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Guidance

## Flood risk and coastal change

Advises how to take account of and address the risks associated with flooding and coastal change in the planning process.

From:

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### Contents

- Planning and flood risk
- Taking flood risk into account in the preparation of Local Plans
- Strategic Flood Risk Assessment
- The sequential, risk-based approach to the location of development
- The aim of the Sequential Test
- Applying the Sequential Test in the preparation of a Local Plan
- The Exception Test
- Applying the Exception Test in the preparation of a Local Plan
- Addressing flood risk in individual planning applications
- Site-specific flood risk assessment
- Applying the Sequential Test to individual planning applications
- Applying the Exception Test to planning applications
- Demonstrating that the wider sustainability benefits to the community outweigh flood risk to satisfy the first part of the Exception Test
- Developers to demonstrate that development will be safe to satisfy the second part of the Exception Test
- How local planning authorities should involve the Environment Agency when determining planning applications where there is a risk of flooding
- How the local planning authority should involve the lead local flood authority when determining planning applications, and what advice should be given about local flood risks
- What is meant by “minor development” in relation to flood risk
- The flood risk issues raised by minor developments
- The flood risk issues raised by changes of use
- Permitted development rights and flood risk

- Reducing the causes and impacts of flooding
- Making development safe from flood risk
- Flood resilience and flood resistance
- Neighbourhood planning
- Flood Zone and flood risk tables
- Site-specific flood risk assessment: Checklist
- Other considerations
- Proximity to main rivers
- What is the general planning approach to development and coastal change?
- Why it is important to apply Integrated Coastal Zone Management
- Coastal Change Management Areas
- Permitted development rights in areas at risk from coastal change

Print this page

Where plans are being prepared under the transitional arrangements set out in Annex 1 to the revised National Planning Policy Framework (<https://www.gov.uk/government/publications/national-planning-policy-framework--2>), the policies in the previous version of the framework published in 2012

(<http://webarchive.nationalarchives.gov.uk/20180608095821/https://www.gov.uk/government/publications/national-planning-policy-framework--2>) will continue to apply, as will any previous guidance which has been superseded since the new framework was published in July 2018. If you'd like an email alert when changes are made to planning guidance please subscribe (<https://www.gov.uk/topic/planning-development/planning-officer-guidance/email-signup>).

## Planning and flood risk

### What is the general planning approach to development and flood risk?

The National Planning Policy Framework sets strict tests to protect people and property from flooding which all local planning authorities are expected to follow. Where these tests are not met, national policy is clear that new development should not be allowed. The main steps to be followed are set out below which, in summary, are designed to ensure that if there are better sites in terms of flood risk, or a proposed development cannot be made safe, it should not be permitted.

See related policy (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para155>).

#### Assess flood risk:

- Local planning authorities undertake a Strategic Flood Risk Assessment to fully understand the flood risk in the area to inform Local Plan preparation
- In areas at risk of flooding or for sites of 1 hectare or more, developers undertake a site-specific flood risk assessment to accompany applications for planning permission (or prior approval for certain types of permitted development).

## **Avoid flood risk:**

- In plan-making, local planning authorities apply a sequential approach to site selection so that development is, as far as reasonably possible, located where the risk of flooding (from all sources) is lowest, taking account of climate change and the vulnerability of future uses to flood risk. In plan-making this involves applying the ‘Sequential Test’ to Local Plans and, if needed, the ‘Exception Test’ to Local Plans.
- In decision-taking, where necessary, local planning authorities also apply the ‘sequential approach’. In decision-taking this involves applying the Sequential Test for specific development proposals and, if needed, the Exception Test for specific development proposals, to steer development to areas with the lowest probability of flooding.

## **Manage and mitigate flood risk:**

- Where development needs to be in locations where there is a risk of flooding as alternative sites are not available, local planning authorities and developers ensure development is appropriately flood resilient and resistant, safe for its users for the development’s lifetime, and will not increase flood risk overall.
- Local planning authorities and developers should seek flood risk management opportunities (eg safeguarding land), and to reduce the causes and impacts of flooding (eg through the use of sustainable drainage systems in developments).

This guidance on flood risk and coastal change will help local planning authorities in the preparation of Local Plans, and neighbourhoods in preparing neighbourhood plans. It will also be relevant to applications for planning permission and applications for prior approval for certain types of permitted development.

There is information on the requirements to consult the Environment Agency on applications where there is a risk of flooding. Also information on what should happen if a local planning authority wishes to grant consent for a major development against Environment Agency advice.

There is information on the role of lead local flood authorities and when their advice may need to be sought in considering planning applications.

There is information on flood risk in relation to minor developments and change of use, whilst information on climate change and flood risk is available from the Environment Agency (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>).

See also:

- What is “flood risk”?
- What are the “areas at risk of flooding” mentioned in paragraph 155 of the National Planning Policy Framework?

Paragraph: 001 Reference ID: 7-001-20140306

Revision date: 06 03 2014

## **What is “flood risk”?**

For the purposes of applying the National Planning Policy Framework, “flood risk” is a combination of the probability and the potential consequences of flooding from all sources – including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers and drainage systems, and from reservoirs, canals and lakes and other artificial sources.

Paragraph: 002 Reference ID: 7-002-20140306

Revision date: 06 03 2014

## **What are the ‘areas at risk of flooding’ mentioned in paragraph 155 of the National Planning Policy Framework?**

For the purposes of applying the National Planning Policy Framework, areas at risk from all sources of flooding are included. For fluvial (river) and sea flooding, this is principally land within Flood Zones 2 and 3. It can also include an area within Flood Zone 1 which the Environment Agency has notified the local planning authority as having critical drainage problems.

Table 1 sets out the definitions of the Flood Zones, from low to high probability of river and sea flooding, and refers to the Environment Agency’s Flood Map for Planning (Rivers and Sea) which shows the location of these Flood Zones. This map and maps showing other sources of flooding are available from the Environment Agency.

Paragraph: 003 Reference ID: 7-003-20140306

Revision date: 06 03 2014

## **Taking flood risk into account in the preparation of Local Plans**

This is summarised in Diagram 1: taking flood risk into account in the preparation of a Local Plan ([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/574832/flood\\_1\\_005.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/574832/flood_1_005.pdf)) (PDF, 561KB, 1 page)

Paragraph: 004 Reference ID: 7-004-20140306

Revision date: 06 03 2014

Notes to diagram 1:

- Read more about Strategic Flood Risk Assessment
- View guidance on Sustainability Appraisal (<https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal>)
- View diagram 2: Application of the Sequential Test for Local Plan preparation
- View diagram 3: Application of the Exception Test to Local Plan preparation
- Read more about the sequential test
- Read more about the exception test

See also:

- Which flood risk management bodies should local planning authorities seek advice from when preparing Local Plans?
- Is flood risk relevant to Local Plan policies that change the use of land or buildings?
- Is flood risk relevant to waste and minerals plans?

## **Which flood risk management bodies should local planning authorities seek advice from when preparing Local Plans?**

Paragraph 156 of the National Planning Policy Framework (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para156>) states that local planning authorities should take advice from the Environment Agency and other relevant flood risk management bodies such as lead local flood authorities and internal drainage boards.

Lead local flood authorities (unitary authorities or county councils) are responsible for managing local flood risk, including from surface water, ground water and ordinary watercourses, and for preparing local flood risk management strategies. Local planning authorities should work with lead local flood authorities to secure Local Plan policies compatible with the local flood risk management strategy.

Local planning authorities should also take advice where relevant, from:

- Internal drainage boards: local planning authorities should confer with internal drainage boards where they exist to identify the scope of their interests.
- Reservoir undertakers: local planning authorities should discuss their proposed site allocations with reservoir undertakers to:
  - avoid an intensification of development within areas at risk from reservoir failure, and;
  - ensure that reservoir undertakers can assess the cost implications of any reservoir safety improvements required due to changes in land use downstream of their assets.
- Navigation authorities: Navigation authorities should be consulted by the local planning authority in relation to sites adjacent to, or which discharge into, canals – especially where these are impounded above natural ground level.

## **Is flood risk relevant to Local Plan policies that change the use of land or buildings?**

A change in use may involve an increase in flood risk if the vulnerability classification of the development is changed – see Table 2. For example, changing from industrial use to residential use will increase the vulnerability classification from ‘less’ to ‘more’ vulnerable. As changes of use are not subject to the Sequential or Exception tests, the local planning authority should consider when formulating policy what changes of use will be acceptable, having regard to the National Planning Policy Framework and taking into account the Strategic Flood Risk Assessment. This is likely to depend on whether developments can be designed to be safe and that there is safe access and egress.

## **Is flood risk relevant to waste and minerals plans?**

Waste and mineral planning authorities need to take account of flood risk when allocating land for development. They should prepare their plan policies with regard to any available Strategic Flood Risk Assessments. The location of Mineral Safeguarding Areas and site allocations, in particular in relation to sand and gravel workings which are often located in functional floodplains, need to be identified. It is possible to explore benefits, such as restoring mineral working located in flood risk areas to increase flood water storage, which can also enhance the natural environment. Partnership working on joint Strategic Flood Risk Assessments offers the best opportunity to identify and realise these opportunities.

Paragraph: 008 Reference ID: 7-008-20140306

Revision date: 06 03 2014

## **Strategic Flood Risk Assessment**

### **What is a Strategic Flood Risk Assessment?**

A Strategic Flood Risk Assessment is a study carried out by one or more local planning authorities to assess the risk to an area from flooding from all sources, now and in the future, taking account of the impacts of climate change (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>), and to assess the impact that land use changes and development in the area will have on flood risk.

Paragraph: 009 Reference ID: 7-009-20140306

Revision date: 06 03 2014

### **How should a Strategic Flood Risk Assessment be used in plan making?**

The Strategic Flood Risk Assessment will be used to refine information on river and sea flooding risk shown on the Environment Agency's Flood Map for Planning (Rivers and Seas) (<https://flood-map-for-planning.service.gov.uk/>). Local planning authorities should use the Assessment to:

- determine the variations in risk from all sources of flooding across their areas, and also the risks to and from surrounding areas in the same flood catchment;
- inform the sustainability appraisal (<https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal>) of the Local Plan, so that flood risk is fully taken into account when considering allocation options and in the preparation of plan policies, including policies for flood risk management to ensure that flood risk is not increased;
- apply the Sequential Test and, where necessary, the Exception Test when determining land use allocations;
- identify the requirements for site-specific flood risk assessments in particular locations, including those at risk from sources other than river and sea flooding;
- determine the acceptability of flood risk in relation to emergency planning capability;
- consider opportunities to reduce flood risk to existing communities and developments through better management of surface water, provision for conveyance and of storage for flood water.

See also:

- How should a Strategic Flood Risk Assessment be prepared (in general)?
- How should a Strategic Flood Risk Assessment be prepared in terms of scope and detail?
- How should Strategic Flood Risk Assessment address surface water flooding issues?

- How should the assessment address the risk from reservoirs?
- How should a Strategic Flood Risk Assessment be used to identify the functional floodplain?
- Should a Level 2 Strategic Flood Risk Assessment take account of existing flood defences?
- How should the assessment cover flood defence breaching and overtopping, and risk to people behind flood defences?

Paragraph: 010 Reference ID: 7-010-20140306

Revision date: 06 03 2014

## **How should a Strategic Flood Risk Assessment be prepared (in general)?**

The Strategic Flood Risk Assessment should be prepared by local planning authorities in consultation with the Environment Agency, lead local flood authorities, local planning authorities' own functions of emergency response and drainage authority under the Land Drainage Act 1991 – and where appropriate, internal drainage boards. Where local authorities are the drainage authority, or are a Maritime District Council under the Coastal Protection Act 1949, or the lead local flood authority, local planning authorities should engage their engineering and emergency response staff when preparing the Assessment.

Local planning authorities should consult sewerage undertakers in developing their Local Plans, so that their Strategic Flood Risk Assessment takes account of any specific capacity problems and of the undertaker's drainage area plans.

Working collaboratively with other authorities, local planning authorities can develop Strategic Flood Risk Assessments covering a wider area and at a river catchment level. County level Assessments may also be appropriate where minerals and waste issues can be considered at the same time.

Paragraph: 011 Reference ID: 7-011-20140306

Revision date: 06 03 2014

## **How should a Strategic Flood Risk Assessment be prepared in terms of scope and detail?**

There are 2 levels of Strategic Flood Risk Assessment, as set out in the following table:

### **Levels of Strategic Flood Risk Assessment**

([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/580849/Levels\\_of\\_Strategic\\_Flood\\_Risk\\_Assessment.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/580849/Levels_of_Strategic_Flood_Risk_Assessment.pdf)) (PDF, 68.8KB, 1 page)

A Level 2 Strategic Flood Risk Assessment should also reduce burdens on developers, in particular, at windfall sites, in the preparation of site-specific flood risk assessments. See the Environment Agency's advice (<https://www.gov.uk/local-planning-authorities-strategic-flood-risk-assessment>) on Strategic Flood Risk Assessment for further information.

Paragraph: 012 Reference ID: 7-012-20140306

Revision date: 06 03 2014

## **How should Strategic Flood Risk Assessment address surface water flooding issues?**

A Strategic Flood Risk Assessment should identify areas at risk from surface water flooding and drainage issues, taking account of the surface water flood risk map (<https://flood-warning-information.service.gov.uk/long-term-flood-risk/#x=357683&y=355134&scale=2>) published by the Environment Agency and any other available evidence, such as local flood risk management strategies. It should also identify the types of measure which may be appropriate to manage them, taking account of location, site opportunities, constraints and geology.

Paragraph: 013 Reference ID: 7-013-20140306

Revision date: 06 03 2014

## **How should the assessment address the risk from reservoirs?**

The failure of a reservoir has the potential to cause catastrophic damage due to the sudden release of large volumes of water. The local planning authority will need to evaluate the potential damage to buildings or loss of life in the event of dam failure, compared to other risks, when considering development downstream of a reservoir. Local planning authorities will also need to evaluate in Strategic Flood Risk Assessments (and when applying the Sequential Test) how an impounding reservoir will modify existing flood risk in the event of a flood in the catchment it is located within, and/or whether emergency draw-down of the reservoir will add to the extent of flooding.

Paragraph: 014 Reference ID: 7-014-20140306

Revision date: 06 03 2014

## **How should a Strategic Flood Risk Assessment be used to identify the functional floodplain?**

The definition of Flood Zone 3b in Table 1 explains that local planning authorities should identify areas of functional floodplain in their Strategic Flood Risk Assessments in discussion with the Environment Agency and the lead local flood authority. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. However, land which would naturally flood with an annual probability of 1 in 20 (5%) or greater in any year, or is designed to flood (such as a flood attenuation scheme) in an extreme (0.1% annual probability) flood, should provide a starting point for consideration and discussions to identify the functional floodplain.

A functional floodplain is a very important planning tool in making space for flood waters when flooding occurs. Generally, development should be directed away from these areas using the Environment Agency's catchment flood management plans, shoreline management plans and local flood risk management strategies produced by lead local flood authorities.

The area identified as functional floodplain should take into account the effects of defences and other flood risk management infrastructure. Areas which would naturally flood, but which are prevented from doing so by existing defences and infrastructure or solid buildings, will not normally be identified as functional floodplain. If an area is intended to flood, eg an upstream flood storage area designed to protect communities further downstream, then this should be safeguarded from development and identified as functional floodplain, even though it might not flood very often.

Paragraph: 015 Reference ID: 7-015-20140306

Revision date: 06 03 2014

## **Should a Level 2 Strategic Flood Risk Assessment take account of existing flood defences?**



See the Environment Agency's (<https://www.gov.uk/local-planning-authorities-strategic-flood-risk-assessment>) advice on development and flood risk.

Paragraph: 016 Reference ID: 7-016-20140306

Revision date: 06 03 2014

## **How should the assessment cover flood defence breaching and overtopping, and risk to people behind flood defences?**

See the Environment Agency's (<https://www.gov.uk/local-planning-authorities-strategic-flood-risk-assessment>) advice on development and flood risk.

Paragraph: 017 Reference ID: 7-017-20140306

Revision date: 06 03 2014

## **The sequential, risk-based approach to the location of development**

### **What is the sequential, risk-based approach to the location of development?**

This general approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. The aim should be to keep development out of medium and high flood risk areas (Flood Zones 2 and 3) and other areas affected by other sources of flooding where possible.

Application of the sequential approach in the plan-making process, in particular application of the Sequential Test, will help ensure that development can be safely and sustainably delivered and developers do not waste their time promoting proposals which are inappropriate on flood risk grounds. According to the information available, other forms of flooding should be treated consistently with river flooding in mapping probability and assessing vulnerability to apply the sequential approach across all flood zones.

Waste and mineral planning authorities should apply the sequential approach to the allocation of sites for waste management and, where possible, mineral extraction and processing. It should also be recognised that mineral deposits have to be worked where they are (and sand and gravel extraction is defined as 'water-compatible development' in table 2, acknowledging that these deposits are often in flood risk areas).

However, mineral working should not increase flood risk elsewhere and needs to be designed, worked and restored accordingly.

Mineral workings can be large and may afford opportunities for applying the sequential approach at the site level. It may be possible to locate ancillary facilities such as processing plant and offices in areas at lowest flood risk. Sequential working and restoration can be designed to reduce flood risk by providing flood storage and attenuation. This is likely to be most effective at a strategic (county) scale.

Paragraph: 018 Reference ID: 7-018-20140306

Revision date: 06 03 2014

## **The aim of the Sequential Test**

### **What is the aim of the Sequential Test for the location of development?**

The Sequential Test ensures that a sequential approach is followed to steer new development to areas with the lowest probability of flooding. The flood zones as refined in the Strategic Flood Risk Assessment for the area provide the basis for applying the Test. The aim is to steer new development to Flood Zone 1 (areas with a low probability of river or sea flooding). Where there are no reasonably available sites in Flood Zone 1, local planning authorities in their decision making should take into account the flood risk vulnerability of land uses and consider reasonably available sites in Flood Zone 2 (areas with a medium probability of river or sea flooding), applying the Exception Test if required. Only where there are no reasonably available sites in Flood Zones 1 or 2 should the suitability of sites in Flood Zone 3 (areas with a high probability of river or sea flooding) be considered, taking into account the flood risk vulnerability of land uses and applying the Exception Test if required.

- Note: Table 2 categorises different types of uses & development according to their vulnerability to flood risk. Table 3 maps these vulnerability classes against the flood zones set out in Table 1 to indicate where development is 'appropriate' and where it should not be permitted.

Within each flood zone, surface water and other sources of flooding also need to be taken into account in applying the sequential approach to the location of development.

Paragraph: 019 Reference ID: 7-019-20140306

Revision date: 06 03 2014

## **Applying the Sequential Test in the preparation of a Local Plan**

This is illustrated in diagram 2 (below). As some areas at lower flood risk may not be suitable for development for various reasons and therefore out of consideration, the Sequential Test should be applied to the whole local planning authority area to increase the possibilities of accommodating development which is not exposed to flood risk. More than one local planning authority may jointly review development options over a wider area where this could potentially broaden the scope for opportunities to reduce flood risk and put the most vulnerable development in lower flood risk areas.

Paragraph: 020 Reference ID: 7-020-20140306

Revision date: 06 03 2014

## **Diagram 2: Application of the Sequential Test for Local Plan preparation**

**Diagram 2: application of the Sequential Test for Local Plan preparation**  
([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/963382/Diagram\\_2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/963382/Diagram_2.pdf))

P.D.F., 635KB, 1 page

Notes to Diagram 2:

Other sources of flooding also need to be considered.

See Table 1, Table 2, Table 3 and Diagram 3.

See guidance on applying the sequential test to individual applications.

See further guidance on the role of sustainability appraisal in the sequential test.

Paragraph: 021 Reference ID: 7-021-20140306

Revision date: 06 03 2014

## **What is the role of sustainability appraisal in the sequential test?**

A local planning authority should demonstrate through evidence that it has considered a range of options in the site allocation process, using the Strategic Flood Risk Assessment to apply the Sequential Test and the Exception Test where necessary. This can be undertaken directly or, ideally, as part of the sustainability appraisal. Where other sustainability criteria outweigh flood risk issues, the decision making process should be transparent with reasoned justifications for any decision to allocate land in areas at high flood risk in the sustainability appraisal report. The Sequential Test can also be demonstrated in a free-standing document, or as part of strategic housing land or employment land availability assessments.

Paragraph: 022 Reference ID: 7-022-20140306

Revision date: 06 03 2014

## **The Exception Test**

### **What is the Exception Test?**

The Exception Test, as set out in paragraph 160 of the Framework (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para160>), is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

Essentially, the 2 parts to the Test require proposed development to show that it will provide wider sustainability benefits to the community that outweigh flood risk, and that it will be safe for its lifetime, without increasing flood risk elsewhere and where possible reduce flood risk overall.

Paragraph: 023 Reference ID: 7-023-20140306

Revision date: 06 03 2014

### **How can wider sustainability benefits to the community that outweigh flood risk be demonstrated?**

Evidence of wider sustainability benefits to the community should be provided, for instance, through the sustainability appraisal. If a potential site allocation fails to score positively against the aims and objectives of the sustainability appraisal, or is not otherwise capable of demonstrating sustainability benefits, the local planning authority should consider whether the use of planning conditions and/or planning obligations could make it do so. Where this is not possible the Exception Test has not been satisfied and the allocation should not be made.

Paragraph: 024 Reference ID: 7-024-20140306

Revision date: 06 03 2014

### **What needs to be considered to demonstrate that development will be safe for its lifetime?**

Wider safety issues need to be considered as part of the plan preparation. If infrastructure fails then people may not be able to stay in their homes. Flood warnings and evacuation issues therefore need to be considered in design and layout of planned developments. In considering an allocation in a Local Plan a level 2 Strategic Flood Risk Assessment should inform consideration of the second part of the Exception Test. See further information on making development safe from flood risk and on what is considered to be the lifetime of development.

Paragraph: 025 Reference ID: 7-025-20140306

Revision date: 06 03 2014

## **What is considered to be the lifetime of development in terms of flood risk and coastal change?**

Residential development should be considered for a minimum of 100 years, unless there is specific justification for considering a shorter period. For example; the time in which flood risk or coastal change is anticipated to impact on it, where a development is controlled by a time-limited planning condition.

The lifetime of a non-residential development depends on the characteristics of that development. Planners should use their experience within their locality to assess how long they anticipate the development being present for. Developers would be expected to justify why they have adopted a given lifetime for the development, for example, when they are preparing a site-specific flood risk assessment. The impact of climate change (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>) needs to be taken into account in a realistic way and developers, the local planning authority and Environment Agency should discuss and agree what allowances are acceptable.

Paragraph: 026 Reference ID: 7-026-20140306

Revision date: 06 03 2014

## **Applying the Exception Test in the preparation of a Local Plan**

This is summarised in diagram 3 (below). The Exception Test should only be applied as set out in Table 3 and following application of the Sequential Test.

Paragraph: 027 Reference ID: 7-027-20140306

Revision date: 06 03 2014

## **Diagram 3: Application of the Exception Test to Local Plan preparation**

**Diagram 3: application of the Exception Test to Local Plan preparation**  
([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/963383/Diagram\\_3.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/963383/Diagram_3.pdf))

P.D.F., 448KB, 1 page

Notes to diagram 3:

- View diagram 2: Application of the Sequential Test for Local Plan preparation
- View table 2: Flood Risk Vulnerability Classification

- View table 3: Flood risk vulnerability and flood zone ‘compatibility’

Paragraph: 028 Reference ID: 7-028-20140306

Revision date: 06 03 2014

## **Addressing flood risk in individual planning applications**

### **What do developers and applicants need to consider?**

Developers and applicants need to consider flood risk to and from the development site, and it is likely to be in their own best interests to do this as early as possible, in particular, to reduce the risk of subsequent, significant additional costs being incurred. The broad approach of assessing, avoiding, managing and mitigating flood risk should be followed.

Paragraph: 029 Reference ID: 7-029-20140306

Revision date: 06 03 2014

## **Site-specific flood risk assessment**

### **What is a site-specific flood risk assessment?**

A site-specific flood risk assessment is carried out by (or on behalf of) a developer to assess the flood risk to and from a development site. Where necessary the assessment should accompany a planning application submitted to the local planning authority. The assessment should demonstrate to the decision-maker how flood risk will be managed now and over the development’s lifetime, taking climate change (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>) into account, and with regard to the vulnerability of its users (see Table 2 – Flood Risk Vulnerability).

The objectives of a site-specific flood risk assessment are to establish:

- whether a proposed development is likely to be affected by current or future flooding from any source;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate;
- the evidence for the local planning authority to apply (if necessary) the Sequential Test, and;
- whether the development will be safe and pass the Exception Test, if applicable.

See further information on the detail needed in a flood risk assessment.

Paragraph: 030 Reference ID: 7-030-20140306

Revision date: 06 03 2014

### **What level of detail is needed in a flood risk assessment?**

The information provided in the flood risk assessment should be credible and fit for purpose. Site-specific flood risk assessments should always be proportionate to the degree of flood risk and make optimum use of information already available, including information in a Strategic Flood Risk Assessment for the area, and the interactive flood risk maps ([http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=\\_e](http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e)) available on the Environment Agency’s web site.

A flood risk assessment should also be appropriate to the scale, nature and location of the development. For example, where the development is an extension to an existing house (for which planning permission is required) which would not significantly increase the number of people present in an area at risk of flooding, the local planning authority would generally need a less detailed assessment to be able to reach an informed decision on the planning application. For a new development comprising a greater number of houses in a similar location, or one where the flood risk is greater, the local planning authority would need a more detailed assessment.

See further advice on flood risk assessment.

Paragraph: 031 Reference ID: 7-031-20140306

Revision date: 06 03 2014

## **What further advice is available on the preparation of a site-specific flood risk assessment?**

To assist the developer, the local planning authority should set out and agree the scope of the flood risk assessment, using the Environment Agency Standing Advice on flood risk (<https://www.gov.uk/flood-risk-assessment-local-planning-authorities>), or in direct consultation with the Agency and/or any other relevant flood risk management bodies. Applicants for planning permission (or prior approval in the case of certain permitted development rights) will find the Agency's advice on assessing flood risk for planning applications (<https://www.gov.uk/flood-risk-assessment-for-planning-applications>) helpful when preparing a site-specific flood risk assessment for, and before designing, a development that raises lower risk concerns.

The checklist in this guidance may be helpful to applicants/developers in preparing a site-specific flood risk assessment.

Paragraph: 032 Reference ID: 7-032-20150415

Revision date: 15 04 2015 See revisions

## **Applying the Sequential Test to individual planning applications**

### **How should the Sequential Test be applied to planning applications?**

See advice on the sequential approach to development and the aim of the sequential test.

The Sequential Test does not need to be applied for individual developments on sites which have been allocated in development plans through the Sequential Test, or for applications for minor development or change of use (except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site).

Nor should it normally be necessary to apply the Sequential Test to development proposals in Flood Zone 1 (land with a low probability of flooding from rivers or the sea), unless the Strategic Flood Risk Assessment for the area, or other more recent information, indicates there may be flooding issues now or in the future (for example, through the impact of climate change).

For individual planning applications where there has been no sequential testing of the allocations in the development plan, or where the use of the site being proposed is not in accordance with the development plan, the area to apply the Sequential Test across will be defined by local circumstances relating to the catchment area for the type of development proposed. For some developments this may be clear, for example, the catchment area for a school. In other cases it may be identified from other Local Plan policies, such as the need for affordable housing within a town

centre, or a specific area identified for regeneration. For example, where there are large areas in Flood Zones 2 and 3 (medium to high probability of flooding) and development is needed in those areas to sustain the existing community, sites outside them are unlikely to provide reasonable alternatives.

When applying the Sequential Test, a pragmatic approach on the availability of alternatives should be taken. For example, in considering planning applications for extensions to existing business premises it might be impractical to suggest that there are more suitable alternative locations for that development elsewhere. For nationally or regionally important infrastructure the area of search to which the Sequential Test could be applied will be wider than the local planning authority boundary.

Any development proposal should take into account the likelihood of flooding from other sources, as well as from rivers and the sea. The sequential approach to locating development in areas at lower flood risk should be applied to all sources of flooding, including development in an area which has critical drainage problems, as notified to the local planning authority by the Environment Agency, and where the proposed location of the development would increase flood risk elsewhere.

See also advice on who is responsible for deciding whether an application passes the Sequential Test and further advice on the Sequential Test process available from the Environment Agency (<https://www.gov.uk/flood-risk-assessment-the-sequential-test-for-applicants>) (flood risk standing advice).

Paragraph: 033 Reference ID: 7-033-20140306

Revision date: 06 03 2014

## **Who is responsible for deciding whether an application passes the Sequential Test?**

It is for local planning authorities, taking advice from the Environment Agency as appropriate, to consider the extent to which Sequential Test considerations have been satisfied, taking into account the particular circumstances in any given case. The developer should justify with evidence to the local planning authority what area of search has been used when making the application. Ultimately the local planning authority needs to be satisfied in all cases that the proposed development would be safe and not lead to increased flood risk elsewhere.

Paragraph: 034 Reference ID: 7-034-20140306

Revision date: 06 03 2014

## **Applying the Exception Test to planning applications**

### **When should the Exception Test be applied to planning applications?**

See general guidance on the Exception Test. The Exception Test should only be applied as set out in Table 3 following application of the Sequential Test. An applicant will need to show that both elements of the Test, as set out in paragraph 159 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para159>) of the Framework, can be satisfied.

Further advice on applying the Exception Test in areas requiring redevelopment or regeneration.

Paragraph: 035 Reference ID: 7-035-20140306

Revision date: 06 03 2014

## **Does the Exception Test need to be applied in areas requiring redevelopment or regeneration?**

If the Sequential Test to locate development where there is a lower risk of flooding has been applied within an area subject to redevelopment or regeneration, the applicant may also need to show that the Exception Test is passed for particular developments within the regeneration area in the circumstances set out in Table 3. As the site is part of a regeneration strategy it is very likely that it will provide the wider sustainability benefits to pass the first part of the Exception Test. The developer still needs to show that the development will be safe and will not increase flood risk elsewhere.

Paragraph: 036 Reference ID: 7-036-20140306

Revision date: 06 03 2014

## **Demonstrating that the wider sustainability benefits to the community outweigh flood risk to satisfy the first part of the Exception Test**

### **How can it be demonstrated that wider sustainability benefits to the community outweigh flood risk?**

Local planning authorities will need to consider what criteria they will use in this assessment, having regard to the objectives of their Local Plan's Sustainability Appraisal framework, and provide advice which will enable applicants to provide the evidence to demonstrate this part of the Exception Test is passed.

If a planning application fails to score positively against the aims and objectives of the Local Plan Sustainability Appraisal or Local Plan policies, or other measures of sustainability, the local planning authority should consider whether the use of planning conditions and/or planning obligations could make it do so. Where this is not possible, the Exception Test has not been satisfied and planning permission should be refused.

Paragraph: 037 Reference ID: 7-037-20140306

Revision date: 06 03 2014

## **Developers to demonstrate that development will be safe to satisfy the second part of the Exception Test**

### **What must developers do to demonstrate that development will be safe?**

The developer must provide evidence to show that the proposed development would be safe and that any residual flood risk (further information in paragraph 041 and paragraph 042) can be overcome to the satisfaction of the local planning authority, taking account of any advice from the Environment Agency. The developer's site-specific flood risk assessment should demonstrate that the site will be safe and that people will not be exposed to hazardous flooding from any source. The following should be covered by the flood risk assessment:

- the design of any flood defence infrastructure;
- access and egress;
- operation and maintenance;
- design of development to manage and reduce flood risk wherever possible;
- resident awareness;



- flood warning and evacuation procedures (see also advice on when flood warning and evacuation plans are needed); and
- any funding arrangements necessary for implementing the measures.

Paragraph: 038 Reference ID: 7-038-20140306

Revision date: 06 03 2014

## **How can you ensure safe access and egress to and from the development?**

Where access and egress is important to the overall safety of the development, this should be discussed with the local planning authority and Environment Agency at the earliest stage, as this can affect the overall design of the development. Access considerations should include the voluntary and free movement of people during a 'design flood', as well as the potential for evacuation before a more extreme flood. Access and egress must be designed to be functional for changing circumstances over the lifetime of the development. Specifically:

- Access routes should allow occupants to safely access and exit their dwellings in design flood conditions. Vehicular access to allow the emergency services to safely reach the development during design flood conditions will also normally be required.
- Wherever possible, safe access routes should be provided that are located above design flood levels and avoiding flow paths. Where this is not possible, limited depths of flooding may be acceptable, provided that the proposed access is designed with appropriate signage etc to make it safe. The acceptable flood depth for safe access will vary depending on flood velocities and the risk of debris within the flood water. Even low levels of flooding can pose a risk to people in situ (because of, for example, the presence of unseen hazards and contaminants in floodwater, or the risk that people remaining may require medical attention).

Paragraph: 039 Reference ID: 7-039-20140306

Revision date: 06 03 2014

## **What is needed to ensure safe evacuation and flood response procedures are in place?**

To demonstrate to the satisfaction of the local planning authority that the development will be safe for its lifetime taking account of the vulnerability of its users, a site-specific flood risk assessment may need to show that appropriate evacuation and flood response procedures are in place to manage the residual risk associated with an extreme flood event. In locations where there is a residual risk of flooding due to the presence of defences, judgements on whether a proposal can be regarded as safe will need to consider the feasibility of evacuation from the area should it be flooded. See also the advice on flood warning and evacuation plans.

Proposals that are likely to increase the number of people living or working in areas of flood risk require particularly careful consideration, as they could increase the scale of any evacuation required. To mitigate this impact it is especially important to look at ways in which the development could help to reduce the overall consequences of flooding in the locality, either through its design (recognising that some forms of development may be more resistant or resilient to floods than others) or through off-site works that benefit the area more generally.

Paragraph: 040 Reference ID: 7-040-20140306

Revision date: 06 03 2014

## **What is “residual risk”?**

Residual risks are those remaining after applying the sequential approach to the location of development and taking mitigating actions. Examples of residual flood risk include:

- the failure of flood management infrastructure such as a breach of a raised flood defence, blockage of a surface water conveyance system, overtopping of an upstream storage area, or failure of a pumped drainage system;
- failure of a reservoir, or;
- a severe flood event that exceeds a flood management design standard, such as a flood that overtops a raised flood defence, or an intense rainfall event which the drainage system cannot cope with.

Areas behind flood defences are at particular risk from rapid onset of fast-flowing and deep water flooding, with little or no warning if defences are overtopped or breached.

Paragraph: 041 Reference ID: 7-041-20140306

Revision date: 06 03 2014

## **How should residual risk be addressed?**

Where residual risk is relatively uniform, such as within a large area protected by embanked flood defences, the Strategic Flood Risk Assessment should indicate the nature and severity of the risk remaining, and provide guidance for residual risk issues to be covered in site-specific flood risk assessments. Where necessary, local planning authorities should use information on identified residual risk to state in Local Plan policies their preferred mitigation strategy in relation to urban form, risk management and where flood mitigation measures are likely to have wider sustainable design implications.

Paragraph: 042 Reference ID: 7-042-20140306

Revision date: 06 03 2014

## **How local planning authorities should involve the Environment Agency when determining planning applications where there is a risk of flooding**

### **What are the requirements for involving the Environment Agency?**

There is a statutory requirement for local planning authorities to consult the Environment Agency for developments in areas at risk of flooding (as defined in the Town and Country Planning (Development Management Procedure) (England) Order 2015 (<http://www.legislation.gov.uk/uksi/2015/595/schedule/4/made>) before granting planning permission. The Environment Agency has Standing Advice (<https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities>) available on its website which gives guidance to local planning authorities and developers where flood risk is an issue, including on when the Environment Agency should be consulted on planning applications.

All local planning authorities should notify the Environment Agency (<https://www.gov.uk/guidance/determining-a-planning-application#para019>) of the decision on any planning application where the Agency has objected on flood risk grounds.

Paragraph: 043 Reference ID: 7-043-20150415

Revision date: 15 04 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/how-local-planning-authorities-should-involve-the-environment-agency-when-determining-planning-applications-where-there-is-a-risk-of-flooding/>).

## **What should happen if a local planning authority wants to grant consent for a major development against Environment Agency advice?**

For any major developments within Flood Zones 2 or 3, or on land within Flood Zone 1 which has been notified to the local planning authority as having critical drainage problems, which are the subject of a sustained objection by the Environment Agency on flood risk grounds, the local planning authority (and applicants) should bear in mind the requirements of the Town and Country Planning (Consultation) (England) Direction 2021 (<https://www.gov.uk/government/publications/the-town-and-country-planning-consultation-england-direction-2021>), if the authority is minded to grant permission for the development. In such cases, the authority, the Agency and the applicant should try to agree what changes could be made to the application that would enable the Agency to withdraw its objection. If the Agency concludes that it is unable to withdraw its objection and the authority is still minded to grant permission, the Direction requires the authority to notify the Secretary of State.

In this context, “major development” means:

- in respect of residential development, the provision of 10 or more dwellings, or a site of 0.5 hectares or more;
- in respect of non-residential development, new floorspace of 1,000 square metres or more, or a site of 1 hectare or more.

Paragraph: 044 Reference ID: 7-044-20140306

Revision date: 06 03 2014

## **How the local planning authority should involve the lead local flood authority when determining planning applications, and what advice should be given about local flood risks**

### **What are the responsibilities of lead local flood authorities and how can they assist local planning authorities in considering planning applications?**

Information about the responsibilities of lead local flood authorities and guidance on securing compatibility between Local Plans and local flood risk management strategies

When considering major development the local planning authority should consult the lead local flood authority on surface water drainage. Having regard to the available information on local flood risks, including the Strategic Flood Risk Assessment and the updated map of flood risk from surface water (<http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=ufmfs#x=357683&y=355134&scale=2>) available on the Environment Agency’s web site, local planning authorities may find it helpful to agree with lead local flood authorities the circumstances and locations where lead local flood authority advice should be sought on other planning applications which raise surface water or other local flood risk issues.

Where surface water or other local flood risks are likely to significantly affect a proposed development site, early discussions between the planning authority and the developer will help to identify the flood risk issues that the authority would expect to see addressed in the planning application and accompanying site-specific flood risk assessment.

Paragraph: 045 Reference ID: 7-045-20150323

Revision date: 23 03 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/how-the-local-planning-authority-should-involve-the-lead-local-flood-authority-when-determining-planning-applications-and-what-advice-should-be-given-about-local-flood-risks/>).

## **What is meant by “minor development” in relation to flood risk**

### **Minor development means:**

- minor non-residential extensions: industrial/commercial/leisure etc extensions with a footprint less than 250 square metres.
- alterations: development that does not increase the size of buildings eg alterations to external appearance.
- householder development: For example; sheds, garages, games rooms etc within the curtilage of the existing dwelling, in addition to physical extensions to the existing dwelling itself. This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling eg subdivision of houses into flats.

See related policy (<https://www.gov.uk/guidance/national-planning-policy-framework>)

Paragraph: 046 Reference ID: 7-046-20140306

Revision date: 06 03 2014

## **The flood risk issues raised by minor developments**

### **Are minor developments likely to raise flood risk issues?**

Minor developments are unlikely to raise significant flood risk issues unless:

- they would have an adverse effect on a watercourse, floodplain or its flood defences;
- they would impede access to flood defence and management facilities, or;
- where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.

The Environment Agency’s advice on flood risk assessment (<https://www.gov.uk/flood-risk-assessment-for-planning-applications>) is helpful for ensuring extensions or alterations are designed and constructed to conform to any flood protection already incorporated in the property, and include flood resilience measures in the design.

Paragraph: 047 Reference ID: 7-047-20150415

Revision date: 15 04 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/the-flood-risk-issues-raised-by-minor-developments/>).

## **The flood risk issues raised by changes of use**

### **What issues need to be considered and what does the applicant need to do?**

A change in use may involve an increase in flood risk if the vulnerability classification of the development is changed. In such cases, the applicant will need to show in their flood risk assessment that future users of the development will not be placed in danger from flood hazards throughout its lifetime. Depending on the risk, mitigation measures may be needed. It is for the applicant to show that the change of use meets the objectives of the Framework's policy on flood risk. For example, how the operation of any mitigation measures can be safeguarded and maintained effectively through the lifetime of the development.

The local planning authority may have a Local Plan policy on what changes of use will be acceptable in areas at risk of flooding.

Paragraph: 048 Reference ID: 7-048-20140306

Revision date: 06 03 2014

## **Permitted development rights and flood risk**

### **What are the flood risk considerations in relation to permitted development rights?**

When considering the potential impacts of permitted development (<https://www.gov.uk/guidance/when-is-permission-required#para016>) on local flood risk, a local planning authority may consider making an Article 4 direction to remove national permitted development rights to protect local amenity or the well-being of an area.

To assist local planning authorities in their determination of an application as to whether their prior approval is required for a change of use of agricultural buildings, or a change from office to dwelling houses in an area at risk of flooding, the applicant should provide with their application an assessment of flood risk. This should demonstrate how the flood risks to the development will be managed so that it remains safe through its lifetime.

Paragraph: 049 Reference ID: 7-049-20150415

Revision date: 15 04 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/permitted-development-rights-and-flood-risk/>)

## **Reducing the causes and impacts of flooding**

### **What are the opportunities for reducing flood risk overall?**

Local authorities and developers should seek opportunities to reduce the overall level of flood risk in the area and beyond. This can be achieved, for instance, through the layout and form of development, including green infrastructure (<https://www.gov.uk/guidance/natural-environment#para027>) and the appropriate application of sustainable drainage systems, through safeguarding land for flood risk management, or where appropriate, through designing off-site works required to protect and support development in ways that benefit the area more generally.

Further advice is available on how to demonstrate the most vulnerable development is located in areas of lowest risk within a site

Paragraph: 050 Reference ID: 7-050-20140306

Revision date: 06 03 2014

## **Why are sustainable drainage systems important?**

Sustainable drainage systems are designed to control surface water run off close to where it falls and mimic natural drainage as closely as possible. They provide opportunities to:

- reduce the causes and impacts of flooding;
- remove pollutants from urban run-off at source;
- combine water management with green space with benefits for amenity, recreation and wildlife.

See further guidance on the planning considerations on sustainable drainage in relation to water supply and water quality:

- water quality (<https://www.gov.uk/guidance/water-supply-wastewater-and-water-quality#water-quality>)
- what to think about if there are concerns about water supply/quality?  
(<https://www.gov.uk/guidance/water-supply-wastewater-and-water-quality#para019>)

Paragraph: 051 Reference ID: 7-051-20150323

Revision date: 23 03 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/reducing-the-causes-and-impacts-of-flooding/why-should-priority-be-given-to-the-use-of-sustainable-drainage-systems/>).

## **When should a sustainable drainage system be considered?**

Whether a sustainable drainage system should be considered will depend on the proposed development and its location, for example whether there are concerns about flooding. Sustainable drainage systems may not be practicable for some forms of development (for example, mineral extraction). New development should only be considered appropriate in areas at risk of flooding if priority has been given to the use of sustainable drainage systems

(<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para163>). Additionally, and more widely, when considering major development, as defined in the Town and Country Planning (Development Management Procedure) (England) Order 2015 (<http://www.legislation.gov.uk/uksi/2015/595/part/1/made>), sustainable drainage systems should be provided unless demonstrated to be inappropriate (<http://www.parliament.uk/documents/commons-vote-office/December%202014/18%20December/6.%20DCLG-sustainable-drainage-systems.pdf>).

Paragraph: 079 Reference ID: 7-079-20150415

Revision date: 15 04 2015 See revisions

(<http://webarchive.nationalarchives.gov.uk/20150417124459/http://planningguidance.planningportal.gov.uk/revisions/7/079/>).

## **What sort of sustainable drainage system should be considered?**

Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable:

1. into the ground (infiltration);

2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer.

Particular types of sustainable drainage systems may not be practicable in all locations. It could be helpful therefore for local planning authorities to set out those local situations where they anticipate particular sustainable drainage systems not being appropriate.

Paragraph: 080 Reference ID: 7-080-20150323

Revision date: 23 03 2015

### **Are there particular factors the local planning authority will address when considering a sustainable drainage system as part of a planning application?**

In considering a development that includes a sustainable drainage system the local planning authority will want to be satisfied that the proposed minimum standards of operation are appropriate and that there are clear arrangements in place for ongoing maintenance. Information sought by the local planning authority should be no more than necessary, having regard to the nature and scale of the development concerned.

Paragraph: 081 Reference ID: 7-081-20150323

Revision date: 23 03 2015

### **When would a sustainable drainage system be inappropriate?**

The decision on whether a sustainable drainage system would be inappropriate in relation to a particular development proposal is a matter of judgement for the local planning authority. In making this judgement the local planning authority will seek advice from the relevant flood risk management bodies, principally the lead local flood authority, including on what sort of sustainable drainage system they would consider to be reasonably practicable.

The judgement of what is reasonably practicable should be by reference to the technical standards (<https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards>) published by the Department for Environment, Food and Rural Affairs and take into account design and construction costs.

Paragraph: 082 Reference ID: 7-082-20150323

Revision date: 23 03 2015

### **Are the Department for Environment, Food and Rural Affairs' technical standards for sustainable drainage systems mandatory?**

The technical standards (<https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards>) provided by government relate to the design, construction, operation and maintenance of sustainable drainage systems and have been published as guidance for those designing schemes. In terms of the overall viability of a proposed development, expecting compliance with the technical standards is unlikely to be reasonably practicable if more expensive than complying with building regulations – provided that where there is a risk of flooding the development will be safe and flood risk is not increased elsewhere. Similarly, a particular discharge route would not normally be reasonable practicable when an alternative would cost less to design and construct.

Paragraph: 083 Reference ID: 7-083-20150323

Revision date: 23 03 2015

### **What is relevant to design and construction costs?**

Construction costs can include the opportunity cost of providing land for a drainage system above ground where the land utilised for the drainage system is not also utilised for another land use.

Design costs also include the resulting maintenance and operation requirements

(<http://www.parliament.uk/documents/commons-vote-office/December%202014/18%20December/6.%20DCLG-sustainable-drainage-systems.pdf>) arising from the design.

Paragraph: 084 Reference ID: 7-084-20150323

Revision date: 23 03 2015

### **What about the operation and maintenance of a sustainable drainage system?**

When planning a sustainable drainage system, developers need to ensure their design takes account of the construction, operation and maintenance requirements of both surface and subsurface components, allowing for any personnel, vehicle or machinery access required to undertake this work. Any sustainable drainage system should be designed so that the capacity takes account of the likely impacts of climate change and likely changes in impermeable area within the development over its lifetime and continues to provide effective drainage for properties. Whether maintenance and operation requirements are economically proportionate should be considered by reference to the costs that would be incurred by consumers for the use of an effective drainage system connecting directly to a public sewer.

Paragraph: 085 Reference ID: 7-085-20150323

Revision date: 23 03 2015

### **Where to go for advice on surface water drainage?**

When considering major development the local planning authority should consult the lead local flood authority (<http://www.legislation.gov.uk/ukxi/2015/595/schedule/4/made>). For other developments the local planning authority will want to consider the circumstances where it would be beneficial to seek advice from the lead local flood authority. Local planning authorities are also advised to consult as appropriate:

1. The relevant sewerage undertaker where a connection with a public sewer is proposed.
2. The Environment Agency, if the drainage system directly or indirectly involves the discharge of water into a watercourse
3. The relevant highway authority for an affected road
4. The Canal and River Trust, if the drainage system may directly or indirectly involve the discharge of water into or under a waterway managed by them
5. An internal drainage board, if the drainage system may directly or indirectly involve the discharge of water into an ordinary watercourse (within the meaning of section 72 of the Land Drainage Act 1991 (<http://www.legislation.gov.uk/ukpga/1991/59/contents>)) within the board's district.

Paragraph: 086 Reference ID: 7-086-20150323

Revision date: 23 03 2015



## **How can you demonstrate that the most vulnerable development is located in areas of lowest flood risk within the site?**

This will be identified from a detailed site-specific flood risk assessment. Residential areas may contain a variety of land uses, including vehicle and pedestrian access, shops and other community facilities. Layout should be designed so that the most vulnerable uses are restricted to higher ground at lower risk of flooding, with development which has a lower vulnerability (parking, open space, etc) in the highest risk areas, unless there are overriding reasons to prefer a different location.

Paragraph: 053 Reference ID: 7-053-20140306

Revision date: 06 03 2014

## **Making development safe from flood risk**

### **How can development be made safe from flood risk?**

After applying a sequential approach so that, as far as possible, development is located to where there is the lowest risk of flooding, new development can be made safe by:

- designing buildings to avoid flooding by, for example, raising floor levels;
- providing adequate flood risk management infrastructure which will be maintained for the lifetime of the development, for example, using Community Infrastructure Levy or planning obligations, or Partnership Funding (<https://www.gov.uk/flood-and-coastal-defence-funding-submit-a-project>) where appropriate
- leaving space in developments for flood risk management infrastructure to be maintained and enhanced, and;
- mitigating the potential impacts of flooding through design and flood resilient and resistant construction.

When considering safety, specific local circumstances need to be taken into account, including:

- the characteristics of a possible flood event, eg the type and source of flooding and frequency, depth, velocity and speed of onset;
- the safety of people within a building if it floods and also the safety of people around a building and in adjacent areas, including people who are less mobile or who have a physical impairment. This includes the ability of residents and users to safely access and exit a building during a design flood and to evacuate before an extreme flood;
- the structural safety of buildings, and;
- the impact of a flood on the essential services provided to a development.

While safety considerations are always very important, local planning authorities should seek to ensure that communities are sustainable, including ensuring that certain sections of society, such as the elderly and those with less mobility, are not unnecessarily excluded from areas where there is a risk of flooding.

See also further advice on:

- What is meant by a “design flood”?
- When are flood warning and evacuation plans needed?

- Who should be consulted on emergency planning issues and in relation to reservoirs?

Paragraph: 054 Reference ID: 7-054-20150415

Revision date: 15 04 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/making-development-safe-from-flood-risk/>)

## **What is meant by a “design flood”?**

This is a flood event of a given annual flood probability, which is generally taken as:

- fluvial (river) flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year), or;
- tidal flooding with a 0.5% annual probability (1 in 200 chance each year), against which the suitability of a proposed development is assessed and mitigation measures, if any, are designed.

Paragraph: 055 Reference ID: 7-055-20140306

Revision date: 06 03 2014

## **Are flood warning and evacuation plans needed?**

One of the considerations to ensure that any new development is safe, including where there is a residual risk of flooding, is whether adequate flood warnings would be available to people using the development. A flood warning and evacuation plan is a requirement for sites at risk of flooding used for holiday or short-let caravans and camping and are important at any site that has transient occupants (eg hostels and hotels).

Paragraph: 056 Reference ID: 7-056-20140306

Revision date: 06 03 2014

## **What are the important considerations for flood warning and evacuation plans?**

Flood warning and evacuation plans will need to take account of the likely impacts of climate change, eg increased water depths and the impact on how people can be evacuated. In consultation with the authority's emergency planning staff, the local planning authority will need to ensure that evacuation plans are suitable through appropriate planning conditions or planning agreements.

In advising the local planning authority, the emergency services are unlikely to regard developments that increase the scale of any rescue that might be required as being safe. Even with defences in place, if the probability of inundation is high, safe access and egress should be maintained for the lifetime of the development. The practicality of safe evacuation from an area will depend on:

- the type of flood risk present, and the extent to which advance warning can be given in a flood event;
- the number of people that would require evacuation from the area potentially at risk;
- the adequacy of both evacuation routes and identified places that people could be evacuated to (and taking into account the length of time that the evacuation may need to last), and;

- sufficiently detailed and up to date evacuation plans being in place for the locality that address these and related issues.

Paragraph: 057 Reference ID: 7-057-20140306

Revision date: 06 03 2014

## **Who should be consulted on emergency planning issues and in relation to reservoirs?**

Local planning authorities are advised to consult with their emergency planning officers as early as possible during the preparation of Local Plans, and also regarding any planning applications which have implications for emergency planning. Where issues affecting emergency services are identified it may be relevant to contact the local resilience forum – multi-agency partnerships made up of representatives from local public services which prepare for local incidents and catastrophic emergencies. Or in some cases, it may be appropriate for the local planning authority to consult the emergency services on specific emergency planning issues related to new developments.

Local planning authorities are also advised to consult with the owners/operators of raised reservoirs, to establish constraints upon safe development.

Paragraph: 058 Reference ID: 7-058-20140306

Revision date: 06 03 2014

## **Flood resilience and flood resistance**

### **What is flood resilience and flood resistance?**

Flood resistance, or dry-proofing, stops water entering a building. Flood resilience, or wet-proofing, accepts that water will enter the building, but through careful design will minimise damage and allow the re-occupancy of the building quickly. Flood resistance and resilience measures should not be used to justify development in inappropriate locations;

- Flood resilient: Flood-resilient buildings are designed and constructed to reduce the impact of flood water entering the building so that no permanent damage is caused, structural integrity is maintained and drying and cleaning is easier. The Department for Communities and Local Government has published Improving the Flood Performance of New Buildings: flood resilient construction (2007) (<https://www.gov.uk/government/publications/flood-resilient-construction-of-new-buildings>). This provides guidance on how to improve the resilience of new properties in low or residual flood risk areas by the use of suitable materials and construction details.
- Flood resistance: Flood-resistant construction can prevent entry of water or minimise the amount that may enter a building where there is short duration flooding outside with water depths of 0.6 metres or less. This form of construction should be used with caution and accompanied by resilience measures, as effective flood exclusion may depend on occupiers ensuring some elements, such as barriers to doorways, are put in place and maintained in a good state. Buildings may also be damaged by water pressure or debris being transported by flood water. This may breach flood-excluding elements of the building and permit rapid inundation. Temporary and demountable defences are not appropriate for new developments.

Further advice on what needs to be considered in the use of appropriate flood resilience and resistance measures.

Paragraph: 059 Reference ID: 7-059-20140306

Revision date: 06 03 2014

## **What needs to be considered in the use of appropriate flood resilience and resistance measures?**

The first preference should be to avoid flood risk. Where it is not possible, a building and its surrounds (at site level) may be constructed to avoid it being flooded (eg by raising it above the design flood level).

Since any flood management measures only manage the risk of flooding rather than remove it, flood resistance and flood resilience may need to be incorporated into the design of buildings and other infrastructure behind flood defence systems. Resistance and resilience measures are unlikely to be suitable as the only mitigation measure to manage flood risk, but they may be suitable in some circumstances, such as:

- water-compatible and less vulnerable uses where temporary disruption is acceptable and an appropriate flood warning is provided;
- in some instances where the use of an existing building is to be changed and it can be demonstrated that no other measure is practicable;
- as a measure to manage residual flood risk.

Further information on flood resilience and resistance is available as part of the advice on flood risk assessment for planning applications (<https://www.gov.uk/flood-risk-assessment-standing-advice>) available from the Environment Agency.

Paragraph: 060 Reference ID: 7-060-20150415

Revision date: 15 04 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/flood-resilience-and-flood-resistance/what-needs-to-be-considered-in-the-use-of-appropriate-flood-resilience-and-resistance-measures/>)

## **Neighbourhood planning**

### **How should neighbourhood planning take account of flood risk?**

The overall approach in paragraph 100 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para155>) of the National Planning Policy Framework applies to neighbourhood planning (<https://www.gov.uk/guidance/neighbourhood-planning--2>).

In summary, the qualifying bodies involved in neighbourhood planning should:

- seek to ensure neighbourhood plans and neighbourhood development/community right to build orders are informed by an appropriate assessment of flood risk;
- ensure policies steer development to areas of lower flood risk as far as possible;

- ensure that any development in an area at risk of flooding would be safe, for its lifetime taking account of climate change impacts (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>);
- be able to demonstrate how flood risk to and from the plan area/ development site(s) will be managed, so that flood risk will not be increased overall, and that opportunities to reduce flood risk, for example, through the use of sustainable drainage systems, are included in the plan/order.

Local planning authorities should have in mind these aims in providing advice or assistance to qualifying bodies involved in neighbourhood planning. Further information on what information and advice should be made available is [here](#).

See also:

- What to consider if there is a risk of flooding in the neighbourhood plan area?
- What to consider if bringing forward a Neighbourhood Development Order/Community Right to Build Order in an area at risk of flooding?

Paragraph: 061 Reference ID: 7-061-20140306

Revision date: 06 03 2014

## **What advice and information on flood risk is available for neighbourhood planning?**

Local planning authorities' Strategic Flood Risk Assessments should be the primary source of flood risk information in considering whether particular neighbourhood planning areas may be appropriate for development. Other important sources include the interactive maps of flood risk ([http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=\\_e](http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e)) available on the Environment Agency's web site. Local planning authorities should make available to qualifying bodies any reports or information relating to the Strategic Flood Risk Assessment, and share any other information relevant to flood risk (such as the application of the Sequential and Exception Tests to the Local Plan).

Along with other statutory agencies, the Environment Agency has published advice on neighbourhood planning ([http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/LIT\\_6524\\_7da381.pdf](http://webarchive.nationalarchives.gov.uk/20140328084622/http://cdn.environment-agency.gov.uk/LIT_6524_7da381.pdf)). Anyone preparing a neighbourhood plan or order may also find it helpful to consult the lead local flood authority or the area.

Paragraph: 062 Reference ID: 7-062-20140306

Revision date: 06 03 2014

## **What should be considered if there is a risk of flooding in the neighbourhood plan area?**

Where the Strategic Flood Risk Assessment, or other available flood risk maps or information, indicates that part or parts of a neighbourhood plan area may be at risk of flooding, the qualifying body will need to have regard to the National Planning Policy Framework's policies on flood risk. Where they are considering proposing development, they should show that this would be consistent with the local planning authority's application of the Sequential Test and if necessary, the Exception Test for the Local Plan.

Where areas under consideration for development are not consistent, or the relevant Local Plan is inconclusive, it is likely that the qualifying body will need to provide further information to demonstrate that any development proposed by the neighbourhood plan passes the Sequential Test, and if necessary the Exception Test.

Local planning authorities should provide advice to qualifying bodies on where and how they should demonstrate that policies and any site allocations in neighbourhood plans and Orders would satisfy the Sequential Test and, if necessary, the Exception Test, including the appropriate area to apply the Sequential Test. This will depend on a number of factors, including;

- the size of the neighbourhood planning area;
- the flood risks in the area and/or in its vicinity;
- the nature of the neighbourhood plan policies or Order proposals;
- the degree of conformity with strategic policies of the Local Plan, including site allocations, and whether these have been subject to the Sequential Test.

In providing advice, local planning authorities should have regard to flood risk across the whole of their areas. In particular, there may be places outside the neighbourhood planning area at lower flood risk which are suitable and reasonably available for the development proposed.

There is further guidance on the approach to individual development proposals, or where a Neighbourhood Development or Community Right to Build Order is proposed, in an area at risk of flooding.

Paragraph: 063 Reference ID: 7-063-20140306

Revision date: 06 03 2014

## **What should be considered if bringing forward a Neighbourhood Development Order/Community Right to Build Order in an area at risk of flooding?**

The general approach and requirements for site-specific flood risk assessments should be applied to developments in areas at risk of flooding to be permitted by Neighbourhood Development/Community Right to Build Orders. This means that for any development proposals:

- in Flood Zone 2 or 3;
- or of at least 1 hectare;
- or in an area that has critical drainage problems (as notified to the local planning authority by the Environment Agency);
- or that may be subject to other sources of flood risk;

a site-specific flood risk assessment should support the draft Order. The flood risk assessment checklist may be helpful in this respect.

Where the neighbourhood planning area is in Flood Zone 2 or 3, or is in an area with critical drainage problems, advice on the scope of the flood risk assessment required should be sought from the Environment Agency. Where the area may be subject to other sources of flooding, it may be helpful to consult other bodies involved in flood risk management, as appropriate.

Where a Neighbourhood Development/Community Right to Build Order is under consideration for a site/area in Flood Zone 2 or 3, which has not been allocated in the development plan through the Sequential Test, and if necessary the Exception Test, it will be necessary for those proposing the

development, in having regard to the National Planning Policy Framework's policies on flood risk, to demonstrate why the development cannot reasonably be located in areas of lower flood risk.

In all cases where new development is proposed, the sequential approach to locating development in areas of lower flood risk should still be applied within a neighbourhood planning area.

Neighbourhood Development/Community Right to Build Orders that propose new development that would be;

- contrary to the flood risk vulnerability and flood zone compatibility table (Table 3), or;
- within areas at risk of flooding where sequential testing shows there to be places at lower flood risk which are suitable and reasonably available for the development proposed,

should not be considered appropriate, having regard to the national policies on development and flood risk.

Paragraph: 064 Reference ID: 7-064-20140306

Revision date: 06 03 2014

## Flood Zone and flood risk tables

- Table 1: Flood Zones
- Table 2: Flood risk vulnerability classification
- Table 3: Flood risk vulnerability and flood zone 'compatibility'

### Table 1: Flood Zones

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea (<https://flood-map-for-planning.service.gov.uk/>)), available on the Environment Agency's web site, as indicated in the table below.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)

Flood Zone	Definition
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the Strategic Flood Risk Assessment when considering location and potential future flood risks to developments and land uses.

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## Table 2: Flood risk vulnerability classification

### Essential infrastructure

- Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk.
- Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood.
- Wind turbines.

### Highly vulnerable

- Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding.
- Emergency dispersal points.
- Basement dwellings.
- Caravans, mobile homes and park homes intended for permanent residential use.
- Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').

### More vulnerable

- Hospitals
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.



- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill\* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

### **Less vulnerable**

- Police, ambulance and fire stations which are not required to be operational during flooding.
- Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill\* and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.

### **Water-compatible development**

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

\* " \* " Landfill is as defined in Schedule 10 of the Environmental Permitting (England and Wales) Regulations 2010 (<http://www.legislation.gov.uk/ukSI/2010/675/schedule/10/made>).

Paragraph: 066 Reference ID: 7-066-20140306

Revision date: 06 03 2014

### **Table 3: Flood risk vulnerability and flood zone 'compatibility'**

### Table 3: flood risk vulnerability and flood zone 'compatibility'

([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/575184/Table\\_3\\_-\\_Flood\\_risk\\_vulnerability\\_and\\_flood\\_zone\\_\\_compatibility\\_.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/575184/Table_3_-_Flood_risk_vulnerability_and_flood_zone__compatibility_.pdf)) (PDF, 58.1KB, 1 page)

#### Key:

✓ Development is appropriate

X Development should not be permitted.

#### Notes to table 3:

- This table does not show the application of the Sequential Test which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and Exception Tests do not need to be applied to minor developments and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

” \* “ In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

Paragraph: 067 Reference ID: 7-067-20140306

Revision date: 06 03 2014

## Site-specific flood risk assessment: Checklist

### 1 - Development site and location

You can use this section to describe the site you are proposing to develop. It would be helpful to include, or make reference to, a location map which clearly indicates the development site.

- a. Where is the development site located? (eg postal address or national grid reference)
- b. What is the current use of the site? (eg undeveloped land, housing, shops, offices)
- c. Which Flood Zone (for river or sea flooding) is the site within? (ie Flood Zone 1, Flood Zone 2, Flood Zone 3). As a first step, you should check the Flood Map for Planning (<https://flood-map-for-planning.service.gov.uk/>) (Rivers and Sea). It is also a good idea to check the Strategic Flood Risk Assessment for the area available from the local planning authority.

### 2 - Development proposals

You can use this section to provide a general summary of the development proposals. It would be helpful to include, or make reference to, an existing block plan and a proposed block plan, where appropriate.

- a. What are the development proposal(s) for this site? Will this involve a change of use of the site and, if so, what will that change be?
- b. In terms of vulnerability to flooding, what is the vulnerability classification of the proposed development? See Table 2 of this guidance for an explanation of the vulnerability classifications.
- c. What is the expected or estimated lifetime of the proposed development likely to be? (eg less than 20 years, 20-50 years, 50-100 years?). See paragraph 026 of this guidance for further advice on how to assess the lifetime of developments for flood risk and coastal change purposes. (It may also be advisable to seek advice from the local planning authority).

### **3 - Sequential test**

For developments in flood zones 2 or 3 only. (If the development site is wholly within flood zone 1, you can skip this section and go to section 4).

You can use this section to describe how you have applied the sequential test (if needed as set out in paragraph 158 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para158>) of the National Planning Policy Framework) to the proposed development, and the evidence to demonstrate how the requirements of the test have been met. See paragraph 033 of this guidance for further information. (You are advised to contact the local planning authority to confirm whether the sequential test should be applied and to ensure the appropriate level of information is provided).

- a. What other locations with a lower risk of flooding have you considered for the proposed development?
- b. If you have not considered any other locations, what are the reasons for this?
- c. Explain why you consider the development cannot reasonably be located within an area with the lowest probability of flooding (flood zone 1); and, if your chosen site is within flood zone 3, explain why you consider the development cannot reasonably be located in flood zone 2. See Table 1 for definitions of the flood zones.
- d. As well as flood risk from rivers or the sea, have you taken account of the risk from any other sources of flooding in selecting the location for the development?

### **4 - Climate Change**

How is flood risk at the site likely to be affected by climate change? (The local planning authority's Strategic Flood Risk Assessment should have taken this into account). Further advice on how to take account of the impacts of climate change in flood risk assessments (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>) is available from the Environment Agency.

### **5 - Site specific flood risk**

You can use this section to describe the risk of flooding to and from the proposed development over its expected lifetime, including appropriate allowances for the impacts of climate change. It would be helpful to include any evidence, such as maps and level surveys of the site, flood datasets (eg flood levels, depths and/or velocities) and any other relevant data, which can be acquired through consultation with the Environment Agency (<https://www.gov.uk/guidance/flood-risk-assessment-for-planning->

applications#get-information-to-complete-an-assessment), the lead local flood authority for the area, or any other relevant flood risk management authority. Alternatively, you may consider undertaking or commissioning your own assessment of flood risk, using methods such as computer flood modelling.

a. What is/ are the main source(s) of flood risk to the site? (eg tidal/sea, fluvial or rivers, surface water, groundwater, other?). You should consider the flood mapping available from the Environment Agency ([http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=\\_e](http://maps.environment-agency.gov.uk/wiyby/wiybyController?ep=maptopics&lang=_e)), the Strategic Flood Risk Assessment for the area, historic flooding records and any other relevant and available information.

b. What is the probability of the site flooding, taking account of the maps of flood risk available from the Environment Agency (<http://apps.environment-agency.gov.uk/wiyby/37837.aspx>), the local planning authority's Strategic Flood Risk Assessment and any further flood risk information?

c. Are you aware of any other sources of flooding that may affect the site?

d. What is the expected depth and level for the design flood? See paragraph 055 of this guidance for information on what is meant by a "design flood". If possible, flood levels should be presented in metres above Ordnance Datum (ie, the height above average sea level).

e. Are properties expected to flood internally in the design flood and to what depth? Internal flood depths should be provided in metres.

f. How will the development be made safe from flooding and the impacts of climate change (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>), for its lifetime? Further information can be found in paragraphs 054 and 059 (including on the use of flood resilience and resistance measures) of this guidance.

g. How will you ensure that the development and any measures to protect the site from flooding will not cause any increase in flood risk off-site and elsewhere? Have you taken into account the impacts of climate change (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>), over the expected lifetime of the development? (eg providing compensatory flood storage which has been agreed with the Environment Agency).

h. Are there any opportunities offered by the development to reduce the causes and impacts of flooding? See paragraph 050 of this guidance for further advice.

## **6. Surface water management \***

You can use this section to describe the existing and proposed surface water management arrangements at the site using sustainable drainage systems wherever appropriate, to ensure there is no increase in flood risk to others off-site.

a. What are the existing surface water drainage arrangements for the site?

b. If known, what (approximately) are the existing rates and volumes of surface water run-off generated by the site?

c. What are the proposals for managing and discharging surface water from the site, including any measures for restricting discharge rates? For major developments (eg of 10 or more homes or major commercial developments), and for all developments in areas at risk of flooding, sustainable drainage systems should be used, unless demonstrated to be inappropriate – see paragraphs 079-086 of this guidance for further advice.

d. How will you prevent run-off from the completed development causing an impact elsewhere?

e. Where applicable, what are the plans for the ongoing operation and/or maintenance of the surface water drainage systems?

## **7. Occupants and users of the development**

You can use this section to provide a summary of the numbers of future occupants and users of the new development; the likely future pattern of occupancy and use; and proposed measures for protecting more vulnerable people from flooding.

a. Will the development proposals increase the overall number of occupants and/or people using the building or land, compared with the current use? If this is the case, by approximately how many will the number(s) increase?

b. Will the proposals change the nature or times of occupation or use, such that it may affect the degree of flood risk to these people? If this is the case, describe the extent of the change.

c. Where appropriate, are you able to demonstrate how the occupants and users that may be more vulnerable to the impact of flooding (eg residents who will sleep in the building; people with health or mobility issues etc) will be located primarily in the parts of the building and site that are at lowest risk of flooding? If not, are there any overriding reasons why this approach is not being followed?

## **8. Exception test**

You can use this section to provide the evidence to support certain development proposals in flood zones 2 or 3 if, following application of the sequential test, it is appropriate to apply the exception test, as set out in paragraphs 159 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para159>) of the National Planning Policy Framework. See paragraph 035 of this guidance for further information on the exception test. It is advisable to contact the local planning authority to confirm whether the exception test needs to be applied and to ensure the appropriate level of information is provided.

a. Would the proposed development provide wider sustainability benefits to the community? If so, could these benefits be considered to outweigh the flood risk to and from the proposed development? See paragraph 037 of this guidance for further information.

b. How can it be demonstrated that the proposed development will remain safe over its lifetime without increasing flood risk elsewhere? See paragraph 038 of this guidance for further information.

c. Will it be possible for the development to reduce flood risk overall (eg through the provision of improved drainage)? See paragraph 050 for further advice.

## **9. Residual risk**

You can use this section to describe any residual risks that remain after the flood risk management and mitigation measures are implemented, and to explain how these risks can be managed to keep the users of the development safe over its lifetime. See paragraph 042 of this guidance for more information.

a. What flood related risks will remain after the flood risk management and mitigation measures have been implemented?

b. How, and by whom, will these risks be managed over the lifetime of the development? (eg putting in place flood warning and evacuation plans).

## **10. Flood risk assessment credentials**

You can use this section to provide details of the author and date of the flood risk assessment.

- a. Who has undertaken the flood risk assessment?
- b. When was the flood risk assessment completed?

## **Other considerations**

- Managing surface water

The site-specific flood risk assessment will need to show how surface water runoff generated by the developed site will be managed. In some cases it may be advisable to detail the surface water management for the proposed development in a separate drainage strategy or plan. You may like to discuss this approach with the lead local flood authority (see paragraph 006 of this guidance).

Surface water drainage elements of major planning applications (eg of 10 or more homes) are reviewed by the lead local flood authority for the area. As a result, there may be specific issues or local policies, for example the Local Flood Risk Management Strategy or Surface Water Management Plan, that will need to be considered when assessing and managing surface water matters.

It is advisable to contact the appropriate lead local flood authority prior to completing the surface water drainage section of the flood risk assessment, to ensure that the relevant matters are covered in sufficient detail.

## **Proximity to main rivers**

If the development of the site involves any activity within specified distances of main rivers, a flood risk activity permit may be required in addition to planning permission. For non-tidal main rivers, a flood risk activity permit may be required if the development of the site is within 8 metres of a river, flood defence structure or culvert. For tidal main rivers, a flood risk activity permit may be required if the development of the site is within 16 metres of a river, flood defence structure or culvert. Details on obtaining a Flood Risk Activity Permit are available from the Environment Agency (<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>).

Paragraph: 068 Reference ID: 7-068-20140306

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(<http://webarchive.nationalarchives.gov.uk/20160601171236/http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/site-specific-flood-risk-assessment-checklist/>)

## **What is the general planning approach to development and coastal change?**

The aim of the policy on coastal change, as set out in paragraphs 166 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para166>) of the National Planning Policy Framework, is to reduce risk from coastal change by avoiding inappropriate development in vulnerable areas or adding to the impacts of physical changes to the coast. The general approach can be summarised as follows:

- Local planning authorities apply Integrated Coastal Zone Management to integrate terrestrial and marine planning regimes;
- Local planning authorities identify Coastal Change Management Areas (further information in paragraph 071 and paragraph 072) likely to be affected by physical changes to the coast;

- Local planning authorities are expected to be clear what development will be appropriate in Coastal Change Management Areas and make provision for development and infrastructure that needs to be relocated away from Coastal Change Management Areas.

Paragraph: 069 Reference ID: 7-069-20140306

Revision date: 06 03 2014

## **Why it is important to apply Integrated Coastal Zone Management**

Integrated Coastal Zone Management is a process which requires the adoption of a joined-up and participative approach towards the planning and management of the many different elements in coastal areas (land and marine). The recognised key principles which should guide all partners in implementing an integrated approach to the management of coastal areas are:

- a long term view
- a broad holistic approach
- adaptive management
- working with natural processes
- support and involvement of all relevant administrative bodies
- use of a combination of instruments
- participatory planning
- reflecting local characteristics

In coastal areas, local planning authorities should collaborate with the Marine Management Organisation to ensure that plans and policies across the land/sea boundary are coordinated. Further guidance on the Marine Management Organisation's role is available [here](#).

Local planning authorities are strongly encouraged to adopt the principles set out in the Coastal Concordat for England (<https://www.gov.uk/government/publications/a-coastal-concordat-for-england>), which is available on the UK Government's web site (publications), working in collaboration with other relevant public bodies to coordinate the consenting process for coastal development.

See related policy (<https://www.gov.uk/guidance/national-planning-policy-framework/10-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para105>)

Paragraph: 070 Reference ID: 7-070-20140306

Revision date: 06 03 2014

## **Coastal Change Management Areas**

### **What is a Coastal Change Management Area?**

This is an area identified in Local Plans as likely to be affected by coastal change (physical change to the shoreline through erosion, coastal landslip, permanent inundation or coastal accretion).

See related policy in paragraph 166 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para166>) of the National Planning Policy Framework.

Paragraph: 071 Reference ID: 7-071-20140306

## **What are the considerations in defining Coastal Change Management Areas?**

A Coastal Change Management Area will only be defined where rates of shoreline change are significant over the next 100 years, taking account of climate change (<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>). They will not need to be defined where the accepted shoreline management plan policy is to hold or advance the line (maintain existing defences or build new defences) for the whole period covered by the plan, subject to evidence of how this may be secured.

Local planning authorities should demonstrate that they have considered shoreline management plans, which provide a large-scale assessment of the risks associated with coastal processes, and should provide the primary source of evidence in defining the coastal change management area and inform land allocation within it. Other sources that may help inform decisions on the appropriate area for the coastal change management area include:

- catchment flood management plans (<http://www.environment-agency.gov.uk/research/planning/33586.aspx>)\*
- estuary management plans
- harbour management plans
- river basin management plans (<http://www.environment-agency.gov.uk/research/planning/33106.aspx>)\*
- Environment Agency's coastal erosion map (<http://www.environment-agency.gov.uk/homeandleisure/134808.aspx>)\*

Shoreline management plans (<http://www.environment-agency.gov.uk/research/planning/104939.aspx>)\* identify risk in 3 time horizons (up to 20, 50 and 100 years) and include maps showing the geographical extent of each risk area. Local planning authorities have discretion to determine how these are interpreted in planning terms to define the coastal change management area and whether it should show the separate zones for each of the 3 time horizons – or whether it should rely on the shoreline management plan for the area to provide that level of information. Where the shoreline management plan policy is to hold the line over part of the 100-year period, evidence would be expected to be provided of how this may be secured.

Although the primary basis for defining the coastal change management area are the physical processes affecting the coast, the local planning authority may want to take into account the boundaries of existing settlements and requirements for facilitating roll-back and relocation of land uses.

” \* “ More information is available on the Environment Agency website.

Paragraph: 072 Reference ID: 7-072-20140306

Revision date: 06 03 2014

## **What development will be appropriate in a Coastal Change Management Area?**

Essential infrastructure may be permitted in a coastal change management area, provided there are clear plans to manage the impacts of coastal change on it, and it will not have an adverse impact on rates of coastal change elsewhere.

Ministry of Defence installations that require a coastal location can be permitted within a coastal change management area, provided there are clear plans to manage the impacts of coastal change. Where the installation will have a material impact on coastal processes, this must be managed to



minimise adverse impacts on other parts of the coast.

For other development the following criteria can be used as a basis for decisions on what may be appropriate:

- Within the short-term risk areas (ie 20-year time horizon) only a limited range of types of development directly linked to the coastal strip, such as beach huts, cafes/tea rooms, car parks and sites used for holiday or short-let caravans and camping – all with time-limited planning permissions;
- Within the medium (20 to 50-year) and long-term (up to 100-year) risk areas, a wider range of time-limited development, such as hotels, shops, office or leisure activities requiring a coastal location and providing substantial economic and social benefits to the community, may be appropriate. Other significant development, such as key community infrastructure, is unlikely to be appropriate unless it has to be sited within the coastal change management area to provide the intended benefit to the wider community and there are clear, costed plans to manage the impact of coastal change on it and the service it provides;
- Permanent new residential development will not be appropriate within a coastal change management area.

In all cases, there should still be careful consideration of the policies on development and flood risk, including table 2 and table 3.

Further advice on:

- how a vulnerability assessment can be used to demonstrate whether development is appropriate in a coastal change management area
- permitted development rights in areas at risk of coastal change
- how neighbourhood plans and Neighbourhood Development/Community Right to Build Orders should take account of coastal change

Advice is also available on what approach should be taken to making provision for the relocation of development away from Coastal Change Management Areas.

Paragraph: 073 Reference ID: 7-073-20140306

Revision date: 06 03 2014

## **Can a vulnerability assessment be used to demonstrate whether development is appropriate in a coastal change management area?**

Local planning authorities may wish to consider whether information about the vulnerability of new development would be helpful to demonstrate the appropriateness of a development in a coastal change management area. It would be advisable for the developer to agree the scope of a vulnerability assessment (which should be appropriate to the degree of risk and the scale, nature and location of the development) in advance with the local planning authority and in consultation with the Environment Agency and any other relevant stakeholders.

In considering the requirements in paragraph 168 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para168>) of the National Planning Policy Framework a vulnerability assessment might demonstrate that the development:

- would not impair the ability of communities and the natural environment to adapt sustainably to the impacts of a changing climate;
- will be safe through its planned lifetime, without increasing risk to life or property, or requiring new or improved coastal defences;
- would not affect the natural balance and stability of the coastline or exacerbate the rate of shoreline change to the extent that changes to the coastline are increased nearby or elsewhere.

The assessment could also consider measures for managing the development at the end of its planned life, including any proposals for the removal of the development before the site is immediately threatened by shoreline changes. Further advice on limiting the planned lifetime of development.

Paragraph: 074 Reference ID: 7-074-20140306

Revision date: 06 03 2014

### **How can planning limit the planned lifetime of development?**

This can be achieved by time-limited planning permissions that can contain conditions relating to the review of that permission in relation to rates of coastal change and removal of the development prior to the anticipated impact of the coastal change. The Local Planning authority should be satisfied that adequate and secure financial arrangements are in place for the removal of time-limited development.

Paragraph: 075 Reference ID: 7-075-20140306

Revision date: 06 03 2014

### **What approach should be taken to making provision for the relocation of development away from Coastal Change Management Areas?**

Formally allocating land in Local Plans for relocation of development and habitat affected by coastal change may be appropriate in some instances. An approach that takes into account the exceptional circumstances of having to replace existing development at risk of coastal change by granting planning permissions where normally they would be refused may be more suitable for some coastal authorities.

See related policy in paragraph 166 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para166>) of the National Planning Policy Framework.

Paragraph: 076 Reference ID: 7-076-20140306

Revision date: 06 03 2014

### **Permitted development rights in areas at risk from coastal change**

**What issues do local planning authorities need to consider in relation to permitted development rights (<https://www.gov.uk/guidance/when-is-permission-required#General-Permitted-Development-Order>) in coastal change areas?**

Where extensions and alterations which are permitted development under the Town and Country Planning (General Permitted Development) (England) (Order) 2015 are likely to result in an increase in the scale of property and number of occupants at risk from coastal change in the short-term (ie next 20 years), local planning authorities should consider whether to make use of their powers under article 4 of the Order (<http://www.legislation.gov.uk/ukxi/2015/596/article/4/made>) to require planning permission to be sought in each case.

See related policy in paragraph 166 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para166>) of the National Planning Policy Framework.

Paragraph: 077 Reference ID: 7-077-20150415

Revision date: 15 04 2015 See previous version

(<http://webarchive.nationalarchives.gov.uk/20141202102440/http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/permitted-development-rights-in-areas-at-risk-from-coastal-change/>)

## **How neighbourhood plans and neighbourhood development/community right to build orders should take account of coastal change**

In line with the core planning principles and the policy on coastal change neighbourhood plans and neighbourhood Development/Community Right to Build Orders should avoid allowing inappropriate development in areas vulnerable to coastal change, or adding to the impacts of physical changes to the coast.

In any instance where a neighbourhood planning area is proposed in a coastal change management area, careful attention should be paid to the guidance on what development would be appropriate in such an area, including whether time-limiting planning permissions would be needed. The local planning authority should be consulted on what information about the vulnerability of new development would be helpful to demonstrate appropriateness in a coastal change management area.

See related policy in paragraphs 166 (<https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#para166>) of the National Planning Policy Framework.

Paragraph: 078 Reference ID: 7-078-20140306

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- Flood risk assessments if you're applying for planning permission (<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>)
- Flood risk assessment: the sequential test for applicants (<https://www.gov.uk/guidance/flood-risk-assessment-the-sequential-test-for-applicants>)
- How to prepare a strategic flood risk assessment (<https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment>)

- Flood risk assessment in flood zone 1 and critical drainage areas  
(<https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zone-1-and-critical-drainage-areas>)

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