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The Planning System and Flood Risk Management



Guidelines for Planning Authorities

November 2009



OPW



email as discussed, please see an extract re flood zones from "The Planning System and Flood Risk Management Guidelines":

"Flood zones

Flood zones are geographical areas within which the likelihood of flooding is in a particular range and they are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning. There are three types or levels of flood zones defined for the purposes of these Guidelines:

- *Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding);*
- *Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding); and*
- *Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all areas of the plan which are not in zones A or B."*

Fluvial Maps (Blue)

- Flood Zone A is the the two darkest shades of blue combined (ie 10 % & 1% AEP)
- Flood Zone B is the lightest shade of blue (from 1% AEP to 0.1% AEP)
- Flood Zone C is the white area of the map

Coastal Maps (Green)

- Flood Zone A is the the two darkest shades of green combined (ie 10% & 0.5% AEP)
- Flood Zone B is the lightest shade of green (from 0.5% AEP to 0.1% AEP)
- Flood Zone C is the white area of the map

Please note that the guidelines are available at the following link:

<http://www.opw.ie/media/Planning%20System%20and%20Flood%20Risk%20Management%20Guidelines.pdf>

Sequential approach

3.2 A sequential approach to planning is a key tool in ensuring that development, particularly new development, is first and foremost directed towards land that is at low risk of flooding. Sequential approaches are already established and working effectively in other areas in the plan making and development management processes (e.g. retail planning). The sequential approach described in Fig. 3.1 should be applied to all stages of the planning and development management process. It is of particular importance at the plan-making stage but is also applicable in the layout and design of development within a specific site at the development management stage. Fig. 3.1 sets out the broad philosophy underpinning the sequential approach in flood risk management, while Fig. 3.2 describes its mechanism for use in the planning process.

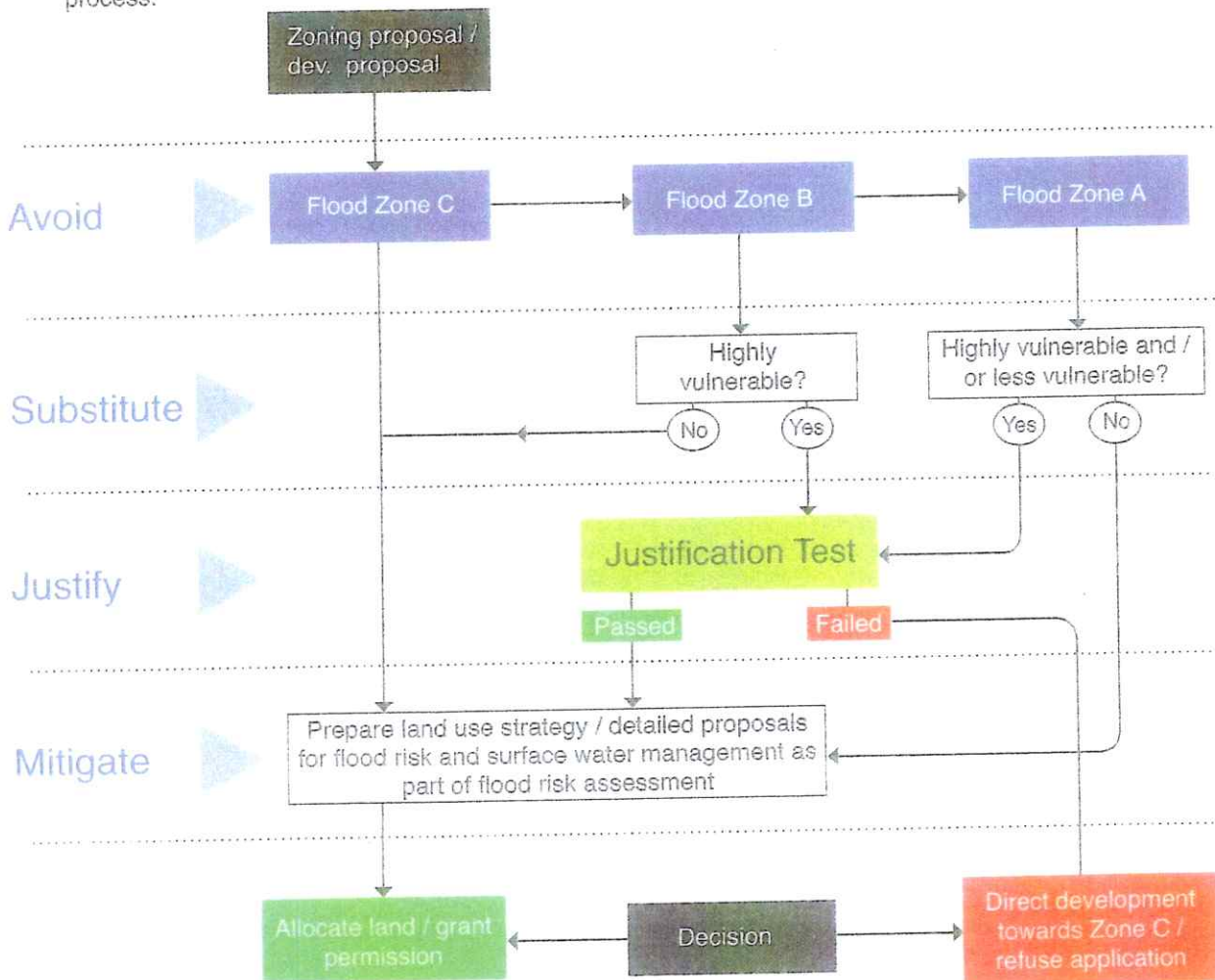


Fig. 3.2: Sequential approach mechanism in the planning process

LOCATION PLAN



Legend:

- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment
- Defended Area
- 10% AEP Coastal Flood Extent
(1 in 10 chance in any given year)
- 0.5% AEP Coastal Flood Extent
(1 in 200 chance in any given year)
- 0.1% AEP Coastal Flood Extent
(1 in 1000 chance in any given year)

IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.



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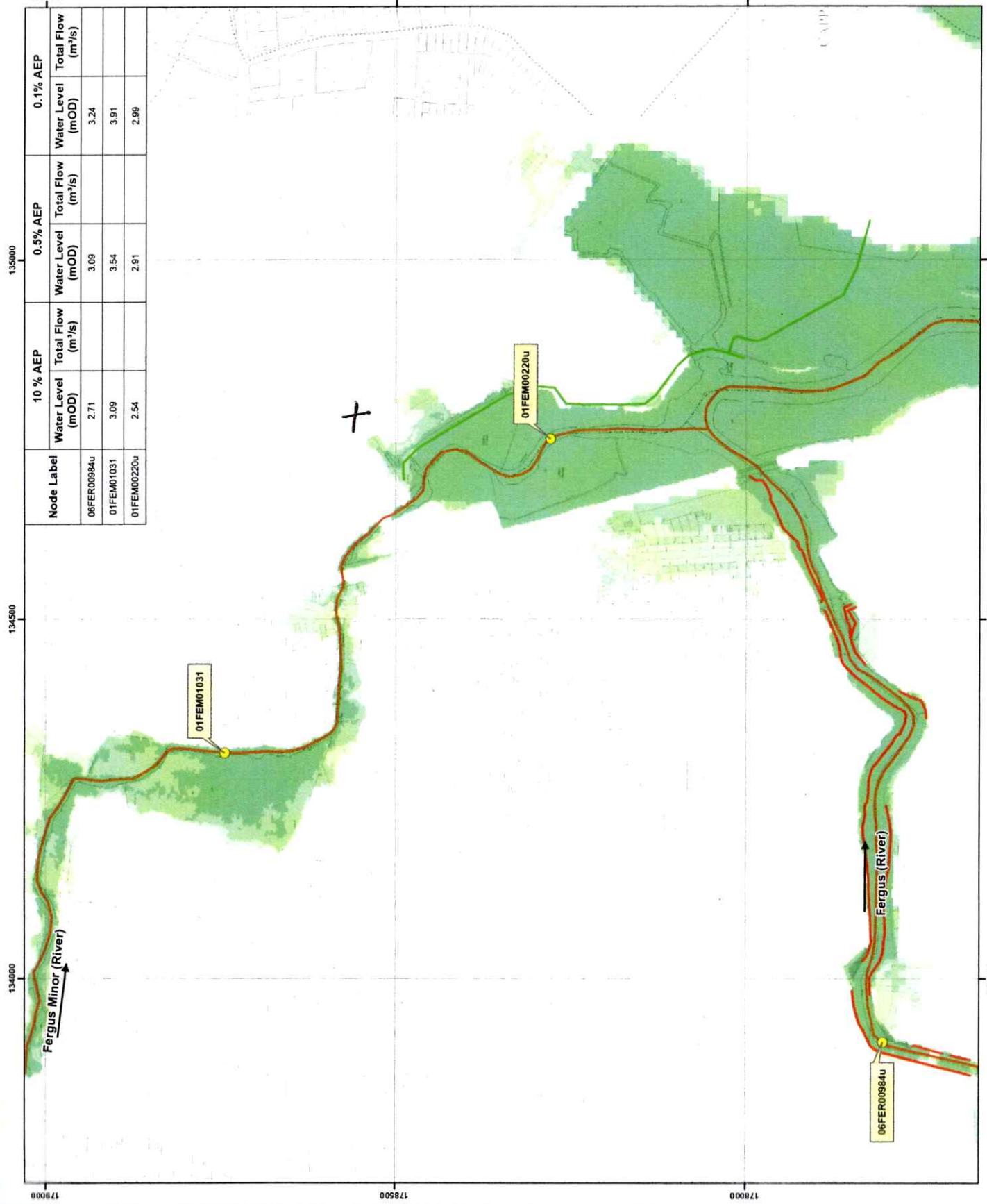
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project: SHANNON CFRRAM STUDY
Map Type: EXTENT
Source: COASTAL-TIDAL
Area: ENNIS

Scenario: EXISTING
Drawn by: EF Date: JUNE 2016
Checked by: AC Date: JUNE 2016
Reviewed by: PT Date: JUNE 2016
Approved by: PT Date: JUNE 2016
Map Number: S27ENS_EXFCO_F1_05
Sheet: 9 of 22 Revision: 0

Map Scale: 1:5000 Plot Scale: 1:1 @ A3

Node Label	10 % AEP		0.5% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m ³ /s)	Water Level (mOD)	Total Flow (m ³ /s)	Water Level (mOD)	Total Flow (m ³ /s)
06FER00984u	2.71		3.09		3.24	
01FEM01031	3.09		3.54		3.91	
01FEM00220u	2.54		2.91		2.99	



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Legend:

- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment
- Defended Area
- 10% AEP Fluvial Flood Extent
(1 in 10 chance in any given year)
- 1% AEP Fluvial Flood Extent
(1 in 100 chance in any given year)
- 0.1% AEP Fluvial Flood Extent
(1 in 1000 chance in any given year)

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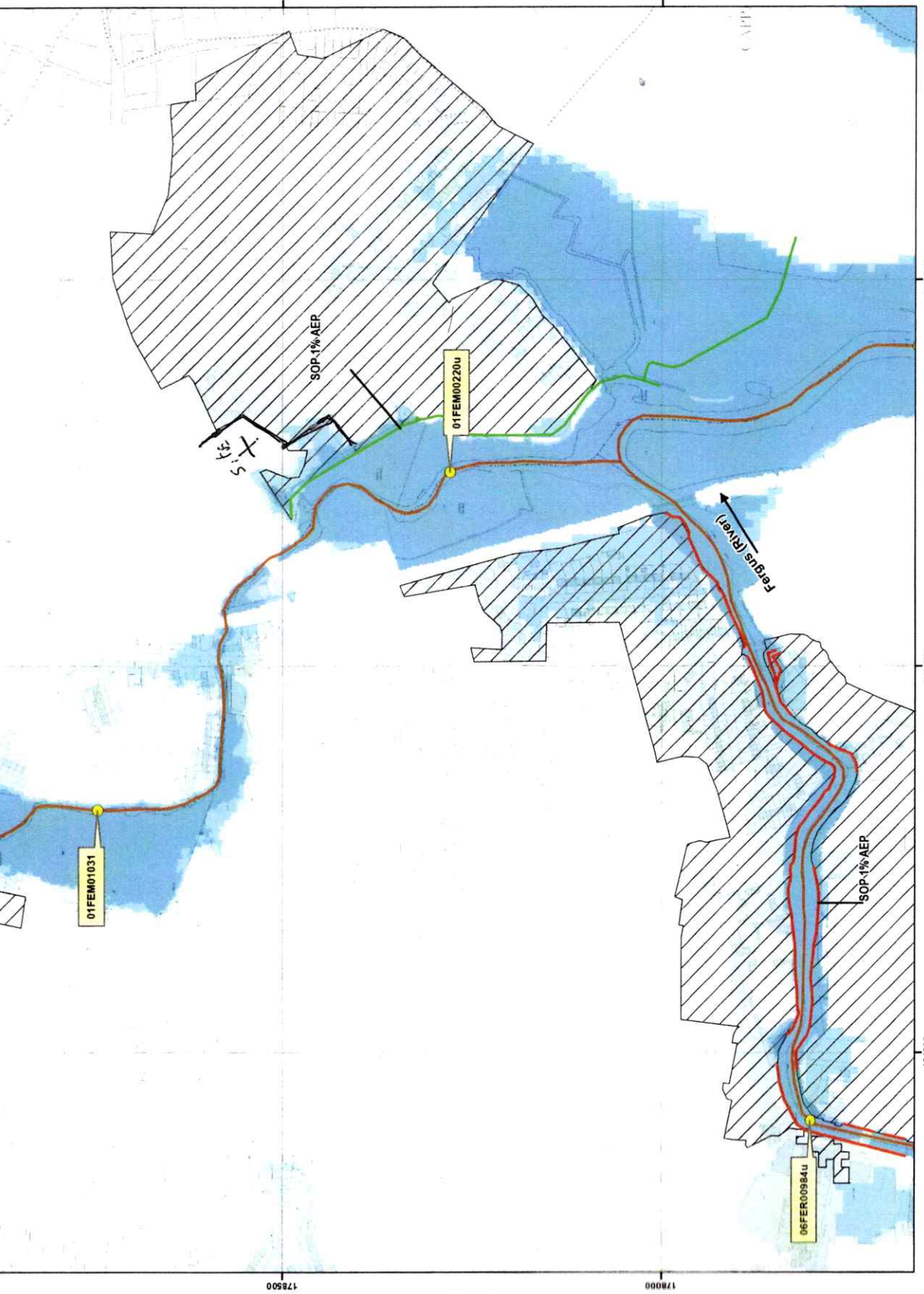
Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project: SHANNON CFHAM STUDY
Map Type: EXTENT
Source: FLUVIAL
Area: ENNIS

Scenario: EXISTING
Drawn by: GH Date: JUNE 2016
Checked by: AC Date: JUNE 2016
Reviewed by: MC Date: JUNE 2016
Approved by: PS Date: JUNE 2016
Map Number: SZ7ENS_EXFCD_F1_09

Sheet: 9 of 22
Map Scale: 1:5000
Revision: 0
Plot Scale: 1:1 @ A3

Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mOD)	Total Flow (m ³ /s)	Water Level (mOD)	Total Flow (m ³ /s)	Water Level (mOD)	Total Flow (m ³ /s)
06FER00984u	2.86	57.75	3.27	79.58	3.49	97.15
01FEM01031	3.37	3.92	3.92	12.67	4.51	19.51
01FEM00220u	2.63	0.37	2.87	12.67	3.15	19.51



6. Decisions on the location of development may be required *before* development plans have been fully reviewed in accordance with these Guidelines and prior to the availability of appropriate flood risk mapping. In such circumstances a planning authority may choose to:
 - i) Vary the development plan to facilitate appropriate development provided that the variation is accompanied by a rigorous assessment of flood risk in accordance with these Guidelines and the application of the Justification Test where necessary;
 - ii) Assess the proposal in accordance with the approach outlined in chapter 5 (5.27); and/or,
 - iii) Await the review of the development plan in accordance with these Guidelines, where such a review is imminent.
7. Land required for current and future flood management, e.g. conveyance and storage of flood water and flood protection schemes, should be proactively identified on development plan and LAP maps and safeguarded from development.
8. Flood risk to, and arising from, new development should be managed through location, layout and design incorporating Sustainable Drainage Systems and compensation for any loss of floodplain as a precautionary response to the potential incremental impacts in the catchment.
9. Strategic environmental assessment (SEA) of regional planning guidelines, development plans and local area plans should include flood risk as one of the key environmental criteria against which such plans are assessed where flood risk has been identified. The SEA process provides an opportunity to assess and consider flood risk with respect to other planning and environmental considerations and should be used to show how the sequential approach to managing flood risks has been executed.

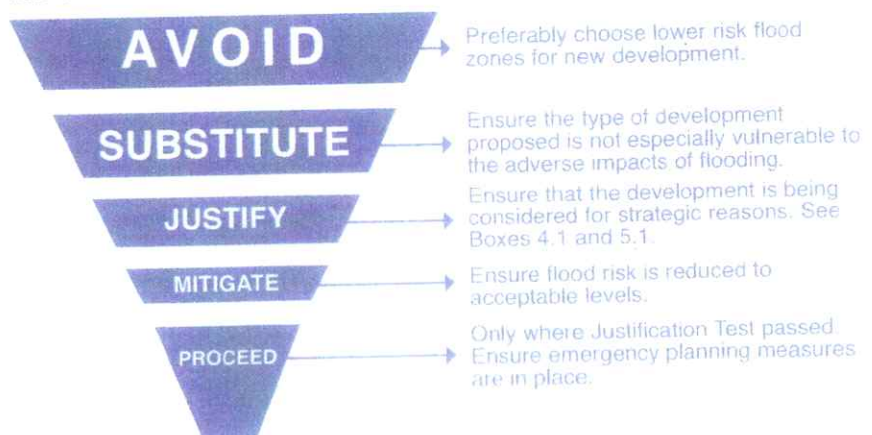


Fig. 3.1 sets out the broad philosophy underpinning the sequential approach in flood risk management, while Fig. 3.2 describes its mechanism for use in the planning process.

Fig. 3.1: Sequential approach principles in flood risk management

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- 3.3 The sequential approach makes use of flood risk assessment and of prior identification of flood zones for river and coastal flooding and classification of the vulnerability to flooding of different types of development, as illustrated in Table 3.1. It is essential that the risk potentially arising from other sources of flooding should also be taken into account in all areas and at all stages of the planning process.
- 3.4 As outlined in paragraph 2.25 the flood zones ignore the presence of defences. Areas that benefit from an existing flood relief scheme or flood defences have a reduced probability of flooding but can be particularly vulnerable due to the speed of flooding when overtopping or a breach or other failure takes place. Because this residual risk of flooding remains, the sequential approach and the Justification Test apply to such defended locations. The range of residual risks is described in Appendix A.
- 3.5 In summary, the planning implications for each of the flood zones are:
- Zone A - High probability of flooding.** Most types of development would be considered inappropriate in this zone. Development in this zone should be avoided and/or only considered in exceptional circumstances, such as in city and town centres, or in the case of essential infrastructure that cannot be located elsewhere, and where the Justification Test has been applied. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation, would be considered appropriate in this zone.
- Zone B - Moderate probability of flooding.** Highly vulnerable development, such as hospitals, residential care homes, Garda, fire and ambulance stations, dwelling houses and primary strategic transport and utilities infrastructure, would generally be considered inappropriate in this zone, unless the requirements of the Justification Test can be met. Less vulnerable development, such as retail, commercial and industrial uses, sites used for short-let for caravans and camping and secondary strategic transport and utilities infrastructure, and water-compatible development might be considered appropriate in this zone. In general however, less vulnerable development should only be considered in this zone if adequate lands or sites are not available in Zone C and subject to a flood risk assessment to the appropriate level of detail to demonstrate that flood risk to and from the development can or will adequately be managed.
- Zone C - Low probability of flooding.** Development in this zone is appropriate from a flood risk perspective (subject to assessment of flood hazard from sources other than rivers and the coast) but would need to meet the normal range of other proper planning and sustainable development considerations.

Further details on the flood zones is contained in Chapter 2.

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- 3.6 Tables 3.1 and 3.2 illustrate those types of development that would be appropriate to each flood zone and those that would be required to meet the Justification Test. Inappropriate development that does not meet the criteria of the Justification Test should not be considered at the plan-making stage or approved within the development management process.

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Justification Test

- 3.7 Notwithstanding the need for future development to avoid areas at risk of flooding, it is recognised that the existing urban structure of the country contains many well established cities and urban centres, which will continue to be at risk of flooding. At the same time such centres may also have been targeted for growth in the National Spatial Strategy, regional planning guidelines and the various city and county development plans taking account of historical patterns of development and their national and strategic value. In addition, development plans have identified various strategically located urban centres and particularly city and town centre areas whose continued growth and development is being encouraged in order to bring about compact and sustainable urban development and more balanced regional development. Furthermore, development plan guidelines, issued by the Minister for the Environment, Heritage and Local Government under Section 28 of the Planning and Development Act 2000, have underlined the importance of compact and sequential development of urban areas with a focus on town and city centre locations for major retailing and higher residential densities.
- 3.8 The Justification Test has been designed to rigorously assess the appropriateness, or otherwise, of particular developments that, for the reasons outlined above, are being considered in areas of moderate or high flood risk. The test is comprised of two processes.
- :: The first is the **Plan-making Justification Test** described in chapter 4 and used at the plan preparation and adoption stage where it is intended to zone or otherwise designate land which is at moderate or high risk of flooding.

- :: The second is the **Development Management Justification Test** described in chapter 5 and used at the planning application stage where it is intended to develop land at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be inappropriate for that land.

Flooding and Strategic Environmental Assessment

- 3.9 The Planning Guidelines for Strategic Environmental Assessment (SEA) (DEHLG, 2004) outline an integrated process for SEA and plan-making. SEA is required to be undertaken for regional planning guidelines, development plans and variations, many local area plans and SDZ planning schemes.
- 3.10 The SEA process provides a good practice framework for scoping and considering a range of planning and environmental issues, including flooding in the plan making process. Flood risk assessments carried out in response to these Guidelines should be integrated with the SEA process in, for example, a distinct chapter of the SEA where a full environmental report is required. Where SEA and the environmental report is required, flood risk assessment should be undertaken as early as possible in the process so that the SEA is fully informed of the flood risks and impacts of the proposed zoning or development (See Appendix A).

Flood risk assessment and Environmental Impact Assessment

- 3.11 At the project level, development either exceeding the specified thresholds for Environmental Impact Assessments (EIA) or development under the thresholds but with significant environmental effects and in an area at risk of flooding will require EIS. Flood risk will therefore need to be an integral part of the EIA process. Screening for EIA should be an integral element of all planning applications in an area at risk of flooding. For further details on how EIA would be applied see paragraph 5.18.
- 3.12 As indicated in the Department's Circular Letter SEA 1/ 08 & NPWS 1/ 08, appropriate assessments are required for plans and programmes potentially affecting Natura 2000 sites under the EU Birds and Habitats Directives. These assessments provide a structured process within which the flood risk assessment should relate. Important aspects of the processes are outlined in more detail in chapter 4.