

Development and Flood Risk Topic Paper

September 2024



Portsmouth
CITY COUNCIL

1 Introduction

1.1 Purpose and scope of this paper

- 1.1.1 This topic paper has been prepared to support the Portsmouth Pre-submission Local Plan. It seeks to link the evidence on flooding, including the Strategic Flood Risk Assessment Levels 1 and 2 and the Sequential and Exception test, to the Portsmouth Local Plan policies.
- 1.1.2 Portsmouth is the UK's only island City. Whilst this brings an array of benefits with its historic waterfront and popular beach, it does mean that the City is significantly constrained, especially when it comes to growth.
- 1.1.3 The City Council acknowledges the risk and that any danger to people and property from flooding must be minimised. This paper sets out how the City Council is approaching flood risk within the new Local Plan. This topic paper brings together the available evidence relating to flooding and drainage for the Portsmouth Local Plan 2040. It sets out how set out how this evidence has been used to inform Policy PLP31 (Flooding) and PLP32 (Sustainable Drainage Systems) of the Portsmouth Local Plan 2040.
- 1.1.4 This paper begins by setting out the national, sub-regional and local context of assessing flood risk (section 2), and then discusses the Strategic Flood Risk Assessment (SFRA) (Level 1) (section 3) including the overarching policy recommendations. Section 4 explains how the SFRA Level 1 informed the sequential test supporting the strategic and allocated sites. Section 5 explains the SFRA Level 2 and how the recommendations were transposed into Policy. Section 6 sets out how this informed the exception test supporting the Local Plan. Finally, section 7 sets out some conclusions based on the available evidence.
- 1.1.5 Portsmouth Geographical Context Portsmouth has a shoreline with a total length of 44 km. The City Council is directly responsible for 23 km of Portsmouth's coastline with the remainder in private ownership, predominantly owned by the Ministry of Defence. The open coast (8 km) is the southern and most exposed shoreline of Portsea Island. Portsmouth is low lying with the majority of Portsea Island being less than 10m above sea level.
- 1.1.6 Portsmouth is a City that is exposed to significant degrees of flood risk with large areas to the south of the island and to the north, including the mainland, falling within flood zones 2 and 3, (areas most at risk of extreme flood events). This flood risk is expected to grow with the accompanying sea level rise brought about by future projected climate change.
- 1.1.7 Portsmouth is also the only City in the UK with a population density greater than that of London. The City is significantly compact and there are very few vacant sites or opportunity areas within the administrative boundary that could deliver significant levels of growth to meet housing need as calculated by the standard methodology.

2 National, sub-regional and local policy context

2.1 National Planning Policy Framework

- 2.1.1 The National Planning Policy Framework (NPPF) was last revised in December 2023. It sets out the approach to flood risk within paragraphs 165-175.
- 2.1.2 Paragraph 165 of the NPPF states "Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere."
- 2.1.3 Paragraph 166 states "Strategic policies should be informed by a strategic flood risk assessment, and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards."
- 2.1.4 Paragraph 167 states "All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property."

2.2 Sub-Regional Work

- 2.2.1 AECOM were commissioned by Portsmouth City Council (PCC) on behalf of ten planning authorities in South Hampshire (the 'Partnership for South Hampshire' (PfSH)) to prepare an updated Strategic Flood Risk Assessment (SFRA). The PfSH SFRA covers the administrative areas of Portsmouth City, Havant Borough, Gosport Borough, Fareham Borough, Eastleigh Borough, Southampton City, Winchester City, Test Valley Borough and New Forest District including the New Forest National Park.
- 2.2.2 The PfSH SFRA has been prepared in line with the requirements of the National Planning Policy Framework (NPPF), supporting Planning Practice Guidance (PPG) and Environment Agency guidance 'How to prepare a Strategic Flood Risk Assessment'.

2.3 Existing Development Plan

- 2.3.1 The current planning policy framework for Portsmouth consists of The Portsmouth Plan (2012); a number of saved policies from the Portsmouth City Local Plan (2006); the Milton Neighbourhood Plan (adopted 2022) for that part of the City in the ward of Milton; Somerstown and North Southsea Area Action Plan (adopted 2012); Southsea Town Centre Area Action Plan (adopted 2007); and the Hampshire Minerals and Waste Plan (adopted 2013).
- 2.3.2 Objective 4 of The Portsmouth Plan (2012) is "to make Portsmouth a City in which everyone feels and is safe".

- 2.3.3 This objective mainly addresses the issue of flood risk and also that of improving the quality of the urban environment. The objective will be achieved by:
- Reducing flood risk in the City by improving flood defences, promoting development in lower risk flood areas first, ensuring that the siting, design and layout of developments mitigate against flooding and implementing sustainable drainage systems (Portsmouth Plan 2012- Objective 4).
- 2.3.4 The key delivery policy for ensuring development is safe against flood risk is Policy PCS12 (Flood risk).

3 Strategic Flood Risk Assessment Level 1

3.1 Background

- 3.1.1 As stated in section 2, an SFRA Level 1 was prepared by AECOM on behalf of ten authorities. Part 5 of the SFRA Level 1 focusses on the flood risk posed to Portsmouth with recommendations made throughout for Portsmouth CC to consider when developing the Local Plan, drafting strategic policies and establishing requirements for development management.
- 3.1.2 All recommendations included within the document have been assessed, and where required, have been included within planning policy.

3.2 SFRA Level 1 Recommendations

- 3.2.1 Table 1 (below) sets out each recommendation that was put forward within the SFRA Level 1 and how this evidence has been used to inform policy.

Recommendation within SFRA Level 1	Portsmouth City Councils response/action
Recommendation 1: It is recommended that Portsmouth CC use the High Probability flood extent in the Risk of Flooding from Surface Water mapping (Appendix A Figure 3) to delineate fluvial Flood Zone 3b Functional Floodplain for these watercourses. The Low Probability flood extent should be used as an indication of areas that will experience surface water flooding in the future because of climate change.	As there is no river modelling for Portsmouth's watercourses, this was not included within the map. This recommendation was as an alternative approach to that taken. These areas are very unlikely to be promoted for development and therefore, this recommendation was not taken forward.
Policy Recommendation 2: Safeguard land for flood defence maintenance and future upgrades within: Reach 1 – 3 and Flood Cell 1 – 7. Safeguard an adequate undeveloped buffer strip alongside tidal flood defence structures to allow future management and maintenance of flood defence structures. Developers and applicants should engage effectively to ensure an appropriate buffer is provided. Each case will be assessed on its own merits taking into consideration site characteristics and the management measures in place. Development adjacent to the coastal frontage should facilitate the delivery of improvements to and maintenance of flood defences, through site design and financial contribution.	This policy recommendation was originally drafted with a specific development set back requirement of 16m from flood defences. This is not possible within Portsmouth given the limited land availability and the fact that some existing development falls within this buffer. It was decided that the setback would be determined on a case-by-case bases following robust evidence. The EA confirmed they were content with this approach. This recommendation was translated into Policy PLP31, criterion (1e)
Policy Recommendation 3: Safeguard an adequate undeveloped buffer strip alongside fluvial and tidal Main Rivers or flood defence structures and prioritise riverside restoration. Policy Recommendation 4: Safeguard an undeveloped buffer strip alongside ordinary watercourses for maintenance purposes. Developers should prioritise riverside restoration as part of development adjacent to ordinary watercourses.	Recommendations 3 and 4 focus on the protection of main rivers and ordinary water courses (streams, ditched, drains, cuts etc). In particular, ensuring there is an adequate buffer strip to allow for maintenance and restoration. The SFRA identifies two main rivers (Great Salterns Drain in the eastern part of Portsea Island, and Farlington Marshes Gutter which drains Farlington Marshes and notable property to the north of the railway line to the Langstone harbour). The location of these does not allow for any development within close proximity and therefore, the watercourses are protected by other policies and designations within the Local Plan. The Surface Water Management Plan (SWMP) notes that there are no ordinary watercourses apart from widespread short lengths of land drains and ditches, which do not have any known history of residential flooding, however flooding of the golf course has occurred from smaller ditches.

Recommendation within SFRA Level 1	Portsmouth City Councils response/action
	Despite there being no significant risk of development in the proximity of main rivers and ordinary watercourses. Criterion 1e of Policy PLP31 refers to the protection of land for future flood defences, flood risk management or maintenance of any watercourse, and does not just address coastal flooding.
Policy Recommendation 5: Where development is planned in urban areas, opportunities for de culverting watercourse sections should be sought to bolster local channel capacity and conveyance.	Although the land on which there are culverts in Portsmouth are not prime development locations, this recommendation was included within policy to ensure robustness. In the case of development occurring within the location of a culvert, it would be significantly easier to maintain an open ditch than a buried pipe. This recommendation is therefore transposed into Policy PLP31, criterion 4.
Policy Recommendation 6: Portsmouth CC should appraise the options for creating flood storage areas on the eastern side of Portsea Island and in the Farlington area. Policy Recommendation 7: Where proposed development results in a change in building footprint, land raising, or other structures, that impact upon the ability of the fluvial floodplain to store water, floodplain compensation must be provided on a level for level, volume for volume basis on land which does not already flood and is within the site boundary.	Flood Storage Areas (FSAs) are natural or man-made areas that temporarily fill with water during periods of high river level, retaining a volume of water which is released back into the watercourse after the peak river flows have passed. The overarching aim of these recommendations is to ensure that following development, there is no increase to flood risk elsewhere. As stated above, development potential is very limited in close proximity to rivers. In the unlikely circumstance that development does occur within these locations, Policy criterion 1f of policy PLP31 requires development not to result in the increase of flood risk elsewhere and where possible will reduce the overall level of flood risk.
Policy Recommendation 8: Seek opportunities to implement natural flood management techniques in the administrative area such as the planting of riparian woodland and wider catchment woodland, to attenuate surface water runoff and groundwater recharge, both in, and preferably upstream of areas that contain vulnerable receptors at risk of groundwater, surface water, or fluvial flooding. There is potential for riparian woodland at Farlington Marshes, on the shoreline at Hilsea Bastion Gardens, and around Great Salterns Lake. There is also potential for wider catchment woodland to be created at Great Salterns Recreation Ground, Tangier Park, and Milton Common.	PCC support this recommendation and have reflected that in Policy PLP31, criterion 3. <i>"Opportunities should be sought to implement natural flood management techniques to attenuate surface water runoff and groundwater discharge."</i>

Recommendation within SFRA Level 1	Portsmouth City Councils response/action
Policy Recommendation 9: Maximise the flood attenuation benefits conferred by its existing GI features in Farlington, Horsea Island, Hilsea (Alexandra Park), Southsea (Southsea Common), and on the eastern side of Portsea Island (Great Salterns Recreation Ground, Tangier Park, and Milton Common), through the enlargement of existing, and creation of new woodlands.	Many greenspaces within Portsmouth are protected and therefore will not be built on. Policies PLP45: Open Space and PLP46: Local Green Spaces seek to protect existing open space from development; to ensure that new open space provision is secured and to designate and protect Local Green Spaces which are considered 'demonstrably special' to the local community. Policy PLP41 (Trees and Hedgerows) seeks to maintain trees across the City and increase the City's tree canopy cover to meet the Council's tree charter of 30,000 new trees planted. If there are appropriate locations within the areas mentioned in the SFRA, these will be considered. Policies under PLP38 also look to enhance and conserve green infrastructure and the Green Grid.
Policy Recommendation 10: Strengthen the surface water runoff requirements for proposed developments in parts of the Portsmouth CC area that are at the greatest risk of surface water flooding in accordance with risk of flooding from surface water mapping (Appendix A Figure 3). In these locations it is recommended that Portsmouth CC set a requirement for a net reduction in surface water runoff rates for all developments.	This recommendation has been taken forward and included within Policy PLP32: Sustainable Drainage Systems (criterion 2). <i>"Development proposals in areas at risk of flooding from surface water will be permitted where the net surface run off is actively reduced when compared to pre-development levels."</i>
Policy Recommendation 11: In urban areas, encourage the use of permeable surfacing. Discourage the paving or covering of permeable surfaces with impermeable surfacing.	This recommendation has been taken forward and included within Policy PLP32 (criterion 3). The policy seeks to minimise the amount of hard landscaping in all applications. Due to Portsmouth being a heavily dense and urbanised City, the cumulative impact of even minor scale development could have a detrimental effect upon the level of surface water run-off.
Policy Recommendation 12: All new development should not adversely affect flood routing and thereby increase flood risk elsewhere. Opportunities should be sought within the site design to make space for water.	This recommendation focuses on development not increasing the risk of flood elsewhere in the City. This is covered by National Policy (NPPF Paragraph 173) and criterion 1(f) of Policy PLP31 of the Portsmouth Local Plan.
Policy Recommendation 13: New development should not result in an increased risk of groundwater flooding elsewhere. Where development is proposed that involves significant works below ground and/or changes to	Criterion 1(a) of policy PLP31 seeks to reduce the impact of all types of flooding within the City. Criterion 1(f) of Policy PLP31 (The development will not result in the increase of flood risk elsewhere and where possible will reduce the overall

Recommendation within SFRA Level 1	Portsmouth City Councils response/action
drainage, further assessment (for example through a Hydrogeological Risk Assessment (HRA)) may be required to determine the potential impact on groundwater and identify proposed mitigation measures.	level of flood risk) also covers all types of flood risk including groundwater flooding. The supporting text to the Policy (in particular criterion 5 which focusses on basement development) provides further detail on the supporting assessments that may be required including a Hydrogeological Risk Assessment. Habitable rooms underground are not permitted within Portsmouth
Recommendation 14: As part of their Sites Allocation process, Portsmouth CC should consult with Southern Water to determine any areas with sewer capacity issues. Redevelopment provides an opportunity to separate combined sewer systems and reduce the causes and impacts of flooding associated with sewer systems and local surface water runoff.	PCC have engaged with Southern Water throughout the production of the Regulation 19 policy and have a signed Statement of Common Ground setting out areas of agreement. The Infrastructure Delivery Plan also notes where improvements to the foul water network are required. PCC have taken on board Southern Water's Regulation 18 comments which have helped formulate Policy PLP31 and PLP32.
Recommendation 15: Portsmouth CC should review the flood risk information within this SFRA with their emergency planning team. Proposals for development that are likely to increase the number of people living or working in areas of flood risk require careful consideration, as they could increase the scale of any evacuation required. The tidal modelling shows that access routes off Portsea Island that are dry or Low hazard are available for the design event (0.5% AEP) for the year 2055, but not available during the design flood event (0.5% AEP) for the year 2122. (It is noted that this may change when the flood defence schemes at Eastern Road, Kendall's Wharf and Ports Creek are completed). Further discussion of safe access is included in Section 7.5.	PCC have engaged with their emergency planning team throughout the production of the SFRA Level 1 and 2. Comments from the emergency planning team have been incorporated where necessary. The SFRA Level 2 expands on the access point. Coastal Partners have confirmed that the North Portsea Island Scheme delivers a 1/500 year standard of protection for 100 years. This provides protection to an extreme flood event for a long period of time. In planning terms, the expectation for developers is to mitigate against the 1/200 year event. So there is a better standard in place here. When the scheme is fully complete in 2026, this will protect the Eastern Road access and also the A3.
Policy Recommendation 16: Apply a sequential approach to site planning.	This is outlined in National Planning Guidance and has been applied in Policy PLP31 and its supporting evidence base.
Policy Recommendation 17: Location of development must take into account the vulnerability of users.	Portsmouth's sequential and exception test takes into account the vulnerability classification of development. Those which are considered more vulnerable and at risk of flooding are taken forward to the exception test.

Recommendation within SFRA Level 1	Portsmouth City Councils response/action
Policy Recommendation 18: All development within Flood Zones 2 and 3 should set finished floor levels above the design flood level (0.5% AEP) including an appropriate allowance for climate change and freeboard. More Vulnerable and Highly Vulnerable development should apply the upper end climate change allowance. Less Vulnerable development should apply the higher central climate change allowance. Policy Recommendation 19: New development must have safe access / escape during the design flood (0.5% AEP) including an appropriate allowance for climate change. More Vulnerable and Highly Vulnerable development should apply the upper end climate change allowance. Less Vulnerable development should apply the higher central climate change allowance. Policy Recommendation 20: New development must be designed to include a place of safety during extreme flood conditions (0.1% AEP) including an allowance for climate change. Policy Recommendation 21: For all development proposed in Flood Zone 2 or 3, an Emergency Plan should be prepared by developers to demonstrate what actions site users will take before, during and after a flood event to ensure their safety, and to demonstrate that their development will not impact on the ability of the local authority and the emergency services to safeguard the current population. For sites in Flood Zone 1 with access routes affected by flooding, it may also be necessary to prepare an Emergency Plan.	Policy criterion 1(j) and (k) of Policy PLP31 address the need to deliver appropriate finished floor levels; access/escape routes; places of safety and emergency planning. The policy refers applicants to the SFRA Level 1 and 2 to seek more detail where it is required.
Policy Recommendation 22: Where development or redevelopment is proposed in areas at risk of flooding, flood resilience measures should be implemented.	This recommendation is covered by Policy PLP31 (1g):

Recommendation within SFRA Level 1	Portsmouth City Councils response/action
	<i>Appropriate flood prevention, protection and resilience measures necessary and appropriate to specific requirements of the proposal site and any other areas potentially impacted by the proposed development have been sensitively incorporated. These will be maintained for the lifetime of the development. Flood management and mitigation measures should be informed by the PfSH SFRA Level 1 and Portsmouth SFRA Level 2;</i>
Policy Recommendation 23: It is recommended that Portsmouth CC incorporate expectations for future development with respect to flood risk into any emerging local design codes. The local design code would need to accord with the National Model Design Code (parts 1 and 2) requirements on water and drainage and follow the approach to flood risk management set out in PPG paragraphs 003 and 004 (Assess, Avoid, Control, Mitigate, Manage), ensuring all development will be appropriately flood resistant and resilient, with reference to the CIRIA Property Flood Resilience Code of Practice. The local design code should be prepared with input from the Environment Agency and Portsmouth CC in their capacity as the LLFA.	PCC are yet to deliver design codes, however, these will cover flood risk when delivered.

Table 1: How each recommendation within the PfSH Level 1 SFRA has been taken into consideration within the Portsmouth Local Plan 2040.

3.3 Flood Zone 3b

3.3.1 Following discussion with the Environment Agency it was determined that there would be no land defined as Flood Zone 3b within Portsmouth. The SFRA Level 1 (paragraphs 3.2.11- 3.2.14) states the following:

The Functional Floodplain is defined in the NPPF as 'land where water from rivers or the sea has to flow or be stored in times of flood'. The Functional Floodplain (also referred to as Flood Zone 3b), is not separately distinguished from Flood Zone 3a on the Flood Map for Planning. Rather the SFRA is the place where LPAs should identify areas of Functional Floodplain in discussion with the Environment Agency.

The PPG states that the identification of Functional Floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. With this caveat, as a starting point the Functional Floodplain will normally comprise land having a 3.3% AEP or greater annual probability of flooding (1 in 30 year), with existing flood risk management infrastructure operating effectively.

Portsmouth is largely protected from flooding from the sea during the 3.3% AEP event due to the presence of flood defences. Modelling of the 3.3% AEP event has been undertaken to identify areas at more frequent risk of flooding from the sea. (It is noted that this modelled scenario just applies the still water level and does not account for wave action). These areas are shown in Appendix A Figure 11 and include:

- *Northern part of Trafalgar Wharf.*
- *The northern part of Portsea Island, along Hilsea Moat and a small area to the east close to Buckby Lane. Flood defence improvement works are planned for Ports Creek (refer to Section 6.1) which are due for completion in 2025. Once these are in place, the north of Portsea Island will be protected during the 3.3% AEP event.*
- *Part of Portsmouth Point, Old Portsmouth.*
- *The northern coastline of Eastney Lake, adjacent to the Eastney and Milton Allotments and Milton Nature Reserve.*

Land is not needed to store tidal flood water given the proximity of the wider Solent. Therefore, a review of these areas has been undertaken in the light of these local circumstances and in agreement with the Environment Agency these areas will be included within the Flood Zone 3a definition and no Flood Zone 3b associated with the sea will be defined.

4 Strategic Flood Risk Assessment Level 2

4.1 Background

- 4.1.1 A Portsmouth specific SFRA Level 2 was prepared by AECOM to support the Local Plan. This assessed the flood risk posed to all sites (excluding Horsea Island Open Space due to there being no built development proposed here) allocated within the Local Plan due to the unique nature of Portsmouth and the flood risk it faces. Even those sites which were not located within a tidal flood zone were assessed to ensure, in the event of a flood (elsewhere in the City), development remained safe for occupants. The City is highly dense and compact and therefore, it is easy for there to be knock on effects of nearby flooding, including issues around access and escape.
- 4.1.2 All site-specific recommendations proposed within the document have been assessed, and where necessary, have been included within planning policy.

4.2 SFRA Level 2 Recommendations

- 4.2.1 Table 2 (below) sets out each recommendation that was put forward within the SFRA Level 2 and how the evidence was used to inform policy.

Recommendation	Strategic/allocated site and recommendation that applies	PCC Response
Recommendation 1 (Sequential Approach): A sequential approach to land use planning should be applied <i>within</i> the site. The most vulnerable aspects of the development (residential development) should be steered towards the areas of lowest risk unless there are overriding reasons to prefer a different location.	This recommendation applies to all strategic and allocated sites	PCC Response: All development should take a sequential approach to land use planning. Criterion C of policy PLP31 requires proposals to meet the sequential and exception test as set out in government policy and guidance. This is a strategic policy and it is not necessary to replicate this in each of the strategic site or allocation policies.
Policy Recommendation 2 (Control Measures): Various control measures could be considered for each site including: 1. Raising land levels above the design flood level for the More Vulnerable land uses and key infrastructure, e.g., residential zones and main roads within the developed area. 2. Providing raised (multi-functional) flood defences around the coastal perimeter (and where necessary to adjoining adjacent areas to prevent ‘back door’ flooding). 3. Providing set-back/secondary defences around sheltered water basins for Less Vulnerable land uses, e.g., commercial, marine employment or leisure related uses. 4. Future-proofing the coastal flood and erosion defences and drainage to allow for climate change impacts including sea-level rise, increased surge and wave severity and rainfall intensity. 5. Land raising to provide a safe access route to the site and for evacuation of people during extreme flood events	• Tipner West and Horsea Island East (1-4) • Tipner East (1-4) • Lakeside North Harbour (1&5) • St James and Langstone Campus (1&4) • Port Solent (1, 4 and 5) • Fraser Range (1, 4 and 5)	PCC Response: Criterion 1g of policy PLP31 states the following: <i>Appropriate flood prevention, protection and resilience measures necessary and appropriate to specific requirements of the proposal site and any other areas potentially impacted by the proposed development have been sensitively incorporated. These will be maintained for the lifetime of the development. Flood management and mitigation measures should be informed by the PfSH SFRA Level 1 and Portsmouth SFRA Level 2;</i> The supporting text to this policy criterion states: <i>It is appreciated that it may not always be possible to locate development outside areas at risk from flooding in Portsmouth. If this is the case, it is still important for applicants to seek opportunities and measures to reduce the causes and impacts of flooding. Management opportunities to control flood risk should be sought to reduce the overall level of flood risk in the application site and beyond. These should be sensitively incorporated taking into consideration the character, landscape and biodiversity of the area.</i>

Recommendation	Strategic/allocated site and recommendation that applies	PCC Response
		Where necessary, specific wording has been included within site specific policies for strategic and allocated sites.
Policy Recommendation 3 (Wave Overtopping): Once the proposed development design is known, including proposed land raising and/or flood defences, detailed site specific wave overtopping calculations will need to be undertaken along with a suitable calculation for appropriate freeboard that accounts for uncertainty. Measures will need to be identified to contain and discharge water from overtopping whilst keeping people safe, in addition to surface water which may be subject to tide locking during high tides.	• Tipner West and Horsea Island East • Tipner East • St James and Langstone Campus • Fraser Range	PCC response Criterion 1(b) of policy PLP31 (flooding) states: <i>Development proposals will be permitted where they are accompanied by a site specific Flood Risk Assessment where required by national policy that is informed by the PfSH SFRA Level 1 and Portsmouth SFRA Level 2.</i> Any site-specific flood risk assessment is therefore expected to undertake wave overtopping calculations.
Policy Recommendation 5 (Finished Floor Levels): Finished floor levels should be set above the design flood level (0.5% AEP including an appropriate allowance for climate change) plus freeboard. More Vulnerable and Highly Vulnerable development should apply the upper end climate change allowance. Less Vulnerable development should apply the higher central climate change allowance.	• Tipner West and Horsea Island East • Tipner East • Lakeside North Harbour • City Centre • St James • Port Solent • St John's College • Fraser Range • The News Centre	PCC response Criterion 1(j) of policy PLP31 (Flooding) states: <i>Development proposals will be permitted where appropriate safety measures have been taken in accordance with the SFRA Level 1 and 2 specifically in relation to finished floor levels, access/escape routes, places of safety and emergency planning;</i>
Policy Recommendation 6 (Access and Escape): New development must have safe access / escape during the design flood (0.5% AEP) including an appropriate allowance for climate change. The order of preference is as follows, there must be robust evidence to show that all effort has been made to provide the most preferred option:	• Tipner West and Horsea Island East • Tipner East • Lakeside North Harbour • City Centre • Fratton Park & the Pompey Centre	PCC response Criterion 1(j) of policy PLP31 (Flooding) states: <i>Development proposals will be permitted where appropriate safety measures have been taken in accordance with the SFRA Level 1 and 2 specifically in relation to finished floor levels, access/escape routes, places of safety and emergency planning;</i>

Recommendation	Strategic/allocated site and recommendation that applies	PCC Response
1) Safe dry route for people and vehicles. 2) Safe dry routes for people. 3) Route for people where flood hazard is low. 4) Route for emergency vehicles where flood hazard is low.	• St James • Port Solent • St John's College • Fraser Range • The News Centre • Somers Orchard	
Policy Recommendation 6 cont. (Access and Escape): The access routes to the site are shown to have Significant hazard rating during the design event (0.5% AEP including climate change). Without safe access routes, development at Port Solent would have to rely on evacuation of occupants prior to the onset of flooding, or the use of places of safety within the development. This approach to deliver safe development will need to be discussed and agreed with PCC as the LPA to determine whether development on this site can pass the Exception Test. Otherwise improvements to the access route will need to be provided.	• Horsea Island East • Port Solent • St John's College • Fraser Range	PCC response Criterion 1(j) of policy PLP31 (Flooding) states: <i>Development proposals will be permitted where appropriate safety measures have been taken in accordance with the SFRA Level 1 and 2 specifically in relation to finished floor levels, access/escape routes, places of safety and emergency planning;</i> Criterion 1(k) states: <i>Robust evidence must show that all efforts have been made to deliver safe access and egress routes on sites at risk of flooding. Where truly exceptional circumstances dictate this not to be feasible, it must be clearly detailed in a site specific FRA how the risks of flooding can be safely managed. Information on duration, hazard and frequency of flooding must be provided for the development lifetime.</i>
Policy Recommendation 8 (Place of Safety): New development must be designed to include a place of safety during extreme flood conditions (0.1% AEP) including an allowance for climate change. Tidal flooding occurs during exceptionally high tides or storm surges. As a result, there is advance warning of such events. The Environment Agency aim to provide a minimum 6 hours warning time for	• Tipner West and Horsea Island East • Tipner East • Lakeside North Harbour • City Centre • St James & Langstone Campus • Port Solent	PCC response Criterion 1(j) of policy PLP31 (Flooding) states: <i>Development proposals will be permitted where appropriate safety measures have been taken in accordance with the SFRA Level 1 and 2 specifically in relation to finished floor levels, access/escape routes, places of safety and emergency planning;</i>

Recommendation	Strategic/allocated site and recommendation that applies	PCC Response
tidal flooding. As a result, it would be possible to evacuate properties prior to any significant tidal flooding taking place. However, places of safety play an important role where, for whatever reason, evacuation in advance of flooding is not achieved, or in cases where flooding occurs because of a failure (e.g., breach) in the flood defences. Places of safety should be designed to facilitate rescue in case emergency care is needed or if it's unlikely to be safe for occupants/users to wait until flood waters have receded sufficiently.	• St John's College • Fraser Range • The News Centre	
Policy Recommendation 9 (Emergency Plans): Developers must prepare Emergency Plans for occupants of the sites to set out the response in the event of a flooding warning with respect to safe access routes and places of safety. Emergency Plans should be agreed with Portsmouth CC and key emergency services.	• Tipner West and Horsea Island East • Tipner East • Lakeside North Harbour • City Centre • St James & Langstone Campus • Port Solent • St John's College • Fraser Range • The News Centre • Somers Orchard	PCC response Criterion 1(j) of policy PLP31 (Flooding) states: <i>Development proposals will be permitted where appropriate safety measures have been taken in accordance with the SFRA Level 1 and 2 specifically in relation to finished floor levels, access/escape routes, places of safety and emergency planning;</i>
Policy Recommendation 10 (Surface Water Management): Proposals should deliver in a net reduction in surface water runoff rates; demonstrate sustainable approaches to the management of surface water making use of SuDS; and incorporate soft landscaping, planting, and permeable surfacing. Due to the condition of the combined sewer	• City Centre • Fratton Park & the Pompey Centre • St John's College • The News Centre • Somers Orchard	PCC response Due to the importance of surface water flooding within Portsmouth, the Regulation 19 plan includes a separate policy on Sustainable Drainage Systems (PLP32). The SFRA Level 2 recommends that those sites inland (and at risk of

Recommendation	Strategic/allocated site and recommendation that applies	PCC Response
system, a betterment of surface run off should be delivered and no net increase in surface water entering the combined system as a minimum.		surface water flooding) should deliver a net reduction in surface water run off rates due to the condition of the combined system. The SFRA Level 2 assumes the remaining sites located adjacent to the sea can dispose of excess run-off into the adjacent waterbody.
Policy Recommendation 10 cont. (Surface Water Management): New development should discharge runoff to the sea following suitable treatment. Proposals for surface water management should make provision for storage during high tide events, when the surface water drainage may be subject to tide locking.	• Tipner West and Horsea Island East • Tipner East • Lakeside • St James and Langstone Campus • Port Solent • Fraser Range	This has been reflected in Policy Criterion 1 of Policy PLP32 which states: <i>Development proposals will be permitted where they ensure the surface run-off rates from the proposed development do not exceed the existing surface run-off rates, with betterment preferred. This is a requirement for all sites within the Local Plan.</i>
Policy Recommendation 10 cont. (Surface Water Management): A joined-up approach to surface water management across the allocation is advised. This should involve delivery of integrated surface water management infrastructure to serve the whole strategic area, rather than piecemeal delivery for individual development sites within the area.	• Lakeside • City Centre • Fratton Park & the Pompey Centre • St James and Langstone Campus • Port Solent	Criterion 5(c) of Policy PLP32 states: <i>Surface water will be separated from foul water flows within the site or it may be discharged into the sea, a watercourse or surface water sewer. If all options have been robustly demonstrated not to be possible, the post development rate of discharge of surface water to the combined system should be no greater than the existing rate. Surface water connections to the foul sewer system will not be accepted.</i> This criterion requires development to follow the drainage hierarchy and discharge run off into the sea Criterion 5(f) of Policy PLP32 requires a joined up approach to sustainable drainage to be taken across all sites.
Policy Recommendation 11 (Groundwater flooding): New development should not result in an increased risk of groundwater flooding elsewhere.	This recommendation applies to all strategic and allocated sites	PCC response Criterion 1(a) of policy PLP31 seeks to reduce the impact of all types of flooding within the City. Criterion 1(f) of Policy PLP31 (The development will not result in the

Recommendation	Strategic/allocated site and recommendation that applies	PCC Response
		increase of flood risk elsewhere and where possible will reduce the overall level of flood risk) also covers all types of flood risk including groundwater flooding. The supporting text to the Policy (in particular criterion 5 which focusses on basement development) provides further detail on the supporting assessments that may be required including a Hydrogeological Risk Assessment. Habitable rooms underground are not permitted within Portsmouth

Table 2: How each recommendation within the Level 2 SFRA has been taken into consideration within the Portsmouth Local Plan 2040.

5 Sequential and Exception Test

5.1 Background

- 5.1.1 Portsmouth City Council have published a Sequential and Exception Test as part of the Core Document Library to support the Pre-submission Local Plan. This document was informed by both the SFRA Levels 1 and 2 and assesses each strategic site and site allocation against flood risk.
- 5.1.2 The document assesses the extent of each strategic and allocated site that is located within Flood Zones 2 and 3. Those which are entirely within Flood Zone 1 or were allocated for a less vulnerable/water compatible use did not progress to the exception test. Despite this, all sites (excluding Horsea Island East) were assessed as part of the SFRA Level 2 due to the risk of flooding posed to Portsmouth. This provided a robust approach to assessing flood risk.
- 5.1.3 All sites assessed as part of the exception test were considered to pass both Parts A and B and therefore considered appropriate to allocate within the Local Plan. It is vital that the Plan includes all these sites. Even with allocating sites located within Flood Zones 2 and 3, Portsmouth still does not meet its housing need, as defined by the Standard Methodology, in full.
- 5.1.4 There are no alternative sites within Portsmouth that could deliver the quantum of development of Strategic and Allocated sites that have not already been included within the housing need calculation (including identified sites)
- 5.1.5 Portsmouth is in a unique position whereby all deliverable and developable sites have been considered and included as part of the housing supply. Even with all these sites, Portsmouth still does not meet its housing need in full. This signifies the importance and need to allocate sites within areas at risk of flooding.