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# Assessment of planning applications: Flood risk

## Emergency planning considerations

AGMA
ASSOCIATION OF GREATER MANCHESTER AUTHORITIES

**Civil Contingencies & Resilience Unit**

# Purpose

The purpose of this document is to identify emergency management considerations for Local Planning Authorities when assessing relevant planning applications. Reference should be made to these considerations by Local Planning Authorities where the NPPF, relevant guidance or partners such as the Environment Agency recommend that advice is sought from emergency planners. The advice is intended to be considered when applications are required to pass both the sequential and exception tests based on the type of development and the flood risk category attached to the proposed development site.

Planning Officers may find these considerations helpful to:

- Inform the attachment of any conditions to the planning permission
- Determining whether a condition attached to an approved planning application has been met.

These considerations will also be used by the AGMA Civil Contingencies and Resilience Unit (CCRU) if consulted on a planning application.

# NPPF considerations

The following table is an extract from the NPPF technical guidance and shows the types of proposed developments where the **exception test** is required. Each category of development is defined further within the technical guidance.

| Flood zones | **Essential infrastructure** | **Water Compatible** | **Highly vulnerable** | **More vulnerable** | **Less vulnerable** |
|---|---|---|---|---|---|
| **Zone 1** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Zone 2** | ✓ | ✓ | **Exception Test required** | ✓ | ✓ |
| **Zone 3a** | **Exception Test required** | ✓ | ✗ | **Exception Test required** | ✓ |
| **Zone 3b** | **Exception Test required** | ✓ | ✗ | ✗ | ✗ |

**Key:**

| | | | |
|---|---|---|---|
| ✓ | **Development is appropriate** | ✗ | **Development should not be permitted** |

Note, this table does not show:

- The application of the Sequential Test which guides development to Flood Zone 1 first, then Zone 2, and then Zone 3

- flood risk assessment requirements; or
- The policy aims for each flood zone.

Paragraphs 102 and 103 from the NPPF provide further detail about the requirements of the exception test

***102:*** ….for the Exception Test to be passed:

- it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been prepared; and

- a site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

***103:*** When determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where, informed by a site-specific flood risk assessment following the Sequential Test, and if required the Exception Test, it can be demonstrated that:

- within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and

- development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and it gives priority to the use of sustainable drainage systems.

# Scope

The 2004 Civil Contingencies Act defines an emergency as:

***"An event or situation which threatens serious damage to human welfare in a place in the UK, the environment of a place in the UK, or war or terrorism which threatens serious damage to the security of the UK. "***

This advice will therefore focus on

- Considerations that will improve the management of imminent or actual flood emergencies by occupiers or emergency responders.
- Measures that can be implemented during the construction of a development and will provide benefits for the life of the development in the event of an emergency - the rationale being that developers will have no ongoing role in emergency planning or management once they have completed the development and occupiers move in.

The following table summarizes the scope of the advice.

| Scope consideration | | Rationale for consideration at the planning stage |
|---|---|---|
| ✓ | Measures that can be implemented by developers during the construction of new developments in relation to other in scope items. | • Consideration at the planning stage will ensure that measures to improve the management of flood emergencies are built into the development during construction and provide benefits for the life of the development. |
| ✓ | Protection of life in the event of an imminent or actual flood emergency. | • Emergencies Responders have a duty to protect life. One way to achieve this is to encourage individuals and communities to consider how they can protect themselves in emergency situations. |
| ✓ | Protection of vulnerable people in the event of an imminent or actual flood emergency. | • A duty for emergency responders. Vulnerable people may be subject to a increased risk of death or injury in emergency situations. Consideration of the design of buildings for certain occupier groups could reduce the risk of harm to vulnerable people. |
| ✓ | Resilience of essential infrastructure in the event of an imminent or actual flood emergency. | • The failure of essential infrastructure can result in a short or long term impact on human welfare. A measure of resilience can be designed in to reduce the risk of this happening. |
| ✓ | Measures that support the minimization of environmental damage in a flood emergency. | • A duty for emergency responders. Responders also need to ensure that environmental damage arising from their own activities is risk assessed and managed. |
| ✗ | Measures to prevent flooding of developments constructed in flood risk zones. | • Flood prevention measures are important design considerations as they can enable occupiers to move back into developments more quickly following a flood emergency. It is preferable to implement prevention measures over emergency management measures where it is cost effective to do so.<br>• Emergency planning advice relates to “last resort” measures to protect the public, environment and essential infrastructure when flooding is imminent or has occurred. |
| ✗ | Ongoing measures that may be required to manage flood risk once construction of the development is complete. | • Developers do not have an obligation to support the ongoing management of flood risk once they have completed a development.<br>• However it should be remembered that Local Authorities have ongoing obligations to warn and inform the public and businesses in respect of emergency risks and responding to emergencies. Local Authorities also lead recovery activities arising from civil emergencies. Approval of certain developments may have an ongoing and/or significant impact on these obligations. |

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| ✗ | Approval of planning applications | • Emergency responders do not have a governance role in respect of approving planning applications. This advice is intended to provide generic guidance for planners considering applications. Decisions regarding measures for developers to implement should be made on a case by case basis having considered all the issues arising in the exception test. |
| ✗ | Provision of advice directly to developers or their agents. | • The responsibility to attach planning conditions and assess whether they have been met rests with planning officers, therefore it would be inappropriate for emergency planners to provide advice direct to applicants. |

# Maps

In Greater Manchester, emergency responders collaborate to produce borough multi agency flood plans which set out the triggers for action and roles and responsibilities of each service and agency in the event of an imminent or actual flood emergency. It would be helpful to emergency responders if developers included maps of developments detailing the following information as part of their Flood Risk Assessments (FRAs). Copies of these maps can be supplied by LAs to GMFRS who will retain them for reference in flood emergency situations.

**Mapping items:**

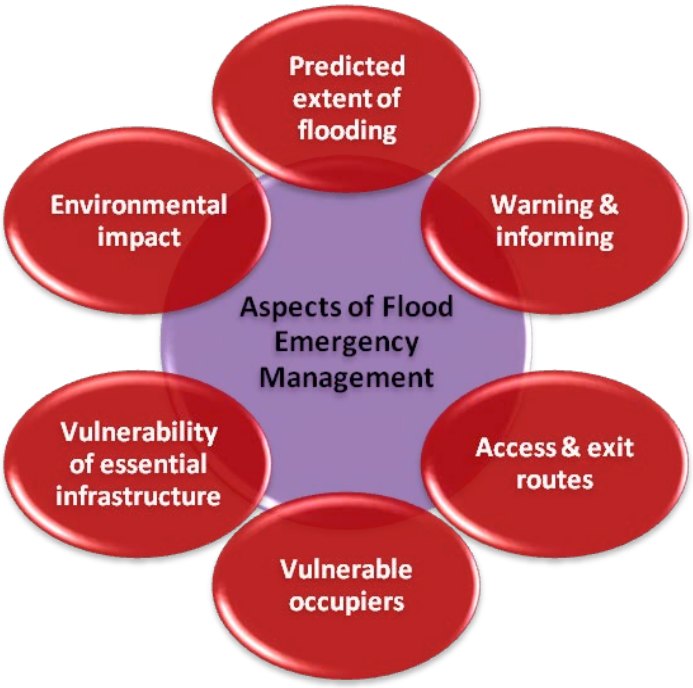
- Building and road layout of development.
- Location and use of all sites that have required the exception test to be passed during the assessment of the application.
- Predicted area of impact of flooding (indicating the source of data used for modelling)
- Designated access and exit routes, including the identification of hazards on these routes such as voids and service covers.
- Location of sumps behind flood defences to facilitate the pumping of flood water
- Potential locations where flood water could be pumped to.
- Routing of utilities supplies
- Other items that could pose a hazard or would be useful for emergency responders to know in the event of a flood emergency.

Maps should use the current Government map symbology which can be downloaded at:

***https://www.gov.uk/government/publications/emergency-responder-interoperability-common-map-symbols***

# Emergency considerations

The following aspects of flood emergency management are relevant when assessing planning applications and will be considered by the AGMA CCRU if consulted on a planning application.




These considerations will ensure that the public have information on how to prepare for and remain safe in flood emergency situations and minimize the consequential loss of key infrastructure.

Developers should be able to address how the design of their development will mitigate the flood risk in the FRAs submitted as part of the planning application. The purpose of an FRA is 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 following tables identify a number of generic considerations within each aspect of flood emergency management where developers may be able to directly or indirectly contribute to reducing the impact of such an event.

These considerations should not be viewed in isolation but as part of an overall assessment of a reasonable contribution by the developer in mitigating the impact of a flood emergency.

| **Predicted extent of flooding** | | |
|---|---|---|
| **Consideration** | **Assessment standards or rationale** | **Recommendations to consider** |
| Does the FRA include an assessment of "danger to people" based on anticipated flood depth and velocity? | The baseline for the assessment is that all planned prevention measures are implemented.<br><br>It may be sensible to consider a number of different flood scenarios eg a 1/100 year event, a 1/1000 year event.<br><br>It may also be appropriate to consider different forms of flooding eg reservoir inundation. | If not, consider recommending a "Danger to People" assessment is carried out |
| How was the "reasonable worst case" outcome classified? | Outcome classifications:<br>• **Danger for some** – includes children, the elderly and the infirm.<br>• **Danger for most** – includes the general public<br>• **Danger for all** – includes emergency services | ***Further advice available from DEFRA Publication: Flood risk assessment guidance for new development R&D technical report FD2320/TR2" -section on safe access and exit (P114)*** |

| Warning & informing | | |
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| **Consideration** | **Assessment standards or rationale** | **Recommendations to consider** |
| Is the site of the proposed development covered by the EA Flood Warning Direct service? | If the Flood Warning Direct service is not operational for the area of the development then there is effectively no warning of imminent river water flooding to the development. | • Developer to discuss provision of flood warnings for the development with the Environment Agency (EA)<br>• Can the developer fund any kind of flood warning system for the development?<br>• Is there any benefit to the developer encouraging occupiers to register for flood warnings for a nearby location? |
| If so, how many hours' notice is this service likely to provide for occupiers of the proposed development in the event of an imminent flood? | Is this sufficient time for non-essential, non-vulnerable occupiers of the development to evacuate or move to a place of safety within the development when warned of a flood? | |
| What measures has the developer considered or committed to undertake to improve flood warning and informing for occupiers? | Measures can either:<br>• Increase the warning time of a flood<br>• Ensure occupiers can take steps to ensure their own safety more quickly | • Steps to promote personal & community preparedness by the initial occupiers of the development.<br>• Steps to encourage sign up toEA flood alerts by initial occupiers of the development.<br>• Investigate joint initiatives with the EA to increase flood warning times eg provision of gauges for flood warden schemes<br><br>***Further advice available from Greater Manchester prepared website & leaflets, EA website & leaflets*** |
| What steps will the developer undertake to ensure occupiers have an understanding of the flood risk they face? | Are occupiers prepared to accept the flood emergency risks posed for the specific type of development? eg caravan sites | • Requiring developers to provide advice or financial support to initial occupiers to create and implement community resilience plans.<br><br>***Further advice available from DEFRA publication: Flood risk at camp sites*** |

| **Access & Exit routes** | | |
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| **Consideration** | **Assessment standards or rationale** | **Recommendations to consider** |
| Has the developer clearly identified access and exit routes that can be considered safe or be made safe for **vehicles** if the proposed development or surrounding area floods?<br><br>How many routes have been identified? | • The route should remain safe and dry when the surrounding area floods - the public should avoid driving vehicles in flood water.<br>• Vehicles should not be used when the presence of water stops the engine functioning, the vehicle may float or become difficult to control. This can happen in depths as shallow as 0.5m<br>• The route should be connected to part of the main road network which is predicted to remain dry and have the capacity to handle the anticipated traffic flows. | • Confirm the extent to which the FRA satisfies these standards for a 1% and 0.1% AEP event.<br>• Raising of ground levels to ensure safe exit and access whilst ensuring no obstruction to flood flow routes and no loss of flood storage capacity.<br>• Water channelling in layout of road network and the effect of dropped kerbs<br><br>***Further advice available from DEFRA Publication: Flood risk assessment guidance for new development R&D technical report FD2320/TR2" -section on safe access and exit (P114)*** |
| Has the developer clearly identified access and exit routes that can be considered safe or be made safe for **people** if the development or surrounding area floods?<br><br>How many routes have been identified? | • The route should be safe for use without the intervention of the emergency services.<br>• The anticipated depth and velocity of floodwater should not pose a risk to people.<br>• There should be no underwater hazards to people - voids, lifted service covers, pollution, exposure to electricity<br>• The route should lead to a place of safety or shelter | • Confirm the extent to which the FRA satisfies these standards for a 1% and 0.1% AEP event.<br>• Ensuring there are no service covers on the route which could lift in a flood and expose voids<br>• Use of painted posts to clearly mark evacuation routes<br><br>***Further advice available from DEFRA Publication: Flood risk assessment guidance for new development R&D technical report FD2320/TR2" -section on safe access and exit (P114)*** |
| If the developer cannot identify safe access and exit routes for ordinary vehicles or people, are there routes deemed safe for **rescue vehicle** use? | • The route should be suitable to facilitate the rescue of people via water rescue assets eg boats | • Confirm the extent to which the FRA satisfies these standards for a 1% and 0.1% AEP event.<br>• Road signs and building numbers/names to be placed above predicted flood levels to ensure visibility for emergency responders |
| Are there any issues with the manoeuvrability by emergency service vehicles and equipment in the | | Could any mitigation measures be considered? |

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| development and surrounding area? | | |

| **Vulnerable Occupiers** | | |
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| **Consideration** | **Assessment standards or rationale** | **Recommendations to consider** |
| Is there sufficient warning time of a flood to evacuate vulnerable occupiers of a development without the support of emergency services? | • Examples of vulnerable occupiers include elderly, children, disabled, prisoners, hospital patients, occupiers of mobile homes.<br>• Will there be sufficient staff working at the development to assist vulnerable occupiers?<br>• A greater number of vulnerable occupiers is likely to increase the time required for evacuation | • Creation of business continuity assessment to identify construction features to ensure the safety of staff and vulnerable occupiers and continuation of service in the event of an emergency. |
| If the development has flooded, is there sufficient time, development access and emergency service capability to evacuate vulnerable occupiers? | • A greater number of vulnerable occupiers is likely to increase the time required for evacuation<br>• Can the safety and security of vulnerable occupiers be managed both during and post evacuation?<br>• Does the local authority have sufficient capability to provide emergency shelter and support for the vulnerabilities of evacuees? | • Construction options for ease of water rescue such as wide opening windows, balconies, and fixings for water rescue<br><br>• Inclusion of sumps behind flood defence to allow required depths of water to be pumped away (and consideration where water could be pumped out to) |
| If evacuation is not possible or desirable, can essential staff move vulnerable occupiers to a place of safety within the development? | • A place of safety would be a location above the predicted level of flood water<br>• Mobile buildings eg caravans cannot be considered as safe places in the event of a flood<br>• If a development floods it may not be possible to use lifts<br>• Consider how long the place of safety would provide access to adequate shelter, food and sanitation | • Options to increase the resilience of designated places of safety eg utilities resilience, building design features |
| Can essential staff continue to carry out their essential duties in a safe place of work above the predicted level of flood water? | • Essential staff are those staff who would need to remain in a flooded development to ensure that any essential services provided by the development are maintained eg supply of water, electricity, telecommunications.<br>• Consider how long the place of safety would provide access to adequate shelter, food and sanitation<br>• Is there sufficient access and exit to the development in | • Options to increase the resilience of designated safe place of work eg utilities resilience, access to essential IT, plant and machinery, building design features<br><br>• Inclusion of sumps behind flood defence to allow required depths of water to be pumped away (and consideration where water could be pumped out to) |

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| | the event of a flood to maintain essential staff coverage - eg allow shift changes | |
| **Essential Infrastructure** | | |
| **Consideration** | **Assessment standards or rationale** | **Recommendations to consider** |
| Does the FRA consider physical measures to protect essential utility supplies (eg electricity, gas, water, telecoms) to the development in the event of a flood? | Will any essential services provided by the development be compromised by a failure in utilities supply? | • Design options to increase resilience of utilities supply or assets<br>• Producing a business continuity assessment to examine the impact of the loss of essential services for a day, week, month or year as deemed proportionate |
| Does the FRA identify sufficient vehicular access to all critical points on the development in the event of a flood? | Access may need to be maintained for the delivery of essential supplies or to carry out routing or emergency maintenance or repairs. | • Pre emptive or permanent measures to protect access to critical points<br>• Consideration as to whether pre-emptive measures can be deployed in time. |
| Does the FRA identify physical measures to facilitate the pumping of flood water away from the development? | | • Inclusion of sumps behind flood defence to allow required depths of water to be pumped away (and consideration where water could be pumped out to) |

| **Environmental impact** | | |
|---|---|---|
| **Consideration** | **Assessment standards or rationale** | **Recommendations to consider** |
| Is there any risk of pollution arising from the release of hazardous substances into flood waters? | Would operations on the development produce or require storage of hazardous substances? | • Construction facilitates the storage, use or production of hazardous substances above the predicted flood level.<br><br>***Further advice available from the EA*** |