

Development Management Guidance: Flood Risk

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Why we comment on this issue

Our key aim in providing advice to planning authorities regarding flood risk in the development management process is to promote safe and resilient communities and businesses through sustainable flood risk management. Development management has a pivotal role to play in delivering sustainable flood risk management through the avoidance of flood risk in the first instance. Delivery of this approach through our planning service accords with our duties under a range of legislation including the:

- Water Environment and Water Services (Scotland) Act 2003,
- Flood Risk Management (Scotland) Act 2009; and,
- Climate Change (Scotland) Act 2009.

Ministerial guidance on Delivering Sustainable Flood Risk Management (Scottish Government, 2011) identifies planning as one of the most powerful tools available to manage flood risk.

SEPA's planning objectives for this topic

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; and,
 - Ensuring development contributes to a reduction in overall flood risk;
- Support the delivery of Flood Risk Management Strategies and Local Flood Risk Management Plans (once published); and,
- 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.

Links to other development management guidance

Other related guidance include: water environment and soils [to be published shortly].



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Using the development management guidance for flood risk

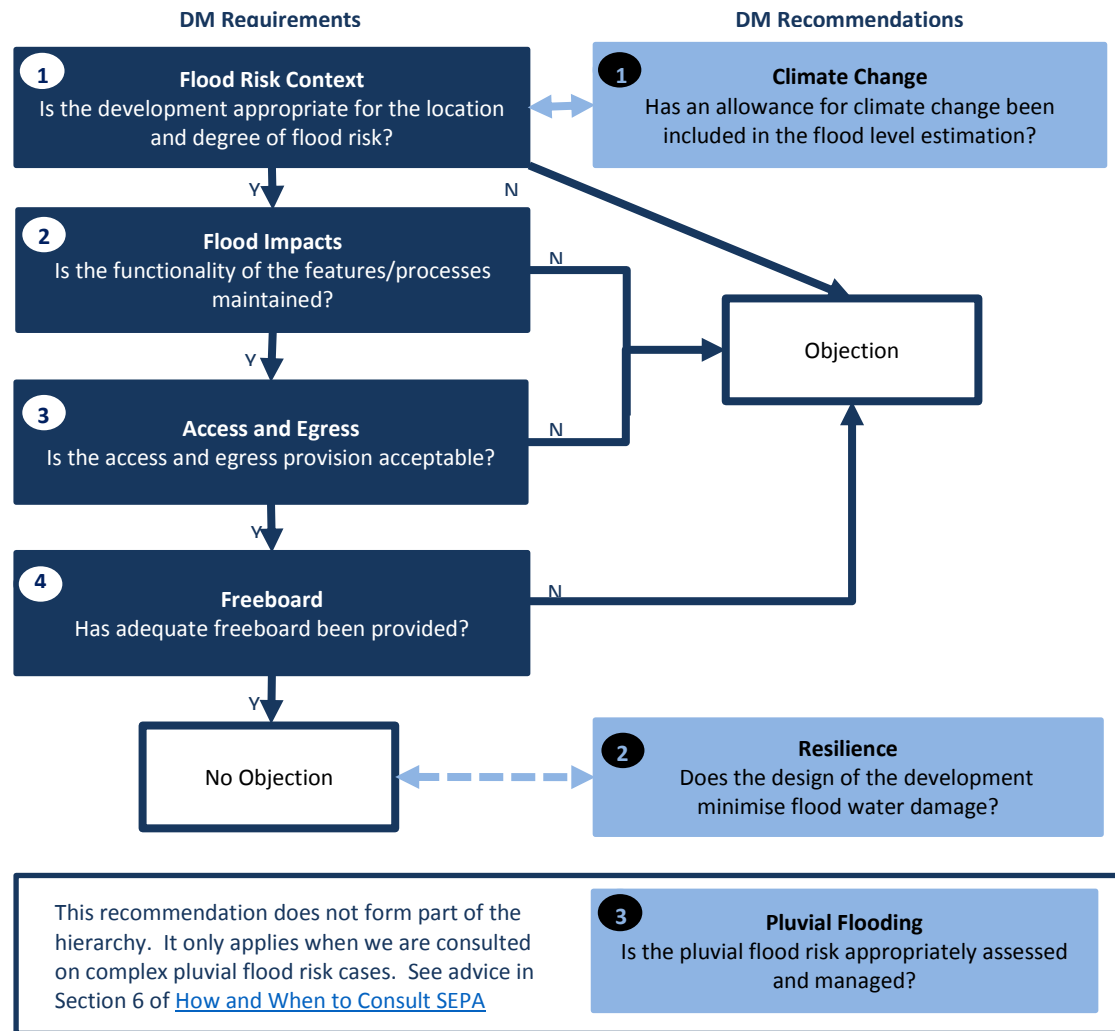
The table on pages 4-7 outlines our requirements and recommendations for development management relating to flood risk in more detail. If the requirements are not met then we are likely to object in principle to the proposed development. If the information requirements for the requirements are not met then we are likely to object on the grounds of lack of information.

It is important to note that the 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.

Further detail on the implementation of the requirements and recommendations and supporting information can be found in the [Flood Risk Background Paper](#).

Flowchart 1: Hierarchy of requirements and recommendations



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Development management requirements	Information requirements
<p><u>Requirement 1: Flood risk context</u></p> <p>Proposed developments should not be located in areas at medium to high risk from fluvial or coastal flooding (or low to medium areas for civil infrastructure). Other <i>most vulnerable</i> uses will only be acceptable in low to medium risk areas if the hazard can be alleviated through appropriate mitigation.</p> <p>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:</p> <ol style="list-style-type: none"> a) Developments classed as <i>water compatible</i> or that are considered to be <i>essential infrastructure</i> 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 is appropriate for the vulnerability of the land use. Further details are provided below. 	<p>As set out in our Technical Guidance for Stakeholders the flood risk assessment should determine the flood extent and flood levels in order to inform the design of the proposed development.</p> <p>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.</p>



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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% 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, • 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,



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	<ul style="list-style-type: none"> • Least vulnerable developments; or, • Any other development that does not increase overall risk (as defined in criterion b) and c) above). 	
<p>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)</p>	<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. 	
<p>Developments that introduce <i>most vulnerable</i> uses into areas protected by a scheme must be avoided.</p> <p>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</p>		
<p><u>Requirement 2: Flood Impacts</u></p> <p>Proposed development should not increase the risk of flooding elsewhere and not adversely interrupting the following processes in fluvial and coastal areas:</p> <ul style="list-style-type: none"> • 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. 		<p>As set out in our Technical Guidance for Stakeholders the flood risk assessment (FRA) should demonstrate how:</p> <p>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</p>



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

b) the proposed development will not increase flood risk elsewhere.

Requirement 3: 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 is 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.

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).

Requirement 4: 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 [Vulnerability Guidance](#)) and civil infrastructure. 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 only a recommendation and should be applied as far as practicable.

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 relevant to Ordnance Datum.

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



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minimum of 600mm above the design flood level (this is separate to any climate change allowance that may be applied).

Development management recommendations	Information requirements
<p><u>Recommendation 1: Climate change</u></p> <p>An allowance for climate change should be included when calculating estimated design flood level. This includes:</p> <ul style="list-style-type: none"> • 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 level. 	<p>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.</p>
<p><u>Recommendation 2: Flood resilient design</u></p> <p>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.</p>	<p>Details of the proposed flood resilience or resistant 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.</p>
<p><u>Recommendation 3: Pluvial flooding</u></p> <p>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).</p>	<p>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:</p>



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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.

