



Portsmouth City Local Plan First Review 2001 - 2011

Supplementary Planning Guidance

FLOOD PROTECTION



Portsmouth
CITY COUNCIL

Supplementary Planning Guidance

FLOOD PROTECTION

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for Planning, Regeneration,
Economic Development and Property

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INTRODUCTION

1. This policy note is one of a series which provides detailed guidance to developers supplementing the Portsmouth City Local Plan Review (2001-2011). It provides additional information on the approach the City Council expects developers to adopt when dealing with sites which lie within the areas at risk of flooding. The risk from flooding in Portsmouth derives from tidal/storm events associated with the sea and coastal processes and not from rivers. This note therefore only deals with coastal flood issues.

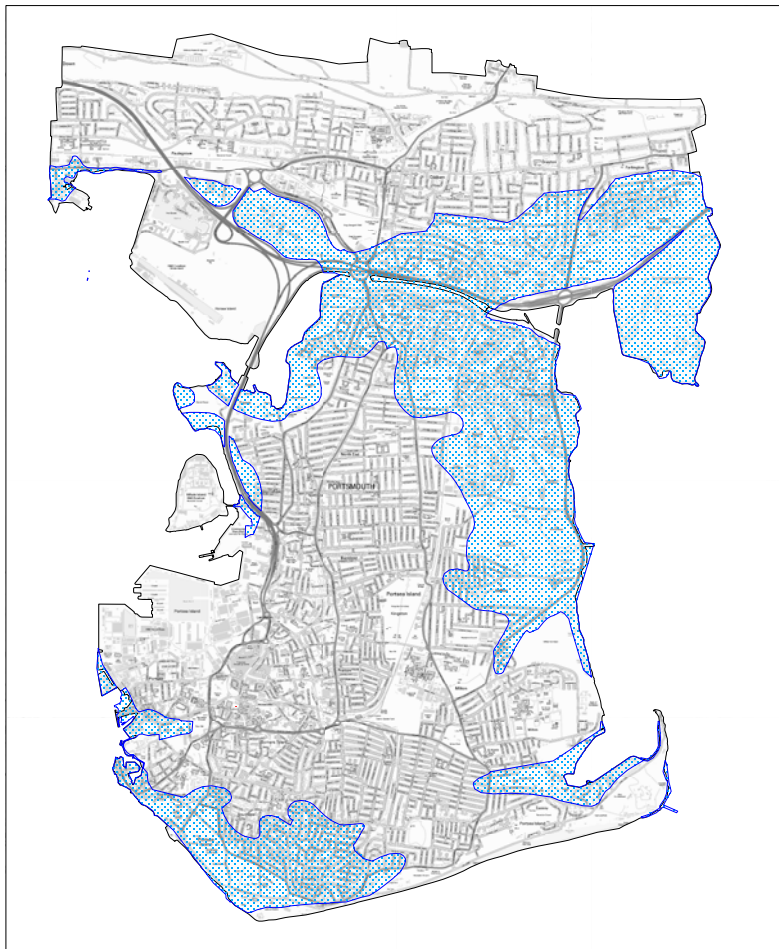
FLOOD RISK IN PORTSMOUTH

2. Map 1 (overleaf) shows the indicative flood plain areas for Portsmouth. For coastal areas, such as in and around Portsmouth, the risk is determined by possible impacts of a 1 in 200 year storm or tidal flood event (this equates more than 0.5% annual probability of flooding). The information, provided by the Environment Agency, is based purely on contours and does not take into account the status of existing flood defences or recent developments.
3. Portsmouth is a densely developed city with a population of some 187,000, of which 148,000 live on Portsea Island, a flat low-lying area. Just under 20% of all dwellings lie within an area which the Environment Agency consider as at risk from flooding.
4. The City Council aims to reduce the risk of flooding and its impacts in Portsmouth. It is currently in the process of assessing flood defences resulting in the drawing up of a programme of improvement (see paragraphs 11 – 19 below). New development will be required to meet flood risk criteria.
5. There have been incidents in the past of flooding from foul sewers. While it is possible that problems of a similar nature could reoccur, this document does not refer to flood risk from this source. Only the main risk, that of tidal flooding, is covered in this guidance.

THE NEED FOR REGENERATION

6. Portsmouth needs more homes and jobs, improved transport systems and an improved urban environment, which achieves objectives of regeneration. At a wider strategic level, towns and cities are seen as offering major opportunities for accommodating additional development through the more efficient use of land and the achievement of brownfield development targets. The local plan review provides for 6,500 new dwellings for the 2001-2011 period. The City Council therefore has to ensure that the right balance is made between meeting the needs for development, derived from its own population, and the requirements to reduce risk from flooding and its effects.
7. Planning Policy Guidance Note (PPG) 25: *Development and Flood Risk* was published in July 2001. The guidance aims to ensure that local planning authorities take flood risk into account properly in the planning of development in order to reduce the risk of flooding and the damage that floods cause. The general principles that apply to Portsmouth include:
 - Appropriate weight to be given to flood issues in the preparation of development plan policies and the determination of Planning applications.
 - Consultation with the Environment Agency and other relevant bodies.
 - Adoption of a risk-based approach to proposals for development in or affecting flood-risk areas and apply the precautionary principle to decision-making.

Map 1 Indicative Flood Plain Areas for Portsmouth



Indicative Floodplain Map
Environment Agency, 2003

Coastal

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This map is incorporated into the proposals map of the Portsmouth City Local Plan Review and is also available on the Environment Agency website under www.environment-agency.gov.uk.

8. The risk-based approach requires that the following are taken into account -
- Areas liable to flooding.
 - Probability of it occurring.
 - Extent and standard of existing flood defences.
 - Likely depth of flooding
 - Impact on other areas and properties.
 - Effect of climate change.
 - The nature of the development and how it has been designed to deal with flood risk.

THE CITY COUNCIL'S APPROACH

9. The City Council adheres to the principles outlined in PPG25 concerning areas at risk, namely, the need for a flexible approach with regards to previously developed land. Provided that a minimum standard of defence can be maintained over the lifetime of the development, development proposals will be permitted in high risk areas in order to achieve aims of regeneration. The Government Office for the South East (GOSE) has confirmed that this approach is appropriate and in accordance with the requirements of PPG25.
10. The City Council will support proposals within the identified areas at risk of flooding where they achieve objectives of regeneration and the reuse and redevelopment of brownfield sites, subject to appropriate measures being undertaken to reduce that risk to an acceptable level.

PORTSEA ISLAND COASTAL STRATEGY STUDY

11. The City Council has commissioned consultants to survey Portsea Island's sea defences and prepare a coastal defence policy in the form of a Strategy Plan for the future defence management of the shoreline. It will provide the basis for the development of sustainable coastal defence policies with preferred implementation action plans that will be presented in a Strategy Plan for Portsea Island.
12. Following completion of the Stage 1 Scoping Study for this project, Stage 2 of this coastal strategy study is currently being carried out having commenced in November 2001 with a completion date of November 2003 now being envisaged.
13. Several types of mathematical modelling will be undertaken in the course of the project, one of which is a flood model used to investigate the propagation of flood waters on Portsea Island.
14. Analysis of this model will provide information on the level and extent of flooding from overtopping and overflow of the coastal defences. This will provide a clearer picture of flooding risks together with the links between defence frontages, and examine the sensitivities to any change in these flood risks.
15. The consultant will also prepare an inventory of areas (including beaches and natural habitats) along the coast, which are at risk of flooding by the sea, coastal erosion or habitat squeeze as a result of coastal change (where rise in sea levels combined with the upgrading of sea defences leads to a loss of intertidal area).
16. The strategy study will assess existing defences for their adequacy for a number of different scenarios, either through a breach or overtopping of the structure, or both, and

examine the present standard of defence provided by the defence and its existing structural condition.

17. The results of these exercises will then enable a better understanding to be gained by all as to the realistic extent of flooding that may occur on Portsea Island during tidal flooding events. This information will be fed into the planning process once finalised.
18. It is intended that on completion of the study, a programme of coastal improvement works will be identified. This will ensure that an acceptable standard of flood and coastal defence is provided to Portsea Island and its population, and the low risk of tidal flooding is maintained or further reduced.
19. Flood protection measures must comply with the requirements of the Habitats Regulations (1994) where they affect European sites for nature conservation (Special Protection Areas and Special Areas of Conservation). Reprovision of lost habitat may be sought where the effects of coastal squeeze result in the demise of significant coastal intertidal areas. The Habitats regulations equally apply to private landowners and statutory bodies.

REQUIREMENTS FOR DEVELOPERS

20. The policy for flood protection in the City Plan Review (DC6) states that:

Development proposals within areas at risk from tidal flooding will only be permitted where the City Council is satisfied that the site is adequately protected from flooding, or will become adequately protected from flooding as part of the development, and that -

- (i) an adequate flood risk assessment has been undertaken;*
- (ii) there is no increase in the number of people at risk from flooding;*
- (iii) the proposals would not increase the risk of flooding elsewhere;*
- (iv) appropriate measures incorporated into the scheme would prevent danger to life or damage to property;*
- (v) the maintenance of existing and proposed flood defences is not prejudiced; and*
- (vi) appropriate measures are taken to ensure that surface water runoff will not result in any further flood risk.*

21. Assessments may vary in size and detail according to the scale of development and relative risk of flooding. Preliminary scoping studies are advisable with larger assessments. Developers should consult the Environment Agency and other relevant operating authorities to determine what information is already available on flood risk potentially affecting or affected by their site and its proposed development. The Portsea Island Coastal Strategy Study will provide important information concerning risk of flooding and a programme for improvement of sea defences where necessary. This should form part of a risk assessment.
22. For proposals in Portsmouth's flood risk areas, the Environment Agency generally requires the following are addressed as part of risk assessments:
 - **An appreciation of the level of flooding that may occur on site.**
The Agency specifically suggests that the applicant submits a site level survey to Ordnance Datum Newlyn (ODN). These levels should be compared to the predicted 0.5% probability sea level for the year 2060 (provided by the Agency) so

that the applicant can take the height of water on site in times of extreme flood events into account when preparing development proposals.

- **An assessment of the means of emergency access to the site in times of flood.**

The site level survey should include levels of access points to the site. These levels should be used to assess whether emergency vehicles could safely access the site in times of flood.

- **An assessment of the number of people at risk of flooding on site.**

If there is no means of access for emergency vehicles to the site, the applicant should demonstrate that the proposal will not increase the number of people on site at risk of flooding, including no sleeping accommodation below predicted flood level and no increase in the number of bedrooms in the property.

23. PPG25 provides an extensive list of requirements for flood risk assessment, outlined in Annex 1. The City Council reserves the right to ask developers to undertake a risk assessment in accordance with the any of the additional requirements depending on scale, location and nature of proposals.

MEASURES TO REDUCE RISK OF FLOODING AND ITS IMPACTS

24. In assessing development proposals within flood risk areas, the City Council, in consultation with the Environment Agency, will pay particular attention to design and mitigation measures to reduce risk. The threat of flooding should be managed to ensure that the development is safe and remains safe throughout its lifetime.

25. Within Portsmouth, development must be guarded against a 1 in 200 year flood event, assuming a sea level for the year 2060 (allowing for a period of at least 50 years of rise in sea level). The necessary data is available from the Environment Agency. Commercial and industrial development should aim to achieve the same minimum standards of defence.

26. The Portsea Island Coastal Strategy and subsequent programme of improvement works will seek to reduce risk. However, the strategy is not due to be completed until November 2003 and any coastal defence improvement measures will need to be programmed over a number of years. The reduction of flood risk may need to be achieved through the design and layout of development proposals themselves. The City Council will attach planning conditions to ensure that appropriate measures are undertaken. Such measures may include :

- Adequate sea wall/defences for development sites which have a water frontage (i.e. taking account of a 1 in 200 year flood event based on 2060 sea level);
- The safeguarding of a means of access to properties by emergency vehicles during times of flooding. Site level surveys undertaken as part of the risk assessment will determine where access points can be provided;
- Restriction on the number of bedrooms for properties where no emergency access to the site is possible during times of flooding,
- Floor level designs of sleeping accommodation (i.e. the bedrooms) not to be below predicted flood levels;
- Appropriate surface water runoff drainage schemes.

27. The Office of the Deputy Prime Minister published '*Preparing for Floods*' in February 2002. It provides guidance for local authorities and developers in the interpretation of

PPG25 and outlines design measures which could reduce the impact of flooding on existing and new properties. Advice is provided on the following :

- External walls
- Internal walls
- Floors
- Building services and fittings (mains electric and water supply).

28. The City Council will encourage developers to design and construct buildings in accordance with the best practice guidance.

ANNEX 1

PPG25 REQUIREMENTS FOR FLOOD RISK ASSESSMENT

In all cases, whenever a flood risk assessment is undertaken for any location, the resulting report should address, as a minimum, the following requirements:

- ◆ *A location plan at an appropriate scale that includes geographical features, street names and identifies all watercourses or other bodies of water in the vicinity. This should include drainage outfalls and, if necessary, cross-refer to their operational arrangements in the body of the report.*
- ◆ *A plan of the site showing levels related to Ordnance Datum, both current and following development.*
- ◆ *A more detailed indication, if appropriate, of flood alleviation measures already in place, of their state of maintenance and their performance.*
- ◆ *An assessment of the source of potential flooding - rivers, tidal, coastal, groundwater, surface flow or any combination of these.*
- ◆ *A plan of the site showing any existing information on extent and depth of flood events or on flood predictions. Information may be anecdotal, photographic, survey results or model estimates. The events should be identified with date/time, source of the data and supporting information provided on rainfall and/or return period, or probability of occurrence of the flood or storm surge event, or combination. Recorded data are particularly valuable and, if available, should be highlighted along with evidence of any observed trends in flood occurrence. Any changes that have taken place since the last event should be identified.*
- ◆ *A plan and description of any structures which may influence local hydraulics. This will include bridges, pipes/ducts crossing the watercourse, culverts, screens, embankments or walls, overgrown or collapsing channels and their likelihood to choke with debris.*
- ◆ *An assessment of the probabilities and any observed trends and the extent and depth of floods for the location and in the catchment context and, if appropriate, routes and speed of water flow. At this stage best estimates, based on the most up-to-date findings, should also be made of climate change impacts on probabilities. The assessment should ensure that the development meets an acceptable standard of flood defence for the design life of the development.*
- ◆ *A cross-section of the site showing finished floor levels or road levels, or other relevant levels relative to the source of flooding, and to anticipated water levels and associated probabilities..*
- ◆ *An assessment of the likely rate or speed with which flooding might occur, the order in which various parts of the location or site might flood, the likely duration of flood events and the economic, social and environmental consequences/impacts of flooding.*
- ◆ *An assessment of the hydraulics of any drains or sewers, existing or proposed, on the site during flood events. The methodology for assessment must be clearly stated.*
- ◆ *An estimate of the volume of water which would be displaced from the site for various flood levels following development of the site and of the run-off likely to be generated from the development proposed.*

- ◆ *An assessment of the likely impact of any displaced water on neighbouring or other locations which might be affected subsequent to development. This should address the potential for change of the flooding regime both upstream and downstream of the site due to ground raising or flood embankments.*
- ◆ *An assessment of the potential impact of any development on fluvial or coastal morphology and the likely longer-term stability and sustainability.*
- ◆ *Because of the uncertainties in flood estimation and expected climate change impacts, hydrological analysis of flood flows and definition of defence standards should include the allowances for increased flows and sea-level rise in MAFF's project appraisal guidance for flood defence.*
- ◆ *An assessment of the residual risks after the construction of any necessary defences. Where new or modified flood defence arrangements are provided, consideration should always be given to their behaviour in extreme events greater than those for which they are designed and information should be provided on the consideration given to minimising risks to life in such circumstances.*