [online planning advice on flood risk](#) which highlights the need for planning authorities to consider whether resilience measures can help to mitigate any flooding impact on development.
- DM.126 Increasing the resilience of development to changes in climate contributes to sustainable development, in accordance with planning authorities duties under The Planning etc. (Scotland) Act 2006. Supporting climate change adaptation is also included as a high level principle that guides sustainable development (SPP, para 29). In particular, local authorities have a duty under the Climate Change (Scotland) Act 2009 to contribute to the delivery of the Climate Change Adaptation Programme (May 2014). This programme identifies the integration of climate change adaptation into planning processes and decisions as a strategic principle.

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DM Recommendation 3: Pluvial Flooding

Pluvial flooding

Flood risk from heavy rainfall (overland flow and ponding) should be properly considered within the planning process. It is important to ensure that fluvial flood risk is not increased via unregulated diversion of pluvial water. Proposed developments with complex pluvial hazards should ensure that the pluvial flood risk is adequately assessed and managed within the site boundary (where possible).

Information recommendations

- DM.127 Where the pluvial flood risk issues are particularly complex, we recommend that a higher level of scrutiny is undertaken in the form of a flood risk assessment or drainage assessment. On receipt of such information from a developer, the planning authority may choose to consult SEPA for such complex cases. The minimum level of information we would need to provide advice to the planning authority would be:
- An appropriate technical report (flood risk assessment or drainage assessment) that addresses the relevant pluvial flooding issues and identifies the complex issues of the case. As good practice this should include an allowance for climate change – the best available guidance should be used to identify an appropriate uplift.

What needs to be considered?

- DM.128 Surface water flooding is often used to describe both pluvial flooding and flooding caused from sewers and other artificial drainage systems. In reality surface water flooding is often a complex interaction of many sources of flooding and can be exacerbated by other sources of flooding e.g. where high sea levels or river levels prevent drainage systems from discharging freely.
- DM.129 This recommendation only covers the pluvial element of surface water flooding. Pluvial flooding involves flooding as a result of rainfall flowing or ponding over the ground before it enters a natural (e.g. watercourse) or artificial (e.g. sewer) drainage system or when it cannot enter a drainage system (e.g. because the system is already full to capacity or the drainage inlets have a limited capacity).
- DM.130 The management of surface water flooding (and drainage) is predominantly a matter for the local authority (land use planning, roads and flooding teams) to consider in conjunction with Scottish Water. [The SEPA – Planning Authority Protocol](#) (paras 47 – 50) explains our role and approach to dealing with surface water flood risk consultations. This is supplemented by the advice in Section 6 of [How and When to Consult SEPA](#) which sets out the procedure to follow. We do not wish to be routinely consulted on surface water flooding and will only provide advice on the pluvial flood risk elements in exceptional circumstances.
- DM.131 When consulted on proposed developments with complex pluvial flooding issues we will provide advice and recommendations relating to how the pre-development hazard has been assessed and defined. We will not generally comment on design solutions for the management of surface water drainage as they are matters for the local authority and Scottish Water to consider.
- DM.132 We will not object solely on the grounds of pluvial flooding, but may object if the pluvial flood risk has not been adequately assessed or managed, and would lead to an increase in fluvial flood risk elsewhere. In these cases, the proposed development would fail to

satisfy [DM Requirement 2](#). It is important to ensure that any such objections are phrased in relation to [DM Requirement 2](#).

Internal consultation

DM.133 The planning case work system should be used to consult the Operational Flood Risk Team.

Justification

DM.134 Under the Flood Risk Management Act (Scotland) 2009 SEPA and local authorities have a duty to exercise their flood risk related functions with a view to reducing overall flood risk. In exercising these functions, they are encouraged to adopt an integrated approach by co-operating with each other to co-ordinate the delivery of flood risk functions.

DM.135 In terms of surface water flooding, local authorities are best placed to deal the different components of surface water flooding. This is either directly as part of their existing responsibilities in relation to roads and surface water drainage and collaboratively with Scottish Water to manage sewer flooding. This responsibility is reflected in the [SEPA – Planning Authority Protocol \(SEPA Policy 41\)](#). As some local authorities lack the expertise required to assess surface water flooding, they may ask SEPA for advice when the pluvial flood risk is particularly complex.

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Glossary

These definitions are SEPA's interpretation of the flooding terms used within this guidance. Please refer to the glossary in SPP for the definitions of more common flooding and planning terms.

<p>Access and Egress</p>	<p>Access and egress is the provision of a safe and flood free route during the relevant flood probability event that enables the free movement of people of all abilities (on foot and with assistance) both to and from a secure place that is connected to ground above the design flood level and wider area.</p>
<p>Appropriate standard (flood protection scheme)</p>	<p>Within the context of the SPP risk framework we consider that an appropriate standard for a formal flood protection scheme (FPS) should be informed by the vulnerability of the proposed land use to flooding. The minimum appropriate standards for each vulnerability class is:</p> <ul style="list-style-type: none"> • Water compatible uses and essential infrastructure (designed and constructed to remain operational during a flood) – no minimum standard • Least vulnerable uses – 0.5% AEP (200 year) standard of protection • Highly vulnerable uses – 0.5% AEP (200 year) plus climate change standard of protection • Most vulnerable uses should be avoided in areas protected by a scheme as the level of protection required to reduce the residual risk to an acceptable level would be so high it is unlikely to be achievable. <p>The SEPA position on development behind flood protection schemes provides further explanation.</p>
<p>Built up areas</p>	<p>An element of professional judgement will need to be exercised in deciding whether a site falls within a built up area. To support a consistency of approach we will apply the following general guiding principles to help decide whether a site is within a built up area. It should be noted that each site will, however, present a unique set of circumstances that will need to be considered together with the views of the relevant local planning, authority.</p> <p>A site would be considered to fall within a built up area if:</p> <ol style="list-style-type: none"> i) It is within the settlement boundary of a village, town or city; <i>and</i>, ii) The adjoining land uses are predominantly developed in nature i.e. most of the boundary is adjacent to existing development. <p>A site should <i>not</i> be considered to fall within a built up area if:</p> <ol style="list-style-type: none"> iii) a sparsely developed area characterised by isolated developments or no other development at all; <i>and</i>, iv) it is outwith a settlement boundary; <i>or</i> v) it is within a settlement boundary but is located on the periphery of the settlement and is predominantly or completely surrounded by undeveloped land. <p>Settlement boundaries are defined in local development plans. It should however, be noted that the approach to defining these can vary</p>

	considerably between planning authorities. The above approach is intended to allow some discretion to sites on the boundary of settlements to allow for this.
Design level	Annual flood risk probability applicable to the development type. The risk framework (SPP, para 263) suggests the most appropriate annual flood risk probabilities for different land uses. For the majority of developments this will be above the 0.5% annual probability flood extent (i.e. medium to high risk areas). For the <i>most vulnerable</i> land use types this will be above the 0.1% annual probability flood extent (i.e. low to medium risk areas).
Evacuation	Involves the movement of people, either through their own efforts or with the assistance of others, to a "place of safety" without the need for specialist trained and equipped rescuers. These activities take place before an area is inundated by flood water.
Existing land use	<p>To establish whether a redevelopment proposal satisfies DM Requirement 1 we will use our Land Use Vulnerability Guidance to compare the vulnerability of the proposed use to the existing lawful planning use of the building.</p> <p>When a building is unoccupied and/or has no lawful planning use, the comparison should be based on the previous (last known) use.</p> <p>This will apply when considering the following types of developments:</p> <ul style="list-style-type: none"> • Alterations/extensions to existing buildings and changes of use; • Sites with existing buildings where demolition is being proposed or additional buildings are to be erected. <p>Vacant sites (i.e. sites with no buildings) are not considered in this way. See the explanation of how to apply criterion b and c.</p>
Functional flood plain	The flood plain is defined in SPP as the generally flat areas adjacent to a watercourse or the sea where water flows in time of flood or would flow but for the presence of flood prevention measures. The functional flood plain refers to the role of the flood plains as flood water storage areas. For planning purposes the functional flood plain is defined in SPP as generally having a greater than 0.5% probability of flooding in any year.
Isolated dwelling / building	<p>An element of professional judgement will need to be exercised in deciding whether a dwelling (or other buildings) could be considered isolated. To support a consistent approach, we have provided some examples of what might and might not constitute an isolated dwelling. It should be noted that each site will, however, present a unique set of circumstances that will need to be considered together with the views of the relevant local planning, authority.</p> <p>A dwelling (or building) could be considered to be isolated if there are no other occupied properties (including residential, commercial, industrial uses etc.), within close walking distance. Conversely, a dwelling could not be considered isolated if, even though located in a sparsely populated area, it is within close walking distance of other occupied properties. An example of a dwelling that could not be considered to be isolated would be one forming part of a small cluster of occupied buildings, even if not part of a formal/recognised settlement.</p>
Previously	Land which has been previously developed. This can include vacant or

developed site	derelict land and land occupied by existing, redundant or unused buildings. Often referred to as brownfield sites. Undeveloped sites can also be termed greenfield.
Rescue (by emergency services)	The recovery of people from imminent danger, or place of temporary refuge when flood water has inundated an area. The key determinant in defining an activity as a rescue is whether it requires specialist trained and equipped teams to recover casualties and take them to a "place of safety", not the immediacy of the action or level of risk involved.
Sparsely populated area	<p>An element of professional judgement will need to be exercised in deciding whether an area is sparsely populated. To support a consistent approach, we provided some examples of what might and might not constitute a sparsely populated area. It should be noted that each site will, however, present a unique set of circumstances that will need to be considered together with the views of the relevant local planning, authority.</p> <p>An area could be considered to be sparsely populated if it is relatively inaccessible by private transport from Scotland's larger towns and cities. Conversely, an area could not be considered to be sparsely populated if, even though there are few dwellings and is largely rural in character, it is relatively accessible by private transport to and is within the hinterland/urban fringe of larger towns and cities. An example of an area that could not be considered to be sparsely populated would be areas of farmland with few or dispersed dwellings, but within easy commuting distance of a small town.</p>

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