



New Broads Flood Risk Supplementary Planning Document

Adopted March 20176

**Tracked Changed Version for reference
only.**

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1. Introduction

The purpose of this SPD is to increase awareness of the nature of flood risk in the Broads area, give advice to developers and others about the Authority’s approach to the issue of development and flood risk, and stress the need to maintain a high standard of design in new waterside development.

Flooding can cause damage to property and infrastructure. Coastal flooding can be particularly damaging. ~~In extreme cases, flooding can lead to loss of life.~~ The threat of flooding can also cause fear and distress to ~~local residents~~ **people and** ~~in extreme some cases, flooding can lead to injury¹ and even loss of life.~~ On the other hand, flooding is also a natural process within a floodplain. In some circumstances it can be beneficial to wildlife.

The Broads Authority is the Local Planning Authority within the Broads area and this Supplementary Planning Document (SPD) applies only to land within the Authority’s executive boundary. The Authority takes advice from the Environment Agency (EA) **and Lead Local Flood Authorities (LLFA)** on flood related issues concerning development. The EA is responsible for flood defence and has permissive powers to carry out work to construct and improve flood defences.

This SPD ~~will replace~~ the 2008 SPD. ~~We are reviewing the current 2008 SPD because: The current SPD is out of date. It initially bridged the policy gap between 2007 Core Strategy and 2011 DM-DPD. The current SPD was based on PPS25. This has been withdrawn with national flood risk policy and guidance contained in the NPPF and NPPG. The Broads Authority has explored climate change issues in more detail.~~

With regards to producing a supplementary planning document (SPD), the NPPF paragraph 155 says: *‘Supplementary planning documents should be used where they can help applicants make successful applications or aid infrastructure delivery, and should not be used to add unnecessarily to the financial burdens on development’.*

The Authority considers that this SPD ~~will help~~ applicants prepare schemes that consider the issue of flooding in an appropriate way. The SPD should be read alongside policy DP29 of the Development Management DPD and is a material consideration in the determination of planning applications. The advice and guidance herein will not add **unnecessary** financial burden to development. ~~The new~~ **This** SPD ~~will provide~~ guidance and advice in advance of the adoption of the new Local Plan in early 2018. ~~The process and timeline is summarised below.~~

Stage	Timeline
To Planning Committee	14 October
To Full Authority	18 November
Consult for at least 4 weeks	21 November until 4pm on 23 December
Make consultation statement	Until 13 January
Amend if need be	
Adopt by Full Authority	27 January
Let those know it is adopted who wanted to know	After adoption

¹ There is a residual risk from all water, especially if it is moving (a flood, at certain velocity and above 4-6cm in depth) which would sweep people and things before it.

it is being adopted	
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~~2. About this Consultation~~

~~The consultation on this SPD runs from 21 November until 4pm on 16 December. That is a period of 5 weeks and reflects the build up to Christmas as well as the next version of the Local Plan being out for consultation on 4 December for 9 weeks. The minimum period for consultation for a SPD is 4 weeks.~~

~~The consultation version of the SPD is available at
<http://www.broads-authority.gov.uk/broadsconsultations>.~~

~~There are printed copies of this document and the Sustainability Appraisal at these locations. For opening times, please contact the venue or check on their website:~~

- ~~• Broads Authority, Yare House, 62-64 Thorpe Road, Norwich NR1 1RY~~
- ~~• Broadland District Council, 1 Yarmouth Road, Norwich NR7 0DU~~
- ~~• Great Yarmouth Borough Council, Town Hall, Hall Plain, Great Yarmouth, Norfolk NR30 2QF~~
- ~~• North Norfolk District Council, Holt Road, Cromer NR27 9EN~~
- ~~• Norwich City Council, City Hall, St Peter's St, Norwich NR2 1NH~~
- ~~• South Norfolk Council, Swan Lane, Long Stratton NR15 2XE~~
- ~~• Waveney District Council, Riverside, 4 Canning Road, Lowestoft NR33 0EQ~~
- ~~• Norfolk County Council, County Hall, Martineau Lane, Norwich NR1 2DH~~
- ~~• Suffolk County Council, Endeavour House, 8 Russell Road, Ipswich IP1 2BX~~
- ~~• Acle Library, Bridewell Lane, Acle NR13 3RA~~
- ~~• Beccles Library, Blyburgate, Beccles NR34 9TB~~
- ~~• Brundall Library, 90 The Street, Brundall NR13 5LH~~
- ~~• Bungay Library, Wharton Street, Bungay NR35 1EL~~
- ~~• Cromer Library, Prince of Wales Road, Cromer NR27 9HS~~
- ~~• Great Yarmouth Library, Tolhouse Street, Great Yarmouth NR30 2SH~~
- ~~• Loddon Library, 31 Church Plain, Loddon NR14 6EX~~
- ~~• Lowestoft Library, Clapham Road South, Lowestoft, NR32 1DR~~
- ~~• Oulton Broad, Library Council Offices, 92 Bridge Road, Oulton Broad NR32 3LR~~
- ~~• Norwich Millennium Library, The Forum, Millennium Plain, Norwich NR2 1AW~~
- ~~• Stalham Library, High Street, Stalham NR12 9AN~~
- ~~• Wroxham Library, Norwich Road, Wroxham NR12 8RX~~

~~The consultation ends at 4pm on 23 December 2016.~~

62 | **3.2. Development Management Policy DP29**

63 The Development and Flood Risk SPD is in conformity with the Core Strategy, Development
64 Management DPD and the National Planning Policy Framework (NPPF). It expands on DM policy
65 DP29:

66 | **DP29 Development on Sites with a High Probability of Flooding**

67 Development will only be permitted in Environment Agency Flood Zones 2 and 3 and those areas
68 deemed to be at risk of flooding in the Authority's Strategic Flood Risk Assessment, where
69 appropriate and when the Sequential Test and Exception Test (parts (a), (b) and (c)) where
70 applicable, as set out in PPS25, have been satisfied. Development proposals should be supported by
71 a Site Specific Flood Risk Assessment.

72 The Flood Risk Assessment will need to meet the requirements of PPS25 and give consideration to
73 the following:

- 74 (a) Whether the proposed development will make a significant contribution to achieving the
- 75 objectives of the Core Strategy and other policies of the Development Plan;
- 76 (b) Whether the development involves the redevelopment of previously developed land or buildings
- 77 and would result in environmental improvements over the current condition of the site;
- 78 (c) Whether appropriate measures to ensure resilience to potential flooding have been incorporated
- 79 into the development;
- 80 (d) Whether appropriate measures to reduce the risk of flooding (on and offsite), including
- 81 sustainable drainage systems with effective attenuation of flows to adjoining land or waterways,
- 82 have been incorporated;
- 83 (e) The impact of the proposal on flood risk elsewhere and on the effectiveness of flood alleviation
- 84 or flood defence schemes; and
- 85 (f) Where the proposal involves the replacement of an existing building, whether the replacement
- 86 building is located and/or designed without increasing flood risk and, where possible, to reduce the
- 87 risks and effects of flooding.

88 The relocation of existing development to an undeveloped site with a lower probability of flooding
89 will be permitted where:

- 90 (g) The vacated site would be reinstated as naturally functioning flood plain;
- 91 (h) The benefits of flood risk reduction outweigh the benefits of leaving the new site undeveloped;
- 92 and
- 93 (i) The development of the new site is appropriate when considered against the other policies of the
- 94 Development Plan.

95 Surface water run-off proposals should address the requirements of the Flood and Water
96 Management Act 2010.

97 | **4.3. Understanding Flood Risk**98 | **4.1.3.1. What is flood risk?**

99 According to the National Planning Practice Guidance (NPPG), “flood risk” is a combination of the
100 probability and the potential consequences of flooding from all sources – including from rivers and
101 the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers
102 and drainage systems, and from reservoirs, canals and lakes and other artificial sources.

103 | **4.2.3.2. What are flood risk zones?**

104 Flood Zones refer to the probability of river and sea flooding, ignoring the presence of
105 defences. They are shown on the Environment Agency’s Flood Map for Planning (Rivers and Sea)²
106 and defined in the table below (taken from the NPPG).

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 (0.1%) annual probability of river or sea flooding. (Shown as ‘clear’ on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 (1%) and 1 in 1,000 (0.1%) annual probability of river flooding; or Land having between a 1 in 200 (0.5%) and 1 in 1,000 (0.1%) annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 (1%) or greater annual probability of river flooding; or Land having a 1 in 200 (0.5%) or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

107 | **4.3.3.3. EA flood risk**

108 The Environment Agency (EA) flood risk maps depict the current probability or likelihood of flooding
109 without defences in place. They therefore show a ‘worst case’ scenario. However, the EA maps do
110 not include climate change predictions of rising sea levels, increase in peak river flow, or increased
111 peak rainfall intensity. Also, the EA flood risk maps just show areas identified as Flood Zone 3 and do
112 not distinguish between zones 3a and 3b. Consequently the EA maps are not sufficient to use to
113 consider the impact of flooding to an individual property. Site-specific flood risk assessments (FRA)
114 are required to consider the impacts of all sources of flooding on an individual property, and these
115 should also include climate change considerations.

116 Whilst most of the Broads Authority area is covered by the river and coastal flood map, those areas
117 outside of it (e.g. Flood Zone 1) should also look at the updated surface water flood map on the EA

² See the flood maps here: <http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&textonly=off&lang=e&topic=floodmap>

118 website. This shows surface water flooding but also indicates a proxy risk for fluvial flooding
119 experienced from an ordinary watercourse until a specific FRA is undertaken (i.e. where the EA
120 fluvial modelling could not extend as the catchments were too small to include (those smaller than
121 | 3km²)).

122 | **4.4.3.4. Strategic Flood Risk Assessment**

123 A Strategic Flood Risk Assessment is a study carried out by one or more local planning authorities to
124 assess the risk to an area from flooding from all sources, now and in the future, taking account of the
125 impacts of climate change, and to assess the impact that land use changes and development in the
126 area will have on flood risk.

127 In accordance with advice from the Environment Agency the Broads Authority, jointly with
128 Broadland District Council, North Norfolk Council , Norwich City Council and South Norfolk District
129 Council, commissioned a Strategic Flood Risk Assessment (SFRA) to inform preparation of the LDF
130 and also to provide further details of varying levels of flood risk within the area. The Inception
131 Report was completed in 2006 with the stage two report completed in 2008³.

132 | At the time of ~~writing~~[adopting this SPD](#), all the Norfolk Authorities were working together to plan
133 strategically across Norfolk. One particular cross boundary issue is that of flood risk. Working
134 together also offers the opportunity for efficiency savings when commissioning evidence bases to
135 support Local Plans. The potential to work together to update the SFRAs around the county was
136 being explored.

137 | **4.5.3.5. The Broads Flood Risk Alleviation Project**

138 The Broadland Flood Alleviation Project (BFAP) is a long-term project to provide a range of flood
139 defence improvements, maintenance and emergency response services within the tidal areas of the
140 Rivers Yare, Bure, Waveney and their tributaries.

141 Appointed by the Environment Agency Broadland Environmental Services Ltd deliver these services
142 and, in partnership with the Environment Agency, are responsible for implementing the 20-year
143 programme of works. This contract was awarded in May 2001 as a Public Private Partnership
144 Programme.

145 The main aim of project work was to strengthen existing flood defences and restore them to a height
146 that existed in 1995 (a level defined by the Environment Agency) and make additional allowances for
147 sea level rise and future settlement of the floodbanks.

148 This aim has largely been achieved, through a phased programme of improvement works
149 comprising:

- 150 • Strengthening the existing floodbanks, restoring them to agreed levels where excessive
151 settlement has occurred
- 152 • Replacing existing erosion protection that is in a poor condition using more environmentally
153 acceptable methods wherever possible

³ This is available to see at the main office of the Broads Authority – paper version only.

- 154 • Providing new protection where erosion is currently threatening the integrity of the flood
155 defences
156 • Carrying out works at undefended communities

157 | **4.6.3.6. Nature of flood risk in the Broads**

158 Approximately 95% of the Broads Authority area is at some risk of flooding. This includes more than
159 2000 properties and almost 30,000 hectares. The Broads Authority boundary is tightly drawn around
160 the edge of the floodplain.

161 The flood risk in the Broads is mainly from both fluvial and tidal sources and the whole character and
162 development in the Broads over many hundreds of years has been closely associated with the water
163 environment and flood risk. Much of the Broads area is defended by flood defence embankments,
164 which are maintained by the Environment Agency to reduce flooding. The flood defences, where
165 they exist, only reduce the risk of flooding and will never eliminate it; this has been the historic case
166 within the Broads.

167 Working, living and visiting the Broads have been, and will continue to be, activities that have co-
168 existed with the risk of flooding. However, any new development (which includes change of use, etc)
169 must be in line with government policy and minimise flood risk. In the Broads area, this means
170 identifying the risks from flooding and ensuring that they are at as low a level as possible compatible
171 with the wetland and water-based environment.

172 | The Broads is not subject to open sea conditions (relating to tidal range and wave action) but parts
173 of the Broads are tidally influenced. Any flood risk assessment should therefore consider both tidal
174 and fluvial flood risk. ~~Therefore, although parts of the Broads are tidally influenced, for flood risk~~
175 ~~assessment purposes the river flooding probabilities are used to define the Flood Zones.~~

176 The SFRA (2008) shows that coastal flooding and flooding associated with defence failure are likely
177 to produce the most significant consequences and greatest hazard because of the speed of onset of
178 the flood, the high water velocities and the deep water. Settlements towards the east of the Broads
179 which are at risk of flooding from failure of the coastal defences are indicated on the Environment
180 Agency maps.

181 The flood probability mapping carried out within the SFRA does not represent the degree of hazard
182 likely to be experienced in the Broads Authority area, especially in the more upstream catchment
183 areas and those areas not at risk of breaching of coastal defences, because it does not quantify
184 depth or water velocity.

185 Hazard is very site specific and could vary greatly over a relatively small area due to the presence of
186 drains, dykes, quay-headings, flood banks, etc., all of which could be masked by turbid floodwaters.
187 The effect of climate change on hazard was also not assessed in the SFRA.

188 | ~~The flood probability mapping indicates in some areas that the functional floodplain extends to the~~
189 ~~boundary of the Broads Authority area. Intuition, or engineering judgement, indicates that this is~~
190 ~~likely to be the case in reality, with the functional floodplain as defined as the 1 in 20 year event.~~

191 It is suggested in the 2008 SFRA that if hazard mapping were to be carried out in order to quantify
 192 depth and water velocity at the various flood events (hazard, or “danger to people”, is a function of
 193 depth and velocity) it would quite likely indicate that both flood depth and velocity are not great. As
 194 a result of this, hazard is generally likely to be low. However, site specific factors significantly
 195 contribute to risk and a site-specific Flood Risk Assessment will need to quantify this.

196 The 2008 SFRA suggests flooding from the tidally influenced Broads’ river systems is likely to be less
 197 hazardous because of the slower onset. This may be an oversimplification due to the interaction of
 198 site specific factors and the condition of winds and tides. The above notwithstanding, hazard and risk
 199 does tend to be predictable on the Broads and this has implications for how these are managed.

200 Fluvial flooding associated with upstream areas of individual catchments within the Broads is not
 201 normally “flashy” and the hazard from these floods, excepting unusual meteorological conditions, is
 202 least onerous. Consideration of the flood risk at a particular location should also take account of
 203 climate change as highlighted in section ~~x6.5~~below.

204 The typical Broads river has a permeable catchment⁴, is groundwater dominated⁵, and is a slow
 205 responding watercourse with a slow increase and decrease of flow in response to rainfall. Although
 206 tidal surges can develop rapidly within 6-12 hours as a result of the movements of weather systems
 207 in the North Sea, the Environment Agency Flood Warning System covers the whole of the Broads
 208 area which could provide some measure of early warning, ~~however, uptake~~ of the service is
 209 voluntary and is not enforceable within the context of planning.

210 It is also the case that existing flood defences in the Broads area offer a very low standard of defence
 211 (typically up to a 1 in 7 year standard) so that overtopping events, or events in which defences are
 212 outflanked or breached, are likely to produce a slow speed of approach of the flood, slow water
 213 velocities, shallow depth and low hazard although immediately behind or close to the breach, the
 214 flow could be greater and subsequently the risk would be higher. ~~The majority of~~Some people living
 215 and working within the Broads are historically familiar with the water environment and are unlikely
 216 to be surprised or alarmed by the prospect of floods or rising water levels or may be more prepared.
 217 That being said, others may not have had any experience of flooding. Measures will need to be in
 218 place to ensure effective communication with visitors - an issue which is already addressed on many
 219 sites locally.

220 Any development encroaching within any of the plotted Flood Zones may increase flood risk to
 221 adjacent areas, and the effect on flood risk of a number of small encroachments is cumulative. If the
 222 requirements of the NPPF and NPPG are met in full, then additional development should not
 223 increase flood risk elsewhere.

224 **4.7.3.7. Other Sources of flood risk**

⁴ A river catchment is the area of land whose water drains into that river. A permeable catchment lies on porous rock, such as chalk or sandstone.

⁵ Where groundwater accounts for much of the inflow and outflow of the watercourse.

225 **i) Surface runoff**

226 The Flood and Water Management Act 2010 (FWMA) defines surface runoff as; rainwater (including
227 snow and other precipitation) which (a) is on the surface of the ground (whether or not it is moving),
228 and (b) has not entered a watercourse, drainage system or public sewer.

229 Intense rainfall, often of short duration, that is unable to soak into the ground or enter drainage
230 systems, can run quickly off land and result in local flooding.

231 There are several stakeholders identified by the FWMA who have a role in the management of
232 surface runoff flooding, these are; Lead Local Flood Authorities, Local Planning Authorities, Water
233 Utilities Companies, Highways Authorities, Riparian Owners.

234 **ii) Ordinary Watercourses**

235 Ordinary Watercourses are defined as; every river, stream, ditch, drain, cut, dyke, sluice, sewer
236 (other than a public sewer) and passage through which water flows and which does not form part of
237 a main river. These watercourses, although not shown at risk on the Environment Agency [flood map](#)
238 [for planning river flood map](#), can be a source of fluvial flooding. The Environment Agency [flood map](#)
239 [for planning River Flood map](#) can only model and hence show risk of flooding on catchments sized
240 greater than 3km². Appropriate site specific risk assessment would still need to consider ordinary
241 watercourse as a source of flood risk.

242 In the County of Norfolk for example there are approximately 7,178 km of mapped ordinary
243 watercourses that are included in the Environment Agency's Detailed River Network dataset. This is
244 undoubtedly a conservative figure as many ordinary watercourses in Norfolk remain unmapped.

245 In terms of local flood risk management, these watercourses are still largely influenced by the Land
246 Drainage Act 1991. This Act identifies three key stakeholders in the management of ordinary
247 watercourses, these are; Internal Drainage Boards, Local District Authorities and Riparian Owners.

248 **iii) Groundwater**

249 The Flood and Water Management Act 2010 defines groundwater as; water below the surface of the
250 ground and in direct contact with the ground or subsoil. It is worth noting that this definition does
251 not include water in buried pipes or other containers.

252 The UK Groundwater Forum describes groundwater flooding as a result of water rising up from the
253 underlying rocks or from water flowing from abnormal springs.

254 Flooding from groundwater is classed as a Local Flood Risk and as such is the responsibility of the
255 Lead Local Flood Authority which ~~in Norfolk is~~ [Suffolk](#) /-Norfolk County Council.

256 **iv) Foul Sewerage Flooding**

257 [Applicants should also assess the risk of foul sewerage flooding. Anglian Water Services as sewerage](#)
258 [undertaker can provide relevant information to applicants to inform preparation of Flood Risk](#)
259 [Assessments.](#)

260 **4.9.3.8. Functional Flood Plain**

261 The NPPG⁶ describes the Functional Flood Plain as *'where water has to flow or be stored in times of*
 262 *flood' and goes on to say:*

263 *The identification of functional floodplain should take account of local circumstances and not be*
 264 *defined solely on rigid probability parameters. However, land which would naturally flood with an*
 265 *annual probability of 1 in 20 (5%) or greater in any year, or is designed to flood (such as a flood*
 266 *attenuation scheme) in an extreme (0.1% annual probability) flood, should provide a starting point*
 267 *for consideration and discussions to identify the functional floodplain.*

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

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

278 The flood probability mapping indicates in some areas that the functional floodplain extends to the
 279 boundary of the Broads Authority area. Intuition, or engineering judgement, indicates that this is
 280 likely to be the case in reality, with the functional floodplain as defined as the 1 in 20 year event.

281 **4.9.3.9. The Coast**

282 The Broads Authority has a small stretch of coast in the Executive Area (Winterton/Horseay area). The
 283 Kelling to Lowestoft Ness Shoreline Management Plan unit 6.13⁷ covers Eccles to Winterton Beach
 284 Road. The Coastal erosion is a sensitive issue and the detail of the approach for this area is included
 285 in the Management Plan. As a summary for this document, the general approach to coastal erosion
 286 along this stretch for the present day and medium term is to hold the line up to 2055. This is
 287 dependent on the option continuing to be technically and economically deliverable and over time
 288 other options may be investigated such as possible managed realignment, or a retired line of
 289 defence further inland. In relation to the present day, the Plan says:-

290 *'Due to the considerable assets at risk and the uncertainty of how the coastline could evolve, the*
 291 *policy option from the present day is to continue to hold the line of the existing defence. This policy*
 292 *option is likely to involve maintenance of existing seawalls and reef structures, replacing groynes as*
 293 *necessary and continuing to re-nourish beaches with dredged sand. This policy option will provide an*
 294 *appropriate standard of protection to all assets behind the present defence line, and, with the*
 295 *recharge, a beach will be maintained as well as a supply of sediment to downdrift areas.'*

⁶ Functional floodplain: <https://www.gov.uk/guidance/flood-risk-and-coastal-change#Strategic-Flood-Risk-Assessment-section>

⁷ Go to page 100: <https://www.great-yarmouth.gov.uk/CHttpHandler.ashx?id=1239&p=0>

5.4. Making and assessing a planning application

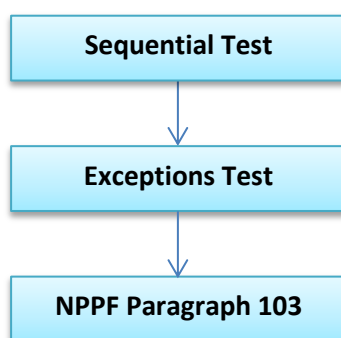
5.1.4.1. Section introduction

Proposals for developments in areas at risk of flooding are subject to appropriate detailed requirements and must be accompanied by an appropriate Site Specific Flood Risk Assessment (FRA). The basic requirements of the FRA are set out in the NPPG⁸.

The Broads Authority encourages all applicants to seek pre-application advice on their proposals and officers can provide advice on which proposals will require an FRA. The Environment Agency⁹ can provide some of the necessary data for an FRA and offer a pre-application advice service¹⁰, ~~subject to charges.~~ The Environment Agency offer one free preliminary opinion to developers which outlines the nature of the information required to accompany an application. Further detailed advice, which may include a technical review of documents prior to submission, is available from the Environment Agency as part of a charged service. All requests for data are provided free of charge.

Developers should assess carefully the full range of issues associated with all sources of flood risk when considering and formulating development proposals. Failure to consider these issues is likely to lead to delay or to refusal of planning permission. Developers must demonstrate that development both minimises flood risk both on and off site, will ensure the safety of the occupants and will still be of a scale and design appropriate to its Broads setting. Flood risk mitigation, resilience and resistance measures should be considered at an early stage and integrated into a high quality design which satisfies the objectives of other planning policies.

The NPPG sets out a Sequential Test¹¹ to development and flood risk that is undertaken by the planning authority to direct development away from flood risk areas. It also sets out an Exception Test¹² for development located in zones of higher flood risk to provide a method to manage flood risk, while still allowing necessary development to occur, subject to appropriate risk reduction and mitigation measures. In essence the steps taken to assess an application for development in flood zones 3a and 3b are:



⁸ How to carry out a flood risk assessment so that you can complete your planning application <https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zones-2-and-3>

⁹ You can email@ enquiries_eastanglia@environment-agency.gov.uk ~~enquiries@environment-agency.gov.uk~~

¹⁰ The pre application enquiry form can be found here: <https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

¹¹ Sequential test: <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/the-sequential-risk-based-approach-to-the-location-of-development/>

¹² Exceptions Test: <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/the-exception-test/>

321 | **5.2.4.2. Land Use and Development in Areas of Flood Risk**

322 The NPPG sets out clearly what are acceptable land uses in different flood zones. There is a
 323 distinction between proposed development in flood risk zones 1, 2 and 3a and proposed
 324 development in flood risk zone 3b. In the case of the former, the NPPG is very clear on
 325 circumstances in which the Sequential and Exception tests must be applied. In terms of proposed
 326 development in Flood Zone 3b the NPPG sets out (in the table below, copied from the NPPG) which
 327 types of development are water compatible and may therefore be acceptable^{13 14}.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

328 Key:

329 ✓ Development is appropriate

330 ✗ Development should not be permitted.

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

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

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

331 Although the sequential test must be applied, due to the limited availability of sites in Flood Zone 1,
 332 the main objective, as applied to the Broads, is likely to be to reduce flood risk to new development
 333 through the application of the sequential approach and to maximise opportunities to build in
 334 resilience both at the site and buildings level through design. The improvement of safety and
 335 management of risk, including response to risk, must be addressed at the design stage.

¹³ Flood Zone and flood risk tables: <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/flood-zone-and-flood-risk-tables/table-2-flood-risk-vulnerability-classification/>

¹⁴ For more detail, go here: <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/flood-zone-and-flood-risk-tables/table-3-flood-risk-vulnerability-and-flood-zone-compatibility/>

336 Any development being promoted in Flood Zone 1 should also consider flood risk from other sources
 337 (not just river and sea flooding). This means that the updated surface water flood map on the
 338 Environment Agency's flood map should also be consulted to apply the sequential approach and
 339 sequential test when making decisions. The 1:1000 year surface water map can be seen as
 340 equivalent probability to Flood zone 2 (river and sea map) and the 1:100 year surface water map can
 341 be seen as equivalent to Flood Zone 3 (river and sea flood map). This is only practical to apply to
 342 significant flow paths shown on the surface water flood map and not to small areas of ponding.

343 The approach in any particular case will depend on the nature of the land and the specific
 344 functionality of the floodplain, taking into account the presence of built structures and site
 345 infrastructure. The following principles will apply to development in flood zone 3.

346 a) Greenfield sites

347 In the case of a 'green field' site which has not been the subject of any previous development, the
 348 site could function as an unconstrained, open floodplain, subject to the presence of any 'defences'.
 349 It may provide areas for water storage in times of flood and may have other value associated with
 350 this, for example as wet woodland.

351 b) Brownfield sites which have been previously developed

352 Sites categorised as "brownfield sites which have been previously developed" will typically often
 353 cover sites larger than a single plot and may have been in use for a variety of uses, often
 354 employment based. Typically these will often be characterised by areas of built development,
 355 including buildings and hardstandings, with undeveloped areas which might include vegetated
 356 margins or open areas. Parts of the site may function as functional floodplain and parts will not. The
 357 functionality of any part will depend on the way in which the water would behave in times of flood.
 358 If flood waters which inundate the site in a 1:20 (5%) annual probability event can pass under or
 359 through a building or sit on land this will be defined as functional floodplain, but where an existing
 360 building or structure acts as a barrier to flood water then its functionality is compromised and it will
 361 not be classified as Flood Zone 3b and can be described as Flood Zone 3a.

362 When considering development proposals for brownfield sites which have been previously
 363 developed, the objective is to locate development in a sequentially appropriate manner on the site
 364 and to reduce risk through design. An initial site appraisal should identify the different flood risk
 365 zones on the site (where applicable) and differentiate between areas of Flood Zone 3a and Flood
 366 Zone 3b, as described above.

367 A comprehensive and accurate site appraisal will be essential as part of an FRA in order to identify
 368 constraints and potential areas for development on a site within the floodplain. The appraisal as part
 369 of a Flood Risk Assessment should identify:

- 370 i) Flood risk zones 1 – 3 within the site with reference to the SFRA/EA Flood Zone maps;
- 371 ii) The boundaries between areas of Flood Zone 3a and the Flood Zone 3b;
- 372 iii) The boundaries within mapped areas of Flood Zone 3b where water has to flow or be stored and
- 373 land areas where buildings and other infrastructure restrict this functionality. The following will
- 374 need to be considered in identifying these boundaries:

- 375 • Extent of buildings on site and their footprints
- 376 • Extent of hardstandings on site and their coverage
- 377 • Permeability of the buildings and hardstandings on site, including the contribution of voids
- 378 • Extent of open areas and drainage infrastructure on site and their capacity
- 379 • Flow pathways and patterns within and off-site

380 Any site specific FRA needs to also include an assessment of historical flooding.

381 Provision of this information will allow an accurate calculation to be made of the extent and location
382 of Flood Zone 3a and Flood Zone 3b within the site. The objective of the appraisal is to identify the
383 location and extent of the site that would be appropriate for development, so that the Broads
384 Authority can ensure that it does not increase flood risk either off site or to the development.
385 Understanding how a site is affected at times of flooding can identify opportunities to allow a
386 development to go ahead, reduce flood risk and identify mechanisms to improve flood storage
387 capacity through layout and design. The appraisal will demonstrate where this is required.

388 Development should be located in a sequentially appropriate manner (which considers areas of
389 lower flood risk first as discussed in the following section) across any flood risk zones, in accordance
390 with the NPPG. Where there is existing development within Flood Zone 3a or 3b, opportunities to
391 improve flood risk should follow the following hierarchy:

- 392 i) relocate development to Flood Zone 1 (subject to other sources of flooding as discussed
393 previously)
- 394 ii) relocate development to a lower flood risk zone
- 395 iii) ensure there is no net increase in the development area within Flood Zone 3a.

396 Land uses or development which is of a higher level of vulnerability, as defined in the NPPG, than
397 existing or previous uses on the site will only be permitted if ~~it~~ it complies with table 3 of the NPPG
398 and all the other policy requirements (such as safety and not increasing flood risk elsewhere).

399 The objective when looking at development proposals on previously developed brownfield sites is to
400 seek opportunities to restore the functionality of the floodplain. This must, however, be balanced
401 against the need to maintain the land uses and development which support the economic and social
402 viability of the Broads communities. So the over-riding principle in respect of development is that it
403 should not increase risk above the existing level.

404 c) Brownfield sites which are currently developed

405 Sites categorised as “brownfield sites which are currently developed” will ~~typically~~ often cover
406 individual sites where replacement development is proposed. ~~Typically~~ these will often be smaller
407 plots and are owner occupied with limited (if any) opportunity for relocating development to an area
408 of lesser flood risk, either on-site or elsewhere.

409 When considering proposals for replacement development, an initial appraisal should identify
410 whether the development is located in Flood Zone 3a or Flood Zone 3b.

411 If the site is in Flood Zone 3b, new water compatible development and essential infrastructure that
412 has been subject to the Exception Test (as defined in the NPPG) will be permitted or a like-for-like
413 replacement of an existing use. As detailed above, existing built development on site may prevent
414 parts of the site from functioning as Flood Zone 3b, meaning it will be considered as Flood Zone 3a.
415 In those cases, it may be acceptable to locate development appropriate to Flood Zone 3a within the
416 extent of the previously developed footprint. This will be subject to the usual considerations in terms
417 of safety of the development.

418 If the site is in Flood Zone 3a, new development for water compatible uses, less vulnerable uses or
419 more vulnerable subject to the Exception Test (as defined in the NPPG) will be permitted or a like-
420 for-like replacement of an existing use. In all cases the safety of the proposed development would
421 need to be considered.

422 The objective when looking at development proposals on brownfield sites which are currently
423 developed is to ensure that development does not increase flood risk to the site or the building or
424 elsewhere above the existing level. Opportunities to reduce flood risk should also be considered.

425 The Authority may permit the relocation of existing development out of Flood Zone 3b to an
426 undeveloped site with a lower probability of flooding where the vacated site is reinstated as
427 naturally functioning floodplain, and where the benefits to flood risk outweigh the benefits of
428 leaving the new site undeveloped. Such proposals will be considered against adopted planning
429 policies.

430 5.3.4.3. Sequential Test

431 The sequential test is designed to ensure that areas at little or no risk of flooding from any source
432 are developed in preference to areas at higher risk. The Sequential Test will be carried out by the
433 Broads Authority on relevant applications located in Flood Zones 2 and 3 in accordance with the
434 NPPF (except for minor development or changes of use – excluding a change of use involving
435 camping and caravans), drawing on information provided by the developer. Sites must be reasonably
436 available to be considered as part of the Sequential Test. The Environment Agency advises that the
437 Sequential Test should be undertaken in isolation and judged on flood risk issues only. The results of
438 the test should then be compared to other non-flood risk matters. A site may therefore pass the
439 Sequential Test but still be considered inappropriate for other reasons, such as being contrary to the
440 Local Plan.

441 The Authority will aim to minimise flood risk by directing development away from areas of high risk.
442 However, this does not override other Core Strategy, Development Management or Site Specific
443 policies which may indicate the unsuitability, for other reasons, of land in Flood Zones 1 or 2.

444 The following sections elaborate on how various elements of the Sequential Test should be
445 addressed. The NPPG says:

446 *The aim is to steer new development to Flood Zone 1 (areas with a low probability of river or sea*
447 *flooding). Where there are no reasonably available sites in Flood Zone 1, local planning authorities in*
448 *their decision making should take into account the flood risk vulnerability of land uses and consider*

449 *reasonably available sites in Flood Zone 2 (areas with a medium probability of river or sea flooding),*
450 *applying the Exception Test if required. Only where there are no reasonably available sites in Flood*
451 *Zones 1 or 2 should the suitability of sites in Flood Zone 3 (areas with a high probability of river or sea*
452 *flooding) be considered, taking into account the flood risk vulnerability of land uses and applying the*
453 *Exception Test if required.*

454 a) Area of search

455 The area of search should be guided by the requirement for the proposed development in a
456 particular area and should be discussed with the Broads Authority at the pre-application stage.

457 The Authority considers the following areas of search to be reasonable:

- 458 • The rest of the particular district within the Broads Authority Executive Area
- 459 • Within the entire Parish (including the part that may be out of the Broads)
- 460 • Other settlements/parishes that are nearby (that may be out of the district)

461 It is acknowledged that the area of search could be outside of the Broads Authority Executive Area
462 and would require discussions with other Local Planning Authorities. However sites that are at less
463 risk of flooding could be in the non-Broads part of the settlement.

464 The Authority acknowledges that some schemes are site specific, such as the regeneration of a
465 particular brownfield site or extension of a building. So it is impractical to change the location.

466 In all cases the developer must justify with evidence to the LPA-Broads Authority what area of search
467 has been used when making the application.

468 b) Passing the sequential test

469 If there are found to be other reasonably available sites at a lower risk of flooding, then the
470 development has failed the Sequential Test and this could lead to refusal of planning permission.
471 Failing to pass the Sequential Test is sufficient grounds for refusal, as it would make the proposal
472 contrary to the NPPF and Local Plan policies.

473 If however there are no other reasonably available sites, then the development can be deemed as
474 passing the Sequential Test. The Exception Test may also need to be undertaken at this point (if
475 required).

476 c) Reasonably available sites

477 A site is considered to be reasonably available if all of the following apply:

- 478 • The site is available to be developed;
- 479 • The site is within the agreed area of search;
- 480 • The site is of comparable size in that it can accommodate the requirements of the proposed
481 development;
- 482 • The site is not safeguarded in the relevant Local Plan for another use; and
- 483 • It does not conflict with any other policies in the Core Strategy, Development Management DPD
484 or Sites Specifics Local Plan.

485 A site is not considered to be reasonably available if they fail to meet all of the above requirements
486 or already have planning permission for a development that is likely to be implemented.

487 **5.4.4.4. Exception Test**

488 The NPPF says that *'if, following application of the Sequential Test, it is not possible, consistent with*
489 *wider sustainability objectives, for the development to be located in zones with a lower probability of*
490 *flooding, the Exception Test can be applied if appropriate. 'applications for minor development'¹⁵ and*
491 *changes of use should not be subject to the Sequential or Exception Tests (except for any proposal*
492 *involving a change of use to a caravan, camping or chalet site, or to a mobile home or park home*
493 *site, where the Sequential and Exception Tests should be applied as appropriate) but should still meet*
494 *the requirements for site-specific flood risk assessments'.*

495 The requirements of the Exception Test are set out in the NPPG. Table 3¹⁶ of the NPPG sets out
496 when the Exception Test needs to be carried out. The Broads Authority has considered these tests
497 and has clarified how they will be interpreted locally in the context of the landscape character and
498 spatial vision. Again, the developer must provide the evidence to enable the Exception Test to be
499 applied by the Authority.

500 The following conditions must be met in order for the Authority to be sure that a proposal is
501 appropriate, in flood risk terms, if an Exception Test is required:

- 502 a) The NPPF at paragraph 102 says that for the Exception Test to be passed *'it must be*
503 *demonstrated that the development provides wider sustainability benefits to the community that*
504 *outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been*
505 *prepared'*. To assess this, the Authority will use the most up to **date Local Plan Sustainability**
506 **Appraisal Objectives**. The current objectives ~~se~~ are set out at [Appendix C](#).
- 507 b) The NPPF at paragraph 102 says that for the Exception Test to be passed *'a site-specific flood risk*
508 *assessment must demonstrate that the development will be safe for its lifetime taking account of*
509 *the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will*
510 *reduce flood risk overall'*. The Broads Authority will presume **100 years for residential**
511 **development** as per the National Planning Policy Guidance. The Authority requires **developers to**
512 **set out the anticipated lifetime of non-residential development and justify this**.

513 In addition to these conditions, the following will also be applied as part of the Exception Test:

- 514 c) The development must not compromise future flood alleviation or flood defence schemes;
- 515 d) The Flood Risk Assessment must demonstrate how resilience to flooding has been incorporated
516 through a design which does not detract from the character of the locality;
- 517 e) The site-specific Flood Risk Assessment must demonstrate how the development will be
518 compatible with the nature of flooding in the Broads, taking into account climate change and sea
519 level rise over the planned life of the development (see section ~~6.5~~ on Climate Smart Thinking);
520 and, ~~in the case of the replacement of a residential property~~

¹⁵ <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/what-is-meant-by-minor-development-in-relation-to-flood-risk/>

¹⁶ For more detail, go here: <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/flood-zone-and-flood-risk-tables/table-3-flood-risk-vulnerability-and-flood-zone-compatibility/>

521 | f) in the case of the replacement of a residential property, Aa residential development must be on
 522 | a like-for-like basis, with no increase in the number of bedrooms, on the same sized footprint¹⁷,
 523 | potentially being relocated in a less vulnerable part of the site.

524 | **5.5.4.5. Information for Flood Risk Assessments**

525 | Guidance on when an FRA is required and on preparing an FRA, including how to obtain flood risk
 526 | data, is available from the Environment Agency¹⁸. The NPPG¹⁹ sets what is required in an FRA with a
 527 | useful checklist.

528 | The flood maps on the Environment Agency website show the flood zones and other sources of flood
 529 | risk, highlighting when an FRA is required for flood risk from a main river or the sea. Further more
 530 | detailed information will be required to consider the specific risk to the site and how it should be
 531 | managed. Other documents should be consulted to assess risk of flooding from other sources and
 532 | historical accounts such as Strategic Flood Risk Assessments, Surface Water Management Plans²⁰ or
 533 | local studies.

534 | Climate change is an important consideration in producing FRAs. An allowance for climate change
 535 | must be included as part of any submitted flood risk assessment. Guidance on the allowances to use
 536 | can be found by using the following hyperlink [https://www.gov.uk/guidance/flood-risk-assessments-](https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances)
 537 | [climate-change-allowances](https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances).

538 | Redevelopment proposals in FZ3a & 3b ~~should seek to demonstrate an improvement~~ should seek to
 539 | demonstrate an improvement in flood risk management (taking into account climate change over
 540 | the development lifetime). For example, a building may be redesigned to be more flood resistant or
 541 | have habitable areas raised and so at less risk. The frequency of flooding to the surrounding land
 542 | may become greater and more hazardous with time, therefore offsetting any improvement to the
 543 | design of the building and challenging the overall sustainability of the location for the given land use.
 544 | These issues will need to be addressed in the site-specific Flood Risk Assessment. Some landowners
 545 | may decide that risk management is too onerous and seek to relocate.

546 | The management of residual risk is another area that has to be addressed. There is no definition of
 547 | what is deemed to be 'safe', but there is information from various sources that can provide a guide
 548 | to what is acceptable in respect of flood depths and velocities. It will be the Authority's role to
 549 | determine what is considered safe in terms of access routes during flood events and whether unsafe
 550 | access can be adequately managed through the submission of a Flood Response Plan. The Authority
 551 | will also consider if proposed less vulnerable developments with internal flooding would be safe and
 552 | sustainable and whether flood resilient measures and flood response plans are sufficient to mitigate
 553 | risk. A key document in this respect is the Defra/EA Research Report FD2320, 'Flood Risk Assessment
 554 | and Resilience'

¹⁷ The "footprint" is the aggregate ground floor area of the existing on site buildings, including outbuildings which affect the functionality of the floodplain but excluding temporary buildings, open spaces with direct external access between wings of a building, and areas of hardstanding.

¹⁸ Flood risk assessment for planning applications <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

¹⁹ Site-specific flood risk assessment: Checklist <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/site-specific-flood-risk-assessment-checklist/>

²⁰ Surface Water Management Plans <https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/flood-and-water-management-policies/surface-water-management-plans>

555 [Guidance for New Development](#)²¹. Advice on the flood resistance and resilience of buildings can be
556 [found at section 5 of this SPD.](#)

[Environment Agency has prepared a locally specific factsheet on climate change allowances. This can be requested via enquiries \[eastanglia@environment-agency.gov.uk\]\(mailto:eastanglia@environment-agency.gov.uk\).](#)

557 The table below shows Sea level allowance for each period of time in millimeters (mm) per year with
558 cumulative sea level rise for each time period in brackets (using 1990 baseline/ as at April 2016)

Area of England	1990 to 2025	2026 to 2050	2051 to 2080	2081 to 2115	Total sea level rise 1990 to 2115 /metres (m)
East, east midlands, London, south east	4 (140 mm)	8.5 (255 mm)	12 (360 mm)	15 (450 mm)	1.21 m

559 For certain application types the Environment Agency has prepared Flood Risk Standing Advice²².
560 Considerable additional information for developers and landowners [can be found in the](#)
561 [Environment Agency's Standing Advice Development and Flood Risk](#) is available. Developers should
562 refer to these sources of information so they are fully informed of the requirements at the time of
563 their application.

564 For minor development²³ a Local Flood Risk Tick Sheet has been produced. This will assist applicants
565 in producing a flood risk assessment for minor developments. It is in conformity with the NPPG FRA
566 guidance and is designed to be user friendly for the applicant yet provide the information the BA
567 needs to determine applications. See [Appendix F](#).

5.6.4.6. Without increasing flood risk elsewhere

569 The NPPF at paragraph 203 says 'when determining planning applications, local planning authorities
570 should ensure flood risk is not increased elsewhere...'. One of the key objectives of a Flood Risk
571 Assessment is to establish if a proposal will increase flood risk elsewhere. This may happen where
572 development causes flows to be diverted, or where development takes up additional space within
573 the floodplain causing floodplain storage capacity to be reduced. A Flood Risk Assessment should
574 consider whether this will happen and propose mitigation measures. These may include for example
575 the provision of compensatory floodplain storage, although this can be difficult to achieve in The
576 Broads area. [Such measures would need to be designed to ensure that water is always stored under the building and can empty after a flood. This would require intermittent boarding, no storage under the building and regular maintenance.](#) Sustainable drainage (SuDS) proposals should also be included
577 within an assessment where a development would increase the impermeable area that would
578 increase the surface water runoff from the site. This will ensure that flood risk is not increased
579
580

²¹ Defra/EA Research Report FD2320 http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2320_3364_TRP.pdf

²² Standing advice <https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>

²³ Minor development in relation to flood risk <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/what-is-meant-by-minor-development-in-relation-to-flood-risk/>

581 elsewhere. For Brownfield sites, proposals should be put forward to limit the surface water
582 discharge as close to greenfield runoff rates.

583 | **5.7.4.7. Flood response plan template.**

584 A Flood Response Plan will always be required for development in flood zone 3. The client/developer
585 responsibilities for health and safety and facilities management may also require a site-specific flood
586 response plan. These are important considerations on commercial sites and are potential
587 requirements for compliance with the Construction (Design and Management) Regulations 2015²⁴.

588 They can form one means of managing residual risk where a development is found to be acceptable
589 in flood risk terms and is a valuable document for owners and occupiers of all property at risk of
590 flooding to have in place. The Authority has produced guidance and a suggested structure for these
591 plans. The guidance and structure can be found at [Appendix D](#).

Tracked changed marked up version

²⁴ Construction (Design and Management) Regulations 2015 <http://www.hse.gov.uk/pUbns/priced/l153.pdf>

592 **6.5. Reducing Flood Risk to Development**

593 **6.1.5.1. Section introduction**

594 Developers must demonstrate that development both appropriately manages flood risk and will still
595 be of a scale and design appropriate to its Broads setting. The Authority will not permit development
596 where the accommodation of measures to reduce flood risk leads to other, unacceptable,
597 consequences. These may include an intrusive scale of building or land raising which is inappropriate
598 in the landscape or built environment.

599 Developers should also note that, in accordance with advice in the NPPG, any necessary flood
600 defence works required because of the development form part of that development and should be
601 funded by the developer.

602 It should be noted that all aspects of the development need to comply with policies of the Core
603 Strategy, Development Management DPD and Sites Specifics Local Plan and that conformity with
604 Core Strategy policy CS20/DP29 does not override applicability of other plans.

605 The Authority will continue to give considerable weight to the advice of the Environment Agency
606 with regard to the appropriateness of development and necessary flood alleviation measures.

607
608 The following sections discuss ways of potentially reducing flood risk to development. In their
609 response to the consultation on this DPD, Historic England was keen (in their response to the
610 consultation on this SPD) to emphasise the waterlogged archaeology in the area and that changes to
611 the flow of water could affect preservation.

612 **6.2.5.2. Raising Floor Levels**

613 This involves setting the building floor level above an appropriate flood level. This approach provides
614 a partial solution by giving protection to people and accommodation, provided that the flood level
615 does not exceed the floor level provided.

616 A development could be designed to allow the site to flood beneath a raised building. This method
617 does not protect the building curtilage or access roads. In addition, flooding may prevent the
618 effective operation of local drainage and sewage systems, with potential adverse environmental and
619 amenity consequences.

620
621 It is also difficult to apply new floor levels to building conversions.

622 The appropriate minimum floor levels to manage flood risk will be determined through the site-
623 specific Flood Risk Assessment. The use of raised floor levels has significant implications for
624 development. Firstly, it can lead to a raising of the ridge level and overall height of the building.
625 Secondly, it affects the relationship between the floor level and the surrounding site and therefore
626 the means of access into the building, including access for all (whereby access ramps for example
627 might need to be longer and higher when compared to not raising the floor). These aspects need
628 careful consideration by the architect at an early stage to ensure that the resulting development will
629 be acceptable in terms of its design in relation to its surroundings and that it complies with legal and
630 policy requirements with regard to access for all.

631 | **6.3.5.3. Raising Plot Levels**

632 Developers may seek to reduce the risk of flooding by raising the level of the land, either in isolation
633 or in combination with a minimum floor level. This approach is unlikely to be a viable option in the
634 Broads. The Authority and the Environment Agency have a preference against raising land levels,
635 because:

- 636 (i) It can serve to divert flood water onto neighbouring plots, particularly in areas primarily affected
637 by fluvial flooding.
- 638 (ii) Land in the Broads area is often wet and of poor load bearing capacity. Raising land by adding
639 soil or other material may lead to the site sinking over a period of time.
- 640 (iii) It affects the relationship of the site to surrounding plots, and to access roads. On waterside
641 sites, the relationship to the river or broad is changed, often leading to the need for higher piling
642 and quay heading, affecting the visual quality of the water's edge.
- 643 (iv) It can be damaging to ecology, geomorphology, trees and other vegetation on the site.
- 644 (v) It can change the character of the landscape. Land raising can increase the height and
645 prominence of new buildings.
- 646 (vi) It may be difficult to ensure that any replacement of lost flood storage capacity behaves in the
647 same manner.

648 Compensatory floodplain storage may be required as a mitigation measure, but this can be difficult
649 to achieve on small plots and the impact off-site would always need to be assessed.

650 | **6.4.5.4. Bunds or Flood Walls**

651 In some exceptional cases it may be appropriate to consider the use of earth bunds or flood walls to
652 reduce the risk of flooding of development or to protect existing development. This approach is less
653 likely to be applicable to small-scale developments.

654 While acceptable in some locations, bunds or flood walls are likely to be damaging to the character
655 of the landscape or built environment in others.

656 As with land raising, bunds can divert flood water onto neighbouring land, particularly in areas
657 primarily affected by fluvial flooding. The provision of alternative flood storage capacity in the
658 drainage compartment will be a requirement in the use of this technique. Careful consideration will
659 be needed to ensure that the engineering requirements for bunds or flood walls are met and that, as
660 far as possible, they are designed to be sympathetic to the local character. In addition, it will be
661 important to ensure that a bund or flood wall does not prejudice the operational requirements of
662 the site, for example at a boatyard or other employment site. This requirement may not apply to the
663 use of bunds to create a temporary storage area or to provide pollution prevention but the potential
664 to increase flood risk elsewhere may need to be considered.

665 An Environmental Permit may be required under the Environmental Permitting (England and Wales)
666 ~~Legislation-Regulations~~ 2010. Check the information at [https://www.gov.uk/topic/environmental-](https://www.gov.uk/topic/environmental-management/environmental-permits)
667 [management/environmental-permits](https://www.gov.uk/topic/environmental-management/environmental-permits) for advice.

668 | **6.5.5.5. Floating/Amphibious Structures**

669 Another option to explore is a fixed but floating solution to development for commercial uses or
670 replacement residential properties. Development might be located on land or in a mooring cut
671 within a currently developed plot giving connectivity with the landscape, retaining the feeling of
672 intimacy on the waterway and the sense of space between development experienced throughout
673 the Broads system.

674 For such development to be acceptable, it must also not increase flood risk elsewhere; reduce flood
675 risk overall wherever possible; and be safe for its lifetime taking into account climate change.
676 Solutions would have to address design issues, including height and the visual impact of floats, as
677 well as consideration of safe access and egress at times of flood and infrastructure requirements.
678 Impact on navigation is also an important consideration. ~~The new Local Plan (in production at the~~
679 ~~time of this SPD) seeks to address floating buildings.~~

680 The appropriateness of such development must be considered based upon its Flood Risk
681 Vulnerability Classification from Table 2 of the Flood Risk and Coastal Change Planning Practice
682 Guidance (discussed previously in this document).

683 Such development would also need to consider Water Framework Directive impacts through an
684 assessment of direct effects on river morphology.

685 ~~6.6.5.6.~~ **Resilience and Resistance**

686 Flood-resilient buildings are designed and constructed to reduce the impact of flood water entering
687 the building (through air bricks, through walls or through toilets or plug holes) so that no permanent
688 damage is caused, structural integrity is maintained and drying and cleaning is easier. Flood-resistant
689 construction can prevent entry of water or minimise the amount that may enter a building where
690 there is short duration flooding outside with water depths of 0.6 metres or less.

691 Consideration should be given at the design stage to the potential effects of flooding on the
692 electrical, foul drainage and other key aspects of the development.

693 Developers may also put forward innovative approaches towards reducing the risks or effects of
694 flooding. The Broads Authority will give careful consideration to such proposals which:

- 695 • Build in resilience and allow sites to flood, for example in commercial non- residential buildings
696 and voids around or under replacement chalets or extensions to buildings for example.
- 697 • Utilise floating walkways as a safe means of escape.
- 698 • Use soft river edge protection measures which absorb water, reduce erosion from wake and
699 encourage plant growth²⁵.
- 700 • Provide compensatory flood storage capacity or washlands (which are areas provided to be
701 deliberately flooded).

702 Further information can be found in the following documents:

- 703 • Improving the Flood Performance of New Buildings: Flood Resilient Construction (CLG 2007)²⁶

²⁵ See Design Guides: <http://www.broads-authority.gov.uk/planning/Planning-permission/design-guides>

²⁶ Flood Resilient Construction

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7730/flood_performance.pdf

- 704 • Six Steps To Property Level Flood Protection - Guidance for property owners²⁷
- 705 • Flood Protection and your property. A guide to protecting your home (Property Care Association, 2014)²⁸
- 707 • Homeowner’s guide to flood resilience – A living document (Know Your Flood Risk)²⁹
- 708 • The Property Flood Resilience Action Plan - DEFRA³⁰

6.7.5.7. Sustainable Drainage Systems (SuDS)

Surface water drainage systems developed in line with the ideals of sustainable development are collectively referred to as Sustainable Drainage Systems (SuDS). Approaches to manage surface water that take into account water quantity (flooding), water quality (pollution), amenity and biodiversity issues are collectively referred to as Sustainable drainage. The philosophy of SuDS is to replicate, as closely as possible, the natural drainage from a site before development. Including the use of shallow surface structures to mimic the pre development scenario and manage water close to where it falls. SuDS can be designed to slow water down (attenuate) before it enters streams, rivers and other watercourses, they provide areas to store water in natural contours and can be used to allow water to soak (infiltrate) into the ground, evaporate from surface water or transpire from vegetation (known as evapotranspiration). It is important to include sufficient treatment steps as part of the design of SuDS to ensure water quality is protected.

All major development is expected to include Sustainable Drainage (SuDS) to manage surface water runoff, unless it is demonstrated to be inappropriate. SuDS are the subject of a The-written Ministerial Statement (December 2014) (effective provision of advice to local planning authorities in relation to water drainage management) which can be found at <https://www.gov.uk/government/speeches/sustainable-drainage-systems>

Where any SuDS are proposed it is important to demonstrate that the SuDS hierarchy has been followed both in terms of:

- surface water disposal location, prioritised in the following order: disposal of water to shallow infiltration, to a watercourse, to a surface water sewer, combined sewer / deep infiltration (generally greater than 2m below ground level (deep infiltration systems can pose a risk to groundwater quality and are not usually supported); and
- the SuDS components used within the management train (source, site and regional control).

At least one feasible proposal for the disposal of surface water drainage should be demonstrated and in many cases supported by the inclusion of appropriate information. Evidence is required to be provided to the Broads Authority and sewerage undertaker in relevant situations to demonstrate

²⁷ http://www.smartfloodprotection.com/wp-content/uploads/dlm_uploads/2014/09/property_owners_guidance_revised.pdf. The guidance has been endorsed by the National Flood Forum, the Association of British Insurers, Defra, the Environment Agency, the Flood Protection Association, and the Local Government Association and was produced through the EUFP7 funded SMARTeST Project (further details: www.floodresilience.eu and www.tech.floodresilience.eu).

²⁸ A guide to protecting your home <http://www.property-care.org/wp-content/uploads/2015/03/FPG-Leaflet-A5-Folded-to-A3-Draft-3-FINAL-WEB.pdf>

²⁹ Homeowners Guide to Flood resilience http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodGuide_ForHomeowners.pdf

³⁰ THE PROPERTY FLOOD RESILIENCE ACTION PLAN https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551615/flood-resilience-bonfield-action-plan-2016.pdf

736 that it is not possible to discharge surface water via infiltration or to a watercourse in accordance
737 with Part H of Building Regulations. It is recognised that many areas in the Broads Authority area
738 may not be suitable for infiltration SuDS due to the location in low lying areas very close to main
739 rivers or due to high ground water levels. However, other SuDS disposal ~~locations~~ options are likely
740 to be available and there are many SuDS components which can attenuate and treat water quality
741 without relying on infiltration. Careful consideration would be needed to ensure that any
742 development would not remove flood water storage in areas of fluvial flood risk (e.g. Flood Zone 3).
743 There may also be constraints to surface water discharges relating to high water levels in a receiving
744 watercourse especially those which are tidal.

745 There are various sources of technical information that can be used when addressing surface water
746 and designing SuDS:

- 747 • NPPG³¹
- 748 • Non-statutory technical standards for the design, maintenance and operation of sustainable
749 drainage systems³²
- 750 • SuDS manual produced by CIRIA³³.
- 751 • With regards to adopting SuDS, Anglian Water's current standards for SuDS adoption are
752 available to view at the following address: <http://www.anglianwater.co.uk/developers/suds.aspx>

³¹ Why are sustainable drainage systems important? <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/reducing-the-causes-and-impacts-of-flooding/why-are-sustainable-drainage-systems-important/>

³² Non-statutory technical standards for sustainable drainage systems
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415773/sustainable-drainage-technical-standards.pdf

³³ In delivering SuDS there is a requirement to meet the framework set out by the Government's 'non statutory technical standards' and the revised SuDS Manual complements these but goes further to support the cost-effective delivery of multiple benefits. http://www.ciria.org/Resources/Free_publications/SuDS_manual_C753.aspx

7.6. Other Important Considerations

7.1.6.1. Planning permission does not guarantee insurance cover

Future insurance cover (in terms of adequate value and at a reasonable cost) for development in flood zones should be an important consideration for the applicant/developer of the scheme. If a scheme was to get planning permission, there is no guarantee that it will successfully get adequate insurance cover at a reasonable cost to the owner or occupier. The Broads Authority strongly recommends that prior to application and delivery on site an insurance provider is contacted and the likelihood of a development getting insured for an adequate value at an acceptable cost is investigated. You may wish to contact Flood RE³⁴ who is 'helping to provide affordable and available home insurance'.

7.2.6.2. Check Building Regulation requirements

A development proposal could seek to address flood risk through its design and seem acceptable from a planning point of view, but there could be issues with meeting the requirements of Building Regulations. The Broads Authority strongly recommends that any design measures to mitigate against or manage flood risk and make a development resilient or resistant to flood risk is discussed with a Building Regulations professional prior to application and delivery on site.

7.3.6.3. Consents

Under the Environmental Permitting (England and Wales) Regulations 2010, an environmental permit may be required for works in, under, over or within 8m of a main river or flood defence; or within 16m of a tidally influenced main river or associated flood defence. In the Broads, main rivers are usually tidally influenced so the wider distance will most likely apply.

'Flood Risk Activities' may require the Environment Agency to issue a bespoke permit, or may be covered by a standard rules permit which includes a set of fixed rules. Activities identified as lower risk may be excluded from the need for a permit or may need to be registered as an exempt activity and comply with certain rules.

Further information on Flood Risk Activity permits is available from:

<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>

To apply or seek further advice, contact the Environment Agency by email:

floodriskactivity@environment-agency.gov.uk or by telephone: 03708 506 506.

Land drainage consent may also be required for any culverts or works affecting the flow of an ordinary watercourse (non-main river). It should be noted that the Broads Authority seeks-tries to avoid the use of culverts. r-and-eConsent for such works will not normally be granted in watercourses due to the adverse impacts on ecology and the potential for an increase in flood risk, except when used as part of water control structures within drainage systems on marshes or fen sites and occasionally for access for equipment over marsh drainage dykes. Culverts are generally pipes through which the watercourse is channelled and can potentially restrict the flow. If the use of a

³⁴ Flood Re is helping to provide affordable and available home insurance. <http://www.floodre.co.uk/>

789 culvert cannot be avoided then their size should be designed such that they have capacity for high
 790 flow conditions (and this specification might be a matter for the IDB or Environment Agency to
 791 consider). It should be noted that these approvals are separate from the planning process.

792 | **7.4.6.4. Flood Warnings**

793 It is emphasised that the application of measures referred to in this document is not a guarantee
 794 against flooding. While the risk of flooding can be reduced, a residual risk will always remain.

795 Individual dwellings and whole sites can be registered with the Environment Agency's flood warning
 796 service 'Floodline Warnings Direct '. The Floodline Warnings Direct (FWD) service provides
 797 information concerning the current and future flooding danger. In the event that flooding in your
 798 area is anticipated, the Environment Agency will issue a flood warning by phone, text or email.

799 The Environment Agency endeavour to give 10 to 12 hours' notice of Tidal Flooding through the
 800 Flood Warning Service to the coast, estuaries and Broads. This may vary depending on the conditions
 801 on the day, timing of the tide in question and your particular location in the Broads (due to the time
 802 | the tide takes to travel up the Broadland rivers). However the notice given for potential **fluvial**
 803 flooding problems will be no less than 2 hours and will usually be a lot more. Further information can
 804 be obtained via: <https://flood-warning-information.service.gov.uk>.

805 It is not possible for the EA to warn for a 'Breach' of defences. This should be considered a part of
 806 the Flood Response Plan.

807 | **7.5.6.5. Climate Smart Approach**

808 To consider how to ensure your development
 809 is suitably proofed against a changing climate
 810 you may wish to take a Climate-Smart
 811 Approach. The Approach takes through a
 812 series of simple steps to consider how a
 813 difference in the climate might impact on the
 814 way you live or work and what options you
 815 could develop to help build resilience or
 816 adapt to a changing regime. These are
 817 summarised in this diagram and more detail
 818 is given in [Appendix E](#).

819 The uncertainty about climate change should
 820 not be a reason to avoid preparing
 821 for it. However, we need climate adaptation
 822 responses that are robust, informed and
 823 flexible. To help develop adaptation planning
 824 in the Broads we are suggesting using a
 825 'climate-smart' approach.

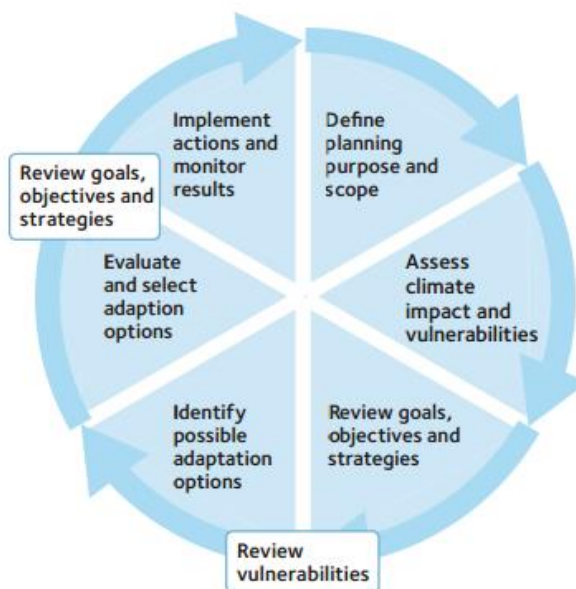


Figure 1 Climate-smart planning cycle

826 The long-term aim of climate-smart planning is to sustain the environment and the multiple benefits
827 it provides for people. Adaptive actions should also seek to reduce greenhouse gas emissions and
828 improve evidence and understanding of climate change processes and impacts.

829 We can test whether our plans will help us adapt to changes in weather, climate change and sea
830 level rise by:

- 831 • Focusing on future possibilities rather than trying to retain the past
- 832 • Being flexible enough to cope with climate uncertainties
- 833 • Avoiding adaptation actions that actually makes (other) things worse – sometimes known as
834 'maladaptation'

835 Climate-smart planning can be done at an individual site level or a larger area level. It should help
836 identify adaptive options within the proposed development or identify when there needs to be
837 changes to the proposed goals because climate (flood) risks means the original intentions become
838 unachievable – perhaps due to cost or technical issues. Climate-smart planning is therefore a
839 repeating cycle.

840 An increased risk of flooding (from a rising sea level and more extreme rainfall events) is probably
841 the greatest changing risk but consideration of all extreme events, periods of increased temperature
842 and more cloud free days could all have impacts. Warmer weather and less days of frost could be
843 opportunities that might help a development and could be easily adapted to. A simple table of likely
844 risks and some initial thinking about adaptation options can be found in the Full and Summary
845 Broads Climate Adaptation Plans³⁵.

³⁵ Climate Change Adaptation Report http://www.broads-authority.gov.uk/data/assets/pdf_file/0005/709160/Climate-Adaptation-Plan-Report.pdf

846 **7. Links to useful websites**

847 **Finding out about flood risk**

848 The EA website shows flood risk in the area:

849 <http://maps.environment->

850 [agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&text](http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&text)

851 [only=off&lang= e&topic=floodmap](http://maps.environment-agency.gov.uk/wiyby/wiybyController?x=357683.0&y=355134.0&scale=1&layerGroups=default&ep=map&text)

852 [Long term flood risk assessment for locations in England can be found here:](https://flood-warning-information.service.gov.uk/long-term-flood-risk)

853 <https://flood-warning-information.service.gov.uk/long-term-flood-risk>

854 **Government Guidance**

855 [Government Guidance can be found here:](https://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/)

856 <https://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/>

857 **Flood Risk Assessment**

858 [Flood risk assessment for planning applications. Find out when you need to do a flood risk](https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications)

859 [assessment as part of your planning application, how to do one and how it's processed.](https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications)

860 <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

861 [Framework and Guidance for Assessing and Managing Flood Risk for New Development – Full](http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2320_3364_TRP.pdf)

862 [Documentation and Tools. EA](http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2320_3364_TRP.pdf)

863 http://sciencesearch.defra.gov.uk/Document.aspx?Document=FD2320_3364_TRP.pdf

864 **Surface Water Management Plans**

865 [Some areas of Norfolk have their own Surface Water Management Plans. Go here to have a look:](https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/flood-and-water-management-policies/surface-water-management-plans)

866 [https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-](https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/flood-and-water-management-policies/surface-water-management-plans)

867 [strategies/flood-and-water-management-policies/surface-water-management-plans](https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/flood-and-water-management-policies/surface-water-management-plans)

868 **Preparing for flooding**

869 <https://www.gov.uk/prepare-for-flooding>

870 **Protecting property**

871 [SIX STEPS TO PROPERTY LEVEL FLOOD PROTECTION. Guidance for property owners.](http://www.smartfloodprotection.com/wp-content/uploads/dlm_uploads/2014/09/property_owners_guidance_revised.pdf)

872 [http://www.smartfloodprotection.com/wp-](http://www.smartfloodprotection.com/wp-content/uploads/dlm_uploads/2014/09/property_owners_guidance_revised.pdf)

873 [content/uploads/dlm_uploads/2014/09/property_owners_guidance_revised.pdf](http://www.smartfloodprotection.com/wp-content/uploads/dlm_uploads/2014/09/property_owners_guidance_revised.pdf)

874 [Homeowners Guide to Flood resilience - A Living Document](http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodGuide_ForHomeowners.pdf)

875 http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodGuide_ForHomeowners.pdf

876 [THE PROPERTY FLOOD RESILIENCE ACTION PLAN. An action plan to enable better uptake of resilience](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551615/flood-resilience-bonfield-action-plan-2016.pdf)

877 [measures for properties at high flood risk.](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551615/flood-resilience-bonfield-action-plan-2016.pdf)

878 [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551615/flood-resilience-bonfield-action-](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551615/flood-resilience-bonfield-action-plan-2016.pdf)

879 [plan-2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/551615/flood-resilience-bonfield-action-plan-2016.pdf)

880 **Flood Advice for Businesses.**

881 http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodGuide_ForBusinesses.pdf

- 882 [Would your business stay afloat? A guide to preparing your business for flooding.](#)
883 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/410606/LIT_5284.pdf
- 884 [Flooding minimising the risk. Flood plan guidance for communities and groups. Practical advice to](#)
885 [help you create a flood plan.](#)
886 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292939/LIT_5286_b9ff43.pdf
- 887 [Combined resistance and resilience measures.](#)
888 http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodGuide_ForResilience.pdf
- 889 [Blue Pages. This is a directory of property flood products and services put together to advise and](#)
890 [inform you of what's available to help reduce the risk of flooding to your home or business.](#)
891 <http://www.bluepages.org.uk/>
- 892 **[After a flood](#)**
893 [Flood Recovery Guide.](#)
894 http://www.knowyourfloodrisk.co.uk/sites/default/files/FloodRecoveryGuide_Interactive.pdf
- 895 **[SuDS](#)**
896 [Non-statutory technical standards for the design, maintenance and operation of sustainable](#)
897 [drainage systems.](#)
898 [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415773/sustainable-drainage-technical-](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415773/sustainable-drainage-technical-standards.pdf)
899 [standards.pdf](#)
- 900 [SuDS manual produced by CIRIA .](#)
901 http://www.ciria.org/Resources/Free_publications/SuDS_manual_C753.aspx
902 [With regards to adopting SuDS, Anglian Water's current standards for SuDS adoption are available to view at the following](#)
903 [address: http://www.anglianwater.co.uk/developers/suds.aspx](http://www.anglianwater.co.uk/developers/suds.aspx)
- 904 **[Permits](#)**
905 [Further information on Flood Risk Activity permits is available from: \[https://www.gov.uk/guidance/flood-\]\(https://www.gov.uk/guidance/flood-risk-activities-environmental-permits\)](#)
906 [risk-activities-environmental-permits](#)
- 907 **[Flood Warnings](#)**
908 [Flood warnings currently issued for England and Wales:](#)
909 [https://flood-warning-information.service.gov.uk.](https://flood-warning-information.service.gov.uk)
- 910 [Sign up for flood warnings \(England and Wales\)](#)
911 <https://www.gov.uk/sign-up-for-flood-warnings>
- 912 **[Norfolk Resilience Forum](#)**
913 <http://www.norfolkprepared.gov.uk/local-risks/plans/>

914 **8. Summary and Conclusions**

915 The purpose of this SPD is to increase awareness of the nature of flood risk in the Broads area, give
916 advice to developers and others about the Authority’s approach to the issue of development and
917 flood risk, and stress the need to maintain a high standard of design in new waterside development.

918 This SPD ~~will replace~~ the 2008 SPD. ~~We are reviewing the current 2008 SPD because:~~
919 ~~The current SPD is out of date. It initially bridged the policy gap between 2007 Core Strategy and~~
920 ~~2011 DM-DPD.~~
921 ~~The current SPD was based on PPS25. This has been withdrawn with national flood risk policy and~~
922 ~~guidance contained in the NPPF and NPPG.~~
923 ~~The Broads Authority has explored climate change issues in more detail~~

924 The SPD seeks to clarify and expand on Policy DM29. It sets out a local approach to some ~~some~~
925 national guidance. Furthermore, there are templates and checklists relating to small scale Flood Risk
926 Assessments and Flood Response Plans.

927 ~~The consultation on this SPD runs from 21 November until 4pm on 16 December. That is a period of~~
928 ~~5 weeks and reflects the build up to Christmas as well as the next version of the Local Plan being out~~
929 ~~for consultation on 4 December for 9 weeks. The minimum period for consultation for a SPD is 4~~
930 ~~weeks.~~

931 ~~The consultation version of the SPD is available at~~
932 ~~<http://www.broads-authority.gov.uk/broadsconsultations>.~~

933 Appendix A: Glossary and Abbreviations

934 Catchment

935 The area contributing surface water flow to a point on a drainage or river system. It can be divided
936 into sub-catchments.

937 Climate Change

938 Climate refers to the weather over a period of time (at least a decade and probably nearer 30 years)
939 and takes account of natural variability. Climate change refers to the current more rapid change of
940 conditions that is being driven by increased greenhouse gas emission primarily from fossil fuels
941 altering the gas levels in the atmosphere. This in turn alters the main weather processes and creates
942 conditions that are unlike normal patterns~~Any long-term significant change in the average weather~~
943 ~~that a given region experiences.~~
944 ~~Average weather may include average temperature, precipitation and wind patterns.~~

945 Environment Agency

946 Are a UK non-departmental public body of DEFRA with the principle aim of protecting and enhancing
947 the environment to make a contribution towards the objective of achieving sustainable
948 development. The Agency has principle responsibility for river flooding.

949 Exception Test

950 If, following application of the Sequential Test (see below), it is not possible for proposed
951 development to be located in zones of lower probability of flooding, the Exception Test should be
952 applied. For the Exception Test to be passed:

- 953 • it must be demonstrated that the development provides wider sustainability benefits to the
954 community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one
955 has been prepared; and
- 956 • a site-specific flood risk assessment must demonstrate that the development will be safe for its
957 lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere,
958 and, where possible, will reduce flood risk overall.

959 Flood Resilience

960 Measures that minimise water ingress and promote fast drying and easy cleaning, to prevent any
961 permanent damage.

962 Flood Resistance

963 Measures to prevent flood water entering a building or damaging its fabric. This has the same
964 meaning as flood proof.

965 Flood Risk

966 The level of flood risk is the product of the frequency or likelihood of the flood events and their
967 consequences (such as loss, damage, harm, distress and disruption).

968 Flood Zone

969 Flood Zones show the probability of flooding, ignoring the presence of existing defences

970 Zone 1: Low Probability of flooding

971 Land having a less than 1 in 1,000 (0.1%) annual probability of river or sea flooding.

972 Zone 2: Medium Probability of flooding

Tracked changed version for reference only.

973 Land having between a 1 in 100 (1%) and 1 in 1,000 (0.1%) annual probability of river flooding; or
974 Land having between a 1 in 200 (0.5%) and 1 in 1,000 (0.1%) annual probability of sea/tidal flooding.

975 **Zone 3a: High Probability**

976 Land having a 1 in 100 (1%) or greater annual probability of river flooding; or
977 Land having a 1 in 200 (0.5%) or greater annual probability of sea/tidal flooding.

978 **Zone 3b: The Functional Floodplain**

979 This zone comprises land where water has to flow or be stored in times of flood, during a flood event
980 with an annual probability of 1 in 20 (5%) or greater.

981 ~~**Functional Floodplain**~~

982 ~~Land where water has to flow or be stored in times of flood.~~

983 **Floodplain**

984 Land adjacent to a watercourse that is subject to repeated flooding under natural conditions.

985 **Flood Risk Assessment (FRA)**

986 An assessment of the risk of flooding, particularly in relation to residential, commercial and
987 industrial land use. FRAs are required to be completed according to the NPPF alongside planning
988 applications in areas that are known to be at risk of flooding.

989 **Fluvial flooding**

990 Flooding from a watercourse (brooks, streams, rivers and lakes etc) that occurs when the water
991 features cannot cope with the amount of water draining into them, from the land. When rainfall is
992 heavy and / or prolonged, a large amount of run-off reaches the rivers and eventually causes them
993 to overtop their banks.

994 ~~**Functional Floodplain**~~

995 ~~Land where water has to flow or be stored in times of flood.~~

996 **Lead Local Flood Authority (LLFA)**

997 Established through the Flood and Water Management Act as the body responsible for managing
998 local flood risk from surface runoff, ordinary watercourses and groundwater.

999 **Main River**

1000 Main rivers are usually larger rivers and streams. In England, the Environment Agency decides which
1001 watercourses are main rivers. It consults with other risk management authorities and the public
1002 before making these decisions. The main river map is then updated to reflect these changes.

Minor Development - flood risk

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

1003 **Material Consideration**

1004 A legal term describing a matter or subject which is relevant (material) for a local authority to
1005 consider when using its powers under planning law in dealing with a planning application.

1006 **Ordinary Watercourse**

1007 An 'ordinary watercourse' is a watercourse that is not part of a main river and includes rivers,
1008 streams, ditches, drains, cuts, culverts, dikes, sluices, sewers (other than public sewers within the
1009 meaning of the Water Industry Act 1991) and passages, through which water flows

1010 **Pluvial Flooding**

1011 Flooding that result from rainfall generated overland flow before the runoff enters any watercourse
1012 or sewer. It is usually associated with high intensity rainfall events. Also referred to as surface water
1013 flooding.

1014 **Residual Flood Risk³⁶**

1015 The remaining flood risk after risk reduction measures have been taken into account. Or the risk
1016 following the failure of defence/flood protection measures.

1017 **River Morphology**

1018 The shape of the river channel, including the form of the bed and banks.

1019 **Run-off**

1020 Water flow over the ground surface to the drainage system. This occurs if the ground is
1021 impermeable, is saturated or if rainfall is particularly intense.

1022 **Section 106 (Town and Country Planning Act 1990)**

1023 A section within the Town and Country Planning Act 1990 that allows a planning obligation to a local
1024 planning authority to be legally binding.

1025 **Sequential Test**

1026 The NPPF advocates that planners use a sequential test when considering land allocations for
1027 development to avoid flood risk where possible. The Sequential Test aims to steer development to
1028 Flood Zone 1, which is an area at low risk of flooding. Where it is not possible to locate development
1029 in such locations sites in Flood Zone 2 will be considered. Only where it is not possible to locate
1030 development within Flood Zones 1 and 2 will development in Flood Zone 3 be considered.

1031 **SUDS (Sustainable Drainage Systems)**

1032 A sequence of management practices and control structures designed to drain surface water in a
1033 more sustainable fashion than some conventional techniques. Surface water management - The
1034 management of runoff in stages as it drains from a site.

1035 **Watercourse**

1036 A term including all rivers, streams ditches drains cuts culverts dykes sluices and passages through
1037 which water flows.

³⁶ <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/developers-to-demonstrate-that-development-will-be-safe-to-satisfy-the-second-part-of-the-exception-test/what-is-residual-risk/>

1038 **Water Framework Directive**

1039 The Water Framework Directive (WFD) is legislation to protect and improve water resources. It
1040 requires an integrated approach to the management of water; including rivers, streams, lakes,
1041 estuaries and coastal waters, as well as surface water and groundwater.

Tracked changed marked up version

1042 Appendix B: The Broads Planning Policy Context

1043 National Planning Policy

1044 The National Planning Policy Framework sets out government's planning policies for England and
1045 how these are expected to be applied. In relation to flood risk, paragraph 100 generally summarises
1046 the approach taken to flood risk:

1047 **100.** Inappropriate development in areas at risk of flooding should be avoided by directing
1048 development away from areas at highest risk, but where development is necessary, making it safe
1049 without increasing flood risk elsewhere. Local Plans should be supported by Strategic Flood Risk
1050 Assessment and develop policies to manage flood risk from all sources, taking account of advice
1051 from the Environment Agency and other relevant flood risk management bodies, such as lead local
1052 flood authorities and internal drainage boards. Local Plans should apply a sequential, risk-based
1053 approach to the location of development to avoid where possible flood risk to people and property
1054 and manage any residual risk, taking account of the impacts of climate change, by:

- 1055 • applying the Sequential Test;
- 1056 • if necessary, applying the Exception Test;
- 1057 • safeguarding land from development that is required for current and future flood management;
- 1058 • using opportunities offered by new development to reduce the causes and impacts of flooding;
- 1059 and
- 1060 • where climate change is expected to increase flood risk so that some existing development may
1061 not be sustainable in the long-term, seeking opportunities to facilitate the relocation of
1062 development, including housing, to more sustainable locations.

1063 The National Planning Practice Guidance is an on-line resource that elaborates and gives more detail
1064 of policies in the NPPF. For example, the NPPG has vulnerability classification tables as well as
1065 information on what a Strategic Flood Risk Assessment should address.

1066 The NPPF and NPPG have replaced PPS25 in relation to the Government's planning policy on flood
1067 risk and flooding.

1068 The NPPG pages on flood risk and coastal change can be found here:

1069 <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/>

1070 The NPPF can be found here:

1071 <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

1072 Core Strategy

1073 The Core Strategy was adopted in 2007. Within the Core strategy are strategic policies. Flood risk
1074 related policies of relevance are listed below.

1075 **CS18** Development will be located to protect the countryside from inappropriate uses to achieve
1076 sustainable patterns of development, by concentrating development in locations:

- 1077 • with local facilities;
- 1078 • with high levels of accessibility; and
- 1079 • where previously developed land is utilised.

1080 **CS20** Development within the Environment Agency’s flood risk zones will only be acceptable when it
1081 is:
1082 • compatible with national policy and when the sequential test and the exception test, where
1083 applicable, as set out in PPS25 have been satisfied,
1084 • demonstrated that it is necessary to support the social and economic needs of the local
1085 community,
1086 • would not increase flood risk elsewhere; and
1087 • would not affect the ability for future flood alleviation projects to be undertaken.

1088 **CS23** A network of waterside sites will be maintained throughout the system in employment use,
1089 providing:
1090 • boating support services;
1091 • provision of visitor facilities;
1092 • access to the water;
1093 • wider infrastructure to support tourism;
1094 • recreational facilities; and
1095 • community facilities.
1096 Limited redevelopment of boatyards and other waterside employment sites for tourism or leisure-
1097 based operations will be permitted, subject to retention of a network of boating services and to the
1098 use for employment purposes of the major part of the sites.

1099 Please note that these three policies have been assessed against the NPPF, which came into force in
1100 March 2012:
1101 • CS18: Generally consistent, but potential for a degree of inconsistency only if this is used to
1102 exclude all development elsewhere (see, e.g., NPPF para 29).
1103 • CS20: Generally consistent, but potential for a degree of inconsistency only if this is used too
1104 rigidly (for instance in relation to minor development, non- „new“ development, development,
1105 etc.), and reference to PPS25 is redundant. No action required ahead of Plan review.
1106 • CS23: policies are considered to be wholly consistent with the NPPF and can be afforded full
1107 weight in decision making.

1108 **Development Management DPD**

1109 The Development Management DPD was adopted in 2011. The policies within this document
1110 provide detail to help determine planning applications.

1111 **DP4 – Design**

1112 All development will be expected to be of a high design quality. Development should integrate
1113 effectively with its surroundings, reinforce local distinctiveness and landscape character and
1114 preserve or enhance cultural heritage. Innovative designs will be encouraged where appropriate.
1115

1116 Proposals will be assessed to ensure they effectively address the following matters (*iInter ali*)
1117 (i) Flood Risk and Resilience: Development should be designed to reduce flood risk but still be of a
1118 scale and design appropriate to its Broads setting. Traditional or innovative approaches may be
1119 employed to reduce the risks and effects of flooding.

1120 **DP24** – Replacement Dwellings
1121 Replacement dwellings outside of the development boundary will be permitted on a one-for-one
1122 basis provided that: (*inter alia*)
1123 (b) The replacement would be located within the same building footprint as the existing dwelling or
1124 in an alternative location within the same curtilage, which would be less visually prominent and/or
1125 at a lower risk of flooding.

1126 **DP29** - Development on Sites with a High Probability of Flooding
1127 See section 2 for policy text.

1128 Please note that these three policies have been assessed against the NPPF, which came into force in
1129 March 2012:

- 1130 • DP4 and DP29: policies are considered to be wholly consistent with the NPPF and can be
1131 afforded full weight in decision making.
- 1132 • DP24: Policy issues not specifically reflected in NPPF. However general thrust of housing policies
1133 in the NPPF would be less restrictive than this policy. Continue to apply weight to policy. No
1134 action required ahead of Plan review. See para 3.2 of main report.

1135 **Sites Specifics Local Plan**

1136 The Sites Specifics Local Plan was adopted in 2014. The allocations range from open space and mixed
1137 use development to areas of tranquillity. No additional local policy on flood risk is included. Where
1138 flood risk has the potential to be a consideration on a particular site, the policy emphasises this and
1139 directs towards national flood risk policy.

1140 **Neighbourhood Plans**

1141 At the time of writing, Acle, Brundall and Strumpshaw Neighbourhood Plans ~~were have been~~
1142 adopted. The Neighbourhood Plans do not include an additional policy on flood risk, but where flood
1143 risk has the potential to be a consideration on a particular site, the policy emphasises this and directs
1144 towards Broads Authority and national flood risk policy.

1145 **The New Broads Local Plan**

1146 At the time of writing, a new Local Plan was being produced for the Broads. This Local Plan will bring
1147 together strategic, development management and site specific policies. Some existing adopted
1148 policies will be rolled forward and some new issues will be addressed. Flood risk will be one of the
1149 issues addressed in the new Local Plan. The Local Plan is due for adoption in spring 2018.

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1150 **Appendix C: Strategic Environmental Assessment**

1151 The Strategic Environmental Assessment (SEA) Directive is a European Union requirement that seeks
 1152 to provide a high level of protection of the environment by integrating environmental considerations
 1153 into the process of preparing certain plans and programmes. Its aim is “to contribute to the
 1154 integration of environmental considerations into the preparation and adoption of plans and
 1155 programmes with a view to promoting sustainable development, by ensuring that, in accordance with
 1156 this Directive, an environmental assessment is carried out of certain plans and programmes which
 1157 are likely to have significant effects on the environment.”

1158 With regards to a SPD requiring a SEA, the NPPG says:

1159 *Supplementary planning documents do not require a sustainability appraisal but may in exceptional*
 1160 *circumstances require a strategic environmental assessment if they are likely to have significant*
 1161 *environmental effects that have not already have been assessed during the preparation of the Local*
 1162 *Plan.*

1163 *A strategic environmental assessment is unlikely to be required where a supplementary planning*
 1164 *document deals only with a small area at a local level (see regulation 5(6) of the Environmental*
 1165 *Assessment of Plans and Programmes Regulations 2004), unless it is considered that there are likely*
 1166 *to be significant environmental effects.*

1167 *Before deciding whether significant environment effects are likely, the local planning authority*
 1168 *should take into account the criteria specified in Schedule 1 to the Environmental Assessment of*
 1169 *Plans and Programmes Regulations 2004 and consult the consultation bodies.*

1170 The following is an internal assessment relating to the requirement of the Flood Risk SPD to undergo
 1171 a Strategic Environmental Assessment.

The Environmental Assessment of Plans and Programmes Regulations 2004 requirement	Assessment of the Flood Risk SPD
Environmental assessment for plans and programmes: first formal preparatory act on or after 21st July 2004	
Is on or after 21st July 2004.	Yes. The SPD will be completed in 2016.
The plan or programme sets the framework for future development consent of projects.	No. It elaborates on already adopted policy.
The plan or programme is the subject of a determination under regulation 9(1) or a direction under regulation 10(3) that it is likely to have significant environmental effects.	See assessment in this table.
CRITERIA FOR DETERMINING THE LIKELY SIGNIFICANCE OF EFFECTS ON THE ENVIRONMENT	
1. The characteristics of plans and programmes, having regard, in particular, to	
The degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources.	The SPD expands on adopted policy. It will be a material consideration in determining planning applications. The SPD does relate to location (in referring to flood zones 3a and 3b) and size (of replacement dwellings) as well as operating conditions (in relation to resilience and guidance for flood response plans).
the degree to which the plan or programme influences other plans and programmes	The SPD does not influence other plans, rather expands on adopted policy. That is to say, it

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The Environmental Assessment of Plans and Programmes Regulations 2004 requirement	Assessment of the Flood Risk SPD
including those in a hierarchy	has been influenced by other plans or programmes.
the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development	The adopted policy and the SPD (which expands on adopted policy) seek to promote sustainable development.
environmental problems relevant to the plan or programme	The SPD relates to adopted policies on flood risk. The environmental problem is flood risk.
the relevance of the plan or programme for the implementation of Community legislation on the environment (for example, plans and programmes linked to waste management or water protection).	The SPD relates to adopted policies on flood risk. The environmental problem is flood risk.
2. Characteristics of the effects and of the area likely to be affected, having regard, in particular, to	
the probability, duration, frequency and reversibility of the effects	The SPD will not affect the probability, duration or frequency of the causes of flood events. That is down to the weather or tide in the main. The impact of flooding on development (and people) already in place is not likely to be affected by this SPD (unless an application is submitted to change the existing development in some form). The adopted policy (on which this SPD expands) could affect the scale of flooding and impact on flooding although the development in the Broads tends to be minor in scale. If the SPD is followed, this could be a positive effect when compared to a development that does not follow a revised SPD.
the cumulative nature of the effects	Flood risk can be increased because of other developments. The SPD refers to the issue of increasing flood risk elsewhere which is linked to cumulative effects.
the transboundary nature of the effects	The Broads Authority sits within six districts so by its very nature there are transboundary considerations, in relation to administrative boundaries. Flood plains are identified for watercourses so to some extent, the transboundary nature of fluvial flooding is known. The transboundary nature of surface water flooding is an area of work which the Lead Local Flood Authorities either have or are working on.
the risks to human health or the environment (for example, due to accidents)	The SPD seeks to elaborate on adopted policies relating to flood risk. Flood risk can affect human health and the environment. The contents of the SPD seek to reduce flood risk and therefore reduce impacts on human

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The Environmental Assessment of Plans and Programmes Regulations 2004 requirement	Assessment of the Flood Risk SPD
	health and the environment.
the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected)	The SPD will cover the Broads Authority which includes 6,000 permanent residents. There are also visitors throughout the year.
the value and vulnerability of the area likely to be affected due to— <ul style="list-style-type: none"> • special natural characteristics or cultural heritage; • exceeded environmental quality standards or limit values; or • intensive land-use; 	The Broads is special in its natural characteristics and cultural heritage. Unsure if standards or limits have been exceeded in the Broads Not relevant
The effects on areas or landscapes which have a recognised national, Community or international protection status.	The area to which the SPD applies is the Broads with an equivalent status to that of a National Park.

1172 The environment bodies were consulted in April 2016. Their responses are below.

- 1173 • **Natural England:** It is our advice, on the basis of the material supplied with the consultation,
1174 that, in so far as our strategic environmental interests are concerned (including but not limited
1175 to statutory designated sites, landscapes and protected species, geology and soils), that there
1176 are unlikely to be significant environmental effects from the proposed plan on sensitive sites
1177 that Natural England has a statutory duty to protect.
- 1178 • **Historic England:** It does not appear that the historic environment is affected, which would be
1179 the primary focus for Historic England. In light of the points raised by other statutory consultees
1180 such as the Environment Agency in particular then I would conclude that an SEA is unlikely to be
1181 required. If the Broads Authority are minded to undertake an assessment against the existing SA
1182 objectives that are being developed for the Local Plan, then Historic England would conclude
1183 that this is beneficial to the assessment of any significant impacts
- 1184 • **Environment Agency:** I've considered the question on whether the Broads Flood Risk SPD
1185 requires SEA; and in my opinion it does not. This is based primarily on the assertion (which I
1186 support) that it is not the SPD that is setting the framework for future consents and projects. The
1187 SPD is not setting policy, it is assisting with the interpretation and application of existing policy
1188 primarily that contained in the National Planning Policy Framework, but also the policy approach
1189 as detailed in the Planning Practice Guidance and reflected in the Local Plan.

1190 As such, an SEA has not been completed on the Flood Risk SPD. The SPD has been assessed against
1191 the Broads Local Plan Sustainability Appraisal Objectives however.

1192 The SA Scoping Report was consulted on between October 2014 and 14 November 2014 with the
1193 following organisations, as required by legislation: Historic England, Natural England and The
1194 Environment Agency. In the spirit of Duty to Cooperate, the constituent district and county councils
1195 have also been consulted: Norfolk County Council, Suffolk County Council, North Norfolk District
1196 Council, Waveney District Council, Great Yarmouth Borough Council, Norwich City Council, South
1197 Norfolk District Council and Broadland District Council. The Authority also consulted the RSPB, New
1198 Anglia, Wild Anglia and Marine Management Organisation to ascertain their views. The organisations
1199 generally supported the objectives.

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SA Objective	Assessment
ENV1: To reduce the adverse effects of traffic (on roads and water).	- Does not directly address traffic
ENV2: To improve water quality and use water efficiently.	A flood event can result in some water quality issues if drains, sewers or toilets are flooded.
ENV3: To protect and enhance biodiversity and geodiversity.	Highlights that some forms of resilience could impact wildlife.
ENV4: To conserve and enhance the quality and local distinctiveness of landscapes and towns/villages.	Highlights that some forms of resilience could impact on landscapes.
ENV5: To adapt to and mitigate against the impacts of climate change.	Flooding is a potential consequence of climate change.
ENV6: To avoid, reduce and manage flood risk.	The SPD is on the subject of flood risk.
ENV7: To manage resources sustainably through the effective use of land, energy and materials.	Does not directly address land, energy and materials.
ENV8: To minimise the production and impacts of waste through reducing what is wasted, re-using and recycling what is left.	Does not directly address waste.
ENV9: To conserve and enhance the cultural heritage, historic environment, heritage assets and their settings	Highlights that some forms of resilience could impact on heritage.
ENV10: To achieve the highest quality of design that is innovative, imaginative, and sustainable and reflects local distinctiveness.	Design is addressed in the SPD.
ENV11: To improve air quality and minimise noise, vibration and light pollution.	Does not directly address these forms of pollution.
ENV12: To increase the proportion of energy generated through renewable/low carbon processes without unacceptable adverse impacts to/on the Broads landscape	Does not directly address energy.
ENV13: To reduce vulnerability to coastal change.	Does not directly address climate change.
SOC1: To improve the health of the population and promote a healthy lifestyle.	There can be impacts on health from flooding.
SCO2: To reduce poverty, inequality and social exclusion.	Does not directly address poverty.
SOC3: To improve education and skills including those related to local traditional industries.	Does not directly address education.
SOC4: To enable suitable stock of housing meeting local needs including affordability.	Housing is referred to in the SPD.
SOC5: To maximise opportunities for new/ additional employment	Employment development is referred to in the SPD.
SOC6a: To improve the quality, range and accessibility of community services and facilities	Does not directly address access to services.
SOC6b: To ensure new development is sustainably located with good access by means other than a private car to a range of community services and facilities.	
SOC7: To build community identity, improve social welfare and reduce crime and anti-social activity.	Does not directly address crime or community identity.
ECO1: To support a flourishing and sustainable economy	Employment development is referred to in the SPD.
ECO2: To ensure the economy actively contributes to social and environmental well-being.	Employment development is referred to in the SPD.
ECO3: To improve economic performance in rural areas.	Does not directly address economic performance.
ECO4: To offer opportunities for Tourism and recreation in a way that helps the economy, society and the environment.	Employment development is referred to in the SPD.

1200 **Appendix D: Flood Response Plan Guidance and Structure**



1201 **Broads Authority**
1202 **Flood Response Plan Guidance and Suggested Structure**

1203 **Chapter 1: Flood Response Plan Guidance**

1204 **1. Introduction**

1205 This guidance has been prepared for the purpose of assisting the preparation of Flood Response
1206 Plans (FRP). Such Plans should be provided as part of a Flood Risk Assessment where this is
1207 necessary to accompany a planning application or, if not submitted with an application, are often
1208 required by planning condition if permission is issued. All residents and businesses in flood risk areas
1209 are encouraged to prepare and maintain a Flood Response Plan so they are prepared in the event of
1210 a flood.

1211 Floods present a danger to health and life and can damage property. It is important to be prepared
1212 in advance to limit the dangers and damage. At times of flooding, emergency and other local
1213 services will be under significant pressure and the better prepared you are as an individual, the less
1214 pressure they will be under so they can attend to the most vulnerable in the community. Even if you
1215 are not physically injured in a flood, the consequences can have an emotional impact due to the
1216 shock and disruption and damage to, or loss of, property and possessions. Being proactive and
1217 having a Plan you are familiar with in advance can help you take prompt, effective action when
1218 warnings are issued and enable an easy and efficient recovery.

1219 Every effort has been made to ensure this guidance is accurate and comprehensive as at the date it
1220 was prepared, however it is the responsibility of the developer to ensure that any additional risks
1221 relevant to a particular property development are fully considered. The Broads Authority will not
1222 accept responsibility for any errors, omissions or misleading statements in this guidance or for any
1223 loss, damage or inconvenience caused as a result of relying on this guidance.

1224 **2. Flood Response Plans - considerations**

1225 The Environment Agency is responsible for the provision of flood warnings to the public.
1226 Anyone can register with the Environment Agency's flood warning service 'Floodline Warnings
1227 Direct'³⁷. The Floodline Warnings Direct (FWD) service provides information concerning the current
1228 and future flooding danger. In the event that flooding in your area is anticipated, the Environment
1229 Agency will issue a flood warning to registered users by telephoning a pre-arranged number with a
1230 recorded message or by sending a text or email.

³⁷ Register With Floodline Warnings Direct <https://fwd.environment-agency.gov.uk/app/olr/register>

1231 | The 3 flood warning codes are shown below. You can go to the Flood Information Service³⁸ to see
 1232 | what warnings are in place around the Country.:



Severe Flood Warning
Severe flooding. Danger to life.



Flood Warning
Flooding is expected.
Immediate action required



Flood Alert
Flooding is possible.
Be prepared

1233 | When drafting a FRP you are strongly encouraged to liaise with the owners/occupiers of any
 1234 | neighbouring and nearby sites ~~in the drafting of their FRPs~~ to coordinate procedures and so
 1235 | minimise confusion during an incident.

1236 | FRPs should reflect the fact that people should evacuate *prior* to a flood occurring. Once an area has
 1237 | been *inundated by flooding*, staying put, rather than evacuating, could be the safer option in the
 1238 | ~~event of flooding~~ because of the dangers of moving in flooded areas such as lifted manhole covers
 1239 | and contaminated water, ~~but, it~~ is important to note that in the Broads area, flood waters may take
 1240 | a longer time to subside which can cause difficulties for those taking refuge within buildings. Your
 1241 | FRP should reflect the local circumstances.

1242 | Consideration should be given to informing appropriate response organisations, such as Social
 1243 | Services, about any elderly or vulnerable people who may require extra assistance in the event of an
 1244 | emergency such as a flood.

1245 | Ensure that the FRP deals with the potential difficulties involved in immediate evacuation which may
 1246 | need to be carried out in inclement weather and require the provision of transport to reach local
 1247 | authority designated rest centres.

1248 | Particular attention should be given to the communication of warnings to vulnerable people
 1249 | including those with impaired hearing or sight and those with restricted mobility.

1250 | **3. Other sources of useful information**

1251 | Emergencies web pages of the County and District Councils contain useful information which you
 1252 | may wish to consult/refer to in your FRP:

- Norfolk County Council:
http://www.norfolk.gov.uk/safety_emergencies_and_accidents/index.htm
- 1253 | • Suffolk County Council and Waveney District Council:
 1254 | <https://www.suffolk.gov.uk/emergency-and-rescue/>
- 1255 | • South Norfolk Council:
 1256 | <http://www.south-norfolk.gov.uk/environment/1507.asp>
- 1257 | • Broadland Council:

³⁸ <https://flood-warning-information.service.gov.uk/>

- 1258 <http://www.broadland.gov.uk/environment/316.asp>
- 1259 • Norwich Council:
- 1260 https://www.norwich.gov.uk/info/20226/emergency_planning
- 1261 • North Norfolk Council:
- 1262 <https://www.northnorfolk.org/environment/18874.asp>
- 1263 • Great Yarmouth Council:
- 1264 <http://www.great-yarmouth.gov.uk/article/2512/Emergency-planning>

1265 **4. Your Flood Response Plan**

1266 Flood Response Plans may be different for different buildings. This would reflect the time of day
1267 someone might be there, how many people are in or around the building and what the building is
1268 used for.

- 1269 • **Businesses** can follow the Environment Agency's guide 'Would your business stay afloat? A guide
1270 to preparing your business for flooding'³⁹.
- 1271 • **Community organisations** can follow the Environment Agency's guide 'Flooding - minimising the
1272 risk. Flood plan guidance for communities and groups. Practical advice to help you create a flood
1273 plan'⁴⁰.



1274 The following suggested structure is for the production of Plans for residential, holiday and other
1275 development which includes overnight accommodation.

³⁹ would your business stay afloat?

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/410606/LIT_5284.pdf

⁴⁰ Flooding - minimising the risk

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292939/LIT_5286_b9ff43.pdf

1276

Chapter 2: Suggested structure for your Flood Response Plan

1277 **1. Introduction**

- 1278 • Describe the location of the site fully and accurately.
- 1279 ○ State the name and address of the property.
- 1280 ○ Attach a site plan to identify the location and size of the site ~~to those using the plan.~~
- 1281 ○ Identify what type of development it is (a residential dwelling, holiday let, second home,
- 1282 etc.) and the size (number of storeys, number of bedrooms, any outbuildings, etc).
- 1283 ○ Identify where the access into the site and into the building is – will this be safe at times
- 1284 of flood? If not, are there other safe accesses that can be used?
- 1285 ○ Identify where people could safely be rescued from in an emergency if a flood occurs
- 1286 before the building is evacuated (safe refuge).
- 1287 • Identify potential sources of floodwater and what to look out for.
- 1288 • What timescale are people likely to have to respond to flood warnings?
- 1289 • State who will be responsible for implementing the Flood Response Plan and who will review it
- 1290 and how regularly.
- 1291 • State which flood zone the site is in (as identified in a Flood Risk Assessment or on the
- 1292 Environment Agency's website⁴¹). A flood zone identifies how likely the site is to flood.

Zone 1: Low Probability of flooding

Land having a less than 1 in 1,000 (0.1%) annual probability of river or sea flooding.

Zone 2: Medium Probability of flooding

Land having between a 1 in 100 (1%) and 1 in 1,000 (0.1%) annual probability of river flooding;
or
Land having between a 1 in 200 (0.5%) and 1 in 1,000 (0.1%) annual probability of sea/tidal
flooding.

Zone 3a: High Probability

Land having a 1 in 100 (1%) or greater annual probability of river flooding; or
Land having a 1 in 200 (0.5%) or greater annual probability of sea/tidal flooding.

Zone 3b: The Functional Floodplain

This zone comprises land where water has to flow or be stored in times of flood, during a flood
event with an annual probability of 1 in 20 (5%) or greater.

1293 **2. Warning arrangements**

- 1294 • Is the site registered with the Environment Agency's Floodline Warnings Direct service?
- 1295 • Who receives these warnings and how? What if they are away?
- 1296 • Where will a copy of this Plan be kept? How will all residents/tenants know where to find it?
- 1297 • How will response organisations (like the police and fire service) be made aware of elderly or
- 1298 vulnerable people who may require extra assistance in the event of an emergency such as a
- 1299 flood?

1300 **3. Instructions to residents/tenants in the event of a flood warning**

⁴¹ Long term flood risk assessment for locations in England




<http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=floodmap#x=357683&y=355134&scale=2>

1301 The plan needs to set out clear instructions and actions for each stage of warning. This needs to form
 1302 an easy-to-refer-to plan that can be followed in an emergency, providing all the necessary
 1303 information and identifying who is responsible for doing what.

1304 It needs to identify at which stage the property should be evacuated, how and where to. A plan
 1305 showing a safe exit route needs to be included.

1306 If refuge is to be taken within the property, the plan needs to identify the circumstances when this
 1307 should take place, where there is safe refuge and where any resources such as a flood kit (see
 1308 below) will be found. Single storey properties may not have a place of safe refuge, so evacuating at
 1309 an early stage to a safe place is more important.

1310 The following table shows the stages of flood warning. What will you do at each stage?

 <p>Flood Alert Flooding is possible. Be prepared.</p>	<ul style="list-style-type: none"> • How will you respond to this alert? • What will you need to do to be prepared? • Is any other action necessary? • Who do you need to tell there is an alert in place? What will they need to do?
 <p>Flood Warning Flooding is expected. Immediate action required.</p>	<ul style="list-style-type: none"> • How will you respond to this warning? • What is the immediate action you need to take? • Who do you need to tell there is a warning in place? What will they need to do?
 <p>Severe Flood Warning Severe flooding. Danger to life.</p>	<ul style="list-style-type: none"> • How will you respond to this severe warning? • What action(s) do you need to take? • Who do you need to tell there is a severe warning in place? What will they need to do?
<p>Warnings no longer in force - no flooding occurred</p>	<ul style="list-style-type: none"> • How will you know when warnings are no longer in force? • Who do you need to tell the danger has passed? • What action is necessary?
<p>Warnings no longer in force - flooding has occurred</p>	<ul style="list-style-type: none"> • How will you know when warnings are no longer in force? • Who do you need to tell the danger has passed? • What action is necessary? • Re-occupation of flooded premises should only be carried out following consultation with the emergency services and appropriate authorities. This is because of any residual hazards. Identify who needs to be consulted, when and how.

Chapter 3: Important Considerations for your Flood Response Plan

1311

1312 The following considerations may be of relevance and importance to your Flood Response Plan, ~~think about what you need to include in your plan.~~ They could help reduce the impact of a flood on
1313 people and property. A comprehensive and effective Plan should identify all actions that would be
1314 necessary before, during and after a flood event.
1315

Be Proactive

- 1317 • Do not wait for a flood – be proactive and consider what can be permanently moved to a safer
1318 higher level. Produce a checklist of remaining items that must be moved if there is a flood event.
1319 E.g. important documents, IT or vehicles.
- 1320 • Check your insurance policy covers flooding.
- 1321 • Look at the best way of stopping floodwater entering your property. There are a range of flood
1322 protection products on the market, a directory of these is available from the National Flood
1323 Forum at www.bluepages.org.uk
- 1324 • Find out where you can get ~~sandbags~~ gel bags if you are in a fresh water area.
- 1325 • Identify who can help you and who you can help.
- 1326 • Understand the different flood warning levels.

Familiarisation

- 1327 • Emphasise the need to be familiar and comfortable with the Plan and its contents.
- 1328 • Consider practicing your response to warnings and how to evacuate.
- 1329 • Become familiar with the safest route from the property to any local evacuation centre.
- 1330 • Get to know your local volunteer Emergency Co-ordinator – ask the Emergency Planning Team at
1331 your local District Council for details.
1332

Actions to consider (to identify at each stage of warning)

- 1333 The plan should identify which actions will be undertaken when a flood alert is issued, which will be
1334 done when a flood warning is issued, etc.
1335
- 1336 • Check at what time the flooding is expected. If the site is vulnerable to tidal flooding, there can
1337 be 6 to 12 hour warning.
 - 1338 • Stay calm and tune in to BBC Radio Norfolk/Suffolk for weather forecasts and local information.
 - 1339 • Fasten your outer doors and fix any flood protection devices.
 - 1340 • Shut off your gas/electric supplies – show on a plan where this is as well as give details of how to
1341 do this. Do not touch electrics if already wet.
 - 1342 • Fill bath and buckets with water in case supply is shut off. Drinking water should be stored in
1343 clean containers.
 - 1344 • Move any important documents, valuables and sentimental items above the flood level or
1345 protect them by placing them in sealed plastic bags.
 - 1346 • Move furniture and electrical items if possible. Roll up carpets and rugs. Remove curtains, or
1347 hang them over rods.
 - 1348 • Consider moving vehicles to higher ground and make safe or secure any large or loose items
1349 outside that could cause damage if moved by floodwater.
 - 1350 • Ensure any hazardous materials are safe and secure and do not create any additional risks by
1351 coming in contact with flood waters
 - 1352 • Tie or anchor down equipment that could potentially float and cause an additional hazard (e.g.
1353 containers used for storage).

- 1354 • Tell your neighbours about the warning, especially if they are elderly or vulnerable. Consider
1355 coordinating plans with neighbours.
- 1356 • If advised to do so, move to an identified Evacuation Centre or other safe place (such as a friend
1357 or relative). If it is not possible to evacuate, move to a safe refuge. If the property is single
1358 storey, move to an identified refuge place with nearby neighbours with safe, higher level
1359 accommodation.
- 1360 • Take essential medicines, infant care items, personal documents/identification for each member
1361 of the family when you evacuate.
- 1362 • Take food, clothes, blankets, candles/torches with you when you evacuate.
- 1363 • Remember any pets (and their needs such as food, cages and litter trays).
- 1364 • Notify visitors to the site that it is not safe.

1365 Flood Kit

1366 The flood kit should include essential items, be stored in the refuge area and be as easily accessible
1367 as possible. The flood kit could contain:

- 1368 • Copies of insurance documents
- 1369 • A torch with spare batteries (or a wind up torch)
- 1370 • Portable radio (wind-up preferred or store spare batteries)
- 1371 • Warm, waterproof clothing.
- 1372 • Rubber gloves
- 1373 • Wellingtons
- 1374 • Blankets
- 1375 • First aid kit with essential prescription medication/repeat prescription form
- 1376 • Bottled water and high energy food snacks (non-perishable and check use by dates)
- 1377 • A copy of the Flood response plan
- 1378 • List of important contact numbers
- 1379 • Wash kit and essential toiletries (such as toilet paper and wet wipes)
- 1380 • Children’s essentials (such as milk, baby food, sterilised bottles, wipes, nappies, nappy bags,
1381 clothing, comforter, teddy or favourite toy)
- 1382 • Food and cages for pets
- 1383 • Laminated copy of the emergency card in the FRP
- 1384 • Plus anything else you consider important.

1385 Dangers of flood water

1386 Include the dangers associated with flooding in your FEP. Do not assume that every flood event will
1387 be the same, just because flood water hasn't been deep or flowed fast in the past, it doesn't mean it
1388 won't in future. A brief guide is given below:

REMEMBER!

- 1389 ➤ **Don't walk through flowing water** – currents can be deceptive. Shallow and fast moving water
1390 can knock you off your feet!
- 1391 ➤ **Don't swim through fast flowing water** – you may get swept away or struck by an object in the
1392 water.
- 1393 ➤ If you *have* to walk in standing water, **use a pole or stick** to ensure that you do not step into
1394 deep water, open manholes or ditches. Use the stick to 'feel' your way.
- 1395 ➤ **Don't drive through a flooded area.** You may not be able to see obstacles under the water or
1396 abrupt drop-offs. Even half a meter of flood water can carry a car away.
- 1397

1398 ➤ **Avoid contact with water** as it may be contaminated with sewerage, chemicals, oil or other
 1399 substances.

1400 **Re-occupation after a flood**

1401 Re-occupation of flooded premises should only be carried out following consultation with the
 1402 emergency services and appropriate authorities. This is because of any residual hazards. A
 1403 statement to this effect could usefully be included in the response plan.

1404 When you can reoccupy, you shall need to:

- 1405 • Safely throw away food that has been in contact with flood water – it could be contaminated.
- 1406 • Open doors and windows to ventilate your property.
- 1407 • Call your insurance company Emergency Helpline as soon as possible. Makes notes of what the
 1408 insurers say and keep correspondence with the insurers.
- 1409 • Keep a record of the flood damage (use photographs or videos).
- 1410 • Commission immediate emergency pumping/repair work if necessary, to protect your property
 1411 from further damage. Check that you can do this without your insurance company's approval.
- 1412 • Keep receipts of work paid for.
- 1413 • Where detailed or lengthy repairs needed, get advice. Your insurer or loss adjuster can give
 1414 advice on reputable contractors/tradesmen. Always check references of tradesmen.
- 1415 • Check with your insurer regarding cost of alternative accommodation, if you need to move out.
 1416 Ensure the insurer knows where to contact you.

1417 Cleaning up...

- 1418 • Find out where you can get help to clean up. Look on the internet for suppliers of cleaning
 1419 materials and equipment to dry out your property. As a guide, it can take a brick house one
 1420 month per inch to dry out.
- 1421 • Don't attempt to dry out photos or papers – place in a plastic bag and if possible store in a fridge
- 1422 • The Citizens Advice Bureau may be able to help.
- 1423 • **Don't think flooding will not happen again – restock supplies and review your plan!**

1424 **Advice and information**

- 1425 • List useful telephone numbers and website - including responsible persons, emergency contacts,
 1426 utilities providers, insurance companies and sources of information such as the local radio
 1427 station.
- 1428 • Provide residents/tenants with information on how to register with the Environment Agency's
 1429 Floodline Warnings Direct service.
- 1430 • It is good practice to display notices within properties (translated where foreign visitors may be
 1431 present), outlining procedures to be followed, escape routes and evacuation plans.

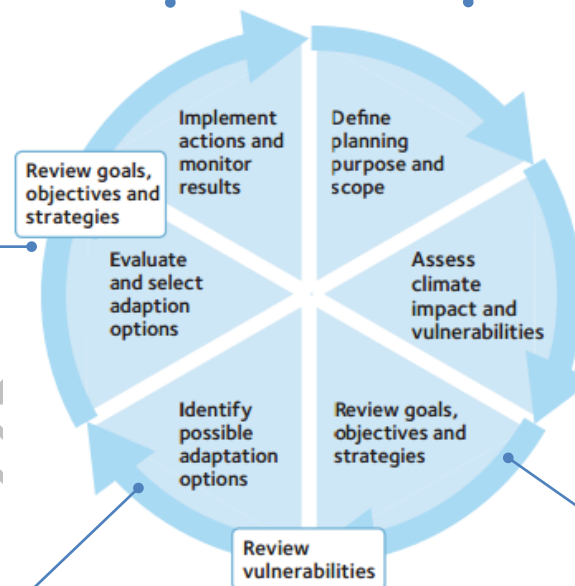
Appendix E: Climate smart planning cycle

It may be sensible to keep an accurate record of your options and decisions, so you can go back to the assumptions made if the adaptation choice is not working. The changes in the weather and climate can be recorded to give an accurate picture of any changes. Keep informed of changing predictions for climate change and monitor what happens to your development over the years. Different results to what was expected may suggest it would be sensible to go through the steps again to see what

Climate change predictions are based on what could happen, rather than knowing precisely what will happen. As such, do you want to consider the most likely changes, or be prepared for the most extreme conditions just in case? You probably need to understand the lifetime of your development and how things could change over that timescale.

Make the choice about which option to follow. This may be immediate action, or you can identify ‘triggers’ as to when you are going to act (e.g. you are willing to live with the driveway being flooded a few times a year at very high tides, but when it’s happening monthly it will be time to act).

Are there actions you can implement now that would help you cope with a new climate regime? Can you alter construction or management choices that minimise any risks? Can what you construct be altered easily in the future if predictions and/or on site experience is worse than you planned for? Are there different technologies that could be applied to lessen risks? If no options seem possible, you may wish to go back through the steps and modify your goals or objectives.



Taking the preferred projections (See the Met Office/UKCIP09 projections website for details) consider what the climate differences are likely to be and how they may impact on the proposed development. List, and possibly rank, the likely things that could create an adverse impact, as well as any opportunities a changing climate might offer for your development and how it is used.

What do you want to achieve? What will you have at the end of the timescale being considered? For example, how often will you use the development and at what time of year? Perhaps the flood impacts will be negligible or not manifesting themselves in the short-term. Be clear about what you would prefer to have in the future – for example, a development that never floods or one that floods a few times a year.

1 **Appendix F: Flood Risk Assessment Tick Sheet**

2 **Flood Risk Assessments for Householder and other minor extensions in Flood Zones 2 & 3**

3 Applications for planning permission within either Flood Zones 2 & 3 should be accompanied by a
4 flood risk assessment. This guidance is for domestic applications and non-domestic extensions where
5 the additional footprint created by the development does not exceed 250 sq. metres (minor
6 development⁴²). It does NOT apply if an additional dwelling is being created e.g. a self-contained
7 annex. This Tick Sheet is consistent with the Environment Agency's Standing Advice. It is a pragmatic
8 and proportionate response to low risk developments in order to reduce the burden on applicants,
9 the LPA and consultees.

10 Make sure that **floor levels are either no lower than existing floor levels or 300 millimetres (mm)**
11 **above the estimated flood level.** If your floor levels aren't going to be 300mm above existing flood
12 levels, you will need to consider appropriate flood resistance and resilience measures. If floor levels
13 are proposed to be set lower than existing floor levels they should be above the known or modelled
14 1 in 100 annual probability river flood (1%) or 1 in 200 annual probability sea flood (0.5%) in any
15 year.

16 Further information and guidance on flood resistance and resilience measures is available in the
17 Flood Risk SPD and here [https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zones-2-and-](https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zones-2-and-3#extra-flood-resistance-and-resilience-measures)
18 [3#extra-flood-resistance-and-resilience-measures](https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zones-2-and-3#extra-flood-resistance-and-resilience-measures) &
19 <https://www.gov.uk/government/publications/flood-resilient-construction-of-new-buildings>

20 State in your Flood Risk Assessment all levels in relation to Ordnance Datum (the height above
21 average sea level). You may be able to get this information from the Ordnance Survey⁴³. If not, you'll
22 need to get a land survey carried out by a qualified surveyor.

23 **Applicants/Agents: Please complete the table overleaf and include it with the planning application**
24 **submission. The table, together with a plan showing the finished floor levels and estimated flood**
25 **levels, will form the Flood Risk Assessment (FRA) and will act as an assurance to the Local Planning**
26 **Authority that flood risk issues have been adequately addressed.**

27 You may be able to get the estimated flood level from the Environment Agency. Please contact
28 ensenquiries@environment-agency.gov.uk. If not, you'll need a flood risk specialist to calculate this
29 for you.

30 You can use the Tick Sheet over page or provide your written flood risk assessment in another
31 format but it must include the relevant plans, surveys and assessments.

32 Any proposed works or structures, in, under, over or within 8m of the top of the bank of a main
33 river, or 16m of a tidal main river, may require a permit under the Environmental Permitting
34 (England and Wales) Regulations 2010 from the Environment Agency. This was formerly called a
35 Flood Defence Consent. Some activities⁴⁴ are also now excluded or exempt. A permit is separate to
36 and in addition to any planning permission granted.

37 Further details and guidance are available at: [https://www.gov.uk/guidance/flood-risk-activities-](https://www.gov.uk/guidance/flood-risk-activities-environmental-permits)
38 [environmental-permits](https://www.gov.uk/guidance/flood-risk-activities-environmental-permits). Or by contacting: floodriskpermit@environment-agency.gov.uk

⁴² Minor development in relation to flood risk: <http://planningguidance.communities.gov.uk/blog/guidance/flood-risk-and-coastal-change/what-is-meant-by-minor-development-in-relation-to-flood-risk/>

⁴³ OS MAPS <https://www.ordnancesurvey.co.uk/>

⁴⁴ Flood risk activities: environmental permits <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits#check-if-what-you-are-doing-is-an-excluded-activity>

39 **Flood Risk Assessment**

40 **Flood Risk Assessments for Householder and other minor extensions in Flood Zones 2 & 3**

Applicant to choose one or other of the flood mitigation measures below	Applicant to indicate their choice in the box below. Enter 'yes' or 'no'
<p>Either; Floor levels within the proposed development will be set no lower than existing levels AND, flood resilient and/or flood resistant measures have been incorporated in the proposed development where appropriate</p>	
<p>Or; Floor levels within the proposed development will be set 300mm above the known or modelled 1 in 100 annual probability river flood (1%) or 1 in 200 annual probability sea flood (0.5%) in any year. This flood level is the extent of the Flood Zones. Please remember to include a plan showing the finished floor levels and the estimated flood levels.</p>	

<p>Site Address</p>	
<p>Proposal Description</p>	
<p>Estimated flood level (i.e. The 1 in 100 year flood level)</p>	
<p>Details of flood resilience and resistance measures</p>	