Sequential Flood Risk Test for Mid Sussex Neighbourhood Plans

Introduction

This Sequential Test has been prepared to assess the flood risk of all sites within the parish that have been identified for potential development in the Neighbourhood Plan.

The sequential test draws upon information gathered and detailed within the District Council's Strategic Flood Risk Assessment (SFRA) (March 2008). The tests follow the steps outlined in the National Planning Policy Framework and accompanying technical guidance, and follows examples of best practice as highlighted by the Environment Agency.

The National Planning Policy Framework (paragraph 100) requires Plans such as the District Plan and Neighbourhood Plans to "apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change, by applying the **Sequential Test**, and, if necessary, applying the **Exception Test**"

Neighbourhood Plans have been prepared to enable Towns and Parishes to plan how their communities will change and develop in the future. In addition to strategic sites identified in the submission District Plan (and subject to a separate flood risk assessment) each Neighbourhood Plan Area has indicated a level of additional homes that are being planned for. In preparing Local Plans the Council are required to undertake a flood risk test. A sequential approach is used to steer new development to areas at the lowest risk of flooding.

The District Plan sets the framework for Neighbourhood Plans and has identified a housing requirement of 10,600 new homes for the plan period up to 2031 that includes 2,000 over the plan period that are to be delivered through Neighbourhood Plans.

The Strategic Flood Risk Assessment identified that approximately 9 sq kilometres of the District is at high risk of fluvial (river) flooding. The risk of river flooding of an area is categorised by the probability of flooding occurring in that area in any given year and these categories are summarised in Table 1.

Flood Zone	Risk of Fluvial Flooding
1	Low probability – land assessed as having a less than 1 in 1,000 annual probability of flooding (<0.1%)
2	Medium probability – land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of flooding (1% - 0.1%)
3a	High probability – land assessed as having a 1 in 100 or greater annual probability of flooding (>1%)
3b	This zone comprises land where water has to flow or be stored in times of flood.

Table 1: Summary of Flood Risk Zones

Technical Guidance to the National Planning Policy Framework classifies types of development into five categories of flood risk vulnerability; essential infrastructure, highly vulnerable, more vulnerable, less vulnerable and water-compatible development. Appendix B lists the types of development that are classified under each flood risk vulnerability classification.

The Sequential Test

Within each flood zone, new development should be directed first to sites at the lowest probability of flooding and the flood vulnerability of the intended use matched to the flood risk of the site, i.e. higher vulnerability uses should be located on parts of the site at lowest probability of flooding. The Sequential Test is the process to ensure that this happens. Sites included in the Sequential Test have been grouped by parish (Appendix A).

The Sequential and Exception Test are national planning policy requirements. These tests are not intended to prevent all development on sites liable to flooding; accepting that some form of development may have to be located here. The Exception Test is only appropriate when there are large areas in Flood Zones 2 and 3, where the Sequential Test alone cannot deliver acceptable sites but where some continuing development is necessary for wider sustainable development reasons.

It may also be appropriate where restrictive national designations such as landscape, heritage and nature conservation designations prevent the availability of unconstrained sites in lower risk areas.

Table 2 shows which type of development can be appropriately located in each flood zone, and where the Exception Test is required.

Flood risk vulnerability classification		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood Zone	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception test required	✓	✓
	Zone 3a	Exception test required	✓	X	Exception test required	✓
	Zone 3b functional floodplain	Exception test required	✓	X	X	X

Key: ✓ Development is appropriate.
X Development should not be permitted.

Table 2: Flood risk Vulnerability and flood zone compatibility

APPENDIX A – Neighbourhood Plan Areas

Ardingly

Analysis of proposed development areas identified

This table shows the following:

- Locations identified through the Neighbourhood Plan.
- The existing flood risk characteristics of these locations.
- The existing land use(s) of each area.
- The proposed use(s) of each area.
- The flood risk vulnerability classification for each proposed use (see Appendix B for definitions of these classifications).

Location	Flood risk zone/s (area of site within flood zone)	Existing Flood Defences	Existing Uses	Proposed Development	Flood vulnerability classification	Can the proposed development be located in the net developable area?
Policy 3 – Standgrove Field, Lodgelands	1 (2.33ha)	None	Agricultural	Residential – up to 27 new homes	More vulnerable	**Yes;** the site is located within Flood Zone 1.
Policy 10 – St Peter's CE Primary School, Holmans	1 (0.40ha)	None	Education, Leisure	Education – permanent extra classrooms, space for play and/or car parking	More vulnerable	**Yes;** the site is located within Flood Zone 1.
Policy 13 – Recreation Ground Pavilion, High Street	1 (2.19ha)	None	Leisure	Leisure – Extension to pavilion	Water-compatible development	**Yes;** this development is not considered to

						be vulnerable to flood risk.
Policy 20 – Ardingly Rail Depot, College Road	1 (2.06ha), 2 (0.49ha) and 3 (0.19ha)	None	Offices, Rail Depot (Minerals)	Railway Station and/or museum	More vulnerable/Less vulnerable	**Yes;** the proposed development could be accommodated in the portion of the site within Flood Zone 1.
Policy 21 – Ardingly College, College Road	1 (8.23ha)	None	Education, Boarding Accommodation	Development proposals within the central built core of the campus at Ardingly College provided they: • are sympathetic to the rural setting of the listed building; • recognise any impact they may have on the AONB and are landscaped appropriately;and • support and enhance the College's position as a school and major local employer.	More vulnerable (likely)	**Yes;** the site is located within Flood Zone 1.

Policy 22 – South of England Showground, Selsfield Road	1 (29.37ha)	None	Equestrian, Indoor and Outdoor Leisure, Guesthouse, Conference and Exhibition Centres	Proposals that expand its range and style of operations	Less vulnerable (likely)	**Yes;** the site is located within Flood Zone 1.
Policy 23 – Wakehurst Place and Millenium Seed Bank	1 (128.4ha) and 3 (2.6ha)	None	Leisure, Designated Park and Gardens – National Trust, Research and Conservation	Proposals which will enable Wakehurst Place and the Millennium Seed Bank to expand to meet new and changing needs as both a tourist destination and centre of research of international importance	Less vulnerable and Water-compatible development	**Yes;** this development is not considered to be vulnerable to flood risk.
Policy 24 – Ardingly Reservoir	3 (80ha)	None	Local Nature Reserve, Leisure (Watersports, Fishing)	Leisure - Changing facilities, recreational activities and events	Water-compatible development	**Yes;** this development is not considered to be vulnerable to flood risk.

Note: Areas identified as having historically flooded in the District Council's Strategic Flood Risk Assessment, but have not been identified as either Flood Zones 2 or 3 on the Environment Agency's flood map, have been defined as areas of Flood Zone 3b for the purposes of this exercise.

APPENDIX A – Neighbourhood Plan Areas

The Sequential Test

Potential housing development sites assessed through the Housing Supply Document 2013 within the Neighbourhood Plan Area are all located within Flood Zone 1 as shown below.

1. Are the proposed development areas in Flood Zone 1 – Low probability of flood risk?	
Yes	Development areas wholly within Flood Zone 1: **Ardingly College, College Road** **Standgrove Field, Lodgelands** **South of England Showground, Selsfield Road** **St Peter's CE Primary School, Holmans** **Recreation Ground Pavilion, High Street**
No	Development areas partly located outside Flood Zone 1: **Ardingly Rail Depot, College Road** **Wakehurst Place and Millenium Seed Bank** Development areas wholly located in Flood Zones 2/3: **Ardingly Reservoir**

2. Could the following proposed development areas in Flood Zones 2 and 3 be alternatively located in Flood Zone 1?	
Ardingly Rail Depot – partly located outside Flood Zone 1 **Wakehurst Place and Millenium Seed Bank** – partly located outside Flood Zone 1 **Ardingly Reservoir**	
No	**a) Identify alternative sites that were considered and explain why they were dismissed**

	None.
	b) explain why the proposals cannot be directed to Flood Zone 1 The development areas of policies that apply to Ardingly Rail Depot and Wakehurst Place and Millennium Seed Bank are primarily within Flood Zone 1 and development will be directed towards these areas. All three sites have been included within the Neighbourhood Plan due to their unique characteristics and designations that make them appropriate for development of the type detailed in their respective policies. Each site is considered to be appropriate in Flood Risk terms for the proposed use in line with Technical Guidance to the National Planning Policy Framework.

3. For sites in 'Flood Zone 2 Medium Probability' of flood risk.	
Locations in Flood Zone 2 include, in whole or in part: **Ardingly Rail Depot, College Road –** 17.9% of overall site	
3a. Are the proposed uses in the 'Water Compatible', 'Less Vulnerable', 'More Vulnerable', or 'Essential Infrastructure' Flood Risk Vulnerability Classifications set out in Table D2?	
Yes	**List the proposed uses in these classifications within Flood Zone 2:** • Water Compatible – none • Less Vulnerable – Railway museum • More Vulnerable – Railway infrastructure (station) • Essential Infrastructure – none **These proposals are appropriate if located in Flood Zone 2. Hence, there is no need to proceed with the Exception Test.**
No	**List the proposed uses not in these classifications:** • None **For these proposed uses proceed to Question 3b.**

3b. Can the more flood sensitive development types ('highly vulnerable' and 'more vulnerable') be directed to parts of the site where the risks are lower for both the occupiers and the premises themselves?
Yes – the area of the site that would be used as a reinstated railway station is located within Flood Zone 1.

4. For sites in 'Flood Zone 3a High Probability' of flood risk.	
Locations in Flood Zone 3a include, in whole or in part: **Ardingly Rail Depot, College Road –** 6.9% of overall site **Ardingly Reservoir** – whole site **Wakehurst Place and Millenium Seed Bank** – 1.9% of overall site	
4a. Can the development proposal be redirected to 'Flood Zone 2 Medium Probability'?	
Possibly	**Explain why:** • The District Council will seek to ensure that new development is located in areas of Flood Zone 2 and 1 that exist within the site areas at Ardingly Rail Depot and Wakehurst Place and Millennium Seed Bank. This will be determined through a site specific Flood Risk Assessment during the planning application process. • The policy relating to development at Ardingly Reservoir proposes water compatible development.
4b. Are the development proposals in the 'Water Compatible' or 'Less Vulnerable' classifications?	
Yes	**List the proposed uses in these classifications:** • Water Compatible – Ardingly Reservoir (Leisure - Changing facilities, recreational activities and events), Wakehurst Place and Millennium Seed Bank (amenity open space and nature conservation) • Less Vulnerable – Ardingly Rail Depot (Railway museum), Wakehurst Place and Millennium Seed Bank (leisure) **There is no need to proceed with the Exception Test.**

No	**List the proposed uses not in these classifications:** • More vulnerable - Ardingly Rail Depot (Railway Station) **For these proposed uses proceed to Question 4d.**
4c. Is the development proposal in the 'Highly Vulnerable' classification?	
No	• **Proceed to Question 4d.**
4d. Can the more flood sensitive development use types ('highly vulnerable' and 'more vulnerable') be directed to parts of the site where the risks are lower for both the occupiers and the premises themselves.	
Yes	• The area of the Ardingly Rail Depot site that would be used as a reinstated railway station is located within Flood Zone 1.

Conclusion

Most locations are wholly within Flood Zone 1 and development is considered appropriate in flood risk terms. Where sites are wholly or partly located in Flood Zones 2 or 3 the sequential test has demonstrated that there is no requirement to carry out the Exception Test.

APPENDIX B – Flood Risk Vulnerability Classification (as per "Technical Guidance to the National Planning Policy Framework")

Essential infrastructure - Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. - Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. - Wind turbines.
Highly vulnerable - Police stations, ambulance stations and fire stations and command centres and telecommunications installations required to be operational during flooding. - Emergency dispersal points. - Basement dwellings. - Caravans, mobile homes and park homes intended for permanent residential use3. - Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as "essential infrastructure").
More vulnerable - Hospitals. - Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. - Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. - Non–residential uses for health services, nurseries and educational establishments. - Landfill and sites used for waste management facilities for hazardous waste. - Sites used for holiday or short-let caravans and camping, *subject to a specific warning and evacuation plan*.
Less vulnerable - Police, ambulance and fire stations which are *not* required to be operational during flooding. - Buildings used for shops, financial, professional and other services, restaurants and cafes, hot food takeaways, offices, general industry, storage and distribution, non–residential institutions not included in "more vulnerable", and assembly and leisure. - Land and buildings used for agriculture and forestry. - Waste treatment (except landfill and hazardous waste facilities). - Minerals working and processing (except for sand and gravel working).

APPENDIX B – Flood Risk Vulnerability Classification (as per "Technical Guidance to the National Planning Policy Framework")

- Water treatment works which do *not* need to remain operational during times of flood.
- Sewage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place).

Water-compatible development

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, *subject to a specific warning and evacuation plan*.