

Rother District Council Level 1 SFRA – Methodology in support of Performing the Sequential Test

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www.jbaconsulting.com

JBA Project Manager

Ed Hartwell BSC MSc MCIWEM C.WEM - Suite A, First Floor, George Parker Bidder Building, 4
Babbage Way, Exeter EX5 2FN

Client

Holly Harrison
Rother District Council

Purpose

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1 Introduction

1.1 Background

JBA Consulting have been commissioned by Rother District Council to update their Level 1 SFRA. Following an initial meeting convened with Rother District Council and JBA Consulting it was agreed that a sequential test methodology would be outlined for reference and sharing with Rother District Council as the Local Planning Authority (LPA), East Sussex County Council as Lead Local Flood Authority (LLFA) and the Environment Agency.

The aim of this appendix is to discuss the availability and limitations of data for assessing the risk from different sources of flooding both now and in the future within the Sequential Test. It includes a user guide for the Council to use the data supplied in the SFRA through the application of the Sequential Test for different sources of risk.

1.2 Policy requirements

The need to apply the Sequential Test is set out within the National Planning Policy Framework (NPPF) which was last updated in August 2026 and the Planning Practice Guidance - Flood Risk and Coastal Change (PPG) which was last updated in September 2025.

Chapter 18, policy F2 of the NPPF states that *"Development plans should take a risk-based approach when identifying suitable locations for development, taking into account all sources of flood risk and the current and future impacts of climate change. They should do this, and manage any residual risk, by:*

a. Applying the sequential test..."

Chapter 18, policy F5 states that

"1. The aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source.

2. The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, other than for:

a. Sites allocated in the development plan which were subject to the sequential test during plan preparation;

b. Sites where a site-specific flood risk assessment demonstrates clearly that:

i. No built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk); or

ii. Where the site would be at risk of surface water flooding only, the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development without increasing flood risk elsewhere in accordance with policy F7.

c. For the following types of development:

i. Householder development;

ii. Small non-residential extensions (with a footprint of less than 250m²); and

iii. Changes of use, other than changes of use to a caravan, camping or chalet site, or to a mobile home or park home site.

3. *The strategic flood risk assessment covering the area of the proposed development and the Flood Map for Planning should provide the evidential basis for applying the sequential test".*

Therefore, in summary the NPPF sets out the requirement for considering all sources of flood risk, now and in the future when applying the Sequential Test. It also identifies certain circumstances where the Sequential Test would not be required where vulnerable elements are shown (through a site-specific Flood Risk Assessment) to be outside of areas at risk of flooding from any source.

Paragraph 017 of the PPG states that *"Where the Strategic Flood Risk Assessment, or other available flood risk maps or information, indicates that part or parts of a neighbourhood plan area may be at risk of flooding, the qualifying body should have regard to the National Planning Policy Framework's policies on flood risk. Where they are considering proposing development, they will need to show that this would be consistent with the local planning authority's application of the Sequential Test"*.

Paragraph 023 of the PPG states that *"The approach is designed to ensure that areas at little or no risk of flooding from **any source** are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in **current and future medium and high flood risk areas** considering **all sources of flooding including areas at risk of surface water flooding**.[...] Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk."*

Paragraph 024 of the PPG states *"Where it is not possible to locate development in low-risk areas, the Sequential Test should go on to compare reasonably available sites within medium risk areas; and then, only where there are no reasonably available sites in low and medium risk areas, within high-risk areas. [...] Initially, the presence of existing flood risk management infrastructure should be ignored, as the long-term funding, maintenance and renewal of this infrastructure is uncertain."*

Paragraph 027 states that *"In applying paragraph 175 a proportionate approach should be taken. Where a site-specific flood risk assessment demonstrates clearly that the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development (therefore addressing the risks identified e.g. by Environment Agency flood risk mapping), without increasing flood risk elsewhere, then the sequential test need not be applied."*

Therefore, in summary the PPG requires all sources of flooding to be considered within the Sequential Test, now and in the future. In cases where a site-specific Flood Risk Assessment shows a development at risk of surface water flooding can be made safe for its lifetime without increasing flood risk elsewhere then the surface water flood risk would not need to be considered within the Sequential Test. Therefore, reference within this document to application of the Sequential Test for surface water flooding is predominantly concerned with the application of this as part of the Local Plan where site-specific Flood Risk Assessments have not been prepared.

The PPG also makes clear that sources of flood risk other than river and tidal (also known as sea) flooding need to be treated consistently with tidal and river (fluvial) flooding, in terms of mapping probability and vulnerability.

1.3 What happens next

Formal confirmation will be sought from the LLFA and Environment Agency to confirm that the proposed approach outlined in this document to address flood risk and the Sequential Test will be supported in principle at Examination.

The content of the SFRA will be prepared on the basis of the agreed approach.

Should a Level 2 SFRA be found to be required, it will include more detailed consideration of surface water drainage, reservoir flooding and groundwater than was the case prior to the NPPF and PPG updates. The implications of this have not been assessed in this document.

In some circumstances, the proposed approach will require more detailed consideration of surface water drainage requirements in the Level 2 SFRA. At this stage it might be necessary and appropriate to engage more closely with Southern Water (responsible for sewerage) in circumstances where there is long term reliance on the performance of existing drainage systems affected by lack of capacity as a consequence of climate change effects (increased rainfall intensities and depths).

2 Summary of influential changes to the NPPF and implications for Sequential and Exception Tests

The Sequential Test, based on the sequential approach, was originally conceived to direct proposed new development to locations that did not rely on Flood Risk Management features, so they are inherently safe and don't place a burden on future generations. The test was previously performed using a set of "Zone" maps that showed the extent of river flooding for circumstances where no defences were present for events with high, medium and low probability. This provided a logical conceptual basis for the placement of proposed new development that would not require investment in flood risk management (and so not place a burden on future generations).

The test process recognised that in some circumstances it would not be possible to locate development in locations outside of medium and high risk Flood Zones, as there are no reasonable alternatives. An obvious circumstance being proposed town centre development in locations of high flood risk, as it is not possible to redevelop town centre sites unless they remain in the town centre. In circumstances where the Sequential Test has been performed and it is not possible for development to be located in areas with a lower risk of flooding, the policy requires that the Exception Test is performed. The Exception Test is a two-part process that requires preparation of evidence to demonstrate that development proposals at risk of flooding deliver wider sustainability benefits and that it can be made safe for the intended lifespan (thus it is a requirement to demonstrate that proposed development will be safe under climate change conditions).

The updated NPPF recommends that application of the Sequential Test applies to any source of flooding. The updated PPG further states in paragraph 23 of the Flood risk and coastal change guidance: *"Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk"*. The general implications of this are summarised as follows:

- The Sequential Test must be based on mapping that enables decision making according to a prioritisation based on a risk-based sequence (for river and sea flooding national mapping is available that describes low, medium and high risk flood zones but comparable mapping of this specific type and quality is not available for other sources; for River and Sea flooding the risk zones are based on the assumption that no flood risk management features are present).
- The other sources of flood risk that can be included in the Sequential Test are surface water, groundwater, sewer flooding and reservoir flooding (or other water impounding features such as canals).
- It follows that proposed new development placed in locations at high or medium risk from flooding from other sources now and in the future (note that the explicit requirement to include climate change in the test, as set out in the August 2022 PPG will require the preparation of additional modelling and mapping or use of proxies) should be accompanied by evidence that the Exception Test can be satisfied (in a Level 2 SFRA).

The Exception Test should only be applied, following the application of the Sequential Test, in the following instances:

- 'Essential infrastructure' in Flood Zone 3a or 3b
- 'Highly vulnerable' development in Flood Zone 2 (this is NOT permitted in Flood Zone 3a or 3b)

- 'More vulnerable' development in Flood Zone 3a (this is NOT permitted in Flood Zone 3b)

The exception test in the SFRA provides additional evidence to demonstrate that the principle of development can be supported at a proposed site and shows that the sustainability benefits of the development to the community outweigh the flood risk.

A basic requirement for the Sequential Test to be performed is that appropriate, competent mapping can be prepared to enable logical comparison of the flood risk from different sources at alternative locations, both now and in the future, as this is fundamental to establishing a logical "risk sequence".

The following summary describes the implications of including different source of flooding both now and in the future in the Sequential Test. It also highlights matters to be considered and identifies a preferred approach.

2.1 River (fluvial) risk

2.1.1 Implications

Source of Flooding	Available Mapping	Implications of making use of mapping in the Sequential Test
Rivers and sea	Flood Map for Planning and detailed models	- The Sequential Test can be carried out using the Flood Map for Planning for present day low (Flood Zone 1), medium (Flood Zone 2) and high risk (Flood Zone 3a) as previously was the case. - Where detailed models are available and where practical, Future Flood Zones 2 (0.1% AEP event), 3a (1% AEP event) and 3b (now the 3.3% AEP) will be assessed with climate change allowances. - The fluvial models may experience instabilities during 0.1% AEP plus climate change runs which may mean that results cannot be prepared. - Generalised (NaFRA2) mapping is used to delineate Flood Zones and the impacts of climate change where there is no detailed modelling or where it is not practicable to use detailed modelling.

2.1.2 Recommendations for using river flood risk in the Sequential Test

- The Environment Agency Flood Map for Planning and any available detailed hydraulic models should be used to consider river flood risk in the Sequential Test.
- For future river flood risk, climate change allowances should be used where there is detailed modelling, and it is practicable to use these. The uplifts per management catchment are:
 - Rother – 28% and 38%
 - Cuckmere and Pevensey Levels – 32% and 43%
 - Medway – 27% and 37%
- In considering the impact of climate change, the 1% AEP and 0.1% AEP events should be used with appropriate allowances for climate change. Detailed modelling should be used where available. Elsewhere, the Flood Map for Planning – Flood Zones plus Climate Change dataset should be used. For river (fluvial) flooding, the dataset uses the 'Central' allowance for the 2080s epoch (2070-2125).

2.2 Tidal (sea) risk

2.2.1 Implications

Source of Flooding	Available Mapping	Implications of making use of mapping in the Sequential Test
Tidal	Flood Map for Planning and detailed models	- The Sequential Test can be carried out using the Flood Map for Planning for present day low (Flood Zone 1), medium (Flood Zone 2) and high risk (Flood Zone 3a) as previously was the case. - Where detailed models are available and where practical, Future Flood Zones 2 (0.1% AEP event), 3a (1% AEP event) and 3b (now the 3.3% AEP) will be assessed with climate change allowances. - Generalised (NaFRA2) mapping is used to delineate Flood Zones where there is no detailed modelling or where it is not practicable to use detailed modelling.

2.2.2 Recommendations for using tidal flood risk in the Sequential Test

- The Environment Agency Flood Map for Planning and any available detailed hydraulic models should be used to consider tidal flood risk in the Sequential Test.

It is recommended that the Sequential Test considers tidal/sea flood risk as follows:

- The Sequential Test can be carried out using the tidal/sea Flood Zones for present day low (Flood Zone 1), medium (Flood Zone 2) and high risk (Flood Zone 3a).
- Where detailed models are available and more up to date the 0.5% AEP and 0.1% AEP events should be assessed alongside the Flood Zones.
- In considering the impact of climate change, the 0.5% AEP and 0.1% AEP events should be used with appropriate allowances for climate change. Detailed modelling should be used where available. Elsewhere, the Flood Map for Planning – Flood Zones plus Climate Change dataset should be used. For tidal/sea flooding, the dataset uses the Upper End allowance accounting for sea level risk to 2125.

2.3 Surface water flood risk

2.3.1 Implications

Source of Flooding	Available Mapping	Implications of making use of mapping in the Sequential Test
Surface Water	Flood Map for Planning – Surface Water Spatial Planning Extents	- Mapping based on a generalised modelling methodology. - Generally suitable for showing surface water flow routes at different probability flood events (3.3% AEP (1 in 30) and 1% AEP (1 in 100)), although the uncertainty associated with the predicted outlines for the respective probabilities is high. - Doesn't always include allowance for drainage features such as culverts and can over or underestimate flooding where there are linear features such as embankments. - Unlike the Zone maps for river and sea flooding, the surface water mapping makes an allowance for the assumed performance of a local drainage system. - Normal profile of extent and shape of surface water flooding is a "dendritic" pattern that follows low lying topography and is not an extensive blanket, as is most often the case for river flooding. - It is likely that in many circumstances surface water flood risk zones based on the surface water mapping could affect a relatively small proportion of a proposed allocation site, but in practical terms this might not in itself be a factor that demonstrated that the principle of development could not be supported.

2.3.2 Recommendations for using zone maps for surface water flooding

Note, changes to the PPG in September 2025 mean that the surface water does not need to be considered within the Sequential Test where a site-specific Flood Risk Assessment demonstrates clearly that the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development. It is anticipated that as part of the Local Plan allocation, the application of the Sequential Test for surface water flood risk would still be required as the majority of sites will not have a site-specific Flood Risk Assessment at this stage.

It is recommended that the Sequential Test considers surface water flood risk as follows:

- The Sequential Test can be carried out using the Flood Map for Planning Surface Water Spatial Planning extents for present day low (less than 1% AEP events), medium (between 1% AEP and 3.3% AEP events) and high risk (greater than 3.3% AEP event) areas.
- The Flood Map for Planning - Surface Water Spatial Planning Extents – Climate Change dataset has been used to assess the impacts of climate change on surface water flood risk. The climate change allowances are based on the latest UK

Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. The 'Upper end' (based on the 95th percentile) for the 2070s epoch (2061-2125) has been used to assess the impacts of climate change.

The use of these surface water events should be done with caution due to the highlighted uncertainties in the surface water modelling and mapping.

Surface Water mapping does not strictly describe the same conceptual risk zone as defined for river and sea flooding (even though it is associated with the same probability) as the mapping is based on different assumptions and is filtered to remove shallow depths of water. However, it does create a product that can accommodate sequential testing, as it would facilitate strategic decisions that directed development to land in lower risk areas.

2.3.3 Groundwater flood risk

2.3.4 Implications

Source of Flooding	Available Mapping	Implications of making use of mapping in the Sequential Test
Groundwater	British Geological Survey (BGS) Groundwater flood susceptibility maps Also: JBA groundwater Flood Map East Sussex County Council historical flooding data	- BGS mapping does not show the likelihood or risk of groundwater flooding occurring, i.e., it is a hazard and consequence based product and does not enable application of risk based approach. - JBA groundwater map does potentially enable a risk-based approach to be taken as it depicts different levels of risk. However, this is based on the risk of emergence of groundwater and not surface flooding due to groundwater and it should be noted that the location of highest risk of emergence might not be coincident with the location at highest risk of flooding. The analyses performed to prepare the mapping are all for a 1 in 100-year (1% AEP) event and so provide a risk of groundwater emergence to the surface as they are based on predicted difference between groundwater level and the ground surface. Five zones are defined to describe the risk of groundwater being: at or very near ground surface; between 0.025m and 0.5m below the ground surface; between 0.5m and 5m below the ground surface; at least 5m below the ground surface; and negligible risk of groundwater flooding. - The underlying challenge with these datasets is that the data is very uncertain and could not be used with confidence unless supported by more detailed local studies. The mapping provides an indication of where risk of elevated groundwater levels might be higher, but it would not be easy to defend.

		• Historic flood data is available from East Sussex County Council. However, this does not always list the source of flooding. In addition, it is often difficult to determine the source of historical flood events and groundwater and surface water flooding can often be confused. • There is no climate change mapping available for groundwater and in view of the uncertainty in the present day data it is unlikely that such mapping will be available in the near future.
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2.3.5 Recommendations for using zone maps for groundwater flooding

It is recommended that the groundwater flood risk is not considered in the Sequential Test on the basis that the JBA groundwater flood map, and East Sussex County Council's historical known events dataset do not provide the confidence or certainty required to undertake the Sequential Test. As the available mapping does not provide competent evidence on the relative risk of flooding across the study area it could potentially result in inappropriate allocations if used without understanding the limitations of the data.

JBA Groundwater mapping should therefore be used in conjunction with other relevant sources of flooding, such as historical records to identify areas that are unlikely to be affected by groundwater flooding (low potential) and where groundwater flooding is potentially a material consideration can be identified (high potential). At a Level 2 SFRA stage (or for a site-specific Flood Risk Assessment), more detailed assessment should be performed of the proposed development sites where the potential for groundwater flooding is high. This will address the potential effects of climate change on groundwater flood risk to the extent permissible by the available data.

2.4 Sewer flood risk

2.4.1 Implications

Source of Flooding	Available Mapping	Implications of making use of mapping in the Sequential Test
Sewer flooding risk	Southern Water DG5 records and Drainage and Wastewater Management Plans (DWMPs)	- Only available at coordinate level and thus mapping does not define spatial extent or location of sewer flooding. - Mapping does not enable execution of risk based sequence.

2.4.2 Recommendations for using zone maps for sewer flooding

It is recommended that the sewer flood risk is not considered in the Sequential Test on the basis that the available information is not of appropriate resolution or format and so does not support spatial comparison of risk. This will be clearly stated in the Level 1 SFRA and, where possible, the DG5 and DWMP information will be used to inform the scope of site specific FRAs.

Water companies were required to publish Drainage Water Management Plans for river basin catchments across England as part of the Environment Act. The plans describe the basis for long term investment proposals by Water Companies that span for more than 25 years and set out the commitment needed to make wastewater systems safe and secure. The plans contain substantive volumes of mapping, information and data that has not previously been made available by water companies. Southern Water published their DWMP in May 2023. As part of the DWMP, a risk-based catchment screening (RBCS) exercise has been completed, where existing readily available data was used to identify where there is a current and/or potential risk or vulnerability in the sewer catchment to future changes, such as new residential development or changes in climate. This feeds into a baseline risk and vulnerability assessment (BRAVA) enabling comparison across locations based on different levels of risk.

The data resolution provided in the DWMP is catchment scale and therefore applicable to large parts of the study area. Consequently, it is not possible to take a risk-based approach using this data and it is not considered to be comparable to the river and sea flooding information. If specific spatial information becomes available on sewer flood risk that provides competent data on the spatial relative risk of flooding this will be evaluated in a Level 2 SFRA and as appropriate inform the Sequential Test process.

2.5 Reservoir flood risk

2.5.1 Implications

Source of Flooding	Available Mapping	Implications of making use of mapping in the Sequential Test
Reservoir flooding risk	Reservoir Flood Mapping (RFM)	- The mapping now shows “wet day” and “dry day” reservoir inundation extents. The “wet day” being a reservoir breach at the same time as a 0.1% AEP river flood (as this is a likely time when a reservoir might fail) and the “dry day” shows the failure just from the water retained by the dam. - Neither set of mapping describes a risk-based scenario as they do not provide the probability of dam failure but are intended to describe a “worst credible case”. - More detailed information on flood velocities and depths has been prepared as part of the modelling and mapping study, but this is not publicly available and can only be viewed by those with appropriate security classifications. The flood extents are publicly available. - A dataset exists which shows where the impact of “wet day” reservoir flooding affects the fluvial flood extent. This is known as the Reservoir Flood Extents - Fluvial Contribution. This dataset can be used to identify areas where: - reservoir flooding is predicted to make fluvial flooding worse. - reservoir flooding is not predicted to make fluvial flooding worse. - The mapping could be used to direct proposed new development away from locations that could potentially be affected by reservoir flood risk. However, it would not be conceptually similar to the risks pertaining to river and sea flooding and further assessment would be required to understand the magnitude of the potential hazard. - A consideration with respect to the reservoir maps is that placing new development in locations potentially affected by reservoir inundation could potentially change the “risk category” of the reservoir and this could result in the reservoir owner (the “undertaker”) having to invest in substantive remedial works to demonstrate that the reservoir had the appropriate level of safety. This is not strictly related to the Sequential Test with respect to high or low risk of flooding, but should be a

		consideration that should be appropriately managed when planning new development. • The mapping does not provide climate change information on future flood risk and provision of such mapping is unlikely based on the existing methodology
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2.5.2 Recommendations for using zone maps for reservoir flooding

It is recommended that the available reservoir flood mapping is not included in the Sequential Test as the available data is inappropriate to be used alongside risk mapping from other sources.

A more detailed assessment of those sites identified to be at risk of inundation should be included in a Level 2 SFRA. It will be made clear in the Level 1 SFRA that the available information is not conceptually similar to the risks pertaining to river and sea flooding as it shows the worst credible case and not the risk of flooding and so does not support a logical spatial comparison of risk that can be substantiated by appropriate evidence.

The RFM Fluvial Contribution Extent will be used to define areas where:

- reservoir flooding is predicted to make fluvial flooding worse.
- reservoir flooding is not predicted to make fluvial flooding worse.

The more detailed assessment in a Level 2 SFRA will also identify locations where proposed development could result in a change to the risk designation of a reservoir. If proposed sites are located in a zone at reservoir risk, it will be necessary understand the extent to which the flooding could be made worse and to report on the implications with respect to allocating the land for development. On that basis such an approach is recommended. If proposed development is located in a high hazard zone in the vicinity of an existing dam structure the implications should be considered in a Level 2 SFRA or site specific Flood Risk Assessment and where appropriate an assessment made of whether alternative sites should be considered in accordance with the Sequential Test.

2.6 Canal flood risk

2.6.1 Implications

Source of Flooding	Available Mapping	Implications of making use of mapping in the Sequential Test
Canal flooding risk	Canal and Rivers Trust breach and overtopping history data	- Canals are regulated waterbodies and are unlikely to flood unless there is a sudden failure of an embankment or a sudden ingress of water from a river in areas where they interact closely. - Historic flood data is available from Rother District Council. - Unless the canal is represented in the Environment Agency fluvial flood model used to define the Flood Zones mapping does not enable execution of risk based sequence.

2.6.2 Recommendations for using zone maps for canal flooding

It is recommended that canal flooding is not included in the Sequential Test as the probability of failure is not quantifiable as it is a residual risk. The available information for canal flooding is not conceptually similar to the risks pertaining to river and sea flooding.

Any development proposed adjacent to a canal should include a detailed assessment of how a canal breach would impact the site as part of a site-specific FRA. Breach modelling information has not yet been received from Canal and Rivers Trust. If specific spatial information becomes available on canal flood risk that provides competent data on the spatial relative risk of flooding this will be evaluated in a Level 2 SFRA and as appropriate inform the Sequential Test process.

3 Sequential approach at a site level

The Environment Agency's Flood Risk Assessment guidance was updated in July 2024. The guidance states that *"you may not need a sequential test if development can be laid out so that only elements such as public open space, biodiversity and amenity areas are in areas at risk of any source of current or future flooding."* The premise of this was subsequently included within the NPPF (see Section 1.1).

Therefore, in cases where the proportion of the site at flood risk is small, a sequential approach at the site level would be appropriate and enable development to be located in areas of low risk of flooding (by avoiding high risk areas that might exist at a particular site). This involves incorporating the less vulnerable aspects of the development (such as public open space, biodiversity and amenity areas) in the areas at risk of flooding. The more vulnerable aspects would be incorporated within areas at lower risk, and a Sequential Test would not be required.

For sites where only a small proportion of the site is identified as being at high or medium risk of flooding, it is possible for the Sequential Test to be satisfied if all proposed development can be placed in areas of low flood risk. This proportion would be defined in consultation with the Council based on the proportion of site that can be left to blue/green open space. This would likely be linked to densities and housing numbers. This can be sequentially preferable to site locations where high or medium flood risk areas cannot be avoided. It should be noted that in most circumstances the flooding from different sources is likely to affect the same "low lying" location within a proposed site, and therefore site selection should usually not be based on the number of different sources of flooding that could affect a site. Also, it is not strictly appropriate to suggest that flood risks from different sources can be simply combined to derive a combined risk or ranking, as the logic and likelihood of such conclusions cannot easily be evidenced by the supporting data. Addressing where the site is at risk, and the mitigation measures that may be required to be in place, should be completed in a Level 2 SFRA and/or site-specific FRA.

4 Conclusions

This technical note has been prepared to formalise the arrangements used by Rother District Council in performing the Sequential Test. Updates to the September 2025 PPG recommends that the Sequential Test now assesses all sources of flooding for low to high risk areas both now and in the future.

A review of readily available information has been undertaken to assess suitable data sources which could be considered for other sources of flood risk not previously included in the Sequential Test. A summary of the datasets to be used in the interim Sequential Test can be found in Appendix A.

For river and sea flood risk it is recommended that Flood Zone 2, 3 and 3b are assessed both for the present day and future.

For Surface Water, it is recommended that the Environment Agency's 1 in 30-year and 1 in 100-year Surface Water Spatial Planning flood extents are used to define a simple zoning scheme that identifies high, medium and low risk zones. It should be noted that the Surface Water Spatial Planning dataset includes an allowance for drainage (a flood risk management feature), so this is not strictly the same conceptual risk zone as defined for river and sea flooding (even though it is associated with the same probability). However, it does create a product that can accommodate sequential testing, as it facilitates strategic decisions that direct development to land in a "low risk surface water flood zone".

For reservoir flood risk, potential high-risk zones will be assessed and identified and if allocated sites are located in such zones, then the implications will be addressed in a Level 2 SFRA.

The readily available datasets for groundwater and sewer flood risk do not competently define areas of high or low risk of flooding and so more detailed assessment should be performed in a Level 2 SFRA to inform the Sequential Test where applicable (i.e. where the Level 1 SFRA screening finds the susceptibility of a site to these sources of flood risk to be high).

If the Local Planning Authority considers that the Sequential Test is performed and it is not possible for development to be located in areas with a lower risk of flooding then consideration must be given to the Exception Test and more detailed assessment included in the Level 2 SFRA.

Consultation will be sought from the LLFA and the Environment Agency for their comments on the methodology and approval in principle to the approach will be obtained before the inclusion in the SFRA.

A Summary of the Sequential Test methodology

Source of Flooding	High risk	Medium risk	Low risk	Justification of approach	
				Risk now	Future risk
Fluvial	Greater than 1% AEP (1 in 100 year) (FZ3)	Between 1% and 0.1% AEP (1 in 100 and 1 in 1000 year) (FZ2)	Less than 0.1% AEP (1 in 1000 year) (FZ1)	EA's Flood Zones 1, 2 and 3a use a risk-based approach	Use Flood Zones 1, 2 and 3a and 3b with climate change allowances where available. Use Flood Map for Planning – Flood Zones plus Climate Change dataset where not available. For fluvial flooding, the dataset uses the 'Central' allowance for the 2080s epoch (2070-2125).
Tidal / sea	Greater than 0.5% AEP (1 in 200 year) (FZ3)	Between 0.5% and 0.1% AEP (1 in 200 and 1 in 1000 year) (FZ2)	Less than 0.1% AEP (1 in 1000 year) (FZ1)	EA's Flood Zones 1, 2 and 3 use a risk-based approach Where detailed models are available and more up-to-date the 0.5% AEP and 0.1% AEP events should be assessed alongside the Flood Zones.	Detailed modelling should be used where it is available. Use Flood Map for Planning – Flood Zones plus Climate Change dataset where not available. For tidal flooding, the dataset uses the Upper End allowance accounting for sea level rise to 2125
Surface Water	Greater than 3.3% AEP (1 in 30-year)	Between 3.3% AEP (1 in 30-year) and 1% AEP (1 in 100-year)	Less than 1% AEP (1 in 100-year)	EA's Flood Map for Planning – Surface Water Spatial Planning – Climate Change mapping, 3.3% AEP (1 in 30) and 1% AEP (1 in 100). Although different assumptions are used to derive surface water risk than is the case for fluvial and tidal flood zones it is felt that the described approach creates a product that can accommodate sequential testing, as it would facilitate strategic decisions that directed development to land in "lower risk surface water flood zones". This approach will require that sites where proposed development is located in a high risk surface water zone are assessed in more detail in a Level 2 SFRA.	EA's Flood Map for Planning – Surface Water Spatial Planning extent mapping with a suitable allowance for climate change.

Source of Flooding	High risk	Medium risk	Low risk	Justification of approach	
				Risk now	Future risk
Groundwater	Screening to be undertaken to assess the potential susceptibility of all sites to groundwater flooding. Additional information required via a Level 2 SFRA or site-specific Flood Risk Assessment where susceptibility is considered to be high.			Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from groundwater. Therefore, a precautionary approach should be taken, and all sites where groundwater flood risk identified to be high will be identified and assessed in a Level 2 SFRA or site-specific Flood Risk Assessment. The implications for sequential selection of alternative locations should be considered at that stage.	(Not available)
Sewer	Screening to be undertaken to assess the potential susceptibility of all sites to sewer flooding. Additional information required via a Level 2 SFRA or site-specific Flood Risk Assessment where susceptibility is considered to be high.			Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from sewers. Therefore, a precautionary approach should be taken, and all sites where sewer flood risk identified to be high will be identified and assessed in a Level 2 SFRA or site-specific Flood Risk Assessment. The implications for sequential selection of alternative locations should be considered at that stage.	(Not available)

Source of Flooding	High risk	Medium risk	Low risk	Justification of approach	
				Risk now	Future risk
Reservoir	Screening to be undertaken to identify sites where reservoir flooding is predicted to make fluvial flooding worse for development or where development is proposed in a high hazard zone. Additional information required via a Level 2 SFRA or site-specific Flood Risk Assessment where susceptibility is considered to be high.			Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from reservoirs. In addition, the reservoir flood map identifies the consequence of a reservoir breach rather than risk, so applying high, medium and low 'risk' is not possible using this dataset. Therefore, a precautionary approach should be taken and sites where reservoir flooding is predicted to make fluvial flooding worse for development or where development is proposed in a high hazard zone will be identified and assessed in a Level 2 SFRA or site-specific Flood Risk Assessment. The implications for sequential selection of alternative locations should be considered at that stage.	(Not available)
Canal	Screening to be undertaken to assess the potential susceptibility of all sites to sewer flooding. Additional information required via a Level 2 SFRA or site-specific Flood Risk Assessment where susceptibility is considered to be high.			Datasets potentially do not have the confidence or certainty required to provide mapping that enables a comparative assessment to be made of the risk of flooding of land from canals. Therefore, a precautionary approach should be taken and sites where canal flood risk identified to be high will be identified and assessed in a Level 2 SFRA or site-specific Flood Risk Assessment. The implications for sequential selection of alternative locations should be considered at that stage.	(Not available)

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Wallingford
Warrington

Registered Office
1 Broughton Park
Old Lane North
Broughton
SKIPTON
North Yorkshire
BD23 3FD
United Kingdom

+44(0)1756 799919
info@jbaconsulting.com
www.jbaconsulting.com
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Jeremy Benn Associates Limited

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